NW Natural HOLDINGS™

PERSEVERANCE AND PROGRESS

2020 ANNUAL REPORT

President and CEO David H. Anderson at company headquarters.

To Our Shareholders

Years come and go, but 2020 is unforgettable. The COVID-19 pandemic spread across the globe and immediately affected all of our daily lives. While many things changed, I'm incredibly proud of the way the NW Natural team pulled together to make sure one thing didn't — providing our customers with essential services safely and reliably.

Across our utilities, we quickly adopted new health and safety protocols, implemented additional precautions, pivoted to remote working and — most importantly — took care of customers and one another. We offered customers bill payment assistance, voluntarily suspended disconnections for nonpayments, donated to nonprofits helping people impacted by COVID-19, and kept our workforce safe and supported during unprecedented challenges.

At the same time, we continued to look ahead and execute on key long-term priorities, laying the foundation for continued success. I'm grateful for our resilience and for your confidence in our company. In a year where uncertainty was the only certainty, we forged ahead and made important progress.

"In a year where uncertainty was the only certainty, we forged ahead and made important progress."

2020 Highlights

Net Income

Reported 2020 net income from continuing operations of $70.3 million or $2.30 per share, compared to $65.3 million or $2.19 per share for 2019. Reported 2019 net income from continuing operations included a regulatory disallowance of historical pension costs of $10.5 million pre-tax. Excluding this charge, on a non-GAAP basis, net income from continuing operations was $71.9 million or $2.41 per share for 2019.[1]

Customer Growth

Achieved an annual customer growth rate of 1.5% by adding nearly 11,600 new natural gas meters, bringing the people we serve to approximately 2.5 million through more than 770,000 meters.

Customer Service

Ranked second in the West and in the top 10 in the nation for large gas utilities in the annual J.D. Power Gas Utility Residential Customer Satisfaction Study.

Reliability

Invested nearly $280 million in our gas utility infrastructure system reinforcement projects in key areas around Portland, Oregon, to support growth plus at our gas storage facility in Mist, Oregon.

Oregon Rate Case

Received Oregon general rate case order providing an estimated annual pretax earnings benefit of $45.1 million to recover operating costs and necessary investment for system reliability and resiliency.

Washington Rate Case

Filed a NW Natural general rate case in Washington requesting a multiyear increase to revenue requirement of $6.3 million in the first year and $3.2 million in the second year to recover costs associated with investments for safety and reliability.

Renewables

Completed rulemaking on landmark Oregon Senate Bill 98 (SB 98), which enables us to purchase renewable natural gas (RNG) or hydrogen on behalf of customers; also completed a request for proposal and signed our first RNG investment contract before the end of 2020.

Decarbonizing

On track to meet or exceed our voluntary carbon savings goal of 30% by 2035.[2] Established our vision forward to be a carbon neutral energy provider by 2050.

Water Growth

Completed five acquisitions, including our first in Texas, and filed three rate cases in Oregon, Washington and Idaho to recover investments made to strengthen infrastructure.

ESG Report

Issued our inaugural Environmental, Social and Governance report, which highlights some of the most important work we're focused on in these areas.

Dividends

Increased dividends paid for the 65th consecutive year, one of the longest records on the NYSE.

[1] See Financial Overview on page 10 for non-GAAP reconciliation.

[2] This is a voluntary emissions savings goal equivalent to 30% of the carbon emissions from our sales customers gas use and company operations from 2015.

Corporate Profile

NW NATURAL HOLDINGS (NYSE: NWN) is headquartered in Portland, Oregon, and owns a regulated natural gas distribution company, NW Natural, water and wastewater utilities through its subsidiary, NW Natural Water, and other business interests and activities.

NW Natural Customer Field Service Technician Greg Gonzales in Portland.

2020 Event Responses

In the face of ongoing challenges during 2020, our values guided our decisions as they always have, and we maintained an unwavering focus on the health and safety of our employees, customers and the communities we serve.

COVID-19 Pandemic

Throughout the pandemic, as essential service providers, our gas and water utilities continued to serve customers without interruption. NW Natural has a well-defined emergency response command structure and protocols. To respond to the virus, we mobilized our Incident Command Team and business continuity plans in early March, formalized and initiated these procedures at our water utilities, and continue to operate under these structures and protocols for the duration of the pandemic.

Employees who work in the field follow CDC, OSHA and state-specific guidance for personal protective equipment, social distancing, sanitizing protocols and other measures to mitigate the spread of the virus. We also created a NW Natural COVID-19 response team with special training and equipment to work in homes where someone with a known or suspected case of COVID-19 is present. For most office employees, we implemented work-from-home plans that remain in place as we take a measured approach to reopening our headquarters and operations center. By following these stringent health guidelines, fewer than 2% of our employees tested positive for COVID-19 in 2020, all of whom have recovered.

In March of last year, we voluntarily stopped charging late fees and disconnecting customers for nonpayment. We continue to offer flexible payment options tailored to the customer's specific situation and provide assistance to help customers pay their bills.

We also worked closely with utility regulators to determine a process and schedule to resume normal business practices. Regulators approved accounting deferrals for certain financial impacts from COVID-19, and management implemented short-term cost-savings initiatives to further mitigate the financial impacts of the virus.

Western Wildfires

In September 2020, wildfires struck the West Coast. NW Natural's Incident Command Team responded quickly, monitoring the fires, developing system shutdown plans to ensure safety, and coordinating with county and state emergency managers. Our natural gas system is designed to allow us to isolate and depressurize sections when conditions require. We worked to stay ahead of the moving fires and shut down sections of the system as needed. Once the fires were controlled and conditions were safe, our crews re-energized the system and relit about 2,500 customers.

Hood River Service Restoration

In late December 2020, NW Natural restored service to customers in Hood River, Oregon, and White Salmon, Washington, after the largest outage the company experienced in 65 years. Service was disrupted to about 5,500 customers when a vehicle crashed into a Williams Northwest Pipeline facility that delivers gas to NW Natural's system. To respond as quickly as possible, we enlisted help from utilities in several states through a mutual assistance agreement.

Social Justice

In 2020, we were reminded that we still have a long way to go to achieve social justice in our nation, our communities and our workplaces. As a company, we have stated publicly that we do not tolerate racism in any form. For over 20 years, NW Natural has actively implemented an agenda focused on diversity, equity and inclusion through initiatives within our workplace, by supporting and participating in wider community diversity initiatives, and by expanding our spending with businesses owned by women, veterans, disabled, economically disadvantaged and minorities.

We're focused on continuous improvement as we build an increasingly diverse workforce across all levels in our organization, strive to ensure equity in pay and development opportunities, and work to foster a culture where all voices are heard and respected.

NW Natural – Natural Gas Utility

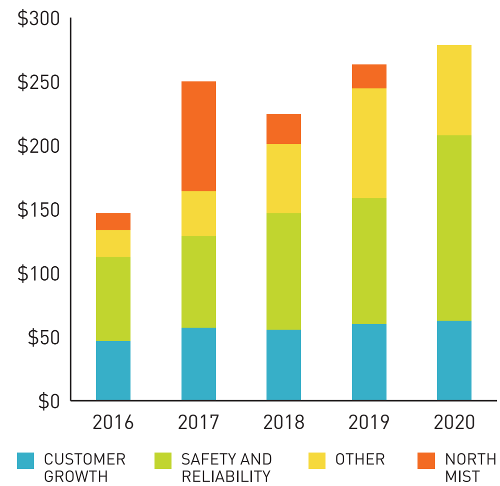
Safety Is Our Highest Priority

Safety is our greatest responsibility to our customers, our employees and the communities we serve. Our employees perform approximately 210,000 routine field visits each year, and we operate a 24/7 emergency hotline so we can immediately dispatch nearby responders to damage and odor calls.

In 2020, we launched our Journey to Zero program to reduce employee injuries. We ended the year with the lowest number of workplace injuries in over a decade, our injury rate decreased by over 40%, and our lost-time injury rate decreased by about 75% compared to 2019.

We also operate one of the most modern systems in the nation, with no cast iron or bare steel pipe, safely and reliably. In 2020, we invested nearly $280 million in our natural gas infrastructure to support system reliability, growth, and improvements. Those investments included system reinforcement projects in four Oregon communities to ensure we can continue serving these growing areas well into the future. We also completed a large dehydration project at our storage facility in Mist, Oregon, which supports reliable service on the coldest winter days.

CAPITAL EXPENDITURES
(in millions)



Total investment in capital expenditures during 2020 was $278 million on an accrual basis.

Our goal is to meet or exceed federal and state pipeline safety regulations. Our transmission system is inspected using a combination of technologically advanced inline inspection tools and direct assessments. Our modern system makes it possible to perform most inspections through inline methods. At the end of 2020, we had inspected about three times the amount required.

2020 FEDERAL REPORTS

ZERO

- Reportable pipeline incidents
- Corrective action orders
- Safety-related condition reports
- Notices of probable violation

Resilience

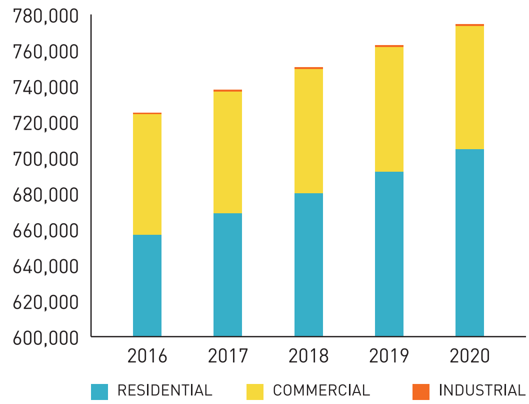
With possible threats in mind — from natural disasters such as earthquakes to cyberattacks — we work to make our operations and systems as resilient as possible.

A study released in 2020 by Portland State University's Center for Public Service, suggests the natural gas system could be a crucial resource in the event of a major disaster that disrupts power to the Pacific Northwest. Disaster recovery efforts could take advantage of NW Natural's modern natural gas distribution system, which includes pipeline materials protected underground, a significant amount of existing regional storage capacity, and the potential for renewable gas production at multiple locations.

To support operational resilience and our value of environmental stewardship, NW Natural moved its core operations to a new and smaller space in February 2020. Designed and constructed to be operational after an earthquake, the building is LEED Core and Shell Gold certified, meeting the U.S. Green Building Council's rigorous standard for healthy and sustainable buildings.

Cyber resilience requires investments in technology to protect our critical systems and customer data. We diligently follow cybersecurity best practices to minimize vulnerabilities and detect and respond to threats. As we moved into our new operations center, we built two data centers for resiliency with one in Central Oregon, outside of the Cascadia impact zone, and the other located at our emergency operations center in Sherwood, Oregon.

UTILITY METERS AT YEAR-END



« We added 11,600 new connections and now serve over 770,000 meters.

Continued Growth

We continued to see strong customer growth in 2020. With new construction and conversions, we connected over 11,600 new meters. Our 2020 overall net customer growth rate of 1.5% was fueled by new single-family housing growth in our region and a steady stream of conversions. However, some commercial customers hardest hit by the pandemic, such as restaurants, were forced to close their doors and disconnect their meters, which moderated the overall growth rate.

Affordability

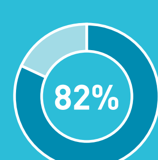
The good news is that gas bills remain very affordable. NW Natural customers are paying about 40% less for their bills today than they did 15 years ago. Low prices mean natural gas heating continues to enjoy a competitive position over other options, with a price advantage of up to 67% over electric furnaces and 15% over high-efficiency heat pumps.

Service Legacy Continues

Excellent service includes investing in easy to use customer-facing technology. In October 2020, we launched a new website designed to give customers a seamless experience on any device, with new self-service tools, notification enhancements and expanded online

RESEARCH CONFIRMS THAT HOMEBUYERS HAVE A STRONG PREFERENCE FOR NATURAL GAS

8 IN 10 PROSPECTIVE HOMEBUYERS SAY NATURAL GAS IS PREFERABLE TO ELECTRICITY FOR HEATING AND COOKING



WOULD PAY $50,000 MORE FOR NATURAL GAS

83% CHOOSE A NATURAL GAS HOME

Source: Escalent December 2020 Study

Our Spanish Resource Team serves Spanish-speaking customers and supports groups across the company.

payment options. We also implemented an improved Interactive Voice Response system and streamlined our onboarding process for all customers.

We're pleased that our customers once again ranked us high in the annual J.D. Power Gas Utility Residential Customer Satisfaction Study. NW Natural scored second in the West among large gas utilities, which is the 17th time our company has scored in the top two in the West. Adding to the accolades, we placed second in the West and the nation across all electric and gas utilities in the 2020 Cogent Syndicated Utility Trusted Brand & Customer Engagement™ study by Escalent earning NW Natural the designation of Customer Champion.

Rate Cases

In October 2020, NW Natural completed an Oregon general rate case for investments in our system's reliability and resiliency. The order included a $45.1 million increase in our revenue requirement, a return on equity of 9.4% and average rate base of $1.44 billion, or an increase of $242 million compared to the last rate case.

At the end of the year, we filed a general rate case in Washington, requesting a multiyear increase with a $6.3 million increase in the first year and a $3.2 million increase in the second year to recover investments to support our gas system's reliability and resiliency.

Vision 2050

In spite of the pandemic, we kept a sharp focus on our longstanding value of environmental stewardship, addressing the climate imperative and making progress toward our commitment to reduce the carbon impacts of the energy we deliver.

With no cast iron or bare steel pipe, we have one of the tightest, lowest-emitting systems in the nation. We use that tight system to deliver more energy in Oregon than any other utility each year. In fact, the existing gas system has provided nearly twice as much energy on a peak heating day as the electric system. And yet, the use of natural gas in our customers' homes and businesses accounts for just 6% of Oregon's annual greenhouse gas emissions.[3] That's a very efficient delivery of a lot of energy.

As we contemplate decarbonization strategies, we know our natural gas system is an incredible asset that is needed during the peak winter months and can handle additional demand. And we believe that our conventional fuel can be exchanged for renewables to further reduce emissions affordably and efficiently.

In 2016, we established a voluntary carbon savings goal of 30% by 2035 for emissions from our own operations and our sales customers' usage based off of 2015 emission levels. We've made great strides toward that goal and are on track to meet or exceed it.

Our focus remains on driving new innovations forward for a substantial climate benefit. Our vision forward is to be a carbon neutral energy provider by 2050. We believe replacing more and more of our natural gas supply with renewables using our existing pipeline infrastructure — combined with expanded energy efficiency and wide adoption of our carbon offset program — yields the fastest affordable climate results for our communities and the planet.

We're seeing European countries pursue a carbon neutral pathway for their gas systems by diversifying with renewable natural gas and renewable hydrogen in tandem with carbon capture utilization and storage.

The renewable supply exists, the technology exists, and we already have a modern delivery system in place. With customers we serve and our policymakers, we're committed to leading the way to solutions that work.

[3] Source: NW Natural sales load data from the Oregon Department of Environmental Quality In-Boundary Greenhouse Gas Inventory, 2015 data.

Supporting the start to this evolution in our supply is groundbreaking Oregon RNG legislation, which outlines goals for adding as much as 30% RNG into the state's pipeline system by 2050. Under the legislation, we can now procure and invest in RNG, including hydrogen, on behalf of our customers with up to 5% of a utility's revenue requirement allowed to be used to cover the incremental cost of RNG. Gas utilities can also invest in renewables and include this capital in rate base if that is the lowest cost option for customers.

When rulemaking for Oregon SB 98 was complete in July, we quickly issued an RFP and were pleased with the robust response and the market insights we gained through the process. Our first investment opportunity came in December 2020 when we formed an innovative RNG partnership with BioCarbN and Tyson Foods to convert methane from several Tyson Foods facilities into RNG. Under the partnership, NW Natural has options to invest up to an estimated $38 million in four separate RNG development projects. In December, NW Natural exercised its first option initiating an investment in an estimated $8 million project. We continue to pursue other viable contracts.

"The renewable supply exists, the technology exists, and we already have a modern delivery system in place. With customers we serve and our policymakers, we're committed to leading the way to solutions that work."

Ahead of Oregon SB 98, we began working on projects that will flow RNG into our pipeline system in Oregon to serve the transportation market. Collectively, these projects are designed to provide immediate and impactful emissions and air quality benefits.

We're excited about a proposed green hydrogen project in Eugene, Oregon, being discussed under a memorandum of understanding we announced in October 2020 with a consortium of partners.

NW Natural technicians testing blended hydrogen gas at NW Natural's Sherwood facility.

This could be the first project in the Pacific Northwest to demonstrate this cutting-edge approach to producing renewable hydrogen.

Another technical question is how to store these renewables. An advantage of our system is that we have 20 billion cubic feet of long-duration, seasonal storage at our Mist facility, which is one of the only storage facilities in the Pacific Northwest. We believe that facility could be used to store renewable molecules in the future, just as it stores conventional natural gas today. By our estimates, 20 billion cubic feet is equivalent to about 6 million megawatt hours of electricity storage. That's about a $2 trillion battery, if you assume current lithium ion technology and use today's prices[4], and is many times larger than the biggest lithium battery in the world today.

Climate work is not easy and there are no shortcuts. But it is imperative for our future and requires collective action and new thinking to reach pragmatic solutions. So each year, we set aggressive goals, make progress and move closer to our vision.

Sale of Noncore Assets

A few years ago, we completed a comprehensive review and determined that our continued focus would be on providing shareholders stable, regulated earnings growth. Through that process, we determined that our Gill Ranch storage facility in California was no longer central to our broader utility strategy. In December 2020, NW Natural Holdings completed the sale of Gill Ranch for $13.5 million. Additionally, in August 2020 we completed the sale of our interest in the Trail West venture, which is exploring the development of a new gas transmission pipeline in the Northwest, for a purchase price of $14 million. We reinvested these proceeds into our growing water and wastewater utility business.

[4] Price is based on National Renewable Energy Laboratory (NREL) technical report from June 2019. NREL is a national laboratory of the U.S. Department of Energy.

NW Natural Water – Water Utilities

Operations and Organic Growth

This past year, with all of its challenges, reinforced our decision to build a water and wastewater utility platform and highlighted the value we can bring and create in this sector.

Operationally, the water and wastewater utilities performed well through the pandemic. We leveraged our resources and expertise at the natural gas company to implement COVID-19 health and safety best practices and ensure that all of our subsidiaries had the equipment and support required to keep employees and customers safe and healthy. Our ability to work together and leverage resources and experience across the platform during this crisis further validated our strategy.

Our water and wastewater utilities continued to grow. Organic customer growth was 2.8% over the 12 months ending Dec. 31, 2020. During that time, we invested in infrastructure as we strive to support safe and reliable service today and in the future.

In 2020 we filed our first water utility general rate cases to recover necessary investments and costs. We'll continue to assess our water utilities for rate cases, and will work closely with our regulators and customers to ensure appropriate investment in this critical infrastructure and operations.

Acquisition Strategy

Since announcing our initial transactions in late 2017, we have solidified our water strategy and quadrupled the number of customers we serve. In 2020, we kept up a steady pace of acquisitions, adding Suncadia Water and Environmental, in Washington state, and grew beyond our legacy service territory with our first acquisition in Texas. In addition, we continued to acquire smaller systems around our existing footprint. In August, we also closed our first municipal acquisition in Idaho near our Falls Water system, giving us important experience and insights into another aspect of the water business.

Cumulatively, we've invested nearly $110 million in acquisitions since 2017. We continue to believe in the investment potential of this business and look forward to putting more money to work here.

NW Natural Water owns Cascadia Water located on Whidbey Island, WA.

Persevering Through Uncertain Times

Reflecting on the many accomplishments of 2020, we weathered an unpredictable storm and emerged stronger. As with past challenges, the last year proved we can respond to an emergent situation with competence and caring, keep our system, employees, customers and community safe, while we also make progress on our long-term goals.

It takes a talented team to achieve this, and I am immensely proud of our employees. They've taken care of our customers and communities when they needed us the most.

Finally, I would like to thank you, our shareholders, for your commitment, confidence and trust as we all persevered despite the challenges.

David H. Anderson

David H. Anderson
President and
Chief Executive Officer

NW Natural WATER™

Salmon Valley Water
Sunriver Water and Wastewater

Cascadia Water
Suncadia Water and Wastewater

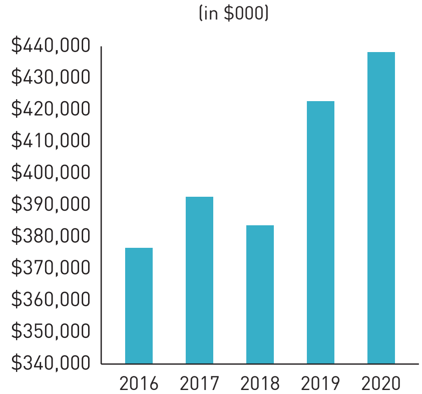
Falls Water
Gem State Water

T&W Water

Financial Overview

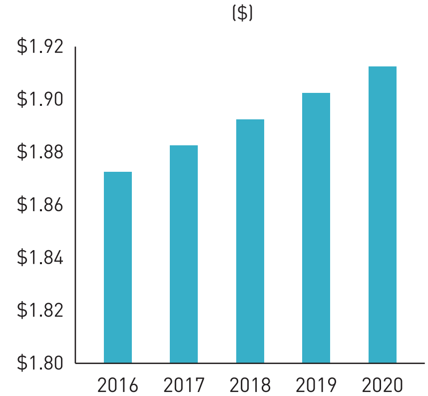
	2020	2019
KEY HIGHLIGHTS		
Consolidated financial facts ($000):		
Operating revenues	773,679	746,372
Net income from continuing operations	70,273	65,311
Adjusted net income from continuing operations	N/A	71,899[1]
Net income	76,781	61,735
Financial ratios (%):		
Return on average common equity	8.8	7.6
Capital structure[2] at year-end:		
Long-term debt	51.8	50.4
Common stock equity	48.2	49.6
COMMON STOCK		
Shareholder data (000):		
Year-end shares outstanding	30,589	30,472
Average shares outstanding–diluted	30,599	29,859
Per share data ($):		
Diluted earnings from continuing operations	2.30	2.19
Adjusted diluted earnings from continuing operations	N/A	2.41[1]
Dividends paid	1.91	1.90
Book value at year-end	29.05	28.42
Market value at year-end	45.99	73.73
NATURAL GAS DISTRIBUTION OPERATING HIGHLIGHTS		
Gas deliveries (000 therms)	1,142,897	1,215,154
Margin[3] ($000)	438,110	422,731
Degree days	2,384	2,709
Meters at year-end	774,476	762,877
Employees at year-end	1,155	1,167
WATER OPERATING HIGHLIGHTS		
Connections at year-end	26,140	18,129
Employees at year-end	56	38
DIVIDENDS PAID ON COMMON STOCK (per share)		
Payment date		
February	0.4775	0.4750
May	0.4775	0.4750
August	0.4775	0.4750
November	0.4800	0.4775
Total dividends paid	1.9125	1.9025

NATURAL GAS DISTRIBUTION MARGIN
(in $000)



Natural Gas Distribution margin increased $15.4 million to $438.1 million in 2020.

DIVIDENDS PAID PER SHARE
($)

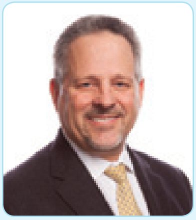


Annual dividends paid per share in 2020 increased for the 65th consecutive year.

[1] Adjusted net income from continuing operations and EPS for 2019 are non-GAAP financial measures that exclude the regulatory pension disallowance of $10.5 million pretax or $6.6 million after-tax. The after-tax disallowance is calculated using the combined federal and state statutory tax rate of 26.5% and reducing the disallowance by $1.1 million of deferred taxes specifically associated with the pension balancing account. EPS is calculated using 29.9 million diluted shares.

[2] Includes current maturities of long-term debt and excludes short-term debt.

[3] References to the margin refer to natural gas distribution segment.



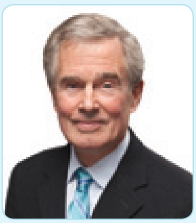
DAVID H. ANDERSON
President and Chief Executive Officer, NW Natural Holdings and NW Natural

TIMOTHY P. BOYLE
President and Chief Executive Officer and Chairman of the Board, Columbia Sportswear Company

JOHN D. CARTER
Former Chairman of the Board, Schnitzer Steel Industries, Inc.

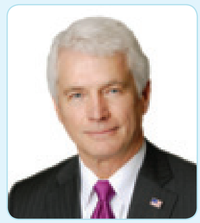
MONICA ENAND
Founder and Chief Executive Officer, Zapproved

C. SCOTT GIBSON
Chairman of the Board, NW Natural Holdings and NW Natural

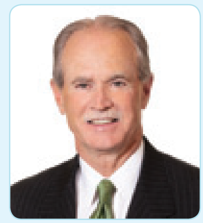


TOD R. HAMACHEK
Former Chairman of the Board, NW Natural Holdings and NW Natural

KAREN LEE
Chief Executive Officer of Pioneer Human Services

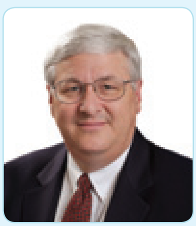


HON. DAVID K. MCCURDY
Former President and CEO of the American Gas Association

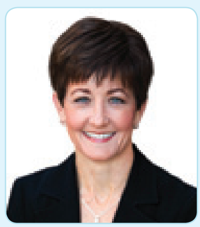


NATHAN I. PARTAIN
Former President and Co-Chief Investment Officer of Duff & Phelps Investment Management Co.

JANE L. PEVERETT
Former President and Chief Executive Officer, British Columbia Transmission Corporation

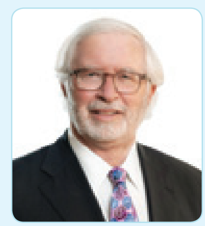


KENNETH THRASHER
Former Chairman of the Board, Compli Corporation



MALIA H. WASSON
President, Sand Creek Advisors

CHARLES A. WILHOITE
Managing Director, Willamette Management Associates, Inc.



STEVEN E. WYNNE
Independent Director, NW Natural and Executive Vice President, Moda, Inc.

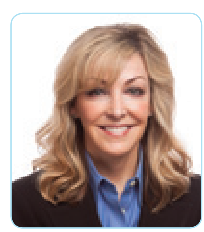
NW NATURAL SENIOR MANAGEMENT

DAVID H. ANDERSON[1]
President and Chief Executive Officer

FRANK BURKHARTSMEYER[1]
Senior Vice President and Chief Financial Officer

JAMES DOWNING
Vice President and Chief Information Officer

SHAWN M. FILIPPI[1,2]
Vice President, Chief Compliance Officer and Corporate Secretary



KIMBERLY HEITING
Senior Vice President Operations and Chief Marketing Officer

JON HUDDLESTON
Vice President Engineering and Utility Operations

JUSTIN B. PALFREYMAN[2]
Vice President, Strategy and Business Development, and President, NW Natural Water

MELINDA ROGERS
Vice President, Chief Human Resources and Diversity Officer

MARDILYN SAATHOFF[1]
Senior Vice President, Regulation and General Counsel

DAVID WEBER
Vice President, Gas Supply and Utility Support Services

KATHRYN WILLIAMS
Vice President, Public Affairs and Sustainability

BRODY J. WILSON[1,2]
Vice President, Chief Accounting Officer, Controller and Treasurer

[1] Also officers at NW Natural Holdings
[2] Also officers at NW Natural Water

Notice of Annual Meeting

The 2021 Annual Meeting of Shareholders is scheduled to be held at 2 p.m., Thursday, May 27, 2021. At the time of the printing of this Annual Report we are expecting to conduct an entirely virtual Annual Meeting. After finalizing this determination, a meeting notice and proxy statement describing our plans for conducting the meeting will be sent to all shareholders who hold shares as of the record date, April 8, 2021. Such plans may be supplemented or revised as appropriate.

Dividend reinvestment and direct stock purchase plan

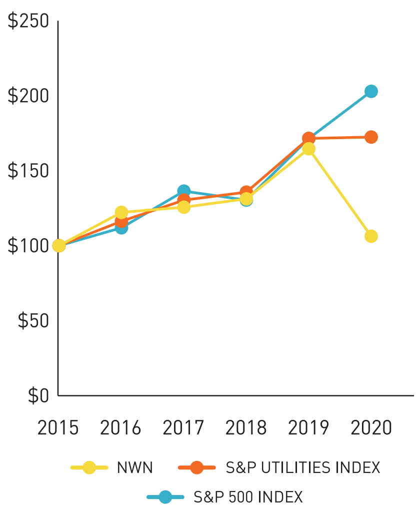
Participants may make an initial investment in company stock and common shareholders of record may reinvest all or part of their dividends in additional shares under the company's plan. Cash purchases may also be made. Participants in the plan bear the cost of brokerage fees and commissions for shares purchased on the open market to fulfill purchases under the plan. A prospectus will be sent upon request.

Scheduled dividend payment dates

Subject to Board approval, the following dates are scheduled for dividend payment:

February 12, 2021
May 14, 2021
August 13, 2021
November 15, 2021

COMPARISON OF FIVE-YEAR CUMULATIVE TOTAL RETURN
(Based on $100 invested on 12/31/2015)



Total shareholder return (annualized) over the five years ending December 31, 2020 for NW Natural was 1.21%, compared to Standard & Poor's (S&P) Utilities Index return of 11.49%, and the S&P 500 Index return of 15.19%.

Certifications

The Chief Executive Officer certified to the NYSE on June 23, 2020, that as of that date, he was not aware of any violation by the company of NYSE's corporate governance listing standards, and the company had filed with the Securities and Exchange Commission (SEC), as exhibits 31.3 and 31.4 to its Annual Report on Form 10-K for the year ended Dec. 31, 2019, the certificates of the Chief Executive Officer and the Chief Financial Officer of the company certifying the quality of the company's public disclosure. For the year ended Dec. 31, 2020, the certificates of the Chief Executive Officer and Chief Financial Officer are attached as exhibits 31.3 and 31.4 to the Form 10-K included in this Annual Report.

Contact the NW Natural Holdings Board

Concerns may be directed to the nonmanagement directors by writing to:

NW Natural Holdings Board of Directors
c/o Corporate Secretary
250 SW Taylor Street
Portland, OR 97204

Forward-looking statements

The statements made in this Annual Report that are not purely historical, including statements regarding plans, goals, strategies, commitments, success, opportunities, dividends, earnings, financial value, financial results, future events, performance, stability, continuation of past practices, future demand or preference for gas, strategic goals and visions, environmental initiatives, decarbonization and role of the natural gas system, including use of renewables, carbon emissions, targets and savings, renewable natural gas or hydrogen projects or investments, procurement of renewable natural gas or hydrogen for customers, commodity costs, customer rates and service, competitive position, revenues, customer and business growth, capital expenditures, system and infrastructure investments, emergency preparedness and response, cybersecurity, system reliability, safety and implementation of safety initiatives, system and operational resiliency, business continuity, environmental stewardship, regulatory proceedings and actions including, but not limited to, our rate cases and the timing and results thereof, rate recovery, effects of regulatory mechanisms, the regional economy, water utility strategy, planned acquisitions and integration thereof, dispositions and timing and outcomes thereof, operating plans and implementation, technology development, innovations and investment, system modernization and efficiency, diversity, equity and inclusion initiatives, effects of legislation, including but not limited to carbon and renewable natural gas and hydrogen regulations, effects, extent, severity and duration of COVID-19 and resulting economic disruption, impact of efforts to mitigate risks posed by its spread, ability of our workforce, customers or suppliers to operate or conduct business, COVID-19 financial impacts, cost-savings measures and accounting deferrals, reopening and remote work plans, and governmental actions and timing thereof, including actions to reopen the economy, are forward-looking statements within the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995. NW Natural's actual results could differ materially from those anticipated in these forward-looking statements as a result of risks and uncertainties, including those described in the attached report on Form 10-K. For a more complete description of these risks and uncertainties, please refer to our filings with the SEC on Forms 10-K and 10-Q.

Request for publications

The following publications may be obtained without charge by contacting the Corporate Secretary at NW Natural's address: Annual Report; Form 10-K; Form 10-Q; Form 8-Ks; Corporate Governance Standards; Director Independence Standards; Code of Ethics; and Board Committee Charters. These publications, as well as other filings made with the SEC, are also available on our website at nwnaturalholdings.com. Our SEC filings are also available through the SEC's website (sec.gov).

NW Natural HOLDINGS™

PRODUCED BY NW NATURAL'S CORPORATE COMMUNICATIONS

PHOTO CREDITS: BRANDON DESJARLAIS - front cover: Columbia Gorge; DALE HEADRICK - page 2: David Anderson; page 4, service technician; page 7, Spanish Resource team; page 8, hydrogen testing; ELENA KUCHKO - back cover: Columbia Gorge; SEAN MARTIN - inside back cover: Mt. Hood; TIM MUANGKEO - page 9: Cape Kiwanda.

PRINTING: Donnelley Financial Solutions

Form 10-K

Annual Report

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2020

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from ___________ to___________

NW Natural HOLDINGS™	NW Natural®
NORTHWEST NATURAL HOLDING COMPANY	**NORTHWEST NATURAL GAS COMPANY**
(Exact name of registrant as specified in its charter)	(Exact name of registrant as specified in its charter)
Commission file number 1-38681	Commission file number 1-15973
Oregon / **82-4710680**	**Oregon** / **93-0256722**
(State or other jurisdiction of incorporation or organization) / (I.R.S. Employer Identification No.)	(State or other jurisdiction of incorporation or organization) / (I.R.S. Employer Identification No.)
250 S.W. Taylor Street	**250 S.W. Taylor Street**
Portland Oregon 97204	**Portland Oregon 97204**
(Address of principal executive offices) (Zip Code)	(Address of principal executive offices) (Zip Code)
Registrant's telephone number: **(503) 226-4211**	Registrant's telephone number: **(503) 226-4211**

Securities registered pursuant to Section 12(b) of the Act:

Registrant	Title of each class	Trading Symbol	Name of each exchange on which registered
Northwest Natural Holding Company	Common Stock	NWN	New York Stock Exchange
Northwest Natural Gas Company	None	None	None

Securities registered pursuant to Section 12(g) of the Act: None.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

NORTHWEST NATURAL HOLDING COMPANY Yes ☒ No ☐ NORTHWEST NATURAL GAS COMPANY Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.

NORTHWEST NATURAL HOLDING COMPANY Yes ☐ No ☒ NORTHWEST NATURAL GAS COMPANY Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

NORTHWEST NATURAL HOLDING COMPANY Yes ☒ No ☐ NORTHWEST NATURAL GAS COMPANY Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

NORTHWEST NATURAL HOLDING COMPANY Yes ☒ No ☐ NORTHWEST NATURAL GAS COMPANY Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

NORTHWEST NATURAL HOLDING COMPANY		NORTHWEST NATURAL GAS COMPANY	
Large Accelerated Filer	☒	Large Accelerated Filer	☐
Accelerated Filer	☐	Accelerated Filer	☐
Non-accelerated Filer	☐	Non-accelerated Filer	☒
Smaller Reporting Company	☐	Smaller Reporting Company	☐
Emerging Growth Company	☐	Emerging Growth Company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

NORTHWEST NATURAL HOLDING COMPANY Yes ☒ No ☐ NORTHWEST NATURAL GAS COMPANY Yes ☐ No ☒

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

NORTHWEST NATURAL HOLDING COMPANY Yes ☐ No ☒ NORTHWEST NATURAL GAS COMPANY Yes ☐ No ☒

As of the end of the second quarter of 2020, the aggregate market value of the shares of Common Stock of Northwest Natural Holding Company (based upon the closing price of these shares on the New York Stock Exchange on June 30, 2020) held by non-affiliates was $1,682,261,011.

At February 16, 2021, 30,606,665 shares of Northwest Natural Holding Company's Common Stock (the only class of Common Stock) were outstanding. All shares of Northwest Natural Gas Company's Common Stock (the only class of Common Stock) outstanding were held by Northwest Natural Holding Company.

This combined Form 10-K is separately filed by Northwest Natural Holding Company and Northwest Natural Gas Company. Information contained in this document relating to Northwest Natural Gas Company is filed by Northwest Natural Holding Company and separately by Northwest Natural Gas Company. Northwest Natural Gas Company makes no representation as to information relating to Northwest Natural Holding Company or its subsidiaries, except as it may relate to Northwest Natural Gas Company and its subsidiaries.

Northwest Natural Gas Company meets the conditions set forth in General Instruction (I)(1)(a) and (b) of Form 10-K and is therefore filing this report with the reduced disclosure format.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of Northwest Natural Holding Company's Proxy Statement, to be filed in connection with the 2021 Annual Meeting of Shareholders, are incorporated by reference in Part III.

TABLE OF CONTENTS

GLOSSARY OF TERMS AND ABBREVIATIONS

AFUDC	Allowance for Funds Used During Construction
AOCI / AOCL	Accumulated Other Comprehensive Income (Loss)
ASC	Accounting Standards Codification
ASU	Accounting Standards Update as issued by the FASB
Average Weather	The 25-year average of heating degree days based on temperatures established in our last Oregon general rate case
Bcf	Billion cubic feet, a volumetric measure of natural gas, where one Bcf is roughly equal to 10 million therms
CNG	Compressed Natural Gas
CODM	Chief Operating Decision Maker, which for accounting purposes is defined as an individual or group of individuals responsible for the allocation of resources and assessing the performance of the entity's business units
Core NGD Customers	Residential, commercial, and industrial customers receiving firm service from the Natural Gas Distribution business
Cost of Gas	The delivered cost of natural gas sold to customers, including the cost of gas purchased or withdrawn/ produced from storage inventory or reserves, gains and losses from gas commodity hedges, pipeline demand costs, seasonal demand cost balancing adjustments, and regulatory gas cost deferrals
Decoupling	A natural gas billing rate mechanism, also referred to as a conservation tariff, which is designed to allow a utility to encourage industrial and small commercial customers to conserve energy while not adversely affecting the utility's earnings due to reductions in sales volumes
Demand Cost	A component in NGD customer rates representing the cost of securing firm pipeline capacity, whether the capacity is used or not
EE/CA	Engineering Evaluation / Cost Analysis
Encana	Encana Oil & Gas (USA) Inc.
Energy Corp	Northwest Energy Corporation, a wholly-owned subsidiary of Northwest Natural Gas Company
EPA	Environmental Protection Agency
EPS	Earnings per share
ECRM	Environmental Cost Recovery Mechanism, a billing rate mechanism for recovering prudently incurred environmental site remediation costs allocable to Washington customers through NGD customer billings
FASB	Financial Accounting Standards Board
FERC	Federal Energy Regulatory Commission; the entity regulating interstate storage services offered by the Mist gas storage facility
Firm Service	Natural gas service offered to customers under contracts or rate schedules that will not be disrupted to meet the needs of other customers
FMBs	First Mortgage Bonds
General Rate Case	A periodic filing with state or federal regulators to establish billing rates for utility customers
GHG	Greenhouse gases
GTN	Gas Transmission Northwest, LLC which owns a transmission pipeline serving California and the Pacific Northwest
Heating Degree Days	Units of measure reflecting temperature-sensitive consumption of natural gas, calculated by subtracting the average of a day’s high and low temperatures from 59 degrees Fahrenheit
Interruptible Service	Natural gas service offered to customers (usually large commercial or industrial users) under contracts or rate schedules that allow for interruptions when necessary to meet the needs of firm service customers
Interstate Storage Services	The portion of the Mist gas storage facility not used to serve NGD customers, instead serving utilities, gas marketers, electric generators, and large industrial users
IPUC	Public Utility Commission of Idaho; the entity that regulates NW Holdings' regulated water businesses with respect to rates and terms of service, among other matters
IRP	Integrated Resource Plan
KB	Kelso-Beaver Pipeline, of which 10% is owned by KB Pipeline Company, a subsidiary of NNG Financial Corporation
LNG	Liquefied Natural Gas, the cryogenic liquid form of natural gas. To reach a liquid form at atmospheric pressure, natural gas must be cooled to approximately negative 260 degrees Fahrenheit

MAP-21	A federal pension plan funding law called the Moving Ahead for Progress in the 21st Century Act, July 2012
Moody's	Moody's Investors Service, Inc., credit rating agency
NAV	Net Asset Value
NGD	Natural Gas Distribution, a segment of Northwest Natural Holding Company and Northwest Natural Gas Company that provides regulated natural gas distribution services to residential, commercial, and industrial customers in Oregon and Southwest Washington
NGD Margin	A financial measure used by NW Natural's CODM consisting of NGD operating revenues less the associated cost of gas, franchise taxes, and environmental recoveries
NNG Financial	NNG Financial Corporation, a wholly-owned subsidiary of NW Holdings
NOL	Net Operating Loss
NRD	Natural Resource Damages
NW Holdings	Northwest Natural Holding Company
NW Natural	Northwest Natural Gas Company, a wholly-owned subsidiary of NW Holdings
NWN Energy	NW Natural Energy, LLC, a wholly-owned subsidiary of NW Holdings
NWN Gas Reserves	NWN Gas Reserves LLC, a wholly-owned subsidiary of Energy Corp
NWN Gas Storage	NW Natural Gas Storage, LLC, a wholly-owned subsidiary of NWN Energy
ODEQ	Oregon Department of Environmental Quality
OPEIU	Office and Professional Employees International Union Local No. 11, AFL-CIO, the Union which represents NW Natural's bargaining unit employees
OPUC	Public Utility Commission of Oregon; the entity that regulates our Oregon natural gas and regulated water businesses with respect to rates and terms of service, among other matters; the OPUC also regulates the Mist gas storage facility's intrastate storage services
PBGC	Pension Benefit Guaranty Corporation
PGA	Purchased Gas Adjustment, a regulatory mechanism primarily used to adjust natural gas customer rates to reflect changes in the forecasted cost of gas and differences between forecasted and actual gas costs from the prior year
Portland General	Portland General Electric; primary customer of the North Mist gas storage facility
PHMSA	U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration
PRP	Potentially Responsible Parties
PUCT	Public Utility Commission of Texas; the entity that regulates NW Holdings' regulated water businesses with respect to rates and terms of service, among other matters
RI/FS	Remedial Investigation / Feasibility Study
RNG	Renewable Natural Gas, a source of natural gas derived from organic materials which may be captured, refined, and distributed on natural gas pipeline systems
RNG Hold Co	NW Natural RNG Holding Company, LLC, a wholly-owned subsidiary of Northwest Natural Gas Company
ROD	Record of Decision
ROE	Return on Equity, a measure of corporate profitability, calculated as net income or loss divided by average common equity. Authorized ROE refers to the equity rate approved by a regulatory agency for use in determining utility revenue requirements
ROR	Rate of Return, a measure of return on utility rate base. Authorized ROR refers to the rate of return approved by a regulatory agency and is generally discussed in the context of ROE and capital structure
S&P	Standard & Poor's Financial Services LLC, a credit rating agency and a subsidiary of S&P Global Inc.
Sales Service	Service provided whereby a customer purchases both natural gas commodity supply and transportation from the NGD business
SEC	U.S. Securities and Exchange Commission
SRRM	Site Remediation and Recovery Mechanism, a billing rate mechanism for recovering prudently incurred environmental site remediation costs allocable to Oregon through NGD customer billings, subject to an earnings test
TCJA	The Tax Cuts and Jobs Act enacted on December 22, 2017
Therm	The basic unit of natural gas measurement, equal to one hundred thousand British thermal units
Transportation Service	Service provided whereby a customer purchases natural gas directly from a supplier but pays the utility to transport the gas over its distribution system to the customer’s facility
U.S. GAAP	Accounting principles generally accepted in the United States of America

WARM	An Oregon billing rate mechanism applied to natural gas residential and commercial customers to adjust for temperature variances from average weather
WUTC	Washington Utilities and Transportation Commission, the entity that regulates our Washington natural gas and regulated water businesses with respect to rates and terms of service, among other matters.

FORWARD-LOOKING STATEMENTS

This report contains forward-looking statements within the meaning of the U.S. Private Securities Litigation Reform Act of 1995, which are subject to the safe harbors created by such Act. Forward-looking statements can be identified by words such as anticipates, assumes, intends, plans, seeks, believes, estimates, expects, and similar references to future periods. Examples of forward-looking statements include, but are not limited to, statements regarding the following:

- plans, projections and predictions;
- objectives, goals, visions or strategies;
- assumptions, generalizations and estimates;
- ongoing continuation of past practices or patterns;
- future events or performance;
- trends;
- risks;
- uncertainties;
- timing and cyclicality;
- economic conditions;
- earnings and dividends;
- capital expenditures and allocation;
- capital markets or loss of capital;
- capital or organizational structure;
- matters related to climate change and our role in a low-carbon, renewable-energy future;
- renewable natural gas and hydrogen;
- our strategy to reduce greenhouse gas emissions;
- the policies and priorities of the new presidential administration;
- growth;
- customer rates;
- illness or quarantine;
- labor relations and workforce succession;
- commodity costs;
- desirability and cost competitiveness of natural gas;
- gas reserves;
- operational performance and costs;
- energy policy, infrastructure and preferences;
- public policy approach and involvement;
- efficacy of derivatives and hedges;
- liquidity, financial positions, and planned securities issuances;
- valuations;
- project and program development, expansion, or investment;
- business development efforts, including acquisitions and integration thereof;
- implementation and execution of our water strategy;
- pipeline capacity, demand, location, and reliability;
- adequacy of property rights and operations center development;
- technology implementation and cybersecurity practices;
- competition;
- procurement and development of gas (including renewable natural gas) and water supplies;
- estimated expenditures, supply chain and third party availability and impairment;
- costs of compliance;
- customers bypassing our infrastructure;
- credit exposures;
- uncollectible account amounts;
- rate or regulatory outcomes, recovery or refunds, and the availability of public utility commissions to take action;
- impacts or changes of executive orders, laws, rules and regulations;
- tax liabilities or refunds, including effects of tax legislation;
- levels and pricing of gas storage contracts and gas storage markets;
- outcomes, timing and effects of potential claims, litigation, regulatory actions, and other administrative matters;
- projected obligations, expectations and treatment with respect to retirement plans;
- effects of projections related to, and our ability to mitigate the effects of, the novel coronavirus (COVID-19) and the economic conditions resulting therefrom;
- disruptions caused by social unrest, including related protests or disturbances;
- availability, adequacy, and shift in mix, of gas and water supplies;
- effects of new or anticipated changes in critical accounting policies or estimates;
- approval and adequacy of regulatory deferrals;
- effects and efficacy of regulatory mechanisms; and
- environmental, regulatory, litigation and insurance costs and recoveries, and timing thereof.

Forward-looking statements are based on our current expectations and assumptions regarding our business, the economy, and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks, and changes in circumstances that are difficult to predict. Our actual results may differ materially from those contemplated by the forward-looking statements. We therefore caution you against relying on any of these forward-looking statements. They are neither statements of historical fact nor guarantees or assurances of future performance. Important factors that could cause actual results to differ materially from those in the forward-looking statements are discussed at Item 1A., "Risk Factors" of Part I and Item 7. and Item 7A., "Management’s Discussion and Analysis of Financial Condition and Results of Operations" and "Quantitative and Qualitative Disclosures About Market Risk", respectively, of Part II of this report.

Any forward-looking statement made in this report speaks only as of the date on which it is made. Factors or events that could cause actual results to differ may emerge from time to time, and it is not possible for us to predict all of them. We undertake no obligation to publicly update any forward-looking statement, whether as a result of new information, future developments or otherwise, except as may be required by law.

PART I

FILING FORMAT

This annual report on Form 10-K is a combined report being filed by two separate registrants: Northwest Natural Holding Company (NW Holdings), and Northwest Natural Gas Company (NW Natural). Except where the content clearly indicates otherwise, any reference in the report to "we," "us" or "our" is to the consolidated entity of NW Holdings and all of its subsidiaries, including NW Natural, which is a distinct SEC registrant that is a wholly-owned subsidiary of NW Holdings. Each of NW Holdings' subsidiaries is a separate legal entity with its own assets and liabilities. Information contained herein relating to any individual registrant or its subsidiaries is filed by such registrant on its own behalf. Each registrant makes representations only as to itself and its subsidiaries and makes no other representation whatsoever as to any other company.

Item 8 in this Annual Report on Form 10-K includes separate financial statements (i.e. balance sheets, statements of comprehensive income, statements of cash flows, and statements of equity) for NW Holdings and NW Natural, in that order. References in this discussion to the "Notes" are to the Notes to the Consolidated Financial Statements in Item 8 of this report. The Notes to the Consolidated Financial Statements are presented on a combined basis for both entities except where expressly noted otherwise. All Items other than Item 8 are combined for the reporting companies.

ITEM 1. BUSINESS

OVERVIEW

On October 1, 2018, we completed a reorganization into a holding company structure. In this reorganization, shareholders of NW Natural (the predecessor publicly held parent company) became shareholders of NW Holdings, on a one-for-one basis, with the same number of shares and same ownership percentage as they held in NW Natural immediately prior to the reorganization. NW Natural became a wholly-owned subsidiary of NW Holdings. Additionally, certain subsidiaries of NW Natural were transferred to NW Holdings. As required under generally accepted accounting principles, these subsidiaries are presented as discontinued operations in the 2018 consolidated results of NW Natural within this report.

NW Holdings is a holding company headquartered in Portland, Oregon and owns NW Natural, NW Natural Water Company, LLC (NWN Water), and other businesses and activities. NW Natural is NW Holdings’ largest subsidiary. NW Natural owns NW Natural RNG Holding Company, LLC, a holding company established to invest in the development and procurement of renewable natural gas.

NW Natural distributes natural gas to residential, commercial, and industrial customers in Oregon and southwest Washington. NW Natural and its predecessors have supplied gas service to the public since 1859, was incorporated in Oregon in 1910, and began doing business as NW Natural in 1997. NW Natural's natural gas distribution activities are reported in the natural gas distribution (NGD) segment. All other business activities, including certain gas storage activities, water businesses, and other investments and activities are aggregated and reported as "other" at their respective registrant.

In addition, NW Holdings reported discontinued operations results related to the sale of Gill Ranch Storage, LLC (Gill Ranch). NW Natural Gas Storage, LLC (NWN Gas Storage), an indirect wholly-owned subsidiary of NW Holdings, entered into a Purchase and Sale Agreement during the second quarter of 2018 that provides for the sale of all membership interests in Gill Ranch. Gill Ranch owns a 75% interest in the natural gas storage facility located near Fresno, California known as the Gill Ranch Gas Storage Facility. On December 4, 2020, NWN Gas Storage closed the sale of all of the membership interests in Gill Ranch. See Note 19 of the Consolidated Financial Statements in Item 8 of this report for more information.

NATURAL GAS DISTRIBUTION (NGD) SEGMENT

Both NW Holdings and NW Natural have one reportable segment, the NGD segment, which is operated by NW Natural. NGD provides natural gas service through approximately 770,000 meters in Oregon and southwest Washington. Approximately 88% of customers are located in Oregon and 12% are located in southwest Washington.

NW Natural has been allocated an exclusive service territory by the Oregon Public Utility Commission (OPUC) and Washington Utilities and Transportation Commission (WUTC), which includes the major population centers in western Oregon, including the Portland metropolitan area, most of the Willamette Valley, the Coastal area from Astoria to Coos Bay, and portions of Washington along the Columbia River. Portland serves as a major West Coast port and is a key distribution center. Major businesses located in NW Natural's service territory include retail, manufacturing, and high-technology industries.

Customers

The NGD business serves residential, commercial, and industrial customers with no individual customer accounting for more than 10% of NW Natural's or NW Holdings' revenues. On an annual basis, residential and commercial customers typically account for approximately 60% of NGD volumes delivered and approximately 90% of margin. Industrial and other customers largely account for the remaining volumes and margin.

The following table presents summary meter information for the NGD segment as of December 31, 2020:

	Number of Meters	% of Volumes	% of Margin
Residential	704,675	38 %	64 %
Commercial	68,812	21 %	24 %
Industrial	989	41 %	7 %
Other[1]	N/A	N/A	5 %
Total	774,476	100 %	100 %

(1) NGD margin is also affected by other items, including miscellaneous revenues, gains or losses from NW Natural's gas cost incentive sharing mechanism, other margin adjustments, and other regulated services.

Generally, residential and commercial customers purchase both their natural gas commodity (gas sales) and natural gas delivery services (transportation services) from the NGD business. Industrial customers also purchase transportation services, but may buy the gas commodity either from NW Natural or directly from a third-party gas marketer or supplier. Gas commodity cost is primarily a pass-through cost to customers; therefore, profit margins are not materially affected by an industrial customer's decision to purchase gas from NW Natural or from third parties. Industrial and large commercial customers may also select between firm and interruptible service levels, with firm services generally providing higher profit margins compared to interruptible services.

To help manage gas supplies, industrial tariffs are designed to provide some certainty regarding industrial customers' volumes by requiring an annual service election, special charges for changes between elections, and in some cases, a minimum or maximum volume requirement before changing options.

Customer growth rates for natural gas utilities in the Pacific Northwest historically have been among the highest in the nation due to lower market saturation as natural gas became widely available as a residential heating source after other fuel options. We estimate natural gas was in approximately 63% of single-family residential homes in NW Natural's service territory in 2020. Customer growth in our region comes mainly from the following sources: single-family housing, both new construction and conversions; multifamily housing new construction; and commercial buildings, both new construction and conversions. Single-family new construction has consistently been our largest source of growth. Continued customer growth is closely tied to the comparative price of natural gas to electricity and fuel oil and the economic health of Portland, Oregon and Vancouver, Washington. We believe there is potential for continued growth as natural gas is a preferred direct energy source due to its affordability, reliability, comfort, convenience, and clean qualities.

Competitive Conditions

In its service areas, the NGD business has no direct competition from other natural gas distributors. However, it competes with other forms of energy in each customer class. This competition among energy suppliers is based on price, efficiency, reliability, performance, preference, market conditions, technology, federal, state, and local energy policy, and environmental impacts.

For residential and small to mid-size commercial customers, the NGD business competes primarily with providers of electricity, fuel oil, and propane.

In the industrial and large commercial markets, the NGD business competes with all forms of energy, including competition from wholesale natural gas marketers. In addition, large industrial customers could bypass NW Natural's natural gas distribution system by installing their own direct pipeline connection to the interstate pipeline system. NW Natural has designed custom transportation service agreements with several large industrial customers to provide transportation service rates that are competitive with the customer’s costs of installing their own pipeline.

Seasonality of Business

The NGD business is seasonal in nature due to higher gas usage by residential and commercial customers during the cold winter heating months. Other categories of customers experience similar seasonality in their usage but to a lesser extent.

Regulation and Rates

The NGD business is subject to regulation by the OPUC and WUTC. These regulatory agencies authorize rates and allow recovery mechanisms to provide the opportunity to recover prudently incurred capital and operating costs from customers, while also earning a reasonable return on investment for investors. In addition, the OPUC and WUTC also regulate the system of accounts and issuance of securities by NW Natural.

NW Natural files general rate cases and rate tariff requests periodically with the OPUC and WUTC to establish approved rates, an authorized return on equity (ROE), an overall rate of return (ROR) on rate base, an authorized capital structure, and other revenue/cost deferral and recovery mechanisms.

NW Natural is also regulated by the Federal Energy Regulatory Commission (FERC). Under NW Natural's Mist interstate storage certificate with FERC, NW Natural is required to file either a petition for rate approval or a cost and revenue study every five years to change or justify maintaining the existing rates for the interstate storage service.

For further discussion on our most recent general rate cases, see Part II, Item 7, "Results of Operations—Regulatory Matters—*Regulation and Rates."*

Gas Supply

NW Natural strives to secure sufficient, reliable supplies of natural gas to meet the needs of customers at the lowest reasonable cost, while maintaining price stability, managing gas purchase costs prudently and supporting our core value of environmental stewardship. This is accomplished through a comprehensive strategy focused on the following items:

- **Reliability** - ensuring gas resource portfolios are sufficient to satisfy customer requirements under extreme cold weather conditions;
- **Diverse Supply** - providing diversity of supply sources;
- **Diverse Contracts** - maintaining a variety of contract durations, types, and counterparties;
- **Cost Management and Recovery** - employing prudent gas cost management strategies; and
- **Environmental Stewardship** - striving to reduce the carbon content and environmental impacts of the energy we deliver.

Reliability

The effectiveness of the natural gas distribution system ultimately rests on whether reliable service is provided to NGD customers. To ensure effectiveness, the NGD business has developed a risk-based methodology in which it uses a planning standard to serve the highest firm sales demand day in any year with 99% certainty.

The projected maximum design day firm NGD customer sales is approximately 10 million therms. Of this total, the NGD business is currently capable of meeting about 56% of requirements with gas from storage located within or adjacent to its service territory, while the remaining supply requirements would come from gas purchases under firm gas purchase contracts and recall agreements.

NW Natural segments transportation capacity, which is a natural gas transportation mechanism under which a shipper can leverage its firm pipeline transportation capacity by separating it into multiple segments with alternate delivery routes. The reliability of service on these alternate routes will vary depending on the constraints of the pipeline system. For those segments with acceptable reliability, segmentation provides a shipper with increased flexibility and potential cost savings compared to traditional pipeline service. The NGD business relies on segmentation of firm pipeline transportation capacity that flows from Stanfield, Oregon to various points south of Molalla, Oregon.

We believe gas supplies would be sufficient to meet existing NGD firm customer demand in the event of maximum design day weather conditions.

The following table shows the sources of supply projected to be used to satisfy the design day sales for the 2020-21 winter heating season:

Therms in millions	Therms	Percent
Sources of NGD supply:		
Firm supply purchases	3.4	34 %
Mist underground storage (NGD only)	3.1	32 %
Company-owned LNG storage	1.9	19 %
Off-system storage contract	0.5	5 %
Pipeline segmentation capacity	0.6	6 %
Recall agreements	0.4	4 %
Total	9.9	100 %

The OPUC and WUTC have Integrated Resource Planning (IRP) processes in which utilities define different growth scenarios and corresponding resource acquisition strategies in an effort to evaluate supply and demand resource requirements, consider uncertainties in the planning process and the need for flexibility to respond to changes, and establish a plan for providing reliable service at the least cost.

NW Natural generally files a full IRP biennially for Oregon and Washington with the OPUC and the WUTC, respectively, and files updates between filings. The OPUC acknowledges NW Natural's action plan, whereas the WUTC provides notice that the IRP has met the requirements of the Washington Administrative Code. OPUC acknowledgment of the IRP does not constitute ratemaking approval of any specific resource acquisition strategy or expenditure. However, the OPUC Commissioners generally indicate that they would give considerable weight in prudence reviews to actions consistent with acknowledged plans. The WUTC has indicated the IRP process is one factor it will consider in a prudence review. For additional information see Part II, Item 7, "Results of Operations—*Regulatory Matters*."

<u>Diversity of Supply Sources</u>
NW Natural purchases gas supplies primarily from the Alberta and British Columbia provinces of Canada and multiple receipt points in the U.S. Rocky Mountains to protect against regional supply disruptions and to take advantage of price differentials. For 2020, 62% of gas supply came from Canada, with the balance primarily coming from the U.S. Rocky Mountain region. The extraction of shale gas has increased the availability of gas supplies throughout North America. We believe gas supplies available in the western United States and Canada are adequate to serve NGD customer requirements for the foreseeable future. NW Natural continues to evaluate the long-term supply mix based on projections of gas production and pricing in the U.S. Rocky Mountain region as well as other regions in North America. NW Natural has also announced its intent to incorporate renewable natural gas (RNG) into its supply portfolio. See "*Environmental Matters*" below.

NW Natural supplements firm gas supply purchases with gas withdrawals from gas storage facilities, including underground reservoirs and LNG storage facilities. Storage facilities are generally injected with natural gas during the off-peak months in the spring and summer, and the gas is withdrawn for use during peak demand months in the winter.

The following table presents the storage facilities available for NGD business supply:

	Maximum Daily Deliverability (therms in millions)	Designed Storage Capacity (Bcf)
Gas Storage Facilities		
Owned Facility		
Mist, Oregon (Mist Facility)[(1)]	3.1	10.6
Mist, Oregon (North Mist Facility)[(2)]	1.3	4.1
Contracted Facility		
Jackson Prairie, Washington[(3)]	0.5	1.1
LNG Facilities		
Owned Facilities		
Newport, Oregon	0.6	1.0
Portland, Oregon	1.3	0.6
Total	6.8	17.4

(1) The Mist gas storage facility has a total maximum daily deliverability of 5.4 million therms and a total designed storage capacity of about 16.0 Bcf, of which 3.1 million therms of daily deliverability and 10.6 Bcf of storage capacity are reserved for NGD business customers.
(2) The North Mist facility is contracted to exclusively serve Portland General Electric, a local electric utility, and may not be used to serve other NGD customers. See "*North Mist Gas Storage Facility*" below for more information.
(3) The storage facility is located near Chehalis, Washington and is contracted from Northwest Pipeline, a subsidiary of The Williams Companies.

The Mist facility serves NGD segment customers and is also used for non-NGD purposes, primarily for contracts with gas storage customers, including utilities and third-party marketers. Under regulatory agreements with the OPUC and WUTC, gas storage at Mist can be developed in advance of NGD customer needs but is subject to recall when needed to serve such customers as their demand increases. When storage capacity is recalled for NGD purposes it becomes part of the NGD segment. In 2020, the NGD business did not recall additional deliverability or associated storage capacity to serve customer needs. The North Mist facility is contracted for the exclusive use of Portland General Electric, a local electric utility, and may not be used to serve other NGD customers. See "*North Mist Gas Storage Facility*" below.

<u>Diverse Contract Durations and Types</u>
NW Natural has a diverse portfolio of short-, medium-, and long-term firm gas supply contracts and a variety of contract types including firm and interruptible supplies as well as supplemental supplies from gas storage facilities.

The portfolio of firm gas supply contracts typically includes the following gas purchase contracts: year-round and winter-only baseload supplies; seasonal supply with an option to call on additional daily supplies during the winter heating season; and daily or monthly spot purchases.

During 2020, a total of 757 million therms were purchased under contracts with durations as follows:

Contract Duration (primary term)	Percent of Purchases
Long-term (one year or longer)	39 %
Short-term (more than one month, less than one year)	23
Spot (one month or less)	38
Total	100 %

Gas supply contracts are renewed or replaced as they expire. During 2020, no individual supplier provided 10% or more of the NGD business gas supply requirements.

Gas Cost Management
The cost of gas sold to NGD customers primarily consists of the following items, which are included in annual Purchased Gas Adjustment (PGA) rates: gas purchases from suppliers; charges from pipeline companies to transport gas to our distribution system; gas storage costs; gas reserves contracts; and gas commodity derivative contracts.

The NGD business employs a number of strategies to mitigate the cost of gas sold to customers. The primary strategies for managing gas commodity price risk include:

- negotiating fixed prices directly with gas suppliers;
- negotiating financial derivative contracts that: (1) effectively convert floating index prices in physical gas supply contracts to fixed prices (referred to as commodity price swaps); or (2) effectively set a ceiling or floor price, or both, on floating index priced physical supply contracts (referred to as commodity price options such as calls, puts, and collars);
- buying physical gas supplies at a set price and injecting the gas into storage for price stability and to minimize pipeline capacity demand costs; and
- investing in gas reserves for longer term price stability. See Note 13 for additional information about our gas reserves.

NW Natural also contracts with an independent energy marketing company to capture opportunities regarding storage and pipeline capacity when those assets are not serving the needs of NGD business customers. Asset management activities provide opportunities for cost of gas savings for customers and incremental revenues for NW Natural through regulatory incentive-sharing mechanisms. These activities, net of the amount shared, are included in other for segment reporting purposes.

Gas Cost Recovery
Mechanisms for gas cost recovery are designed to be fair and reasonable, with an appropriate balance between the interests of customers and NW Natural. In general, natural gas distribution rates are designed to recover the costs of, but not to earn a return on, the gas commodity sold. Risks associated with gas cost recovery are minimized by resetting customer rates annually through the PGA and aligning customer and shareholder interests through the use of sharing, weather normalization, and conservation mechanisms in Oregon. See Part II, Item 7, "Results of Operations—*Regulatory Matters*" and "Results of Operations—Business Segments—Natural Gas Distribution Operations—*Cost of Gas*".

Environmental Stewardship
Part of our gas supply strategy is working to reduce the carbon content and the environmental impacts of the energy we deliver. To that end, NW Natural developed and implemented an emissions screening tool that uses Environmental Protection Agency (EPA) data to calculate the relative emissions intensity of gas producer operations and prioritize purchases from lower emitting producers. Beginning in 2019, we began using this emissions intensity screening tool alongside other purchasing criteria such as price, credit worthiness and geographic diversity. The result has been a cost-neutral way to reduce carbon emissions associated with our natural gas supply.

In addition, NW Natural is actively working to procure RNG contracts under Oregon Senate Bill 98, and is engaging in longer-term efforts to increase the amount of RNG on our system and explore the development of renewable hydrogen through power to gas. See "*Environmental Matters*" below.

Transportation of Gas Supplies
NW Natural's gas distribution system is reliant on a single, bi-directional interstate transmission pipeline to bring gas supplies into the natural gas distribution system. Although dependent on a single pipeline, the pipeline's gas flows into the Portland metropolitan market from two directions: (1) the north, which brings supplies from the British Columbia and Alberta supply basins; and (2) the east, which brings supplies from Alberta as well as the U.S. Rocky Mountain supply basins.

NW Natural incurs monthly demand charges related to firm pipeline transportation contracts. These contracts have expiration dates ranging from 2021 to 2061. The largest pipeline agreements are with Northwest Pipeline. NW Natural actively works with Northwest Pipeline and others to renew contracts in advance of expiration to ensure gas transportation capacity is sufficient to meet customer needs.

Rates for interstate pipeline transportation services are established by FERC within the U.S. and by Canadian authorities for services on Canadian pipelines.

Gas Distribution

Safety and the protection of employees, customers, and our communities at large are, and will remain, top priorities. NW Natural constructs, operates, and maintains its pipeline distribution system and storage operations with the goal of ensuring natural gas is delivered and stored safely, reliably, and efficiently.

NW Natural has one of the most modern distribution systems in the country with no identified cast iron pipe or bare steel main. Since the 1980s, NW Natural has taken a proactive approach to replacement programs and partnered with the OPUC and WUTC on progressive regulation to further safety and reliability efforts for the distribution system. In the past, NW Natural had a cost recovery program in Oregon that encompassed programs for bare steel replacement, transmission pipeline integrity management, and distribution pipeline integrity management as appropriate.

Natural gas distribution businesses are likely to be subject to greater federal and state regulation in the future. Additional operating and safety regulations from the U.S. Department of Transportation’s Pipeline and Hazardous Materials Safety Administration (PHMSA) are currently under development. In 2016, PHMSA issued safety requirements for natural gas transmission pipelines. In 2019, PHMSA issued the first of three portions of these regulations which went into effect on July 1, 2020 and include up to a 15-year timeline for compliance. The remaining portions of the regulations are anticipated to be issued in 2021. NW Natural intends to continue to work diligently with industry associations as well as federal and state regulators to ensure the safety of the system and compliance with new laws and regulations. The costs associated with compliance with federal, state, and local laws and regulations are expected to be recovered in rates.

North Mist Gas Storage Facility

In May 2019, NW Natural completed an expansion of its existing gas storage facility near Mist, Oregon. The North Mist facility provides long-term, no-notice underground gas storage service and is dedicated solely to Portland General Electric (Portland General) under a 30-year contract with options to extend up to an additional 50 years upon mutual agreement of the parties. Portland General uses the facility to support its gas-fired electric power generation facilities, which incorporate renewable energy into the electric grid.

North Mist includes a new reservoir providing 4.1 Bcf of available storage, an additional compressor station with a contractual capacity of 120,000 dekatherms of gas per day, no-notice service that can be drawn on rapidly, and a 13-mile pipeline to connect to Portland General's Port Westward gas plants in Clatskanie, Oregon.

Upon placement into service in May 2019, the facility was included in rate base under an established tariff schedule with revenues recognized consistent with the schedule. Billing rates will be updated annually to the current depreciable asset level and forecasted operating expenses.

While there are additional expansion opportunities in the Mist storage field, further development is not contemplated at this time and any expansion would be based on market demand, cost effectiveness, available financing, receipt of future permits, and other rights.

OTHER

Certain businesses and activities of NW Holdings and NW Natural are aggregated and reported as other for segment reporting purposes.

NW Natural

The following businesses and activities are aggregated and reported as other under NW Natural, a wholly-owned subsidiary of NW Holdings:

- 5.4 Bcf of the Mist gas storage facility contracted to other utilities and third-party marketers;
- natural gas asset management activities; and
- appliance retail center operations.

Mist Gas Storage

The Mist gas storage facility began operations in 1989. It is a 16.0 Bcf facility with 10.6 Bcf used to provide gas storage for the NGD business. The remaining 5.4 Bcf of the facility is contracted with other utilities and third-party marketers with these results reported in other.

The overall facility consists of seven depleted natural gas reservoirs, 22 injection and withdrawal wells, a compressor station, dehydration and control equipment, gathering lines, and other related facilities. The capacity at Mist serving other utilities and third-party marketers provides multi-cycle gas storage services to customers in the interstate and intrastate markets. The interstate storage services are offered under a limited jurisdiction blanket certificate issued by FERC. Under NW Natural's interstate storage certificate with FERC, NW Natural is required to file either a petition for rate approval or a cost and revenue study every five years to change or justify maintaining the existing rates for the interstate storage service. Intrastate firm storage services in Oregon are offered under an OPUC-approved rate schedule as an optional service to certain eligible customers. Gas storage revenues from the 5.4 Bcf are derived primarily from firm service customers who provide energy-related services, including natural gas distribution, electric generation, and energy marketing. The Mist facility benefits from limited competition as there are few storage facilities in the Pacific Northwest region. Therefore, NW Natural is able to acquire high-value, multi-year contracts.

Asset Management Activities

NW Natural contracts with an independent energy marketing company to provide asset management services, primarily through the use of natural gas commodity exchange agreements and natural gas pipeline capacity release transactions. The results of these activities are included in other, except for the asset management revenues allocated to NGD business customers pursuant to regulatory agreements, which are reported in the NGD segment.

NW Holdings

These include the following businesses and activities aggregated under NW Holdings:

- NW Natural Water Company, LLC (NWN Water) and its water and wastewater utility operations and acquisition activities;
- an equity method investment in Trail West Holdings, LLC (TWH);
- a minority interest in the Kelso-Beaver Pipeline held by our wholly-owned subsidiary NNG Financial Corporation (NNG Financial); and
- holding company and corporate activities as well as adjustments made in consolidation.

On August 6, 2020, NWN Energy completed the sale to an unrelated third party of its interest in TWH. See Note 14 of the Consolidated Financial Statements in Item 8 of this report for more information.

Water Utilities

After a comprehensive strategic planning process, in December 2017, we entered the water utility sector by announcing several acquisitions, which NWN Water subsequently closed. Through December 31, 2020, NWN Water serves a total of approximately 63,000 people through 26,000 water and wastewater connections in the Pacific Northwest and Texas, with an aggregate investment of nearly $110 million. NW Holdings continues to pursue additional acquisitions in a disciplined manner.

The water and wastewater utilities primarily serve residential and commercial customers. Water distribution operations are seasonal in nature with peak demand during warmer summer months, while wastewater is less seasonally affected. Entities generally operate in exclusive service territories with no direct competitors. Water distribution customer rates are regulated by state utility commissions while the wastewater businesses we own currently are not rate regulated by utility commissions.

ENVIRONMENTAL MATTERS

Properties and Facilities

NW Natural owns, or previously owned, properties and facilities that are currently being investigated that may require environmental remediation and are subject to federal, state, and local laws and regulations related to environmental matters. These laws and regulations may require expenditures over a long time frame to address certain environmental impacts. Estimates of liabilities for environmental costs are difficult to determine with precision because of the various factors that can affect their ultimate disposition. These factors include, but are not limited to, the following:

- the complexity of the site;
- changes in environmental laws and regulations at the federal, state, and local levels;
- the number of regulatory agencies or other parties involved;
- new technology that renders previous technology obsolete, or experience with existing technology that proves ineffective;
- the level of remediation required;
- variations between the estimated and actual period of time that must be dedicated to respond to an environmentally-contaminated site; and
- the application of environmental laws that impose joint and several liabilities on all potentially responsible parties.

NW Natural has received recovery of a portion of such environmental costs through insurance proceeds, seeks the remainder of such costs through customer rates, and believes recovery of these costs is probable. In both Oregon and Washington, NW Natural has mechanisms to recover expenses. Oregon recoveries are subject to an earnings test. See Part II, Item 7, "Results of Operations—Regulatory Matters—Rate Mechanisms—*Environmental Cost Deferral and Recovery*", and Note 2 and Note 18 of the Consolidated Financial Statements in Item 8 of this report for more information.

Greenhouse Gas Matters

We recognize certain of our businesses, including our natural gas business, are likely to be affected by requirements to address greenhouse gas emissions. Future federal, state or local legislation or regulation may seek to limit emissions of greenhouse gases, including both carbon dioxide (CO2) and methane. These potential laws and regulations may require certain activities to reduce emissions and/or increase the price paid for energy based on its carbon content.

Current federal rules require the reporting of greenhouse gas (GHG) emissions. In September 2009, the EPA issued a final rule requiring the annual reporting of greenhouse gas emissions from certain industries, specified large GHG emission sources, and facilities that emit 25,000 metric tons or more of CO2 equivalents per year. NW Natural began reporting emission information in 2011. Under this reporting rule, local natural gas distribution companies like NW Natural are required to report system throughput to the EPA on an annual basis. The EPA also has required additional GHG reporting regulations to which NW Natural is subject, requiring the annual reporting of fugitive emissions from operations.

The Oregon and Washington state governments have identified emission reduction as a priority and continue to consider various GHG reduction initiatives. On March 10, 2020, the governor of Oregon issued an executive order (EO) establishing GHG emissions reduction goals of at least 45% below 1990 emission levels by 2035 and at least 80% below 1990 emission levels by 2050 and directed state agencies and commissions to facilitate such GHG emission goals targeting a variety of sources and industries. Although the EO does not specifically direct actions of natural gas distribution businesses, the OPUC is directed to prioritize proceedings and activities that advance decarbonization in the utility sector, mitigate energy burden experienced by utility customers and ensure system reliability and resource adequacy. The EO also directs other agencies to cap and reduce GHG emissions from transportation fuels and all other liquid and gaseous fuels, including natural gas, adopt building energy efficiency goals for new building construction, reduce methane emissions from landfills and food waste, and submit a proposal for adoption of state goals for carbon sequestration and storage by Oregon’s forest, wetlands and agricultural lands. These agencies and commissions are currently engaged in various stages of their rulemaking processes and are currently expected to complete those processes in the next 12 to 24 months. NW Natural is actively engaged with Oregon state regulatory entities and holds a seat on the Oregon Department of Environmental Quality (DEQ) rules advisory committee, which is considering the cap and reduce rules.

In Washington, where approximately 10% of NW Natural’s revenues and 22% of new meters are derived, policy focused on the goal of reducing GHGs and enhancing energy efficiency measures for commercial and residential energy customers have been enacted by the Washington State Building Code Council. Effective February 1, 2021, building codes in Washington state require new residential and commercial construction to achieve higher levels of energy efficiency based on specified carbon emissions assumptions, which are expected to calculate on-site electric appliances to have lower GHG emissions than comparable gas appliances, potentially increasing the cost of new building construction incorporating natural gas. Although legislation with similar goals has previously been pursued unsuccessfully in Washington, it is likely that legislatures nationwide and in our service territory will continue to work to combat climate change through legislative action. NW Natural is working with policymakers and a coalition of utilities in Washington to help them understand the role direct use natural gas, and in the coming years renewable natural gas and hydrogen, may play in aggressively pursuing more effective policies to reduce greenhouse gases while preserving reliability, resiliency, energy choice and energy affordability.

In addition to legislative activities at the state level, ballot measures may be proposed by advocacy groups. Some local and county governments in the United States also have been proposing or passing renewable energy resolutions, restrictions, taxes or fees with advocates seeking to accelerate renewable energy goals. A number of cities across the country, and several in our service territory are currently considering such actions aimed at formalizing climate action goals and driving down GHG emissions, including limitations or bans on the use of natural gas in new construction. NW Natural is actively engaged with such cities and local governments in our service territory and is working to help these communities understand the ways in which the natural gas system, and renewable fuels on the horizon, can help cities meet their decarbonization goals. With the new United States presidential administration, we also expect new federal rules and frameworks related to GHG emissions.

While the outcome of these federal, state or local climate change policy developments cannot be determined at this time, these initiatives could produce a number of results including new regulations, legal actions, additional charges to fund energy efficiency activities, or other regulatory actions. The adoption and implementation of regulations limiting GHG emissions could require NW Natural to incur compliance costs associated with our customers’ use, which we currently expect to recover through rates and therefore may result in an increase in the prices charged to customers, and a potential decline in the demand for natural gas.

In 2017, NW Natural initiated a multi-pronged, multi-year strategy to accelerate and deliver greater GHG emission reductions in the communities we serve. Key components of this strategy include customer energy efficiency, continued adoption of NW Natural's voluntary Smart Energy carbon offset program, and seeking to incorporate RNG and hydrogen into our gas supply. RNG is produced from organic materials including food, agricultural and forestry waste, wastewater, or landfills. Methane is captured from these organic materials as they decompose and is conditioned to pipeline quality, so it can be added into the existing natural gas system, reducing net GHG emissions. In 2019, Oregon Senate Bill 98 (SB 98) was signed into law enabling NW Natural to procure RNG on behalf of customers and provided voluntary targets that would allow us to make qualified investments and purchase RNG from third parties such that up to 30% of the gas distributed to retail customers is RNG by 2050, and creating a limit of 5% of a utility's revenue requirement that can be used to cover the incremental cost of RNG. The bill was signed into law by the governor in July 2019, and subsequently, the OPUC adopted final rules in July 2020. NW Natural is actively working to procure RNG supply for customers, and is engaging in longer-term efforts to increase the amount of RNG on our system and explore the development of renewable hydrogen through power to gas. In December 2020, NW Natural announced a partnership with BioCarbN, a developer and operator of sustainable infrastructure projects, to convert methane into RNG. Under this partnership, NW Natural has the ability to invest up to an estimated $38 million in four separate RNG development projects that will access biogas derived from water treatment at Tyson Foods' processing plants, subject to approval by all parties. In December 2020, NW Natural exercised its option for the first development project in Nebraska, initiating investment in an estimated $8 million project, which we expect will begin producing RNG in late 2021. This is the company's first investment under Oregon SB 98.

NW Natural continues to take proactive steps in seeking to reduce GHG emissions in our region and is proactively communicating with local, state and federal governments and communities about those steps. We believe that NW Natural has a vital role in providing energy to the communities we serve. Each year, NW Natural delivers more energy in Oregon than any other utility. The sales of natural gas to our residential and commercial customers account for approximately 6% of Oregon's GHG emissions according to data for recent years from the State of Oregon Department of Environmental Quality In-Boundary GHG Inventory. We intend to continue to provide this necessary energy to our communities and to use our modern pipeline system to help the Pacific Northwest transition to a clean energy future.

HUMAN CAPITAL

Our core values of integrity, safety, caring, service ethic, and environmental stewardship guide how we engage with customers, stakeholders, shareholders, and communities. We actively work to foster these values in our employee culture and to nurture an inclusive and equitable environment that provides opportunities, prioritizes health and safety, and supports growth and learning. We aim to recruit and retain employees who share our core values and reflect our communities.

Employees

At December 31, 2020, our workforce consisted of the following:

NW Natural:	
Unionized employees[1]	606
Non-unionized employees	549
Total NW Natural	1,155
Other Entities:	
Water company employees	56
Other	5
Total other entities	61
Total Employees	1,216

[1] Members of the Office and Professional Employees International Union (OPEIU) Local No. 11, AFL-CIO.

NW Natural's labor agreement with members of OPEIU covers wages, benefits, and working conditions. In November 2019, NW Natural's unionized employees ratified a collective bargaining agreement that took effect on December 1, 2019 and extends to May 31, 2024, and thereafter from year to year unless either party serves notice of its intent to negotiate modifications to the collective bargaining agreement. During calendar year 2020, NW Natural did not incur any work stoppages (strikes or lockouts), and therefore, experienced zero idle days for the year.

Certain subsidiaries may receive services from employees of other subsidiaries. When such services involve regulated entities, those entities receiving services reimburse the entity providing services pursuant to shared services agreements, as applicable.

Safety

Safety is one of our greatest responsibilities to employees. In managing the business, we strive to foster a safety culture focused on prevention, open communication, collaboration, and a strong service and safety ethic. We believe employee safety is critical to our success. A portion of executives' compensation is tied to achieving our safety metrics, and our Board of Directors regularly reviews company safety metrics. NW Natural's health and safety policies and procedures are designed to comply with all applicable regulations, but we also work to go beyond compliance by striving to incorporate industry best practices and benchmarking.

As part of our commitment to employee health and safety, we maintain regular training programs, emergency preparedness procedures, and specific training and procedures to identify hazards and handle high-risk emergency situations. Employees complete hands-on, scenario-based training at our training facility in Oregon that allows employees to experience realistic situations in a controlled environment. We also host natural gas safety training events for first responders, which prepares our teams to deliver an integrated, seamless response in the event of an emergency that involves or affects the natural gas system.

Our COVID-19 response is just one example of our safety culture in action. As a critical infrastructure energy company that provides an essential service to our customers, NW Natural has well-defined emergency response command structures and protocols. In response to the COVID-19 pandemic, NW Natural mobilized its incident command team and business continuity plans in early March 2020, and continues to operate under these structures and protocols, with a focus on the safety of our employees and the people, business partners, and communities we serve. NW Natural has generally suspended business travel out of our service territory and implemented work-from-home plans for employees wherever possible. For employees whose role requires them to work in the field, we are following CDC, OSHA, and state specific guidance. Measures include: following social distancing guidelines; use of personal protective equipment (PPE) including masks, face coverings and gloves; enhanced sanitizing protocols; requiring employee health screenings prior to entering a NW Natural facility; and other measures intended to mitigate the spread of this disease and keep our employees and customers safe and informed. Our water companies are following similar protocols. As an essential service provider, our water and natural gas utility businesses continue to serve our customers without interruption. Our experience and continuing focus on workplace safety have enabled us to preserve business continuity without sacrificing our commitment to the safety of our employees and the people, business partners, and communities served.

The COVID-19 pandemic also presents challenges for employees' emotional well-being and ability to balance work and family responsibilities. We are supporting our employees through these unusual times with the following: frequent employee surveys; virtual meetings on wellness topics; resiliency support; additional psychological support services; processes to facilitate flexible and reduced-schedule work where possible; and virtual ergonomic assistance to help remote employees work safely at home.

Employee Benefits

To attract employees and meet the needs of our workforce, NW Natural strives to offer competitive benefits packages to employees. The benefits package options vary depending on type of employee and date of hire. NW Natural continuously looks for ways to support employees' work-life balance and well-being and this is reflected in physical, mental and financial wellness programs to meet the needs of our employees and help them care for their families. Benefits available to employees during 2020 included, among others: healthcare and other insurance coverages, wellness resources, retirement and savings plans, paid time off programs and flexible work schedules, culture and community-focused resources and opportunities, and employee recognition programs and discounts.

Employee Development

NW Natural seeks to provide its employees with growth and development opportunities through formal and informal programs designed to build skills and relationships. These programs include: (i) a culturally relevant mentoring program that creates opportunities for career growth by building relationships; (ii) a tuition assistance program for qualified educational pursuits; (iii) an internal class that provides participants with a big-picture understanding of the industry and company operations, equipping them to see how they contribute to NW Natural's success and identify opportunities for career growth; (iv) internal and continuing educational curriculum relevant to areas of expertise; and (v) ongoing management and leadership training programs.

Diversity, Equity and Inclusion

We have a longstanding commitment to creating a diverse and inclusive culture that reflects and supports the communities we serve, and believe a diverse, equitable, and inclusive workforce contributes to long-term success. This commitment to diversity also extends to leadership positions, including members of the officer team and the Board of Directors. Recruiting, promoting, and retaining diverse talent, building inclusive teams, and creating a culture that embraces differences are at the core of our workforce strategy. To attract diverse candidates, we work with community groups and organizations to help promote awareness of job opportunities within diverse communities.

In 2020, we launched employee resource groups for Asian-American, African-American, Veteran, Latinx, and LGBT+ employees, which groups are in addition to our existing Women's Network. We also continue to emphasize employee education, including diversity training for employees at the manager level and above, diversity training as part of new hire onboarding, and other diversity, equity, and inclusion education that occurs throughout the year. An area of focus going forward is to understand, and increase awareness of internal systems and structures that could limit representation and equity for underrepresented employees. To that end, we are working toward revising and refocusing new manager and new hire training to include implicit bias, diversity, equity and inclusion, and anti-racism education.

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

For information concerning executive officers, see Part III, Item 10.

AVAILABLE INFORMATION

NW Holdings and NW Natural file annual, quarterly and current reports and other information with the Securities and Exchange Commission (SEC). The SEC maintains an Internet site where reports, proxy statements, and other information filed can be read, copied, and requested online at its website (www.sec.gov). In addition, we make available, free of charge, on our website (www.nwnaturalholdings.com), our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) and proxy materials filed under Section 14 of the Securities Exchange Act of 1934, as amended (Exchange Act), as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. We have included our website address as an inactive textual reference only. Information contained on our website is not incorporated by reference into this annual report on Form 10-K.

NW Holdings and NW Natural have adopted a Code of Ethics for all employees, officers, and directors that is available on our website. We intend to disclose revisions and amendments to, and any waivers from, the Code of Ethics for officers and directors on our website. Our Corporate Governance Standards, Director Independence Standards, charters of each of the committees of the Board of Directors, and additional information about NW Holdings and NW Natural are also available at the website. Copies of these documents may be requested, at no cost, by writing or calling Shareholder Services, Northwest Natural Holding Company, 250 S.W. Taylor Street, Portland, Oregon 97204, telephone 503-220-2402.

ITEM 1A. RISK FACTORS

NW Holdings' and NW Natural's business and financial results are subject to a number of risks and uncertainties, many of which are not within our control, which could adversely affect our business, financial condition, and results of operations. Additional risks and uncertainties that are not currently known to us or that are not currently believed by us to be material may also harm our businesses, financial condition, and results of operations. When considering any investment in NW Holdings' or NW Natural's securities, investors should carefully consider the following information, as well as information contained in the caption "Forward-Looking Statements", Item 7A, and our other documents filed with the SEC. This list is not exhaustive and the order of presentation does not reflect management's determination of priority or likelihood. Additionally, our listing of risk factors that primarily affects one of our businesses does not mean that such risk factor is inapplicable to our other businesses.

Legal, Regulatory and Legislative Risks

REGULATORY RISK. *Regulation of NW Holdings' and NW Natural's regulated businesses, including changes in the regulatory environment, failure of regulatory authorities to approve rates which provide for timely recovery of costs and an adequate return on invested capital, or an unfavorable outcome in regulatory proceedings may adversely impact NW Holdings' and NW Natural's financial condition and results of operations.*

The OPUC and WUTC have general regulatory authority over NW Natural's gas business in Oregon and Washington. NW Holdings' regulated water utility businesses are generally regulated by the public utility commission in the state in which a water business is located. These public utility commissions have broad regulatory authority, including: the rates charged to customers; authorized rates of return on rate base, including ROE; the amounts and types of securities that may be issued by our regulated utility companies, like NW Natural; services our regulated utility companies provide and the manner in which they provide them; the nature of investments our utility companies make; deferral and recovery of various expenses, including, but not limited to, pipeline replacement, environmental remediation costs, capital and information technology investments, commodity hedging expense, and certain employee benefit expenses such as pension costs; transactions with affiliated interests; regulatory adjustment mechanisms such as weather adjustment mechanisms, and other matters. The OPUC also regulates actions investors may take with respect to our utility companies, NW Natural and NW Holdings. Similarly, FERC has regulatory authority over NW Natural's interstate storage services. Expansion of our businesses could result in regulation by other regulatory authorities. For example, in 2020, NW Holdings' acquired a water sector business in Texas that is subject to the regulatory authority of the Public Utility Commission of Texas.

The prices regulators allow us to charge for regulated utility service, and the maximum FERC-approved rates FERC authorizes us to charge for interstate storage and related transportation services, are the most significant factors affecting both NW Natural's and NW Holdings' financial position, results of operations and liquidity. State utility regulators have the authority to disallow recovery of costs they find imprudently incurred or otherwise disallowed, and rates that regulators allow may be insufficient for recovery of costs we incur. We expect to continue to make expenditures to expand, improve and safely operate our gas and water utility distribution and gas storage systems. Regulators can deny recovery of those costs. Furthermore, while each applicable state regulator has established an authorized rate of return for our regulated utility businesses, we may not be able to achieve the earnings level authorized. Moreover, in the normal course of business we may place assets in service or incur higher than expected levels of operating expense before rate cases can be filed to recover those costs (this is commonly referred to as regulatory lag). The failure of any regulatory commission to approve requested rate increases on a timely basis to recover costs or to allow an adequate return could adversely impact NW Holdings' or NW Natural's financial condition, results of operations and liquidity.

As companies with regulated utility businesses, we frequently have dockets open with our regulators, including a general rate case filed with the WUTC in December 2020. The regulatory proceedings for these dockets typically involve multiple parties, including governmental agencies, consumer advocacy groups, and other third parties. Each party has differing concerns, but all generally have the common objective of limiting amounts included in rates. We cannot predict the timing or outcome of these proceedings or our pending Washington general rate case, or the effects of those outcomes on NW Holdings' and NW Natural's results of operations and financial condition.

LEGISLATIVE, COMPLIANCE AND TAXING AUTHORITY RISK. *NW Holdings and NW Natural are subject to governmental regulation, and compliance with local, state and federal requirements, including taxing requirements, and unforeseen changes in or interpretations of such requirements could affect NW Holdings' or NW Natural's financial condition and results of operations.*

NW Holdings and NW Natural are subject to regulation by federal, state and local governmental authorities. We are required to comply with a variety of laws and regulations and to obtain authorizations, permits, approvals and certificates from governmental agencies in various aspects of our business. Significant changes in federal, state, or local governmental leadership can accelerate or amplify changes in existing laws or regulations, or the manner in which they are interpreted or enforced. For example, the result of the 2020 United States Presidential election is expected to result in leadership changes in many federal administrative agencies. Moreover, the 2020 election resulted in Democratic control of the presidency and both houses of Congress, and as a result, the U.S. Congress and the U.S. presidential administration may make substantial changes to fiscal, tax, regulation, environmental, climate and other federal policies. Similarly, local elections during 2021 may lead to significant policy changes at the state or municipal levels in our service areas that may affect us. In addition, foreign governments may implement changes to their policies, in response to changes to U.S. policy or otherwise. Although we cannot predict the impact, if any, of these changes to our businesses, they could adversely affect NW Holdings' or NW Natural's financial condition and results of operations. Until we know what policy changes are made and how those changes impact our businesses and the business of our competitors over the long term, we will not know if, overall, we will benefit from them or be negatively affected by them.

We cannot predict changes in laws, regulations, interpretations or enforcement or the impact of such changes. Additionally, any failure to comply with existing or new laws and regulations could result in fines, penalties or injunctive measures. For example, under the Energy Policy Act of 2005, the FERC has civil authority under the Natural Gas Act to impose penalties for current violations of in excess of $1.3 million per day for each violation. In addition, as the regulatory environment for our businesses increases in complexity, the risk of inadvertent noncompliance may also increase. Changes in regulations, the imposition of additional regulations, and the failure to comply with laws and regulations could negatively influence NW Holdings' or NW Natural's operating environment and results of operations.

Additionally, changes in federal, state, local or foreign tax laws and their related regulations, or differing interpretations or enforcement of applicable law by a federal, state, local or foreign taxing authority, could result in substantial cost to us and negatively affect our results of operations. Tax law and its related regulations and case law are inherently complex and dynamic. Disputes over interpretations of tax laws may be settled with the taxing authority in examination, through programs like the Compliance Assurance Process (CAP), upon appeal or through litigation. Our judgments may include reserves for potential adverse outcomes regarding tax positions that have been or plan to be taken that may be subject to challenge by taxing authorities. Changes in laws, regulations or adverse judgments and the inherent difficulty in quantifying potential tax effects of business decisions may negatively affect NW Holdings' or NW Natural's financial condition and results of operations.

Furthermore, certain tax assets and liabilities, such as deferred tax assets and regulatory tax assets and liabilities, are recognized or recorded by NW Holdings or NW Natural based on certain assumptions and determinations made based on available evidence, such as projected future taxable income, tax-planning strategies, and results of recent operations. If these assumptions and determinations prove to be incorrect, the recorded results may not be realized, which may negatively impact the financial results of NW Holdings and NW Natural.

There is uncertainty as to how our regulators will reflect the impact of the legislation and other government regulation in rates. The resulting ratemaking treatment may negatively affect NW Holdings' or NW Natural's financial condition and results of operations.

REPUTATIONAL RISKS. *Customers', legislators', and regulators' opinions of NW Holdings and NW Natural are affected by many factors, including system and fuel reliability and safety, protection of customer information, rates, media coverage, and public sentiment. To the extent that customers, legislators, or regulators have or develop a negative opinion of our businesses, NW Holdings' and NW Natural's financial position, results of operations and cash flows could be adversely affected.*

A number of factors can affect customer's perception of us including: service interruptions or safety concerns due to failures of equipment or facilities or from other causes, and our ability to promptly respond to such failures; our ability to safeguard sensitive customer information; the timing and magnitude of rate increases; and volatility of rates. Customers', legislators', and regulators' opinions of us can also be affected by media coverage, including the proliferation of social media, which may include information, whether factual or not, that could damage the perception of natural gas, our brand, or our reputation.

Other concerns that have been raised about the use of natural gas include the potential for natural gas explosions and the effect of natural gas on indoor air quality. For example, NW Natural's gas distribution system was struck by a third party resulting in a gas explosion in 2016, and while NW Natural was determined not to be at fault, the perception of natural gas as an energy source could have been affected. In addition, studies and claims by advocacy groups from time to time question the indoor health and general climate effects from burning natural gas, which may also impact public perception. These shifts in public sentiment may not only impact further legislative initiatives, but behaviors and perceptions of customers, investors and regulators.

If customers, legislators, or regulators have or develop a negative opinion of us and our services, or of natural gas as an energy source generally, this could make it more difficult for us to achieve favorable legislative or regulatory outcomes. Negative opinions could also result in sales volumes reductions or increased use of other sources of energy, or additional difficulties in accessing capital markets. Any of these consequences could adversely affect NW Holdings' or NW Natural's financial position, results of operations and cash flows.

REGULATORY ACCOUNTING RISK. *In the future, NW Holdings or NW Natural may no longer meet the criteria for continued application of regulatory accounting practices for all or a portion of our regulated operations.*

If we can no longer apply regulatory accounting, we could be required to write off our regulatory assets and precluded from the future deferral of costs not recovered through rates at the time such amounts are incurred, even if we are expected to recover these amounts from customers in the future.

COVID-19 Risk

PUBLIC HEALTH RISK. *The recent novel coronavirus (COVID-19) pandemic is widespread, severe and unpredictable. The continuation of this outbreak and the resulting economic conditions, or the emergence of other epidemic or pandemic crises, could materially and adversely affect NW Holdings' and NW Natural's business, results of operations, or financial condition.*

The novel coronavirus (COVID-19), which was declared a pandemic by the World Health Organization in March 2020, has resulted in widespread and severe global, national and local economic and societal disruptions. In late March 2020, the Governors of Oregon and Washington issued "stay at home" executive orders requiring the closure of "non-essential" business and modifications to certain "essential" businesses. While most of NW Natural's services were, and continue to be, considered "essential" under existing executive orders, there is no guarantee they will continue to be classified as such. Additionally, while we have undertaken emergency response command structures and protocols that have operated well, they may not be sufficient to adequately mitigate the effects of COVID-19 on our operations, particularly in the event the pandemic worsens. The situation is rapidly evolving and dynamic and could ultimately adversely affect our business by, among other things:

- disrupting our access to capital markets or increasing costs of capital affecting our liquidity in the future;
- reducing demand for natural gas, particularly from commercial and industrial customers that may be considered "non-essential" businesses under current or future executive orders or other governmental action, or that are suffering slow-downs or ultimately close completely due to COVID-19 effects;
- reducing customer growth and new meter additions due to less economic, construction or conversion activity;
- subjecting us to legislative or prolonged administrative action that limits our ability to collect on overdue accounts or disconnect gas service for nonpayment, beyond a period of time acceptable to us;
- increasing our operating costs for emergency supplies, personal protective equipment, cleaning services and supplies, remote technology and other specific needs during this crisis;
- impacting our capital expenditures if construction activities are suspended or delayed;
- sickening or causing a mandatory quarantine of a large percentage of our workforce, or key workgroups with specialized skill sets, impairing our ability to perform key business functions or execute our business continuity plans;
- adversely affecting the asset values of NW Natural's defined benefit pension plan or causing a failure to maintain sustained growth in pension investments over time, increasing our contribution requirements;
- limiting or curtailing entirely, public utility commissions' ability to approve or authorize applications or other requests we may make with respect to our regulated businesses;
- increasing volatility in the price of natural gas;
- impairing the functioning of our supply chain or ability to rely on third parties or business partners; and
- creating additional cybersecurity vulnerabilities due to heavy reliance on remote working in our business continuity model.

Additionally, the effects of COVID-19 could create prolonged unfavorable economic conditions, slowed economic growth, or an economic recession that may result in or be accompanied by unprecedented unemployment rates and declines in the value of homes and investment assets, adversely affecting the income and financial resources of many domestic households and businesses. It is unclear whether governmental responses to these conditions will lessen the severity or duration of any economic downturn. Our operational and financial results would likely be affected by such economic conditions. Less new housing construction, fewer conversions to natural gas, higher levels of residential foreclosures and vacancies, and personal and business bankruptcies or reduced spending could all negatively affect our financial condition and results of operations.

The ultimate impact of COVID-19 on our business cannot be predicted and will depend on factors beyond our knowledge or control, including the duration and severity of the outbreak and resulting economic downturn, actions taken to contain the outbreak and mitigate its public health effects, and the extent to which normal economic and operating conditions can resume and when they might do so. Any of these factors could have an adverse effect on our business, outlook, financial condition, and results of operations and cash flows, which could be significant.

Growth and Strategic Risks

STRATEGIC TRANSACTION RISK. *NW Holdings' and NW Natural's ability to successfully complete strategic transactions, including merger, acquisition, divestiture, joint venture, business development projects or other strategic transactions is subject to significant risks, including the risk that required regulatory or governmental approvals may not be obtained, risks relating to unknown problems or liabilities or problems or liabilities undisclosed to us, and the risk that for these or other reasons, we may be unable to achieve some or all of the benefits that we anticipate from such transactions, which could adversely affect NW Holdings' or NW Natural's financial condition, results of operations, and cash flows.*

From time to time, NW Holdings and NW Natural have pursued and may continue to pursue strategic transactions including merger, acquisition, divestiture, joint venture, business development projects or other strategic transactions, including RNG projects and acquisitions by NW Holdings in the water sector of a number of water utilities, wastewater entities and a water services company, with NW Holdings' continuing to seek other such water sector related opportunities. Any such transactions involve substantial risks, including the following:

- purchase or sale transactions that are contracted for may fail to close for a variety of reasons;
- acquired businesses or assets may not produce revenues, earnings or cash flow at anticipated levels, which could, among other things, result in the impairment of any goodwill associated with such acquisitions;
- acquired businesses or assets could have environmental, permitting, or other problems for which contractual protections prove inadequate;

- there may be difficulties in integration or operation costs of new businesses;
- there may exist liabilities that were not disclosed to us, that exceed our estimates, or for which our rights to indemnification from the seller are limited;
- we may be unable to obtain the necessary regulatory or governmental approvals to close a transaction, receive approvals granted subject to terms that are unacceptable to us;
- we may be unable to achieve the anticipated regulatory treatment of any such transaction as part of the transaction approval or subsequent to closing the transaction; or
- we may be unable to avoid a sale of assets for a price that is less than the book value of those assets.

One or more of these risks could affect NW Holdings' and NW Natural's financial condition, results of operations, and cash flows.

BUSINESS DEVELOPMENT RISK. *NW Holdings' and NW Natural's business development projects may encounter unanticipated obstacles, costs, changes or delays that could result in a project becoming impaired, which could negatively impact NW Holdings' or NW Natural's financial condition, results of operations and cash flows.*

Business development projects involve many risks. We are currently engaged in several business development projects, including, but not limited to, several water, wastewater and RNG projects. We may also engage in other business development projects such as investments in additional long-term gas reserves, CNG refueling stations, power to gas or hydrogen projects or other projects intended to reduce carbon emissions. These projects may not be successful. Additionally, we may not be able to obtain required governmental permits and approvals to complete our projects in a cost-efficient or timely manner, potentially resulting in delays or abandonment of the projects. We could also experience issues such as: technological challenges; ineffective scalability; startup and construction delays; construction cost overruns; disputes with contractors; the inability to negotiate acceptable agreements such as rights-of-way, easements, construction, gas supply or other material contracts; changes in customer demand, perception or commitment; public opposition to projects; changes in market prices; and operating cost increases. Additionally, we may be unable to finance our business development projects at acceptable costs or within a scheduled time frame necessary for completing the project. Any of the foregoing risks, if realized, could result in the project becoming impaired, and such impairment could have an adverse effect on NW Holdings' or NW Natural's financial condition and results of operations.

JOINT PARTNER RISK. *Investing in business development projects through partnerships, joint ventures or other business arrangements affects our ability to manage certain risks and could adversely impact NW Holdings' or NW Natural's financial condition, results of operations and cash flows.*

We use joint ventures and other business arrangements to manage and diversify the risks of certain development projects, including NW Natural's gas reserves agreements and RNG projects. NW Holdings or NW Natural may acquire or develop part-ownership interests in other projects in the future, including but not limited to, water, wastewater, RNG or hydrogen projects. Under these arrangements, we may not be able to fully direct the management and policies of the business relationships, and other participants in those relationships may take action contrary to our interests, including making operational decisions that could negatively affect our costs and liabilities. In addition, other participants may withdraw from the project, divest important assets, become financially distressed or bankrupt, or have economic or other business interests or goals that are inconsistent with ours.

NW Natural's gas reserves arrangements, which operate as a hedge backed by physical gas supplies, involve a number of risks, including: gas production that is significantly less than the expected volumes, or no gas volumes; operating costs that are higher than expected; inherent risks of gas production, including disruption to operations or a complete shut-in of the field; and one or more participants in one of these gas reserves arrangements becoming financially insolvent or acting contrary to NW Natural's interests. For example, Jonah Energy, the counterparty in NW Natural's gas reserves arrangement, has experienced recent credit rating downgrades. While NW Natural intends to continue monitoring Jonah Energy's financial condition and take appropriate actions to preserve NW Natural's interests, it does not control Jonah Energy's financial condition or continued performance under the gas reserves arrangement. The cost of the original gas reserves venture is currently included in customer rates and additional wells under that arrangement are recovered at specific costs, the occurrence of one or more of these risks could affect NW Natural's ability to recover this hedge in rates. Further, new gas reserves arrangements have not been approved for inclusion in rates, and regulators may ultimately determine to not include all or a portion of future transactions in rates. The realization of any of the above mentioned situations could adversely impact NW Holdings' or NW Natural's financial condition, results of operations and cash flows.

CUSTOMER GROWTH RISK. *NW Holdings' and NW Natural's NGD margin, earnings and cash flow may be negatively affected if we are unable to sustain customer growth rates in our NGD segment.*

NW Natural's NGD margins and earnings growth have largely depended upon the sustained growth of its residential and commercial customer base due, in part, to the new construction housing market, conversions of customers to natural gas from other energy sources and growing commercial use of natural gas. The last recession slowed new construction. While new home construction has resumed and the multi-family composition has been higher than its pre-recession pace, overall construction has not returned to the pre-recession pace, and there are predictions of an impending new recessionary cycle. Insufficient growth in these markets, for economic, political or other reasons could adversely affect NW Holdings' or NW Natural's utility margin, earnings and cash flows.

RISK OF COMPETITION. *Our NGD business is subject to increased competition which could negatively affect NW Holdings' or NW Natural's results of operations.*

In the residential and commercial markets, NW Natural's NGD business competes primarily with suppliers of electricity, fuel oil, and propane. In the industrial market, NW Natural competes with suppliers of all forms of energy. Competition among these forms of energy is based on price, efficiency, reliability, performance, market conditions, technology, environmental impacts and public perception. Technological improvements in other energy sources such as heat pumps, batteries or other alternative technologies could erode NW Natural's competitive advantage. If natural gas prices rise relative to other energy sources, or if the cost, environmental impact or public perception of such other energy sources improves relative to natural gas, it may negatively affect NW Natural's ability to attract new customers or retain our existing residential, commercial and industrial customers, which could have a negative impact on our customer growth rate and NW Holdings' and NW Natural's results of operations.
Our natural gas storage operations compete primarily with other storage facilities and pipelines. Natural gas storage is an increasingly competitive business, with the ability to expand or build new storage capacity in California, the U.S. Rocky Mountains and elsewhere in the U.S. and Canada. Increased competition in the natural gas storage business could reduce the demand for our natural gas storage services, drive prices down for our storage business, and adversely affect our ability to renew or replace existing contracts at rates sufficient to maintain current revenues and cash flows, which could adversely affect NW Holdings' and NW Natural's financial condition, results of operations and cash flows.

Operational Risks

OPERATING RISK. *Transporting and storing natural gas and distributing natural gas and water involves numerous risks that may result in accidents and other operating risks and costs, some or all of which may not be fully covered by insurance, and which could adversely affect NW Holdings' or NW Natural's financial condition, results of operations and cash flows.*

NW Holdings and NW Natural are subject to all of the risks and hazards inherent in the businesses of gas distribution and storage, and water distribution, including:

- earthquakes, wildfires, floods, storms, landslides and other severe weather incidents and natural hazards;
- leaks or losses of natural gas, water or wastewater, or contamination of natural gas or water by chemicals or compounds, as a result of the malfunction of equipment or facilities or otherwise;
- damages from third parties;
- operator errors;
- negative performance by our storage reservoirs, facilities, or wells that could cause us to fail to meet expected or forecasted operational levels or contractual commitments to our customers;
- problems maintaining, or the malfunction of, pipelines, wellbores and related equipment and facilities that form a part of the infrastructure that is critical to the operation of our gas and water distribution and gas storage facilities;
- presence of chemicals or other compounds in natural gas that could adversely affect the performance of the system or end-use equipment;
- collapse of underground storage reservoirs;
- inadequate supplies of natural gas or water;
- operating costs that are substantially higher than expected;
- migration of natural gas through faults in the rock or to some area of the reservoir where existing wells cannot drain the gas effectively, resulting in loss of the gas;
- blowouts (uncontrolled escapes of gas from a pipeline or well) or other accidents, fires and explosions; and
- risks and hazards inherent in the drilling operations associated with the development of gas storage facilities, and wells.

For example, TC Pipelines, LP (TC Pipelines) has identified the presence of a chemical substance, dithiazine, at several facilities on the system of its subsidiary, Gas Transmission Northwest (GTN), and those of some upstream and downstream connecting pipeline facilities. A portion of NW Natural's gas supplies from Canada are transported on GTN's pipelines. TC Pipelines reports that dithiazine can drop out of gas streams in a powdery form at some points of pressure reduction (for example, at a regulator), and that in incidents where a sufficient quantity of the material accumulates in certain places, improper functioning of equipment can occur, which can result in increased preventative and corrective action costs. While NW Natural has not detected significant quantities of dithiazine on its system to date, we continue to monitor and could discover increased levels of dithiazine or other compounds on NW Natural's system that could affect the performance of the system or end-use equipment.

These risks could result in disruption of service, personal injury or loss of human life, damage to and destruction of property and equipment, pollution or other environmental damage, breaches of our contractual commitments, and may result in curtailment or suspension of operations, which in turn could lead to significant costs and lost revenues. Further, because our pipeline, storage and distribution facilities are in or near populated areas, including residential areas, commercial business centers, and industrial sites, any loss of human life or adverse financial outcomes resulting from such events could be significant. We could be subject to lawsuits, claims, and criminal and civil enforcement actions. Additionally, we may not be able to maintain the level or types of insurance we desire, and the insurance coverage we do obtain may contain large deductibles or fail to cover certain hazards or cover all potential losses. The occurrence of any operating risks not covered by insurance could adversely affect NW Holdings' or NW Natural's financial condition, results of operations and cash flows.

SAFETY REGULATION RISK. *NW Holdings and NW Natural may experience increased federal, state and local regulation of the safety of our systems and operations, which could adversely affect NW Holdings' or NW Natural's operating costs and financial results.*

The safety and protection of the public, our customers and our employees is and will remain our top priority. We are committed to consistently monitoring and maintaining our distribution systems and storage operations to ensure that natural gas and water is acquired, stored and delivered safely, reliably and efficiently. Given recent high-profile natural gas explosions, leaks and accidents in other parts of the country involving both distribution systems and storage facilities, we anticipate that the natural gas industry may be the subject of even greater federal, state and local regulatory oversight. For example, in 2020, the Protecting our Infrastructure of Pipelines and Enhancing Safety Act (PIPES Act) reauthorization was signed into law increasing regulations for natural gas transmission and distribution pipelines. Among other things, the PIPES Act includes new mandates for the Pipeline and Hazardous Materials Safety Administration (PHMSA) to require operators to update and implement various pipeline safety plans and processes.

In addition, our workplaces are subject to the requirements of the Department of Transportation, through the Federal Motor Carrier Safety Administration, and the Occupational Safety and Health Administration, as well as state statutes and regulations that regulate the protection of the health and safety of workers. The failure to comply with these requirements or general industry standards, including keeping adequate records or preventing occupational injuries or exposure, could expose us to civil or criminal liability, enforcement actions, and regulatory fines and penalties that may not be recoverable through our rates and could have a material adverse effect on our business, financial condition, results of operations and cash flows.

We intend to work diligently with industry associations and federal and state regulators to seek to ensure compliance with these and other new laws. We expect there to be increased costs associated with compliance, and those costs could be significant. If these costs are not recoverable in our customer rates, they could have a negative impact on NW Holdings' and NW Natural's operating costs and financial results.

RELIANCE ON THIRD PARTIES TO SUPPLY NATURAL GAS RISK. *NW Natural relies on third parties to supply the natural gas in its NGD segment, and limitations on NW Natural's ability to obtain supplies, or failure to receive expected supplies for which it has contracted, could have an adverse impact on NW Holdings' or NW Natural's financial results.*

NW Natural's ability to secure natural gas for current and future sales depends upon its ability to purchase and receive delivery of supplies of natural gas from third parties. NW Natural, and in some cases, its suppliers of natural gas, does not have control over the availability of natural gas supplies, competition for those supplies, disruptions in those supplies, priority allocations on transmission pipelines, or pricing of those supplies. Additionally, third parties on whom NW Natural relies may fail to deliver gas for which it has contracted. For example, in October, 2018, a 36-inch pipeline near Prince George, British Columbia owned by Enbridge ruptured, disrupting natural gas flows from Canada into Washington while the ruptured pipeline and an adjacent pipeline were assessed and the ruptured pipeline was repaired. Once repaired, pressurization levels for those pipelines were reduced for a significant period of time for assessment and testing. Similarly, in December 2020, gas supply to approximately 5,500 of NW Natural's customers was disrupted for a few days as a result of a vehicle crashing into a Williams Northwest Pipeline facility. If NW Natural is unable or limited in its ability to obtain natural gas from its current suppliers or new sources, it may not be able to meet customers' gas requirements and would likely incur costs associated with actions necessary to mitigate service disruptions, both of which could significantly and negatively impact NW Holdings' and NW Natural's results of operations.

SINGLE TRANSPORTATION PIPELINE RISK. *NW Natural relies on a single pipeline company for the transportation of gas to its service territory, a disruption of which could adversely impact its ability to meet customers' gas requirements, which could significantly and negatively impact NW Holdings' and NW Natural's results of operations.*

NW Natural's distribution system is directly connected to a single interstate pipeline, which is owned and operated by Northwest Pipeline. The pipeline's gas flows are bi-directional, transporting gas into the Portland metropolitan market from two directions: (1) the north, which brings supplies from the British Columbia and Alberta supply basins; and (2) the east, which brings supplies from the Alberta and the U.S. Rocky Mountain supply basins. If there is a rupture or inadequate capacity in, or supplies to maintain adequate pressures in, the pipeline, NW Natural may not be able to meet its customers' gas requirements and we would likely incur costs associated with actions necessary to mitigate service disruptions, both of which could significantly and negatively impact NW Holdings' and NW Natural's results of operations.

THIRD PARTY PIPELINE RISK. *NW Holdings' and NW Natural's gas storage businesses depend on third-party pipelines that connect our storage facilities to interstate pipelines, the failure or unavailability of which could adversely affect NW Holdings' or NW Natural's financial condition, results of operations and cash flows.*

Our gas storage facilities are reliant on the continued operation of a third-party pipeline and other facilities that provide delivery options to and from our storage facilities. Because we do not own all of these pipelines, their operations are not within our control. If the third-party pipeline to which we are connected were to become unavailable for current or future withdrawals or injections of natural gas due to repairs, damage to the infrastructure, lack of capacity or other reasons, our ability to operate efficiently and satisfy our customers' needs could be compromised, thereby potentially having an adverse impact on NW Holdings' or NW Natural's financial condition, results of operations and cash flows.

WORKFORCE RISK. *NW Holdings' and NW Natural's businesses are heavily dependent on being able to attract and retain qualified employees and maintain a competitive cost structure with market-based salaries and employee benefits, and workforce disruptions could adversely affect NW Holdings' or NW Natural's operations and results.*

NW Holdings' and NW Natural's ability to implement our business strategy and serve our customers is dependent upon our continuing ability to attract and retain diverse, talented professionals and a technically skilled workforce, and being able to transfer the knowledge and expertise of our workforce to new and increasingly diverse employees as our largely older workforce retires. A significant portion of our workforce is currently eligible or will reach retirement eligibility within the next five years, which will require that we attract, train and retain skilled workers to prevent loss of institutional knowledge or skills gaps. Without an appropriately skilled workforce, our ability to provide quality service and meet our regulatory requirements will be challenged and this could negatively impact NW Holdings' and NW Natural's earnings. Additionally, just over half of NW Natural workers are represented by the OPEIU Local No. 11 AFL-CIO, and are covered by a collective bargaining agreement that extends to May 31, 2024. Disputes with the union representing NW Natural employees over terms and conditions of their agreement, or failure to timely and effectively renegotiate the agreement upon its expiration, could result in instability in our labor relationship or other labor disruptions that could impact the timely delivery of gas and other services from our utility and storage facilities, which could strain relationships with customers and state regulators and cause a loss of revenues. The collective bargaining agreements may also limit our flexibility in dealing with NW Natural's workforce, and the ability to change work rules and practices and implement other efficiency-related improvements to successfully compete in today's challenging marketplace, which may negatively affect NW Holdings' and NW Natural's financial condition and results of operations.

Environmental Risks

ENVIRONMENTAL LIABILITY RISK. *Certain of NW Natural's, and possibly NW Holdings', properties and facilities may pose environmental risks requiring remediation, the costs of which are difficult to estimate and which could adversely affect NW Holdings' and NW Natural's financial condition, results of operations, and cash flows.*

NW Natural owns, or previously owned, properties that require environmental remediation or other action. NW Holdings or NW Natural may now, or in the future, own other properties that require environmental remediation or other action. NW Natural and NW Holdings accrue all material loss contingencies relating to these properties. A regulatory asset at NW Natural has been recorded for estimated costs pursuant to a deferral order from the OPUC and WUTC. In addition to maintaining regulatory deferrals, NW Natural settled with most of its historical liability insurers for only a portion of the costs it has incurred to date and expects to incur in the future. To the extent amounts NW Natural recovered from insurance are inadequate and it is unable to recover these deferred costs in utility customer rates, NW Natural would be required to reduce its regulatory assets which would result in a charge to earnings in the year in which regulatory assets are reduced. In addition, in Oregon, the OPUC approved the SRRM, which limits recovery of deferred amounts to those amounts which satisfy an annual prudence review and an earnings test that requires NW Natural to contribute additional amounts toward environmental remediation costs above approximately $10 million in years in which NW Natural earns above its authorized ROE. To the extent NW Natural earns more than its authorized ROE in a year, it would be required to cover environmental expenses greater than the $10 million with those earnings that exceed its authorized ROE. The OPUC ordered a review of the SRRM in 2018 or when we obtain greater certainty of environmental costs, whichever occurred first. We submitted information for review in 2018, and believe we could be subject to further review. Similarly, in October 2019, the WUTC authorized an ECRM, which allows for recovery of certain past deferred and future prudently incurred remediation costs allocable to Washington through application of insurance proceeds and collections from customers, subject to an annual prudence determination. These ongoing prudence reviews, or with respect to the SRRM, the earnings test, or the periodic review could reduce the amounts NW Natural is allowed to recover, and could adversely affect NW Holdings' or NW Natural's financial condition, results of operations and cash flows.

Moreover, we may have disputes with regulators and other parties as to the severity of particular environmental matters, what remediation efforts are appropriate, whether natural resources were damaged, and the portion of the costs or claims NW Natural or NW Holdings should bear. We cannot predict with certainty the amount or timing of future expenditures related to environmental investigations, remediation or other action, the portions of these costs allocable to NW Natural or NW Holdings, or disputes or litigation arising in relation thereto.

Environmental liability estimates are based on current remediation technology, industry experience gained at similar sites, an assessment of probable level of responsibility, and the financial condition of other potentially responsible parties. However, it is difficult to estimate such costs due to uncertainties surrounding the course of environmental remediation, the preliminary nature of certain site investigations, natural recovery of the site, unavoidable limitations associated with environmental investigations and remedial technologies, evolving science, and the application of environmental laws that impose joint and several liabilities on all potentially responsible parties. These uncertainties and disputes arising therefrom could lead to further adversarial administrative proceedings or litigation, with associated costs and uncertain outcomes, all of which could adversely affect NW Holdings' or NW Natural's financial condition, results of operations and cash flows.

ENVIRONMENTAL REGULATION COMPLIANCE RISK. *NW Holdings and NW Natural are subject to environmental regulations for our ongoing businesses, compliance with which could adversely affect our operations or financial results.*

NW Holdings and NW Natural are subject to laws, regulations and other legal requirements enacted or adopted by federal, state and local governmental authorities relating to protection of the environment, including those legal requirements that govern discharges of substances into the air and water, the management and disposal of hazardous substances and waste, groundwater quality and availability, plant and wildlife protection, and other aspects of environmental regulation. For example, our natural gas operations are subject to reporting requirements to the Environmental Protection Agency (EPA) and the Oregon Department of Environmental Quality (ODEQ) regarding greenhouse gas emissions. These and other current and future additional environmental regulations could result in increased compliance costs or additional operating restrictions, which may or may not be recoverable in customer rates or through insurance. If these costs are not recoverable, or if these regulations reduce the desirability or cost-competitiveness of natural gas, they could have an adverse effect on NW Holdings' or NW Natural's operations or financial condition.

GLOBAL CLIMATE CHANGE RISK. *Our businesses may be subject to physical risks associated with climate change, all of which could adversely affect NW Holdings' or NW Natural's financial condition, results of operations and cash flows.*

Climate change may cause physical risks, including an increase in sea level, intensified storms, water scarcity, wildfire susceptibility and changes in weather conditions, such as changes in precipitation, average temperatures and extreme wind or other extreme weather events or climate conditions. A significant portion of the nation's gas infrastructure is located in areas susceptible to storm damage that could be aggravated by wetland and barrier island erosion, which could give rise to gas supply interruptions and price spikes.

These and other physical changes could result in disruptions to natural gas production and transportation systems potentially increasing the cost of gas and affecting our natural gas businesses' ability to procure or transport gas to meet customer demand. These changes could also affect our distribution systems resulting in increased maintenance and capital costs, disruption of service, regulatory actions and lower customer satisfaction. Similar disruptions could occur in NW Holdings' water utility businesses. Additionally, to the extent that climate change adversely impacts the economic health or weather conditions of our service territory directly, it could adversely impact customer demand or our customers' ability to pay. Such physical risks could have an adverse effect on NW Holdings' or NW Natural's financial condition, results of operations, and cash flows.

PUBLIC PERCEPTION AND POLICY RISK. *Changes in public sentiment or public policy with respect to natural gas, including through local, state or federal laws or legislation or other regulation (including ballot initiatives or executive orders), could adversely affect NW Holdings' or NW Natural's financial condition, results of operations and cash flows.*

There are a number of international, federal, state, and local legislative, legal, regulatory and other initiatives being proposed and adopted in an attempt to measure, control or limit the effects of global warming and climate change, including greenhouse gas (GHG) emissions such as carbon dioxide and methane. For example, cap and trade bills were considered in the 2019 and 2020 Oregon legislative sessions, and failed each time due to a lack of quorum for a vote. In Washington, similar legislation seeking to reduce GHG emissions in a variety of ways have been unsuccessfully pursued. It is expected that there will be continued efforts to address climate change in the 2021 legislative sessions through legislation that seeks to limit GHG emissions, disadvantages direct natural gas usage, or promotes electrification, in both Oregon and Washington. The Washington State Building Code Council adopted a statewide residential building code that incorporates carbon reduction measures. In Oregon, largely as a result of the inability of the Oregon legislature to pass GHG legislation, in March, 2020, the Oregon Governor issued an executive order establishing GHG emissions reduction goals of at least 45% below 1990 emission levels by 2035 and at least 80% below 1990 emission levels by 2050 and directing state agencies and commissions to facilitate such GHG emission goals. Although the order does not specifically direct actions of natural gas distribution businesses, the OPUC is directed to prioritize proceedings and activities that advance decarbonization in the utility sector, mitigate energy burden experienced by utility customers and ensure system reliability and resource adequacy. The executive order also directs other agencies to cap and reduce GHG emissions from transportation fuels and all other liquid and gaseous fuels, including natural gas, adopt building energy efficiency goals for new building construction, reduce methane gas emissions from landfills and food waste, and submit a proposal for adoption of state goals for carbon sequestration and storage by Oregon's forest, wetlands and agricultural lands. At this time, we are unable to predict the impact of the executive order on NW Natural. As an executive order, any implementation is reliant on state agency rule-making. The scope and content of any state commission or agency rules, as well as the time to propose, adopt and implement any such rules, has not been fully determined, but is expected to be substantially complete in the next 12 to 24 months.

A number of local jurisdictions are also reviewing their own GHG regulations. For example, one small jurisdiction in NW Natural's service territory, Eugene, Oregon, is seeking to pursue reductions in GHG emissions by negotiating for GHG targets, carbon offsets and increased use of RNG in their system. Such current or future legislation, regulation or other initiatives (including ballot initiatives or ordinances) could impose on our natural gas businesses operational requirements or restrictions, additional charges to fund energy efficiency initiatives, or levy a tax based on carbon content. In addition, while no such bans currently exist in NW Natural's operating territories, certain municipalities, such as Berkeley, California, are moving to restrict new natural gas hookups in residential and other buildings. Other jurisdictions have considered requiring the conversion of buildings to electric heat, or otherwise adopting policies or incentives to encourage the use of electricity in lieu of natural gas. Such restrictions could adversely impact customer growth or usage, and could adversely impact our ability to recover costs and maintain reasonable customer rates.

NW Natural believes natural gas has an important role in moving the Pacific Northwest to a low carbon future, and to that end is developing programs and measures to reduce carbon emissions. However, NW Natural's efforts may not happen quickly enough to keep pace with legislation or other regulation, legal changes or public sentiment, or may not be as effective as expected.

Any of these initiatives, or our unsuccessful response to them, could result in us incurring additional costs to comply with the imposed restrictions, provide a cost or other competitive advantage to energy sources other than natural gas, reduce demand for natural gas, restrict our ability to add new construction meters, impose costs or restrictions on end users of natural gas, impact the prices we charge our customers, impose increased costs on us associated with the adoption of new infrastructure and technology to respond to such requirements, and could negatively impact public perception of our services or products that negatively diminishes the value of our brand, all of which could adversely affect NW Holdings' or NW Natural's business operations, financial condition and results of operations.

Business Continuity and Technology Risks

BUSINESS CONTINUITY RISK. *NW Holdings and NW Natural may be adversely impacted by local or national disasters, pandemic illness, political unrest, terrorist activities, cyber-attacks or data breaches, and other extreme events to which we may not be able to promptly respond, which could adversely affect NW Holdings' or NW Natural's operations or financial condition.*

Local or national disasters, pandemic illness (including COVID-19), political unrest, terrorist activities, cyber-attacks and data breaches, and other extreme events are a threat to our assets and operations. Companies in critical infrastructure industries may face a heightened risk due to being the target of, and having heightened exposure to, acts of terrorism or sabotage, including physical and security breaches of our physical infrastructure and information technology systems in the form of cyber-attacks. These attacks could, among other things, target or impact our technology or mechanical systems that operate our distribution, transmission or storage facilities and result in a disruption in our operations, damage to our system and inability to meet customer requirements. In addition, the threat of terrorist activities could lead to increased economic instability and volatility in the price of natural gas or other necessary commodities that could affect our operations. Threatened or actual national disasters or terrorist activities may also disrupt capital or bank markets and our ability to raise capital or obtain debt financing, or impact our suppliers or our customers directly. Local disaster, protests or pandemic illness could result in disruption of our infrastructure or part of our workforce being unable to operate or maintain our infrastructure or perform other tasks necessary to conduct our business. A slow or inadequate response to events may have an adverse impact on our operations and earnings. We may not be able to maintain sufficient insurance to cover all risks associated with local and national disasters, pandemic illness, terrorist activities, cyber-attacks and other events. Additionally, large scale natural disasters or terrorist attacks could destabilize the insurance industry making the insurance we do have unavailable, which could increase the risk that an event could adversely affect NW Holdings' or NW Natural's operations or financial results.

RELIANCE ON TECHNOLOGY RISK. *NW Holdings' and NW Natural's efforts to integrate, consolidate and streamline each of their operations has resulted in increased reliance on technology, the failure of which could adversely affect NW Holdings' or NW Natural's financial condition and results of operations.*

NW Holdings and NW Natural have undertaken a variety of initiatives to integrate, standardize, centralize and streamline operations. These efforts have resulted in greater reliance on technological tools such as, at NW Natural: an enterprise resource planning system, a digital dispatch system, an automated meter reading system, a web-based ordering and tracking system, and other similar technological tools and initiatives. Our future success will depend, in part, on our ability to anticipate and adapt to technological changes in a cost-effective manner and to offer, on a timely basis, services that meet customer demands and evolving industry standards. New technologies may emerge that could be superior to, or may not be compatible with, some of our existing technologies, and may require us to make significant expenditures to remain competitive. We continue to implement technology to improve our business processes and customer interactions. In addition, our various existing information technology systems require periodic modifications, upgrades and/or replacement. For example, NW Natural intends to upgrade its SAP system and replace its customer information system in the near future.

There are various risks associated with these systems in addition to upgrades and replacements, including hardware and software failure, communications failure, data distortion or destruction, unauthorized access to data, misuse of proprietary or confidential data, unauthorized control through electronic means, programming mistakes and other inadvertent errors or deliberate human acts. In addition, we are dependent on a continuing flow of important components to maintain and upgrade our information technology systems. Our suppliers may face production or import delays due to natural disasters, strikes, lock-outs, political unrest or other such circumstances. Technology services provided by third-parties also could be disrupted due to events and circumstances beyond our control which could adversely impact our business, financial condition and results of operations.

Any modifications, upgrades, system maintenance or replacements subject us to inherent costs and risks, including potential disruption of our internal control structure, substantial capital expenditures, additional administrative and operating expenses, retention of sufficiently skilled personnel to implement and operate the new systems, and other risks and costs of delays or difficulties in transitioning to new systems or of integrating new systems into our current systems. In addition, the difficulties with implementing new technology systems may cause disruptions in our business operations and have an adverse effect on our business and operations, if not anticipated and appropriately mitigated. There is also risk that we may not be able to recover all costs associated with projects to improve our technological capabilities, which may adversely affect NW Holdings' or NW Natural's financial condition and results of operations.

CYBERSECURITY RISK. *NW Holdings' and NW Natural's status as an infrastructure services provider coupled with its reliance on technology could result in a security breach which could adversely affect NW Holdings' or NW Natural's financial condition and results of operations.*

Although we take precautions to protect our technology systems and are not aware of any material security breaches to date, there is no guarantee that the procedures we have implemented to protect against unauthorized access to secured data and systems, including our industrial controls and other information technology systems, are adequate to safeguard against all security breaches or other cyber attacks. Additionally, the facilities and systems of clients, suppliers and third party service providers could be vulnerable to the same cyber risks as our facilities and systems, and such third party systems may be interconnected to our systems both physically and technologically. Therefore, an event caused by cyberattacks or other malicious act at an interconnected third party could impact our business and facilities similarly. As these potential cyber security attacks become more common and sophisticated, we could be required to incur costs to strengthen our systems or obtain specific insurance coverage against potential losses. Our businesses could experience breaches of security pertaining to sensitive customer, employee, and vendor information maintained by us in the normal course of business, which could adversely affect our reputation, diminish customer confidence, disrupt operations, materially increase the costs we incur to protect against these risks, and subject us to possible financial liability or increased regulation or litigation, any of which could adversely affect NW Holdings' or NW Natural's financial condition and results of operations.

Financial and Economic Risks

HOLDING COMPANY DIVIDEND RISK. *As a holding company, NW Holdings depends on its operating subsidiaries, including NW Natural, to meet financial obligations and the ability of NW Holdings to pay dividends on its common stock is dependent on the receipt of dividends and other payments from its subsidiaries, including NW Natural.*

As a holding company, NW Holdings' only significant assets are the stock and membership interests of its operating subsidiaries, which at this time is primarily NW Natural. NW Holdings' direct and indirect subsidiaries are separate and distinct legal entities, managed by their own boards of directors, and have no obligation to pay any amounts to their respective shareholders, whether through dividends, loans or other payments. The ability of these companies to pay dividends or make other distributions on their common stock is subject to, among other things: their results of operations, net income, cash flows and financial condition, as well as the success of their business strategies and general economic and competitive conditions; the prior rights of holders of existing and future debt securities and any future preferred stock issued by those companies; and any applicable legal restrictions.

In addition, the ability of NW Holdings' subsidiaries to pay upstream dividends and make other distributions is subject to applicable state law and regulatory restrictions. Under the OPUC and WUTC regulatory approvals for the holding company formation, if NW Natural ceases to comply with credit and capital structure requirements approved by the OPUC and WUTC, it will not, with limited exceptions, be permitted to pay dividends to NW Holdings. Under the OPUC and WUTC orders authorizing the holding company reorganization, NW Natural may not pay dividends or make distributions to NW Holdings if NW Natural's credit ratings and common equity levels fall below specified ratings and levels. If NW Natural's long-term secured credit ratings are below A- for S&P and A3 for Moody's, dividends may be issued so long as NW Natural's common equity is 45% or above. If NW Natural's long-term secured credit ratings are below BBB for S&P and Baa2 for Moody's, dividends may be issued so long as NW Natural's common equity is 46% or above. Dividends may not be issued if NW Natural's long-term secured credit ratings fall to BB+ or below for S&P or Ba1 or below for Moody's, or if NW Natural's common equity is below 44%. The ratio is measured using common equity and long-term debt excluding imputed debt or debt-like lease obligations, and is determined on a preceding or projected 13-month basis.

EMPLOYEE BENEFIT RISK. *The cost of providing pension and postretirement healthcare benefits is subject to changes in pension assets and liabilities, changing employee demographics and changing actuarial assumptions, which may have an adverse effect on NW Holdings' or NW Natural's financial condition, results of operations and cash flows.*

Until NW Natural closed the pension plans to new hires, which for non-union employees was in 2006 and for union employees was in 2009, it provided pension plans and postretirement healthcare benefits to eligible full-time utility employees and retirees. Approximately 40% of NW Natural's current utility employees were hired prior to these dates, and therefore remain eligible for these plans. Other businesses we acquire may also have pension plans. The costs to NW Natural, or the other applicable businesses we may acquire, for providing such benefits is subject to change in the market value of the pension assets, changes in employee demographics including longer life expectancies, increases in healthcare costs, current and future legislative changes, and various actuarial calculations and assumptions. The actuarial assumptions used to calculate our future pension and postretirement healthcare expenses may differ materially from actual results due to significant market fluctuations and changing withdrawal rates, wage rates, interest rates and other factors. These differences may result in an adverse impact on the amount of pension contributions, pension expense or other postretirement benefit costs recorded in future periods. Sustained declines in equity markets and reductions in bond rates may have a material adverse effect on the value of the pension fund assets and liabilities. In these circumstances, NW Natural may be required to recognize increased contributions and pension expense earlier than it had planned to the extent that the value of pension assets is less than the total anticipated liability under the plans, which could have a negative impact on NW Holdings' and NW Natural's financial condition, results of operations and cash flows.

HEDGING RISK. *NW Natural's risk management policies and hedging activities cannot eliminate the risk of commodity price movements and other financial market risks, and its hedging activities may expose it to additional liabilities for which rate recovery may be disallowed, which could result in an adverse impact on NW Holdings' and NW Natural's operating revenues, costs, derivative assets and liabilities and operating cash flows.*

NW Natural's gas purchasing requirements expose it to risks of commodity price movements, while its use of debt and equity financing exposes it to interest rate, liquidity and other financial market risks. NW Natural attempts to manage these exposures with both financial and physical hedging mechanisms, including its gas reserves transactions which are hedges backed by physical gas supplies. While NW Natural has risk management procedures for hedging in place, they may not always work as planned and cannot entirely eliminate the risks associated with hedging. Additionally, NW Natural's hedging activities may cause it to incur additional expenses to obtain the hedge. NW Natural does not hedge its entire interest rate or commodity cost exposure, and the unhedged exposure will vary over time. Gains or losses experienced through hedging activities, including carrying costs, generally flow through NW Natural's PGA mechanism or are recovered in future general rate cases. However, the hedge transactions NW Natural enters into for utility purposes are subject to a prudence review by the OPUC and WUTC, and, if found imprudent, those expenses may be, and have been previously, disallowed, which could have an adverse effect on NW Holdings' or NW Natural's financial condition and results of operations.
In addition, NW Natural's actual business requirements and available resources may vary from forecasts, which are used as the basis for its hedging decisions, and could cause its exposure to be more or less than anticipated. Moreover, if NW Natural's derivative instruments and hedging transactions do not qualify for regulatory deferral and it does not elect hedge accounting treatment under U.S. GAAP, NW Holdings' or NW Natural's results of operations and financial condition could be adversely affected.

NW Natural also has credit-related exposure to derivative counterparties. Counterparties owing NW Natural or its subsidiaries money or physical natural gas commodities could breach their obligations. Should the counterparties to these arrangements fail to perform, NW Natural may be forced to enter into alternative arrangements to meet its normal business requirements. In that event, NW Holdings' or NW Natural's financial results could be adversely affected. Additionally, under most of NW Natural's hedging arrangements, any downgrade of its senior unsecured long-term debt credit rating could allow its counterparties to require NW Natural to post cash, a letter of credit or other form of collateral, which would expose NW Natural to additional costs and may trigger significant increases in borrowing from its credit facilities or equity contribution needs from NW Holdings, if the credit rating downgrade is below investment grade. Further, based on current interpretations, NW Natural is not considered a "swap dealer" or "major swap participant" in 2021, so NW Natural is exempt from certain requirements under the Dodd-Frank Act. If NW Natural is unable to claim this exemption, it could be subject to higher costs for its derivatives activities, and such higher costs could have a negative impact on NW Holdings' and NW Natural's operating costs and financial results.

GAS PRICE RISK. *Higher natural gas commodity prices and volatility in the price of gas may adversely affect NW Natural's NGD business, whereas lower gas price volatility may adversely affect NW Natural's and NW Holdings' gas storage business, in each case negatively affecting NW Holdings' and NW Natural's results of operations and cash flows.*

The cost of natural gas is affected by a variety of factors, including weather, changes in demand, the level of production and availability of natural gas supplies, transportation constraints, availability and cost of pipeline capacity, federal and state energy and environmental regulation and legislation, natural disasters and other catastrophic events, national and worldwide economic and political conditions, and the price and availability of alternative fuels. At NW Natural, the cost we pay for natural gas is generally passed through to customers through an annual PGA rate adjustment. If gas prices were to increase significantly, it would raise the cost of energy to NW Natural's customers, potentially causing those customers to conserve or switch to alternate sources of energy. Significant price increases could also cause new home builders and commercial developers to select alternative energy sources. Decreases in the volume of gas NW Natural sells could reduce NW Holdings or NW Natural's earnings, and a decline in customers could slow growth in future earnings. Additionally, because a portion (10% or 20%) of any difference between the estimated average PGA gas cost in rates and the actual average gas cost incurred is recognized as current income or expense, higher average gas costs than those assumed in setting rates can adversely affect NW Holdings' and NW Natural's operating cash flows, liquidity and results of operations. Additionally, notwithstanding NW Natural's current rate structure, higher gas costs could result in increased pressure on the OPUC or the WUTC to seek other means to reduce NW Natural's rates, which also could adversely affect NW Holdings' and NW Natural's results of operations and cash flows.

Higher gas prices may also cause NW Natural to experience an increase in short-term debt and temporarily reduce liquidity because it pays suppliers for gas when it is purchased, which can be in advance of when these costs are recovered through rates. Significant increases in the price of gas can also slow collection efforts as customers experience increased difficulty in paying their higher energy bills, leading to higher than normal delinquent accounts receivable resulting in greater expense associated with collection efforts and increased bad debt expense.

INABILITY TO ACCESS CAPITAL MARKET RISK. *NW Holdings' or NW Natural's inability to access capital, or significant increases in the cost of capital, could adversely affect NW Holdings' or NW Natural's financial condition and results of operations.*

NW Holdings' and NW Natural's ability to obtain adequate and cost effective short-term and long-term financing depends on maintaining investment grade credit profiles as well as the existence of liquid and stable financial markets. NW Holdings relies on access to equity and bank markets to finance equity contributions to subsidiaries and other business requirements. NW Natural relies on access to capital and bank markets, including commercial paper and bond markets, to finance its operations, construction expenditures and other business requirements, and to refund maturing debt that cannot be funded entirely by internal cash flows. Disruptions in capital markets, including but not limited to, the ongoing COVID-19 pandemic or political unrest, could adversely affect our ability to access short-term and long-term financing. Our access to funds under committed credit facilities, which are currently provided by a number of banks, is dependent on the ability of the participating banks to meet their funding commitments. Those banks may not be able to meet their funding commitments if they experience shortages of capital and liquidity. Disruptions in the bank or capital financing markets as a result of economic uncertainty, changing or increased regulation of the financial sector, or failure of major financial institutions, or disruptions in credit markets, could adversely affect NW Holdings' and NW Natural's access to capital and negatively impact our ability to run our businesses and make strategic investments.

NW Natural is currently rated by S&P and Moody's and a negative change in its credit ratings, particularly below investment grade, could adversely affect its cost of borrowing and access to sources of liquidity and capital.

Such a downgrade could further limit its access to borrowing under available credit lines. Additionally, downgrades in its current credit ratings below investment grade could cause additional delays in NW Natural's ability to access the capital markets while it seeks supplemental state regulatory approval, which could hamper its ability to access credit markets on a timely basis. NW Holdings' credit profile is largely supported by NW Natural's credit ratings and any negative change in NW Natural's credit ratings would likely negatively impact NW Holdings' access to sources of liquidity and capital and cost of borrowing. A credit downgrade to NW Natural, or resulting negative impact on NW Holdings, could also require additional support in the form of letters of credit, cash or other forms of collateral and otherwise adversely affect NW Holdings' or NW Natural's financial condition and results of operations.

IMPAIRMENT OF LONG-LIVED ASSETS OR GOODWILL RISK. *Impairments of the value of long-lived assets or goodwill could have a material effect on NW Holdings' or NW Natural's financial condition, or results of operations.*

NW Holdings and NW Natural review the carrying value of long-lived assets other than goodwill whenever events or changes in circumstances indicate the carrying amount of the assets might not be recoverable. The determination of recoverability is based on the undiscounted net cash flows expected to result from the operation of such assets. Projected cash flows depend on the future operating costs and projected revenues associated with the asset.

We review the carrying value of goodwill annually or whenever events or changes in circumstances indicate that such carrying value may not be recoverable. A goodwill impairment analysis begins with a qualitative analysis of events and circumstances. If the qualitative assessment indicates that the carrying value may be at risk, we will perform a quantitative assessment and recognize a goodwill impairment for any amount in which the fair value of a reporting unit exceeds its fair value. NW Holdings' total goodwill was $69.2 million as of December 31, 2020 and $49.9 million as of December 31, 2019. The increase in the goodwill balance was due to additions associated with acquisitions in the water sector. All of our goodwill is related to water and wastewater acquisitions. There have been no impairments recognized for the water and wastewater acquisitions to date. Any impairment charge taken with respect to our long-lived assets or goodwill could be material and could have a material effect on NW Holdings' or NW Natural's financial condition and results of operations.

CUSTOMER CONSERVATION RISK. *Customers' conservation efforts may have a negative impact on NW Holdings' and NW Natural's revenues.*

An increasing national focus on energy conservation, including improved building practices and appliance efficiencies may result in increased energy conservation by customers. This can decrease NW Natural's sales of natural gas and adversely affect NW Holdings' or NW Natural's results of operations because revenues are collected mostly through volumetric rates, based on the amount of gas sold. In Oregon, NW Natural has a conservation tariff which is designed to recover lost utility margin due to declines in residential and small commercial customers' consumption. However, NW Natural does not have a conservation tariff in Washington that provides it this margin protection on sales to customers in that state. Similar conservation risks exist for water utilities. Customers' conservation efforts may have a negative impact on NW Holdings' and NW Natural's financial condition, revenues and results of operations.

WEATHER RISK. *Warmer than average weather may have a negative impact on our revenues and results of operations.*

We are exposed to weather risk in our natural gas business, primarily at NW Natural. A majority of NW Natural's gas volume is driven by gas sales to space heating residential and commercial customers during the winter heating season. Current NW Natural rates are based on an assumption of average weather. Warmer than average weather typically results in lower gas sales. Colder weather typically results in higher gas sales. Although the effects of warmer or colder weather on utility margin in Oregon are expected to be mitigated through the operation of NW Natural’s weather normalization mechanism, weather variations from normal could adversely affect utility margin because NW Natural may be required to purchase more or less gas at spot rates, which may be higher or lower than the rates assumed in its PGA. Also, a portion of NW Natural’s Oregon residential and commercial customers (usually less than 10%) have opted out of the weather normalization mechanism, and approximately 12% of its customers are located in Washington where it does not have a weather normalization mechanism. These effects could have an adverse effect on NW Holdings’ and NW Natural’s financial condition, results of operations and cash flows.

Water Business Risks

WATER SECTOR BUSINESS. *NW Holdings has entered the water sector through the acquisition of a number of water and wastewater companies. Water and wastewater businesses are subject to a number of risks in addition to the risks described above.*

Although the water businesses are not currently expected to materially contribute to the results of operations of NW Holdings, these businesses are subject to risks, in addition to those described above that could adversely affect their results of operations, including:

- contamination of water supplies, including water provided to customers with naturally occurring or human-made substances or other hazardous materials;
- interruptions in water supplies and service, natural disasters and droughts;
- conservation efforts by customers;
- regulatory requirements and proceedings; and
- weather conditions.

Significant losses, liabilities or impairments arising from these businesses may adversely affect NW Holdings' financial position or results of operations.

INVESTMENT RISK. *NW Holdings’ expectations with respect to the financial results of its investments in water operations are based on various assumptions and beliefs that may not prove accurate, resulting in failures or delays in achieving expected returns or performance.*

NW Holdings’ expansion into the water sector is an important component of its growth strategy. Although NW Holdings expects its water and wastewater utility operations will result in various benefits, including expanding customer bases, providing investment opportunities through infrastructure development and enhancing regulatory relationships within the local communities served, NW Holdings may not be able to realize these or other benefits. Achieving the anticipated benefits is subject to a number of uncertainties, including whether the businesses acquired can be operated in the manner intended and whether costs to finance the acquisitions and investments will be consistent with expectations. Events outside of our control, including but not limited to regulatory changes or developments, could adversely affect our ability to realize the anticipated benefits from building NW Holdings’ water platform. The integration of newly acquired water businesses may be unpredictable, subject to delays or changed circumstances, and such businesses may not perform in accordance with our expectations. In addition, anticipated costs, level of management’s attention and internal resources to achieve the integration of the acquired businesses may differ significantly from our current estimates resulting in failures or delays in achieving expected returns or performance. If NW Holdings' expectations regarding the financial results of its investments in water operations prove to be inaccurate, it may adversely affect NW Holdings' financial position or results of operations.

ITEM 1B. UNRESOLVED STAFF COMMENTS

We have no unresolved staff comments.

ITEM 2. PROPERTIES

NW Natural's Natural Gas Distribution Properties
NW Natural's natural gas pipeline system consists of approximately 14,000 miles of distribution and transmission mains and approximately 10,000 miles of service lines located in its territory in Oregon and southwest Washington. In addition, the pipeline system includes service pipelines, meters and regulators, and gas regulating and metering stations. Natural gas pipeline mains are located in municipal streets or alleys pursuant to franchise or occupation ordinances, in county roads or state highways pursuant to agreements or permits granted pursuant to statute, or on lands of others pursuant to easements obtained from the owners of such lands. NW Natural also holds permits for the crossing of numerous railroads, navigable waterways and smaller tributaries throughout our entire service territory.

NW Natural owns service building facilities in Portland, Oregon, as well as various satellite service centers, garages, warehouses, and other buildings necessary and useful in the conduct of its business. Resource centers are maintained on owned or leased premises at convenient points in the distribution system to provide service within NW Natural's service territory. NW Natural also owns LNG storage facilities in Portland and near Newport, Oregon.

NW Natural commenced a 20-year lease in March 2020 for a new corporate operations center in Portland, Oregon.

NW Natural's Mortgage and Deed of Trust (Mortgage) is a first mortgage lien on substantially all of the property constituting NW Natural's natural gas distribution plant balances.

These properties are used in the NGD segment.

NW Natural's Natural Gas Storage Properties
NW Natural holds leases and other property interests in approximately 12,000 net acres of underground natural gas storage in Oregon and easements and other property interests related to pipelines associated with these facilities. NW Natural owns rights to depleted gas reservoirs near Mist, Oregon that are continuing to be developed and operated as underground gas storage facilities. NW Natural also holds all future storage rights in certain other areas of the Mist gas field in Oregon in addition to other leases and property interests.

A portion of these properties are used in the NGD segment.

NWN Water's Distribution Properties
NWN Water owns and maintains water distribution pipes, storage, wells and other infrastructure and wastewater treatment facilities, and holds related leases and other property interests in Oregon, Washington, Idaho and Texas. Pipelines are located in municipal streets or alleys pursuant to franchise or occupation ordinances, in county roads or state highways pursuant to agreements or permits granted pursuant to statute, or on lands of others pursuant to easements obtained from the owners of such lands. These properties are used by entities that are aggregated and reported as other under NW Holdings.

We consider all of our properties currently used in our operations, both owned and leased, to be well maintained, in good operating condition, and, along with planned additions, adequate for our present and foreseeable future needs.

ITEM 3. LEGAL PROCEEDINGS

Other than the proceedings disclosed in Note 18, we have only nonmaterial litigation in the ordinary course of business.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

NW Holdings' common stock is listed and trades on the New York Stock Exchange under the symbol NWN.

There is no established public trading market for NW Natural's common stock.

As of February 16, 2021, there were 4,614 holders of record of NW Holdings' common stock and NW Holdings was the sole holder of NW Natural's common stock.

The following table provides information about purchases of NW Holdings' equity securities that are registered pursuant to Section 12 of the Securities Exchange Act of 1934, as amended, during the quarter ended December 31, 2020:

Issuer Purchases of Equity Securities

Period	Total Number of Shares Purchased[1]	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs[2]	Maximum Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs[2]
Balance forward			2,124,528	$ 16,732,648
10/01/20-10/31/20	—	$ —	—	—
11/01/20-11/30/20	1,556	$ 49.30	—	—
12/01/20-12/31/20	—	$ —	—	—
Total	1,556		2,124,528	$ 16,732,648

(1) During the quarter ended December 31, 2020, no shares of NW Holdings common stock were purchased on the open market to meet the requirements of our Dividend Reinvestment and Direct Stock Purchase Plan. However, 1,556 shares of NW Holdings common stock were purchased on the open market to meet the requirements of share-based compensation programs. During the quarter ended December 31, 2020, no shares of NW Holdings common stock were accepted as payment for stock option exercises pursuant to the NW Natural Restated Stock Option Plan.

(2) During the quarter ended December 31, 2020, no shares of NW Holdings common stock were repurchased pursuant to the NW Holdings Board of Directors-approved share repurchase program. In May 2019, we received NW Holdings Board of Directors approval to extend the repurchase program through May 2022. For more information on this program, see Note 5.

ITEM 6. SELECTED FINANCIAL DATA

Omitted in accordance with SEC regulations.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following is management’s assessment of NW Holdings' and NW Natural's financial condition, including the principal factors that affect results of operations. The discussion covers the years ended December 31, 2020, 2019, and 2018 and refers to the consolidated results of NW Holdings, the substantial majority of which consist of the operating results of NW Natural. When significant activity exists at NW Holdings that does not exist at NW Natural, additional disclosure has been provided. References in this discussion to "Notes" are to the Notes to the Consolidated Financial Statements in Item 8 of this report.

NW Natural's natural gas distribution activities are reported in the natural gas distribution (NGD) segment. The NGD segment also includes NWN Gas Reserves, which is a wholly-owned subsidiary of Energy Corp, the NGD-portion of NW Natural's Mist storage facility in Oregon, and NW Natural RNG Holding Company, LLC. Other activities aggregated and reported as other at NW Natural include the non-NGD storage activity at Mist as well as asset management services and the appliance retail center operations. Other activities aggregated and reported as other at NW Holdings include NWN Energy's equity investment in Trail West Holdings, LLC (TWH) through August 6, 2020; NNG Financial's investment in Kelso-Beaver Pipeline (KB Pipeline); and NWN Water, which through itself or its subsidiaries, owns and continues to pursue investments in the water sector. See Note 4 for further discussion of our business segment and other, as well as our direct and indirect wholly-owned subsidiaries. See Note 14 for information on our TWH investment.

In addition, NW Holdings has reported discontinued operations results related to the sale of Gill Ranch Storage, LLC (Gill Ranch). NW Natural Gas Storage, LLC (NWN Gas Storage), an indirect wholly-owned subsidiary of NW Holdings, entered into a Purchase and Sale Agreement during the second quarter of 2018 that provided for the sale of all membership interests in Gill Ranch. Gill Ranch owns a 75% interest in the natural gas storage facility located near Fresno, California known as the Gill Ranch Gas Storage Facility. For more information, see "Results of Operations - *Discontinued Operations*" below.

NON-GAAP FINANCIAL MEASURES. In addition to presenting the results of operations and earnings amounts in total, certain financial measures are expressed in cents per share, which are non-GAAP financial measures. All references in this section to earnings per share (EPS) are on the basis of diluted shares. We use such non-GAAP financial measures to analyze our financial performance because we believe they provide useful information to our investors and creditors in evaluating our financial condition and results of operations. Our non-GAAP financial measures should not be considered a substitute for, or superior to, measures calculated in accordance with U.S. GAAP.

EXECUTIVE SUMMARY

Our core mission is to provide safe, reliable and affordable essential utility services in an environmentally responsible way to better the lives of the public we serve. Highlights for the year include:

- Added nearly 11,600 natural gas customers in 2020 for an annual growth rate of 1.5% at December 31, 2020;
- Continued to provide customers with essential natural gas and water utility services and assist our most vulnerable community members during COVID-19;
- Invested $273 million in natural gas and water utility systems to support growth and greater reliability and resiliency;
- Completed rule-making for Oregon Senate Bill 98 enabling NW Natural to procure renewable natural gas (RNG) for customers and invested in our first development project to convert methane into RNG;
- Scored second in the West among large utilities in the 2020 J.D. Power Gas Utility Residential Customer Satisfaction Study;
- Concluded the Oregon general rate case with a revenue requirement increase to support growth and system investments;
- Filed a multi-year general rate case in Washington requesting a revenue requirement increase;
- Announced that NW Natural is working toward a renewable hydrogen facility with a partner in Oregon;
- Closed five water and wastewater utility transactions in 2020, bringing our total connections to approximately 26,000; and
- Increased dividends for the 65th consecutive year to shareholders.

Key financial highlights for NW Holdings include:

	2020		2019		2018	
In millions	Amount	Per Share	Amount	Per Share	Amount	Per Share
Net income from continuing operations	$ 70.3	$ 2.30	$ 65.3	$ 2.19	$ 67.3	$ 2.33
Income (loss) from discontinued operations, net of tax	6.5	0.21	(3.6)	(0.12)	(2.7)	(0.09)
Consolidated net income	$ 76.8	$ 2.51	$ 61.7	$ 2.07	$ 64.6	$ 2.24

Key financial highlights for NW Natural include:

	2020	2019	2018
In millions	Amount	Amount	Amount
Net income from continuing operations	$ 70.6	$ 69.0	$ 68.0
Loss from discontinued operations, net of tax	—	—	(1.7)
Consolidated net income	$ 70.6	$ 69.0	$ 66.3
Natural gas distribution margin	$ 438.1	$ 422.7	$ 383.7

2020 COMPARED TO 2019. Consolidated net income increased $1.6 million at NW Natural primarily due to the following factors:

- a $15.4 million increase in NGD segment margin driven by the 2020 Oregon and 2019 Washington rate cases and residential customer growth; and
- a $7.9 million decrease in other expense, net primarily related to higher 2019 pension expenses (non-service cost component) recognized as part of the settlement and recovery of NW Natural's pension balancing account, which was primarily offset within NGD margin and income tax benefits (as discussed below) and which did not recur in 2020; partially offset by
- a $13.6 million increase in depreciation expense and general taxes due to property, plant, and equipment additions, as we continued to invest in our gas utility system; and
- a $7.0 million increase in income tax expense primarily due to 2019 including an income tax benefit related to the return of deferred TCJA benefits to customers and the regulatory pension disallowance, and higher pre-tax income.

Net income from continuing operations increased $5.0 million at NW Holdings primarily due to the following factors:

- a $1.6 million increase in consolidated net income at NW Natural as discussed above; and
- a $3.4 million increase in other net income primarily reflecting higher earnings at our water and wastewater utilities that have been acquired since 2019.

2019 COMPARED TO 2018. NW Holdings' net income from continuing operations decreased $2.0 million and NW Natural's net income from continuing operations increased $1.0 million.

In March 2019, the OPUC issued an order resolving the remaining open items from NW Natural's 2018 Oregon general rate case regarding recovery of the pension balancing account and treatment of the benefits associated with the TCJA. As a result of the order, in the first quarter of 2019, NW Natural recorded a disallowance and several benefits and expenses through the consolidated statements of comprehensive income as follows:

Pension balancing account. Approximately $12.5 million in previously deferred pension expenses were recognized of which approximately $4.6 million was recorded in operations and maintenance expense and $7.9 million was recorded in other income (expense), net. These charges were offset with a corresponding increase in revenue of $7.1 million and in income tax benefits of $2.7 million as the order required the offset of certain deferred TCJA benefits against the pension balancing account. Additional TCJA income tax benefits were realized throughout 2019 to offset the remainder of the $12.5 million charge.

NW Natural also recognized a regulatory pension disallowance of $10.5 million with approximately $3.9 million recognized in operations and maintenance expense and $6.6 million recognized in other income (expense), net, partially offset by related discrete income tax benefits of $1.1 million. Lastly, NW Natural realized $3.8 million of deferred regulatory interest accrued on the pension balancing account.

Deferred TCJA benefits and timing variance. In addition, the OPUC ordered the return of approximately $6.3 million of excess deferred income taxes associated with plant and gas reserves annually beginning April 1, 2019. As a result, NW Natural recognized approximately $2.0 million in income tax benefits in the first quarter of 2019. Reductions to customer billings commenced April 1, 2019 and offset these income tax benefits in total by the end of 2019. NW Natural will continue reductions to customer billings and recognition of deferred income tax benefits in subsequent years until all benefits have been returned.

The increase of $1.0 million at NW Natural was primarily due to the following factors:

- a $39.0 million increase in NGD segment margin driven by new customer rates from the 2018 Oregon rate case and 2019 Washington rate case, customer growth, and lease revenue from the North Mist storage facility; the remaining increase primarily relates to $7.1 million in revenues which were offset by pension expenses due to the OPUC order as discussed above;
- a $9.4 million decrease in NGD segment income tax expense primarily due to the income tax implications of the March 2019 OPUC order, of which $5.4 million was offset by pension expenses as discussed above, with the remainder driven by the return of deferred TCJA benefit credits to customers and lower pretax income in 2019 compared to 2018; and
- a $5.8 million increase in deferred regulatory interest income in other income (expense), net, of which $5.1 million relates to interest recognized in association with the OPUC order discussed above; offset by
- a $34.4 million increase in pension costs within operations and maintenance expense and other income (expense), net, of which $12.5 million relates to costs which were entirely offset by revenues and income tax benefits as discussed above, and $10.5 million relates to the regulatory pension disallowance discussed above. In addition, there was an $11.4 million increase in pension expenses as NW Natural began collecting ongoing pension costs through customer rates on November 1, 2018 and began collecting deferred pension costs through customer rates on April 1, 2019 rather than deferring a portion to the balancing account;
- a $5.4 million increase in depreciation and amortization primarily due to additional capital expenditures;
- a $5.4 million decrease in non-NGD segment operating revenues due to lower asset management revenues and increased asset management revenue sharing with Oregon customers as a result of the 2018 Oregon rate case;
- a $4.6 million increase in NGD segment interest expense due to higher interest on long- and short-term debt balances; and
- a $2.9 million increase in NGD segment operations and maintenance expenses primarily attributable to annual employee cost increases.

The decrease of $2.0 million at NW Holdings was primarily driven by increases in professional service costs and expenses associated with developing the water business, partially offset by the increase of $1.0 million at NW Natural.

COVID-19 AND CURRENT ECONOMIC CONDITIONS. The novel coronavirus (COVID-19), which was declared a pandemic by the World Health Organization in March 2020, has resulted in severe and widespread global, national, and local economic and societal disruptions. In Oregon and Washington, where we serve natural gas and water customers, stay-at-home orders were issued in March 2020. Orders were also issued in March in Idaho and Texas where we also serve water customers. These and subsequent executive orders required the closure of “non-essential” businesses and permitted the continuation of “essential services.” All of the services provided by NW Natural and NW Natural Water were considered “essential services” under the executive orders applicable to the jurisdictions in which they operate, and we continue to serve our gas and water customers and proceed with capital investments without interruption.

As a critical infrastructure energy company that provides an essential service to our customers, NW Natural has well-defined emergency response command structures and protocols. In response to the pandemic, NW Natural mobilized its incident command team and business continuity plans in early March 2020, and continues to operate under these structures and protocols, with a focus on the safety of our 1,200 employees and the 2.5 million people, business partners and communities we serve. NW Natural has generally suspended business travel out of our service territory and implemented work-from-home plans for employees wherever possible. For employees whose role requires them to work in the field or onsite, we are following CDC, OSHA, and state specific requirements. Measures include: following social distancing guidelines; use of personal protective equipment (PPE) including masks, face coverings and gloves; enhanced sanitizing protocols; requiring employee health screenings prior to entering a NW Natural facility; and other measures intended to mitigate the spread of this disease and keep our employees and customers safe and informed. Our water companies are following similar protocols. In addition, we are working with state officials to provide our essential field and onsite workers access to the vaccine during the coming months. We remain vigilant regarding the safety of our customers and employees.

Currently, our service territories are in various phases of reopening, which has permitted the reopening of many businesses that were considered non-essential. Certain of the reopened businesses are operating under continued restrictions related to patron capacity for retail stores and outdoor-only seating for restaurants in Oregon, among other restrictions to prevent further spread of COVID-19.

To support our customers in this unusual time, in March 2020, NW Natural temporarily stopped charging late fees and disconnecting customers for nonpayment. NW Natural also provided Oregon natural gas customers with annual bill credits primarily in June totaling approximately $17.0 million related to NW Natural's revenue sharing mechanism. Through term sheets with the Oregon and Washington Commissions, we have agreed to timelines for resuming our normal business practices such as beginning collection processes while also providing financial assistance and payment plans to our most vulnerable customers.

From a financial perspective, the initial timing of the onset of the COVID-19 pandemic in March 2020 and resulting economic disruption in the United States coincided with the end of the Pacific Northwest 2019-20 winter heating season and although it has continued into the 2020-21 winter heating season, the financial effects were moderated by our regulated utility business model, our natural gas customer base being predominately residential, and temporary cost savings initiatives that were implemented by management. For 2020, we estimate the total financial effects of COVID-19 to be approximately $10 million pre-tax with the impact partially mitigated by regulatory deferrals and temporary cost savings measures. We incurred $4.8 million of COVID-related costs that were deferred to a regulatory asset for recovery in a future period. These costs included PPE supplies, estimates for bad debts, and interest expense associated with financing related activities undertaken to support liquidity during the pandemic, net of direct cost savings such as lower travel and meals and entertainment expenses. In addition, we expect to recognize revenue in a future period for an additional $1.3 million related to forgone late fee revenue. We also experienced additional financial implications of approximately $3.8 million pre-tax that will not be recovered through rates primarily due to lower natural gas distribution margin from customers that stopped natural gas service and lower usage from customers that are not covered under decoupled rate schedules. The financial impacts were mitigated in part by approximately $3.5 million in temporary cost savings initiatives.

During 2020, NW Natural increased the allowance for uncollectible accounts by $2.4 million to $3.1 million. Our allowance for residential and commercial uncollectible accounts estimate increased from 0.1% of gas sales to approximately 0.4% of gas sales for the year ended December 31, 2020.

At the onset of the pandemic, in March 2020 as a precaution to strengthen our liquidity and guard against volatile markets as the COVID-19 pandemic unfolded, we took the following steps:

- NW Natural drew $227 million on its credit facility and subsequently repaid the full amount during the second quarter;
- NW Holdings drew $35 million on its credit facility and repaid $27 million as of December 31, 2020;
- NW Natural borrowed $150 million pursuant to a 364-day term loan and subsequently repaid the full amount in October 2020; and
- NW Natural issued $150 million 30-year first mortgage bonds with an interest rate of 3.6%, which was primarily to support its capital expenditure program.

The federal CARES Act was signed into law on March 27, 2020 to provide direct and indirect financial support to individuals, businesses, state and local governments, and the healthcare system in response to COVID-19. As provided for in the CARES Act, we deferred remittance of the employer portion of the Social Security payroll tax from March through December 31, 2020, when the provision ended. This resulted in $4.7 million of deferred payroll taxes that we expect to remit under the CARES Act guidelines, which require half of the tax liability to be paid by December 31, 2021 and the remaining half to be paid by December 31, 2022.

We have taken additional actions in response to known issues arising from the trends related to the COVID-19 pandemic. For example, we have enhanced cybersecurity monitoring in response to reports that cybersecurity attackers are more active with much of the economy utilizing work from home protocols. Like others, we experienced some constraints on our ability to obtain PPE and disinfecting supplies, but currently believe that we have sufficient supplies to continue our work and continue to procure additional supplies and most efficiently utilize those supplies we have on hand. We have not experienced material disruptions in our supply chain for goods and services to date, but are continuing to actively monitor, and have formulated and continue to evaluate contingency plans as necessary.

We remain vigilant in monitoring how the phased re-openings of the territories in which we operate progress and any reinstitution or possible reinstitution of restrictions, and we are actively monitoring several key metrics. While we are unable to predict the length, severity or impacts of the COVID-19 pandemic and economic disruptions on our business, the potential for a resurgence or mutation of the virus, or timing, widespread availability and efficacy of vaccine implementation, we have the following expectations and beliefs currently:

- Both NW Natural and NW Natural Water expect their capital projects in 2021 to move forward as planned.
- NW Natural's customer growth rate is affected by both new meter connections and when existing customers close their accounts and disconnect their meters. Customer growth from construction and conversions remained strong during 2020. A slow economic recovery could result in a decline in new meter connections, which could adversely affect margin in 2021 and the following periods. In addition, we are closely monitoring our approximately 70,000 commercial and industrial natural gas meters, as a substantial decline in these meters could materially affect margin in 2021 and the following periods. A

disconnection may occur if circumstances require businesses, such as restaurants, retailers, and those in the hospitality sector, to temporarily or permanently close. When we cease suspending disconnections, we may experience a higher level of disconnections. We don't anticipate significant residential meter disconnections.
- NW Natural has seen lower utility margin from a reduction in overall sales volumes during the year ended December 31, 2020 attributed to COVID-19, primarily related to the loss of commercial customers as described above. Due to the seasonality of our gas utility business, we may see more substantial declines in volumes as our peak heating season progresses, depending on the level of reopenings and resiliency of businesses in the communities in which we serve. However, volumes do not translate directly to earnings as the majority of our NGD margin is not dependent on volumes.
- While we have begun returning to normal business practices for many commercial and industrial customers in certain jurisdictions, our residential customers' return to normal practices may be extended based on the timing, availability and efficacy of vaccine rollout and timing of economic recovery. Therefore, the recognition of late and disconnection fee revenue may be delayed beyond our current expectations.
- As the pandemic has continued into the 2020-2021 winter heating season, certain customers are faced with seasonally higher natural gas usage and bills. This could have a financial strain on our customers and impact their ability to pay their bills in a timely manner thus potentially increasing our working capital needs.
- While we deferred to a regulatory asset certain COVID-related financial impacts as agreed upon with regulators, ultimate recovery of these costs and prudence review will be determined through a separate proceeding and may be subject to modification as a result of those proceedings.

Given the evolving nature of the pandemic and resulting economic conditions, we are continually monitoring our business operations and the larger trends and developments to take additional measures we believe are warranted to continue providing safe and reliable service to our customers and communities while protecting our employees.

2021 OUTLOOK

We expect to make significant progress on our long-term objectives in the coming year. Our natural gas distribution business is focused on providing safe, reliable, and affordable energy in an environmentally responsible way to better the lives of the public we serve. Our water and wastewater utility business is committed to providing its customers with safe, clean, reliable and affordable water and wastewater services, while also continuing to grow organically and through acquisitions. In 2021, we remain focused on the strategic pillars of our business: ensuring safe & reliable service; providing superior customer service; advancing constructive legislative policies and regulation; enabling customer growth; and leading on environmental stewardship and decarbonization.

ENSURING SAFE AND RELIABLE SERVICE. Delivering our products safely and reliably to customers, while keeping our employees safe, is our first priority. At NW Natural, we remain focused on safety and emergency response through hands-on, scenario-based training for employees, third-party contractors, and first responders. The reliability, resiliency and safety of our gas system is critical and to this end, we remain focused on investing in necessary upgrades and replacing key system components, preventing third-party damages, and performing regular inspections and assessments. Safety for our gas infrastructure also includes maintaining and strengthening our cybersecurity defenses, upgrading key technology systems, such as our enterprise risk planning system and customer information system over the next several years, and preparing for large-scale emergency events, such as seismic hazards. Our water and wastewater utilities are focused on executing on their capital expenditure plans to ensure continued safe and reliable service to customers and enhancing plans to be able to readily prioritize capital investments.

PROVIDING SUPERIOR CUSTOMER EXPERIENCE. We have a legacy of providing excellent customer service and a long-standing dedication to continuous improvement, which has resulted in NW Natural consistently receiving high rankings in the J.D. Power and Associates customer satisfaction studies and more recently in Escalent's Congent trusted brand and customer engagement residential customer study, earning NW Natural the designation of Customer Champion for the last several years. During 2020, we also implemented several new customer facing technologies including a new website, a streamlined customer onboarding process, and new Interactive Voice Response (IVR) system. In 2021, we intend to fully optimize this new technology to enhance our natural gas customers’ experience and meet their evolving expectations. We'll also plan for the next upgrades, which will be centered on our customers’ most frequent interactions and highest value touchpoints.

ADVANCING CONSTRUCTIVE LEGISLATIVE POLICIES AND REGULATION. NW Natural has a history of working productively with lawmakers and regulators. Most recently in 2020, rulemaking was completed on the groundbreaking Oregon Senate Bill 98 that allows gas utilities to procure and invest in renewable natural gas for their customers. In 2021, we'll continue to proactively communicate with policymakers and other stakeholders about what we believe is the important role of the gas system in achieving climate goals for our communities, and work with the American Gas Association to provide education on the role of natural gas in energy infrastructure at the national level. With regulators, we'll strive to work productively on open proceedings, taking care of customers during the pandemic, and pursuing recovery of deferred costs related to COVID-19. NW Natural will also continue working with the EPA and other stakeholders on an environmentally protective and cost-effective clean-up for the Portland Harbor Superfund Site. For our water utilities, we are focused on working collaboratively with regulators, pursuing efficient approval processes for acquisitions, filing general rate cases where needed to support investments, and engaging in constructive regulatory proceedings.

ENABLING CUSTOMER GROWTH. Natural gas is a preferred energy choice in our service territory given its affordable, efficient, and reliable qualities and often preferred by homeowners for heating and cooking. We are focused on leveraging these key attributes to capitalize on our region's continued strong housing growth. We'll strive to continue growing our market share in the residential sector and multifamily developments, but believe commercial customer growth may be modest in 2021 as the pandemic has placed additional restrictions on small businesses, such as retail stores and restaurants, in our region. At NW Natural Water, we continue to be focused on supporting the fast-growing communities we currently serve and continuing our disciplined acquisition strategy.

LEADING ON DECARBONIZATION. We are deeply committed to a clean energy future and environmental stewardship. It's why NW Natural launched a low-carbon initiative in 2017 to reduce emissions in the communities we serve by leveraging our modern natural gas pipeline system in new ways, working closely with customers, policymakers and regulators, and embracing cutting-edge technology. In 2020, under Oregon SB 98, NW Natural began a partnership with BioCarbN, a developer and operator of sustainable infrastructure projects, to convert methane into RNG. Under this partnership, NW Natural has the ability to invest up to an estimated $38 million in four separate RNG development projects that will access biogas derived from water treatment at Tyson Foods' processing plants. In 2021, NW Natural intends to continue striving to execute on our renewable strategy by helping our customers reduce and offset their consumption, to procure and invest in RNG for our customers under Oregon Senate Bill 98, execute on our RNG interconnection projects, continue developing voluntary renewable product offerings for our customers, and explore renewable hydrogen. We also intend to leverage technology and relationships to examine ways to reduce emissions across the entire value chain from suppliers to end-use heating appliances.

DIVIDENDS

NW Holdings dividend highlights include:

Per common share	2020	2019	2018
Dividends paid	$ 1.9125	$ 1.9025	$ 1.8925

In January 2021, the Board of Directors of NW Holdings declared a quarterly dividend on NW Holdings common stock of $0.4800 per share, payable on February 12, 2021, to shareholders of record on January 29, 2021, reflecting an indicated annual dividend rate of $1.92 per share.

See "Financial Condition - *Liquidity and Capital Resources*" for more information regarding the NW Holdings and NW Natural dividend policies and regulatory conditions on NW Natural dividends to its parent, NW Holdings.

RESULTS OF OPERATIONS

Regulatory Matters

Regulation and Rates

NATURAL GAS DISTRIBUTION. NW Natural's natural gas distribution business is subject to regulation by the OPUC and WUTC with respect to, among other matters, rates and terms of service, systems of accounts, and issuances of securities by NW Natural. In 2020, approximately 88% of NGD customers were located in Oregon, with the remaining 12% in Washington. Earnings and cash flows from natural gas distribution operations are largely determined by rates set in general rate cases and other proceedings in Oregon and Washington. They are also affected by weather, the local economies in Oregon and Washington, the pace of customer growth in the residential, commercial, and industrial markets, and NW Natural's ability to remain price competitive, control expenses, and obtain reasonable and timely regulatory recovery of its natural gas distribution-related costs, including operating expenses and investment costs in plant and other regulatory assets. See "*Most Recent Completed Rate Cases*" below.

MIST INTERSTATE GAS STORAGE. NW Natural's interstate storage activity at Mist is subject to regulation by the OPUC, WUTC, and the Federal Energy Regulatory Commission (FERC) with respect to, among other matters, rates and terms of service. The OPUC also regulates the intrastate storage services at Mist, while FERC regulates the interstate storage services at Mist. The FERC uses a maximum cost of service model which allows for gas storage prices to be set at or below the cost of service as approved by each agency in their last regulatory filing. The OPUC Schedule 80 rates are tied to the FERC rates, and are updated whenever NW Natural modifies FERC maximum rates.

OTHER. In June 2018, NWN Gas Storage, a wholly-owned subsidiary of NW Holdings, entered into a Purchase and Sale Agreement for the sale of all of its ownership interests in Gill Ranch, a natural gas storage facility located near Fresno, California. The sale closed on December 4, 2020. See Note 19 for more information. The wholly-owned regulated water businesses of NWN Water, a wholly-owned subsidiary of NW Holdings, are subject to regulation by the utility commissions in the states in which they are located, which currently includes Oregon, Washington, Idaho, and Texas.

Most Recent Completed Rate Cases

OREGON. On October 16, 2020, the OPUC issued an order concluding NW Natural's general rate case filed in December 2019 (Order). The Order provides for a total revenue requirement increase of approximately $45 million over revenues from existing rates. The revenue requirement is based on the following assumptions:

- Capital structure of 50% common equity and 50% long-term debt;
- Return on equity of 9.4%;
- Cost of capital of 6.965%; and
- Average rate base of $1.44 billion or an increase of $242.1 million since the last rate case.

Under the terms of the Order, NW Natural was authorized to begin to recover the expense associated with the Oregon Corporate Activity Tax (CAT) as a component of base rates. See "*Corporate Activity Tax*" below.

In NW Natural's previous Oregon rate case in March 2019, the OPUC ordered specific terms by which excess deferred income taxes (EDIT) associated with the Tax Cuts and Jobs Act (TCJA) would be provided to customers directly or applied for the benefit of customers. The Order in the most recent Oregon rate case directs NW Natural to include a true-up credit to customers of approximately $1.0 million as a temporary rate adjustment to be amortized over the 2020-21 PGA year.

In addition, the Order approves the application of NW Natural’s decoupling calculation for the months of November and May to the month of April. The decoupling mechanism is intended to encourage customers to conserve energy without adversely affecting earnings due to reductions in sales volumes.

From November 1, 2018 through October 31, 2020, the OPUC authorized rates to customers based on an ROE of 9.4%, an overall rate of return of 7.317%, and a capital structure of 50% common equity and 50% long-term debt. In March 2019, the OPUC issued an order resolving the remaining matters of the rate case regarding recovery of NW Natural's pension balancing account and the return of tax reform benefits to customers. For additional information, see "Rate Mechanisms - *Pension Cost Deferral and Pension Balancing Account*" and "Rate Mechanisms - *Tax Reform Deferral*" below.

WASHINGTON. Effective November 1, 2019, the WUTC authorized rates to customers based on an ROE of 9.4% and an overall rate of return of 7.161% with a capital structure of 50.0% long-term debt, 1.0% short-term debt, and 49.0% common equity. The WUTC also authorized the recovery of environmental remediation expenses allocable to Washington customers through an Environmental Cost Recovery Mechanism (ECRM) and directed NW Natural to provide federal tax reform benefits to customers. See "Rate Mechanisms - Environmental Cost Deferral and Recovery - *Washington ECRM*" and "Rate Mechanisms -*Tax Reform Deferral*" below.

From January 1, 2009, through October 31, 2019, the WUTC authorized rates to customers based on an ROE of 10.1% and an overall rate of return of 8.4% with a capital structure of 51% common equity, 5% short-term debt, and 44% long-term debt.

FERC. NW Natural is required under its Mist interstate storage certificate authority and rate approval orders to file every five years either a petition for rate approval or a cost and revenue study to change or justify maintaining the existing rates for its interstate storage services. On October 12, 2018, NW Natural filed a rate petition with FERC for revised cost-based maximum rates, which incorporated the new federal corporate income tax rate. The revised rates were effective beginning November 1, 2018.

NW Natural continuously evaluates the need for rate cases in its jurisdictions.

Regulatory Proceeding Updates

2021 WASHINGTON RATE CASE. On December 18, 2020, NW Natural filed a request for a general rate increase with the WUTC. The filing includes a requested increase in annual revenue requirements over two years, consisting of an 8.0% or $6.3 million increase in the first year beginning November 1, 2021 (Year One), and a 3.7% or $3.2 million increase in the second year beginning November 1, 2022 (Year Two). NW Natural is also requesting a $2.2 million, or 3%, offset to rates in the first year via suspension of amortization of a regulatory asset associated with NW Natural’s energy efficiency programs and via application of proceeds from the sale of real property in Portland, Oregon, which would reduce the Year One rate increase to approximately 5%.

The requested increase is intended to recover operating costs and investments made in the distribution system, underground storage facility, operations facilities, including improvements to the resource facility in Vancouver, Washington, and upgrades of critical information technology, including NW Natural’s enterprise resource planning system, and is based upon the following assumptions or requests:

- Capital structure of 50% long-term debt, 1% short-term debt, and 49% common equity;
- Return on equity of 9.4%
- Cost of capital of 6.913%; and
- Average rate base of $194.7 million, an increase of $20.9 million since the last rate case for capital expenditures already expended at the time of filing, with an additional expected $31.2 million increase in Year One, and an additional expected $21.4 million increase in Year Two, with the increases in Year One and Year Two relating to expected capital expenditures in those years.

NW Natural’s filing will be reviewed by the WUTC and other stakeholders. The process is anticipated to take up to 11 months. NW Natural has requested that the new rates take effect November 1, 2021.

2020 OREGON & WASHINGTON DEFERRAL. In December 2020, a vehicle crashed into a Williams NW Pipeline district regulator, causing more than 5,500 NW Natural customers in the Hood River, Oregon area and White Salmon, Washington area to lose natural gas service. NW Natural recorded a regulatory asset of approximately $0.8 million for costs incurred to restore service. NW Natural filed requests for deferrals with the OPUC and WUTC and plans to seek recovery of these costs in future ratemaking proceedings.

Rate Mechanisms
During 2020 and 2019, NW Natural's key approved rates and recovery mechanisms for each service area included:

	Oregon		Washington	
	2018 Rate Case	2020 Rate Case (effective 11/1/2020)	2009 Rate Case	2019 Rate Case (effective 11/1/2019)
Authorized Rate Structure:				
ROE	9.4%	9.4%	10.1%	9.4%
ROR	7.3%	7.0%	8.4%	7.2%
Debt/Equity Ratio	50%/50%	50%/50%	49%/51%	51%/49%
Key Regulatory Mechanisms:				
Purchased Gas Adjustment (PGA)	X	X	X	X
Gas Cost Incentive Sharing	X	X		
Decoupling	X	X		
Weather Normalization (WARM)	X	X		
Environmental Cost Recovery	X	X		X
Interstate Storage and Asset Management Sharing	X	X	X	X

Annually, or more often if circumstances warrant, NW Natural reviews all regulatory assets for recoverability. If NW Natural should determine all or a portion of these regulatory assets no longer meet the criteria for continued application of regulatory accounting, then NW Natural would be required to write-off the net unrecoverable balances against earnings in the period such a determination was made.

PURCHASED GAS ADJUSTMENT. Rate changes are established for NW Natural each year under PGA mechanisms in Oregon and Washington to reflect changes in the expected cost of natural gas commodity purchases. The PGA filings include gas costs under spot purchases as well as contract supplies, gas cost hedges, gas costs from the withdrawal of storage inventories, the production of gas reserves, interstate pipeline demand costs, temporary rate adjustments, which amortize balances of deferred regulatory accounts, and the removal of temporary rate adjustments effective for the previous year.

Each year, NW Natural hedges gas prices on a portion of NW Natural's annual sales requirement based on normal weather, including both physical and financial hedges. NW Natural entered the 2020-21 gas year with its forecasted sales volumes hedged at 53% in financial swap and option contracts, including hedging of 56% in Oregon and 28% in Washington, and 17% in physical gas supplies, including hedging of 18% in Oregon and 13% in Washington. The percentage of total hedged for Oregon was approximately 74% and approximately 41% for Washington.

NW Natural is also hedged between 1% and 43% for annual requirements over the subsequent five gas years, which consists of between 1% and 41% in Oregon and between 0% and 58% in Washington. Hedge levels are subject to change based on actual load volumes, which depend to a certain extent on weather, economic conditions, and estimated gas reserve production. Also, gas storage inventory levels may increase or decrease with storage expansion, changes in storage contracts with third parties, variations in the heat content of the gas, and/or storage recall by NW Natural.

In September 2020, NW Natural filed its annual PGA and received OPUC and WUTC approval in October 2020. PGA rate changes were effective November 1, 2020. Rates and hedging approaches may vary between states due to different rate structures and mechanisms.

Under the current PGA mechanism in Oregon, there is an incentive sharing provision whereby NW Natural is required to select each year an 80% deferral or a 90% deferral of higher or lower actual gas costs compared to estimated PGA prices, such that the impact on NW Natural's current earnings from the incentive sharing is either 20% or 10% of the difference between actual and estimated gas costs, respectively. For the 2019-20 and 2020-21 gas years, NW Natural selected the 90% deferral option. Under the Washington PGA mechanism, NW Natural defers 100% of the higher or lower actual gas costs, and those gas cost differences are passed on to customers through the annual PGA rate adjustment.

EARNINGS TEST REVIEW. NW Natural is subject to an annual earnings review in Oregon to determine if the NGD business is earning above its authorized ROE threshold. If NGD business earnings exceed a specific ROE level, then 33% of the amount above that level is required to be deferred or refunded to customers. Under this provision, if NW Natural selects the 80% deferral gas cost option, then NW Natural retains all earnings up to 150 basis points above the currently authorized ROE. If NW Natural selects the 90% deferral option, then it retains all earnings up to 100 basis points above the currently authorized ROE. For the 2019-20 and 2020-21 gas years, NW Natural selected the 90% deferral option. The ROE threshold is subject to adjustment annually based on movements in long-term interest rates. For calendar years 2018, 2019, and 2020, the ROE threshold was 10.48%, 10.24%, and 10.40%, respectively. There were no refunds required for 2018 and 2019. NW Natural does not expect a refund for 2020 based on results, and anticipates filing its 2020 earnings test in May 2021.

GAS RESERVES. In 2011, the OPUC approved the Encana gas reserves transaction to provide long-term gas price protection for NGD business customers and determined costs under the agreement would be recovered on an ongoing basis through the annual PGA mechanism. Gas produced from NW Natural's interests is sold at then prevailing market prices, and revenues from such sales, net of associated operating and production costs and amortization, are included in cost of gas. The cost of gas, including a carrying cost for the rate base investment made under the original agreement, is included in NW Natural's annual Oregon PGA filing, which allows NW Natural to recover these costs through customer rates. The net investment under the original agreement earns a rate of return.

In 2014, NW Natural amended the original gas reserves agreement in response to Encana's sale of its interest in the Jonah field located in Wyoming to Jonah Energy. Under the amended agreement with Jonah Energy, NW Natural has the option to invest in additional wells on a well-by-well basis with drilling costs and resulting gas volumes shared at the amended proportionate working interest for each well in which NW Natural invests. Volumes produced from the additional wells drilled after the amended agreement are included in NW Natural's Oregon PGA at a fixed rate of $0.4725 per therm. NW Natural has not participated in additional wells since 2014.

DECOUPLING. In Oregon, NW Natural has a decoupling mechanism. Decoupling is intended to break the link between earnings and the quantity of gas consumed by customers, removing any financial incentive to discourage customers' efforts to conserve energy. The Oregon decoupling baseline usage per customer was reset in the 2020 Oregon general rate case. The Order in the 2020 Oregon general rate case also approved of extending NW Natural's decoupling calculation for the months of November and May to the month of April. This mechanism employs a use-per-customer decoupling calculation, which adjusts margin revenues to account for the difference between actual and expected customer volumes. The margin adjustment resulting from differences between actual and expected volumes under the decoupling component is recorded to a deferral account, which is included in the annual PGA filing.

WARM. In Oregon, NW Natural has an approved weather normalization mechanism, which is applied to residential and small commercial customer bills. This mechanism is designed to help stabilize the collection of fixed costs by adjusting residential and small commercial customer billings based on temperature variances from average weather, with rate decreases when the weather is colder than average and rate increases when the weather is warmer than average. The mechanism is applied to bills from December through mid-May of each heating season. The mechanism adjusts the margin component of customers' rates to reflect average weather, which uses the 25-year average temperature for each day of the billing period. Daily average temperatures and 25-year average temperatures are based on a set point temperature of 59 degrees Fahrenheit for residential customers and 58 degrees Fahrenheit for commercial customers. The collections of any unbilled WARM amounts due to tariff caps and floors are deferred and earn a carrying charge until collected, or returned, in the PGA the following year. Residential and small commercial customers in Oregon are allowed to opt out of the weather normalization mechanism, and as of December 31, 2020, 8% of total eligible customers had opted out. NW Natural does not have a weather normalization mechanism approved for Washington customers, which account for about 12% of total customers. See "Business Segment—*Natural Gas Distribution*" below.

INDUSTRIAL TARIFFS. The OPUC and WUTC have approved tariffs covering NGD service to major industrial customers, which are intended to give NW Natural certainty in the level of gas supplies needed to serve this customer group. The approved terms include, among other things, an annual election period, special pricing provisions for out-of-cycle changes, and a requirement that industrial customers complete the term of their service election under NW Natural's annual PGA tariff.

ENVIRONMENTAL COST DEFERRAL AND RECOVERY. NW Natural has authorizations in Oregon and Washington to defer costs related to remediation of properties that are owned or were previously owned by NW Natural. In Oregon, a Site Remediation and Recovery Mechanism (SRRM) is currently in place to recover prudently incurred costs allocable to Oregon customers, subject to an earnings test. Effective beginning November 1, 2019, the WUTC authorized an Environmental Cost Recovery Mechanism (ECRM) for recovery of prudently incurred costs allocable to Washington customers.

<u>Oregon SRRM</u>

Under the Oregon SRRM collection process, there are three types of deferred environmental remediation expense:

- Pre-review - This class of costs represents remediation spend that has not yet been deemed prudent by the OPUC. Carrying costs on these remediation expenses are recorded at NW Natural's authorized cost of capital. NW Natural anticipates the prudence review for annual costs and approval of the earnings test prescribed by the OPUC to occur by the third quarter of the following year.

- Post-review - This class of costs represents remediation spend that has been deemed prudent and allowed after applying the earnings test, but is not yet included in amortization. NW Natural earns a carrying cost on these amounts at a rate equal to the five-year treasury rate plus 100 basis points.
- Amortization - This class of costs represents amounts included in current customer rates for collection and is calculated as one-fifth of the post-review deferred balance. NW Natural earns a carrying cost equal to the amortization rate determined annually by the OPUC, which approximates a short-term borrowing rate. NW Natural included $4.2 million and $5.1 million of deferred remediation expense approved by the OPUC for collection during the 2020-21 and 2019-20 PGA years, respectively.

In addition, the SRRM also provides for the annual collection of $5.0 million from Oregon customers through a tariff rider. As it collects amounts from customers, NW Natural recognizes these collections as revenue net of any earnings test adjustments and separately amortizes an equal and offsetting amount of the deferred regulatory asset balance through the environmental remediation operating expense line shown separately in the operating expenses section of the Consolidated Statements of Comprehensive Income (Loss). See Note 18 for more information on our environmental matters.

The SRRM earnings test is an annual review of adjusted NGD ROE compared to authorized NGD ROE. To apply the earnings test NW Natural must first determine what if any costs are subject to the test through the following calculation:

Annual spend
Less: $5.0 million base rate rider
Prior year carry-over[1]
$5.0 million insurance + interest on insurance
Total deferred annual spend subject to earnings test
Less: over-earnings adjustment, if any
Add: deferred interest on annual spend[2]
Total amount transferred to post-review

(1) Prior year carry-over results when the prior year amount transferred to post-review is negative. The negative amount is carried over to offset annual spend in the following year.
(2) Deferred interest is added to annual spend to the extent the spend is recoverable.

To the extent the NGD business earns at or below its authorized ROE as defined in the SRRM, the total amount transferred to post-review is recoverable through the SRRM. To the extent more than authorized ROE is earned in a year, the amount transferred to post-review would be reduced by those earnings that exceed its authorized ROE.

For 2020, NW Natural has performed this test, which is anticipated to be submitted to the OPUC in May 2021. No earnings test adjustment is expected for 2020.

Washington ECRM
The ECRM established by the WUTC order effective November 1, 2019 permits NW Natural’s recovery of environmental remediation expenses allocable to Washington customers. These expenses represent 3.32% of costs associated with remediation of sites that historically served both Oregon and Washington customers. The order allows for recovery of past deferred and future prudently incurred remediation costs allocable to Washington through application of insurance proceeds and collections from customers. Prudently incurred costs that were deferred from the initial deferral authorization in February 2011 through June 2019 are to be fully offset with insurance proceeds, with any remaining insurance proceeds to be amortized over a 10.5 year period. On an annual basis, NW Natural will file for a prudence determination and a request to recover remediation expenditures in excess of insurance amortizations in the following year's customer rates. After insurance proceeds are fully amortized, if in a particular year the request to collect deferred amounts exceeds one percent of Washington normalized revenues, then the excess will be collected over three years with interest. On October 29, 2020, NW Natural's first environmental cost recovery filing was approved by the WUTC covering the period from December 31, 2018 to December 31, 2019.

PENSION COST DEFERRAL AND PENSION BALANCING ACCOUNT. From 2011 through October 2018, the OPUC authorized a regulatory mechanism in which NW Natural deferred annual pension expenses above the amount set in rates, with recovery of these deferred amounts through the implementation of a balancing account, which included the expectation of higher and lower pension expenses in future years. During this period the mechanism permitted NW Natural to accrue interest on the account balance at the NGD business' authorized rate of return. The OPUC ordered the freezing of the account in October 2018 with pension expenses to be recovered through rates beginning November 1, 2018.

In March 2019, the OPUC issued an order outlining how the account would be recovered. As a result, the following items were recorded in the first quarter of 2019:
- Applied $7.1 million of TCJA benefits deferred from January 1, 2018 to October 31, 2018, as a reduction against the pension balancing account;
- Credited to customers' benefit $5.4 million of deferred income taxes as a reduction against the pension balancing account;
- Reduced the amount of the frozen balancing account by an additional $10.5 million; and
- Reduced the interest rate on the pension balancing account from NW Natural's authorized rate of return of 7.317% to 4.3%.

The items above resulted in the recovery of $12.5 million of deferred pension expenses by applying deferred tax benefits against the pension balancing account. Recognition of these items resulted in higher operations and maintenance expense and other income (expense), net with offsetting benefits recognized in operating revenues and income tax expense. Additional pension expenses of $10.5 million from the regulatory disallowance were also recognized in operations and maintenance expense and other income (expense), net. Deferred regulatory interest income of $3.8 million was also realized in other income (expense), net in 2019.

Commencing April 1, 2019, the OPUC also authorized the collection of the remainder of the pension balancing account over ten years in a customer tariff of $7.3 million per year. Deferred pension expense recoveries, inclusive of the application of the TCJA benefits described above, were $7.1 million and $16.8 million in 2020 and 2019, respectively. Pension expense deferrals, excluding interest, were $10.3 million in 2018.

TAX REFORM DEFERRAL. In December 2017, NW Natural filed applications with the OPUC and WUTC to defer the overall net benefit associated with the TCJA that was enacted on December 22, 2017. In February 2019, NW Natural and the other parties to the 2018 Oregon rate case agreed upon terms by which the deferred benefits would be returned to customers via a joint stipulation filed with the OPUC. In March 2019, the OPUC approved the terms in their entirety as follows:
- Applied $7.1 million of TCJA benefits deferred from January 1, 2018 to October 31, 2018, as a reduction against the pension balancing account; and
- Credited to customers' benefit $5.4 million of deferred income taxes as a reduction against the pension balancing account;

Commencing April 1, 2019, the OPUC also ordered the following:
- Provide an annual credit to base rates of $3.4 million for excess deferred income taxes to all customers, subject to the average rate assumption method;
- Provide an additional annual credit of $3.0 million to sales service customers for five years; and
- An increase in rate base of $15.4 million, and corresponding increase to revenue requirement of $1.4 million.

If NW Natural files a general rate case within five years of the date of the March 2019 order, this revenue requirement may be adjusted as part of that general rate case. On December 30, 2019, NW Natural filed a general rate case with the OPUC, which is within five years from the date of the March 2019 order and the order in that rate case adjusted this revenue requirement. For more information, see "*Most Recent Completed General Rate Cases*" above.

On October 21, 2019 the WUTC issued an order dictating the means by which deferred tax reform benefits would be returned to customers beginning November 1, 2019. The order directs NW Natural to provide customers with a rate reduction of $2.1 million over one year to reflect the benefit of the lower federal corporate income tax rate accumulating from January 1, 2018 through October 31, 2019, and provides an additional annual rate reduction initially set at approximately $0.5 million to reflect a benefit from the remeasurement of deferred tax liabilities of approximately $15.0 million.

INTERSTATE STORAGE AND ASSET MANAGEMENT SHARING. On an annual basis, NW Natural credits amounts to Oregon and Washington customers as part of a regulatory incentive sharing mechanism related to net revenues earned from Mist gas storage and asset management activities. Previously, amounts were credited to Oregon customers in June. Starting in 2021, Oregon customers will receive this credit in February per the 2020 Oregon rate case order. Credits are given to customers in Washington as reductions in rates through the annual PGA filing in November.

The following table presents the credits to NGD customers:

In millions	2020	2019	2018
Oregon	$ 17.0	$ 16.3	$ 11.7
Washington	$ 0.7	$ 1.2	$ 1.0

HOLDING COMPANY REORGANIZATION. On October 1, 2018, we completed the reorganization to a holding company structure. There were a number of conditions under the agreement with the OPUC and the WUTC related to the formation of a holding company structure. One of the conditions is that, for three years following formation of the holding company, NW Natural was required to provide an annual $500,000 credit to Oregon customers and a $55,000 credit to Washington customers. The credits to both Oregon and Washington customers were given in conjunction with the respective PGA filings with the rate adjustments commencing on November 1 of the applicable PGA year.

COVID-19 PROCESS AND DEFERRAL DOCKETS. During 2020, our regulated utilities, other utilities, stakeholders, and public utility commissions worked together to determine the best way to continue protecting utility customers during and after the pandemic. In September 2020, the OPUC issued an order authorizing OPUC staff to execute a term sheet with NW Natural and other parties to the proceeding, which includes provisions for lifting moratoriums on disconnections for nonpayment and late fees; extending timeframes for repayments and deferred payment plans; establishing timelines for reinstitution of service disconnection and reconnection fees; and allowing for deferred accounting of COVID-19 related costs. The term sheet also directs NW Natural to work with the parties to provide bill payment assistance, petition the Oregon legislature for bill payment assistance funding, explore the applicability of decoupling charges for a period of time, and participate in an investigation and discussion surrounding low income customers and social and environmental justice. The stipulation incorporating the term sheet was approved by the OPUC in November 2020. A term sheet was approved by the WUTC in October 2020 that provides similar guidance on key items such as the timing of lifting moratoriums on disconnections, resuming the collection process, and bill assistance and payment plans.

Additionally, both Oregon and Washington approved our applications to defer certain COVID-19 related costs in 2020. Costs that may be recoverable include, but are not limited to, the following: personal protective equipment, cleaning supplies and services, bad debt expense, financing costs to secure liquidity, and certain lost revenue, net of offsetting direct expense reductions associated with COVID-19. As of December 31, 2020, we estimated that approximately $6.1 million of the financial effects related to COVID-19 in 2020 could be recoverable. As a result, we recorded a regulatory asset of approximately $4.8 million for incurred costs as of December 31, 2020. In addition, we expect to recognize revenue in a future period for an additional $1.3 million related to forgone late fee revenue.

The following table outlines some of the key items approved by the respective Commissions:

	Oregon		Washington	
Reinstituting Disconnections for Nonpayment:				
Residential	June 30, 2021	*	July 31, 2021	*
Small Commercial	December 1, 2020		July 31, 2021	*
Large Commercial/Industrial	November 3, 2020		October 20, 2020	
Resuming Residential Reconnection Fee Charges	October 1, 2022	*	January 27, 2022	*
Reinstituting Late Fees for Nonpayment:				
Residential	October 1, 2022	*	January 27, 2022	*
Small Commercial	December 1, 2020		January 27, 2022	*
Large Commercial/Industrial	November 3, 2020		October 20, 2020	
Extended Time Payment Arrangements:				
Residential	Up to 24 months		Up to 18 months	
Small Commercial	Up to 6 months		Up to 12 months	
Arrearage Forgiveness Program	1% of Retail Revenue		1% of Retail Revenue	

* Jurisdiction retains discretion to re-evaluate date based on ongoing pandemic and economic conditions.

RENEWABLE NATURAL GAS. On June 19, 2019, the Oregon legislature passed Senate Bill 98 (SB98), which enables natural gas utilities to procure or develop RNG on behalf of their Oregon customers. RNG is produced from organic materials like food, agricultural and forestry waste, wastewater, or landfills. Methane is captured from these organic materials as they decompose and is conditioned to pipeline quality, so it can be added into the existing natural gas system, reducing net GHG emissions. The bill was signed into law by the governor in July 2019, and subsequently, the OPUC opened a docket in August 2019 regarding the rules for the bill. After working with parties, the OPUC adopted final rules in July 2020.

SB98 and the rules outline the following parameters for the RNG program including: setting voluntary goals for adding as much as 30% renewable natural gas into the state's pipeline system by 2050; enabling gas utilities to invest in and own the cleaning and conditioning equipment required to bring raw biogas and landfill gas up to pipeline quality, as well as the facilities to connect to the local gas distribution system; and allowing up to 5% of a utility's revenue requirement to be used to cover the incremental cost or investment in renewable natural gas infrastructure.

Further, the new law supports all forms of renewable natural gas including renewable hydrogen, which is made from excess wind, solar and hydro power. Renewable hydrogen can be used for the transportation system, industrial use, or blended into the natural gas pipeline system.

In its initial RNG contract under SB98, NW Natural began a partnership with BioCarbN, a developer and operator of sustainable infrastructure projects, to convert methane into RNG. Under this partnership, NW Natural has the ability to invest up to an estimated $38 million in four separate RNG development projects that will access biogas derived from water treatment at Tyson Foods' processing plants, subject to approval by all parties. In December 2020, NW Natural exercised its option for the first development project in Nebraska, initiating investment in an estimated $8 million project, which is expected to begin producing RNG in late 2021.

CORPORATE ACTIVITY TAX. In 2019, the State of Oregon enacted a Corporate Activity Tax (CAT) that is applicable to all businesses with annual Oregon gross revenue in excess of $1 million. The CAT is in addition to the state's corporate income tax and imposes a 0.57% tax on certain Oregon gross receipts less a reduction for a portion of cost of goods sold or labor. The CAT legislation became effective September 29, 2019 and applies to calendar years beginning January 1, 2020. Under the terms of the Order in NW Natural's 2020 Oregon general rate case, NW Natural is authorized to begin to recover the expense associated with the CAT as a component of base rates. NW Natural is also directed to adjust the amount recovered for the CAT in each annual PGA to reflect changes in gross revenue and cost of goods sold that occur as a result of the PGA.

Beginning on the November 1, 2020 rate effective date, NW Natural expects to recover an additional $3.15 million in revenue requirement for the CAT. The Order also provides for certain adjustments if there are legislative, rulemaking, judicial, or policy decisions that would cause the calculation methodology used by NW Natural for the CAT to vary in a fundamental way. Additionally, the CAT deferred from January 2020 through June 2020 will be added to and amortized over the 2020-21 PGA gas year, and the CAT amounts deferred from July 2020 through the effective date of the rate case will be amortized over the 2021-22 PGA year.

WATER UTILITIES. In 2020, NW Holdings, through its water subsidiaries, continued acquiring water utilities. The following notable transactions received regulatory approval and were closed during 2020:

- **Suncadia Water Company, LLC and Suncadia Environmental, LLC** — NWN Water of Washington received regulatory approval for the purchase of Suncadia Water in January 2020. Suncadia Environmental is not currently subject to the WUTC's jurisdiction. The transaction closed in January 2020.
- **T&W Water Service Company** — NWN Water of Texas received regulatory approval from the Public Utility Commission of Texas for the T&W Water Service Company acquisition in February 2020 and subsequently the transaction closed in March 2020.

In addition to the acquisitions above, we closed three acquisitions near existing water utilities during 2020. While COVID-19 has restricted certain activities, we continue to pursue water acquisitions and expect to return to normal business development activities as the pandemic eases and travel and commerce return to previous levels. For our acquired water utilities, we've begun to assess the need for general rate cases, and in 2020, we filed general rate cases for three water utilities to support infrastructure investments for safety and reliability.

OREGON EXECUTIVE ORDER. On March 10, 2020, the governor of Oregon issued an executive order (EO) establishing GHG emissions reduction goals of at least 45% below 1990 emission levels by 2035 and at least 80% below 1990 emission levels by 2050 and directed state agencies and commissions to facilitate such GHG emission goals targeting a variety of sources and industries. Although the EO does not specifically direct actions of natural gas distribution businesses, the OPUC is directed to prioritize proceedings and activities that advance decarbonization in the utility sector, mitigate energy burden experienced by utility customers and ensure system reliability and resource adequacy. The EO also directs other agencies to cap and reduce GHG emissions from transportation fuels and all other liquid and gaseous fuels, including natural gas, adopt building energy efficiency goals for new building construction, reduce methane gas emissions from landfills and food waste, and submit a proposal for adoption of state goals for carbon sequestration and storage by Oregon’s forest, wetlands and agricultural lands. These agencies and commissions are currently engaged in various stages of their rulemaking processes and are currently expected to complete those processes in the next 12 to 24 months. NW Natural is actively engaged with Oregon state regulatory entities and holds a seat on the Oregon Department of Environmental Quality rules advisory committee, which is considering the cap and reduce rules.

INTEGRATED RESOURCE PLAN (IRP). NW Natural generally files a full IRP biennially for Oregon and Washington with the OPUC and WUTC, respectively. NW Natural jointly filed its 2018 IRP for both Oregon and Washington in August 2018, and received both a letter of compliance from the WUTC and acknowledgment by the OPUC in February 2019. The 2018 IRP included analysis of different scenarios, examining several potential future states and the corresponding least cost, least risk resource acquisition strategies. In addition to these strategies, the 2018 IRP published an emissions forecast for each of these potential futures. NW Natural expects to file an update to the 2018 IRP in March 2021.

The development of an IRP filing is an extensive and complex process that engages multiple stakeholders in an effort to build a robust and commonly understood analysis. The final product is intended to provide a long-term outlook of the supply-side and demand-side resource requirements for reliable and low cost natural gas service. The IRP examines and analyses uncertainties in the planning process, including potential changes in governmental and regulatory policies. As a result of the EO issued by the governor of Oregon, new regulations and requirements are currently being developed in the state of Oregon, which have the potential to impact long-term resource decisions. In order to reflect the outcomes of the EO proceedings, the time to file NW Natural's next full IRP was extended to July 2022.

Business Segment - Natural Gas Distribution (NGD)

NGD margin results are primarily affected by customer growth, revenues from rate-base additions, and, to a certain extent, by changes in delivered volumes due to weather and customers' gas usage patterns. In Oregon, NW Natural has a conservation tariff (also called the decoupling mechanism), which adjusts margin up or down each month through a deferred regulatory accounting adjustment designed to offset changes resulting from increases or decreases in average use by residential and commercial customers. NW Natural also has a weather normalization tariff in Oregon, WARM, which adjusts customer bills up or down to offset changes in margin resulting from above- or below-average temperatures during the winter heating season. Residential and commercial customers in Oregon are allowed to opt out of the weather normalization mechanism, and as of December 31, 2020, approximately 8% of total eligible customers had opted out. NW Natural does not have a weather normalization mechanism approved for Washington customers, which account for about 12% of total customers. The decoupling and WARM mechanisms are designed to reduce, but not eliminate, the volatility of customer bills and natural gas distribution earnings. See "Regulatory Matters—*Rate Mechanisms*" above.

The NGD business is primarily seasonal in nature due to higher gas usage by residential and commercial customers during the cold winter heating months. Other categories of customers experience seasonality in their usage but to a lesser extent. Seasonality affects the comparability of the results of operations of the NGD business across quarters but not across years.

NGD segment highlights include:

Dollars and therms in millions, except EPS data		2020		2019		2018
NGD net income	$	63.6	$	60.8	$	57.5
EPS - NGD segment	$	2.08	$	2.04	$	1.99
Gas sold and delivered (in therms)		1,143		1,215		1,128
NGD margin(1)	$	438.1	$	422.7	$	383.7

(1) See Natural Gas Distribution Margin Table below for additional detail.

2020 COMPARED TO 2019. NGD net income was $63.6 million in 2020 compared to $60.8 million in 2019. The primary factors contributing to the increase in NGD net income were as follows:

- a $15.4 million increase in NGD margin primarily due to:
  - a $17.7 million increase due to new customer rates from the 2020 Oregon and 2019 Washington rate cases;
  - a $7.6 million increase from revenue generated from NW Natural's North Mist storage contract which commenced service in May 2019 and is included within other regulated services within NGD margin; and
  - a $3.9 million increase from customer growth; partially offset by
  - a $7.1 million decrease due to revenue recognized in 2019 as part of the settlement and recovery of NW Natural's pension balancing account, which was entirely offset by pension expenses within operations and maintenance expense and other income (expense), net, and which did not recur in 2020;
  - a $4.0 million decrease primarily due to lower overrun and entitlement fees;
  - a $2.7 million decrease driven by warmer than average weather in 2020 compared average weather in 2019; and
  - a $1.3 million decrease related to the temporary suspension of late fees during the COVID-19 pandemic.

In addition to the increase in margin, NGD net income for 2020 reflects:

- a benefit of $12.5 million from pension expenses recognized in 2019 associated with recoveries of NW Natural's pension balancing account which did not recur in 2020. Approximately $4.6 million was recorded in operations and maintenance expense and $7.9 million was recorded in other income (expense), net; and
- a benefit of $10.5 million from a 2019 regulatory pension disallowance which did not recur in 2020. Approximately $3.9 million was recorded in operations and maintenance expense and $6.6 million was recorded in other income (expense), net.

The increases in net income above are partially offset by the following:

- an $8.2 million increase in operations and maintenance expense related to higher compensation costs, contractor expenses, and moving and lease costs for a new headquarters and operations center;
- a $13.8 million increase in depreciation and general tax expenses due to NGD plant additions, including the North Mist gas storage facility;
- a $7.3 million decrease in other income (expense), net primarily related to interest income recognized in 2019 associated with the 2019 recoveries of the pension balancing account and ongoing regulatory amortization of the remaining pension balancing account deferral, which began in April 2019; and
- a $6.9 million higher income tax reflecting a non-recurring tax benefit associated with the March 2019 Oregon order, partially offset by the ongoing amortization of TCJA benefits.

Total natural gas sold and delivered in 2020 decreased 6% over 2019 primarily due to the impact of weather that was 12% warmer than average in 2020 compared to weather that was average in 2019.

2019 COMPARED TO 2018. NGD net income was $60.8 million in 2019 compared to $57.5 million in 2018. The primary factors contributing to the increase in NGD net income were as follows:

- a $39.0 million increase in NGD margin primarily due to:
  - a $16.2 million increase due to new customer rates from the 2018 Oregon rate case and 2019 Washington rate case;
  - a $6.1 million increase from customer growth;
  - an $11.8 million increase from revenue generated from NW Natural's North Mist storage contract which commenced service in May 2019 and is included within other regulated services within NGD margin;
  - a $7.1 million increase due to revenues recognized in association with recoveries of NW Natural's pension balancing account, which are entirely offset by pension expenses within operations and maintenance and other income (expense), net; and
  - a $3.7 million increase driven by colder than average weather in the first quarter of 2019 coupled with higher fee revenues from interruptible customers as a result of system restrictions; partially offset by
  - a $3.2 million decrease due to an adjustment to the tax reform deferral estimate in 2018; and
  - a $1.5 million decrease due to a regulatory disallowance of deferred environmental expenditures as a result of the 2019 Washington rate case.
- a $9.4 million decrease in income tax expense primarily due to the income tax implications of the March 2019 OPUC order, of which $5.4 million was offset by pension expenses as discussed above, with the remainder driven by the return of deferred TCJA benefit credits to customers and lower pretax income in 2019 compared to 2018; and
- a $5.8 million increase in deferred regulatory interest income in other income (expense), net, of which $5.1 million relates to interest recognized in association with the OPUC order discussed above.

The increases were partially offset by:

- a $34.4 million increase in pension costs within operations and maintenance expense and other income (expense), net, of which $12.5 million relates to costs which were entirely offset by revenues and income tax benefits in the March 2019 OPUC order, and $10.5 million relates to the regulatory pension disallowance included in the March 2019 OPUC order. In addition, there was a $11.4 million increase in pension expenses as NW Natural began collecting ongoing pension costs through customer rates on November 1, 2018 and began collecting deferred pension costs through customer rates on April 1, 2019 rather than deferring a portion to the balancing account;
- a $5.7 million increase in depreciation expense due to NGD plant additions;
- a $4.6 million increase in interest expense driven by $2.3 million higher interest on long term debt, $1.2 million lower AFUDC debt interest income, and $0.9 million higher commercial paper and line of credit interest;
- a $3.3 million decrease in AFUDC equity interest; and
- a $2.9 million increase in NGD segment operations and maintenance expenses primarily attributable to annual employee cost increases.

Total natural gas sold and delivered in 2019 increased 8% over 2018 primarily due to the impact of weather that was average in 2019 compared to weather that was 15% warmer than average in 2018.

NATURAL GAS DISTRIBUTION MARGIN TABLE. The following table summarizes the composition of NGD gas volumes, revenues, and cost of sales:

In thousands, except degree day and customer data	2020	2019	2018	Favorable (Unfavorable) 2020 vs. 2019	Favorable (Unfavorable) 2019 vs. 2018
NGD volumes (therms):					
Residential and commercial sales	677,271	734,347	661,163	(57,076)	73,184
Industrial sales and transportation	465,626	480,807	467,040	(15,181)	13,767
Total NGD volumes sold and delivered	1,142,897	1,215,154	1,128,203	(72,257)	86,951
Operating revenues:					
Residential and commercial sales	$ 661,346	$ 638,884	$ 621,782	$ 22,462	$ 17,102
Industrial sales and transportation	58,678	56,553	58,713	2,125	(2,160)
Other distribution revenues	1,926	13,035	(109)	(11,109)	13,144
Other regulated services	19,122	12,056	262	7,066	11,794
Total operating revenues	741,072	720,528	680,648	20,544	39,880
Less: Cost of gas	262,980	255,135	255,743	(7,845)	608
Less: Environmental remediation expense	9,691	12,337	11,127	2,646	(1,210)
Less: Revenue taxes	30,291	30,325	30,082	34	(243)
NGD margin	$ 438,110	$ 422,731	$ 383,696	$ 15,379	$ 39,035
Margin(1)					
Residential and commercial sales	$ 385,989	$ 366,974	$ 352,710	$ 19,015	$ 14,264
Industrial sales and transportation	30,800	31,985	30,817	(1,185)	1,168
Miscellaneous revenues	1,709	4,671	5,542	(2,962)	(871)
Gain (loss) from gas cost incentive sharing	267	(1,299)	(27)	1,566	(1,272)
Other margin adjustments(2)	229	8,350	(5,608)	(8,121)	13,958
Distribution margin	$ 418,994	$ 410,681	$ 383,434	$ 8,313	$ 27,247
Other regulated services	19,116	12,050	262	7,066	11,788
NGD margin	$ 438,110	$ 422,731	$ 383,696	$ 15,379	$ 39,035
Degree days(3)					
Average(4)	2,706	2,710	2,714	(4)	(4)
Actual	2,384	2,709	2,313	(12)%	17 %
Percent warmer than average weather	(12)%	— %	(15)%		
NGD Meters - end of period:					
Residential meters	704,675	692,012	680,134	12,663	11,878
Commercial meters	68,812	69,858	69,259	(1,046)	599
Industrial meters	989	1,007	1,028	(18)	(21)
Total number of meters	774,476	762,877	750,421	11,599	12,456
NGD Meter growth:					
Residential meters	1.8 %	1.7 %			
Commercial meters	(1.5)%	0.9 %			
Industrial meters	(1.8)%	(2.0)%			
Total meter growth	1.5 %	1.7 %			

(1) Amounts reported as margin for each category of meters are operating revenues, which are net of revenue taxes, less cost of gas and environmental remediation expense.

(2) Other margin adjustments include net revenue recoveries of $6.2 million and revenue deferrals of $7.9 million for the years ended December 31, 2019 and 2018, respectively, associated with the decline of the U.S. federal corporate income tax rate.

(3) Heating degree days are units of measure reflecting temperature-sensitive consumption of natural gas, calculated by subtracting the average of a day's high and low temperatures from 59 degrees Fahrenheit.

(4) Average weather represents the 25-year average of heating degree days. Beginning November 1, 2020, average weather is calculated over the period June 1, 1994 through May 31, 2019, as determined in NW Natural's 2020 Oregon general rate case. From November 1, 2018 through October 31, 2020, average weather was calculated over the period May 31, 1992 through May 30, 2017, as determined in NW Natural's 2018 Oregon general rate case. Prior to November 1, 2018, average weather was calculated over the period 1986 - 2010, as determined in NW Natural's 2012 Oregon general rate case.

Residential and Commercial Sales

The primary factors that impact results of operations in the residential and commercial markets are customer growth, seasonal weather patterns, energy prices, competition from other energy sources, and economic conditions in our service areas. The impact of weather on margin is significantly reduced through NW Natural's weather normalization mechanism in Oregon; approximately 82% of NW Natural's total customers are covered under this mechanism. The remaining customers either opt out of the mechanism or are located in Washington, which does not have a similar mechanism in place. For more information on the weather mechanism, see "Regulatory Matters—Rate Mechanisms—*Weather Normalization Mechanism*" above.

NGD residential and commercial sales highlights include:

In millions	2020	2019	2018
Volumes (therms):			
Residential sales	435.2	457.2	411.7
Commercial sales	242.1	277.1	249.5
Total volumes	677.3	734.3	661.2
Operating revenues:			
Residential sales	$ 460.3	$ 437.7	$ 418.4
Commercial sales	201.0	201.2	203.3
Total operating revenues	$ 661.3	$ 638.9	$ 621.7
Margin:			
Residential:			
Sales	$ 274.9	$ 272.3	$ 240.0
Alternative revenues:			
Weather normalization	9.0	(1.8)	7.6
Decoupling	(6.1)	(6.6)	(0.6)
Amortization of alternative revenue	3.3	2.0	1.9
Total residential NGD margin	281.1	265.9	248.9
Commercial:			
Sales	100.2	115.8	103.7
Alternative revenues:			
Weather normalization	2.7	(0.7)	2.4
Decoupling	1.1	(5.2)	7.3
Amortization of alternative revenue	0.9	(8.8)	(9.6)
Total commercial NGD margin	104.9	101.1	103.8
Total residential and commercial NGD margin	$ 386.0	$ 367.0	$ 352.7

2020 COMPARED TO 2019. The increases of $22.4 million in operating revenue and $19.0 million in total residential and commercial NGD margin were primarily the result of new customer rates resulting from the Oregon and Washington rate cases and customer growth. Sales volume decreased 57.0 million therms, or 8%, primarily due to warmer than average weather in 2020 compared to average weather in 2019 and lower usage from commercial customers related to the pandemic, partially offset by residential customer growth.

2019 COMPARED TO 2018. The increases of $17.2 million in operating revenue and $14.3 million in total residential and commercial NGD margin were primarily driven by new customer rates from the 2018 Oregon rate case and 2019 Washington rate case as well as sales volume increases of 73.1 million therms, or 11%, due to customer growth and average weather in 2019 compared to warmer than average weather in 2018.

Industrial Sales and Transportation

Industrial customers have the option of purchasing sales or transportation services. Under the sales service, the customer buys the gas commodity from NW Natural. Under the transportation service, the customer buys the gas commodity directly from a third-party gas marketer or supplier. The NGD gas commodity cost is primarily a pass-through cost to customers; therefore, NGD profit margins are not materially affected by an industrial customer's decision to purchase gas from third parties. Industrial and large commercial customers may also select between firm and interruptible service options, with firm services generally providing higher profit margins compared to interruptible services. To help manage gas supplies, industrial tariffs are designed to provide some certainty regarding industrial customers' volumes by requiring an annual service election which becomes effective November 1, special charges for changes between elections, and in some cases, a minimum or maximum volume requirement before changing options.

NGD industrial sales and transportation highlights include:

In millions	2020	2019	2018
Volumes (therms):			
Industrial - firm sales	34.3	36.6	35.3
Industrial - firm transportation	162.3	175.7	162.7
Industrial - interruptible sales	48.6	47.4	50.6
Industrial - interruptible transportation	220.4	221.1	218.4
Total volumes	465.6	480.8	467.0
Margin:			
Industrial - sales and transportation	$ 30.8	$ 32.0	$ 30.8

2020 COMPARED TO 2019. NGD volumes decreased by 15.2 million therms, or 3%, and margin decreased by $1.2 million primarily due to lower usage from a small number of industrial customers.

2019 COMPARED TO 2018. Industrial sales and transportation volumes increased by 13.8 million therms and NGD margin increased $1.2 million due to an increase in manufacturing activity in NW Natural's service territory. The increase was partially offset by a reduction in customer count, which was driven by customer elections to switch from industrial to commercial rate schedules.

Miscellaneous Revenues

Margin from miscellaneous revenues includes fee income as well as regulatory revenue adjustments, which reflect current period deferrals to and prior year amortizations from regulatory asset and liability accounts, except for gas cost deferrals which flow through cost of gas. Decoupling and other regulatory amortizations from prior year deferrals are included in revenues from residential, commercial, and industrial firm customers.

Margin from NGD miscellaneous revenues highlights include:

In millions	2020	2019	2018
Other revenues	$ 1.7	$ 4.7	$ 5.5

2020 COMPARED TO 2019. Margin from miscellaneous revenues decreased due to lower entitlement and curtailment revenues in 2020 as 2019 included higher fee revenue related to a rupture in a critical natural gas pipeline in western Canada in 2018 that disrupted gas supply to the Pacific Northwest. In addition, margin from miscellaneous revenues was negatively impacted by the moratorium on charging late or reconnection fees during the pandemic in 2020.

2019 COMPARED TO 2018. Margin from miscellaneous revenues remained flat due to continued entitlement and curtailment revenue in first quarter of 2019 related to the October 2018 Canadian pipeline event.

Other Regulated Services

Other Regulated Services primarily consist of lease revenues from NW Natural's North Mist storage facility as well as other lease revenues for compressed natural gas assets.

Other regulated services revenue highlights include:

In millions	2020	2019	2018
North Mist storage services	$ 19.5	$ 11.8	$ —
Other services	(0.4)	0.3	0.3
Total other regulated services	$ 19.1	$ 12.1	$ 0.3

2020 COMPARED TO 2019. Other regulated services margin increased $7.0 million due to the commencement of storage services at the North Mist expansion facility in May 2019. See Note 7 for more information regarding North Mist expansion lease accounting.

2019 COMPARED TO 2018. Other regulated services margin increased $11.8 million due to the commencement of storage services at the North Mist expansion facility in May 2019.

Cost of Gas

Cost of gas as reported by the NGD segment includes gas purchases, gas withdrawn from storage inventory, gains and losses from commodity hedges, pipeline demand costs, seasonal demand cost balancing adjustments, regulatory gas cost deferrals, gas reserves costs, and company gas use. The OPUC and WUTC generally require natural gas commodity costs to be billed to customers at the actual cost incurred, or expected to be incurred. Customer rates are set each year so that if cost estimates were met the NGD business would not earn a profit or incur a loss on gas commodity purchases; however, in Oregon we have the incentive sharing mechanism described under "Regulatory Matters—Rate Mechanisms—*Purchased Gas Adjustment*" above. In addition to the PGA incentive sharing mechanism, gains and losses from hedge contracts entered into after annual PGA rates are effective for Oregon customers are also required to be shared and therefore may impact net income. Further, NW Natural also has a regulatory agreement whereby it earns a rate of return on its investment in the gas reserves acquired under the original agreement with Encana and includes gas from the amended gas reserves agreement at a fixed rate of $0.4725 per therm, which are also reflected in NGD margin. See "Application of Critical Accounting Policies and Estimates—*Accounting for Derivative Instruments and Hedging Activities*" below.

Cost of gas highlights include:

In millions except where indicated		2020		2019		2018
Cost of gas	$	263.0	$	255.1	$	255.7
Volumes sold (therms)		760		818		747
Average cost of gas (cents per therm)	$	0.35	$	0.31	$	0.34
Gain (loss) from gas cost incentive sharing	$	0.3	$	(1.3)	$	—

2020 COMPARED TO 2019. Cost of gas increased by $7.9 million, or 3%, primarily due to a 13% increase in average cost of gas consistent with higher gas costs in the PGA; partially offset by a 7% decrease in volumes sold driven primarily by 12% warmer than average weather during 2020 as compared to average weather in 2019.

2019 COMPARED TO 2018. Cost of gas was flat compared to 2018, primarily due to the 10% increase in volumes sold driven by average weather in 2019 compared to warmer than average weather in 2018 and customer growth, primarily offset by a three cent decrease in the average cost of gas.

The effect on net income from NW Natural's Oregon gas cost incentive sharing mechanism resulted in a margin gain of $0.3 million in 2020 compared to margin loss of $1.3 million in 2019 and a slight margin loss in 2018. In 2020, actual prices were lower than the estimated prices included in customer rates during the period. In 2019, actual gas prices were higher than those included in rates during the period. In 2018, actual prices closely aligned with estimated prices included in customer rates. For a discussion of the gas cost incentive sharing mechanism, see "Regulatory Matters—Rate Mechanisms—*Purchased Gas Adjustment*" above.

Other

Other activities aggregated and reported as other at NW Holdings include NWN Energy's equity investment in Trail West Holdings, LLC (TWH); NNG Financial's investment in Kelso-Beaver Pipeline (KB Pipeline); and NWN Water, which owns and continues to pursue investments in the water sector. Other activities aggregated and reported as other at NW Natural include the non-NGD storage activity at Mist as well as asset management services and the appliance retail center operations. See Note 4 for further discussion of our business segment and other, as well as our direct and indirect wholly-owned subsidiaries.

On August 6, 2020, NWN Energy completed the sale to an unrelated third party of its interest in TWH. See Note 14 for further details.

At Mist, NW Natural provides gas storage services to customers in the interstate and intrastate markets using storage capacity that has been developed in advance of NGD customers' requirements. Pre-tax income from gas storage at Mist and asset management services is subject to revenue sharing with NGD customers.

Under this regulatory incentive sharing mechanism, NW Natural retains 80% of pre-tax income from Mist gas storage services and asset management services when the underlying costs of the capacity being used are not included in NGD business rates. The remaining 20% is credited to a deferred regulatory account for credit to NGD customers.

Through October 2018, when the capacity used was included in NGD rates, NW Natural retained 33% of pre-tax income with the remaining 67% credited to a deferred regulatory account for credit to NGD customers. In conjunction with the Oregon rate case, effective November 2018, NW Natural retains 10% of pre-tax income from such storage and asset management services and 90% is credited to NGD business customers.

The following table presents the results of activities aggregated and reported as other for both NW Holdings and NW Natural:

In millions, except EPS data	2020	2019	2018
NW Natural other - net income	$ 7.0	$ 8.1	$ 10.6
Other NW Holdings activity	(0.3)	(3.6)	(0.8)
NW Holdings other - net income	$ 6.7	$ 4.5	$ 9.8
EPS - NW Holdings - other	$ 0.22	$ 0.15	$ 0.34

The significant drivers of changes in other net income discussed below apply to both NW Holdings and NW Natural.

2020 COMPARED TO 2019. Other net income increased $2.2 million and decreased $1.1 million at NW Holdings and NW Natural, respectively. The decrease at NW Natural was primarily due to lower earnings from non-NGD gas storage operations at Mist as a result of less favorable market conditions. The increase at NW Holdings was driven by higher earnings from water and wastewater utilities and lower expenses at the holding company, partially offset by the decline in other for NW Natural.

2019 COMPARED TO 2018. Other net income decreased $5.3 million and $2.5 million at NW Holdings and NW Natural, respectively. The decrease at NW Natural was primarily driven by lower asset management revenues and increased asset management revenue sharing with Oregon customers as a result of the 2018 Oregon rate case. The decrease from other NW Holdings activity was driven by increases in professional service costs and expenses associated with developing the water business.

Consolidated Operations

Operations and Maintenance

Operations and maintenance highlights include:

In millions	2020	2019	2018
NW Natural	$ 168.9	$ 169.1	$ 155.2
Other NW Holdings operations and maintenance	11.2	9.1	1.5
NW Holdings	$ 180.1	$ 178.2	$ 156.7

2020 COMPARED TO 2019. Operations and maintenance expense decreased $0.2 million for NW Natural primarily due to the following:

- a $7.4 million decrease reflecting pension expense (service cost component) recognized as part of the recovery of NW Natural's pension balancing account settlement in the Oregon rate case, which did not recur in 2020 as discussed below; and
- a $0.6 million decrease in workers compensation expense as a result of fewer claims in 2020; partially offset by
- a $4.5 million increase in contractor and professional service expenses, and moving costs, as we moved to a new headquarters and operations center;
- a $1.6 million increase related to higher compensation costs attributable to annual employee cost increases; and
- a $1.4 million increase due to higher lease expense for the new headquarters and operations center.

Operations and maintenance expense in 2020 excludes approximately $2.9 million of COVID-19 related expenses that were deferred to a regulatory asset. In addition, to mitigate the effects of the financial implications of COVID-19, management implemented temporary cost savings initiatives, which resulted in approximately $3.5 million of operations and maintenance expense savings.

Operations and maintenance expense increased $1.9 million for NW Holdings primarily due to the following:

- a $2.2 million increase in other NW Holdings operations and maintenance expense primarily due to operating expenses at our water and wastewater utilities that have been acquired since 2019; partially offset by
- a $0.2 million decrease in operations and maintenance expense at NW Natural as discussed above.

2019 COMPARED TO 2018. Operations and maintenance expense increased $21.5 million and $13.9 million for NW Holdings and NW Natural, respectively, primarily due to the following factors:

- a $12.5 million increase in pension expenses, consisting of:
    - a $4.6 million increase from recovery of amounts in NW Natural's pension balancing account upon receipt of an OPUC accounting order in March 2019, which was offset within NGD margin and income tax benefits;
    - a $4.0 million increase from higher pension costs as NW Natural began collecting ongoing pension costs through customer rates on November 1, 2018 and began collecting deferred pension costs through customer rates on April 1, 2019 rather than deferring a portion to the balancing account; and
    - a $3.9 million increase from a regulatory pension disallowance as a result of the March 2019 OPUC order in the Oregon general rate case.

The remaining change was primarily attributable to annual employee cost increases.

The $7.6 million increase in other NW Holdings operations and maintenance expense was primarily due to expenses associated with developing the water business in 2019.

Depreciation and Amortization

Depreciation and amortization highlights include:

In millions		2020		2019		2018
NW Natural	$	101.6	$	90.4	$	85.0
Other NW Holdings depreciation and amortization		2.1		1.1		0.2
NW Holdings	$	103.7	$	91.5	$	85.2

2020 COMPARED TO 2019. Depreciation and amortization expense increased $11.2 million for NW Natural, primarily due to NGD plant additions and the North Mist gas storage facility that began operations and depreciating in May 2019.

Depreciation and amortization expense increased $12.2 million for NW Holdings, primarily due to a $1.0 million increase in other NW Holdings depreciation and amortization related to water and wastewater acquisitions and an $11.2 million increase at NW Natural as discussed above.

2019 COMPARED TO 2018. Depreciation and amortization expense increased by $6.3 million and $5.4 million for NW Holdings and NW Natural, respectively, primarily due to NGD plant additions that included investments in natural gas transmission and distribution systems supporting customer growth, safety, reliability, facility upgrades, and enhanced technology. In addition, the North Mist gas storage facility began operations and began depreciating in May 2019. The increase in other NW Holdings depreciation and amortization was primarily due to depreciation expense at acquired water and wastewater entities.

Other Income (Expense), Net

Other income (expense), net highlights include:

In millions		2020		2019		2018
NW Natural total other income (expense), net	$	(15.1)	$	(23.0)	$	(3.6)
Other NW Holdings activity		1.2		0.2		—
NW Holdings total other income (expense), net	$	(13.9)	$	(22.8)	$	(3.6)

2020 COMPARED TO 2019. Other income (expense), net, increased $7.9 million at NW Natural primarily due to higher 2019 pension expenses (non-service cost component) recognized as part of the settlement and recovery of NW Natural's pension balancing account, which did not recur in 2020. Other income (expense), net, increased $8.9 million at NW Holdings due to an increase of $1.0 million in other NW Holdings activity and a $7.9 million increase at NW Natural as discussed above.

2019 COMPARED TO 2018. Other income (expense), net, decreased $19.2 million and $19.4 million at NW Holdings and NW Natural, respectively. The decrease was primarily driven by activity in NW Natural's pension balancing account as described below. In addition, net interest income on deferred regulatory accounts increased $5.5 million primarily due to $5.1 million of deferred equity interest income recognized in 2019 in conjunction with amortization of the pension balancing account. Interest income from the equity portion of AFUDC decreased $3.3 million, primarily driven by the placement of the North Mist facility into service in May 2019.

Pension Balancing Account

From 2011 through October 31, 2018, NW Natural had OPUC approval to defer certain pension costs in excess of what was recovered in customer rates. This pension cost deferral was recorded to a regulatory balancing account, which stabilized the amount of pension expense recognized each year in the consolidated statements of comprehensive income (loss). Total pension cost deferrals, excluding interest, were $10.3 million and $6.5 million for the years ended December 31, 2018 and 2017, of which $7.9 million and $4.1 million was recognized in other income (expense), net, respectively. In October 2018, the OPUC issued an order freezing the pension balancing account and directing that future pension expense would be recovered through rates with an increase of $8.1 million to revenue requirement.

In March 2019, the OPUC issued another order allowing for the application of certain deferred revenues and tax benefits from the TCJA to reduce NW Natural's pension regulatory balancing account. A corresponding total of $12.5 million in pension expenses were recognized, of which $7.9 million was recognized in other income (expense), net in the consolidated statements of comprehensive income in the first quarter of 2019, with offsetting benefits recorded within operating revenues and income taxes. The order also directed NW Natural to reduce the balancing account by an additional, disallowed, $10.5 million, of which $6.6 million was charged to other income (expense), net in the consolidated statements of comprehensive income. Amortization of the remaining amount of the balancing account began in the second quarter of 2019 in accordance with the order. Total amortization of the balancing account for the year ended December 31, 2019, inclusive of the $12.5 million recovery mentioned above, was $16.8 million, of which $10.7 million was recorded to other income (expense), net. See Note 10 and "Regulatory Matters— *Pension Cost Deferral and Pension Balancing Account*" for more information regarding the pension balancing account.

Interest Expense, Net

Interest expense, net highlights include:

In millions	2020	2019	2018
NW Natural	$ 40.9	$ 41.3	$ 37.0
Other NW Holdings interest expense	2.2	1.4	0.1
NW Holdings	$ 43.1	$ 42.7	$ 37.1

2020 COMPARED TO 2019. Interest expense, net, decreased $0.4 million at NW Natural primarily due to $1.7 million of lower interest on commercial paper borrowings, partially offset by $0.6 million of higher interest on long-term debt balances. NW Natural deferred to a regulatory asset approximately $1.9 million of interest on financings undertaken in March 2020 as a precautionary measure to strengthen our liquidity position as the pandemic unfolded.

Interest expense, net, increased $0.4 million at NW Holdings primarily due to $0.8 million higher interest on outstanding credit agreement balances, partially offset by a $0.4 million decrease at NW Natural as discussed above.

2019 COMPARED TO 2018. Interest expense, net of amounts capitalized increased $5.6 million and $4.3 million at NW Holdings and NW Natural, respectively. The increase at NW Natural was primarily driven by $2.3 million higher interest on long term debt balances, $1.2 million lower AFUDC debt interest income, and $0.9 million higher commercial paper and line of credit interest. The additional increase at NW Holdings was driven by interest on long-term debt at NWN Water and interest on NW Holdings' line of credit.

Income Tax Expense

NW Holdings income tax expense highlights include:

In millions	2020	2019	2018
Income tax expense	$ 21.1	$ 12.6	$ 24.2
Effective tax rate	23.1 %	16.2 %	26.4 %

NW Natural income tax expense highlights include:

In millions	2020	2019	2018
Income tax expense	$ 21.1	$ 14.1	$ 24.5
Effective tax rate	23.0 %	16.9 %	26.4 %

2020 COMPARED TO 2019. The effective tax rate increased by 6.9% and 6.1% at NW Holdings and NW Natural, respectively. The increase in the effective tax rate is primarily due to the 2019 tax implications of the March 2019 OPUC order, including the return of deferred TCJA benefits to customers and the regulatory pension disallowance.

2019 COMPARED TO 2018. The effective tax rate decreased by 10.2% and 9.5% at NW Holdings and NW Natural, respectively. The reduction was driven by the return of tax reform benefits to customers, including $5.4 million in tax benefits recognized in association with the OPUC 2018 Oregon rate case order which was offset by pension expenses. See "Executive Summary - *Deferred TCJA benefits and timing variance*" above.

Discontinued Operations

On June 20, 2018, NWN Gas Storage, a wholly-owned subsidiary of NW Holdings, entered into a Purchase and Sale Agreement (the Agreement) that provided for the sale by NWN Gas Storage of all of its membership interests in Gill Ranch. Gill Ranch owns a 75% interest in the natural gas storage facility located near Fresno, California known as the Gill Ranch Gas Storage Facility.

On December 4, 2020, NWN Gas Storage closed the sale of all the memberships interests in Gill Ranch and received payment of the initial cash purchase price of $13.5 million less the $1.0 million deposit previously paid. Furthermore, additional payments to NWN Gas Storage may be made subject to a maximum amount of $15.0 million in the aggregate (subject to a working capital adjustment) based on the economic performance of Gill Ranch each full gas storage year (April 1 of one year through March 31 of the following year) occurring after the closing and the remaining portion of the 2020-2021 gas storage year and will continue until such time as the maximum amount has been paid. The fair value of this arrangement at the closing date was zero based on a discounted cash flow forecast. Subsequent changes in the fair value will be recorded in earnings. The completion of the sale resulted in an after-tax gain of $5.9 million.

The results of Gill Ranch Storage have been determined to be discontinued operations until the date of sale and are presented separately, net of tax, from the results of continuing operations of NW Holdings for all periods presented. See Note 19 for more information on the Agreement and the results of our discontinued operations.

FINANCIAL CONDITION

Capital Structure

NW Holdings' long-term goal is to maintain a strong and balanced consolidated capital structure. NW Natural targets a regulatory capital structure of 50% common equity and 50% long-term debt, which is consistent with approved regulatory allocations in Oregon, which has an allocation of 50% common equity and 50% long-term debt without recognition of short-term debt, and Washington, which has an allocation of 50% long-term debt, 1% short-term debt, and 49% common equity.

When additional capital is required, debt or equity securities are issued depending on both the target capital structure and market conditions. These sources of capital are also used to fund long-term debt retirements and short-term commercial paper maturities. See "*Liquidity and Capital Resources*" below and Note 9. Achieving our target capital structure and maintaining sufficient liquidity to meet operating requirements is necessary to maintain attractive credit ratings and provide access to the capital markets at reasonable costs.

NW Holdings' consolidated capital structure, excluding short-term debt, was as follows:

	December 31,	
	2020	2019
Common equity	48.2 %	49.6 %
Long-term debt (including current maturities)	51.8	50.4
Total	100.0 %	100.0 %

NW Natural's consolidated long-term capital structure, excluding short-term debt, was as follows:

	December 31,	
	2020	2019
Common equity	47.7 %	49.3 %
Long-term debt (including current maturities)	52.3	50.7
Total	100.0 %	100.0 %

Including short-term debt balances, as of December 31, 2020 and 2019, NW Holdings' consolidated capital structure included common equity of 41.4% and 45.7%, long-term debt of 40.0% and 42.5%, and short-term debt including current maturities of long-term debt of 18.6% and 11.8%, respectively. As of December 31, 2020 and 2019, NW Natural's consolidated capital structure included common equity of 42.1% and 45.9%, long-term debt of 43.2% and 42.9%, and short-term debt including current maturities of long-term debt of 14.7% and 11.2%, respectively.

During 2020, changes to NW Natural's capital structures were primarily due to increases in short-term debt and the issuance of long-term debt. Changes to NW Holdings' capital structure were primarily due to increases in short-term debt at NW Natural. See further discussion below in "Cash Flows — *Financing Activities*".

Liquidity and Capital Resources

At December 31, 2020 and December 31, 2019, NW Holdings had approximately $30.2 million and $9.6 million, and NW Natural had approximately $10.5 million and $5.9 million, of cash and cash equivalents, respectively. In order to maintain sufficient liquidity during periods when capital markets are volatile, NW Holdings and NW Natural may elect to maintain higher cash balances and add short-term borrowing capacity. NW Holdings and NW Natural may also pre-fund their respective capital expenditures when long-term fixed rate environments are attractive.

For example, as the COVID-19 pandemic developed, in early to mid-March, markets displayed significant volatility. In response to that volatility and possible implications for the availability of access to the capital markets, NW Natural and NW Holdings undertook a number of measures to increase cash on hand to ensure ample liquidity. On March 20, 2020, NW Natural borrowed $122.0 million under its multi-year credit facility, which was not backing commercial paper. As of December 31, 2020, the credit facility was paid back in full. Similarly, on March 20, 2020, NW Holdings borrowed $35.0 million under its multi-year credit facility, of which $27.0 million had been paid back as of December 31, 2020. On March 23, 2020, NW Natural entered into a $150.0 million, 364-day term loan credit agreement, and borrowed the full amount on closing. The term loan was paid back in full and terminated in 2020. On March 31, 2020, NW Natural issued and sold $150.0 million aggregate principal amount of 3.60% first mortgage bonds (FMBs). These actions were taken as a precaution to support sufficient cash on hand under a variety of financial sector circumstances that could develop. Currently, NW Holdings and NW Natural expect to have ample liquidity in the form of cash on hand and from operations and available credit capacity under credit facilities to support funding needs.

NW Holdings

For NW Holdings, short-term liquidity is primarily provided by cash balances, dividends from its operating subsidiaries, in particular NW Natural, available cash from a multi-year credit facility, and short-term credit facilities. NW Holdings also has a universal shelf registration statement filed with the SEC for the issuance of debt and equity securities. NW Holdings long-term debt, if any, and equity issuances are primarily used to provide equity contributions to NW Holdings' operating subsidiaries for operating and capital expenditures and other corporate purposes. NW Holdings' issuance of securities is not subject to regulation by state public utility commissions, but the dividends from NW Natural to NW Holdings are subject to regulatory ring-fencing provisions. NW Holdings guarantees the debt of its wholly-owned subsidiary, NWN Water. See "*Long-Term Debt*" below for more information regarding NWN Water debt.

As part of the ring-fencing conditions agreed upon with the OPUC and WUTC in connection with the holding company reorganization, NW Natural may not pay dividends or make distributions to NW Holdings if NW Natural's credit ratings and common equity ratio, defined as the ratio of equity to long-term debt, fall below specified levels. If NW Natural's long-term secured credit ratings are below A- for S&P and A3 for Moody's, dividends may be issued so long as NW Natural's common equity ratio is 45% or more. If NW Natural's long term secured credit ratings are below BBB for S&P and Baa2 for Moody's, dividends may be issued so long as NW Natural's common equity ratio is 46% or more. Dividends may not be issued if NW Natural's long-term secured credit ratings are BB+ or below for S&P or Ba1 or below for Moody's, or if NW Natural's common equity ratio is below 44%, where the ratio is measured using common equity and long-term debt excluding imputed debt or debt-like lease obligations. In each case, common equity ratios are determined based on a preceding or projected 13-month average. In addition, there are certain OPUC notice requirements for dividends in excess of 5% of NW Natural's retained earnings.

Additionally, if NW Natural's common equity (excluding goodwill and equity associated with non-regulated assets), on a preceding or projected 13-month average basis, is less than 46% of NW Natural's capital structure, NW Natural is required to notify the OPUC, and if the common equity ratio falls below 44%, file a plan with the OPUC to restore its equity ratio to 44%. This condition is designed to ensure NW Natural continues to be adequately capitalized under the holding company structure. Under the WUTC order, the average common equity ratio must not exceed 56%.

At December 31, 2020 and 2019, NW Natural satisfied the ring-fencing provisions described above.

Based on several factors, including current cash reserves, committed credit facilities, its ability to receive dividends from its operating subsidiaries, in particular NW Natural, and an expected ability to issue long-term debt and equity securities in the capital markets, NW Holdings believes its liquidity is sufficient to meet anticipated near-term cash requirements, including all contractual obligations, investing, and financing activities as discussed in "*Contractual Obligations*" and "*Cash Flows*" below.

NW HOLDINGS DIVIDENDS. Quarterly dividends have been paid on common stock each year since NW Holdings' predecessor's stock was first issued to the public in 1951. Annual common stock dividend payments per share, adjusted for stock splits, have increased each year since 1956. The declarations and amount of future dividends to shareholders will depend upon earnings, cash flows, financial condition, NW Natural's ability to pay dividends to NW Holdings and other factors. The amount and timing of dividends payable on common stock is at the sole discretion of the NW Holdings Board of Directors.

Natural Gas Distribution Segment

For the NGD business segment, short-term borrowing requirements typically peak during colder winter months when the NGD business borrows money to cover the lag between natural gas purchases and bill collections from customers. Short-term liquidity for the NGD business is primarily provided by cash balances, internal cash flow from operations, proceeds from the sale of commercial paper notes, as well as available cash from multi-year credit facilities, short-term credit facilities, company-owned life insurance policies, the sale of long-term debt, and equity contributions from NW Holdings. NW Natural's long-term debt and contributions from NW Holdings are primarily used to finance NGD capital expenditures, refinance maturing debt, and provide temporary funding for other general corporate purposes of the NGD business.

Based on its current debt ratings (see "*Credit Ratings*" below), NW Natural has been able to issue commercial paper and long-term debt at attractive rates and has not needed to borrow or issue letters of credit from its back-up credit facility. In the event NW Natural is not able to issue new debt due to adverse market conditions or other reasons, NW Natural expects that near-term liquidity needs can be met using internal cash flows, issuing commercial paper, receiving equity contributions from NW Holdings, or, for the NGD segment, drawing upon a committed credit facility. NW Natural also has a universal shelf registration statement filed with the SEC for the issuance of secured and unsecured debt securities. As previously described, NW Natural drew on its credit facility, secured a term loan, and issued FMBs to ensure ample liquidity during market volatility resulting from the commencement of the COVID-19 pandemic.

In the event senior unsecured long-term debt ratings are downgraded, or outstanding derivative positions exceed a certain credit threshold, counterparties under derivative contracts could require NW Natural to post cash, a letter of credit, or other forms of collateral, which could expose NW Natural to additional cash requirements and may trigger increases in short-term borrowings while in a net loss position. NW Natural was not required to post collateral at December 31, 2020. However, if the credit risk-related contingent features underlying these contracts were triggered on December 31, 2020, assuming long-term debt ratings dropped to non-investment grade levels, NW Natural could have been required to post $0.1 million in collateral with our counterparties. See "Credit Ratings" below and Note 16.

Other items that may have a significant impact on NW Natural's liquidity and capital resources include NW Natural's pension contribution requirements and environmental expenditures.

PENSION CONTRIBUTION. NW Natural expects to make contributions to its company-sponsored defined benefit plan, which is closed to new employees, over the next several years until the plan is fully funded under the Pension Protection Act rules, including the rules issued under the Moving Ahead for Progress in the 21st Century Act (MAP-21), as amended. See "Application of Critical Accounting Policies—*Accounting for Pensions and Postretirement Benefits*" below and Note 10 for more information.

ENVIRONMENTAL EXPENDITURES. NW Natural expects to continue using cash resources to fund environmental liabilities. NW Natural has authorizations in Oregon and Washington to defer costs related to remediation of properties that are owned or were previously owned by NW Natural. In Oregon, a Site Remediation and Recovery Mechanism (SRRM) is currently in place to recovery prudently incurred costs allocable to Oregon customers, subject to an earnings test. On October 21, 2019 the WUTC authorized an Environmental Cost Recovery Mechanism (ECRM) for recovery of prudently incurred costs allocable to Washington customers beginning November 1, 2019. See Note 18, and "Results of Operations—Regulatory Matters—*Environmental Cost Deferral and Recovery*" above.

Based on several factors, including current credit ratings, NW Natural's commercial paper program, current cash reserves, committed credit facilities, and an expected ability to issue long-term debt and receive equity contributions from NW Holdings, NW Natural believes its liquidity is sufficient to meet anticipated near-term cash requirements, including all contractual obligations, investing, and financing activities as discussed in "*Contractual Obligations*" and "*Cash Flows*" below.

NW NATURAL DIVIDENDS. The declarations and amount of future dividends to NW Holdings will depend upon earnings, cash flows, financial condition, the satisfaction of OPUC and WUTC regulatory ring-fencing restrictions, and other factors. The amount and timing of dividends payable on common stock is subject to approval of the NW Natural Board of Directors.

OFF-BALANCE SHEET ARRANGEMENTS. Except for certain lease and purchase commitments, NW Holdings and NW Natural have no material off-balance sheet financing arrangements. See "*Contractual Obligations*" below.

Contractual Obligations

The following table shows contractual obligations from continuing operations at December 31, 2020 by maturity and type of obligation:

	Payments Due in Years Ending December 31,						
In millions	2021	2022	2023	2024	2025	Thereafter	Total
NW Natural							
Short-term debt maturities	$ 231.5	$ —	$ —	$ —	$ —	$ —	$ 231.5
Long-term debt maturities	60.0	—	90.0	—	30.0	744.7	924.7
Interest on long-term debt	40.3	38.6	37.7	34.6	34.0	446.0	631.2
Postretirement benefit payments(1)	26.8	27.5	28.4	29.1	29.7	161.9	303.4
Operating leases	6.8	6.8	7.0	7.1	7.2	123.8	158.7
Gas purchases(2)	83.5	—	—	—	—	—	83.5
Gas pipeline capacity commitments	85.6	87.8	82.1	77.1	74.4	516.3	923.3
Other purchase commitments(3)	0.8	5.3	4.7	5.9	5.0	13.3	35.0
Other long-term liabilities(4)	18.2	—	—	—	—	—	18.2
NW Natural Total	553.5	166.0	249.9	153.8	180.3	2,006.0	3,309.5
Other (NW Holdings)							
Short-term debt maturities	73.0	—	—	—	—	—	73.0
Short- and long-term obligations(5)	35.9	0.4	0.4	0.4	0.3	2.0	39.4
NW Holdings Total	$ 662.4	$ 166.4	$ 250.3	$ 154.2	$ 180.6	$ 2,008.0	$ 3,421.9

(1) Postretirement benefit payments primarily consists of two NW Natural items: (1) estimated pension and other postretirement plan payments, which are funded by plan assets and future cash contributions, and (2) required payments to the Western States multiemployer pension plan due to NW Natural's withdrawal from the plan in December 2013. See Note 10.

(2) Gas purchases include contracts which use price formulas tied to monthly index prices. The commitment amounts presented incorporate the December 2020 first of month index price for each supply basin from which gas is purchased. For a summary of gas purchase and gas pipeline capacity commitments, see Note 17.

(3) Other purchase commitments primarily consist of remaining balances under existing purchase orders and gas storage agreements.

(4) Other long-term liabilities includes accrued deferred compensation plan liabilities for executives and directors. The timing of these payments are uncertain; however, these payments are unlikely to all occur in the next 12 months.
(5) Short- and long-term obligations include short- and long-term debt obligations and other immaterial liabilities.

In addition to known contractual obligations listed in the above table, NW Natural has also recognized liabilities for future environmental remediation or action. The exact timing of payments beyond 12 months with respect to those liabilities cannot be reasonably estimated due to numerous uncertainties surrounding the course of environmental remediation and the preliminary nature of site investigations. See Note 18 for a further discussion of environmental remediation cost liabilities.

At December 31, 2020, 606 of NW Natural's natural gas distribution employees were members of the Office and Professional Employees International Union (OPEIU) Local No. 11. In November 2019, union employees ratified a new collective bargaining agreement that took effect on December 1, 2019, expires on May 31, 2024, and is effective thereafter from year to year unless either party serves notice of its intent to negotiate modifications to the collective bargaining agreement.

Short-Term Debt

The primary source of short-term liquidity for NW Holdings is cash balances, dividends from its operating subsidiaries, in particular NW Natural, available cash from a multi-year credit facility, and short-term credit facilities it may enter into from time to time.

The primary source of short-term liquidity for NW Natural is from the sale of commercial paper, available cash from a multi-year credit facility, and short-term credit facilities. NW Natural has a separate commercial paper program and separate bank facilities. In addition to issuing commercial paper or bank loans to meet working capital requirements, including seasonal requirements to finance gas purchases and accounts receivable, short-term debt may also be used to temporarily fund capital requirements. For NW Natural, commercial paper and bank loans are periodically refinanced through the sale of long-term debt or equity contributions from NW Holdings. Commercial paper, when outstanding, is sold through two commercial banks under an issuing and paying agency agreement and is supported by one or more unsecured revolving credit facilities. See “Credit Agreements” below.

At December 31, 2020 and 2019, NW Holdings had short-term debt outstanding of $304.5 million and $149.1 million, respectively. The weighted average interest rate of NW Holdings' short-term debt outstanding at December 31, 2020 and 2019 was 0.5% and 2.0%, respectively. NW Natural had short-term debt outstanding of $231.5 million and $125.1 million, respectively. The weighted average interest rate of NW Natural's short-term debt outstanding at December 31, 2020 and 2019 was 0.4% and 2.0%, respectively.

Credit Agreements

NW Holdings

NW Holdings has a $100 million credit agreement, with a feature that allows it to request increases in the total commitment amount, up to a maximum of $150 million. The maturity date of the agreement is October 2, 2023, with available extensions of commitments for two additional one-year periods, subject to lender approval.

All lenders under the NW Holdings credit agreement are major financial institutions with committed balances and investment grade credit ratings as of December 31, 2020 as follows:

In millions

Lender rating, by category	Loan Commitment
AA/Aa	$ 100
Total	$ 100

Based on credit market conditions, it is possible one or more lending commitments could be unavailable to NW Holdings if the lender defaulted due to lack of funds or insolvency; however, NW Holdings does not believe this risk to be imminent due to the lenders' strong investment-grade credit ratings.

The NW Holdings credit agreement permits the issuance of letters of credit in an aggregate amount of up to $40 million. The principal amount of borrowings under the credit agreement is due and payable on the maturity date. The credit agreement requires NW Holdings to maintain a consolidated indebtedness to total capitalization ratio of 70% or less. Failure to comply with this covenant would entitle the lenders to terminate their lending commitments and accelerate the maturity of all amounts outstanding. NW Holdings was in compliance with this covenant at December 31, 2020 and 2019, with consolidated indebtedness to total capitalization ratios of 58.6% and 54.3%, respectively.

The agreement also requires NW Holdings to maintain debt ratings (which are defined by a formula using NW Natural's credit ratings in the event NW Holdings does not have a credit rating) with Standard & Poor's (S&P) and Moody's Investors Service, Inc. (Moody’s) and notify the lenders of any change in its senior unsecured debt ratings or senior secured debt ratings, as applicable, by such rating agencies. A change in NW Holdings' debt ratings by S&P or Moody’s is not an event of default, nor is the maintenance of a specific minimum level of debt rating a condition of drawing upon the credit agreement. Rather, interest rates on any loans outstanding under the credit agreements are tied to debt ratings and therefore, a change in the debt rating would increase or decrease the cost of any loans under the credit agreements when ratings are changed. NW Holdings does not currently maintain ratings with S&P or Moody's.

Interest charges on the credit agreement are indexed to the London Interbank Offered Rate (LIBOR). The agreement contains a provision to transition to an equivalent replacement rate upon the phase-out of LIBOR in 2022.

NW Holdings had no letters of credit issued and outstanding at December 31, 2020 and 2019. NW Holdings had a $1.0 million letter of credit issued and outstanding, separate from the aforementioned credit agreement, at December 31, 2019 for purposes of facilitating the Suncadia acquisition, which was extinguished after the close of the transaction in February 2020.

NW Natural

NW Natural has a multi-year credit agreement for unsecured revolving loans totaling $300 million, with a feature that allows NW Natural to request increases in the total commitment amount, up to a maximum of $450 million. The maturity date of the agreement is October 2, 2023 with an available extension of commitments for two additional one-year periods, subject to lender approval.

All lenders under the NW Natural credit agreement are major financial institutions with committed balances and investment grade credit ratings as of December 31, 2020 as follows:

In millions

Lender rating, by category	Loan Commitment
AA/Aa	$ 300
Total	$ 300

Based on credit market conditions, it is possible one or more lending commitments could be unavailable to NW Natural if the lender defaulted due to lack of funds or insolvency; however, NW Natural does not believe this risk to be imminent due to the lenders' strong investment-grade credit ratings.

The NW Natural credit agreement permits the issuance of letters of credit in an aggregate amount of up to $60 million. The principal amount of borrowings under the credit agreement is due and payable on the maturity date. There were no outstanding balances under this credit agreement at December 31, 2020 or 2019. The credit agreement requires NW Natural to maintain a consolidated indebtedness to total capitalization ratio of 70% or less. Failure to comply with this covenant would entitle the lenders to terminate their lending commitments and accelerate the maturity of all amounts outstanding. NW Natural was in compliance with this covenant at December 31, 2020 and 2019, with consolidated indebtedness to total capitalization ratios of 57.9% and 54.1%, respectively.

The agreement also requires NW Natural to maintain credit ratings with S&P and Moody’s and notify the lenders of any change in NW Natural's senior unsecured debt ratings or senior secured debt ratings, as applicable, by such rating agencies. A change in NW Natural's debt ratings by S&P or Moody’s is not an event of default, nor is the maintenance of a specific minimum level of debt rating a condition of drawing upon the credit agreement. Rather, interest rates on any loans outstanding under the agreement are tied to debt ratings and therefore, a change in the debt rating would increase or decrease the cost of any loans under the credit agreement when ratings are changed. See "*Credit Ratings*" below.

Interest charges on the credit agreement are indexed to LIBOR. The agreement contains a provision to transition to an equivalent replacement rate upon the phase-out of LIBOR.

Credit Ratings

NW Holdings does not currently maintain ratings with S&P or Moody's. NW Natural's credit ratings are a factor of liquidity, potentially affecting access to the capital markets including the commercial paper market. NW Natural's credit ratings also have an impact on the cost of funds and the need to post collateral under derivative contracts.

The following table summarizes NW Natural's current credit ratings:

	S&P	Moody's
Commercial paper (short-term debt)	A-1	P-2
Senior secured (long-term debt)	AA-	A2
Senior unsecured (long-term debt)	n/a	Baa1
Corporate credit rating	A+	n/a
Ratings outlook	Stable	Stable

The above credit ratings and ratings outlook are dependent upon a number of factors, both qualitative and quantitative, and are subject to change at any time. The disclosure of or reference to these credit ratings is not a recommendation to buy, sell or hold NW Holdings or NW Natural securities. Each rating should be evaluated independently of any other rating.

As part of the ring-fencing conditions agreed upon with the OPUC and WUTC in connection with the holding company reorganization, NW Holdings and NW Natural are required to maintain separate credit ratings, long-term debt ratings, and preferred stock ratings, if any.

Long-Term Debt

The following NW Natural debentures were retired in the periods indicated:

	Year Ended December 31,		
In millions	2020	2019	2018
NW Natural First Mortgage Bonds			
Series 6.60% due 2018	$ —	$ —	$ 22
Series 1.55% due 2018	—	—	75
Series 8.31% due 2019	—	10	—
Series 7.63% due 2019	—	20	—
Series 5.37% due 2020	75	—	—
Total	$ 75	$ 30	$ 97

In June 2019, NWN Water, a wholly-owned subsidiary of NW Holdings, entered into a two-year term loan agreement for $35.0 million. The loan carried an interest rate of 0.70% at December 31, 2020, which is based upon the one-month LIBOR rate. The loan is guaranteed by NW Holdings and requires NW Holdings to maintain a consolidated indebtedness to total capitalization ratio of 70% or less. Failure to comply with this covenant would entitle the lenders to terminate their lending commitments and accelerate the maturity of all amounts outstanding. NW Holdings was in compliance with this covenant at December 31, 2020, with a consolidated indebtedness to total capitalization ratio of 58.6%.

In March 2020, NW Natural issued $150.0 million of FMBs with an interest rate of 3.60%, due in 2050. In February 2020, NW Natural retired $75.0 million of FMBs with an interest rate of 5.37%.

$10.0 million of FMBs with an interest rate of 9.05% and $50.0 million of FMBs with an interest rate of 3.18% will mature in August and September 2021, respectively.

See "Financial Condition—*Contractual Obligations*" above for long-term debt maturing over the next five years.

Bankruptcy Ring-fencing Restrictions

As part of the ring-fencing conditions agreed upon with the OPUC and WUTC in connection with the holding company reorganization, NW Natural is required to have one director who is independent from NW Natural management and from NW Holdings and to issue one share of NW Natural preferred stock to an independent third party. NW Natural was in compliance with both of these ring-fencing provisions as of December 31, 2020 and 2019. NW Natural may file a voluntary petition for bankruptcy only if approved unanimously by the Board of Directors of NW Natural, including the independent director, and by the holder of the preferred share.

Cash Flows

Operating Activities

Changes in our operating cash flows are primarily affected by net income or loss, changes in working capital requirements, and other cash and non-cash adjustments to operating results.

Operating activity highlights include:

	NW Holdings		
In millions	2020	2019	2018
Cash provided by operating activities	$ 143.0	$ 185.3	$ 168.8

	NW Natural		
In millions	2020	2019	2018
Cash provided by operating activities	$ 146.2	$ 186.2	$ 173.5

The significant drivers of changes in cash provided by operating activities discussed below apply to both NW Holdings and NW Natural.

2020 COMPARED TO 2019. The significant factors contributing to the $42.3 million and $40.0 million decreases in NW Holdings and NW Natural cash flow provided by operating activities, respectively, were as follows:
- a decrease of $25.8 million at NW Natural from increased receivables;
- a decrease of $18.0 million due to higher contributions paid to qualified defined benefit pension plans;
- a decrease of $15.8 million from decreased cash collections from our decoupling mechanism; and
- a decrease of $11.6 million due to higher environmental expenditures; partially offset by
- a decrease of $41.1 million in net deferred gas costs as the actual costs during the 2019-20 winter season were in line with estimates embedded in the PGA as opposed to gas costs in the 2018-2019 winter season that were 14% above PGA estimates.

2019 COMPARED TO 2018. The significant factors contributing to the $16.5 million and $12.7 million increases in NW Holdings and NW Natural cash flow provided by operating activities, respectively, were as follows:
- an increase of $27.5 million at NW Holdings and $24.9 million at NW Natural due to net income tax refunds in 2019 compared to payments in 2018. The refunds were primarily due to bonus depreciation taken on NW Natural's North Mist gas storage expansion which was placed into service in May 2019, as well as $6.0 million in income taxes paid in 2018 and refunded to NW Natural in 2019;
- an increase of $10.6 million from collections of both current and deferred pension expenses as a result of NW Natural's Oregon rate case; and
- an increase of $4.6 million due to lower contributions paid to qualified defined benefit pension plans; partially offset by
- a net decrease of $28.5 million at NW Natural from changes in receivables, inventories, and accounts payable, primarily reflecting increased gas purchase expenditures from average weather in 2019 compared to warmer-than average weather in 2018 as well as higher gas costs than those included in customer rates.

During the year ended December 31, 2020, NW Natural contributed $29.0 million to its qualified defined benefit pension plan, compared to $11.0 million for 2019 and $15.5 million in 2018. The amount and timing of future contributions will depend on market interest rates and investment returns on the plans' assets. See Note 10.

NW Holdings and NW Natural have lease and purchase commitments relating to our operating activities that are financed with cash flows from operations. For information on cash flow requirements related to leases and other purchase commitments, see "Financial Condition—*Contractual Obligations*" above and Note 17.

Investing Activities

Investing activity highlights include:

	NW Holdings		
In millions	2020	2019	2018
Cash used in investing activities	$ (294.3)	$ (303.8)	$ (217.5)
Capital expenditures	(273.0)	(223.5)	(214.6)

	NW Natural		
In millions	2020	2019	2018
Cash used in investing activities	$ (264.1)	$ (243.1)	$ (238.5)
Capital expenditures	(266.0)	(221.4)	(214.3)

2020 COMPARED TO 2019. Cash used in investing activities decreased $9.5 million at NW Holdings and increased $21.0 million and NW Natural, respectively.

The decrease in cash used at NW Holdings was driven by $12.5 million of proceeds from the sale of Gill Ranch and $7.0 million from the sale of Trail West. The increase in cash used at NW Natural was due to continued capital expenditures for customer growth, system reinforcement, and technology, partially offset by lower leasehold improvement expenditures at the new corporate operations center and $8.1 million of proceeds from the sale of assets.

2019 COMPARED TO 2018. Cash used in investing activities increased $86.3 million and $4.6 million at NW Holdings and NW Natural, respectively. The increase at NW Natural was driven by continued capital expenditures for customer growth, system reinforcement, and technology, as well as leasehold improvement additions at NW Natural's new corporate operations center. The increase was partially offset by lower capital expenditures due to the completion of the North Mist gas storage expansion in May 2019. The increase at NW Holdings was driven by $55.9 million higher expenditures for acquisitions, net of cash acquired.

NW Natural capital expenditures for 2021 are expected to be in the range of $280 million to $320 million and for the five-year period from 2021 to 2025 are expected to range from $1.0 billion to $1.2 billion. NW Natural Water is expected to invest approximately $15 million in 2021 related to maintenance capital expenditures for water and wastewater utilities currently owned or under a purchase and sale agreement, and for the five-year period from 2021 to 2025 capital expenditures are expected to invest approximately $40 million to $50 million.

The timing and amount of the core capital expenditures and projects for 2021 and the next five years could change based on regulation, growth, and cost estimates. Additional investments in our infrastructure during and after 2021 that are not incorporated in the estimates provided above will depend largely on additional regulations, growth, and expansion opportunities. Required funds for the investments are expected to be internally generated or financed with long-term debt or equity, as appropriate.

Financing Activities

Financing activity highlights include:

	NW Holdings		
In millions	2020	2019	2018
Cash provided by financing activities	$ 171.8	$ 115.5	$ 57.8
Proceeds from issuances of CP, maturities greater than 90 days	195.0	—	—
Change in short-term debt, net	(39.6)	(68.5)	163.3
Change in long-term debt	75.0	145.0	(47.0)
Proceeds from common stock issued	—	93.0	—
Cash dividend payments on common stock	(55.4)	(53.3)	(51.3)

	NW Natural		
In millions	2020	2019	2018
Cash provided by financing activities	$ 122.4	$ 54.9	$ 69.8
Proceeds from issuances of CP, maturities greater than 90 days	195.0	—	—
Change in short-term debt, net	(88.6)	(92.4)	163.3
Change in long-term debt	75.0	110.0	(47.0)
Cash dividend payments on common stock	(55.4)	(53.4)	(38.4)

2020 COMPARED TO 2019. Cash provided by financing activities increased $56.3 million and $67.5 million at NW Holdings and NW Natural, respectively.

The increase in cash provided by financing activities at NW Natural was primarily driven by $198.8 million of higher borrowings of short-term debt, net, and $2.0 million of higher cash dividends paid. The increases were partially offset by decreases of $35.0 million in long-term borrowing and the $93.2 million in capital contribution from NW Holdings to NW Natural in 2019.

The increase at NW Holdings was primarily due to $223.9 million higher in short-term borrowing, partially offset by decreases of $93.0 million in common stock issuance proceeds and $70.0 million lower repayments of long-term debt.

2019 COMPARED TO 2018. Cash provided by financing activities increased $57.7 million and decreased $14.9 million at NW Holdings and NW Natural, respectively.

The decrease in cash provided by financing activities at NW Natural was primarily driven by $255.7 million in higher repayments of short-term debt compared to 2018 and $15.0 million higher cash dividends paid. The decrease was partially offset by net issuances of $110.0 million in long-term debt in 2019 compared to net repayments of $47.0 million in 2018, as well as a capital contribution from NW Holdings to NW Natural of $93.0 million.

The increase at NW Holdings was primarily due to proceeds of $93.0 million from the June 2019 issuance of NW Holdings common stock, the issuance of $35.0 million of long-term debt at NW Natural Water, and short-term debt issuances of $24 million at NW Holdings. These increases were partially offset by the debt activity at NW Natural described above.

Pension Cost and Funding Status of Qualified Retirement Plans

NW Natural's pension costs are determined in accordance with accounting standards for compensation and retirement benefits. See “Application of Critical Accounting Policies and Estimates – *Pensions and Postretirement Benefits*” below. Pension expense for NW Natural's qualified defined benefit plan, which is allocated between operations and maintenance expenses, capital expenditures, and through October 31, 2018, the deferred regulatory balancing account, totaled $18.4 million in 2020, an increase of $1.9 million from 2019. The fair market value of pension assets in this plan increased to $373.9 million at December 31, 2020 from $313.1 million at December 31, 2019. The increase was due to a gain on plan assets of $54.6 million and $29.0 million in employer contributions, partially offset by benefit payments of $22.7 million.

Contributions made to NW Natural's company-sponsored qualified defined benefit pension plan are based on actuarial assumptions and estimates, tax regulations, and funding requirements under federal law. The qualified defined benefit pension plan was underfunded by $151.2 million at December 31, 2020. NW Natural plans to make contributions during 2021 of $20.1 million. See Note 10 for further pension disclosures.

Contingent Liabilities

Loss contingencies are recorded as liabilities when it is probable that a liability has been incurred and the amount of the loss is reasonably estimable in accordance with accounting standards for contingencies. See “*Application of Critical Accounting Policies and Estimates*” below. At December 31, 2020, NW Natural's total estimated liability related to environmental sites was $120.5 million. See Note 18 and "Results of Operations—Regulatory Matters—Rate Mechanisms—*Environmental Cost Deferral and Recovery*" above.

NW Holdings is not currently party to any direct claims or litigation, though in the future it may be subject to claims and litigation arising in the ordinary course of business.

New Accounting Pronouncements

For a description of recent accounting pronouncements that may have an impact on our financial condition, results of operations, or cash flows, see Note 2.

APPLICATION OF CRITICAL ACCOUNTING POLICIES AND ESTIMATES

In preparing financial statements in accordance with U.S. GAAP, management exercises judgment to assess the potential outcomes and related accounting impacts in the selection and application of accounting principles, including making estimates and assumptions that affect reported amounts of assets, liabilities, revenues, expenses, and related disclosures in the financial statements. Management considers critical accounting policies to be those which are most important to the representation of financial condition and results of operations and which require management’s most difficult and subjective or complex judgments, including accounting estimates that could result in materially different amounts if reported under different conditions or used different assumptions. Our most critical estimates and judgments for both NW Holdings and NW Natural include accounting for:

- regulatory accounting;
- revenue recognition;
- derivative instruments and hedging activities;
- pensions and postretirement benefits;
- income taxes;
- environmental contingencies; and
- impairment of long-lived assets and goodwill.

Management has discussed its current estimates and judgments used in the application of critical accounting policies with the Audit Committees of the Boards of NW Holdings and NW Natural. Within the context of critical accounting policies and estimates, management is not aware of any reasonably likely events or circumstances that would result in materially different amounts being reported.

Regulatory Accounting

The NGD segment is regulated by the OPUC and WUTC, which establish the rates designed to recover specific costs of providing regulatory services, and, to a certain extent, set forth special accounting treatment for certain regulatory transactions for which NW Natural records regulatory assets and liabilities. In general, the same accounting principles as non-regulated companies reporting under U.S. GAAP are used. However, authoritative guidance for regulated operations (regulatory accounting) requires different accounting treatment for regulated companies to show the effects of such regulation. For example, NW Natural accounts for the cost of gas using a PGA deferral and cost recovery mechanism, which is submitted for approval annually to the OPUC and WUTC. See "Results of Operations—Regulatory Matters—Rate Mechanisms—*Purchased Gas Adjustment*" above. There are other expenses and revenues that the OPUC or WUTC may require NW Natural to defer for recovery or refund in future periods. Regulatory accounting requires NW Natural to account for these types of deferred expenses (or deferred revenues) as regulatory assets (or regulatory liabilities) on the balance sheet. When the recovery of these regulatory assets from, or refund of regulatory liabilities to, customers is approved, NW Natural recognizes the expense or revenue on the income statement at the same time the adjustment to amounts included in rates charged to customers.

The conditions that must be satisfied to adopt the accounting policies and practices of regulatory accounting include:
- an independent regulator sets rates;
- the regulator sets the rates to cover specific costs of delivering service; and
- the service territory lacks competitive pressures to reduce rates below the rates set by the regulator.

Because NW Natural's NGD operations satisfy all three conditions, NW Natural continues to apply regulatory accounting to NGD operations. Future accounting changes, regulatory changes, or changes in the competitive environment could require NW Natural to discontinue the application of regulatory accounting for some or all of our regulated businesses. This would require the write-off of those regulatory assets and liabilities that would no longer be probable of recovery from or refund to customers.

Based on current accounting and regulatory competitive conditions, NW Natural believes it is reasonable to expect continued application of regulatory accounting for NGD activities. Further, it is reasonable to expect the recovery or refund of NW Natural's regulatory assets and liabilities at December 31, 2020 through future customer rates. If it is determined that all or a portion of these regulatory assets or liabilities no longer meet the criteria for continued application of regulatory accounting, then NW Natural would be required to write-off the net unrecoverable balances against earnings in the period such determination is made. The net balance in regulatory asset and liability accounts was a net liability of $308.5 million and $285.3 million as of December 31, 2020 and 2019, respectively. See Note 2 for more detail on regulatory balances.

Revenue Recognition

Revenues, which are derived primarily from the sale, transportation, and storage of natural gas, are recognized upon the delivery of gas commodity or services rendered to customers.

Accrued Unbilled Revenue

For a description of the policy regarding accrued unbilled revenue, most of which relates to the NGD business at NW Natural, see Note 2. The following table presents changes in key metrics if the estimated percentage of unbilled volume at December 31 was adjusted up or down by 1%:

	2020	
In millions	Up 1%	Down 1%
Unbilled revenue increase (decrease)[(1)]	$ 0.9	$ (0.9)
Margin increase (decrease)[(1)]	0.1	(0.1)
Net income before tax increase (decrease)[(1)]	0.1	(0.1)

(1) Includes impact of regulatory mechanisms including decoupling mechanism and excludes the impact of unbilled revenue from water services.

Derivative Instruments and Hedging Activities

NW Natural's gas acquisition and hedging policies set forth guidelines for using financial derivative instruments to support prudent risk management strategies. These policies specifically prohibit the use of derivatives for trading or speculative purposes. Financial derivative contracts are utilized to hedge a portion of natural gas sale requirements. These contracts include swaps, options, and combinations of option contracts. NW Natural primarily uses these derivative financial instruments to manage commodity price variability. A small portion of NW Natural's derivative hedging strategy involves foreign currency exchange contracts.

Derivative instruments are recorded on the balance sheet at fair value. If certain regulatory conditions are met, then the derivative instrument fair value is recorded together with an offsetting entry to a regulatory asset or liability account pursuant to regulatory accounting, and no unrealized gain or loss is recognized in current income or loss. See "*Regulatory Accounting*" above for additional information. The gain or loss from the fair value of a derivative instrument subject to regulatory deferral is included in the recovery from, or refund to, NGD business customers in future periods. If a derivative contract is not subject to regulatory deferral, then the accounting treatment for unrealized gains and losses is recorded in accordance with accounting standards for derivatives and hedging which is either in current income or loss or in accumulated other comprehensive income or loss (AOCI or AOCL). Derivative contracts outstanding at December 31, 2020, 2019 and 2018 were measured at fair value using models or other market accepted valuation methodologies derived from observable market data. Estimates of fair value may change significantly from period-to-period depending on market conditions, notional amounts, and prices. These changes may have an impact on results of operations, but the impact would largely be mitigated due to the majority of derivative activities being subject to regulatory deferral treatment. For more information on derivative activity and associated regulatory treatment, see Note 2 and Note 16.

The following table summarizes the amount of gains realized from commodity price transactions for the last three years:

In millions	2020	2019	2018
NGD business net gain on:			
Commodity Swaps	$ 2.3	$ 17.9	$ 7.4

Realized gains and losses from commodity hedges shown above were recorded in cost of gas and were, or will be, included in annual PGA rates.

Pensions and Postretirement Benefits

NW Natural maintains a qualified non-contributory defined benefit pension plan, non-qualified supplemental pension plans for eligible executive officers and certain key employees, and other postretirement employee benefit plans covering certain non-union employees. NW Natural also has a qualified defined contribution plan (Retirement K Savings Plan) for all eligible employees. Only the qualified defined benefit pension plan and Retirement K Savings Plan have plan assets, which are held in qualified trusts to fund the respective retirement benefits. The qualified defined benefit retirement plan for union and non-union employees was closed to new participants several years ago. Non-union and union employees hired or re-hired after December 31, 2006 and 2009, respectively, and employees of certain NW Holdings subsidiaries are provided an enhanced Retirement K Savings Plan benefit. The postretirement Welfare Benefit Plan for non-union employees was also closed to new participants several years ago.

Net periodic pension and postretirement benefit costs (retirement benefit costs) and projected benefit obligations (benefit obligations) are determined using a number of key assumptions including discount rates, rate of compensation increases, retirement ages, mortality rates and an expected long-term return on plan assets. See Note 10.

Accounting standards also require balance sheet recognition of unamortized actuarial gains and losses and prior service costs in AOCI or AOCL, net of tax. However, the retirement benefit costs related to qualified defined benefit pension and postretirement benefit plans are generally recovered in rates charged to NGD customers, which are set based on accounting standards for pensions and postretirement benefit expenses. As such, NW Natural received approval from the OPUC to recognize the unamortized actuarial gains and losses and prior service costs as a regulatory asset or regulatory liability based on expected rate recovery, rather than including it as AOCI or AOCL under common equity. See "*Regulatory Accounting"* above and Note 2, "*Industry Regulation*".

In 2011, NW Natural received regulatory approval from the OPUC and began deferring a portion of pension expense above or below the amount set in rates to a regulatory balancing account on the balance sheet. As part of general rate case proceedings, on October 26, 2018, the OPUC issued an order to freeze NW Natural's pension balancing account as of October 31, 2018. In March 2019, the OPUC issued an order resolving the remaining open items for NW Natural's 2018 Oregon general rate case regarding recovery of the pension balancing account. At December 31, 2020, the cumulative amount deferred for future pension cost recovery was $50.5 million, including accrued interest. The regulatory balancing account includes the recognition of accrued interest on the account balance at NW Natural's authorized rate of return from 2011 through October 31, 2018, and at 4.3% thereafter. See "Regulatory Matters - Rate Mechanisms - *Pension Cost Deferral and Pension Balancing Account*" above for more information.

A number of factors, as discussed above, are considered in developing pension and postretirement benefit assumptions. For the December 31, 2020 measurement date, NW Natural reviewed and updated:

- the weighted-average discount rate assumptions for pensions decreased from 3.16% for 2019 to 2.36% for 2020, and our weighted-average discount rate assumptions for other postretirement benefits decreased from 3.11% for 2019 to 2.34% for 2020. The new rate assumptions were determined for each plan based on a matching of benchmark interest rates to the estimated cash flows, which reflect the timing and amount of future benefit payments. Benchmark interest rates are drawn from the FTSE Above Median Curve, which consists of high quality bonds rated AA- or higher by S&P or Aa3 or higher by Moody's;
- the expected annual rate of future compensation increases for bargaining unit employees, which remained consistent with 2019, of 6.50% in 2020 and 3.50% thereafter. The rate for 2020 reflects a new collective bargaining agreement that took effect December 1, 2019. The expected annual rate of future compensation was 3.50% for non-bargaining employees;
- the expected long-term return on qualified defined benefit plan assets remains unchanged at 7.25%;
- the mortality rate assumptions were updated from Pri-2012 mortality tables using scale MP-2019 to Pri-2012 mortality tables using scale MP-2020, which partially offset increases of the projected benefit obligation; and
- other key assumptions, which were based on actual plan experience and actuarial recommendations.

At December 31, 2020, the net pension liability (benefit obligations less market value of plan assets) for NW Natural's qualified defined benefit plan decreased $13.1 million compared to 2019. The decrease in the net pension liability is primarily due to the

$60.9 million increase in plan assets, partially offset by the $47.8 million increase to the pension benefit obligation. The liability for non-qualified plans increased $2.7 million, and the liability for other postretirement benefits decreased $0.5 million in 2020.

The expected long-term rate of return on plan assets is determined by averaging the expected earnings for the target asset portfolio. In developing expected return, historical actual performance and long-term return projections are analyzed, which gives consideration to the current asset mix and target asset allocation.

NW Natural believes its pension assumptions are appropriate based on plan design and an assessment of market conditions. The following shows the sensitivity of retirement benefit costs and benefit obligations to changes in certain actuarial assumptions:

Dollars in millions	Change in Assumption	Impact on 2020 Retirement Benefit Costs	Impact on Retirement Benefit Obligations at Dec. 31, 2020
Discount rate:	(0.25)%		
Qualified defined benefit plans		$ 1.5	$ 18.4
Non-qualified plans		—	1.0
Other postretirement benefits		0.1	0.9
Expected long-term return on plan assets:	(0.25)%		
Qualified defined benefit plans		0.8	N/A

In July 2012, President Obama signed MAP-21 into law. This legislation changed several provisions affecting pension plans, including temporary funding relief and Pension Benefit Guaranty Corporation (PBGC) premium increases, which shifts the level of minimum required contributions from the short-term to the long-term as well as increasing the operational costs of running a pension plan. MAP-21 established a new minimum and maximum corridor for segment rates based on a 25-year average of bond yields, which resulted in lower minimum contributions requirements than those under previous regulations. MAP-21, as amended, provides for the current corridor to be in effect through 2020 and subsequently broaden on an annual basis from 2021 through 2024.

Income Taxes

Valuation Allowances

Deferred tax assets are recognized to the extent that these assets are believed to be more likely than not to be realized. In making such a determination, available positive and negative evidence is considered, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations. NW Holdings and NW Natural have determined that all recorded deferred tax assets are more likely than not to be realized as of December 31, 2020. See Note 11.

Uncertain Tax Benefits

The calculation of tax liabilities involves dealing with uncertainties in the application of complex tax laws and regulations in the jurisdictions in which we operate. A tax benefit from a material uncertain tax position will only be recognized when it is more likely than not that the position, or some portion thereof, will be sustained upon examination, including resolution of any related appeals or litigation processes, on the basis of the technical merits. NW Holdings and NW Natural participate in the Compliance Assurance Process (CAP) with the Internal Revenue Service (IRS). Under the CAP program companies work with the IRS to identify and resolve material tax matters before the federal income tax return is filed each year. No reserves for uncertain tax benefits were recorded during 2020, 2019, or 2018. See Note 11.

Tax Legislation

When significant proposed or enacted changes in income tax rules occur we consider whether there may be a material impact to our financial position, results of operations, cash flows, or whether the changes could materially affect existing assumptions used in making estimates of tax related balances.

On December 22, 2017, H.R.1 - An Act to provide for reconciliation pursuant to titles II and V of the concurrent resolution on the budget for fiscal year 2018, also known as the Tax Cuts and Jobs Act (TCJA), was enacted. The TCJA lowered the U.S. federal corporate income tax rate to 21% from the existing maximum rate of 35%, effective for our tax year beginning January 1, 2018. The TCJA includes specific provisions related to regulated public utilities that generally provide for the continued deductibility of interest expense and the elimination of bonus depreciation. Certain rate normalization requirements for accelerated cost recovery benefits related to regulated plant balances also continue. See Note 11 for more information on how we are impacted by the TCJA.

With respect to other tax legislation, the final tangible property regulations applicable to all taxpayers were issued on September 13, 2013 and were generally effective for taxable years beginning on or after January 1, 2014. In addition, procedural guidance related to the regulations was issued under which taxpayers may make accounting method changes to comply with the regulations. We have evaluated the regulations and do not anticipate any material impact. However, unit-of-property guidance applicable to natural gas distribution networks has not yet been issued and is expected in the near future. We will further evaluate the effect of these regulations after this guidance is issued, but believe the current method is materially consistent with the new regulations and do not expect this additional guidance to have a material effect on our financial statements.

Regulatory Matters
Regulatory tax assets and liabilities are recorded to the extent it is probable they will be recoverable from, or refunded to, customers in the future. At December 31, 2020 and 2019, NW Natural had net regulatory income tax assets of $14.6 million and $16.9 million, respectively, representing future rate recovery of deferred tax liabilities resulting from differences in NGD plant financial statement and tax bases and NGD plant removal costs. These regulatory assets are currently being recovered through customer rates. At December 31, 2020 and 2019, regulatory income tax assets of $2.5 million and $2.5 million, respectively, were recorded by NW Natural, representing probable future rate recovery of deferred tax liabilities resulting from the equity portion of AFUDC. At December 31, 2020, a regulatory income tax asset of $1.7 million was recorded by NW Natural, representing future recovery of Oregon Corporate Activity Tax that was deferred between January 1, 2020 and October 31, 2020.

At December 31, 2020 and 2019, regulatory liability balances, representing the estimated net benefit to NGD customers resulting from the change in deferred taxes as a result of the TCJA, of $197.8 million and $205.0 million, respectively, were recorded by NW Natural. These balances include a gross up for income taxes of $52.4 million and $54.3 million, respectively.

The TCJA includes specific guidance for determining the shortest time period over which the portion of this regulatory liability resulting from accelerated cost recovery of NGD plant may accrue to the benefit of customers to avoid incurring federal normalization penalties. However, it is anticipated that until such time that customers receive the direct benefit of this regulatory liability, the balance, net of the additional gross up for income taxes, will continue to provide an indirect benefit to customers by reducing the NGD rate base which determines customer rates for service. Regulatory orders were issued by Oregon in March 2019 and by Washington in October 2019 addressing the provision of these TCJA tax benefits to customers. See "Regulatory Matters-Regulatory Proceeding Updates-*Tax Reform Deferral*" for more information.

NGD rates in effect for Oregon through October 31, 2018 and for Washington through October 31, 2019 included an allowance to provide for the recovery of the anticipated provision for income taxes incurred as a result of providing regulated services. The provision for income taxes during these periods included an allowance for federal income taxes determined by utilizing the pre-TCJA federal corporate income tax rate of 35 percent. NW Natural recorded an additional regulatory liability in 2018 and 2019 reflecting the deferral of estimated rate benefit for customers due to the newly enacted 21 percent federal corporate income tax rate. At December 31, 2019, a regulatory liability of $1.7 million was recorded to reflect this estimated revenue deferral. The liability has been completely amortized to customers’ benefit as of December 31, 2020.

Environmental Contingencies
Environmental liabilities are accounted for in accordance with accounting standards under the loss contingency guidance when it is probable that a liability has been incurred and the amount of the loss is reasonably estimable. Amounts recorded for environmental contingencies take numerous factors into consideration, including, among other variables, changes in enacted laws, regulatory orders, estimated remediation costs, interest rates, insurance proceeds, participation by other parties, timing of payments, and the input of legal counsel and third-party experts. Accordingly, changes in any of these variables or other factual circumstances could have a material impact on the amounts recorded for our environmental liabilities. For a complete discussion of environmental accounting policies refer to Note 2. For a discussion of current environmental sites and liabilities refer to Note 18. In addition, for information regarding the regulatory treatment of these costs and NW Natural's regulatory recovery mechanism, see "Results of Operations—Regulatory Matters—Rate Mechanisms—*Environmental Cost Deferral and Recovery*" above.

Impairment of Long-Lived Assets and Goodwill
Long-Lived Assets
We review the carrying value of long-lived assets whenever events or changes in circumstances indicate the carrying amount of the assets might not be recoverable. Factors that would necessitate an impairment assessment of long-lived assets include a significant adverse change in the extent or manner in which the asset is used, a significant adverse change in legal factors or business climate that could affect the value of the asset, or a significant decline in the observable market value or expected future cash flows of the asset, among others.

When such factors are present, we assess the recoverability by determining whether the carrying value of the asset will be recovered through expected future cash flows. An asset is determined to be impaired when the carrying value of the asset exceeds the expected undiscounted future cash flows from the use and eventual disposition of the asset. If an impairment is indicated, we record an impairment loss for the difference between the carrying value and the fair value of the long-lived assets. Fair value is estimated using appropriate valuation methodologies, which may include an estimate of discounted cash flows.

Goodwill and Business Combinations
In a business combination, goodwill is initially measured as any excess of the acquisition-date fair value of the consideration transferred over the acquisition-date fair value of the net identifiable assets acquired.

The carrying value of goodwill is reviewed annually during the fourth quarter using balances as of October 1, or whenever events or changes in circumstance indicate that such carrying values may not be recoverable.

NW Holdings' policy for goodwill assessments begins with a qualitative analysis in which events and circumstances are evaluated, including macroeconomic conditions, industry and market conditions, regulatory environments, and the overall financial performance of the reporting unit. If the qualitative assessment indicates that the carrying value may be at risk of recoverability, a quantitative evaluation is performed to measure the carrying value against the fair value of the reporting unit. This evaluation may involve the assessment of future cash flows and other subjective factors for which uncertainty exists and could impact the estimation of future cash flows. These factors include, but are not limited to, the amount and timing of future cash flows, future growth rates, and the discount rate. Unforeseen events and changes in circumstances or market conditions could adversely affect these estimates, which could result in an impairment charge. A qualitative assessment was performed during the fourth quarter of 2020 which indicated a quantitative assessment was not required; thus, no goodwill impairment was recorded. See Note 2 and Note 15 for additional information.

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured as the aggregate of the consideration transferred, measured at fair value at the acquisition date, and the fair value of any non-controlling interest in the acquiree. Acquisition-related costs are expensed as incurred. When NW Natural acquires a business, it assesses the financial assets acquired and liabilities assumed for appropriate classification and designation in accordance with the contractual terms, economic circumstances and pertinent conditions as of the acquisition date. When there is substantial judgment or uncertainty around the fair value of acquired assets, we may engage a third party expert to assist in determining the fair values of certain assets or liabilities.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

NW Holdings and NW Natural are exposed to various forms of market risk including commodity supply risk, commodity price risk, interest rate risk, foreign currency risk, credit risk and weather risk. The following describes NW Holdings' and NW Natural's exposure to these risks, as applicable.

Commodity Supply Risk

NW Natural enters into spot, short-term, and long-term natural gas supply contracts, along with associated pipeline transportation contracts, to manage commodity supply risk. Historically, NW Natural has arranged for physical delivery of an adequate supply of gas, including gas in Mist storage and off-system storage facilities, to meet expected requirements of core NGD customers. NW Natural's long-term gas supply contracts are primarily index-based and subject to monthly re-pricing, a strategy that is intended to substantially mitigate credit exposure to physical gas counterparties. Absolute notional amounts under physical gas contracts related to open positions on derivative instruments were 458 million therms and 513 million therms as of December 31, 2020 and 2019, respectively.

Commodity Price Risk

Natural gas commodity prices are subject to market fluctuations due to unpredictable factors including weather, pipeline transportation congestion, drilling technologies, market speculation, and other factors that affect supply and demand. Commodity price risk is managed with financial swaps and physical gas reserves from a long-term investment in working interests in gas leases operated by Jonah Energy. These financial hedge contracts and gas reserves volumes are generally included in NW Natural's annual PGA filing for recovery, subject to a regulatory prudence review. Notional amounts under financial derivative contracts were $168.5 million and $123.3 million as of December 31, 2020 and 2019, respectively. The fair value of financial swaps, based on market prices at December 31, 2020, was an unrealized gain of $12.8 million, which would result in cash inflows of $1.3 million in 2021 and $12.5 million in 2022, and cash outflows of $1.0 million in 2023.

Interest Rate Risk

NW Holdings and NW Natural are exposed to interest rate risk primarily associated with new debt financing needed to fund capital requirements, including future contractual obligations and maturities of long-term and short-term debt. Interest rate risk is primarily managed through the issuance of fixed-rate debt with varying maturities. NW Holdings and NW Natural may also enter into financial derivative instruments, including interest rate swaps, options and other hedging instruments, to manage and mitigate interest rate exposure. NW Holdings and NW Natural did not have any interest rate swaps outstanding as of December 31, 2020 or 2019.

Foreign Currency Risk

The costs of certain pipeline and off-system storage services purchased from Canadian suppliers are subject to changes in the value of the Canadian currency in relation to the U.S. currency. Foreign currency forward contracts are used to hedge against fluctuations in exchange rates for NW Natural's commodity-related demand and reservation charges paid in Canadian dollars. Notional amounts under foreign currency forward contracts were $5.9 million and $6.7 million as of December 31, 2020 and 2019, respectively. If all of the foreign currency forward contracts had been settled on December 31, 2020, a gain of $0.3 million would have been realized. See Note 16.

Credit Risk

Credit Exposure to Natural Gas Suppliers

Certain gas suppliers have either relatively low credit ratings or are not rated by major credit rating agencies. To manage this supply risk, NW Natural purchases gas from a number of different suppliers at liquid exchange points. NW Natural evaluates and monitors suppliers' creditworthiness and maintains the ability to require additional financial assurances, including deposits, letters of credit, or surety bonds, in case a supplier defaults. In the event of a supplier's failure to deliver contracted volumes of gas, the NGD business would need to replace those volumes at prevailing market prices, which may be higher or lower than the original transaction prices. NW Natural expects these costs would be subject to its PGA sharing mechanism discussed above. Since most of NW Natural's commodity supply contracts are priced at the daily or monthly market index price tied to liquid exchange points, and NW Natural has adequate storage flexibility, NW Natural believes it is unlikely a supplier default would have a material adverse effect on its financial condition or results of operations.

Credit Exposure to Financial Derivative Counterparties

Based on estimated fair value at December 31, 2020, NW Natural's overall credit exposure relating to commodity contracts is considered immaterial as it reflects amounts owed to financial derivative counterparties (see table below). However, changes in natural gas prices could result in counterparties owing NW Natural money. Therefore, NW Natural's financial derivatives policy requires counterparties to have at least an investment-grade credit rating at the time the derivative instrument is entered into and specific limits on the contract amount and duration based on each counterparty's credit rating. NW Natural actively monitors and manages derivative credit exposure and places counterparties on hold for trading purposes or requires cash collateral, letters of credit, or guarantees as circumstances warrant.

The following table summarizes NW Natural's overall financial swap and option credit exposure, based on estimated fair value, and the corresponding counterparty credit ratings. The table uses credit ratings from S&P and Moody’s, reflecting the higher of the S&P or Moody’s rating or a middle rating if the entity is split-rated with more than one rating level difference:

	Financial Derivative Position by Credit Rating Unrealized Fair Value Gain (Loss)	
In millions	2020	2019
AA/Aa	$ 11.2	$ 4.0
A/A	1.6	1.6
Total	$ 12.8	$ 5.6

In most cases, NW Natural also mitigates the credit risk of financial derivatives by having master netting arrangements with counterparties which provide for making or receiving net cash settlements. Generally, transactions of the same type in the same currency that have settlement on the same day with a single counterparty are netted and a single payment is delivered or received depending on which party is due funds.

Additionally, NW Natural has master contracts in place with each derivative counterparty, most of which include provisions for posting or calling for collateral. Generally, NW Natural can obtain cash or marketable securities as collateral with one day’s notice. Various collateral management strategies are used to reduce liquidity risk. The collateral provisions vary by counterparty but are not expected to result in the significant posting of collateral, if any. NW Natural has performed stress tests on the portfolio and concluded the liquidity risk from collateral calls is not material. Derivative credit exposure is primarily with investment grade counterparties rated AA-/Aa3 or higher. Contracts are diversified across counterparties, business types and countries to reduce credit and liquidity risk.

At December 31, 2020, financial derivative credit risk on a volumetric basis was geographically concentrated 43% in the United States and 57% in Canada, based on counterparties' location. At December 31, 2019, financial derivative credit risk on a volumetric basis was geographically concentrated 38% in the United States and 62% in Canada with our counterparties.

Credit Exposure to Insurance Companies

Credit exposure to insurance companies for loss or damage claims could be material. NW Holdings and NW Natural regularly monitor the financial condition of insurance companies who provide general liability insurance policy coverage to NW Holdings, NW Natural, their predecessors, and their subsidiaries.

Weather Risk

NW Natural has a weather normalization mechanism in Oregon; however, it is exposed to weather risk primarily from NGD business operations. A large percentage of NGD margin is volume driven, and current rates are based on an assumption of average weather. NW Natural's weather normalization mechanism in Oregon is for residential and commercial customers, which is intended to stabilize the recovery of NGD business fixed costs and reduce fluctuations in customers’ bills due to colder or warmer than average weather. Customers in Oregon are allowed to opt out of the weather normalization mechanism. As of December 31, 2020, approximately 8% of Oregon customers had opted out. In addition to the Oregon customers opting out, Washington residential and commercial customers account for approximately 12% of our total customer base and are not covered by weather normalization. The combination of Oregon and Washington customers not covered by a weather normalization mechanism is 18% of all residential and commercial customers. See "Results of Operations—Regulatory Matters—Rate Mechanisms—*WARM*" above.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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Supplemental Schedules Omitted

All other schedules are omitted because of the absence of the conditions under which they are required or because the required information is included elsewhere in the financial statements.

NW HOLDINGS MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

NW Holdings management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) or 15d-15(f) under the Securities Exchange Act of 1934, as amended. NW Holdings' internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States of America (U.S. GAAP). NW Holdings' internal control over financial reporting includes those policies and procedures that:

(i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions involving company assets;

(ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of financial statements in accordance with U.S. GAAP, and that receipts and expenditures are being made only in accordance with authorizations of management and the NW Holdings Board of Directors; and

(iii) provide reasonable assurance regarding prevention or timely detection of the unauthorized acquisition, use, or disposition of NW Holdings' assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements or fraud. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

NW Holdings management assessed the effectiveness of NW Holdings' internal control over financial reporting as of December 31, 2020. In making this assessment, NW Holdings management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control-Integrated Framework (2013)*.

Based on NW Holdings management's assessment and those criteria, NW Holdings management has concluded that it maintained effective internal control over financial reporting as of December 31, 2020.

The effectiveness of internal control over financial reporting as of December 31, 2020 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which appears in this annual report.

/s/ David H. Anderson
David H. Anderson
President and Chief Executive Officer

/s/ Frank H. Burkhartsmeyer
Frank H. Burkhartsmeyer
Senior Vice President and Chief Financial Officer

February 26, 2021

NW NATURAL MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

NW Natural management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) or 15d-15(f) under the Securities Exchange Act of 1934, as amended. NW Natural's internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States of America (U.S. GAAP). NW Natural's internal control over financial reporting includes those policies and procedures that:

(i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions involving company assets;

(ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of financial statements in accordance with U.S. GAAP, and that receipts and expenditures are being made only in accordance with authorizations of management and the NW Natural Board of Directors; and

(iii) provide reasonable assurance regarding prevention or timely detection of the unauthorized acquisition, use, or disposition of NW Natural's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements or fraud. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

NW Natural management assessed the effectiveness of NW Natural's internal control over financial reporting as of December 31, 2020. In making this assessment, NW Natural management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control-Integrated Framework (2013)*.

Based on NW Natural management's assessment and those criteria, NW Natural management has concluded that it maintained effective internal control over financial reporting as of December 31, 2020.

/s/ David H. Anderson
David H. Anderson
President and Chief Executive Officer

/s/ Frank H. Burkhartsmeyer
Frank H. Burkhartsmeyer
Senior Vice President and Chief Financial Officer

February 26, 2021

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of Northwest Natural Holding Company

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Northwest Natural Holding Company and its subsidiaries (the "Company") as of December 31, 2020 and 2019, and the related consolidated statements of comprehensive income (loss), shareholders' equity and cash flows for each of the three years in the period ended December 31, 2020, including the related notes and financial statement schedules listed in the accompanying index (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2020 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in 2019.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Accounting for the Effects of Regulatory Matters

As described in Note 2 to the consolidated financial statements, there were $380.7 million of regulatory assets and $690.0 million of regulatory liabilities as of December 31, 2020. As disclosed by management, the Company has operations that are subject to the actions of regulators which establish rates in general rate cases and other proceedings which are designed to recover specific costs of providing regulatory services for which management records regulatory assets and liabilities. Regulatory accounting requires management to account for deferred expenses (or deferred revenues) as regulatory assets (or regulatory liabilities) on the balance sheet. When the recovery of these regulatory assets from, or refund of regulatory liabilities to, customers is approved, management recognizes the expense or revenue on the income statement at the same time the adjustment to amounts is included in rates charged to customers.

The principal considerations for our determination that performing procedures relating to the Company's accounting for the effects of regulatory matters is a critical audit matter are the significant judgment by management in assessing the potential outcomes and related accounting impacts of rate cases and other proceedings. This in turn led to a high degree of auditor judgment, subjectivity and effort in performing procedures and evaluating audit evidence obtained related to the recovery of regulatory assets and the settlement of regulatory liabilities.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's assessment of rate cases and other proceedings, including the probability of recovery of regulatory assets and the settlement of regulatory liabilities and related accounting and disclosure impacts. These procedures also included, among others (i) evaluating the reasonableness of management's assessment regarding the probability of recovery of regulatory assets and settlement of regulatory liabilities, (ii) evaluating the sufficiency of the disclosures in the consolidated financial statements, and (iii) testing the regulatory assets and liabilities, including those subject to regulatory proceedings, also involved considering the provisions and formulas outlined in rate orders, other regulatory correspondence, and the application of relevant regulatory precedents.

/s/ PricewaterhouseCoopers LLP
Portland, Oregon
February 26, 2021
We have served as the Company's auditor since 1997.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholder of Northwest Natural Gas Company:

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Northwest Natural Gas Company and its subsidiaries (the "Company") as of December 31, 2020 and 2019, and the related consolidated statements of comprehensive income (loss), shareholder's equity and cash flows for each of the three years in the period ended December 31, 2020, including the related notes and financial statement schedule listed in the accompanying index (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2020 in conformity with accounting principles generally accepted in the United States of America.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in 2019.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits of these consolidated financial statements in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Accounting for the Effects of Regulatory Matters

As described in Note 2 to the consolidated financial statements, there were $380.6 million of regulatory assets and $689.2 million of regulatory liabilities as of December 31, 2020. As disclosed by management, the Company has operations that are subject to the actions of regulators which establish rates in general rate cases and other proceedings which are designed to recover specific costs of providing regulatory services for which management records regulatory assets and liabilities. Regulatory accounting requires management to account for deferred expenses (or deferred revenues) as regulatory assets (or regulatory liabilities) on the balance sheet. When the recovery of these regulatory assets from, or refund of regulatory liabilities to, customers is approved, management recognizes the expense or revenue on the income statement at the same time the adjustment to amounts is included in rates charged to customers.

The principal considerations for our determination that performing procedures relating to the Company's accounting for the effects of regulatory matters is a critical audit matter are the significant judgment by management in assessing the potential outcomes and related accounting impacts of rate cases and other proceedings. This in turn led to a high degree of auditor judgment, subjectivity and effort in performing procedures and evaluating audit evidence obtained related to the recovery of regulatory assets and the settlement of regulatory liabilities.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's assessment of rate cases and other proceedings, including the probability of recovery of regulatory assets and the settlement of regulatory liabilities and related accounting and disclosure impacts. These procedures also included, among others (i) evaluating the reasonableness of management's assessment regarding the probability of recovery of regulatory assets and settlement of regulatory liabilities, (ii) evaluating the sufficiency of the disclosures in the consolidated financial statements, and (iii) testing the regulatory assets and liabilities, including those subject to regulatory proceedings, also involved considering the provisions and formulas outlined in rate orders, other regulatory correspondence, and the application of relevant regulatory precedents.

/s/ PricewaterhouseCoopers LLP
Portland, Oregon
February 26, 2021

We have served as the Company's auditor since 1997.

NORTHWEST NATURAL HOLDING COMPANY
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

	Year Ended December 31,		
In thousands, except per share data	2020	2019	2018
Operating revenues	$ 773,679	$ 746,372	$ 706,143
Operating expenses:			
Cost of gas	262,755	254,911	255,519
Operations and maintenance	180,129	178,191	156,698
Environmental remediation	9,691	12,337	11,127
General taxes	35,078	32,388	32,172
Revenue taxes	30,291	30,325	30,082
Depreciation and amortization	103,683	91,496	85,156
Other operating expenses	3,701	3,250	3,227
Total operating expenses	625,328	602,898	573,981
Income from operations	148,351	143,474	132,162
Other income (expense), net	(13,944)	(22,836)	(3,601)
Interest expense, net	43,052	42,685	37,059
Income before income taxes	91,355	77,953	91,502
Income tax expense	21,082	12,642	24,191
Net income from continuing operations	70,273	65,311	67,311
Income (loss) from discontinued operations, net of tax	6,508	(3,576)	(2,742)
Net income	76,781	61,735	64,569
Other comprehensive income (loss):			
Change in employee benefit plan liability, net of taxes of $1,025 for 2020, $956 for 2019, and $(166) for 2018	(2,848)	(2,655)	476
Amortization of non-qualified employee benefit plan liability, net of taxes of $(244) for 2020, $(172) for 2019, and $(278) for 2018	679	476	774
Comprehensive income	$ 74,612	$ 59,556	$ 65,819
Average common shares outstanding:			
Basic	30,541	29,786	28,803
Diluted	30,599	29,859	28,873
Earnings from continuing operations per share of common stock:			
Basic	$ 2.30	$ 2.19	$ 2.34
Diluted	2.30	2.19	2.33
Earnings (loss) from discontinued operations per share of common stock:			
Basic	$ 0.21	$ (0.12)	$ (0.10)
Diluted	0.21	(0.12)	(0.09)
Earnings per share of common stock:			
Basic	$ 2.51	$ 2.07	$ 2.24
Diluted	2.51	2.07	2.24

See Notes to Consolidated Financial Statements

NORTHWEST NATURAL HOLDING COMPANY
CONSOLIDATED BALANCE SHEETS

	As of December 31,	
In thousands	2020	2019
Assets:		
Current assets:		
Cash and cash equivalents	$ 30,168	$ 9,648
Accounts receivable	88,083	67,137
Accrued unbilled revenue	57,949	56,192
Allowance for uncollectible accounts	(3,219)	(673)
Regulatory assets	31,745	41,929
Derivative instruments	13,678	6,802
Inventories	42,691	43,985
Gas reserves	11,409	15,278
Income taxes receivable	6,000	256
Other current assets	44,741	38,004
Discontinued operations - current assets	—	15,134
Total current assets	323,245	293,692
Non-current assets:		
Property, plant, and equipment	3,734,039	3,476,746
Less: Accumulated depreciation	1,079,269	1,037,847
Total property, plant, and equipment, net	2,654,770	2,438,899
Gas reserves	34,484	48,394
Regulatory assets	348,927	343,146
Derivative instruments	6,135	3,337
Other investments	49,259	63,333
Operating lease right of use asset	77,446	2,950
Assets under sales-type leases	143,759	146,310
Goodwill	69,225	49,929
Other non-current assets	49,129	38,464
Total non-current assets	3,433,134	3,134,762
Total assets	$ 3,756,379	$ 3,428,454

See Notes to Consolidated Financial Statements

NORTHWEST NATURAL HOLDING COMPANY
CONSOLIDATED BALANCE SHEETS

In thousands	As of December 31, 2020	As of December 31, 2019
Liabilities and equity:		
Current liabilities:		
Short-term debt	$ 304,525	$ 149,100
Current maturities of long-term debt	95,344	75,109
Accounts payable	97,966	113,370
Taxes accrued	13,812	11,971
Interest accrued	7,441	7,451
Regulatory liabilities	50,362	44,657
Derivative instruments	4,198	2,000
Operating lease liabilities	1,105	2,101
Other current liabilities	52,330	62,705
Discontinued operations - current liabilities	—	13,709
Total current liabilities	627,083	482,173
Long-term debt	860,081	805,955
Deferred credits and other non-current liabilities:		
Deferred tax liabilities	319,292	295,643
Regulatory liabilities	639,663	625,717
Pension and other postretirement benefit liabilities	217,287	228,129
Derivative instruments	2,852	609
Operating lease liabilities	80,621	841
Other non-current liabilities	120,767	123,388
Total deferred credits and other non-current liabilities	1,380,482	1,274,327
Commitments and contingencies (see Note 17 and Note 18)		
Equity:		
Common stock - no par value; authorized 100,000 shares; issued and outstanding 30,589 and 30,472 at December 31, 2020 and 2019, respectively	565,112	558,282
Retained earnings	336,523	318,450
Accumulated other comprehensive loss	(12,902)	(10,733)
Total equity	888,733	865,999
Total liabilities and equity	$ 3,756,379	$ 3,428,454

See Notes to Consolidated Financial Statements

NORTHWEST NATURAL HOLDING COMPANY

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

In thousands	Common Stock	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total Equity
Balance at December 31, 2017	$ 448,865	$ 302,349	$ (8,438)	$ 742,776
Comprehensive income	—	64,569	1,250	65,819
Dividends on common stock, $1.89 per share	—	(54,736)	—	(54,736)
Stock-based compensation	3,020	—	—	3,020
Shares issued pursuant to equity based plans	5,175	—	—	5,175
Cash purchase of shares for business combination	(7,945)	—	—	(7,945)
Value of shares transferred for business combination	8,525	—	—	8,525
Balance at December 31, 2018	457,640	312,182	(7,188)	762,634
Comprehensive income (loss)	—	61,735	(2,179)	59,556
Dividends on common stock, $1.90 per share	—	(56,833)	—	(56,833)
Stock-based compensation	2,601	—	—	2,601
Shares issued pursuant to equity based plans	5,085	—	—	5,085
Issuance of common stock, net of issuance costs	92,956	—	—	92,956
Reclassification of tax effects from the TCJA	—	1,366	(1,366)	—
Balance at December 31, 2019	558,282	318,450	(10,733)	865,999
Comprehensive income (loss)	—	76,781	(2,169)	74,612
Dividends on common stock, $1.91 per share	—	(58,708)	—	(58,708)
Stock-based compensation	4,361	—	—	4,361
Shares issued pursuant to equity based plans	2,469	—	—	2,469
Balance at December 31, 2020	$ 565,112	$ 336,523	$ (12,902)	$ 888,733

See Notes to Consolidated Financial Statements

NORTHWEST NATURAL HOLDING COMPANY
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
In thousands	2020	2019	2018
Operating activities:			
Net income	$ 76,781	$ 61,735	$ 64,569
Adjustments to reconcile net income to cash provided by operations:			
Depreciation and amortization	103,683	91,496	85,156
Regulatory amortization of gas reserves	17,779	19,172	16,684
Deferred income taxes	18,667	6,317	14,356
Qualified defined benefit pension plan expense	18,370	16,497	8,108
Contributions to qualified defined benefit pension plans	(28,980)	(10,970)	(15,540)
Deferred environmental expenditures, net	(27,871)	(16,226)	(14,528)
Environmental remediation expense	9,691	12,337	11,127
Regulatory revenue deferral from the TCJA	—	853	7,929
Regulatory disallowance of pension costs	—	10,500	—
Gain on sale of discontinued operations, net of tax	(5,902)	—	—
Other	(6,942)	13,907	1,596
Changes in assets and liabilities:			
Receivables, net	(16,799)	5,844	181
Inventories	1,262	(5,969)	3,207
Income and other taxes	(10,710)	4,528	(16,904)
Accounts payable	(15,910)	(16,485)	16,792
Deferred gas costs	17,590	(23,471)	(14,395)
Decoupling mechanism	2,884	18,661	4,497
Other, net	(12,467)	(4,140)	(3,419)
Discontinued operations	1,894	712	(645)
Cash provided by operating activities	143,020	185,298	168,771
Investing activities:			
Capital expenditures	(273,016)	(223,471)	(214,636)
Acquisitions, net of cash acquired	(38,263)	(56,786)	(873)
Leasehold improvement expenditures	(7,878)	(18,812)	(4,415)
Proceeds from the sale of assets	8,149	659	477
Proceeds from sale of equity method investment	7,000	—	—
Proceeds from sale of discontinued operations	12,500	—	—
Other	1,654	(3,544)	1,421
Discontinued operations	(4,423)	(1,827)	573
Cash used in investing activities	(294,277)	(303,781)	(217,453)

NORTHWEST NATURAL HOLDING COMPANY
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2020	2019	2018
Financing activities:			
Proceeds from stock options exercised	68	2,015	1,546
Proceeds from common stock issued	—	92,956	—
Long-term debt issued	150,000	175,000	50,000
Long-term debt retired	(75,000)	(30,000)	(97,000)
Proceeds from term loan due within one year	150,000	—	—
Repayment of term loan	(150,000)	—	—
Proceeds from issuances of commercial paper, maturities greater than 90 days	195,025	—	—
Changes in other short-term debt, net	(39,600)	(68,520)	163,274
Cash dividend payments on common stock	(55,420)	(53,339)	(51,311)
Stock purchases related to acquisitions	—	—	(7,951)
Other	(3,296)	(2,614)	(715)
Cash provided by financing activities	171,777	115,498	57,843
Increase (decrease) in cash and cash equivalents	20,520	(2,985)	9,161
Cash and cash equivalents, beginning of period	9,648	12,633	3,472
Cash and cash equivalents, end of period	$ 30,168	$ 9,648	$ 12,633
Supplemental disclosure of cash flow information:			
Interest paid, net of capitalization	$ 42,651	$ 41,231	$ 35,324
Income taxes paid (refunded)	13,644	(96)	27,370

See Notes to Consolidated Financial Statements

NORTHWEST NATURAL GAS COMPANY

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

In thousands	Year Ended December 31, 2020	2019	2018
Operating revenues	$ 758,748	$ 739,944	$ 705,571
Operating expenses:			
Cost of gas	262,980	255,135	255,743
Operations and maintenance	168,869	169,091	155,225
Environmental remediation	9,691	12,337	11,127
General taxes	34,459	32,075	32,086
Revenue taxes	30,291	30,325	30,082
Depreciation and amortization	101,586	90,405	84,986
Other operating expenses	3,232	3,230	3,223
Total operating expenses	611,108	592,598	572,472
Income from operations	147,640	147,346	133,099
Other income (expense), net	(15,116)	(22,968)	(3,599)
Interest expense, net	40,866	41,339	36,992
Income before income taxes	91,658	83,039	92,508
Income tax expense	21,095	14,065	24,459
Net income from continuing operations	70,563	68,974	68,049
Loss from discontinued operations, net of tax	—	—	(1,723)
Net income	70,563	68,974	66,326
Other comprehensive income (loss):			
Change in employee benefit plan liability, net of taxes of $1,025 for 2020, $956 for 2019, and $(166) for 2018	(2,848)	(2,655)	476
Amortization of non-qualified employee benefit plan liability, net of taxes of $(244) for 2020, $(172) for 2019, and $(278) for 2018	679	476	774
Comprehensive income	$ 68,394	$ 66,795	$ 67,576

See Notes to Consolidated Financial Statements

NORTHWEST NATURAL GAS COMPANY
CONSOLIDATED BALANCE SHEETS

In thousands	As of December 31, 2020	2019
Assets:		
Current assets:		
Cash and cash equivalents	$ 10,453	$ 5,919
Accounts receivable	80,035	66,823
Accrued unbilled revenue	57,890	56,139
Receivables from affiliates	660	787
Allowance for uncollectible accounts	(3,107)	(672)
Regulatory assets	31,745	41,929
Derivative instruments	13,678	6,802
Inventories	42,325	43,896
Gas reserves	11,409	15,278
Other current assets	37,909	33,258
Total current assets	282,997	270,159
Non-current assets:		
Property, plant, and equipment	3,683,776	3,456,075
Less: Accumulated depreciation	1,075,446	1,036,593
Total property, plant, and equipment, net	2,608,330	2,419,482
Gas reserves	34,484	48,394
Regulatory assets	348,887	343,146
Derivative instruments	6,135	3,337
Other investments	49,242	49,837
Operating lease right of use asset	77,328	2,760
Assets under sales-type leases	143,759	146,310
Other non-current assets	48,174	38,062
Total non-current assets	3,316,339	3,051,328
Total assets	$ 3,599,336	$ 3,321,487

See Notes to Consolidated Financial Statements

NORTHWEST NATURAL GAS COMPANY
CONSOLIDATED BALANCE SHEETS

In thousands	As of December 31, 2020	2019
Liabilities and equity:		
Current liabilities:		
Short-term debt	$ 231,525	$ 125,100
Current maturities of long-term debt	59,955	74,907
Accounts payable	95,170	111,641
Payables to affiliates	13,820	1,546
Taxes accrued	13,724	11,717
Interest accrued	7,338	7,441
Regulatory liabilities	50,362	44,657
Derivative instruments	4,198	2,000
Operating lease liabilities	1,054	1,979
Other current liabilities	51,907	61,438
Total current liabilities	529,053	442,426
Long-term debt	857,265	769,081
Deferred credits and other non-current liabilities:		
Deferred tax liabilities	318,034	309,297
Regulatory liabilities	638,793	625,717
Pension and other postretirement benefit liabilities	217,287	228,129
Derivative instruments	2,852	609
Operating lease liabilities	80,559	772
Other non-current liabilities	120,309	123,260
Total deferred credits and other non-current liabilities	1,377,834	1,287,784
Commitments and contingencies (see Note 17 and Note 18)		
Equity:		
Common stock	319,506	319,557
Retained earnings	528,580	513,372
Accumulated other comprehensive loss	(12,902)	(10,733)
Total equity	835,184	822,196
Total liabilities and equity	$ 3,599,336	$ 3,321,487

See Notes to Consolidated Financial Statements

NORTHWEST NATURAL GAS COMPANY

CONSOLIDATED STATEMENTS OF SHAREHOLDER'S EQUITY

In thousands	Common Stock	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total Equity
Balance at December 31, 2017	$ 448,865	$ 302,349	$ (8,438)	$ 742,776
Comprehensive income	—	66,326	1,250	67,576
Dividends on common stock	—	(41,035)	—	(41,035)
Stock-based compensation[(1)]	2,161	—	—	2,161
Shares issued pursuant to equity based plans	3,075	—	—	3,075
Transfer of investments to NW Holdings as of October 1, 2018	(227,649)	168,764	—	(58,885)
Balance at December 31, 2018	226,452	496,404	(7,188)	715,668
Comprehensive income (loss)	—	68,974	(2,179)	66,795
Dividends on common stock	—	(53,372)	—	(53,372)
Capital contribution from parent	93,105	—	—	93,105
Reclassification of tax effects from the TCJA	—	1,366	(1,366)	—
Balance at December 31, 2019	319,557	513,372	(10,733)	822,196
Comprehensive income (loss)	—	70,563	(2,169)	68,394
Dividends on common stock	—	(55,355)	—	(55,355)
Other	(51)	—	—	(51)
Balance at December 31, 2020	$ 319,506	$ 528,580	$ (12,902)	$ 835,184

(1) Stock-based compensation is based on stock awards of NW Natural to be issued in shares of NW Holdings.

See Notes to Consolidated Financial Statements

NORTHWEST NATURAL GAS COMPANY

CONSOLIDATED STATEMENTS OF CASH FLOWS

In thousands	Year Ended December 31, 2020	2019	2018
Operating activities:			
Net income	$ 70,563	$ 68,974	$ 66,326
Adjustments to reconcile net income to cash provided by operations:			
Depreciation and amortization	101,586	90,405	84,986
Regulatory amortization of gas reserves	17,779	19,172	16,684
Deferred income taxes	4,645	4,046	12,330
Qualified defined benefit pension plan expense	18,370	16,497	8,108
Contributions to qualified defined benefit pension plans	(28,980)	(10,970)	(15,540)
Deferred environmental expenditures, net	(27,871)	(16,226)	(14,528)
Environmental remediation expense	9,691	12,337	11,127
Regulatory revenue deferral from the TCJA	—	853	7,929
Regulatory disallowance of pension costs	—	10,500	—
Other	(7,025)	12,317	883
Changes in assets and liabilities:			
Receivables, net	(16,540)	9,264	(3,920)
Inventories	1,539	(5,990)	3,212
Income and other taxes	10,832	496	(7,854)
Accounts payable	(18,909)	(18,548)	13,937
Deferred gas costs	17,590	(23,471)	(14,395)
Decoupling mechanism	2,884	18,661	4,497
Other, net	(9,935)	(2,141)	(3,458)
Discontinued operations	—	—	3,184
Cash provided by operating activities	146,219	186,176	173,508
Investing activities:			
Capital expenditures	(266,048)	(221,380)	(214,328)
Leasehold improvement expenditures	(7,878)	(18,812)	(4,415)
Proceeds from the sale of assets	8,149	659	477
Other	1,654	(3,544)	421
Discontinued operations	—	—	(20,617)
Cash used in investing activities	(264,123)	(243,077)	(238,462)
Financing activities:			
Proceeds from stock options exercised	—	—	1,368
Long-term debt issued	150,000	140,000	50,000
Long-term debt retired	(75,000)	(30,000)	(97,000)
Proceeds from term loan due within one year	150,000	—	—
Repayment of term loan	(150,000)	—	—
Proceeds from issuances of commercial paper, maturities greater than 90 days	195,025	—	—
Changes in other short-term debt, net	(88,600)	(92,400)	163,300
Cash contributions received from parent	—	93,155	—
Cash dividend payments on common stock	(55,355)	(53,372)	(38,387)
Other	(3,632)	(2,510)	(1,539)
Discontinued operations	—	—	(7,951)
Cash provided by financing activities	122,438	54,873	69,791
Increase (decrease) in cash and cash equivalents	4,534	(2,028)	4,837
Cash and cash equivalents, beginning of period	5,919	7,947	3,110
Cash and cash equivalents, end of period	$ 10,453	$ 5,919	$ 7,947
Supplemental disclosure of cash flow information:			
Interest paid, net of capitalization	$ 40,624	$ 39,927	$ 35,305
Income taxes paid (refunded)	6,100	2,479	27,350

See Notes to Consolidated Financial Statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. ORGANIZATION AND PRINCIPLES OF CONSOLIDATION

On October 1, 2018, we completed a reorganization into a holding company structure. In this reorganization, shareholders of NW Natural (the predecessor publicly held parent company) became shareholders of NW Holdings on a one-for-one basis; maintaining the same number of shares and ownership percentage as held in NW Natural immediately prior to the reorganization. NW Natural became a wholly-owned subsidiary of NW Holdings. Additionally, certain subsidiaries of NW Natural were transferred to NW Holdings. This reorganization was accounted for as a transaction among entities under common control. As required under accounting guidance, these subsidiaries are presented in this report as discontinued operations in the consolidated results of NW Natural. See Note 19 for additional information.

The accompanying consolidated financial statements represent the respective, consolidated financial results of NW Holdings and NW Natural and all respective companies that each registrant directly or indirectly controls, either through majority ownership or otherwise. This is a combined report of NW Holdings and NW Natural, which includes separate consolidated financial statements for each registrant.

NW Natural's regulated natural gas distribution activities are reported in the natural gas distribution (NGD) segment. The NGD segment is NW Natural's core operating business and serves residential, commercial, and industrial customers in Oregon and southwest Washington. The NGD segment is the only reportable segment for NW Holdings and NW Natural. All other activities, water businesses, and other investments are aggregated and reported as other at their respective registrant.

NW Holdings and NW Natural consolidate all entities in which they have a controlling financial interest. Investments in corporate joint ventures and partnerships that NW Holdings does not directly or indirectly control, and for which it is not the primary beneficiary, include NNG Financial's investment in Kelso-Beaver Pipeline, which is accounted for under the equity method, and NWN Energy's investment in Trail West Holdings, LLC (TWH), which was accounted for under the equity method through August 6, 2020 when it was sold to a third party. See Note 14 for activity related to TWH. NW Holdings and its direct and indirect subsidiaries are collectively referred to herein as NW Holdings, and NW Natural and its direct and indirect subsidiaries are collectively referred to herein as NW Natural. The consolidated financial statements of NW Holdings and NW Natural are presented after elimination of all intercompany balances and transactions.

In June 2018, NWN Gas Storage, a wholly-owned subsidiary of NW Natural at the time and now a wholly-owned subsidiary of NW Holdings, entered into a Purchase and Sale Agreement that provided for the sale of all of the membership interests in its wholly-owned subsidiary, Gill Ranch Storage, LLC (Gill Ranch). We concluded that the sale of Gill Ranch qualified as assets and liabilities held for sale and discontinued operations. As such, the results of Gill Ranch were presented as a discontinued operation for NW Holdings for all periods presented and for NW Natural up until the holding company reorganization was effective on October 1, 2018 on the consolidated statements of comprehensive income and cash flows, and the assets and liabilities associated with Gill Ranch were classified as discontinued operations assets and liabilities on the NW Holdings consolidated balance sheet. See Note 19 for additional information. Additionally, we reevaluated reportable segments and concluded that the remaining gas storage activities no longer met the requirements to be separately reported as a segment. Interstate Storage Services is reported in Other under NW Natural and NW Holdings as applicable, and all prior periods reflect this change. See Note 4, which provides segment information.

Notes to the consolidated financial statements reflect the activity of continuing operations for both NW Holdings and NW Natural for all periods presented, unless otherwise noted. Certain reclassifications have been made to conform prior period information to the current presentation. The reclassifications did not have a material effect on our consolidated financial statements.

2. SIGNIFICANT ACCOUNTING POLICIES

Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles in the United States of America (U.S. GAAP) requires management to make estimates and assumptions that affect reported amounts in the consolidated financial statements and accompanying notes. Actual amounts could differ from those estimates, and changes would most likely be reported in future periods. Management believes the estimates and assumptions used are reasonable.

Industry Regulation

NW Holdings' principal business is to operate as a holding company for NW Natural and its other subsidiaries.

NW Natural's principal business is the distribution of natural gas, which is regulated by the OPUC and WUTC. NW Natural also has natural gas storage services, which are regulated by the FERC, and to a certain extent by the OPUC and WUTC. Additionally, certain of NW Holdings' subsidiaries own water businesses, which are regulated by the public utility commission in the state in which the water utility is located, which is currently Oregon, Washington, Idaho and Texas. Accounting records and practices of the regulated businesses conform to the requirements and uniform system of accounts prescribed by these regulatory authorities in accordance with U.S. GAAP. The businesses in which customer rates are regulated by the OPUC, WUTC, IPUC, PUTC, and FERC have approved cost-based rates which are intended to allow such businesses to earn a reasonable return on invested capital.

In applying regulatory accounting principles, NW Holdings and NW Natural capitalize or defer certain costs and revenues as regulatory assets and liabilities pursuant to orders of the applicable state public utility commission, which provide for the recovery of revenues or expenses from, or refunds to, utility customers in future periods, including a return or a carrying charge in certain cases.

Amounts NW Natural deferred as regulatory assets and liabilities were as follows:

	Regulatory Assets	
In thousands	2020	2019
Current:		
Unrealized loss on derivatives(1)	$ 4,198	$ 2,000
Gas costs	1,979	20,140
Environmental costs(2)	4,992	4,762
Decoupling(3)	361	1,969
Pension balancing(4)	7,131	5,939
Income taxes	3,484	2,209
Other(5)	9,600	4,910
Total current	$ 31,745	$ 41,929
Non-current:		
Unrealized loss on derivatives(1)	$ 2,852	$ 609
Pension balancing(4)	43,383	48,251
Income taxes	15,368	17,173
Pension and other postretirement benefit liabilities	170,812	173,262
Environmental costs(2)	90,623	87,624
Gas costs	3,925	2,866
Decoupling(3)	1,031	—
Other(5)	20,893	13,361
Total non-current	$ 348,887	$ 343,146
Other (NW Holdings)	40	—
Total non-current -NW Holdings	$ 348,927	$ 343,146

In thousands	Regulatory Liabilities 2020	2019
Current:		
Gas costs	$ 1,118	$ 1,223
Unrealized gain on derivatives[1]	13,674	6,622
Decoupling[3]	11,793	4,831
Income taxes[6]	8,217	8,435
Other[5]	15,560	23,546
Total current	50,362	44,657
Non-current:		
Gas costs	$ 314	$ 2,013
Unrealized gain on derivatives[1]	6,135	3,337
Decoupling[3]	1,723	6,378
Income taxes[6]	189,587	198,219
Accrued asset removal costs[7]	427,960	401,893
Other[5]	13,074	13,877
Total non-current	$ 638,793	$ 625,717
Other (NW Holdings)	870	—
Total non-current -NW Holdings	$ 639,663	$ 625,717

(1) Unrealized gains or losses on derivatives are non-cash items and, therefore, do not earn a rate of return or a carrying charge. These amounts are recoverable through natural gas distribution rates as part of the annual Purchased Gas Adjustment (PGA) mechanism when realized at settlement.
(2) Refer to the Environmental Cost Deferral and Recovery table in Note 18 for a description of environmental costs.
(3) This deferral represents the margin adjustment resulting from differences between actual and expected volumes.
(4) Refer to Note 10 for information regarding the deferral of pension expenses.
(5) Balances consist of deferrals and amortizations under approved regulatory mechanisms and typically earn a rate of return or carrying charge.
(6) This balance represents estimated amounts associated with the Tax Cuts and Jobs Act. See Note 11.
(7) Estimated costs of removal on certain regulated properties are collected through rates. See "Accounting Policies—*Plant, Property, and Accrued Asset Removal Costs*" below.

The amortization period for NW Natural's regulatory assets and liabilities ranges from less than one year to an indeterminable period. Regulatory deferrals for gas costs payable are generally amortized over 12 months beginning each November 1 following the gas contract year during which the deferred gas costs are recorded. Similarly, most other regulatory deferred accounts are amortized over 12 months. However, certain regulatory account balances, such as income taxes, environmental costs, pension liabilities, and accrued asset removal costs, are large and tend to be amortized over longer periods once NW Natural has agreed upon an amortization period with the respective regulatory agency.

We believe all costs incurred and deferred at December 31, 2020 are prudent. All regulatory assets and liabilities are reviewed annually for recoverability, or more often if circumstances warrant. If we should determine that all or a portion of these regulatory assets or liabilities no longer meet the criteria for continued application of regulatory accounting, then NW Natural would be required to write-off the net unrecoverable balances in the period such determination is made.

Regulatory interest income of $4.8 million and $19.6 million and regulatory interest expense of $1.8 million and $12.3 million was recognized within other income (expense), net for the years ended December 31, 2020 and 2019, respectively.

Environmental Regulatory Accounting

See Note 18 for information about the SRRM and OPUC orders regarding implementation.

COVID-19 Impact

During 2020, our regulated utilities received approval in their respective jurisdictions to defer certain financial impacts associated with COVID-19 such as bad debt expense, financing costs to secure liquidity, lost revenues related to late fees and reconnection fees, and other COVID-19 related costs, net of offsetting direct expense reductions associated with COVID-19. As a result, we recorded a regulatory asset of approximately $4.8 million for incurred costs associated with COVID-19 that are recoverable.

New Accounting Standards

NW Natural and NW Holdings consider the applicability and impact of all accounting standards updates (ASUs) issued by the Financial Accounting Standards Board (FASB). ASUs not listed below were assessed and determined to be either not applicable or are expected to have minimal impact on consolidated financial position or results of operations.

Recently Adopted Accounting Pronouncements

ACCUMULATED OTHER COMPREHENSIVE INCOME. On February 14, 2018, the FASB issued ASU 2018-02, "Income Statement—Reporting Comprehensive Income: Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income." This update was issued in response to concerns from certain stakeholders regarding the current requirements under U.S. GAAP that deferred tax assets and liabilities are adjusted for a change in tax laws or rates, and the effect is to be included in income from continuing operations in the period of the enactment date. This requirement is also applicable to items in accumulated other comprehensive income where the related tax effects were originally recognized in other comprehensive income. The adjustment of deferred taxes due to the new corporate income tax rate enacted through the Tax Cuts and Jobs Act (TCJA) on December 22, 2017 recognized in income from continuing operations causes the tax effects of items within accumulated other comprehensive income (referred to as stranded tax effects) to not reflect the appropriate tax rate. The amendments in this update allow but do not require a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the TCJA and require certain disclosures about stranded tax effects. NW Natural adopted and applied the standard in the first quarter of 2019. NW Natural elected to reclassify the stranded tax effects of the TCJA of $1.4 million from accumulated other comprehensive loss to retained earnings in the period of adoption. Going forward, our policy is that, in the event that regulation changes result in stranded tax effects, such amounts will be reclassified from accumulated other comprehensive income (loss) to retained earnings in the final period that the related deferred tax balance remeasurement is expected to impact income from continuing operations.

CLOUD COMPUTING. On August 29, 2018, the FASB issued ASU 2018-15, "Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract." The purpose of the amendment is to align the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. The amendments in this update were effective beginning January 1, 2020. Early adoption was permitted, and NW Holdings and NW Natural early adopted ASU 2018-15 in the quarter ended March 31, 2019 utilizing the prospective application methodology. The adoption of this ASU did not materially affect the financial statements and disclosures of NW Holdings or NW Natural.

CREDIT LOSSES. On June 16, 2016, the FASB issued ASU 2016-13, "Measurement of Credit Losses on Financial Instruments," which applies to financial assets subject to credit losses and measured at amortized cost. The new standard requires financial assets measured at amortized cost to be presented at the net amount expected to be collected and the allowance for credit losses is to be recorded as a valuation account that is deducted from the amortized cost basis. The amendments in this update were effective beginning January 1, 2020 and were applied with the modified retrospective methodology. The adoption of this ASU did not materially affect the financial statements and disclosures of NW Holdings or NW Natural.

The majority of NW Holdings' and NW Natural's financial assets are either short-term in nature, such as trade receivables, or relate to leased gas facilities under approved rate schedules.

DERIVATIVES AND HEDGING. On August 28, 2017, the FASB issued ASU 2017-12, "Derivatives and Hedging: Targeted Improvements to Accounting for Hedging Activities." The purpose of the amendment is to more closely align hedge accounting with companies' risk management strategies. The ASU amends the accounting for risk component hedging, the hedged item in fair value hedges of interest rate risk, and amounts excluded from the assessment of hedge effectiveness. The guidance also amends the recognition and presentation of the effect of hedging instruments and includes other simplifications of hedge accounting. The amendments in this ASU were effective beginning January 1, 2019 and were applied prospectively to hedging instruments. The adoption did not have an impact on the financial statements or disclosures of NW Holdings or NW Natural.

FAIR VALUE MEASUREMENT. On August 28, 2018, the FASB issued ASU 2018-13, "Changes to the Disclosure Requirements for Fair Value Measurement." The purpose of the amendment is to modify the disclosure requirements for fair value measurements. The amendments in this ASU were effective beginning January 1, 2020. The amendments on changes in unrealized gains and losses, the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements and the narrative description of measurement uncertainty should be applied prospectively. All other amendments should be applied retrospectively. NW Holdings and NW Natural do not have either Level 3 fair value measurements or transfers between Level 1 or Level 2 in their current portfolios. The adoption did not have an impact on the financial statements or disclosures of NW Holdings or NW Natural.

LEASES. On February 25, 2016, the FASB issued ASU 2016-02, "Leases," which revises the existing lease accounting guidance. Pursuant to the new standard ("ASC 842"), lessees are required to recognize all leases, including operating leases that are greater than 12 months at lease commencement, on the balance sheet and record corresponding right of use assets and lease liabilities. Lessor accounting will remain substantially the same under the new standard. Quantitative and qualitative disclosures are also required for users of the financial statements to have a clear understanding of the nature of our leasing activities.

We elected the alternative prospective transition approach for adoption beginning January 1, 2019. All comparative periods prior to January 1, 2019 will retain the financial reporting and disclosure requirements of ASC 840 "Leases" ("ASC 840"). There was no cumulative effect adjustment to the opening balance of retained earnings recorded as of January 1, 2019 for adoption as there were no initial direct costs or other capitalized costs related to the legacy leases that needed to be derecognized upon adoption of ASC 842.

We elected the land easement optional practical expedient to not evaluate existing or expired land easements that were not previously accounted for as leases under the ASC 840 lease guidance. For the existing lease portfolio, we did not elect the optional practical expedient package to retain the legacy lease accounting conclusions upon adoption; we re-assessed our existing contracts under the new leasing standard including whether the contract meets the definition of a lease and lease classification. As a result, we determined that most of our underground gas storage contracts no longer meet the definition of a lease under the new lease standard.

Upon adoption on January 1, 2019, NW Holdings recorded an operating lease right of use asset and an associated operating lease liability of approximately $7.3 million, of which $7.0 million was recorded at NW Natural. Lease liabilities are measured using NW Natural's incremental borrowing rate based on information available at the lease commencement date in determining the present value of lease payments. See Note 7 for more information.

RETIREMENT BENEFITS. On August 28, 2018, the FASB issued ASU 2018-14, "Changes to the Disclosure Requirements for Defined Benefit Plans." The purpose of the amendment is to modify the disclosure requirements for defined benefit pension and other postretirement plans. The amendments in this ASU were effective beginning January 1, 2020 and were applied retrospectively. The adoption of this ASU did not materially affect the financial statements and disclosures of NW Holdings or NW Natural.

Recently Issued Accounting Pronouncements

INCOME TAXES. On December 18, 2019, the FASB issued ASU 2019-12, "Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes." The purpose of the amendment is to reduce cost and complexity related to accounting for income taxes by removing certain exceptions to the general principles and improving consistent application for other areas in Topic 740. The amendments in this ASU are effective beginning January 1, 2021. Early adoption is permitted. The amended presentation and disclosure guidance should be applied retrospectively. We do not expect this ASU to materially affect the financial statements and disclosures of NW Holdings or NW Natural.

REFERENCE RATE REFORM. On March 12, 2020, the FASB issued ASU 2020-04, "Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting." The purpose of the amendment is to provide optional expedients and exceptions for applying generally accepted accounting principles (GAAP) to contracts, hedging relationships, and other transactions affected by reference rate reform if certain criteria are met. The amendments in this ASU apply only to contracts, hedging relationships, and other transactions that reference LIBOR or another reference rate expected to be discontinued because of reference rate reform. The amendments in this ASU are effective for all entities as of March 12, 2020 through December 31, 2022. We do not expect this ASU to materially affect the financial statements and disclosures of NW Holdings or NW Natural.

Accounting Policies

The accounting policies discussed below apply to both NW Holdings and NW Natural.

Plant, Property, and Accrued Asset Removal Costs

Plant and property are stated at cost, including capitalized labor, materials, and overhead. In accordance with regulatory accounting standards, the cost of acquiring and constructing long-lived plant and property generally includes an allowance for funds used during construction (AFUDC) or capitalized interest. AFUDC represents the regulatory financing cost incurred when debt and equity funds are used for construction (see "*AFUDC*" below). When constructed assets are subject to market-based rates rather than cost-based rates, the financing costs incurred during construction are included in capitalized interest in accordance with U.S. GAAP, not as regulatory financing costs under AFUDC.

In accordance with long-standing regulatory treatment, our depreciation rates consist of three components: one based on the average service life of the asset, a second based on the estimated salvage value of the asset, and a third based on the asset's estimated cost of removal. We collect, through rates, the estimated cost of removal on certain regulated properties through depreciation expense, with a corresponding offset to accumulated depreciation. These removal costs are non-legal obligations as defined by regulatory accounting guidance. Therefore, we have included these costs as non-current regulatory liabilities rather than as accumulated depreciation on our consolidated balance sheets. In the rate setting process, the liability for removal costs is treated as a reduction to the net rate base on which the NGD business has the opportunity to earn its allowed rate of return.

The costs of NGD plant retired or otherwise disposed of are removed from NGD plant and charged to accumulated depreciation for recovery or refund through future rates. Gains from the sale of regulated assets are generally deferred and refunded to customers. For assets not related to NGD, we record a gain or loss upon the disposal of the property, and the gain or loss is recorded in operating income or loss in the consolidated statements of comprehensive income.

The provision for depreciation of NGD property, plant, and equipment is recorded under the group method on a straight-line basis with rates computed in accordance with depreciation studies approved by regulatory authorities. The weighted-average depreciation rate for NGD assets in service was approximately 3.0% for 2020, 2.9% for 2019, and 2.8% for 2018, reflecting the approximate weighted-average economic life of the property. This includes 2020 weighted-average depreciation rates for the following asset categories: 2.6% for transmission and distribution plant, 2.0% for gas storage facilities, 6.7% for general plant, and 5.1% for intangible and other fixed assets.

AFUDC. Certain additions to NGD plant include AFUDC, which represents the net cost of debt and equity funds used during construction. AFUDC is calculated using actual interest rates for debt and authorized rates for ROE, if applicable. If short-term debt balances are less than the total balance of construction work in progress, then a composite AFUDC rate is used to represent interest on all debt funds, shown as a reduction to interest charges, and on ROE funds, shown as other income. While cash is not immediately recognized from recording AFUDC, it is realized in future years through rate recovery resulting from the higher NGD cost of service. Our composite AFUDC rate was 1.9% in 2020, 3.9% in 2019, and 5.2% in 2018.

IMPAIRMENT OF LONG-LIVED ASSETS. We review the carrying value of long-lived assets whenever events or changes in circumstances indicate the carrying amount of the assets may not be recoverable. Factors that would necessitate an impairment assessment of long-lived assets include a significant adverse change in the extent or manner in which the asset is used, a significant adverse change in legal factors or business climate that could affect the value of the asset, or a significant decline in the observable market value or expected future cash flows of the asset, among others.

When such factors are present, we assess the recoverability by determining whether the carrying value of the asset will be recovered through expected future cash flows. An asset is determined to be impaired when the carrying value of the asset exceeds the expected undiscounted future cash flows from the use and eventual disposition of the asset. If an impairment is indicated, we record an impairment loss for the difference between the carrying value and the fair value of the long-lived assets. Fair value is estimated using appropriate valuation methodologies, which may include an estimate of discounted cash flows.

Cash and Cash Equivalents

For purposes of reporting cash flows, cash and cash equivalents include cash on hand plus highly liquid investment accounts with original maturity dates of three months or less. At December 31, 2020 and 2019, NW Holdings had outstanding checks of $4.4 million and $3.2 million, respectively, substantially all of which is recorded at NW Natural. These balances are included in accounts payable in the .NW Holdings and NW Natural balance sheets.

Restricted cash is primarily comprised of funds from public purpose charges for programs that assist low-income customers with bill payments or energy efficiency. As of December 31, 2020 and 2019, NW Natural had restricted cash of $5.3 million and $3.0 million, respectively. These balances are included in other current assets in the NW Holdings and NW Natural balance sheets. Changes in these balances are presented in changes in assets and liabilities - other, net in the NW Holdings and NW Natural statements of cash flows. There were no transfers between restricted cash and cash and cash equivalents during the years ended December 31, 2020 and 2019.

Revenue Recognition and Accrued Unbilled Revenue

Revenues, derived primarily from the sale and transportation of natural gas, are recognized upon delivery of gas or water, or service to customers. Revenues include accruals for gas or water delivered but not yet billed to customers based on estimates of deliveries from meter reading dates to month end (accrued unbilled revenue). Accrued unbilled revenue is dependent upon a number of factors that require management's judgment, including total natural gas receipts and deliveries, customer use of natural gas or water by billing cycle, and weather factors. Accrued unbilled revenue is reversed the following month when actual billings occur. NW Holdings' accrued unbilled revenue at December 31, 2020 and 2019 was $57.9 million and $56.2 million, respectively, substantially all of which is accrued unbilled revenue at NW Natural.

Revenues not related to NGD are derived primarily from Interstate Storage Services, asset management activities at the Mist gas storage facility, and other investments and business activities. At the Mist underground storage facility, revenues are primarily firm service revenues in the form of fixed monthly reservation charges. In addition, we also have asset management service revenue from an independent energy marketing company that optimizes commodity, storage, and pipeline capacity release transactions. Under this agreement, guaranteed asset management revenue is recognized using a straight-line, pro-rata methodology over the term of each contract. Revenues earned above the guaranteed amount are recognized as they are earned.

Revenue Taxes

Revenue-based taxes are primarily franchise taxes, which are collected from customers and remitted to taxing authorities. Revenue taxes are included in operating expenses in the statements of comprehensive income for NW Holdings and NW Natural. All revenue taxes are recorded at NW Natural and were $30.3 million, $30.3 million, and $30.1 million for 2020, 2019, and 2018, respectively.

Accounts Receivable and Allowance for Uncollectible Accounts

Accounts receivable consist primarily of amounts due for natural gas sales and transportation services to NGD customers, plus amounts due for gas storage services. NW Holdings and NW Natural establish allowances for uncollectible accounts (allowance) for trade receivables, including accrued unbilled revenue, based on the aging of receivables, collection experience of past due account balances including payment plans, and historical trends of write-offs as a percent of revenues. A specific allowance is established and recorded for large individual customer receivables when amounts are identified as unlikely to be partially or fully recovered. Inactive accounts are written-off against the allowance after they are 120 days past due or when deemed uncollectible. Differences between the estimated allowance and actual write-offs will occur based on a number of factors, including changes in economic conditions, customer creditworthiness, and natural gas prices. The allowance for uncollectible accounts is adjusted quarterly, as necessary, based on information currently available.

ALLOWANCE FOR TRADE RECEIVABLES. Accounts receivable consist primarily of amounts due for natural gas sales and transportation services to NGD customers and amounts due for gas storage services. The payment term of these receivables is generally 15 days. For these short-term receivables, it is not expected that forecasted economic conditions would significantly affect the loss estimates under stable economic conditions. For extreme situations like a financial crisis, natural disaster, and the economic slowdown caused by pandemics like COVID-19, we enhance our review and analysis.

After considering the significant exposure to quarantine-related job losses in Oregon and Washington state, NW Holdings and NW Natural expanded our standard review procedures for our allowance for uncollectible accounts calculation, including analyzing the significant indications of unemployment rate and comparing to historic economic data during the 2007-2009 time period when the country experienced an economic recession. We then considered other qualitative information including recent customer interactions related to payment plans and credit issues, statistics from our website related to credit inquiries, and economic stimulus provided by the federal government which could have a beneficial impact on residential and commercial customers' abilities to ultimately make payment on their accounts. Our provision calculation for residential and commercial accounts was estimated as a percentage of accounts that no customer payment was received for 90 or more days. For industrial accounts, we continue to analyze those accounts on an account-by-account basis with specific reserves taken as necessary.

The following table presents the activity related to the NW Holdings provision for uncollectible accounts by pool, substantially all of which is related to NW Natural's accounts receivable:

	As of December 31, 2019	Year ended December 31, 2020		As of December 31, 2020
In thousands	Beginning Balance	Provision recorded[1]	Write-offs recognized, net of recoveries	Ending Balance
Allowance for uncollectible accounts related to accounts receivable:				
Residential	$ 432	$ 2,159	$ (438)	$ 2,153
Commercial	57	821	(174)	704
Industrial	72	77	(7)	142
Accrued unbilled and other	112	166	(58)	220
Total	$ 673	$ 3,223	$ (677)	$ 3,219

[1] Includes $2.3 million that was deferred to a regulatory asset for costs associated with COVID-19 that are recoverable in future rates.

ALLOWANCE FOR NET INVESTMENTS IN SALES-TYPE LEASES. NW Natural currently holds two net investments in sales-type leases, with substantially all of the net investment balance related to the North Mist natural gas storage agreement with Portland General Electric (PGE) which is billed under an OPUC-approved rate schedule. See Note 7 for more information on the North Mist lease. Due to the nature of this service, PGE may recover the costs of the lease through general rate cases. Therefore, we expect the risk of loss due to the credit of this lessee to be remote. As such, no allowance for uncollectibility was recorded for our sales-type lease receivables. NW Natural will continue monitoring the credit health of the lessees and the overall economic environment, including the economic factors closely tied to the financial health of our current and future lessees.

Inventories

NGD gas inventories, which consist of natural gas in storage for NGD customers, are stated at the lower of weighted-average cost or net realizable value. The regulatory treatment of these inventories provides for cost recovery in customer rates. NGD gas inventories injected into storage are priced in inventory based on actual purchase costs, and those withdrawn from storage are charged to cost of gas during the period they are withdrawn at the weighted-average inventory cost.

Gas storage inventories, which primarily represented inventories at the Gill Ranch Facility and are included in Discontinued operations - current assets on the consolidated balance sheets, mainly consist of natural gas received as fuel-in-kind from storage customers. Gas storage inventories are valued at the lower of average cost or net realizable value. Cushion gas is not included in inventory balances, is recorded at original cost, and is classified as a long-term plant asset.

Materials and supplies inventories consist of inventories both related to and unrelated to NGD and are stated at the lower of average cost or net realizable value.

NW Natural's NGD and gas storage inventories totaled $24.7 million and $27.5 million at 2020 and 2019, respectively. At December 31, 2020 and 2019, NW Holdings' materials and supplies inventories, which are comprised primarily of NW Natural's materials and supplies, totaled $18.0 million and $16.5 million, respectively.

Gas Reserves

Gas reserves are payments to acquire and produce natural gas reserves. Gas reserves are stated at cost, adjusted for regulatory amortization, with the associated deferred tax benefits recorded as liabilities on the balance sheet. The current portion is calculated based on expected gas deliveries within the next fiscal year. NW Natural recognizes regulatory amortization of this asset on a volumetric basis calculated using the estimated gas reserves and the estimated therms extracted and sold each month. The amortization of gas reserves is recorded to cost of gas along with gas production revenues and production costs. See Note 13.

Derivatives

NW Natural's derivatives are measured at fair value and recognized as either assets or liabilities on the balance sheet. Changes in the fair value of the derivatives are recognized in earnings unless specific regulatory or hedge accounting criteria are met. Accounting for derivatives and hedges provides an exception for contracts intended for normal purchases and normal sales for which physical delivery is probable. In addition, certain derivative contracts are approved by regulatory authorities for recovery or refund through customer rates. Accordingly, the changes in fair value of these approved contracts are deferred as regulatory assets or liabilities pursuant to regulatory accounting principles. NW Natural's financial derivatives generally qualify for deferral under regulatory accounting. NW Natural's index-priced physical derivative contracts also qualify for regulatory deferral accounting treatment.

Derivative contracts entered into for NGD requirements after the annual PGA rate has been set and maturing during the PGA year are subject to the PGA incentive sharing mechanism. In Oregon, NW Natural participates in a PGA sharing mechanism under which it is required to select either an 80% or 90% deferral of higher or lower gas costs such that the impact on current earnings from the gas cost sharing is either 20% or 10% of gas cost differences compared to PGA prices, respectively. For each of the PGA years in Oregon beginning November 1, 2020, 2019, and 2018, NW Natural selected the 90% deferral of gas cost differences. In Washington, 100% of the differences between the PGA prices and actual gas costs are deferred. See Note 16.

NW Natural's financial derivatives policy sets forth the guidelines for using selected derivative products to support prudent risk management strategies within designated parameters. NW Natural's objective for using derivatives is to decrease the volatility of gas prices and cash flows without speculative risk. The use of derivatives is permitted only after the risk exposures have been identified, are determined not to exceed acceptable tolerance levels, and are determined necessary to support normal business activities. NW Natural does not enter into derivative instruments for trading purposes. All derivatives for NW Holdings are currently held at NW Natural.

Fair Value

In accordance with fair value accounting, we use the following fair value hierarchy for determining inputs for our debt, pension plan assets, and derivative fair value measurements:

- Level 1: Valuation is based on quoted prices for identical instruments traded in active markets;
- Level 2: Valuation is based on quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-based valuation techniques for which all significant assumptions are observable in the market; and
- Level 3: Valuation is generated from model-based techniques that use significant assumptions not observable in the market. These unobservable assumptions reflect our own estimates of assumptions market participants would use in valuing the asset or liability.

In addition, the fair value for certain pension trust investments is determined using Net Asset Value per share (NAV) as a practical expedient, and therefore they are not classified within the fair value hierarchy. These investments primarily consist of institutional investment products.

When developing fair value measurements, it is our policy to use quoted market prices whenever available or to maximize the use of observable inputs and minimize the use of unobservable inputs when quoted market prices are not available. Fair values are primarily developed using industry-standard models that consider various inputs including: (a) quoted future prices for commodities; (b) forward currency prices; (c) time value; (d) volatility factors; (e) current market and contractual prices for underlying instruments; (f) market interest rates and yield curves; (g) credit spreads; and (h) other relevant economic measures. NW Natural considers liquid points for natural gas hedging to be those points for which there are regularly published prices in a nationally recognized publication or where the instruments are traded on an exchange.

Goodwill and Business Combinations

NW Holdings, through its wholly-owned subsidiary NWN Water and NW Water's wholly-owned subsidiaries, has completed various acquisitions that resulted in the recognition of goodwill. Goodwill is measured as the excess of the acquisition-date fair value of the consideration transferred over the acquisition-date fair value of the net identifiable assets assumed. Adjustments are recorded during the measurement period to finalize the allocation of the purchase price. The carrying value of goodwill is reviewed annually during the fourth quarter using balances as of October 1, or whenever events or changes in circumstance indicate that such carrying values may not be recoverable. The goodwill assessment policy begins with a qualitative analysis in which events and circumstances are evaluated, including macroeconomic conditions, industry and market conditions, regulatory environments, and overall financial performance of the reporting unit. If the qualitative assessment indicates that the carrying value may be at risk of recoverability, a quantitative evaluation is performed to measure the carrying value of the goodwill against the fair value of the reporting unit. The reporting unit is determined primarily based on current operating segments and the level of review provided by the Chief Operating Decision Maker (CODM) and/or segment management on the operating segment's financial results. Reporting units are evaluated periodically for changes in the corporate environment.

As of December 31, 2020 and 2019, NW Holdings had goodwill of $69.2 million and $49.9 million, respectively. All of NW Holdings' goodwill was acquired through the business combinations completed by NWN Water and its wholly-owned subsidiaries. No impairment charges were recorded as a result of the fourth quarter goodwill impairment assessment.

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured as the aggregate of the consideration transferred, measured at fair value at the acquisition date, and the fair value of any non-controlling interest in the acquiree. Acquisition-related costs are expensed as incurred. When NW Natural acquires a business, it assesses the financial assets acquired and liabilities assumed for appropriate classification and designation in accordance with the contractual terms, economic circumstances and pertinent conditions as of the acquisition date. When there is substantial judgment or uncertainty around the fair value of acquired assets, we may engage a third party expert to assist in determining the fair values of certain assets or liabilities.

Income Taxes

We account for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements. Under this method, deferred tax assets and liabilities are determined on the basis of the differences between the financial statement and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the enactment date period unless, for NW Natural, a regulatory order specifies deferral of the effect of the change in tax rates over a longer period of time.

For NW Natural, deferred income tax assets and liabilities are also recognized for temporary differences where the deferred income tax benefits or expenses have previously been flowed through in the ratemaking process of the NGD business. Regulatory tax assets and liabilities are recorded on these deferred tax assets and liabilities to the extent it is believed they will be recoverable from or refunded to customers in future rates.

Deferred investment tax credits on NGD plant additions, which reduce income taxes payable, are deferred for financial statement purposes and amortized over the life of the related plant.

NW Holdings files consolidated or combined income tax returns that include NW Natural. Income tax expense is allocated on a separate company basis incorporating certain consolidated return considerations. Subsidiary income taxes payable or receivable are generally settled with NW Holdings, the common agent for income tax matters.

Interest and penalties related to unrecognized tax benefits, if any, are recognized within income tax expense and accrued interest and penalties are recognized within the related tax liability line in the consolidated balance sheets. No accrued interest or penalties for uncertain tax benefits have been recorded. See Note 11.

Environmental Contingencies

Loss contingencies are recorded as liabilities when it is probable a liability has been incurred and the amount of the loss is reasonably estimable in accordance with accounting standards for contingencies. Estimating probable losses requires an analysis of uncertainties that often depend upon judgments about potential actions by third parties. Accruals for loss contingencies are recorded based on an analysis of potential results.

With respect to environmental liabilities and related costs, estimates are developed based on a review of information available from numerous sources, including completed studies and site specific negotiations. NW Natural's policy is to accrue the full amount of such liability when information is sufficient to reasonably estimate the amount of probable liability. When information is not available to reasonably estimate the probable liability, or when only the range of probable liabilities can be estimated and no amount within the range is more likely than another, it is our policy to accrue at the low end of the range. Accordingly, due to numerous uncertainties surrounding the course of environmental remediation and the preliminary nature of several site investigations, in some cases, it may not be possible to reasonably estimate the high end of the range of possible loss. In those cases, the nature of the potential loss and the fact that the high end of the range cannot be reasonably estimated is disclosed. See Note 18.

Subsequent Events

We monitor significant events occurring after the balance sheet date and prior to the issuance of the financial statements to determine the impacts, if any, of events on the financial statements to be issued.

3. EARNINGS PER SHARE

Basic earnings or loss per share are computed using NW Holdings' net income or loss and the weighted average number of common shares outstanding for each period presented. Diluted earnings per share are computed in the same manner, except using the weighted average number of common shares outstanding plus the effects of the assumed exercise of stock options and the payment of estimated stock awards from other stock-based compensation plans that are outstanding at the end of each period presented. Anti-dilutive stock awards are excluded from the calculation of diluted earnings or loss per common share.

NW Holdings' diluted earnings or loss per share are calculated as follows:

In thousands, except per share data	2020	2019	2018
Net income from continuing operations	$ 70,273	$ 65,311	$ 67,311
Income (loss) from discontinued operations, net of tax	6,508	(3,576)	(2,742)
Net income	$ 76,781	$ 61,735	$ 64,569
Average common shares outstanding - basic	30,541	29,786	28,803
Additional shares for stock-based compensation plans (See Note 8)	58	73	70
Average common shares outstanding - diluted	30,599	29,859	28,873
Earnings from continuing operations per share of common stock:			
Basic	$ 2.30	$ 2.19	$ 2.34
Diluted	2.30	2.19	2.33
Earnings (loss) from discontinued operations per share of common stock:			
Basic	$ 0.21	$ (0.12)	$ (0.10)
Diluted	0.21	(0.12)	(0.09)
Earnings per share of common stock:			
Basic	$ 2.51	$ 2.07	$ 2.24
Diluted	2.51	2.07	2.24
Additional information:			
Anti-dilutive shares	1	—	2

4. SEGMENT INFORMATION

We primarily operate in one reportable business segment, which is NW Natural's local gas distribution business and is referred to as the NGD segment. During the second quarter of 2018, we moved forward with long-term strategic plans, which included a shift away from the California gas storage business, by entering into a Purchase and Sale Agreement that provided for the sale of all of the membership interests in Gill Ranch. See Note 19 for additional information. As such, we reevaluated reportable segments and concluded that the remaining gas storage activities no longer meet the requirements of a reportable segment. Interstate Storage Services and asset management activities at the Mist gas storage facility are now reported as other under NW Natural. NW Natural and NW Holdings also have investments and business activities not specifically related to the NGD segment, which are aggregated and reported as other and described below for each entity.

No individual customer accounts for over 10% of NW Holdings' or NW Natural's operating revenues.

Natural Gas Distribution

NW Natural's local gas distribution segment (NGD) is a regulated utility principally engaged in the purchase, sale, and delivery of natural gas and related services to customers in Oregon and southwest Washington. The NGD business is responsible for building and maintaining a safe and reliable pipeline distribution system, purchasing sufficient gas supplies from producers and marketers, contracting for firm and interruptible transportation of gas over interstate pipelines to bring gas from the supply basins into its service territory, and re-selling the gas to customers subject to rates, terms, and conditions approved by the OPUC or WUTC. NGD also includes taking customer-owned gas and transporting it from interstate pipeline connections, or city gates, to the customers' end-use facilities for a fee, which is approved by the OPUC or WUTC. Approximately 88% of NGD customers are located in Oregon and 12% in Washington. On an annual basis, residential and commercial customers typically account for around 60% of total NGD volumes delivered and around 90% of NGD margin. Industrial customers largely account for the remaining volumes and NGD margin. A small amount of the margin is also derived from miscellaneous services, gains or losses from an incentive gas cost sharing mechanism, and other service fees.

Industrial sectors served by the NGD business include: pulp, paper, and other forest products; the manufacture of electronic, electrochemical and electrometallurgical products; the processing of farm and food products; the production of various mineral products; metal fabrication and casting; the production of machine tools, machinery, and textiles; the manufacture of asphalt, concrete, and rubber; printing and publishing; nurseries; and government and educational institutions.

In addition to NW Natural's local gas distribution business, the NGD segment also includes the portion of the Mist underground storage facility used to serve NGD customers, the North Mist gas storage expansion in Oregon, NWN Gas Reserves, which is a wholly-owned subsidiary of Energy Corp, and NW Natural RNG Holding Company, LLC, a holding company established to invest in the development and procurement of renewable natural gas.

NW Natural

NW Natural's activities in Other include Interstate Storage Services and third-party asset management services for the Mist facility in Oregon, appliance retail center operations, and corporate operating and non-operating revenues and expenses that cannot be allocated to NGD operations.

Earnings from Interstate Storage Services assets are primarily related to firm storage capacity revenues. Earnings from the Mist facility also include revenue, net of amounts shared with NGD customers, from management of NGD assets at Mist and upstream pipeline capacity when not needed to serve NGD customers. Under the Oregon sharing mechanism, NW Natural retains 80% of the pre-tax income from these services when the costs of the capacity were not included in NGD rates, or 10% of the pre-tax income when the costs have been included in these rates. The remaining 20% and 90%, respectively, are recorded to a deferred regulatory account for crediting back to NGD customers.

NW Holdings

NW Holdings' activities in Other include all remaining activities not associated with NW Natural, specifically NWN Water, which consolidates the water and wastewater utility operations and is pursuing other investments in the water sector through itself and wholly-owned subsidiaries; NWN Gas Storage, a wholly-owned subsidiary of NWN Energy; NWN Energy's equity investment in TWH through August 6, 2020; and other pipeline assets in NNG Financial. For more information on the sale of TWH, see Note 14. Other also includes corporate revenues and expenses that cannot be allocated to other operations, including certain business development activities.

All prior period amounts have been retrospectively adjusted to reflect the change in reportable segments and the designation of Gill Ranch as a discontinued operation for NW Holdings, and the designation of subsidiaries previously owned by NW Natural that are now owned by NW Holdings as discontinued operations for NW Natural.

Segment Information Summary

Inter-segment transactions were immaterial for the periods presented. The following table presents summary financial information concerning the reportable segment and other for continuing operations. See Note 19 for information regarding discontinued operations for NW Holdings and NW Natural.

In thousands	NGD	Other (NW Natural)	NW Natural	Other (NW Holdings)	NW Holdings
2020					
Operating revenues	$ 741,072	$ 17,676	$ 758,748	$ 14,931	$ 773,679
Depreciation and amortization	100,591	995	101,586	2,097	103,683
Income (loss) from operations	137,724	9,916	147,640	711	148,351
Net income (loss) from continuing operations	63,555	7,008	70,563	(290)	70,273
Capital expenditures	263,777	2,271	266,048	6,968	273,016
Total assets at December 31, 2020	3,549,868	49,468	3,599,336	157,043	3,756,379
2019					
Operating revenues	$ 720,528	$ 19,416	$ 739,944	$ 6,428	$ 746,372
Depreciation and amortization	89,415	990	90,405	1,091	91,496
Income (loss) from operations	135,918	11,428	147,346	(3,872)	143,474
Net income (loss) from continuing operations	60,828	8,146	68,974	(3,663)	65,311
Capital expenditures	219,880	1,500	221,380	2,091	223,471
Total assets at December 31, 2019[1]	3,273,835	47,652	3,321,487	91,833	3,413,320
2018					
Operating revenues	$ 680,648	$ 24,923	$ 705,571	$ 572	$ 706,143
Depreciation and amortization	83,732	1,254	84,986	170	85,156
Income (loss) from operations	118,095	15,004	133,099	(937)	132,162
Net income (loss) from continuing operations	57,491	10,558	68,049	(738)	67,311
Capital expenditures	212,323	2,005	214,328	308	214,636
Total assets at December 31, 2018[1]	3,141,969	50,767	3,192,736	36,657	3,229,393

(1) Total assets for NW Holdings exclude assets related to discontinued operations of $15.1 million and $13.3 million as of December 31, 2019, and 2018, respectively.

Natural Gas Distribution Margin

NGD margin is a financial measure used by the CODM, consisting of NGD operating revenues, reduced by the associated cost of gas, environmental remediation expense, and revenue taxes. The cost of gas purchased for NGD customers is generally a pass-through cost in the amount of revenues billed to regulated NGD customers. Environmental remediation expense represents collections received from customers through environmental recovery mechanisms in Oregon and Washington as well as adjustments for the Oregon environmental earnings test when applicable. This is offset by environmental remediation expense presented in operating expenses. Revenue taxes are collected from NGD customers and remitted to taxing authorities. The collections from customers are offset by the expense recognition of the obligation to the taxing authority. By subtracting cost of gas, environmental remediation expense, and revenue taxes from NGD operating revenues, NGD margin provides a key metric used by the CODM in assessing the performance of the NGD segment.

The following table presents additional segment information concerning NGD margin:

In thousands	2020	2019	2018
NGD margin calculation:			
NGD operating revenues	$ 721,950	$ 708,472	$ 680,386
Other regulated services	19,122	12,056	262
Total NGD operating revenues	741,072	720,528	680,648
Less: NGD cost of gas	262,980	255,135	255,743
Environmental remediation expense	9,691	12,337	11,127
Revenue taxes	30,291	30,325	30,082
NGD margin	$ 438,110	$ 422,731	$ 383,696

5. COMMON STOCK

As of December 31, 2020 and 2019, NW Holdings had 100 million shares of common stock authorized. As of December 31, 2020, NW Holdings had 203,923 shares reserved for issuance of common stock under the Employee Stock Purchase Plan (ESPP) and 271,949 shares reserved for issuance under the Dividend Reinvestment and Direct Stock Purchase Plan (DRPP). At NW Holdings' election, shares sold through the DRPP may be purchased in the open market or through original issuance of shares reserved for issuance under the DRPP.

The Restated Stock Option Plan (SOP) was terminated with respect to new grants in 2012; however, options granted before the Restated SOP was terminated remain outstanding until the earlier of their expiration, forfeiture, or exercise. Options are now exercisable for shares of NW Holdings common stock. There were 9,438 options outstanding at December 31, 2020, which were granted prior to termination of the plan.

On June 7, 2019, NW Holdings completed the issuance of 1,437,500 shares of common stock, inclusive of the overallotment option granted to the underwriters, which was exercised in full. All shares were issued on June 7, 2019 at an offering price of $67.00 per share. The issuance resulted in proceeds to NW Holdings of $93.0 million, net of discounts and expenses. The issuance was executed to raise funds for general corporate purposes, including for equity contributions to NW Holdings' subsidiaries, that are reflected as equity transfers on occurrence. Contributions received by NW Natural were also used, in part, to repay short-term indebtedness.

Stock Repurchase Program

NW Holdings has a share repurchase program under which it may purchase its common shares on the open market or through privately negotiated transactions. NW Holdings currently has Board authorization through May 2022 to repurchase up to an aggregate of the greater of 2.8 million shares or $100 million. No shares of common stock were repurchased pursuant to this program during the year ended December 31, 2020. Since the plan's inception in 2000 under NW Natural, a total of 2.1 million shares have been repurchased at a total cost of $83.3 million.

The following table summarizes the changes in the number of shares of NW Holdings' common stock issued and outstanding:

In thousands	Shares
Balance, December 31, 2017	28,736
Sales to employees under ESPP	19
Stock-based compensation	64
Sales to shareholders under DRPP	61
Balance, December 31, 2018	28,880
Sales to employees under ESPP	18
Stock-based compensation	83
Equity issuance	1,438
Sales to shareholders under DRPP	53
Balance, December 31, 2019	30,472
Sales to employees under ESPP	3
Stock-based compensation	46
Sales to shareholders under DRPP	68
Balance, December 31, 2020	30,589

6. REVENUE

The following table presents disaggregated revenue from continuing operations:

	Year ended December 31, 2020				
In thousands	NGD	Other (NW Natural)	NW Natural	Other (NW Holdings)	NW Holdings
Natural gas sales	$ 710,422	$ —	$ 710,422	$ —	$ 710,422
Gas storage revenue, net	—	9,759	9,759	—	9,759
Asset management revenue, net	—	2,532	2,532	—	2,532
Appliance retail center revenue	—	5,385	5,385	—	5,385
Other revenue	1,337	—	1,337	14,931	16,268
Revenue from contracts with customers	711,759	17,676	729,435	14,931	744,366
Alternative revenue	10,870	—	10,870	—	10,870
Leasing revenue	18,443	—	18,443	—	18,443
Total operating revenues	$ 741,072	$ 17,676	$ 758,748	$ 14,931	$ 773,679

	Year ended December 31, 2019				
In thousands	NGD	Other (NW Natural)	NW Natural	Other (NW Holdings)	NW Holdings
Natural gas sales	$ 729,296	$ —	$ 729,296	$ —	$ 729,296
Gas storage revenue, net	—	10,240	10,240	—	10,240
Asset management revenue, net	—	3,705	3,705	—	3,705
Appliance retail center revenue	—	5,471	5,471	—	5,471
Other revenue	847	—	847	6,428	7,275
Revenue from contracts with customers	730,143	19,416	749,559	6,428	755,987
Alternative revenue	(20,984)	—	(20,984)	—	(20,984)
Leasing revenue	11,369	—	11,369	—	11,369
Total operating revenues	$ 720,528	$ 19,416	$ 739,944	$ 6,428	$ 746,372

NW Natural's revenue represents substantially all of NW Holdings' revenue and is recognized for both registrants when the obligation to customers is satisfied and in the amount expected to be received in exchange for transferring goods or providing services. Revenue from contracts with customers contains one performance obligation that is generally satisfied over time, using the output method based on time elapsed, due to the continuous nature of the service provided. The transaction price is determined by a set price agreed upon in the contract or dependent on regulatory tariffs. Customer accounts are settled on a monthly basis or paid at time of sale and based on historical experience. It is probable that we will collect substantially all of the consideration to which we are entitled. We evaluated the probability of collection in accordance with the current expected credit losses standard.

NW Holdings and NW Natural do not have any material contract assets, as net accounts receivable and accrued unbilled revenue balances are unconditional and only involve the passage of time until such balances are billed and collected. NW Holdings and NW Natural do not have any material contract liabilities.

Revenue taxes are included in operating revenues with an equal and offsetting expense recognized in operating expenses in the consolidated statements of comprehensive income. Revenue-based taxes are primarily franchise taxes, which are collected from NGD customers and remitted to taxing authorities.

Natural Gas Distribution

Natural Gas Sales

NW Natural's primary source of revenue is providing natural gas to customers in the NGD service territory, which includes residential, commercial, industrial and transportation customers. NGD revenue is generally recognized over time upon delivery of the gas commodity or service to the customer, and the amount of consideration received and recognized as revenue is dependent on the Oregon and Washington tariffs. Customer accounts are to be paid in full each month, and there is no right of return or warranty for services provided. Revenues include firm and interruptible sales and transportation services, franchise taxes recovered from the customer, late payment fees, service fees, and accruals for gas delivered but not yet billed (accrued unbilled revenue). The accrued unbilled revenue balance is based on estimates of deliveries during the period from the last meter reading and management judgment is required for a number of factors used in this calculation, including customer use and weather factors.

We applied the significant financing practical expedient and have not adjusted the consideration NW Natural expects to receive from NGD customers for the effects of a significant financing component as all payment arrangements are settled annually. Due to the election of the right to invoice practical expedient, we do not disclose the value of unsatisfied performance obligations.

Alternative Revenue

Weather normalization (WARM) and decoupling mechanisms are considered to be alternative revenue programs. Alternative revenue programs are considered to be contracts between NW Natural and its regulator and are excluded from revenue from contracts with customers.

Leasing Revenue

Leasing revenue primarily consists of revenues from NW Natural's North Mist Storage contract with Portland General Electric (PGE) in support of PGE's gas-fired electric power generation facilities under an initial 30-year contract with options to extend, totaling up to an additional 50 years upon mutual agreement of the parties. The facility is accounted for as a sales-type lease with regulatory accounting deferral treatment. The investment is included in rate base under an established cost-of-service tariff schedule, with revenues recognized according to the tariff schedule and as such, profit upon commencement was deferred and will be amortized over the lease term. Leasing revenue also contains rental revenue from small leases of property owned by NW Natural to third parties. The majority of these transactions are accounted for as operating leases and the revenue is recognized over the term of the lease agreement. Lease revenue is excluded from revenue from contracts with customers. See Note 7 for additional information.

NW Natural Other

Gas Storage Revenue

NW Natural's other revenue includes gas storage activity, which includes Interstate Storage Services used to store natural gas for customers. Gas storage revenue is generally recognized over time as the gas storage service is provided to the customer and the amount of consideration received and recognized as revenue is dependent on set rates defined per the storage agreements. Noncash consideration in the form of dekatherms of natural gas is received as consideration for providing gas injection services to gas storage customers. This noncash consideration is measured at fair value using the average spot rate. Customer accounts are generally paid in full each month, and there is no right of return or warranty for services provided. Revenues include firm and interruptible storage services, net of the profit sharing amount refunded to NGD customers.

Asset Management Revenue

Revenues include the optimization of third-party storage assets and pipeline capacity and are provided net of the profit sharing amount refunded to NGD customers. Certain asset management revenues received are recognized over time using a straight-line approach over the term of each contract, and the amount of consideration received and recognized as revenue is dependent on a variable pricing model. Variable revenues earned above guaranteed amounts are estimated and recognized at the end of each period using the most likely amount approach. Additionally, other asset management revenues may be based on a fixed rate. Generally, asset management accounts are settled on a monthly basis.

As of December 31, 2020, unrecognized revenue for the fixed component of the transaction price related to gas storage and asset management revenue was approximately $88.4 million. Of this amount, approximately $19.0 million will be recognized in 2021, $19.4 million in 2022, $17.8 million in 2023, $14.0 million in 2024, and $18.2 million thereafter. The amounts presented here are calculated using current contracted rates.

Appliance Retail Center Revenue
NW Natural owns and operates an appliance store that is open to the public, where customers can purchase natural gas home appliances. Revenue from the sale of appliances is recognized at the point in time in which the appliance is transferred to the third party responsible for delivery and installation services and when the customer has legal title to the appliance. It is required that the sale be paid for in full prior to transfer of legal title. The amount of consideration received and recognized as revenue varies with changes in marketing incentives and discounts offered to customers.

NW Holdings Other
NW Holdings' primary source of other revenue is providing water and wastewater services to customers. Water and wastewater service revenue is generally recognized over time upon delivery of the water commodity or service to the customer, and the amount of consideration received and recognized as revenue is dependent on the tariffs established in the state we operate. Customer accounts are to be paid in full each month, and there is no right of return or warranty for services provided.

We applied the significant financing practical expedient and have not adjusted the consideration we expect to receive from water distribution and wastewater collection customers for the effects of a significant financing component as all payment arrangements are settled annually. Due to the election of the right to invoice practical expedient, we do not disclose the value of unsatisfied performance obligations.

7. LEASES

Lease Revenue
Leasing revenue primarily consists of NW Natural's North Mist natural gas storage agreement with PGE which is billed under an OPUC-approved rate schedule and includes an initial 30-year term with options to extend, totaling up to an additional 50 years upon mutual agreement of the parties. Under U.S. GAAP, this agreement is classified as a sales-type lease and qualifies for regulatory accounting deferral treatment. The investment in the storage facility is included in rate base under a separately established cost-of-service tariff, with revenues recognized according to the tariff schedule. As such, the selling profit that was calculated upon commencement as part of the sale-type lease recognition was deferred and will be amortized over the lease term. Billing rates under the cost-of-service tariff will be updated annually to reflect current information including depreciable asset levels, forecasted operating expenses, and the results of regulatory proceedings, as applicable, and revenue received under this agreement is recognized as operating revenue on the consolidated statements of comprehensive income. There are no variable payments or residual value guarantees. The lease does not contain an option to purchase the underlying assets.

NW Natural also maintains a sales-type lease for specialized compressor facilities to provide high pressure compressed natural gas (CNG) services. Lease payments are outlined in an OPUC-approved rate schedule over a 10-year term. There are no variable payments or residual value guarantees. The selling profit computed upon lease commencement was not significant.

Our lessor portfolio also contains small leases of property owned by NW Natural to third parties. These transactions are accounted for as operating leases and the revenue is recognized over the term of the lease agreement.

The components of lease revenue at NW Natural were as follows:

	Year ended December 31,	
In thousands	2020	2019
Lease revenue		
Operating leases	$ 88	$ 171
Sales-type leases	18,355	11,198
Total lease revenue	$ 18,443	$ 11,369

Total future minimum lease payments to be received under non-cancelable leases at NW Natural at December 31, 2020 are as follows:

In thousands	Operating	Sales-Type	Total
2021	$ 59	$ 17,518	$ 17,577
2022	55	17,026	17,081
2023	47	16,557	16,604
2024	47	15,867	15,914
2025	43	15,306	15,349
Thereafter	52	251,721	251,773
Total lease revenue	$ 303	$ 333,995	$ 334,298
Less: imputed interest		189,501	
Total leases receivable		$ 144,494	

The total leases receivable above is reported under the NGD segment and the short- and long-term portions are included within other current assets and assets under sales-type leases on the consolidated balance sheets, respectively. The total amount of unguaranteed residual assets was $4.3 million and $4.0 million at December 31, 2020 and 2019, respectively, and is included in assets under sales-type leases on the consolidated balance sheets. Additionally, under regulatory accounting, the revenues and expenses associated with these agreements are presented on the consolidated statements of comprehensive income such that their presentation aligns with similar regulated activities at NW Natural.

Additionally, future minimum lease payments of $0.5 million for each of the years ending 2021 and 2022 are to be received under non-cancelable operating leases associated with non-utility property rentals. For each of the years ended December 31, 2020 and 2019, approximately $0.5 million of lease revenue is presented in other income (expense), net on the consolidated statements of comprehensive income as it is non-operating income.

Lease Expense

Operating Leases

We have operating leases for land, buildings and equipment. Our primary lease is for NW Natural's operations center. Our leases have remaining lease terms of one year to 19 years. Many of our lease agreements include options to extend the lease, which we do not include in our minimum lease terms unless they are reasonably certain to be exercised. Short-term leases with a term of 12 months or less are not recorded on the balance sheet.

As most of our leases do not provide an implicit rate and are entered into by NW Natural, we use an estimated discount rate representing the rate we would have incurred to finance the funds necessary to purchase the leased asset and is based on information available at the lease commencement date in determining the present value of lease payments.

The components of lease expense, a portion of which is capitalized, were as follows:

	Year ended December 31, 2020		
In thousands	NW Natural	Other (NW Holdings)	NW Holdings
Operating lease expense	$ 4,381	$ 125	$ 4,506
Short-term lease expense	$ 1,010	$ —	$ 1,010

	Year ended December 31, 2019		
In thousands	NW Natural	Other (NW Holdings)	NW Holdings
Operating lease expense	$ 4,620	$ 191	$ 4,811
Short-term lease expense	$ 1,146	$ —	$ 1,146

Supplemental balance sheet information related to operating leases as of December 31, 2020 is as follows:

In thousands	NW Natural	Other (NW Holdings)	NW Holdings
Operating lease right of use assets	$ 77,328	$ 118	$ 77,446
Operating lease liabilities - current liabilities	$ 1,054	$ 51	$ 1,105
Operating lease liabilities - non-current liabilities	80,559	62	80,621
Total operating lease liabilities	$ 81,613	$ 113	$ 81,726

Supplemental balance sheet information related to operating leases as of December 31, 2019 is as follows:

In thousands	NW Natural	Other (NW Holdings)	NW Holdings
Operating lease right of use assets	$ 2,760	$ 190	$ 2,950
Operating lease liabilities - current liabilities	$ 1,979	$ 122	$ 2,101
Operating lease liabilities - non-current liabilities	772	69	841
Total operating lease liabilities	$ 2,751	$ 191	$ 2,942

The weighted-average remaining lease terms and weighted-average discount rates for the operating leases at NW Natural were as follows:

	2020	2019
Weighted-average remaining lease term (years)	19.2	1.0
Weighted-average discount rate	7.23 %	3.98 %

Commencement of Significant Lease
NW Natural commenced a 20-year operating lease agreement in March 2020 for a new corporate operations center in Portland, Oregon. Total estimated base rent payments over the life of the lease are approximately $159.4 million. There is an option to extend the term of the lease for two additional periods of seven years.

There is a material timing difference between the minimum lease payments and expense recognition as calculated under operating lease accounting rules. OPUC issued an order allowing us to align our expense recognition with cash payments for ratemaking purposes. We recorded the difference between the minimum lease payments and the aggregate of the imputed interest on the finance lease obligation and amortization of the right-of-use asset as a regulatory asset on our balance sheet. The balance of the regulatory asset as of December 31, 2020 was $4.2 million.

Maturities of operating lease liabilities at December 31, 2020 were as follows:

In thousands	NW Natural	Other (NW Holdings)	NW Holdings
2021	$ 6,760	$ 52	$ 6,812
2022	6,849	67	6,916
2023	6,986	—	6,986
2024	7,150	—	7,150
2025	7,185	—	7,185
Thereafter	123,784	—	123,784
Total lease payments	158,714	119	158,833
Less: imputed interest	77,101	6	77,107
Total lease obligations	81,613	113	81,726
Less: current obligations	1,054	51	1,105
Long-term lease obligations	$ 80,559	$ 62	$ 80,621

As of December 31, 2020, finance lease liabilities with maturities of less than one year were $0.7 million at NW Natural.

Cash Flow Information
Supplemental cash flow information related to leases was as follows:

	Year ended December 31, 2020		
In thousands	NW Natural	Other (NW Holdings)	NW Holdings
Cash paid for amounts included in the measurement of lease liabilities			
Operating cash flows from operating leases	$ 4,466	$ 131	$ 4,597
Finance cash flows from finance leases	$ 835	$ —	$ 835
Right of use assets obtained in exchange for lease obligations			
Operating leases	$ 78,539	$ 51	$ 78,590
Finance leases	$ 1,386	$ —	$ 1,386

	Year ended December 31, 2019		
In thousands	NW Natural	Other (NW Holdings)	NW Holdings
Cash paid for amounts included in the measurement of lease liabilities			
Operating cash flows from operating leases	$ 4,447	$ 182	$ 4,629
Finance cash flows from finance leases	$ 120	$ —	$ 120
Right of use assets obtained in exchange for lease obligations			
Operating leases	$ 7,205	$ 372	$ 7,577
Finance leases	$ 312	$ —	$ 312

Finance Leases
NW Natural also leases building storage spaces for use as a gas meter room in order to provide natural gas to multifamily or mixed use developments. These contracts are accounted for as finance leases and typically involve a one-time upfront payment with no remaining liability. The right of use asset for finance leases was $1.8 million and $0.5 million at December 31, 2020 and 2019, respectively.

8. STOCK-BASED COMPENSATION

Stock-based compensation plans are designed to promote stock ownership in NW Holdings by employees and officers of NW Holdings and its affiliates. These compensation plans include a Long Term Incentive Plan (LTIP), an ESPP, and a Restated SOP.

Long Term Incentive Plan

The LTIP is intended to provide a flexible, competitive compensation program for eligible officers and key employees. Under the LTIP, shares of NW Holdings common stock are authorized for equity incentive grants in the form of stock, restricted stock, restricted stock units, stock options, or performance shares. An aggregate of 1,100,000 shares were authorized for issuance as of December 31, 2020. Shares awarded under the LTIP may be purchased on the open market or issued as original shares.

Of the 1,100,000 shares of common stock authorized for LTIP awards at December 31, 2020, there were 435,758 shares available for issuance under any type of award. This assumes market, performance, and service-based grants currently outstanding are awarded at the target level. There were no outstanding grants of restricted stock or stock options under the LTIP at December 31, 2020 or 2019. The LTIP stock awards are compensatory awards for which compensation expense is based on the fair value of stock awards, with expense being recognized over the performance and vesting period of the outstanding awards. Forfeitures are recognized as they occur.

Performance Shares
LTIP performance shares incorporate a combination of market, performance, and service-based factors. The following table summarizes performance share expense information:

Dollars in thousands	Shares[(1)]	Expense During Award Year[(2)]	Total Expense for Award
Estimated award:			
2018-2020 grant[(3)]	31,600	$ 2,137	$ 2,137
Actual award:			
2017-2019 grant	41,537	$ 572	$ 1,971
2016-2018 grant	28,218	$ 598	$ 1,413

(1) In addition to common stock shares, a participant also receives a dividend equivalent cash payment equal to the number of shares of common stock received on the award payout multiplied by the aggregate cash dividends paid per share during the performance period.

(2) Amount represents the expense recognized in the third year of the vesting period noted above. For the 2018-2020 grant, mutual understanding of the award's key terms was established in the third year of the vesting period, triggering full expense recognition in 2020.

(3) This represents the estimated number of shares to be awarded as of December 31, 2020 as certain performance share measures have been achieved. Amounts are subject to change with final payout amounts authorized by the Board of Directors in February 2021.

The aggregate number of performance shares granted and outstanding at the target and maximum levels were as follows:

Dollars in thousands	Performance Share Awards Outstanding		2020
Performance Period	Target	Maximum	Expense
2018-20	31,825	63,650	$ 2,137
2019-21	—	—	—
2020-22	—	—	—
Total	31,825	63,650	$ 2,137

Performance share awards are based on the achievement of a three-year ROIC threshold that must be met and a cumulative EPS factor, which can be modified by a TSR factor relative to the performance of the Russell 2500 Utilities Index over the three-year performance period. The performance period allows for one of the performance factors to remain variable until the first quarter of the third year of the award period. As the performance factor will not be approved until the first quarter of 2021 and 2022, there is not a mutual understanding of the awards' key terms and conditions between NW Natural and the participants as of December 31, 2020, and therefore, no expense was recognized for the 2019-2021 and 2020-2022 performance period. NW Natural will calculate the grant date fair value and recognize expense once the final performance factor has been approved. If the target is achieved for the 2019-2021 and 2020-2022 awards, NW Holdings would grant for accounting purposes 35,170 and 31,830 shares in the first quarter of 2021 and 2022, respectively.

Compensation expense is recognized in accordance with accounting standards for stock-based compensation and calculated based on performance levels achieved and an estimated fair value using the Monte-Carlo method. Due to there not being a mutual understanding of the 2019-2021 and 2020-2022 awards' key terms and conditions as noted above, the grant date fair value has not yet been determined and no non-vested shares existed at December 31, 2020. The weighted-average grant date fair value of non-vested shares associated with the 2018-2020 awards was $78.96 per share at December 31, 2020. The weighted-average grant date fair value of shares vested during the year was $78.96 per share and there were no performance shares granted during the year and no unrecognized compensation expense for accounting purposes as of December 31, 2020.

Restricted Stock Units

In 2012, RSUs began being granted under the LTIP instead of stock options under the Restated SOP. Generally, the RSUs awarded are forfeitable and include a performance-based threshold as well as a vesting period of four years from the grant date. Upon vesting, the RSU holder is issued one share of common stock plus a cash payment equal to the total amount of dividends paid per share between the grant date and vesting date of that portion of the RSU. The fair value of an RSU is equal to the closing market price of NW Holdings' common stock on the grant date. During 2020, total RSU expense was $2.0 million compared to $1.8 million in 2019 and $1.8 million in 2018. As of December 31, 2020, there was $3.7 million of unrecognized compensation cost from grants of RSUs, which is expected to be recognized over a period extending through 2025.

Information regarding the RSU activity is summarized as follows:

	Number of RSUs	Weighted - Average Price Per RSU
Nonvested, December 31, 2017	84,522	$ 53.90
Granted	32,450	57.59
Vested	(32,689)	50.75
Forfeited	(1,603)	59.95
Nonvested, December 31, 2018	82,680	56.47
Granted	36,018	65.29
Vested	(35,778)	54.22
Forfeited	(3,187)	63.89
Nonvested, December 31, 2019	79,733	61.17
Granted	33,594	55.58
Vested	(29,273)	59.29
Forfeited	(1,590)	69.71
Nonvested, December 31, 2020	82,464	$ 59.40

Restated Stock Option Plan

The NW Natural Restated SOP was terminated for new option grants in 2012; however, options granted before the plan terminated remain outstanding until the earlier of their expiration, forfeiture, or exercise and are now exercisable for shares of NW Holdings common stock. Any new grants of stock options will be made under NW Holdings' LTIP, however, no option grants have been awarded since 2012 and all stock options were vested as of December 31, 2015.

Options under the Restated SOP were granted to officers and key employees designated by a committee of the Board of Directors. All options were granted at an option price equal to the closing market price on the date of grant and may be exercised for a period of up to 10 years and seven days from the date of grant. Option holders may exchange shares they have owned for at least six months, valued at the current market price, to purchase shares at the option price.

Information regarding the Restated SOP activity is summarized as follows:

	Option Shares	Weighted - Average Price Per Share	Intrinsic Value *(In millions)*
Balance outstanding and exercisable, December 31, 2017	91,688	$ 44.43	$ 1.4
Exercised	(35,450)	43.61	0.8
Forfeited	(300)	43.29	n/a
Balance outstanding and exercisable, December 31, 2018	55,938	44.96	0.9
Exercised	(45,000)	44.79	1.0
Forfeited	—	—	n/a
Balance outstanding and exercisable, December 31, 2019	10,938	45.67	0.3
Exercised	(1,500)	45.24	—
Expired	—	—	n/a
Balance outstanding and exercisable, December 31, 2020	9,438	$ 45.74	$ —

The weighted-average remaining life of options exercisable and outstanding at December 31, 2020 was 0.17 years.

Employee Stock Purchase Plan

NW Holdings' ESPP allows employees of NW Holdings, NW Natural and certain designated subsidiaries to purchase common stock at 85% of the closing price on the trading day immediately preceding the initial offering date, which is set annually. For the 2020-2021 ESPP period, each eligible employee may purchase up to $21,232 worth of stock through payroll deductions over a period defined by the Board of Directors, with shares issued at the end of the subscription period.

Stock-Based Compensation Expense

Stock-based compensation expense is recognized as operations and maintenance expense or is capitalized as part of construction overhead at the entity at which the award recipient is employed. The following table summarizes the NW Holdings' financial statement impact, substantially all of which was recorded at NW Natural, of stock-based compensation under the LTIP, Restated SOP and ESPP:

In thousands	2020	2019	2018
Operations and maintenance expense, for stock-based compensation	$ 3,525	$ 2,172	$ 2,489
Income tax benefit	(933)	(575)	(659)
Net stock-based compensation effect on net income (loss)	2,592	1,597	1,830
Amounts capitalized for stock-based compensation	$ 841	$ 430	$ 531

9. DEBT

Short-Term Debt

The primary source of short-term liquidity for NW Holdings is cash balances, dividends from its operating subsidiaries, in particular NW Natural, available cash from a multi-year credit facility, and short-term credit facilities it may enter into from time to time.

The primary source of short-term liquidity for NW Natural is from the sale of commercial paper, its multi-year credit facilities, and short-term credit facilities it may enter into from time to time. In addition to issuing commercial paper or bank loans to meet working capital requirements, including seasonal requirements to finance gas purchases and accounts receivable, short-term debt may also be used to temporarily fund capital requirements. For NW Natural, commercial paper and bank loans are periodically refinanced through the sale of long-term debt or equity contributions from NW Holdings. NW Natural's commercial paper is sold through two commercial banks under an issuing and paying agency agreement and is supported by one or more unsecured revolving credit facilities. See "*Credit Agreements*" below.

At December 31, 2020 and 2019, NW Holdings had short-term debt outstanding of $304.5 million and $149.1 million, respectively. The weighted average interest rate of NW Holdings' short-term debt outstanding at December 31, 2020 and 2019 was 0.5% and 2.0%, respectively. At December 31, 2020 and 2019, NW Natural had $231.5 million and $125.1 million of commercial paper outstanding, respectively. The weighted average interest rate of commercial paper outstanding at December 31, 2020 and 2019 was 0.4% and 2.0%, respectively.

The carrying cost of commercial paper approximates fair value using Level 2 inputs. See Note 2 for a description of the fair value hierarchy. At December 31, 2020, NW Natural's commercial paper had a maximum remaining maturity of 166 days and an average remaining maturity of 47 days.

Credit Agreements

NW Holdings

In October 2018, NW Holdings entered into a $100.0 million credit agreement, with a feature that allows it to request increases in the total commitment amount, up to a maximum of $150.0 million. The maturity date of the agreement is October 2, 2023, with available extensions of commitments for two additional one-year periods, subject to lender approval.

The NW Holdings credit agreement permits the issuance of letters of credit in an aggregate amount of up to $40.0 million. The principal amount of borrowings under the credit agreement is due and payable on the maturity date. The credit agreement requires NW Holdings to maintain a consolidated indebtedness to total capitalization ratio of 70% or less. Failure to comply with this covenant would entitle the lenders to terminate their lending commitments and accelerate the maturity of all amounts outstanding. NW Holdings was in compliance with this covenant at December 31, 2020 and 2019.

The agreement also requires NW Holdings to maintain debt ratings (which are defined by a formula using NW Natural's credit ratings in the event NW Holdings does not have a credit rating) with Standard & Poor's (S&P) and Moody's Investors Service, Inc. (Moody’s) and notify the lenders of any change in its senior unsecured debt ratings or senior secured debt ratings, as applicable, by such rating agencies. A change in NW Holdings' debt ratings by S&P or Moody’s is not an event of default, nor is the maintenance of a specific minimum level of debt rating a condition of drawing upon the credit agreement. Rather, interest rates on any loans outstanding under the credit agreements are tied to debt ratings and therefore, a change in the debt rating would increase or decrease the cost of any loans under the credit agreements when ratings are changed. NW Holdings does not currently maintain ratings with S&P or Moody's.

There was $73.0 million and $24.0 million of outstanding balances under the NW Holdings agreement at December 31, 2020 and 2019, respectively. No letters of credit were issued or outstanding under the NW Holdings agreement at December 31, 2020 and 2019. NW Holdings had a $1.0 million letter of credit issued and outstanding, separate from the aforementioned credit agreement, at December 31, 2019 for the purposes of facilitating the Suncadia acquisition. This letter of credit was extinguished upon the close of the transaction in February 2020.

NW Natural

In October 2018, NW Natural entered into a multi-year credit agreement for unsecured revolving loans totaling $300.0 million, with a feature that allows NW Natural to request increases in the total commitment amount, up to a maximum of $450.0 million. The maturity date of the agreement is October 2, 2023 with available extensions of commitments for two additional one-year periods, subject to lender approval. The credit agreement permits the issuance of letters of credit in an aggregate amount of up to $60.0 million. The principal amount of borrowings under the credit agreement is due and payable on the maturity date. There were no outstanding balances under NW Natural's credit agreement and no letters of credit issued or outstanding at December 31, 2020 and 2019.

NW Natural's credit agreement require NW Natural to maintain a consolidated indebtedness to total capitalization ratio of 70% or less. Failure to comply with this covenant would entitle the lenders to terminate their lending commitments and accelerate the maturity of all amounts outstanding. NW Natural was in compliance with this covenant at December 31, 2020 and 2019.

The credit agreement also requires NW Natural to maintain credit ratings with S&P and Moody’s and notify the lenders of any change in NW Natural's senior unsecured debt ratings or senior secured debt ratings, as applicable, by such rating agencies. A change in NW Natural's debt ratings by S&P or Moody’s is not an event of default, nor is the maintenance of a specific minimum level of debt rating a condition of drawing upon the credit agreement. Rather, interest rates on any loans outstanding under the credit agreement are tied to debt ratings and therefore, a change in the debt rating would increase or decrease the cost of any loans under the credit agreement when ratings are changed.

Long-Term Debt

NW Holdings

At December 31, 2020 and 2019, NW Holdings had long-term debt outstanding of $955.4 million and $881.1 million, respectively; which included $7.5 million and $5.7 million of unamortized debt issuance costs at NW Natural, respectively. NW Holdings' long-term debt is primarily comprised of debt held at its wholly-owned subsidiaries NW Natural (shown below) and NWN Water. Long-term debt at NWN Water is primarily comprised of a two-year term loan agreement for $35.0 million, due in 2021. NWN Water entered into this agreement in June 2019 and the loan carried an interest rate of 0.70% at December 31, 2020, which is based upon the one-month LIBOR rate. The loan is guaranteed by NW Holdings and requires NW Holdings to maintain a consolidated indebtedness to total capitalization ratio of 70% or less. Failure to comply with this covenant would entitle the lenders to terminate their lending commitments and accelerate the maturity of all amounts outstanding. NW Holdings was in compliance with this covenant at December 31, 2020, with a consolidated indebtedness to total capitalization ratio of 58.6%.

NW Natural

NW Natural's issuance of FMBs, which includes NW Natural's medium-term notes, under the Mortgage and Deed of Trust (Mortgage) is limited by eligible property, adjusted net earnings, and other provisions of the Mortgage. The Mortgage constitutes a first mortgage lien on substantially all of NW Natural's NGD property.

Maturities and Outstanding Long-Term Debt

Retirement of long-term debt for each of the annual periods through December 31, 2025 and thereafter are as follows:

In thousands	Long-term debt maturities
NW Natural	
2021	$ 60,000
2022	—
2023	90,000
2024	—
2025	30,000
Thereafter	744,700
Total	$ 924,700

The following table presents debt outstanding as of December 31:

In thousands	2020	2019
NW Natural		
First Mortgage Bonds:		
5.370% Series due 2020	$ —	$ 75,000
9.050% Series due 2021	10,000	10,000
3.176% Series due 2021	50,000	50,000
3.542% Series due 2023	50,000	50,000
5.620% Series due 2023	40,000	40,000
7.720% Series due 2025	20,000	20,000
6.520% Series due 2025	10,000	10,000
7.050% Series due 2026	20,000	20,000
3.211% Series due 2026	35,000	35,000
7.000% Series due 2027	20,000	20,000
2.822% Series due 2027	25,000	25,000
6.650% Series due 2027	19,700	19,700
6.650% Series due 2028	10,000	10,000
3.141% Series due 2029	50,000	50,000
7.740% Series due 2030	20,000	20,000
7.850% Series due 2030	10,000	10,000
5.820% Series due 2032	30,000	30,000
5.660% Series due 2033	40,000	40,000
5.250% Series due 2035	10,000	10,000
4.000% Series due 2042	50,000	50,000
4.136% Series due 2046	40,000	40,000
3.685% Series due 2047	75,000	75,000
4.110% Series due 2048	50,000	50,000
3.869% Series due 2049	90,000	90,000
3.600% Series due 2050	150,000	—
Long-term debt, gross	924,700	849,700
Less: current maturities	60,000	75,000
Total long-term debt	$ 864,700	$ 774,700

First Mortgage Bonds
In March 2020, NW Natural issued $150.0 million of FMBs with an interest rate of 3.600%, due in 2050.

Retirements of Long-Term Debt
In February 2020, NW Natural retired $75.0 million of FMBs with an interest rate of 5.370%.

Fair Value of Long-Term Debt
NW Holdings' and NW Natural's outstanding debt does not trade in active markets. The fair value of debt is estimated using natural gas distribution companies with similar credit ratings, terms, and remaining maturities to NW Holdings' and NW Natural's debt that actively trade in public markets. Substantially all outstanding debt at NW Holdings is comprised of NW Natural debt. These valuations are based on Level 2 inputs as defined in the fair value hierarchy. See Note 2.

The following table provides an estimate of the fair value of NW Holdings' long-term debt, including current maturities of long-term debt, using market prices in effect on the valuation date:

	December 31,	
In thousands	2020	2019
Gross long-term debt	$ 962,905	$ 886,776
Unamortized debt issuance costs	(7,480)	(5,712)
Carrying amount	$ 955,425	$ 881,064
Estimated fair value(1)	$ 1,136,311	$ 957,268

(1) Estimated fair value does not include unamortized debt issuance costs.

The following table provides an estimate of the fair value of NW Natural's long-term debt, including current maturities of long-term debt, using market prices in effect on the valuation date:

	December 31,	
In thousands	2020	2019
Gross long-term debt	$ 924,700	$ 849,700
Unamortized debt issuance costs	(7,480)	(5,712)
Carrying amount	$ 917,220	$ 843,988
Estimated fair value(1)	$ 1,097,348	$ 919,835

(1) Estimated fair value does not include unamortized debt issuance costs.

10. PENSION AND OTHER POSTRETIREMENT BENEFIT COSTS

NW Natural maintains a qualified non-contributory defined benefit pension plan (Pension Plan), non-qualified supplemental pension plans for eligible executive officers and other key employees, and other postretirement employee benefit plans. NW Natural also has a qualified defined contribution plan (Retirement K Savings Plan) for all eligible employees. The Pension Plan and Retirement K Savings Plan have plan assets, which are held in qualified trusts to fund retirement benefits.

Effective January 1, 2007 and 2010, the Pension Plan and postretirement benefits for non-union employees and union employees, respectively, were closed to new participants.

Non-union and union employees hired or re-hired after December 31, 2006 and 2009, respectively, and employees of NW Natural subsidiaries are provided an enhanced Retirement K Savings Plan benefit.

The following table provides a reconciliation of the changes in NW Natural's benefit obligations and fair value of plan assets, as applicable, for NW Natural's pension and other postretirement benefit plans, excluding the Retirement K Savings Plan, and a summary of the funded status and amounts recognized in NW Holdings' and NW Natural's consolidated balance sheets as of December 31:

	Postretirement Benefit Plans			
	Pension Benefits		Other Benefits	
In thousands	2020	2019	2020	2019
Reconciliation of change in benefit obligation:				
Obligation at January 1	$ 515,668	$ 455,568	$ 29,568	$ 28,172
Service cost	6,614	6,308	258	244
Interest cost	16,161	18,683	905	1,117
Net actuarial loss	52,777	58,269	145	1,809
Benefits paid	(25,073)	(23,160)	(1,837)	(1,774)
Obligation at December 31	$ 566,147	$ 515,668	$ 29,039	$ 29,568
Reconciliation of change in plan assets:				
Fair value of plan assets at January 1	$ 313,051	$ 257,797	$ —	$ —
Actual return on plan assets	54,600	65,104	—	—
Employer contributions	31,354	13,310	1,837	1,774
Benefits paid	(25,073)	(23,160)	(1,837)	(1,774)
Fair value of plan assets at December 31	$ 373,932	$ 313,051	$ —	$ —
Funded status at December 31	$ (192,215)	$ (202,617)	$ (29,039)	$ (29,568)

At December 31, 2020, the net liability (benefit obligations less market value of plan assets) for the Pension Plan decreased $13.1 million compared to 2019. The decrease in the net pension liability is primarily due to the $60.9 million increase in plan assets, partially offset by the $47.8 million increase to the pension benefit obligation. The liability for non-qualified plans increased $2.7 million, and the liability for other postretirement benefits decreased $0.5 million in 2020.

NW Natural's Pension Plan had a projected benefit obligation of $525.1 million and $477.3 million at December 31, 2020 and 2019, respectively, and fair values of plan assets of $373.9 million and $313.1 million, respectively. The plan had an accumulated benefit obligation of $480.0 million and $434.9 million at December 31, 2020 and 2019, respectively.

The following table presents amounts realized through regulatory assets or in other comprehensive loss (income) for the years ended December 31:

	Regulatory Assets						Other Comprehensive Loss (Income)		
	Pension Benefits			Other Postretirement Benefits			Pension Benefits		
In thousands	2020	2019	2018	2020	2019	2018	2020	2019	2018
Net actuarial loss (gain)	$ 16,170	$ 10,424	$ 14,261	$ 145	$ 1,809	$ (327)	$ 3,873	$ 3,595	$ (677)
Amortization of:									
Prior service (cost) credit	—	(7)	(42)	468	468	468	—	—	—
Actuarial loss	(18,627)	(14,057)	(18,761)	(607)	(369)	(448)	(923)	(648)	(1,052)
Total	$ (2,457)	$ (3,640)	$ (4,542)	$ 6	$ 1,908	$ (307)	$ 2,950	$ 2,947	$ (1,729)

The following table presents amounts recognized in regulatory assets and accumulated other comprehensive loss (AOCL) at December 31:

	Regulatory Assets				AOCL	
	Pension Benefits		Other Postretirement Benefits		Pension Benefits	
In thousands	2020	2019	2020	2019	2020	2019
Prior service cost (credit)	$ —	$ —	$ (801)	$ (1,270)	$ —	$ —
Net actuarial loss	164,446	166,903	7,167	7,629	17,434	14,484
Total	$ 164,446	$ 166,903	$ 6,366	$ 6,359	$ 17,434	$ 14,484

The following table presents amounts recognized by NW Holdings and NW Natural in AOCL and the changes in AOCL related to NW Natural's non-qualified employee benefit plans:

	Year ended December 31,	
In thousands	2020	2019
Beginning balance	$ (10,733)	$ (7,188)
Amounts reclassified to AOCL	(3,873)	(3,611)
Amounts reclassified from AOCL:		
Amortization of actuarial losses	923	648
Reclassification of stranded tax effects(1)	—	(1,366)
Total reclassifications before tax	(2,950)	(4,329)
Tax expense	781	784
Total reclassifications for the period	(2,169)	(3,545)
Ending balance	$ (12,902)	$ (10,733)

(1) Reclassification of $1.4 million of income tax effects resulting from the TCJA from accumulated other comprehensive loss to retained earnings was made pursuant to the adoption of ASU 2018-02. See Note 2.

In 2021, NW Natural will amortize an estimated $20.8 million from regulatory assets to net periodic benefit costs, consisting of $21.3 million of actuarial losses offset by $0.5 million of prior service credits.

The assumed discount rates for NW Natural's Pension Plan and other postretirement benefit plans were determined independently based on the FTSE Above Median Curve (discount rate curve), which uses high quality corporate bonds rated AA- or higher by S&P or Aa3 or higher by Moody’s. The discount rate curve was applied to match the estimated cash flows in each of the plans to reflect the timing and amount of expected future benefit payments for these plans.

The assumed expected long-term rate of return on plan assets for the Pension Plan was developed using a weighted-average of the expected returns for the target asset portfolio. In developing the expected long-term rate of return assumption, consideration was given to the historical performance of each asset class in which the plan’s assets are invested and the target asset allocation for plan assets.

The investment strategy and policies for Pension Plan assets held in the retirement trust fund were approved by the NW Natural Retirement Committee, which is composed of senior management with the assistance of an outside investment consultant. The policies set forth the guidelines and objectives governing the investment of plan assets. Plan assets are invested for total return with appropriate consideration for liquidity, portfolio risk, and return expectations. All investments are expected to satisfy the prudent investments rule under the Employee Retirement Income Security Act of 1974. The approved asset classes may include cash and short-term investments, fixed income, common stock and convertible securities, absolute and real return strategies, and real estate. Plan assets may be invested in separately managed accounts or in commingled or mutual funds. Investment re-balancing takes place periodically as needed, or when significant cash flows occur, in order to maintain the allocation of assets within the stated target ranges. The retirement trust fund is not currently invested in NW Holdings or NW Natural securities.

The following table presents the Pension Plan asset target allocation at December 31, 2020:

Asset Category	Target Allocation
Long government/credit	20 %
U.S. large cap equity	18
Non-U.S. equity	18
Absolute return strategies	12
U.S. small/mid cap equity	10
Real estate funds	7
High yield bonds	5
Emerging markets equity	5
Emerging market debt	5

Non-qualified supplemental defined benefit plan obligations were $41.0 million and $38.3 million at December 31, 2020 and 2019, respectively. These plans are not subject to regulatory deferral, and the changes in actuarial gains and losses, prior service costs, and transition assets or obligations are recognized in AOCL, net of tax until they are amortized as a component of net periodic benefit cost. These are unfunded, non-qualified plans with no plan assets; however, a significant portion of the obligations is indirectly funded with company and trust-owned life insurance and other assets.

Other postretirement benefit plans are unfunded plans but are subject to regulatory deferral. The actuarial gains and losses, prior service costs, and transition assets or obligations for these plans are recognized as a regulatory asset.

Net periodic benefit costs consist of service costs, interest costs, the expected returns on plan assets, and the amortization of gains and losses and prior service costs. The gains and losses are the sum of the actuarial and asset gains and losses throughout the year and are amortized over the average remaining service period of active participants. The asset gains and losses are based in part on a market-related valuation of assets. The market-related valuation reflects differences between expected returns and actual investment returns with the differences recognized over a two-year period from the year in which they occur, thereby reducing year-to-year net periodic benefit cost volatility.

The service cost component of net periodic benefit cost for NW Natural pension and other postretirement benefit plans is recognized in operations and maintenance expense in the consolidated statements of comprehensive income. The other non-service cost components are recognized in other income (expense), net in the consolidated statements of comprehensive income. The following table provides the components of net periodic benefit cost for NW Natural's pension and other postretirement benefit plans for the years ended December 31:

	Pension Benefits			Other Postretirement Benefits		
In thousands	2020	2019	2018	2020	2019	2018
Service cost	$ 6,614	$ 6,308	$ 7,185	$ 258	$ 244	$ 282
Interest cost	16,161	18,684	16,991	905	1,116	964
Expected return on plan assets	(21,865)	(20,854)	(20,639)	—	—	—
Amortization of prior service cost (credit)	—	7	43	(468)	(468)	(468)
Amortization of net actuarial loss	19,550	14,704	19,813	607	368	448
Net periodic benefit cost	20,460	18,849	23,393	1,302	1,260	1,226
Amount allocated to construction	(2,798)	(2,493)	(2,764)	(98)	(86)	(98)
Amount deferred to regulatory balancing account	—	—	(10,314)	—	—	—
Net periodic benefit cost charged to expense	17,662	16,356	10,315	1,204	1,174	1,128
Regulatory pension disallowance	—	10,500	—	—	—	—
Amortization of regulatory balancing account	7,131	16,841	—	—	—	—
Net amount charged to expense	$ 24,793	$ 43,697	$ 10,315	$ 1,204	$ 1,174	$ 1,128

Net periodic benefit costs are reduced by amounts capitalized to NGD plant. In addition, a certain amount of net periodic benefit costs were recorded to the regulatory balancing account, representing net periodic pension expense for the Pension Plan above the amount set in rates, as approved by the OPUC, from 2011 through October 31, 2018.

In March 2019, the OPUC issued an order concluding the NW Natural 2018 Oregon rate case. The order allowed for the application of certain deferred revenues and tax benefits from the TCJA to reduce NW Natural's pension regulatory balancing account. A corresponding total of $12.5 million in pension expenses were recognized in operating and maintenance expense and other income (expense), net in the consolidated statements of comprehensive income in the first quarter of 2019, with offsetting benefits recorded within operating revenues and income taxes. The order also directed NW Natural to reduce the balancing account by an additional $10.5 million, of which $3.9 million was charged to operations and maintenance expense and $6.6 million was charged to other income (expense), net in the consolidated statements of comprehensive income. Amortization of the remaining amount of the balancing account began in the second quarter of 2019 in accordance with the order.

Total amortization of the regulatory balancing account of $7.1 million and $16.8 million was recognized in 2020 and 2019, respectively, of which $2.6 million and $6.2 million was charged to operations and maintenance expense, respectively, and $4.5 million and $10.6 million was charged to other income (expense), net, respectively. Total deferrals of the regulatory balancing account were $10.3 million in 2018, of which $2.4 million was deferred from operations and maintenance expense and $7.9 million was deferred from other income (expense), net.

The following table provides the assumptions used in measuring periodic benefit costs and benefit obligations for the years ended December 31:

	Pension Benefits			Other Postretirement Benefits		
	2020	2019	2018	2020	2019	2018
Assumptions for net periodic benefit cost:						
Weighted-average discount rate	3.18 %	4.19 %	3.51 %	3.11 %	4.13 %	3.44 %
Rate of increase in compensation	3.50 %	3.25-3.50%	3.25-4.50%	n/a	n/a	n/a
Expected long-term rate of return	7.25 %	7.50 %	7.50 %	n/a	n/a	n/a
Assumptions for year-end funded status:						
Weighted-average discount rate	2.36 %	3.16 %	4.20 %	2.34 %	3.11 %	4.13 %
Rate of increase in compensation[1]	3.50-6.50%	3.50-6.50%	3.25-4.50%	n/a	n/a	n/a
Expected long-term rate of return	7.25 %	7.25 %	7.50 %	n/a	n/a	n/a

[1] Rate assumption is 6.50% in 2020 and 3.50% thereafter. The 2020 compensation increase assumption was a result of the 2019 execution of a new collective bargaining agreement with unionized members of NW Natural effective December 1, 2019.

The assumed annual increase in health care cost trend rates used in measuring other postretirement benefits as of December 31, 2020 was 6.25%. These trend rates apply to both medical and prescription drugs. Medical costs and prescription drugs are assumed to decrease gradually each year to a rate of 4.75% by 2026.

Assumed health care cost trend rates can have a significant effect on the amounts reported for the health care plans; however, other postretirement benefit plans have a cap on the amount of costs reimbursable by NW Natural.

Mortality assumptions are reviewed annually and are updated for material changes as necessary. In 2020, mortality rate assumptions were updated from Pri-2012 mortality tables using scale MP-2019 to Pri-2012 mortality tables using scale MP-2020, which partially offset increases of the projected benefit obligation.

The following table provides information regarding employer contributions and benefit payments for NW Natural's Pension Plan, non-qualified pension plans, and other postretirement benefit plans for the years ended December 31, and estimated future contributions and payments:

In thousands	Pension Benefits	Other Benefits
Employer Contributions:		
2019	$ 13,310	$ 1,774
2020	31,362	1,837
2021 (estimated)	22,465	1,654
Benefit Payments:		
2018	21,918	1,674
2019	23,160	1,774
2020	25,073	1,837
Estimated Future Benefit Payments:		
2021	24,609	1,654
2022	25,299	1,664
2023	26,083	1,694
2024	26,807	1,690
2025	27,399	1,678
2026-2030	149,287	7,815

Employer Contributions to Company-Sponsored Defined Benefit Pension Plan

NW Natural makes contributions to its Pension Plan based on actuarial assumptions and estimates, tax regulations, and funding requirements under federal law. The Pension Protection Act of 2006 (the Act) established funding requirements for defined benefit plans. The Act establishes a 100% funding target over seven years for plan years beginning after December 31, 2008. In July 2012, President Obama signed the Moving Ahead for Progress in the 21st Century Act (MAP-21) into law, which changed several provisions affecting pension plans, including temporary funding relief and Pension Benefit Guaranty Corporation (PBGC) premium increases, which shifts the level of minimum required contributions from the short-term to the long-term as well as increasing the operational costs of running a pension plan. MAP-21 established a new minimum and maximum corridor for segment rates based on a 25-year average of bond yields, which resulted in lower minimum contributions requirements than those under previous regulations. MAP-21, as amended, provides for the current corridor to be in effect through 2020 and subsequently broaden on an annual basis from 2021 through 2024.

The Pension Plan was underfunded by $151.2 million at December 31, 2020. NW Natural made cash contributions totaling $29.0 million to its Pension Plan for 2020. During 2021, NW Natural expects to make contributions of approximately $20.1 million to this plan.

Multiemployer Pension Plan

In addition to the NW Natural-sponsored Pension Plan presented above, prior to 2014 NW Natural contributed to a multiemployer pension plan for its NGD union employees known as the Western States Office and Professional Employees International Union Pension Fund (Western States Plan). That plan's employer identification number is 94-6076144. Effective December 22, 2013, NW Natural withdrew from the plan, which was a noncash transaction. Vested participants will receive all benefits accrued through the date of withdrawal. As the plan was underfunded at the time of withdrawal, NW Natural was assessed a withdrawal liability of $8.3 million, plus interest, which requires NW Natural to pay $0.6 million each year to the plan for 20 years beginning in July 2014. The cost of the withdrawal liability was deferred to a regulatory account on the balance sheet.

Payments were $0.7 million for 2020, and as of December 31, 2020 the liability balance was $6.1 million. Contributions to the plan were $0.6 million for each of 2019 and 2018, which was approximately 5% to 6% of the total contributions to the plan by all employer participants in those years.

Defined Contribution Plan

NW Natural's Retirement K Savings Plan is a qualified defined contribution plan under Internal Revenue Code Sections 401(a) and 401(k). NW Natural contributions totaled $8.3 million, $7.0 million, and $6.5 million for 2020, 2019, and 2018, respectively. The Retirement K Savings Plan includes an Employee Stock Ownership Plan.

Deferred Compensation Plans

NW Natural's supplemental deferred compensation plans for eligible officers and senior managers are non-qualified plans. These plans are designed to enhance the retirement savings of employees and to assist them in strengthening their financial security by providing an incentive to save and invest regularly.

Fair Value

Below is a description of the valuation methodologies used for assets measured at fair value. In cases where NW Natural's Pension Plan is invested through a collective trust fund or mutual fund, the fund's market value is utilized. Market values for investments directly owned are also utilized.

U.S. EQUITY. These are non-published net asset value (NAV) assets. The non-published NAV assets consist of commingled trusts where NAV is not published but the investment can be readily disposed of at NAV or market value. The underlying investments in this asset class includes investments primarily in U.S. common stocks.

INTERNATIONAL/GLOBAL EQUITY. These are Level 1 and non-published NAV assets. The Level 1 asset is a mutual fund, and the non-published NAV assets consist of commingled trusts where the NAV/unit price is not published, but the investment can be readily disposed of at the NAV/unit price. The mutual funds has a readily determinable fair value, including a published NAV, and the commingled trusts are valued at unit price. This asset class includes investments primarily in foreign equity common stocks.

LIABILITY HEDGING. These are non-published NAV assets. The non-published NAV assets consist of commingled trusts where NAV is not published but the investment can be readily disposed of at NAV or market value. The underlying investments in this asset class include long duration fixed income investments primarily in U.S. treasuries, U.S. government agencies, municipal securities, mortgage-backed securities, asset-backed securities, as well as U.S. and international investment-grade corporate bonds.

OPPORTUNISTIC. These are non-published NAV assets consisting of commingled trusts where the investments can be readily disposed of at unit price, and a hedge fund of funds where the valuation is not published. This hedge fund of funds is winding down. Based on recent dispositions, NW Natural believes the remaining investment is fairly valued. The hedge fund of funds is valued at the weighted average value of investments in various hedge funds, which in turn are valued at the closing price of the underlying securities. This asset class includes investments in emerging market debt, leveraged loans, REITs, high yield bonds, a commodities fund, and a hedge fund of funds.

ABSOLUTE RETURN STRATEGY. This is a non-published NAV asset consisting of a hedge fund of funds where the valuation is not published. This hedge fund of funds is winding down. Based on recent dispositions, NW Natural believes the remaining investment is fairly valued. The hedge fund of funds is valued at the weighted average value of investments in various hedge funds, which in turn are valued at the closing price of the underlying securities. This asset class primarily includes investments in common stocks and fixed income securities.

CASH AND CASH EQUIVALENTS. These are Level 1 and non-published NAV assets. The Level 1 assets consist of cash in U.S. dollars, which can be readily disposed of at face value. The non-published NAV assets represent mutual funds without published NAV's but the investment can be readily disposed of at the NAV. The mutual funds are valued at the NAV of the shares held by the plan at the valuation date.

The preceding valuation methods may produce a fair value calculation that is not indicative of net realizable value or reflective of future fair values. Although we believe these valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain investments could result in a different fair value measurement at the reporting date.

Investment securities are exposed to various financial risks including interest rate, market, and credit risks. Due to the level of risk associated with certain investment securities, it is reasonably possible that changes in the values of NW Natural's investment securities will occur in the near term and such changes could materially affect NW Natural's investment account balances and the amounts reported as plan assets available for benefit payments.

The following tables present the fair value of NW Natural's Pension Plan assets, including outstanding receivables and liabilities, of NW Natural's retirement trust fund:

In thousands	December 31, 2020				
Investments	Level 1	Level 2	Level 3	Non-Published NAV[1]	Total
US equity	$ —	$ —	$ —	$ 117,764	$ 117,764
International / Global equity	39,114	—	—	78,092	117,206
Liability hedging	—	—	—	111,041	111,041
Opportunistic	—	—	—	25,625	25,625
Cash and cash equivalents	—	—	—	2,295	2,295
Total investments	$ 39,114	$ —	$ —	$ 334,817	$ 373,931

	December 31, 2019				
Investments	Level 1	Level 2	Level 3	Non-Published NAV[1]	Total
US equity	$ —	$ —	$ —	$ 95,604	$ 95,604
International / Global equity	33,168	—	—	74,337	107,505
Liability hedging	—	—	—	93,028	93,028
Opportunistic	—	—	—	9,864	9,864
Cash and cash equivalents	—	—	—	7,049	7,049
Total investments	$ 33,168	$ —	$ —	$ 279,882	$ 313,050

	December 31,	
	2020	2019
Receivables:		
Accrued interest and dividend income	$ 6,429	$ 3,243
Total receivables	6,429	3,243
Liabilities:		
Due to broker for securities purchased	6,429	3,242
Total investment in retirement trust	$ 373,931	$ 313,051

(1) The fair value for these investments is determined using Net Asset Value per share (NAV) as of December 31, as a practical expedient, and therefore they are not classified within the fair value hierarchy. These investments primarily consist of institutional investment products, for which the NAV is generally not publicly available.

11. INCOME TAX

The following table provides a reconciliation between income taxes calculated at the statutory federal tax rate and the provision for income taxes reflected in the NW Holdings and NW Natural statements of comprehensive income or loss for December 31:

	NW Holdings			NW Natural		
Dollars in thousands	2020	2019	2018	2020	2019	2018
Income taxes at federal statutory rate	$ 19,185	$ 16,370	$ 19,222	$ 19,248	$ 17,438	$ 19,434
Increase (decrease):						
State income tax, net of federal	6,389	4,422	4,927	6,385	4,716	4,982
Differences required to be flowed-through by regulatory commissions	(3,960)	(5,772)	1,302	(3,960)	(5,772)	1,302
Deferred tax rate differential post-TCJA	—	—	(76)	—	—	(75)
Regulatory settlement	—	(1,129)	—	—	(1,129)	—
Other, net	(532)	(1,249)	(1,184)	(578)	(1,188)	(1,184)
Total provision for income taxes	$ 21,082	$ 12,642	$ 24,191	$ 21,095	$ 14,065	$ 24,459
Effective tax rate	23.1 %	16.2 %	26.4 %	23.0 %	16.9 %	26.4 %

The NW Holdings and NW Natural effective income tax rates for 2020 compared to 2019 changed primarily as a result of higher pre-tax income, the Oregon Corporate Activity Tax effective January 1, 2020, and amortization of excess deferred income tax benefits as ordered by regulatory commissions. The NW Holdings and NW Natural effective income tax rates for 2019 compared to 2018 changed primarily as a result of lower pre-tax income and amortization of excess deferred income tax benefits as ordered by regulatory commissions.

The provision for current and deferred income taxes consists of the following at December 31:

	NW Holdings			NW Natural		
In thousands	2020	2019	2018	2020	2019	2018
Current						
Federal	$ 10,106	$ 5,530	$ 8,953	$ 11,092	$ 6,755	$ 9,127
State	5,971	1,667	3,785	5,357	2,101	3,846
Total current income taxes	16,077	7,197	12,738	16,449	8,856	12,973
Deferred						
Federal	2,888	1,515	9,001	1,921	1,340	9,025
State	2,117	3,930	2,452	2,725	3,869	2,461
Total deferred income taxes	5,005	5,445	11,453	4,646	5,209	11,486
Income tax provision	$ 21,082	$ 12,642	$ 24,191	$ 21,095	$ 14,065	$ 24,459

The following table summarizes the tax effect of significant items comprising NW Holdings and NW Natural's deferred income tax balances recorded at December 31:

	NW Holdings		NW Natural	
In thousands	2020	2019	2020	2019
Deferred tax liabilities:				
Plant and property	$ 297,078	$ 269,886	$ 290,105	$ 281,044
Leases receivable	39,396	40,133	39,396	40,133
Pension and postretirement obligations	25,066	22,635	25,066	22,635
Income tax regulatory asset	17,104	19,382	17,104	19,382
Lease right of use assets	21,613	778	21,596	731
Other	—	748	—	407
Total deferred income tax liabilities	$ 400,257	$ 353,562	$ 393,267	$ 364,332
Deferred income tax assets:				
Income tax regulatory liability	$ 52,590	$ 54,259	$ 52,366	$ 54,259
Lease liabilities	21,622	775	21,606	728
Other intangible assets	4,485	2,723	—	—
Net operating losses and credits carried forward	861	162	80	48
Other	1,407	—	1,181	—
Total deferred income tax assets	$ 80,965	$ 57,919	$ 75,233	$ 55,035
Total net deferred income tax liabilities	$ 319,292	$ 295,643	$ 318,034	$ 309,297

At December 31, 2020 and 2019, regulatory income tax assets of $14.6 million and $16.9 million, respectively, were recorded by NW Natural, a portion of which is recorded in current assets. These regulatory income tax assets primarily represent future rate recovery of deferred tax liabilities, resulting from differences in NGD plant financial statement and tax bases and NGD plant removal costs, which were previously flowed through for rate making purposes and to take into account the additional future taxes, which will be generated by that recovery. These deferred tax liabilities, and the associated regulatory income tax assets, are currently being recovered through customer rates. At December 31, 2020 and 2019, regulatory income tax assets of $2.5 million and $2.5 million, respectively, were recorded by NW Natural, representing future recovery of deferred tax liabilities resulting from the equity portion of AFUDC. At December 31, 2020, regulatory income tax assets of $1.7 million were recorded by NW Natural, representing future recovery of Oregon Corporate Activity tax that was deferred between January 1, 2020 and October 31, 2020. In October 2020, the OPUC issued an order providing for recovery of deferred Oregon CAT as well as CAT incurred prospectively beginning November 1, 2020

At December 31, 2020 and 2019, deferred tax assets of $52.4 million and $54.3 million, respectively, were recorded by NW Natural representing the future income tax benefit associated with the excess deferred income tax regulatory liability recorded as a result of the lower federal corporate income tax rate provided for by the TCJA. At December 31, 2020 and 2019, regulatory liability balances representing the benefit of the change in deferred taxes as a result of the TCJA of $197.8 million and $205.0 million, respectively, were recorded by NW Natural.

NW Natural’s natural gas utility rates include an allowance to provide for the recovery of the anticipated provision for income taxes incurred as a result of providing regulated services. As a result of the 21 percent federal corporate income tax rate enacted in 2017, NW Natural recorded an additional regulatory liability in 2018 and 2019 reflecting the deferral of the estimated rate benefit for customers. The deferral period for Oregon ended on October 31, 2018 coincident with new rates beginning November 1, 2018. The deferral period for Washington ended on October 31, 2019 coincident with new rates beginning November 1, 2019. At December 31, 2019, a regulatory liability of $1.7 million was recorded to reflect this estimated revenue deferral. The liability has been completely amortized to customers’ benefit as of December 31, 2020.

NW Holdings and NW Natural assess the available positive and negative evidence to estimate if sufficient taxable income will be generated to utilize their respective existing deferred tax assets. Based upon this assessment, NW Holdings and NW Natural determined that it is more likely than not that all of their respective deferred tax assets recorded as of December 31, 2020 will be realized.

The Company estimates it has net operating loss (NOL) carryforwards of $0.3 million for federal taxes and $11.5 million for state taxes at December 31, 2020. We anticipate fully utilizing these NOL carryforward balances before they begin to expire in 2030 for federal and 2023 for state. Oregon Energy Incentive Program (EIP) credits, California alternative minimum tax (AMT) credits and Idaho investment tax credits (ITC) of $0.1 million are also available. The EIP credits expires in 2025. The AMT credits do not expire. The ITC credits expire in 2033.

Uncertain tax positions are accounted for in accordance with accounting standards that require an assessment of the anticipated settlement outcome of material uncertain tax positions taken in a prior year, or planned to be taken in the current year. Until such positions are sustained, the uncertain tax benefits resulting from such positions would not be recognized. No reserves for uncertain tax positions were recorded as of December 31, 2020, 2019, or 2018.

The federal income tax returns for tax years 2016 and earlier are closed by statute. The IRS Compliance Assurance Process (CAP) examination of the 2017 and 2018 tax years have been completed. There were no material changes to these returns as filed. The 2019 and 2020 tax years are currently under IRS CAP examination. Our 2021 CAP application has been filed. Under the CAP program, NW Holdings and NW Natural work with the IRS to identify and resolve material tax matters before the tax return is filed each year.

As of December 31, 2020, income tax years 2016 through 2019 remain open for examination by the State of California. Income tax years 2018 and 2019 are open for examination by the State of Idaho. The State of Oregon examined the Oregon corporate income tax returns for tax years 2015, 2016, and 2017. No material changes occurred as a result of this examination. Tax years 2018 and 2019 are open for examination by the State of Oregon.

U.S. Federal TCJA Matters

On December 22, 2017, the TCJA was enacted and permanently lowered the U.S. federal corporate income tax rate to 21% from the previous maximum rate of 35%, effective for the tax year beginning January 1, 2018. The TCJA included specific provisions related to regulated public utilities that provide for the continued deductibility of interest expense and the elimination of bonus tax depreciation for property both acquired and placed into service on or after January 1, 2018.

Under pre-TCJA law, business interest was generally deductible in the determination of taxable income. The TCJA imposed a new limitation on the deductibility of net business interest expense in excess of approximately 30 percent of adjusted taxable income. Taxpayers operating in the trade or business of a regulated utility are excluded from these new interest expense limitations. Final U.S. Treasury Regulations became effective in November of 2020 which provide a de minimis rule whereby if 90 percent or more of a taxpayer's adjusted asset basis is allocable to regulated utility activities, then all of the business interest expense of that taxpayer is deemed to be excepted business interest of the regulated utility activity and is thereby not limited under the TCJA. As a result of the de minimis rule, NW Holdings and NW Natural anticipate that business interest expense will not be limited under the TCJA.

The TCJA generally provides for immediate full expensing for qualified property both acquired and placed in service after September 27, 2017 and before January 1, 2023. This would generally provide for accelerated cost recovery for capital investments. However, the definition of qualified property excludes property used in the trade or business of a regulated utility. Final U.S. Treasury Regulations were published in September of 2019 which clarified that bonus tax depreciation would not be available for regulated utility activity assets both acquired and placed in service by NW Holdings or NW Natural on or after January 1, 2018. Final U.S. Treasury Regulations released in September of 2020 clarified that long production period property acquired before September 27, 2017 continues to qualify for bonus depreciation in the year placed in service consistent with pre-TCJA law.

NW Natural previously filed applications with the OPUC and WUTC to defer the NGD net income tax benefits resulting from the TCJA. In March 2019, the OPUC issued an order addressing the regulatory amortization of the income tax benefits from the TCJA that NW Natural deferred for Oregon customers in December of 2017. Under the order, NW Natural will provide the benefit of these TCJA income tax deferrals to Oregon customers through ongoing annual credits to customer base rates and as a one-time recovery of a portion of the pension balancing account regulatory asset balance. On an annualized basis, it is anticipated that the income tax benefits from the provision of these TCJA benefits to customers should approximate the reduction to pretax income that occurs as a result of the customer base rate credits and one-time recovery of a portion of the pension balancing account.

In October 2019, the WUTC issued an order addressing the regulatory amortization of the income tax benefits from the TCJA that NW Natural deferred for Washington customers in December of 2017. Under the order, NW Natural provided deferred income tax benefits from the TCJA to customers through base rate credits beginning November 1, 2019.

12. PROPERTY, PLANT, AND EQUIPMENT

The following table sets forth the major classifications of property, plant, and equipment and accumulated depreciation of continuing operations at December 31:

In thousands	2020	2019
NW Natural:		
NGD plant in service	$ 3,548,543	$ 3,302,049
NGD work in progress	63,901	84,965
Less: Accumulated depreciation	1,055,809	1,017,931
NGD plant, net	2,556,635	2,369,083
Other plant in service	66,300	63,513
Other construction work in progress	5,032	5,548
Less: Accumulated depreciation	19,637	18,662
Other plant, net	51,695	50,399
Total property, plant, and equipment	$ 2,608,330	$ 2,419,482
Other (NW Holdings):		
Other plant in service	$ 50,263	$ 20,671
Less: Accumulated depreciation	3,823	1,254
Other plant, net	46,440	19,417
NW Holdings:		
Total property, plant, and equipment	$ 2,654,770	$ 2,438,899
NW Natural and NW Holdings:		
Capital expenditures in accrued liabilities	$ 25,129	$ 32,502

Accumulated depreciation does not include the accumulated provision for asset removal costs of $428.0 million and $401.9 million at December 31, 2020 and 2019, respectively. These accrued asset removal costs are reflected on the balance sheet as regulatory liabilities. See Note 2.

<u>NW Holdings</u>
Other plant balances include long-lived assets associated with water operations and non-regulated activities not held by NW Natural or its subsidiaries.

<u>NW Natural</u>
Other plant balances include long-lived assets not related to NGD and long-lived assets that may be used to support NGD operations.

The weighted average depreciation rate for NGD assets was 3.0% in 2020, 2.9% in 2019, and 2.8% in 2018. The weighted average depreciation rate for assets not related to NGD was 1.8% in 2020, 1.8% in 2019, and 2.2% in 2018.

In May 2019, NW Natural placed its North Mist gas storage expansion facility into service and commenced storage services to the facility's single customer, PGE. Under U.S. GAAP, this agreement is classified as a sales-type lease and qualifies for regulatory accounting deferral treatment. Accordingly, the project was de-recognized from property, plant and equipment upon lease commencement and the investment balance is presented net of the current portion of scheduled billings within assets under sales-type leases on the consolidated balance sheets. A total of $146.0 million was de-recognized from plant on the lease commencement date. The facility is included within rate base for ratemaking purposes. See Note 7 for information regarding leases, including North Mist.

13. GAS RESERVES

NW Natural has invested $188 million through the gas reserves program in the Jonah Field located in Wyoming as of December 31, 2020. Gas reserves are stated at cost, net of regulatory amortization, with the associated deferred tax benefits recorded as liabilities in the consolidated balance sheets. The investment in gas reserves provides long-term price protection for NGD customers through the original agreement with Encana Oil & Gas (USA) Inc. under which NW Natural invested $178 million and the amended agreement with Jonah Energy LLC under which an additional $10 million was invested.

NW Natural entered into the original agreements with Encana in 2011 under which NW Natural holds working interests in certain sections of the Jonah Field. Gas produced in these sections is sold at prevailing market prices, and revenues from such sales, net of associated operating and production costs and amortization, are credited to the NGD cost of gas. The cost of gas, including a carrying cost for the rate base investment, is included in the annual Oregon PGA filing, which allows NW Natural to recover these costs through customer rates. The investment under the original agreement, less accumulated amortization and deferred taxes, earns a rate of return.

In March 2014, NW Natural amended the original gas reserves agreement in order to facilitate Encana's proposed sale of its interest in the Jonah field to Jonah Energy. Under the amendment, NW Natural ended the drilling program with Encana, but increased its working interests in its assigned sections of the Jonah field. NW Natural also retained the right to invest in new wells with Jonah Energy. Under the amended agreement there is still the option to invest in additional wells on a well-by-well basis with drilling costs and resulting gas volumes shared at NW Natural's amended proportionate working interest for each well in which it invests. NW Natural elected to participate in some of the additional wells drilled in 2014, but has not participated in additional wells since 2014. However, there may be the opportunity to participate in more wells in the future.

Gas produced from the additional wells is included in the Oregon PGA at a fixed rate of $0.4725 per therm, which approximates the 10-year hedge rate plus financing costs at the inception of the investment.

Gas reserves acted to hedge the cost of gas for approximately 5%, 5% and 6% of NGD gas supplies for the years ended December 31, 2020, 2019, and 2018, respectively.

The following table outlines NW Natural's net gas reserves investment at December 31:

In thousands	2020	2019
Gas reserves, current	$ 11,409	$ 15,278
Gas reserves, non-current	175,898	172,029
Less: Accumulated amortization	141,414	123,635
Total gas reserves[1]	45,893	63,672
Less: Deferred taxes on gas reserves	10,572	15,515
Net investment in gas reserves	$ 35,321	$ 48,157

(1) The net investment in additional wells included in total gas reserves was $3.0 million and $3.8 million at December 31, 2020 and 2019, respectively.

NW Natural's investment is included in NW Holdings' and NW Natural's consolidated balance sheets under gas reserves with the maximum loss exposure limited to the investment balance.

14. INVESTMENTS

Investments include financial investments in life insurance policies, and equity method investments in certain partnerships and limited liability companies. The following table summarizes other investments at December 31:

	NW Holdings		NW Natural	
In thousands	2020	2019	2020	2019
Investments in life insurance policies	$ 49,241	$ 49,837	$ 49,241	$ 49,837
Investments in gas pipeline	—	13,472	—	—
Other	18	24	—	—
Total other investments	$ 49,259	$ 63,333	$ 49,241	$ 49,837

Investment in Life Insurance Policies

NW Natural has invested in key person life insurance contracts to provide an indirect funding vehicle for certain long-term employee and director benefit plan liabilities. The amount in the above table is reported at cash surrender value, net of policy loans.

Investments in Gas Pipeline

On August 6, 2020, NWN Energy completed the sale of 100% of its interest in Trail West Holdings, LLC (TWH) to an unrelated third party for a purchase price of $14.0 million, $7.0 million of which was paid upon closing the transaction, and $7.0 million is to be paid upon the one-year anniversary of the close date. The completion of the sale resulted in an after-tax gain of approximately $0.5 million.

TWH was a variable interest entity reported under equity method accounting through its sale. The investment in TWH did not meet the criteria to be classified as held for sale or discontinued operations. The investment balance in TWH was $13.4 million at December 31, 2019.

15. BUSINESS COMBINATIONS

2020 Business Combinations

During the year ended December 31, 2020, NWN Water and its subsidiaries completed two significant acquisitions qualifying as business combinations. The aggregate fair value of the preliminary cash consideration transferred for these acquisitions was $38.1 million, most of which was preliminarily allocated to property, plant and equipment and goodwill. These transactions align with NW Holdings' water sector strategy as it continues to expand its water services territories in the Pacific Northwest and beyond and included:

- Suncadia Water Company, LLC and Suncadia Environmental Company, LLC which were acquired by NWN Water of Washington on January 31, 2020, and
- T&W Water Service Company which was acquired by NWN Water of Texas on March 2, 2020.

As each of these acquisitions met the criteria of a business combination, a preliminary allocation of the consideration to the acquired net assets based on their estimated fair value as of the acquisition date was performed. The allocation for each of these business combinations is considered preliminary as of December 31, 2020, as facts and circumstances that existed as of the acquisition date may be discovered as we continue to integrate these businesses. In accordance with U.S. GAAP, the fair value determination involves management judgment in determining the significant estimates and assumptions used and was made using existing regulatory conditions for net assets associated with Suncadia Water Company, LLC and T&W Water Service Company. This allocation is considered preliminary as of December 31, 2020, as facts and circumstances that existed as of the acquisition date may be discovered as we continue to integrate the acquired businesses. As a result, subsequent adjustments to the preliminary valuation of tangible assets, contract assets and liabilities, tax positions, and goodwill may be required. Subsequent adjustments are not expected to be significant, and any such adjustments are expected to be completed within the one-year measurement period for all acquisitions described above.

Total preliminary goodwill of $18.2 million was recognized from the acquisitions described above. No intangible assets aside from goodwill were acquired. The goodwill recognized is attributable to the regulated water utility service territories, experienced workforces, and the strategic benefits from both the water and wastewater utilities expected from growth in their service territories. The total amount of goodwill that is expected to be deductible for income tax purposes is approximately $16.5 million. The acquisition costs associated with each business combination were expensed as incurred. The results of these business combinations were not material to the consolidated financial results of NW Holdings for the year ended December 31, 2020.

Other Business Combinations

During the year ended December 31, 2020, NWN Water completed three additional acquisitions, comprised of four water systems and one wastewater system, which qualified as business combinations. The aggregate fair value of the preliminary consideration transferred for these acquisitions was approximately $1.5 million. These business combinations were not significant to NW Holdings' results of operations.

2019 Business Combinations

Sunriver

On May 31, 2019, NWN Water of Oregon, a wholly-owned indirect subsidiary of NW Holdings, completed the acquisition of Sunriver Water LLC and Sunriver Environmental LLC (collectively referred to as Sunriver), a privately-owned water utility and wastewater treatment company located in Sunriver, Oregon that serves approximately 9,400 connections. The acquisition-date fair value of the total consideration transferred, after closing adjustments, was approximately $55.0 million in cash consideration. The transaction aligns with NW Holdings' water sector strategy as it continues to expand its water utility service territory in the Pacific Northwest and begins to pursue wastewater investment opportunities.

The Sunriver acquisition met the criteria of a business combination, and as such a preliminary allocation of the consideration to the acquired assets based on their estimated fair value as of the acquisition date was performed. In accordance with U.S. GAAP, the fair value determination was made using existing regulatory conditions for assets associated with Sunriver Water LLC as well as existing market conditions and standard valuation approaches for assets associated with Sunriver Environmental LLC in order to allocate value as determined by an independent third party assessor for certain assets, which involved the use of management judgment in determining the significant estimates and assumptions used by the assessor, with the remaining difference from the consideration transferred being recorded as goodwill. The acquisition costs were expensed as incurred.

Final goodwill of $41.1 million was recognized from this acquisition. The goodwill recognized is attributable to Sunriver's regulated water utility service territory, experienced workforce, and the strategic benefits for both the water utility and wastewater services expected from growth in its service territory. No intangible assets aside from goodwill were acquired. The total amount of goodwill that is expected to be deductible for income tax purposes is approximately $50.0 million.

The final purchase price for the acquisition has been allocated to the net assets acquired as of the acquisition date and is as follows:

In thousands		May 31, 2020
Current assets	$	222
Property, plant and equipment		12,866
Goodwill		41,054
Deferred tax assets		828
Current liabilities		(22)
Total net assets acquired	$	54,948

The amount of Sunriver revenues included in NW Holdings' consolidated statements of comprehensive income was $6.6 million for the year ended December 31, 2020. Earnings included in NW Holdings' consolidated statements of comprehensive income was $1.6 million for the year ended December 31, 2020.

Other Business Combinations
During 2019, NWN Water completed three additional acquisitions qualifying as business combinations. The aggregate fair value of the preliminary consideration transferred for these acquisitions was approximately $2.0 million. These business combinations were not significant to NW Holdings' results of operations.

Goodwill
NW Holdings allocates goodwill to reporting units based on the expected benefit from the business combination. We perform an annual impairment assessment of goodwill at the reporting unit level, or more frequently if events and circumstances indicate that goodwill might be impaired. An impairment loss is recognized if the carrying value of a reporting unit's goodwill exceeds its fair value.

As a result of all acquisitions completed, total goodwill was $69.2 million as of December 31, 2020 and $49.9 million as of December 31, 2019. The increase in the goodwill balance was primarily due to additions associated with our acquisitions in the water sector. All of our goodwill is related to water and wastewater acquisitions and is included in the other category for segment reporting purposes. The annual impairment assessment of goodwill occurs in the fourth quarter of each year. There have been no impairments recognized to date.

16. DERIVATIVE INSTRUMENTS

NW Natural enters into financial derivative contracts to hedge a portion of the NGD segment's natural gas sales requirements. These contracts include swaps, options, and combinations of option contracts. These derivative financial instruments are primarily used to manage commodity price variability. A small portion of NW Natural's derivative hedging strategy involves foreign currency forward contracts.

NW Natural enters into these financial derivatives, up to prescribed limits, primarily to hedge price variability related to term physical gas supply contracts as well as to hedge spot purchases of natural gas. The foreign currency forward contracts are used to hedge the fluctuation in foreign currency exchange rates for pipeline demand charges paid in Canadian dollars.

In the normal course of business, NW Natural also enters into indexed-price physical forward natural gas commodity purchase contracts and options to meet the requirements of NGD customers. These contracts qualify for regulatory deferral accounting treatment.

NW Natural also enters into exchange contracts related to the third-party asset management of its gas portfolio, some of which are derivatives that do not qualify for hedge accounting or only partial regulatory deferral, but are subject to NW Natural's regulatory sharing agreement. These derivatives are recognized in operating revenues, net of amounts shared with NGD customers.

Notional Amounts
The following table presents the absolute notional amounts related to open positions on NW Natural derivative instruments:

	At December 31,			
In thousands		2020		2019
Natural gas (in therms):				
Financial		784,400		651,540
Physical		457,593		512,849
Foreign exchange	$	5,896	$	6,650

Purchased Gas Adjustment (PGA)
Derivatives entered into by NW Natural for the procurement or hedging of natural gas for future gas years generally receive regulatory deferral accounting treatment. In general, commodity hedging for the current gas year is completed prior to the start of the gas year, and hedge prices are reflected in the weighted-average cost of gas in the PGA filing. Rates and hedging approaches may vary between states due to different rate structures and mechanisms. In addition, as required with the Washington PGA filing, NW Natural incorporated and began implementing risk-responsive hedging strategies for its Washington gas supplies. Hedge contracts entered into after the start of the PGA period are subject to the PGA incentive sharing mechanism in Oregon. NW Natural entered the 2020-21 and 2019-20 gas years with forecasted sales volumes hedged at 53% and 52% in financial swap and option contracts, and 17% and 19% in physical gas supplies, respectively. Hedge contracts entered into prior to the PGA filing, in September 2020, were included in the PGA for the 2020-21 gas year. Hedge contracts entered into after the PGA filing, and related to subsequent gas years, may be included in future PGA filings and qualify for regulatory deferral.

Unrealized and Realized Gain/Loss
The following table reflects the income statement presentation for the unrealized gains and losses from NW Natural's derivative instruments, which also represents all derivative instruments at NW Holdings:

	December 31, 2020		December 31, 2019	
In thousands	Natural gas commodity	Foreign exchange	Natural gas commodity	Foreign exchange
Benefit (expense) to cost of gas	$ 7,342	$ 312	$ 9,863	$ 102
Operating revenues (expense)	(1,212)	—	(568)	—
Amounts deferred to regulatory accounts on balance sheet	(6,306)	(312)	(9,376)	(102)
Total gain (loss) in pre-tax earnings	$ (176)	$ —	$ (81)	$ —

Unrealized Gain/Loss
Outstanding derivative instruments related to regulated NGD operations are deferred in accordance with regulatory accounting standards. The cost of foreign currency forward and natural gas derivative contracts are recognized immediately in the cost of gas; however, costs above or below the amount embedded in the current year PGA are subject to a regulatory deferral tariff and therefore, are recorded as a regulatory asset or liability.

Realized Gain/Loss
NW Natural realized net gains of $2.3 million and $17.9 million for the years ended December 31, 2020 and 2019, respectively, from the settlement of natural gas financial derivative contracts. Realized gains and losses offset the higher or lower cost of gas purchased, resulting in no incremental amounts to collect or refund to customers.

Credit Risk Management of Financial Derivatives Instruments
No collateral was posted with or by NW Natural counterparties as of December 31, 2020 or 2019. NW Natural attempts to minimize the potential exposure to collateral calls by diversifying counterparties and using credit limits to manage liquidity risk. Counterparties generally allow a certain credit limit threshold before requiring NW Natural to post collateral against unrealized loss positions. Given NW Natural's counterparty credit limits and portfolio diversification, it was not subject to collateral calls in 2020 or 2019. The collateral call exposure is set forth under credit support agreements, which generally contain credit limits. NW Natural could also be subject to collateral call exposure where it has agreed to provide adequate assurance, which is not specific as to the amount of credit limit allowed, but could potentially require additional collateral in the event of a material adverse change.

Based upon current commodity financial swap and option contracts outstanding, which reflect unrealized gains of $13.1 million at December 31, 2020, we have estimated the level of collateral demands, with and without potential adequate assurance calls, using current gas prices and various credit downgrade rating scenarios for NW Natural as follows:

		Credit Rating Downgrade Scenarios			
In thousands	(Current Ratings) A+/A3	BBB+/Baa1	BBB/Baa2	BBB-/Baa3	Speculative
With Adequate Assurance Calls	$ —	$ —	$ —	$ —	$ 51
Without Adequate Assurance Calls	$ —	$ —	$ —	$ —	$ 51

NW Natural's financial derivative instruments are subject to master netting arrangements; however, they are presented on a gross basis in the consolidated balance sheets. NW Natural and its counterparties have the ability to set-off obligations to each other under specified circumstances. Such circumstances may include a defaulting party, a credit change due to a merger affecting either party, or any other termination event.

If netted by counterparty, NW Natural's physical and financial derivative position would result in an asset of $14.1 million and a liability of $1.3 million as of December 31, 2020, and an asset of $9.4 million and a liability of $1.9 million as of December 31, 2019.

NW Natural is exposed to derivative credit and liquidity risk primarily through securing fixed price natural gas commodity swaps with financial counterparties. NW Natural utilizes master netting arrangements through International Swaps and Derivatives Association contracts to minimize this risk along with collateral support agreements with counterparties based on their credit ratings. In certain cases, NW Natural requires guarantees or letters of credit from counterparties to meet its minimum credit requirement standards.

NW Natural's financial derivatives policy requires counterparties to have an investment-grade credit rating at the time the derivative instrument is entered into, and specifies limits on the contract amount and duration based on each counterparty’s credit rating. NW Natural does not speculate with derivatives. Derivatives are used to hedge exposure above risk tolerance limits. Increases in market risk created by the use of derivatives is offset by the exposures they modify.

We actively monitor NW Natural's derivative credit exposure and place counterparties on hold for trading purposes or require other forms of credit assurance, such as letters of credit, cash collateral, or guarantees as circumstances warrant. The ongoing assessment of counterparty credit risk includes consideration of credit ratings, credit default swap spreads, bond market credit spreads, financial condition, government actions, and market news. A Monte Carlo simulation model is used to estimate the change in credit and liquidity risk from the volatility of natural gas prices. The results of the model are used to establish trading limits. NW Natural's outstanding financial derivatives at December 31, 2020 mature by October 31, 2022.

We could become materially exposed to credit risk with one or more of our counterparties if natural gas prices experience a significant increase. If a counterparty were to become insolvent or fail to perform on its obligations, we could suffer a material loss; however, we would expect such a loss to be eligible for regulatory deferral and rate recovery, subject to a prudence review. All of our existing counterparties currently have investment-grade credit ratings.

Fair Value

In accordance with fair value accounting, NW natural includes non-performance risk in calculating fair value adjustments. This includes a credit risk adjustment based on the credit spreads of NW Natural counterparties when in an unrealized gain position, or on NW Natural's own credit spread when it is in an unrealized loss position. The inputs in our valuation models include natural gas futures, volatility, credit default swap spreads, and interest rates. Additionally, the assessment of non-performance risk is generally derived from the credit default swap market and from bond market credit spreads. The impact of the credit risk adjustments for all outstanding derivatives was immaterial to the fair value calculation at December 31, 2020. As of December 31, 2020 and 2019, the net fair value was an asset of $12.8 million and $7.5 million, respectively, using significant other observable, or Level 2, inputs. No Level 3 inputs were used in our derivative valuations during the years ended December 31, 2020 and 2019.

17. COMMITMENTS AND CONTINGENCIES

Gas Purchase and Pipeline Capacity Purchase and Release Commitments

NW Natural has signed agreements providing for the reservation of firm pipeline capacity under which it is required to make fixed monthly payments for contracted capacity. The pricing component of the monthly payment is established, subject to change, by U.S. or Canadian regulatory bodies, or is established directly with private counterparties, as applicable. In addition, NW Natural has entered into long-term agreements to release firm pipeline capacity. NW Natural also enters into short-term and long-term gas purchase agreements.

The aggregate amounts of these agreements were as follows at December 31, 2020:

In thousands	Gas Purchase Agreements	Pipeline Capacity Purchase Agreements	Pipeline Capacity Release Agreements
2021	$ 83,475	$ 77,748	$ 7,892
2022	—	80,646	7,182
2023	—	78,503	3,632
2024	—	73,472	3,632
2025	—	71,313	3,027
Thereafter	—	516,291	—
Total	83,475	897,973	25,365
Less: Amount representing interest	25	89,303	162
Total at present value	$ 83,450	$ 808,670	$ 25,203

Total fixed charges under capacity purchase agreements were $81.8 million for 2020, $82.2 million for 2019, and $82.6 million for 2018, of which $4.8 million, $4.3 million, and $4.3 million, respectively, related to capacity releases. In addition, per-unit charges are required to be paid based on the actual quantities shipped under the agreements. In certain take-or-pay purchase commitments, annual deficiencies may be offset by prepayments subject to recovery over a longer term if future purchases exceed the minimum annual requirements.

Leases
Refer to Note 7 for a discussion of lease commitments and contingencies.

Environmental Matters
Refer to Note 18 for a discussion of environmental commitments and contingencies.

18. ENVIRONMENTAL MATTERS

NW Natural owns, or previously owned, properties that may require environmental remediation or action. The range of loss for environmental liabilities is estimated based on current remediation technology, enacted laws and regulations, industry experience gained at similar sites, and an assessment of the probable level of involvement and financial condition of other potentially responsible parties (PRPs). When amounts are prudently expended related to site remediation of those sites described herein, NW Natural has recovery mechanisms in place to collect 96.7% of remediation costs allocable to Oregon customers and 3.3% of costs allocable to Washington customers.

These sites are subject to the remediation process prescribed by the Environmental Protection Agency (EPA) and the Oregon Department of Environmental Quality (ODEQ). The process begins with a remedial investigation (RI) to determine the nature and extent of contamination and then a risk assessment (RA) to establish whether the contamination at the site poses unacceptable risks to humans and the environment. Next, a feasibility study (FS) or an engineering evaluation/cost analysis (EE/CA) evaluates various remedial alternatives. It is at this point in the process when NW Natural is able to estimate a range of remediation costs and record a reasonable potential remediation liability, or make an adjustment to the existing liability. From this study, the regulatory agency selects a remedy and issues a Record of Decision (ROD). After a ROD is issued, NW Natural would seek to negotiate a consent decree or consent judgment for designing and implementing the remedy. NW Natural would have the ability to further refine estimates of remediation liabilities at that time.

Remediation may include treatment of contaminated media such as sediment, soil and groundwater, removal and disposal of media, institutional controls such as legal restrictions on future property use, or natural recovery. Following construction of the remedy, the EPA and ODEQ also have requirements for ongoing maintenance, monitoring and other post-remediation care that may continue for many years. Where appropriate and reasonably known, NW Natural will provide for these costs in the remediation liabilities described below.

Due to the numerous uncertainties surrounding the course of environmental remediation and the preliminary nature of several site investigations, in some cases, NW Natural may not be able to reasonably estimate the high end of the range of possible loss. In those cases, the nature of the possible loss has been disclosed, as has the fact that the high end of the range cannot be reasonably estimated where a range of potential loss is available. Unless there is an estimate within the range of possible losses that is more likely than other cost estimates within that range, NW Natural records the liability at the low end of this range. It is likely changes in these estimates and ranges will occur throughout the remediation process for each of these sites due to the continued evaluation and clarification concerning responsibility, the complexity of environmental laws and regulations and the determination by regulators of remediation alternatives. In addition to remediation costs, NW Natural could also be subject to Natural Resource Damages (NRD) claims. NW Natural will assess the likelihood and probability of each claim and recognize a liability if deemed appropriate. Refer to "*Other Portland Harbor*" below.

Environmental Sites

The following table summarizes information regarding liabilities related to environmental sites, which are recorded in other current liabilities and other noncurrent liabilities in NW Natural's balance sheet at December 31:

	Current Liabilities		Non-Current Liabilities	
In thousands	2020	2019	2020	2019
Portland Harbor site:				
Gasco/Siltronic Sediments	$ 7,596	$ 11,632	$ 43,725	$ 46,082
Other Portland Harbor	1,942	2,543	7,020	6,920
Gasco/Siltronic Upland site	14,887	14,203	40,250	43,616
Central Service Center site	—	—	—	—
Front Street site	3,816	10,847	1,107	—
Oregon Steel Mills	—	—	179	179
Total	$ 28,241	$ 39,225	$ 92,281	$ 96,797

Portland Harbor Site

The Portland Harbor is an EPA listed Superfund site that is approximately 10 miles long on the Willamette River and is adjacent to NW Natural's Gasco uplands site. NW Natural is one of over one hundred PRPs, each jointly and severally liable, at the Superfund site. In January 2017, the EPA issued its Record of Decision, which selects the remedy for the clean-up of the Portland Harbor site (Portland Harbor ROD). The Portland Harbor ROD estimates the present value total cost at approximately $1.05 billion with an accuracy between -30% and +50% of actual costs.

NW Natural's potential liability is a portion of the costs of the remedy for the entire Portland Harbor Superfund site. The cost of that remedy is expected to be allocated among more than one hundred PRPs. NW Natural is participating in a non-binding allocation process with the other PRPs in an effort to resolve its potential liability. The Portland Harbor ROD does not provide any additional clarification around allocation of costs among PRPs; accordingly, NW Natural has not modified any of the recorded liabilities at this time as a result of the issuance of the Portland Harbor ROD.

NW Natural manages its liability related to the Superfund site as two distinct remediation projects, the Gasco/Siltronic Sediments and Other Portland Harbor projects.

GASCO/SILTRONIC SEDIMENTS. In 2009, NW Natural and Siltronic Corporation entered into a separate Administrative Order on Consent with the EPA to evaluate and design specific remedies for sediments adjacent to the Gasco uplands and Siltronic uplands sites. NW Natural submitted a draft EE/CA to the EPA in May 2012 to provide the estimated cost of potential remedial alternatives for this site. In March 2020, NW Natural and the EPA amended the Administrative Order on Consent to include additional remedial design activities downstream of the Gasco sediments site and in the navigation channel. Siltronic Corporation is not a party to the amended order. At this time, the estimated costs for the various sediment remedy alternatives in the draft EE/CA for the additional studies and design work needed before the cleanup can occur, and for regulatory oversight throughout the cleanup range from $51.3 million to $350 million. NW Natural has recorded a liability of $51.3 million for the Gasco sediment clean-up, which reflects the low end of the range. At this time, we believe sediments at the Gasco sediments site represent the largest portion of NW Natural's liability related to the Portland Harbor site discussed above.

OTHER PORTLAND HARBOR. While we believe liabilities associated with the Gasco/Siltronic sediments site represent NW Natural's largest exposure, there are other potential exposures associated with the Portland Harbor ROD, including NRD costs and harborwide remedial design and cleanup costs (including downstream petroleum contamination), for which allocations among the PRPs have not yet been determined.

NW Natural and other parties have signed a cooperative agreement with the Portland Harbor Natural Resource Trustee council to participate in a phased NRD assessment to estimate liabilities to support an early restoration-based settlement of NRD claims. One member of this Trustee council, the Yakama Nation, withdrew from the council in 2009, and in 2017, filed suit against NW Natural and 29 other parties seeking remedial costs and NRD assessment costs associated with the Portland Harbor site, set forth in the complaint. The complaint seeks recovery of alleged costs totaling $0.3 million in connection with the selection of a remedial action for the Portland Harbor site as well as declaratory judgment for unspecified future remedial action costs and for costs to assess the injury, loss or destruction of natural resources resulting from the release of hazardous substances at and from the Portland Harbor site. The Yakama Nation has filed two amended complaints addressing certain pleading defects and dismissing the State of Oregon. On the motion of NW Natural and certain other defendants the federal court has stayed the case pending the outcome of the non-binding allocation proceeding discussed above. NW Natural has recorded a liability for NRD claims which is at the low end of the range of the potential liability; the high end of the range cannot be reasonably estimated at this time. The NRD liability is not included in the aforementioned range of costs provided in the Portland Harbor ROD.

Gasco Uplands Site
A predecessor of NW Natural, Portland Gas and Coke Company, owned a former gas manufacturing plant that was closed in 1958 (Gasco site) and is adjacent to the Portland Harbor site described above. The Gasco site has been under investigation by NW Natural for environmental contamination under the ODEQ Voluntary Cleanup Program (VCP). It is not included in the range of remedial costs for the Portland Harbor site noted above. The Gasco site is managed in two parts, the uplands portion and the groundwater source control action.

NW Natural submitted a revised Remedial Investigation Report for the uplands to ODEQ in May 2007. In March 2015, ODEQ approved Remedial Assessment (RA) for this site, enabling commencement of work on the FS in 2016. NW Natural has recognized a liability for the remediation of the uplands portion of the site which is at the low end of the range of potential liability; the high end of the range cannot be reasonably estimated at this time.

In October 2016, ODEQ and NW Natural agreed to amend their VCP agreement to incorporate a portion of the Siltronic property adjacent to the Gasco site formerly owned by Portland Gas & Coke between 1939 and 1960 into the Gasco RA and FS, excluding the uplands for Siltronic. Previously, NW Natural was conducting an investigation of manufactured gas plant constituents on the entire Siltronic uplands for ODEQ. Siltronic will be working with ODEQ directly on environmental impacts to the remainder of its property.

In September 2013, NW Natural completed construction of a groundwater source control system, including a water treatment station, at the Gasco site. NW Natural has estimated the cost associated with the ongoing operation of the system and has recognized a liability which is at the low end of the range of potential cost. NW Natural cannot estimate the high end of the range at this time due to the uncertainty associated with the duration of running the water treatment station, which is highly dependent on the remedy determined for both the upland portion as well as the final remedy for Gasco sediment exposure.

Other Sites
In addition to those sites above, NW Natural has environmental exposures at three other sites: Central Service Center, Front Street and Oregon Steel Mills. NW Natural may have exposure at other sites that have not been identified at this time. Due to the uncertainty of the design of remediation, regulation, timing of the remediation and in the case of the Oregon Steel Mills site, pending litigation, liabilities for each of these sites have been recognized at their respective low end of the range of potential liability; the high end of the range could not be reasonably estimated at this time.

CENTRAL SERVICE CENTER SITE. The investigative phase to characterize the existing site has been completed and determined by the Oregon Department of Environmental Quality (DEQ) to be sufficient to allow for the issuance of a Conditional No Further Action (cNFA). NW Natural is now conducting ongoing environmental monitoring activities through 2024 in order to meet the conditions which were included within the cNFA.

FRONT STREET SITE. The Front Street site was the former location of a gas manufacturing plant NW Natural operated (the former Portland Gas Manufacturing site, or PGM). At ODEQ's request, NW Natural conducted a sediment and source control investigation and provided findings to ODEQ. In December 2015, an FS on the former Portland Gas Manufacturing site was completed.

In July 2017, ODEQ issued the PGM ROD. The ROD specifies the selected remedy, which requires a combination of dredging, capping, treatment, and natural recovery. In addition, the selected remedy also requires institutional controls and long-term inspection and maintenance. In September 2020, NW Natural revised its estimate of the remaining cost to construct the remedy to be approximately $7.1 million. Further, NW Natural has recognized an additional liability of $4.9 million for munitions and design costs, regulatory and permitting issues, and post-construction work. Construction of the remedy began in early July 2020 and was completed in October 2020.

OREGON STEEL MILLS SITE. Refer to "Legal Proceedings," below.

Environmental Cost Deferral and Recovery
NW Natural has authorizations in Oregon and Washington to defer costs related to remediation of properties that are owned or were previously owned by NW Natural. In Oregon, a Site Remediation and Recovery Mechanism (SRRM) is currently in place to recover prudently incurred costs allocable to Oregon customers, subject to an earnings test. On October 21, 2019 the WUTC authorized an Environmental Cost Recovery Mechanism (ECRM) for recovery of prudently incurred costs allocable to Washington customers beginning November 1, 2019.

The following table presents information regarding the total regulatory asset deferred as of December 31:

In thousands		2020		2019
Deferred costs and interest[1]	$	44,516	$	36,673
Accrued site liabilities[2]		120,352		135,662
Insurance proceeds and interest		(69,253)		(79,949)
Total regulatory asset deferral[1]	$	95,615	$	92,386
Current regulatory assets[3]	$	4,992	$	4,762
Long-term regulatory assets[3]	$	90,623	$	87,624

(1) Includes pre-review and post-review deferred costs, amounts currently in amortization, and interest, net of amounts collected from customers. In Oregon, NW Natural earns a carrying charge on cash amounts paid, whereas amounts accrued but not yet paid do not earn a carrying charge until expended. NW Natural also accrues a carrying charge on insurance proceeds for amounts owed to customers. In Washington, neither the cash paid nor insurance proceeds accrue a carrying charge.

(2) Excludes 3.3% of the Front Street site liability, or $0.2 million in 2020 and $0.4 million in 2019, as the OPUC only allows recovery of 96.7% of costs for those sites allocable to Oregon, including those that historically served only Oregon customers.

(3) Environmental costs relate to specific sites approved for regulatory deferral by the OPUC and WUTC. In Oregon, NW Natural earns a carrying charge on cash amounts paid, whereas amounts accrued but not yet paid do not earn a carrying charge until expended. It also accrues a carrying charge on insurance proceeds for amounts owed to customers. In Washington, neither the cash paid nor insurance proceeds received accrue a carrying charge. Current environmental costs represent remediation costs management expects to collect from customers in the next 12 months. Amounts included in this estimate are still subject to a prudence and earnings test review by the OPUC and do not include the $5.0 million tariff rider. The amounts allocable to Oregon are recoverable through NGD rates, subject to an earnings test. See "*Oregon SRRM*" below.

Oregon SRRM

Collections From Oregon Customers

Under the SRRM collection process, there are three types of deferred environmental remediation expense:

- Pre-review - This class of costs represents remediation spend that has not yet been deemed prudent by the OPUC. Carrying costs on these remediation expenses are recorded at NW Natural's authorized cost of capital. NW Natural anticipates the prudence review for annual costs and approval of the earnings test prescribed by the OPUC to occur by the third quarter of the following year.
- Post-review - This class of costs represents remediation spend that has been deemed prudent and allowed after applying the earnings test, but is not yet included in amortization. NW Natural earns a carrying cost on these amounts at a rate equal to the five-year treasury rate plus 100 basis points.
- Amortization - This class of costs represents amounts included in current customer rates for collection and is generally calculated as one-fifth of the post-review deferred balance. NW Natural earns a carrying cost equal to the amortization rate determined annually by the OPUC, which approximates a short-term borrowing rate.

In addition to the collection amount noted above, an order issued by the OPUC provides for the annual collection of $5.0 million from Oregon customers through a tariff rider. As NW Natural collects amounts from customers, it recognizes these collections as revenue and separately amortizes an equal and offsetting amount of its deferred regulatory asset balance through the environmental remediation operating expense line shown separately in the operating expense section of the income statement.

NW Natural received total environmental insurance proceeds of approximately $150 million as a result of settlements from litigation that was dismissed in July 2014. Under a 2015 OPUC order which established the SRRM, one-third of the Oregon allocated proceeds were applied to costs deferred through 2012 with the remaining two-thirds applied to costs at a rate of $5.0 million per year plus interest over the following 20 years. NW Natural accrues interest on the Oregon allocated insurance proceeds in the customer's favor at a rate equal to the five-year treasury rate plus 100 basis points. As of December 31, 2020, NW Natural has applied $83.2 million of insurance proceeds to prudently incurred remediation costs allocated to Oregon.

Environmental Earnings Test

To the extent NW Natural earns at or below its authorized Return on Equity (ROE) as defined by the SRRM, remediation expenses and interest in excess of the $5.0 million tariff rider and $5.0 million insurance proceeds are recoverable through the SRRM. To the extent NW Natural earns more than its authorized ROE in a year, it is required to cover environmental expenses and interest on expenses greater than the $10.0 million with those earnings that exceed its authorized ROE.

Washington ECRM

Washington Deferral

On October 21, 2019, the WUTC issued an order (WUTC Order) establishing the ECRM which allows for recovery of past deferred and future prudently incurred environmental remediation costs allocable to Washington customers through application of insurance proceeds and collections from customers. Environmental remediation expenses relating to sites that previously served both Oregon and Washington customers are allocated between states with Washington customers receiving 3.3% percent of the costs and insurance proceeds.

As a result of the WUTC Order, in the fourth quarter of 2019, approximately $3.0 million of prudently incurred costs deferred from the initial deferral authorization in February 2011 through November 2018 were fully offset with insurance proceeds. In addition, approximately $1.5 million of disallowed deferred environmental remediation expenses incurred prior to the deferral authorization were charged to environmental remediation expense.

Insurance proceeds will be fully applied to costs incurred between December 2018 and June 2019 once deemed prudent in future rate proceedings. Remaining insurance proceeds will be amortized over a 10.5 year period ending December 31, 2029. On an annual basis, NW Natural will file for a prudence determination and a request to amortize costs to the extent that remediation expenses exceed the insurance amortization. After insurance proceeds are fully amortized, if in a particular year the request to collect deferred amounts exceeds one percent of Washington normalized revenues, then the excess will be collected over three years with interest.

Legal Proceedings

NW Holdings is not currently party to any direct claims or litigation, though in the future it may be subject to claims and litigation arising in the ordinary course of business.

NW Natural is subject to claims and litigation arising in the ordinary course of business, including the matters discussed above. Although the final outcome of any of these legal proceedings cannot be predicted with certainty, including the matter described below, NW Natural and NW Holdings do not expect that the ultimate disposition of any of these matters will have a material effect on financial condition, results of operations, or cash flows.

Oregon Steel Mills Site

In 2004, NW Natural was served with a third-party complaint by the Port of Portland (the Port) in a Multnomah County Circuit Court case, Oregon Steel Mills, Inc. v. The Port of Portland. The Port alleges that in the 1940s and 1950s petroleum wastes generated by NW Natural's predecessor, Portland Gas & Coke Company, and 10 other third-party defendants, were disposed of in a waste oil disposal facility operated by the United States or Shaver Transportation Company on property then owned by the Port and now owned by Evraz Oregon Steel Mills. The complaint seeks contribution for unspecified past remedial action costs incurred by the Port regarding the former waste oil disposal facility as well as a declaratory judgment allocating liability for future remedial action costs. No date has been set for trial. In August 2017, the case was stayed pending the outcome of the Portland Harbor allocation process or other mediation. Although the final outcome of this proceeding cannot be predicted with certainty, NW Natural and NW Holdings do not expect the ultimate disposition of this matter will have a material effect on NW Natural's or NW Holdings' financial condition, results of operations, or cash flows.

For additional information regarding other commitments and contingencies, see Note 17.

19. DISCONTINUED OPERATIONS

NW Holdings

On June 20, 2018, NWN Gas Storage, then a wholly-owned subsidiary of NW Natural, entered into a Purchase and Sale Agreement (the Agreement) that provided for the sale by NWN Gas Storage of all of the membership interests in Gill Ranch. Gill Ranch owns a 75% interest in the natural gas storage facility located near Fresno, California known as the Gill Ranch Gas Storage Facility.

On December 4, 2020, NWN Gas Storage closed the sale of all of the membership interests in Gill Ranch and received payment of the initial cash purchase price of $13.5 million less the $1.0 million deposit previously paid. Furthermore, additional payments to NWN Gas Storage may be made subject to a maximum amount of $15.0 million in the aggregate (subject to a working capital adjustment) based on the economic performance of Gill Ranch for each full gas storage year (April 1 of one year through March 31 of the following year) occurring after the closing and the remaining portion of the 2020-2021 gas storage year and will continue until such time as the maximum amount has been paid. The fair value of this arrangement at the closing date was zero based on a discounted cash flow forecast. Subsequent changes in the fair value will be recorded in earnings. The completion of the sale resulted in an after-tax gain of $5.9 million.

The following table presents the operating results of Gill Ranch and is presented net of tax on NW Holdings' consolidated statements of comprehensive income:

	NW Holdings Discontinued Operations		
In thousands, except per share data	2020	2019	2018
Revenues	$ 10,193	$ 5,301	$ 3,579
Expenses			
Operations and maintenance	7,931	8,587	5,771
General taxes	198	219	479
Depreciation and amortization	391	423	430
Other expenses and interest	848	931	609
Total expenses	9,368	10,160	7,289
Income (loss) from discontinued operations	825	(4,859)	(3,710)
Gain on sale of discontinued operations	8,027	—	—
Income (loss) from discontinued operations before income tax	8,852	(4,859)	(3,710)
Income tax expense (benefit)[1]	2,344	(1,283)	(968)
Income (loss) from discontinued operations, net of tax	$ 6,508	$ (3,576)	$ (2,742)

[1] Includes income tax expense of $2.1 million related to the sale of Gill Ranch for the year ended December 31, 2020.

As a result of the disposition of the membership interests of Gill Ranch, there were no assets or liabilities classified as held for sale at December 31, 2020. The assets and liabilities of the discontinued operations classified as held for sale in the consolidated balance sheet at December 31, 2019 include the following:

	NW Holdings Discontinued Operations
In thousands	2019
Assets:	
Accounts receivable	$ 333
Inventories	695
Other current assets	457
Property, plant, and equipment, net	13,284
Operating lease right of use asset	118
Other non-current assets	247
Total discontinued operations assets - current assets[1]	$ 15,134
Liabilities:	
Accounts payable	$ 1,250
Other current liabilities	848
Operating lease liabilities	116
Other non-current liabilities	11,495
Total discontinued operations liabilities - current liabilities[1]	$ 13,709

[1] The total assets and liabilities of Gill Ranch were classified as current because it was probable that the sale would be completed within one year.

NW Natural

As part of the holding company reorganization in October 2018, NWN Energy, NWN Gas Storage, Gill Ranch, NNG Financial, NWN Water, and NW Holdings, which were direct and indirect subsidiaries of NW Natural prior to the reorganization, are no longer subsidiaries of NW Natural. See Note 1 for additional information. As a result, NW Natural's financial statements reflect amounts related to these entities as discontinued operations for all periods presented. The expenses included in the results of discontinued operations are the direct operating expenses incurred by the entities that may be reasonably segregated from the costs of NW Natural's continuing operations.

The following table presents the operating results prior to the holding company reorganization effective October 1, 2018 of NWN Energy, NWN Gas Storage, Gill Ranch, NNG Financial, NWN Water, and NW Holdings, which were historically reported within the gas storage segment and other, and is presented net of tax on NW Natural's consolidated statements of comprehensive income:

In thousands, except per share data	NW Natural Discontinued Operations 2018
Revenues	$ 3,016
Expenses	
Operations and maintenance	4,151
General taxes	448
Depreciation and amortization	420
Other expenses and interest	342
Total expenses	5,361
Loss from discontinued operations before income tax	(2,345)
Income tax benefit	(622)
Loss from discontinued operations, net of tax	$ (1,723)

SCHEDULE I - CONDENSED FINANCIAL INFORMATION OF NORTHWEST NATURAL HOLDING COMPANY

NORTHWEST NATURAL HOLDING COMPANY

CONDENSED STATEMENTS OF COMPREHENSIVE INCOME (PARENT COMPANY ONLY)

In thousands	Year ended December 31, 2020	Year ended December 31, 2019	Inception through December 31, 2018
Operating expenses:			
Operations and maintenance	$ 771	$ 2,747	$ 838
Total operating expenses	771	2,747	838
Loss from operations	(771)	(2,747)	(838)
Earnings from investment in subsidiaries, net of tax	78,450	64,328	36,469
Other income (expense), net	57	(22)	36
Interest expense, net	1,557	726	53
Income before income taxes	76,179	60,833	35,614
Income tax benefit	(602)	(902)	(225)
Net income	$ 76,781	$ 61,735	$ 35,839

See Notes to Condensed Financial Statements

NORTHWEST NATURAL HOLDING COMPANY
CONDENSED BALANCE SHEETS
(PARENT COMPANY ONLY)

In thousands	As of December 31, 2020	2019
Assets:		
Current assets:		
Cash and cash equivalents	$ 11,267	119
Receivables from affiliates	14,738	1,950
Income taxes receivable	6,000	256
Other current assets	6,223	4,600
Total current assets	38,228	6,925
Non-current assets:		
Investments in subsidiaries	939,741	888,477
Other investments	17	24
Deferred tax assets	171	191
Other non-current assets	213	245
Total non-current assets	940,142	888,937
Total assets	$ 978,370	$ 895,862
Liabilities and equity:		
Current liabilities:		
Short-term debt	$ 73,000	$ 24,000
Accounts payable	119	612
Payables to affiliates	12,912	3,697
Taxes accrued	—	127
Other current liabilities	49	37
Total current liabilities	86,080	28,473
Equity:		
Common stock	847,193	840,364
Retained earnings	45,097	27,025
Total equity	892,290	867,389
Total liabilities and equity	$ 978,370	$ 895,862

See Notes to Condensed Financial Statements

NORTHWEST NATURAL HOLDING COMPANY
CONDENSED STATEMENTS OF CASH FLOWS
(PARENT COMPANY ONLY)

In thousands	Year ended December 31, 2020	Year ended December 31, 2019	Inception through December 31, 2018
Operating activities:			
Net income	$ 76,781	$ 61,735	$ 35,839
Adjustments to reconcile net income to cash used in operations:			
Equity in earnings of subsidiaries, net of tax	(78,450)	(64,328)	(36,469)
Cash dividends received from subsidiaries	55,387	53,439	—
Deferred income taxes	20	(198)	7
Other	65	66	15
Changes in assets and liabilities:			
Receivables, net	(12,788)	846	(585)
Income and other taxes	(7,451)	4,325	(9,034)
Accounts payable	8,809	(5,177)	9,304
Interest accrued	77	(32)	32
Other, net	(364)	(346)	(44)
Cash provided by (used in) operating activities	42,086	50,330	(935)
Investing activities:			
Contributions to subsidiaries	(47,194)	(157,591)	(1,804)
Return of capital from subsidiaries	19,000	35,000	—
Cash used in investing activities	(28,194)	(122,591)	(1,804)
Financing activities:			
Proceeds from stock options exercised	68	2,015	—
Proceeds from common stock issued	—	92,956	—
Changes in other short-term debt, net	49,000	24,000	—
Cash dividend payments on common stock	(55,420)	(53,339)	(12,923)
Capital contributions	—	—	20,000
Other	3,608	2,737	(327)
Cash (used in) provided by financing activities	(2,744)	68,369	6,750
Increase (decrease) in cash and cash equivalents	11,148	(3,892)	4,011
Cash and cash equivalents, beginning of period	119	4,011	—
Cash and cash equivalents, end of period	$ 11,267	$ 119	$ 4,011

See Notes to Condensed Financial Statements

NOTES TO CONDENSED FINANCIAL STATEMENTS

1. BASIS OF PRESENTATION

NW Holdings is an energy services holding company that conducts substantially all of its business operations through its subsidiaries, particularly NW Natural. These condensed financial statements and related footnotes have been prepared in accordance with Rule 12-04, Schedule I of Regulation S-X. These financial statements, in which NW Holdings' subsidiaries have been included using the equity method, should be read in conjunction with the consolidated financial statements and notes thereto of NW Holdings included in Item 8 of this Form 10-K.

Equity earnings of subsidiaries including earnings from NW Natural were $78.5 million, $64.3 million, and $36.5 million for the years ended December 31, 2020, 2019, and 2018 respectively.

There were $74.4 million and $88.4 million of cash dividends paid to NW Holdings from wholly-owned subsidiaries for the years ended December 31, 2020 and 2019, respectively, and none for the year ended December 31, 2018.

Condensed Statements of Cash Flows Correction

During 2020, NW Holdings identified that activities related to dividends received from subsidiaries had been reported as cash flows from financing activities and should have been presented as operating and investing activities. NW Holdings corrected the previously presented cash flows for dividends received from subsidiaries and in doing so, the statements of cash flows for the year ended December 31, 2019 was adjusted to decrease net cash flows used from financing activities by $88.4 million, with a corresponding increase in net cash flows provided by operating and used in investing activities of $53.4 million and $35.0 million, respectively. NW Holdings has evaluated the effect of the misstatement, both qualitatively and quantitatively, and concluded that it did not have a material impact on, nor require amendment of, any previously filed condensed financial statements.

2. DEBT

For information concerning NW Holdings' debt obligations, see Note 9 to the consolidated financial statements included in Item 8 of this report.

NORTHWEST NATURAL HOLDING COMPANY

SCHEDULE II - VALUATION AND QUALIFYING ACCOUNTS AND RESERVES

COLUMN A	COLUMN B	COLUMN C		COLUMN D	COLUMN E
		Additions		Deductions	
In thousands (year ended December 31)	Balance at beginning of period	Charged to costs and expenses	Charged to other accounts	Net write-offs	Balance at end of period
2020					
Reserves deducted in balance sheet from assets to which they apply:					
Allowance for uncollectible accounts	$ 673	$ 890	$ 2,333	$ 677	$ 3,219
2019					
Reserves deducted in balance sheet from assets to which they apply:					
Allowance for uncollectible accounts	$ 977	$ 450	$ —	$ 754	$ 673
2018					
Reserves deducted in balance sheet from assets to which they apply:					
Allowance for uncollectible accounts	$ 956	$ 680	$ —	$ 659	$ 977

NORTHWEST NATURAL GAS COMPANY

SCHEDULE II - VALUATION AND QUALIFYING ACCOUNTS AND RESERVES

COLUMN A	COLUMN B	COLUMN C		COLUMN D	COLUMN E
		Additions		Deductions	
In thousands (year ended December 31)	Balance at beginning of period	Charged to costs and expenses	Charged to other accounts	Net write-offs	Balance at end of period
2020					
Reserves deducted in balance sheet from assets to which they apply:					
Allowance for uncollectible accounts	$ 672	$ 779	$ 2,333	$ 677	$ 3,107
2019					
Reserves deducted in balance sheet from assets to which they apply:					
Allowance for uncollectible accounts	$ 975	$ 450	$ —	$ 753	$ 672
2018					
Reserves deducted in balance sheet from assets to which they apply:					
Allowance for uncollectible accounts	$ 956	$ 678	$ —	$ 659	$ 975

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

(a) Evaluation of Disclosure Controls and Procedures

NW Holdings and NW Natural management, under the supervision and with the participation of the Chief Executive Officer and Chief Financial Officer, completed an evaluation of the effectiveness of the design and operation of disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended (the Exchange Act)). Based upon this evaluation, the Chief Executive Officer and Chief Financial Officer of each registrant have concluded that, as of the end of the period covered by this report, disclosure controls and procedures were effective to ensure that information required to be disclosed by each such registrant and included in reports filed or submitted under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the Securities and Exchange Commission (SEC) rules and forms and that such information is accumulated and communicated to management of each registrant, including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

(b) Changes in Internal Control Over Financial Reporting

NW Holdings and NW Natural management are responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in the Exchange Act Rule 13a-15(f). There have been no changes in internal control over financial reporting that occurred during the quarter ended December 31, 2020 that have materially affected, or are reasonably likely to materially affect, internal control over financial reporting for NW Holdings and NW Natural.

The statements contained in Exhibit 31.1, Exhibit 31.2, Exhibit 31.3, and Exhibit 31.4 should be considered in light of, and read together with, the information set forth in this Item 9(a).

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The "Information Concerning Nominees and Continuing Directors", "Delinquent Section 16(a) Reports" and "Corporate Governance" contained in NW Holdings' definitive Proxy Statement for the 2021 Annual Meeting of Shareholders is hereby incorporated by reference.

EXECUTIVE OFFICERS

Name	Age at Dec. 31, 2020	Positions held during last five years[1]
David H. Anderson*	59	President and Chief Executive Officer[2] (2016-); Chief Operating Officer and President (2015-2016); Executive Vice President and Chief Operating Officer (2014-2015); Executive Vice President Operations and Regulation (2013-2014); Senior Vice President and Chief Financial Officer (2004-2013).
Frank H. Burkhartsmeyer*	56	Senior Vice President and Chief Financial Officer[2] (2017-); President and Chief Executive Officer of Renewables, Avangrid Renewables (2015-2017); Senior Vice President of Finance, Iberdrola Renewables Holdings, Inc. (2012-2015).
James R. Downing	51	Vice President and Chief Information Officer (2017-); Chief Information Officer, WorleyParsons (America's Division) (2016-2017); Executive Service Delivery Manager for SAP, British Petroleum (2011-2015).
Shawn M. Filippi*	48	Vice President, Chief Compliance Officer and Corporate Secretary[2] (2016-); Vice President and Corporate Secretary (2015-2016); Senior Legal Counsel (2011-2014); Assistant Corporate Secretary (2010-2014).
Kimberly A. Heiting	51	Senior Vice President, Operations and Chief Marketing Officer (2018-); Senior Vice President, Communications and Chief Marketing Officer (2018); Vice President, Communications and Chief Marketing Officer (2015-2018); Chief Marketing & Communications Officer (2013-2014); Chief Corporate Communications Officer (2011-2013).
Jon G. Huddleston	58	Vice President, Engineering and Utility Operations (2018-); Senior Director, Utility Operations (2014-2018); Director, Utility Operations (2013-2014); Process Director (2007-2013).
Justin B. Palfreyman	42	Vice President, Strategy and Business Development (2017-); President NW Natural Water (2018-); Vice President, Business Development (2016-2017); Director, Power, Energy and Infrastructure Group, Lazard, Freres & Co. (2009-2016).
Melinda B. Rogers	55	Vice President, Chief Human Resources and Diversity Officer (2018-); Senior Director of Human Resources (2018); Senior Manager, Organizational Effectiveness and Talent Acquisition (2015-2017); Senior Associate, Point B (2014-2015); Director, Executive Development Center, Willamette University (2011-2015).
MardiLyn Saathoff*	64	Senior Vice President, Regulation and General Counsel[2] (2016-); Senior Vice President and General Counsel (2015-2016); Vice President, Legal, Risk and Compliance (2013-2015); Deputy General Counsel (2010-2013); Chief Governance Officer and Corporate Secretary (2008-2014).
David A. Weber	61	Vice President, Gas Supply and Utility Support Services (2019-); President and Chief Executive Officer, NW Natural Gas Storage, LLC and Gill Ranch Storage, LLC (2011-).
Kathryn M. Williams	45	Vice President, Public Affairs and Sustainability (2019-); Government and Community Affairs Director (2018-2019); State Affairs Manager, Port of Portland (2015-2018); Business and Rail Relations Manager, Port of Portland (2007-2015).
Brody J. Wilson*	41	Vice President, Chief Accounting Officer, Controller and Treasurer[2] (2017-); Chief Financial Officer (Interim), Treasurer, Chief Accounting Officer and Controller (2016-2017); Chief Accounting Officer, Controller and Assistant Treasurer (2016); Controller (2013-2015); Acting Controller (2013); Accounting Director (2012-2013).

DIRECTOR (NORTHWEST NATURAL GAS COMPANY ONLY)**		
Name	Age at Dec. 31, 2020	Positions held during last five years[1]
Steven E. Wynne**	68	Executive Vice President, Moda, Inc., a privately-held healthcare insurance company (2012-); Director, FLIR Systems, Inc. (1999-); Director, JELD-WEN Holding Inc. (2012-); Director, Pendleton Woolen Mills, Inc. (2013-); Director, Lone Rock Resources, Inc. (2016-); Director, Citifyd Inc. (2013-2019); Trustee, Willamette University (1999-); Trustee, Portland Center Stage (2012-2019); Executive Vice President, JELD-WEN, Inc. (2011-2012); President and Chief Executive Officer, SBI International, Ltd. (2004-2007); Partner, Ater Wynne LLP (2001-2002; 2003-2004); President and Chief Executive Officer, Adidas (1995-2000). Mr. Wynne's senior management experience with a variety of companies, board service on a number of public and private companies and longstanding legal practice in the areas of corporate finance, securities and mergers and acquisitions qualify him to provide insight and guidance in the areas of corporate governance, strategic planning, enterprise risk management, finance and operations.

* Executive Officer of Northwest Natural Holding Company and Northwest Natural Gas Company.
** Director of Northwest Natural Gas Company only. All other directors of Northwest Natural Gas Company are also directors of Northwest Natural Holding Company, and information regarding all directors concurrently serving on the Board of Directors of Northwest Natural Gas Company and Northwest Natural Holding Company will be incorporated by reference to our definitive Proxy Statement for the 2021 Annual Meeting of Shareholders.
(1) Unless otherwise specified, all positions held at Northwest Natural Gas Company.
(2) Position held at Northwest Natural Holding Company (beginning March 2018) and Northwest Natural Gas Company.

Each executive officer serves successive annual terms; present terms end at the 2021 annual meeting. There are no family relationships among our executive officers, directors or any person chosen to become one of our officers or directors. NW Holdings and NW Natural have adopted a Code of Ethics (Code) applicable to all employees, officers, and directors that is available on our website at www.nwnaturalholdings.com. We intend to disclose on our website at www.nwnaturalholdings.com any amendments to the Code or waivers of the Code for executive officers and directors.

ITEM 11. EXECUTIVE COMPENSATION

The information concerning "Executive Compensation", "Report of the Organization and Executive Compensation Committee", and "Compensation Committee Interlocks and Insider Participation" contained in NW Holdings' definitive Proxy Statement for the 2021 Annual Meeting of Shareholders is hereby incorporated by reference. Information related to Executive Officers as of December 31, 2020 is reflected in Part III, Item 10, above.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

As of February 16, 2021, NW Holdings owned 100% of the outstanding common stock of NW Natural.

The following table sets forth information regarding compensation plans under which equity securities of NW Holdings are authorized for issuance as of December 31, 2020 (see Note 8 to the Consolidated Financial Statements):

Plan Category	(a) Number of securities to be issued upon exercise of outstanding options, warrants and rights	(b) Weighted-average exercise price of outstanding options, warrants and rights	(c) Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
Equity compensation plans approved by security holders:			
Long Term Incentive Plan (LTIP) (1)(2)	181,289	n/a	435,758
Restated Stock Option Plan	9,438	$ 45.74	—
Employee Stock Purchase Plan	50,839	$ 37.78	153,084
Equity compensation plans not approved by security holders:			
Executive Deferred Compensation Plan (EDCP)(3)	953	n/a	n/a
Directors Deferred Compensation Plan (DDCP)(3)	41,215	n/a	n/a
Deferred Compensation Plan for Directors and Executives (DCP)(4)	213,721	n/a	n/a
Total	497,455		588,842

(1) Awards may be granted under the LTIP as Performance Share Awards, Restricted Stock Units, or stock options. Shares issued pursuant to Performance Share Awards and Restricted Stock Units under the LTIP do not include an exercise price, but are payable when the award criteria are satisfied. The number of shares shown in column (a) include 82,464 Restricted Stock Units and 98,825 Performance Share Awards, reflecting the number of shares to be issued as performance share awards under outstanding Performance Share Awards if target performance levels are achieved. If the maximum awards were paid pursuant to the Performance Share Awards outstanding at December 31, 2020, the number of shares shown in column (a) would increase by 98,825 shares, reflecting the maximum share award of 200% of target, and the number of shares shown in column (c) would decrease by the same amount of shares. No stock options or other types of award have been issued under the LTIP.

(2) The number of shares shown in column (c) includes shares that are available for future issuance under the LTIP as Restricted Stock Units, Performance Share Awards, or stock options at December 31, 2020.

(3) Prior to January 1, 2005, deferred amounts were credited, at the participant's election, to either a "cash account" or a "stock account." If deferred amounts were credited to stock accounts, such accounts were credited with a number of shares of NW Natural (now NW Holdings) common stock based on the purchase price of the common stock on the next purchase date under our Dividend Reinvestment and Direct Stock Purchase Plan, and such accounts were credited with additional shares based on the deemed reinvestment of dividends. Cash accounts are credited quarterly with interest at a rate equal to Moody's Average Corporate Bond Yield plus two percentage points, subject to a 6% minimum rate. At the election of the participant, deferred balances in the stock accounts are payable after termination of Board service or employment in a lump sum, in installments over a period not to exceed 10 years in the case of the DDCP, or 15 years in the case of the EDCP, or in a combination of lump sum and installments. Amounts credited to stock accounts are payable solely in shares of common stock and cash for fractional shares, and amounts in the above table represent the aggregate number of shares credited to participant's stock accounts. We have contributed common stock to the trustee of the Umbrella Trusts such that the Umbrella Trusts hold approximately the number of shares of common stock equal to the number of shares credited to all participants' stock accounts.

(4) Effective January 1, 2005, the EDCP and DDCP were closed to new participants and replaced with the DCP. The DCP continues the basic provisions of the EDCP and DDCP under which deferred amounts are credited to either a "cash account" or a "stock account." Stock accounts represent a right to receive shares of NW Holdings common stock on a deferred basis, and such accounts are credited with additional shares based on the deemed reinvestment of dividends. Effective January 1, 2007, cash accounts are credited quarterly with interest at a rate equal to Moody's Average Corporate Bond Yield. Our obligation to pay deferred compensation in accordance with the terms of the DCP will generally become due on retirement, death, or other termination of service, and will be paid in a lump sum or in installments of five, 10, or 15 years as elected by the participant in accordance with the terms of the DCP. Amounts credited to stock accounts are payable solely in shares of common stock and cash for fractional shares, and amounts in the above table represent the aggregate number of shares credited to participants' stock accounts. We have contributed common stock to the trustee of the Supplemental Trust such that this trust holds approximately the number of common shares equal to the number of shares credited to all participants' stock accounts. The right of each participant in the DCP is that of a general, unsecured creditor of NW Natural.

The information captioned "Beneficial Ownership of Common Stock by Directors and Executive Officers" and "Security Ownership of Common Stock of Certain Beneficial Owners" contained in NW Holdings' definitive Proxy Statement for the 2021 Annual Meeting of Shareholders is incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information captioned "Transactions with Related Persons" and "Corporate Governance" in NW Holdings' definitive Proxy Statement for the 2021 Annual Meeting of Shareholders is hereby incorporated by reference.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

NW Holdings
The information captioned "2020 and 2019 Audit Firm Fees" in NW Holdings' definitive Proxy Statement for the 2021 Annual Meeting of Shareholders is hereby incorporated by reference.

NW Natural
The following table shows the fees and expenses of NW Natural, paid or accrued for the integrated audits of the consolidated financial statements and other services provided by NW Natural's independent registered public accounting firm, PricewaterhouseCoopers LLP, for fiscal years 2020 and 2019:

In thousands	2020	2019
Audit Fees	$ 1,273	$ 1,222
Audit-Related Fees	31	31
Tax Fees	22	22
All Other Fees	3	3
Total	$ 1,329	$ 1,278

AUDIT FEES. This category includes fees and expenses for services rendered for the integrated audit of the consolidated financial statements included in the Annual Report on Form 10-K and the review of the quarterly financial statements included in the Quarterly Reports on Form 10-Q. The integrated audit includes the review of our internal control over financial reporting in compliance with Section 404 of the Sarbanes-Oxley Act of 2002 (Sarbanes-Oxley Act). In addition, amounts include fees for services routinely provided by the auditor in connection with regulatory filings, including issuance of consents and comfort letters relating to the registration of Company securities and assistance with the review of documents filed with the SEC.

AUDIT-RELATED FEES. This category includes fees for assurance and related services that are reasonably related to the performance of the audit or review of our financial statements and internal control over financial reporting, including fees and expenses related to consultations for financial accounting and reporting, in addition to fees for EPA assurance letters.

TAX FEES. This category includes fees for tax compliance, and review services rendered for NW Natural's income tax returns.

ALL OTHER FEES. This category relates to services other than those described above. The amount reflects payments for accounting research tools in each of 2020 and 2019.

PRE-APPROVAL POLICY FOR AUDIT AND NON-AUDIT SERVICES. The Audit Committee of NW Natural approved or ratified 100 percent of 2020 and 2019 services for audit, audit-related, tax services and all other fees, including audit services relating to compliance with Section 404 of the Sarbanes-Oxley Act. The chair of the Audit Committee of NW Natural is authorized to pre-approve non-audit services between meetings of the Audit Committee and must report such approvals at the next Audit Committee meeting.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) The following documents are filed as part of this report:

1. A list of all Financial Statements and Supplemental Schedules is incorporated by reference to Item 8.

2. List of Exhibits filed:

   Reference is made to the Exhibit Index commencing on page 148.

ITEM 16. FORM 10-K SUMMARY

None.

NORTHWEST NATURAL HOLDING COMPANY
NORTHWEST NATURAL GAS COMPANY

Exhibit Index to Annual Report on Form 10-K
For the Fiscal Year Ended December 31, 2020

Exhibit Number	Document
*3a.	Amended and Restated Articles of Incorporation of Northwest Natural Holding Company (incorporated by reference to Exhibit 3.1 to the Form 8-K dated October 1, 2018, File No. 1-38681).
3b.	Amended and Restated Articles of Incorporation of Northwest Natural Gas Company.
*3c.	Amended and Restated Bylaws of Northwest Natural Holding Company (incorporated by reference to Exhibit 3.1 to the Form 8-K filed April 7, 2020, File No. 1-38681).
*3d.	Amended and Restated Bylaws of Northwest Natural Gas Company (incorporated by reference to Exhibit 3.2 to the Form 8-K filed April 7, 2020, File No. 1-15973).
*4a.	Copy of Mortgage and Deed of Trust of Northwest Natural Gas Company, dated as of July 1, 1946 (Mortgage and Deed of Trust), to Bankers Trust (to whom Deutsche Bank Trust Company Americas is the successor), Trustee (incorporated by reference to Exhibit 7(j) in File No. 2-6494); and copies of Supplemental Indentures Nos. 1 through 14 to the Mortgage and Deed of Trust, dated respectively, as of June 1, 1949, March 1, 1954, April 1, 1956, February 1, 1959, July 1, 1961, January 1, 1964, March 1, 1966, December 1, 1969, April 1, 1971, January 1, 1975, December 1, 1975, July 1, 1981, June 1, 1985 and November 1, 1985 (incorporated by reference to Exhibit 4(d) in File No. 33-1929); Supplemental Indenture No. 15 to the Mortgage and Deed of Trust, dated as of July 1, 1986 (filed as Exhibit 4(c) in File No. 33-24168); Supplemental Indentures Nos. 16, 17 and 18 to the Mortgage and Deed of Trust, dated, respectively, as of November 1, 1988, October 1, 1989 and July 1, 1990 (incorporated by reference to Exhibit 4(c) in File No. 33-40482); Supplemental Indenture No. 19 to the Mortgage and Deed of Trust, dated as of June 1, 1991 (incorporated by reference to Exhibit 4(c) in File No. 33-64014).
*4b.	Supplemental Indenture No. 20 to the Mortgage and Deed of Trust, dated as of June 1, 1993 (incorporated by reference to Exhibit 4a.(1) to Form 10-K for year ended December 31, 1993, File No. 0-00994).
*4c.	Supplemental Indenture No. 21 to the Mortgage and Deed of Trust, dated as of October 15, 2012 (incorporated by reference to Exhibit 4.1 to Form 8-K dated October 26, 2012, File No. 1-15973).
*4d.	Supplemental Indenture No. 22 to the Mortgage and Deed of Trust, dated as of November 1, 2016 (incorporated by reference to Exhibit 4.1 to Form 10-Q for the quarter ended September 30, 2016, File No. 1-15973).
*4e.	Supplemental Indenture No. 23 to the Mortgage and Deed of Trust, dated as of September 1, 2018 (incorporated by reference to Exhibit 4(a) to Form 8-K dated September 10, 2018, File No. 1-15973).
*4f.	Copy of Indenture, dated as of June 1, 1991, between Northwest Natural Gas Company and Bankers Trust Company (to whom Deutsche Bank Trust Company Americas is successor), Trustee, relating to Northwest Natural Gas Company's Unsecured Debt Securities (incorporated by reference to Exhibit 4(e) in File No. 33-64014).
*4g.	Credit Agreement, dated as of October 2, 2018, among Northwest Natural Holding Company and the lenders party thereto, with JPMorgan Chase Bank, N.A. as administrative agent and Bank of America, N.A., U.S. Bank National Association, and Wells Fargo Bank, National Association, as co-syndication agents (incorporated by reference to Exhibit 4.1 to Form 8-K dated October 3, 2018, File No. 1-38681).
*4h.	Credit Agreement, dated as of October 2, 2018, among Northwest Natural Gas Company and the lenders party thereto, with JPMorgan Chase Bank, N.A. as administrative agent and Bank of America, N.A., U.S. Bank National Association, and Wells Fargo Bank, National Association, as co-syndication agents (incorporated by reference to Exhibit 4.1 to Form 8-K dated October 3, 2018, File No. 1-15973).
*4i.	Credit Agreement, dated as of June 27, 2019, among NW Natural Water Company, LLC, Northwest Natural Holding Company, the lenders party thereto, and Bank of Montreal, as administrative agent (incorporated by reference to Exhibit 4.1 to the Form 10-Q for the quarter ended June 30, 2019, File No. 1-38681).

*4j. Credit Agreement, dated as of March 23, 2020, among Northwest Natural Gas Company, the lenders party thereto, and U.S. Bank National Association, as administrative agent (incorporated by reference to Exhibit 4.1 to the Form 8-K filed March 25, 2020, File No. 1-15973).

*4k. Description of securities registered under Section 12 of the Exchange Act of 1934 (incorporated by reference to Exhibit 4j to Form 10-K for the year ended December 31, 2019, File No. 1-38681).

*10 Purchase and Sale Agreement dated June 20, 2018, between NW Natural Gas Storage LLC and SENSA Holdings LLC (incorporated by reference to Exhibit 10 to Form 10-Q for the quarter ended June 30, 2018, File No. 1-15973).

*10.1 Fifth Amendment to Purchase and Sale Agreement, dated April 29, 2020, between NW Natural Gas Storage, LLC and SENSA Holdings LLC, amending the Purchase and Sale Agreement, dated June 20, 2018, as amended (incorporated by reference to Exhibit 10.2 to the Form 10-Q for the quarter ended March 31, 2020, File No. 1-38681).

*10.2 Tenth Amendment to Purchase and Sale Agreement, dated December 4, 2020, between NW Natural Gas Storage LLC and SENSA Holdings LLC, amending the Purchase and Sale Agreement, dated June 20, 2018, as amended (incorporated by reference to Exhibit 10.1 to the Form 8-K filed December 7, 2020, File No. 1-38681).

21 Subsidiaries of Northwest Natural Holding Company.

23a. Consent of PricewaterhouseCoopers LLP - NW Holdings.

23b. Consent of PricewaterhouseCoopers LLP - NW Natural.

31.1 Certification of Principal Executive Officer of Northwest Natural Gas Company Pursuant to Rule 13a-14(a)/15d-14(a), Section 302 of the Sarbanes-Oxley Act of 2002.

31.2 Certification of Principal Financial Officer of Northwest Natural Gas Company Pursuant to Rule 13a-14(a)/15d-14(a), Section 302 of the Sarbanes-Oxley Act of 2002.

31.3 Certification of Principal Executive Officer of Northwest Natural Holding Company Pursuant to Rule 13a-14(a)/15d-14(a), Section 302 of the Sarbanes-Oxley Act of 2002.

31.4 Certification of Principal Financial Officer of Northwest Natural Holding Company Pursuant to Rule 13a-14(a)/15d-14(a), Section 302 of the Sarbanes-Oxley Act of 2002.

**32.1 Certification of Principal Executive Officer and Principal Financial Officer of Northwest Natural Gas Company Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

**32.2 Certification of Principal Executive Officer and Principal Financial Officer of Northwest Natural Holding Company Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

101. The following materials formatted in Inline Extensible Business Reporting Language (Inline XBRL):
(i) Consolidated Statements of Income;
(ii) Consolidated Balance Sheets;
(iii) Consolidated Statements of Cash Flows; and
(iv) Related notes.

104. The cover page from the Company's Annual Report on Form 10-K for the year ended December 31, 2020, formatted in Inline XBRL and contained in Exhibit 101.

Executive Compensation Plans and Arrangements:

*10a. Executive Supplemental Retirement Income Plan, 2018 Restatement (incorporated herein by reference to Exhibit 10.6 to the Form 8-K dated October 1, 2018, File No. 1-38681).

*10b. Supplemental Executive Retirement Plan of Northwest Natural Gas Company, 2018 Restatement, as amended July 25, 2019 (incorporated by reference to Exhibit 10.1 to the Form 10-Q for the quarter ended June 30, 2019, File No. 1-15973).

*10c. Northwest Natural Gas Company Supplemental Trust, effective January 1, 2005, restated as of October 1, 2018 (incorporated by reference to Exhibit 10.9 to the Form 8-K dated October 1, 2018, File No. 1-38681).

*10d. Northwest Natural Gas Company Umbrella Trust for Directors, effective January 1, 1991, restated as of October 1, 2018 (incorporated by reference to Exhibit 10.11 to the Form 8-K dated October 1, 2018, File No. 1-38681).

*10e. Northwest Natural Gas Company Umbrella Trust for Executives, effective January 1, 1988, restated as of October 1, 2018 (incorporated by reference to Exhibit 10.10 to the Form 8-K dated October 1, 2018, File No. 1-38681).

*10f. Restated Stock Option Plan, as amended effective December 14, 2006 (incorporated by reference to Exhibit 10c to Form 10-K for 2006, File No. 1-15973).

*10g. Form of Restated Stock Option Plan Agreement (incorporated by reference to Exhibit 10h to Form 10-K for 2009, File No. 1-15973).

*10h. Executive Deferred Compensation Plan, effective as of January 1, 1987, restated as of October 1, 2018 (incorporated by reference to Exhibit 10.4 to the Form 8-K dated October 1, 2018, File No. 1-38681).

*10i. Directors Deferred Compensation Plan, effective June 1, 1981, restated as of October 1, 2018 (incorporated by reference to Exhibit 10.5 to the Form 8-K dated October 1, 2018, File No. 1-38681).

*10j. Deferred Compensation Plan for Directors and Executives, effective January 1, 2005, restated as of October 1, 2018 (incorporated by reference to Exhibit 10.3 to the Form 8-K dated October 1, 2018, File No. 1-38681).

*10k. Form of Indemnity Agreement as entered into between Northwest Natural Gas Company and each director and certain executive officers (incorporated by reference to Exhibit 10l to Form 10-K for 2018, File No. 1-38681).

*10l. Form of Indemnity Agreement as entered into between Northwest Natural Holding Company and each director and certain executive officers (incorporated by reference to Exhibit 10m to Form 10-K for 2018, File No. 1-38681).

*10m. Non-Employee Directors Stock Compensation Plan, as amended effective December 15, 2005 (incorporated by reference to Exhibit 10.2 to Form 8-K dated December 16, 2005, File No. 1-15973).

*10n. Executive Annual Incentive Plan, effective January 1, 2020 (incorporated by reference to Exhibit 10o to Form 10-K for 2019, File No. 1-15973).

10o. Executive Annual Incentive Plan, effective January 1, 2021.

*10p. Form of Change in Control Severance Agreement between Northwest Natural Gas Company and each executive officer, as amended and restated as of March 1, 2020 (incorporated by reference to Exhibit 10q to Form 10-K for 2019, File No. 1-15973).

*10q. Northwest Natural Gas Company Long Term Incentive Plan, as amended and restated effective May 24, 2012 (incorporated by reference to Exhibit 10r to Form 10-K for 2012, File No. 1-15973).

*10r. Northwest Natural Gas Company Long Term Incentive Plan, as amended and restated effective May 25, 2017 (incorporated by reference to Exhibit 10s to Form 10-K for 2017, File No. 1-15973).

*10s. Northwest Natural Holding Company Long Term Incentive Plan, as amended and restated as of October 1, 2018 (incorporated by reference to Exhibit 10.1 to the Form 8-K dated October 1, 2018, File No. 1-38681).

*10t. Form of Performance Share Long Term Incentive Agreement under Long Term Incentive Plan (2018-2020) (incorporated by reference to Exhibit 10y to Form 10-K for 2017, File No. 1-15973).

*10u. Form of Performance Share Long Term Incentive Award Agreement under Long Term Incentive Plan (2019-2021) (incorporated by reference to Exhibit 10z to Form 10-K for 2018, File No. 1-38681).

*10v. Form of Performance Share Long Term Incentive Agreement under Long Term Incentive Plan (2020-2022) (incorporated by reference to Exhibit 10x to Form 10-K for 2019, File No. 1-38681).

10w. Form of Performance Share Long Term Incentive Agreement under Long Term Incentive Plan (2021-2023).

*10x. Form of Consent dated December 14, 2006 entered into by each executive officer with respect to amendments to the Executive Supplemental Retirement Income Plan, the Supplemental Executive Retirement Plan and certain change in control severance agreements (incorporated by reference to Exhibit 10.1 to Form 8-K dated December 19, 2006, File No. 1-15973).

*10y. Consent to Amendment of Deferred Compensation Plan for Directors and Executives, dated February 28, 2008 entered into by each executive officer (incorporated by reference to Exhibit 10bb to Form 10-K for 2007, File No. 1-15973).

10z. Form of Restricted Stock Unit Award Agreement under Long Term Incentive Plan (2021).

*10aa. Form of Restricted Stock Unit Award Agreement under Long Term Incentive Plan (2020) (incorporated by reference to Exhibit 10aa to Form 10-K for 2019, File No. 1-38681).

*10bb. Form of Restricted Stock Unit Award Agreement under Long Term Incentive Plan (2019) (incorporated by reference to Exhibit 10cc to Form 10-K for 2018, File No. 1-38681).

*10cc. Form of Restricted Stock Unit Award Agreement under Long Term Incentive Plan (2018) (incorporated by reference to Exhibit 10bb to Form 10-K for 2017, File No. 1-15973).

*10dd. Corrected Form of Restricted Stock Unit Award Agreement under Long Term Incentive Plan (2017) (incorporated by reference to Exhibit 10.1 to Form 10-Q for the quarter ended March 31, 2017, File No. 1-15973).

*10ee. Severance Agreement between Northwest Natural Gas Company and an executive officer, dated August 1, 2016 (incorporated by reference to Exhibit 10.1 to Form 8-K dated July 29, 2016, File No. 1-15973).

*10ff. Form of Restricted Stock Unit Award Agreement between Northwest Natural Gas Company and an executive officer dated as of July 27, 2016 (incorporated by reference to Exhibit 10.1 to Form 10-Q for the quarter ended June 30, 2016, File No. 1-15973).

*10gg. Form of Severance Agreement between Northwest Natural Gas Company and an executive officer, dated May 17, 2017 (incorporated by reference to Exhibit 10.1 to Form 8-K dated April 24, 2017, File No. 1-15973).

*10hh. Form of Special Restricted Stock Unit Agreement between Northwest Natural Gas Company and an executive officer, dated May 17, 2017 (incorporated by reference to Exhibit 10.2 to Form 8-K dated April 24, 2017, File No. 1-15973).

*10ii. Form of Special Retention Restricted Stock Unit Agreement between Northwest Natural Gas Company and an executive officer, dated September 30, 2016 (incorporated by reference to Exhibit 10qq to Form 10-K for 2017, File No. 1-15973).

*10jj. Cash Retention Agreement between Northwest Natural Gas Company and an executive officer, dated as of March 1, 2018 (incorporated by reference to Exhibit 10ss to Form 10-K for 2017, File No. 1-15973).

*10kk. Annual Incentive Plan for NW Natural Gas Storage, LLC, as amended effective January 1, 2020 (incorporated by reference to Exhibit 10ll to Form 10-K for 2019, File No. 1-38681).

10ll. Annual Incentive Plan for NW Natural Gas Storage, LLC, as amended effective January 1, 2021.

*10mm. Long Term Incentive Plan for NW Natural Gas Storage, LLC, as amended effective January 1, 2016 (incorporated by reference to Exhibit 10pp to Form 10-K for 2016, File No. 1-15973).

*Incorporated by reference as indicated
**Pursuant to Item 601(b)(32)(ii) of Regulation S-K, this certificate is not being "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, each registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized. The signature for each undersigned company shall be deemed to relate only to matters having reference to such company and its subsidiaries.

NORTHWEST NATURAL HOLDING COMPANY

By: /s/ David H. Anderson
David H. Anderson
President and Chief Executive Officer
Date: February 26, 2021

NORTHWEST NATURAL GAS COMPANY

By: /s/ David H. Anderson
David H. Anderson
President and Chief Executive Officer
Date: February 26, 2021

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the date indicated. The signatures of each of the undersigned shall be deemed to relate only to matters having reference to the below named company and its subsidiaries.

NORTHWEST NATURAL HOLDING COMPANY

Signature	Title	Date
/s/ David H. Anderson David H. Anderson President and Chief Executive Officer	Principal Executive Officer and Director	February 26, 2021
/s/ Frank H. Burkhartsmeyer Frank H. Burkhartsmeyer Senior Vice President and Chief Financial Officer	Principal Financial Officer	February 26, 2021
/s/ Brody J. Wilson Brody J. Wilson Vice President, Treasurer, Chief Accounting Officer and Controller	Principal Accounting Officer	February 26, 2021
/s/ Timothy P. Boyle Timothy P. Boyle	Director	)))
/s/ John D. Carter John D. Carter	Director	)))
/s/ Monica Enand Monica Enand	Director	)))
/s/ C. Scott Gibson C. Scott Gibson	Director	)))
/s/ Tod R. Hamachek Tod R. Hamachek	Director	)))
/s/ Karen Lee Karen Lee	Director	February 26, 2021))
/s/ Dave McCurdy Dave McCurdy	Director	)))
/s/ Nathan I. Partain Nathan I. Partain	Director	)))
/s/ Jane L. Peverett Jane L. Peverett	Director	)))
/s/ Kenneth Thrasher Kenneth Thrasher	Director	)))
/s/ Malia H. Wasson Malia H. Wasson	Director	)))
/s/ Charles A. Wilhoite Charles A. Wilhoite	Director	))

NORTHWEST NATURAL GAS COMPANY

Signature	Title	Date
/s/ David H. Anderson	Principal Executive Officer and Director	February 26, 2021
David H. Anderson President and Chief Executive Officer		
/s/ Frank H. Burkhartsmeyer	Principal Financial Officer	February 26, 2021
Frank H. Burkhartsmeyer Senior Vice President and Chief Financial Officer		
/s/ Brody J. Wilson	Principal Accounting Officer	February 26, 2021
Brody J. Wilson Vice President, Treasurer, Chief Accounting Officer and Controller		
/s/ Timothy P. Boyle	Director	)
Timothy P. Boyle		))
/s/ John D. Carter	Director	)
John D. Carter		))
/s/ Monica Enand	Director	)
Monica Enand		))
/s/ C. Scott Gibson	Director	)
C. Scott Gibson		))
/s/ Tod R. Hamachek	Director	)
Tod R. Hamachek		))
/s/ Karen Lee	Director	)
Karen Lee		))
/s/ Dave McCurdy	Director	February 26, 2021
Dave McCurdy		))
/s/ Nathan I. Partain	Director	)
Nathan I. Partain		))
/s/ Jane L. Peverett	Director	)
Jane L. Peverett		))
/s/ Kenneth Thrasher	Director	)
Kenneth Thrasher		))
/s/ Malia H. Wasson	Director	)
Malia H. Wasson		))
/s/ Charles A. Wilhoite	Director	)
Charles A. Wilhoite		))
/s/ Steven E. Wynne	Director	)
Steven E. Wynne		)

SUBSIDIARIES OF NORTHWEST NATURAL HOLDING COMPANY

an Oregon Corporation

Name of Subsidiary	Jurisdiction Organized
Northwest Natural Gas Company (dba NW Natural)	**Oregon**
Northwest Energy Corporation(1)	Oregon
NWN Gas Reserves LLC(1)	Oregon
NW Natural RNG Holding Company, LLC(1)	Oregon
Lexington Renewable Energy LLC(1)	Delaware
NW Natural Energy, LLC	Oregon
NW Natural Gas Storage, LLC	Oregon
NNG Financial Corporation	Oregon
Northwest Biogas, LLC	Oregon
KB Pipeline Company	Oregon
NW Natural Water Company, LLC	Oregon
Salmon Valley Water Company	Oregon
NW Natural Water of Oregon, LLC	Oregon
Sunstone Water, LLC	Oregon
Sunstone Infrastructure, LLC	Oregon
Sunriver Water LLC	Oregon
Sunriver Environmental LLC	Oregon
NW Natural Water of Washington, LLC	Washington
Cascadia Water, LLC	Washington
Cascadia Infrastructure, LLC	Washington
Suncadia Water Company, LLC	Washington
Suncadia Environmental Company, LLC	Washington

NW Natural Water of Idaho, LLC	Idaho
Falls Water Co., Inc.	Idaho
Gem State Water Company, LLC	Idaho
Gem State Infrastructure, LLC	Idaho
NW Natural Water of Texas, LLC	Texas
Blue Topaz Water, LLC	Texas
Blue Topaz Infrastructure, LLC	Texas
T & W Water Service Company	Texas

(1) Subsidiary of Northwest Natural Gas Company

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-187005-01, 333-180350-01, 333-134973-01, 333-100885-01, 333-139819-01, 333-221347-01, 333-227687, and 333-234539) and Form S-3 (No. 333-227662) of Northwest Natural Holding Company of our report dated February 26, 2021 relating to the financial statements, financial statement schedules and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
Portland, Oregon
February 26, 2021

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (No. 333-214425) and Form S-3 (No. 333-227662-01) of Northwest Natural Gas Company of our report dated February 26, 2021 relating to the financial statements and financial statement schedule which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
Portland, Oregon
February 26, 2021

EXHIBIT 31.1

CERTIFICATION

I, David H. Anderson, certify that:

1. I have reviewed this annual report on Form 10-K for the year ended December 31, 2020 of Northwest Natural Gas Company;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: February 26, 2021

/s/ David H. Anderson
David H. Anderson
President and Chief Executive Officer

EXHIBIT 31.2

CERTIFICATION

I, Frank H. Burkhartsmeyer, certify that:

1. I have reviewed this annual report on Form 10-K for the year ended December 31, 2020 of Northwest Natural Gas Company;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 26, 2021

/s/ Frank H. Burkhartsmeyer
Frank H. Burkhartsmeyer
Senior Vice President and Chief Financial Officer

EXHIBIT 31.3

CERTIFICATION

I, David H. Anderson, certify that:

1. I have reviewed this annual report on Form 10-K for the year ended December 31, 2020 of Northwest Natural Holding Company;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: February 26, 2021

/s/ David H. Anderson
David H. Anderson
President and Chief Executive Officer

EXHIBIT 31.4

CERTIFICATION

I, Frank H. Burkhartsmeyer, certify that:

1. I have reviewed this annual report on Form 10-K for the year ended December 31, 2020 of Northwest Natural Holding Company;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 26, 2021

/s/ Frank H. Burkhartsmeyer
Frank H. Burkhartsmeyer
Senior Vice President and Chief Financial Officer

EXHIBIT 32.1

NORTHWEST NATURAL GAS COMPANY

Certificate Pursuant to Section 906

of Sarbanes – Oxley Act of 2002

Each of the undersigned, DAVID H. ANDERSON, Chief Executive Officer, and FRANK H. BURKHARTSMEYER, the Chief Financial Officer, of NORTHWEST NATURAL GAS COMPANY (the Company), DOES HEREBY CERTIFY that:

1. The Company’s Annual Report on Form 10-K for the year ended December 31, 2020 (the Report) fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

2. Information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

IN WITNESS WHEREOF, each of the undersigned has caused this instrument to be executed this twenty-sixth day of February 2021.

/s/ David H. Anderson
David H. Anderson
President and Chief Executive Officer

/s/ Frank H. Burkhartsmeyer
Frank H. Burkhartsmeyer
Senior Vice President and Chief Financial Officer

A signed original of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002 has been provided to Northwest Natural Gas Company and will be retained by Northwest Natural Gas Company and furnished to the Securities and Exchange Commission or its staff upon request.

EXHIBIT 32.2

NORTHWEST NATURAL HOLDING COMPANY

Certificate Pursuant to Section 906
of Sarbanes – Oxley Act of 2002

Each of the undersigned, DAVID H. ANDERSON, Chief Executive Officer, and FRANK H. BURKHARTSMEYER, the Chief Financial Officer, of NORTHWEST NATURAL HOLDING COMPANY (the Company), DOES HEREBY CERTIFY that:

1. The Company's Annual Report on Form 10-K for the year ended December 31, 2020 (the Report) fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

2. Information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

IN WITNESS WHEREOF, each of the undersigned has caused this instrument to be executed this twenty-sixth day of February 2021.

/s/ David H. Anderson
David H. Anderson
President and Chief Executive Officer

/s/ Frank H. Burkhartsmeyer
Frank H. Burkhartsmeyer
Senior Vice President and Chief Financial Officer

A signed original of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002 has been provided to Northwest Natural Holding Company and will be retained by Northwest Natural Holding Company and furnished to the Securities and Exchange Commission or its staff upon request.

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Investor and Shareholder Information

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Director, Investor Relations
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nikki.sparley@nwnatural.com

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Manager, Shareholder Services
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STOCK TRANSFER AGENT AND REGISTRAR

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American Stock Transfer
& Trust Company
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Brooklyn, NY 11219
(888) 777-0321
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TRUSTEE AND BOND PAYING AGENT

For bond issues:
Deutsche Bank
Trust Company Americas
60 Wall Street
New York, NY 10005
(800) 735-7777

ESG REPORT

Learn more about NW Natural's commitments to system safety and preparedness, environmental stewardship, progress on our Low Carbon Pathway, community support and philanthropy, and the values that guide our work every day.

View our Environmental, Social and Governance Report online: **www.nwnatural.com/esgreport**

LOW-INCOME PROGRAMS

NW Natural helps low-income customers manage their bills through a variety of programs. Shareholders and customers support the Gas Assistance Program, which supplements federal and state assistance programs. In addition, the Oregon Low-Income Gas Assistance Program uses public purpose fees to help low-income customers pay their utility bills. The Oregon Low-Income Energy-Efficiency Program, also paid for by public purpose charges, helps customers in need acquire high-efficiency equipment and weatherization upgrades.

View the Low-Income Programs at: **www.nwnatural.com/paymentassistance**

ENERGY-EFFICIENCY PROGRAMS

NW Natural partners with Energy Trust of Oregon to offer our Oregon and Washington customers energy-efficiency programs and services. Learn more about the results of these savings programs and the benefits to our customers.

View the Energy Trust of Oregon Annual Report at: **www.nwnatural.com/savingsprograms**

NW Natural HOLDINGS™
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PORTLAND, OREGON 97204
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NYSE: NWN

Our Core Values

Integrity
Safety
Caring
Service Ethic
Environmental Stewardship