

**APPLICATION FOR AMENDMENT NO. 7
TO THE MIST UNDERGROUND NATURAL GAS
STORAGE SITE CERTIFICATE**

**Submitted by:
NW Natural**

August 29, 2000

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AFFIDAVIT OF AUTHENTICITY

I, Carla L. Kelley being sworn, state that:

I am Deputy General Counsel of Northwest Natural Gas Company dba NW Natural and am authorized to act on behalf of NW Natural.


NW Natural is submitting this Application for Amendment No. 7 to the Mist Underground Natural Gas Storage Site Certificate.

To my best knowledge and belief, the information in this Application for Amendment No. 7 is true and accurate.

Dated this 29th day of August, 2000.

NORTHWEST NATURAL GAS COMPANY

By:



Carla L. Kelley
Deputy General Counsel for
Northwest Natural Gas Company

**APPLICATION FOR AMENDMENT NO. 7 TO THE
MIST UNDERGROUND NATURAL GAS
STORAGE SITE CERTIFICATE**

(a) APPLICANT INFORMATION

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Portland, OR 97209

Places of Incorporation: Oregon and Washington

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(b) DESCRIPTION OF THE FACILITY

INTRODUCTION.

By this Application, Northwest Natural ("NWN") proposes to amend the site certificate for its underground natural gas storage facility at Mist, Oregon. NWN is applying to increase the capacity of the Mist storage facility by 55 MMcfd, from 190 MMcfd to 245 MMcfd. The daily throughput is a condition of the Certificate.¹

On March 27, 2000, NWN applied to the Federal Energy Regulatory Commission ("FERC") for permission to sell storage and related transportation services to interstate pipelines at market-based rates utilizing NWN's facilities. NWN expects to receive approval of that application, known as the "Section 224" service. To make optimal use of the Section 224 service, NWN needs to increase the permitted throughput of the Mist facility to 245 MMcfd, which can be accomplished with facilities permitted under Amendment No. 6.

¹ There is an error in the Certificate for Amendment No. 6, as described in correspondence from Carla Kelley to David Stewart-Smith of April 11, 2000. NW Natural applied to increase the daily throughput to 190 MMcfd and that request was approved. However, the required language stating the daily throughput was not properly transferred to the Site Certificate itself. Instead, a provision from the Order was mistakenly repeated. OOE Staff and NWN are in agreement that the current permitted daily throughput is 190 MMcfd.

This increase in throughput can be accomplished without changing any other existing condition of the Mist Underground Natural Gas Storage Site Certificate ("the Certificate"). No change is requested in the maximum allowable operating pressures for any of the equipment, pipelines or reservoirs and this Amendment will not require any additional compression or additional gathering lines other than those already approved in a prior amendment.

In summary, this request to increase throughput by 55 MMcfd will not require any physical changes to the site that could affect standards. The increased throughput of 245 MMcfd can be achieved strictly with the physical plant approved in Amendment No. 6. For informational purposes, therefore, this Application summarizes the standards that the Council has already approved for the physical plant in Amendment No. 6. The prior plant changes make the current request for increased throughput possible. Thus the facility that will be used for the increased throughput is the same facility already permitted in Amendment No. 6.

Pursuant to OAR 345-027-0060 (1) (f) (2), the Application to Amend the Site Certificate for Mist Underground Natural Gas Storage submitted September 15, 1998, is hereby incorporated by reference. Materials submitted with that document will either be summarized in the application for Amendment No. 7 or referenced. Exhibits submitted with Amendment No. 6 will be referenced rather than reattached here.

EXISTING SITE CERTIFICATES AND FACILITIES.²

NATURE OF THE FACILITY.

NWN is a gas utility that delivers energy to more than 500,000 customers. Although energy needs change significantly on a daily, monthly and seasonal basis due to changes in space-heating requirements, harvest processing, annual production cycles and other factors, in Oregon gas usage is generally lowest during summer months and peaks during December, January and February. Underground gas storage provides the most efficient means of balancing relatively constant pipeline gas supplies with widely fluctuating seasonal, daily and hourly market requirements. Gas is injected into storage during off-peak periods when market requirements are less than supply availability, and is withdrawn from storage when market demand exceeds available supplies from other sources. Storage reservoirs usually are replenished from April through September and are drawn down between October and March.

² This introductory statement about the Mist underground storage operation is repeated from a prior application, as is the analysis of Council jurisdiction, for the benefit of Council members who were not members at the time Amendment No. 6 was processed.

Underground reservoir storage requires suitable underground geological conditions in a specific geographic area. These conditions occur in depleted oil or gas pools like the pools in the Calvin Creek storage area.

An underground storage reservoir, reduced to simplest terms, is little more than a gas production reservoir retrofitted to inject gas back into the ground and withdraw it on a cyclical basis. Some gas always remains in the reservoir to maintain operating pressure. This gas is referred to as "cushion gas." Between one-third and one-half of the original gas in place in each reservoir (including some that could never be produced) is used as cushion gas. The remainder of the reservoir's capacity is used to inject and withdraw gas relatively rapidly to meet market needs. This gas is referred to as "working gas."

The principal differences between a natural gas production field and an underground storage reservoir are operational. The gas wells in a production field are designed to produce gas at flow rates that permit the efficient drainage of the reservoir over time. The Oregon Department of Geology and Mineral Industries ("DOGAMI") regulates the spacing of gas wells. Generally, no more than one well per quarter section (160 acres) is allowed. Closer well spacing could result in higher development costs with negligible increase in overall gas production. Competing wells could also cause the premature demise of a reservoir, leaving behind gas that is uneconomical to produce.

A different operating concept applies to a storage reservoir. Instead of producing the major portion of the underground gas by careful management of field pressures and auxiliary compression over a period of years, the goal changes to that of an annual fill-and-empty cycle. We currently are capable of a significantly greater withdrawal rate than the original production capacity; therefore, a more closely spaced pattern of higher capacity wells has been used for storage operations. Compressors allow the storage pressure to be restored during a six-month injection period and provide for sustained high delivery rates during withdrawal as the reservoir pressure depletes.

SITE SELECTION.

Underground storage facilities can only be developed in rare locations where the underground geological conditions are right. The Mist gas field (the "Mist Field") is such a place.

Millions of years ago, the present gas-producing sands in the Mist Field were laid down by a large river delta advancing into the ocean (analogous to the modern Mississippi River delta). The delta subsided and water depths increased, resulting in mud being deposited over the sand. Compaction from the weight of the material consolidated the sand and muds into sandstone and mudstone. Decomposition of the organic remains in the rock formed natural gas. Large amounts of natural gas migrated into the sandstone and accumulated in

areas where the gas could be trapped and displace the water from between the sand grains, forming a "bubble." The compressed layers of clay that form the seal (caprock) over the sand prevent further vertical gas migration. The ongoing compression of Oregon against the Pacific Ocean floor created the folds and faults in the sandstone that form the compartments that trap the gas and prevent lateral migration. The fact that gas remains in these reservoirs at high pressure (up to 1,000 pounds per square inch) after millions of years demonstrates the stable nature of these reservoirs. No man-made structures have been so thoroughly tested.

Gas storage facilities have been constructed in similar sandstones in Washington, but no native gas was present. That made exploration and development of the structures much more risky and expensive. It was necessary to pump salty water out of the sandstone and to inject gas produced in other states and transported to the site. There was no guarantee that the injected gas would stay put or that it would be recoverable. The gas reservoirs in the Mist Field are the only producing gas reservoirs discovered to date in Oregon and Washington, and thus they are the only "pretested" storage reservoirs, a rare and valuable resource.

SITE BACKGROUND.

By the late 1970s, NWN had anticipated its need for natural gas storage capacity in the Portland metropolitan area. NWN believed the area around Mist, in rural Columbia County, Oregon, might be one of the few areas in the state containing sandstones of reservoir quality that could be used to store natural gas. These sandstone zones, surrounded by impermeable rock, are referred to as underground "reservoirs," although they are not large caverns. The small spaces between sand grains are in excess of 30 percent of the volume of the rock and can be filled with compressed natural gas. NWN recognized that the Mist area would be an excellent location for storage facilities to serve the region.

Reichhold Energy Company and Diamond Shamrock Exploration Company were exploring the Mist area with the hope that underground reservoirs containing commercial gas deposits would be discovered. NWN formed a subsidiary, Oregon Natural Gas Development Corporation ("ONG"), to participate with those two companies in exploring the Mist area by drilling exploration wells to depths of several thousand feet below the surface. From NWN's perspective, simply finding a good underground reservoir, even without commercial gas deposits, would have been satisfactory. The discovery of natural gas at Mist was a bonus.

The Mist Field was discovered in April 1979. Natural gas production was established in December of that year when the first volumes of natural gas were transported to a connection with the NWN pipeline system about nine miles away, near Clatskanie. Subsequently, producing wells from the commercial

discoveries in the Mist Field were connected by buried gathering lines to the natural gas processing equipment located at Miller Station. At Miller Station, the produced natural gas was collected, measured, treated and odorized before its transmission to NWN pipelines. Since 1979, more than \$100 million worth of natural gas has been produced from numerous separate gas reservoirs in the Mist Field.

Through the 1980s and into the 1990s, gas exploration and production in the Mist Field was carried on by ONG and a variety of industry participants including Reichhold Energy Company, Diamond Shamrock Exploration Company, ARCO Oil & Gas Company, Nahama & Weagant Energy Company and Enerfin Resources NW-LP ("Enerfin"). Gathering pipelines connecting individual production wells to Miller Station were constructed and operated by ONG until December 1995 and by Enerfin thereafter. During these same time periods, ONG and Enerfin also operated the production wells under contract with the well's various owners.

By the early 1980s, ONG had produced most of the economically recoverable natural gas in the Bruer and Flora pools, two of the first production reservoirs at Mist. In anticipation of that occurrence, in 1981, ONG applied for the permits necessary to convert the Bruer and Flora pools into an underground natural gas storage facility.

In September 1981, based on an application from ONG, the Energy Facility Siting Council ("EFSC" or the "Council") approved a site certificate for an underground natural gas storage facility at the Mist Field in Columbia County (the "Storage Certificate"). (Exhibit 1, Application to Amend the Site Certificate for Mist Underground Natural Gas Storage, September 15, 1998 (henceforth Amendment No. 6.)) The Storage Certificate authorized ONG to construct and operate "two naturally existing underground gas reservoirs (the Flora and Bruer pools) * * *; Miller Station with attendant equipment (including, but not limited to, compressors), gathering lines, access roads, existing natural gas wells, monitoring wells and proposed injection/withdrawal wells" (collectively known as the "Mist Site"). (Exhibit 1 at 2, 3, Amendment No. 6). The Mist Site is located in rural Columbia County in parts of Sections 2, 3, 4, 10 and 11 of Township 6 North, Range 5 West, Willamette Meridian.

In 1990, ONG assigned the Storage Certificate to its parent, NWN. (Exhibit 2, Amendment No. 6.) The Council approved three amendments to the Storage Certificate, in 1987, 1988, 1990. The amendments modified several terms of the Storage Certificate and authorized the construction and replacement of wells. (Exhibits 3-5, Amendment No. 6.)

In 1997, the Council approved Amendment No. 4. (Exhibit 6, Amendment No. 6.) That amendment approved an expansion of the Mist Site that increased the combined total Mist storage peak-day delivery capability from 100 MMcf/d to

145 MMcfd. The expansion included: (1) improvements to the Miller Station gas-processing facility, including the replacement of two older 550-horsepower compressor units with one larger, more efficient unit; (2) total available compression of 6,650 brake horsepower; (3) construction of a building for the new compressor and updates to related equipment; (4) natural gas storage in one additional naturally occurring underground pool, Al's Pool, in the Calvin Creek storage area; (5) up to four new sites for injection/withdrawal wells, including one to four wells at each site; (6) approximately one mile of buried 8-inch and 6-inch gathering pipeline; and (7) approximately two and one-half miles of buried twin 16-inch transmission pipeline. NWN's Application for Amendment No. 4 described the Project as "Phase I of an expansion that may include four additional phases over a 10-year period." (Application to Amend Site Certificate for Mist Underground Natural Gas Storage Facility, Mar. 20, 1997 ("Phase II Application"), at 6.)

On March 13, 1998, the Council approved Amendment No. 5, which replaced the amendment provisions in the Storage Certificate with a requirement that future site certificate amendments be governed by the Council's amendment rules. (Exhibit 7, Amendment No. 6.)

In 1998, NWN applied to increase the capacity of the Mist storage facility. This was known as Phase III of NWN's storage development effort at Mist. NWN's application for Amendment No. 6, which permitted Phase III, was approved by final order on March 31, 1999. The gas storage portion of that project included: (1) upgrades to the dehydration and metering systems at Miller Station; (2) natural gas storage in one additional naturally occurring underground pool, the Reichhold Pool, within the existing site boundary; (3) up to four new sites for injection/withdrawal wells, including one to four wells at each site; (4) approximately 6,500 feet of buried gathering pipeline no greater than 12 inches in diameter; and (5) the removal of the 6,650 compressor horsepower limitation currently in place for the Miller Station facility. Approval of Amendment No. 6 allows Miller Station to operate at rates of up to 190 MMcfd without any restriction on the use of the three existing compressor units, which have a total rating of 8,200 BHP.

On March 27, 2000, NWN applied to the Federal Energy Regulatory Commission ("FERC") for permission to sell storage and related transportation services to interstate pipelines at market-based rates utilizing NWN's facilities. NWN expects to receive approval of that application, known as the "Section 224" service in Fall 2000. To make optimal use of the Section 224 service, NWN needs to increase the permitted throughput of the Mist facility to 245 MMcfd, which can be accomplished with facilities permitted under Amendment No. 6.

COUNCIL JURISDICTION.

Gas Storage Facility.

When EFSC approved the Storage Certificate in 1981, its jurisdiction included both the surface and underground components of the facility. In 1993, the siting law was amended to include within the Council's jurisdiction only the "surface facility related to an underground gas storage reservoir that, at design injection or withdrawal rates, will receive or deliver more than 50 million cubic feet of natural or synthetic gas per day, and require more than 4,000 horsepower of natural gas compression to operate * * *." ORS 469.300(9)(a)(H).

The underground storage reservoir as well as the injection, withdrawal and monitoring wells and the individual wellhead equipment remain under DOGAMI's pervasive authority over the wells and other subsurface components. ORS 469.300(9)(a)(H)(i)-(ii); see 1993 Or Laws, ch 544, 3.

The surface facilities at the Mist Site are now subject to Council jurisdiction because they have the capacity to receive or deliver more than 50 million cubic feet per day and in its current configuration the facility utilizes up to 8,200 horsepower of compression to achieve permitted throughput rates.

The Council's jurisdiction over this request to increase the maximum throughput is based on a change in a condition of an existing jurisdictional facility. OAR 345-027-0050(1)(d). However, all elements of the operations necessary to achieve the increased throughput have already been permitted under Amendment No. 6.

Amendment Process.

The Council rules that govern site certificate amendments are set forth in OAR chapter 345, division 27. OAR 345-027-0011 states that these rules apply only to "facilities for which a site certificate is executed on or after November 30, 1994." The Storage Certificate was executed in 1981. On February 27, 1998, NWN asked the Council to amend the storage site certificate by replacing the amendment provisions in the site certificate with requirements that future site certificate amendments be governed by the "duly adopted rules of the Energy Facility Siting Council for the amendment of site certificates." On March 13, 1998, the Council approved the requested amendments. (Exhibits 7, 9 to Amendment No. 6.) Accordingly, this amendment proceeding is governed by the site certificate amendment rules in OAR chapter 345, division 27.

(c) PROJECT DESCRIPTION.

Gas Storage Facility.

The project approved in Amendment No. 6 allowed NWN to develop new underground gas storage capacity and expand the existing Miller Station facility so that an additional 45 MMcfd of storage gas could be delivered into the Portland load center on a design day. That expansion increased the combined total permitted Mist storage peak-day delivery to 190 MMcfd from the existing permitted maximum of 145 MMcfd. It included the development of a new storage reservoir, the Reichhold Pool, with high-capacity injection/withdrawal wells, the installation of a new high-capacity gathering pipeline to connect the Reichhold Pool injection/withdrawal wells to the existing gathering system and the upgrading of processing and compression capacity at Miller Station. These improvements will allow the facilities to deliver the requested 245 MMcfd without further improvements. The current need for the additional throughput arose through the Section 224 service developed after Amendment No. 6.

Miller Station Improvements.

Amendment No. 6 approved an increase in the total gas throughput of Miller Station to accommodate the expanded storage capacity. That increased throughput required minor improvements to Miller Station's compressor capacity, metering, dehydration and auxiliary systems. The existing compressor capacity consists of one ISO-rated 5,500-BHP gas-turbine-driven compressor and two 1,350-BHP reciprocating compressors. The gas-turbine-driven compressor was installed in 1998 with low-emission burners and controls to minimize NOx emissions. The two reciprocating compressors have newer engines that utilize clean-burn technology, which also minimizes NOx emissions.

Amendment No. 6 to the Storage Certificate removed the restriction in Amendment No. 4 to the Storage Certificate (Exhibit 6 to Amendment No. 6) restricting the total compression horsepower available for use at the Mist facility to 6,650 BHP. The purpose of Amendment No. 6 was to remove the horsepower limitation so that all of the installed compressor units could be operated at their full rated horsepower, totaling 8,200 BHP.

Although the requested expansion of Miller Station capacity was only 45 MMcfd, the station now has a higher capability with equipment approved in Amendment No. 6. Amendment No. 6 also authorized the addition of one new glycol contact tower with an overhead scrubber and the associated gas and glycol piping. The station metering required the installation of new higher capacity meters. Both of these modifications were requested so that future expansions of the station could be made readily up to the ultimate station capacity of approximately 300 MMcfd if future storage projects prove to be viable.

The Reichhold Pool has proved viable. The equipment required for the increase in throughput to 245 MMcfd has been previously approved, so the requested change is not for additional equipment, but rather in the maximum permitted operating rate. Each of the three compressors at Miller Station is currently permitted to run at its maximum rated horsepower and maximum rate, but the combined throughput is limited by the current permit. This application does not affect the operations of the four reservoirs or any of the field equipment, but merely allows all reservoirs to be operated simultaneously to achieve the requested deliverability. None of the maximum allowable operating pressures for any of the equipment, pipelines or reservoirs are being changed, so there is no increased risk of a failure due to overpressurization.

Reservoir Development Phase.

The Calvin Creek storage area is located two and one-half miles south of NWN's Miller Station compressor plant near Mist, Oregon. (Exhibit 12, Amendment No. 6) The Calvin Creek storage area has multiple reservoirs located within its boundaries, some of which are potentially suitable for storage development. During Phase II, the expansion the Council approved in 1997, Al's Pool was developed for storage and was fully operational in November 1998. During Phase III, NWN tested and confirmed the suitability of the Reichhold Pool for storage operation. In order to make full use of this pool, NWN needs to expand the current permitted throughput to 245 MMcfd.

Gathering System Additions.

The gathering system that will support the requested increase in throughput was approved in Amendment No. 6. It consisted of a single 12-inch pipeline from the southern terminus of the twin 16-inch gathering pipelines (the Calvin Creek gathering header) to the location of the Reichhold Pool. At that point, the 12-inch pipeline connects with six-inch or eight-inch gathering lines from each of the individual wellheads in the area. (Exhibit 13, Amendment No. 6.) The total approved gathering line alignment travels under approximately 6,500 feet of private logging roads and reforested timberlands. The gathering line route involves one landowner. The construction right-of-way will not exceed 80 feet in width. NWN will maintain a permanent right-of-way approximately 40 feet wide in the area above the pipeline for maintenance and safety. A map delineating the gathering lines to the Reichhold Pool is included as Exhibit 1 to this application.

In 1999, NWN constructed 2,800 ft. of 12" gathering line to an area near Reichhold Pool. During 2000, an additional 600 ft. will be constructed. (Amendment No. 6 was approved for 6,500 feet of gathering line.)

To avoid areas where slope stability is a concern, NWN conducted a geotechnical review of a preliminary route. (Exhibit 14, Amendment No. 6.) No

geotechnical hazards along the proposed route were identified. NWN has conducted a cultural and environmental review in accordance with existing regulations to ensure that there will be no adverse effect on any cultural or environmental resources. (Exhibit 15, Amendment No. 6) .

(d) SPECIFIC LANGUAGE OF THE SITE CERTIFICATE REQUESTED.

NWN requests the following amendment to the Site Certificate:

"Site Specific Conditions Under OAR 345-027-0023

- (4) The site boundary is specified in Exhibit 2 to the Application for Amendment No. 7; the total permitted daily throughput of the facility is 245 MMcfd."

(e) and (f)

DIVISION 22 STANDARDS APPROVED IN AMENDMENT NO. 6 THAT RELATE TO THE PROPOSED CHANGE IN THROUGHPUT AND ANALYSIS OF COMPLIANCE WITH COUNCIL, STATE AND LOCAL RULES AND ORDINANCES.

The following discussion of standards is largely taken from Amendment No. 6. It has been modified where necessary to be specific to this application. However, no new facilities are required beyond what has already been permitted in order to increase the throughput as requested to 245 MMcfd.

ORGANIZATIONAL, MANAGERIAL AND TECHNICAL EXPERTISE (OAR 345-022-0010).

Under this standard, the Council determines whether the applicant has the organizational, managerial and technical expertise to construct and operate the facility. To conclude that the applicant has the necessary expertise, the Council must determine that the applicant has

"A reasonable probability of successful construction and operation of the facility considering the experience of the applicant, the availability of technical expertise to the applicant, and, if the applicant has constructed or operated other facilities, the past performance of the applicant, including but not limited to the number and severity of regulatory citations, in constructing or operating a facility, type of equipment, or process similar to the proposed facility." OAR 345-022-0010(1).

NWN'S UNDERGROUND STORAGE AND PIPELINE EXPERIENCE.

NWN is a 140-year-old company whose core business is the local distribution of natural gas. Around 1980, NWN began developing the natural gas fields in the Mist area for the reinjection and storage of natural gas. Since 1988, NWN has operated its underground natural gas storage operation at Mist under

the Storage Certificate, one of the two site certificates that is now in the amendment process. NWN also has a site certificate authorizing it to build and operate the South Mist Feeder pipeline, which brings natural gas to and from the storage facility.

The storage facility allows NWN to store natural gas that it purchases from the interstate pipeline and to withdraw that gas when it is needed for particularly cold weather and peaking requirements. Company personnel who have been managing the existing storage operation will continue to operate the expanded facility. These individuals include the operators who run Miller Station and the geologists and engineers who were formerly employed by an NWN subsidiary, ONG. The subsidiary is now merged into NWN and its employees work directly for NWN. Many of the individuals now working for NWN who are involved in the design and construction of Mist facilities have been with the underground storage project at Mist since its inception, as described below.

TECHNICAL EXPERTISE AVAILABLE TO NWN.

NWN has assembled an experienced team of professional, technical and administrative personnel to manage all phases of the Project. Following is a brief description of several key members of the Project team, taken from Amendment No. 6. The same team remains in place.

Charlie Stinson, General Manager, Engineering Services and Storage Development. Mr. Stinson is an Oregon-registered petroleum engineer who has been continually involved in the Mist development since discovery of the Mist gas fields in 1979. His specific experiences at Mist include management of the Bruer/Flora storage reservoir development, supervision of the installation and operation of the gas-production gathering system and management of various gas development ventures. Mr. Stinson was responsible for the recently completed addition of the Calvin reservoirs and expansion of Miller Station, which were approved by EFSC as Amendment No. 4 to the Storage Certificate, and for the modifications to Miller Station and the new 27 miles of the South Mist Feeder approved in Amendment No. 6 and Amendment No. 2 to the South Mist Feeder Site Certificate.

Ron Gullberg, Storage Project Manager. Mr. Gullberg is a civil engineer registered in Oregon and Wyoming. He has more than 20 years of experience in natural gas control, storage and distribution system construction at NWN. He is responsible for the day-to-day management of the Project. Mr. Gullberg took over the construction management of the expansion approved by Amendment No. 4 in 1997. He was also in charge of construction approved by Amendment No. 6 and Amendment No. 2 for the South Mist Feeder.

Warren Harris, Pipeline Design & Installation. Mr. Harris is a mechanical engineer with more than 28 years of experience in the design and construction of

gas pipeline systems in the Pacific Northwest. Mr. Harris was a key member of NWN's original South Mist Feeder project, which installed the existing pipeline in 1989. He was responsible for the design of the South Mist Feeder expansion approved in Amendment No. 2 to the South Mist Feeder Site Certificate and completed in 1999.

Jack Meyer, Reservoir Development. Mr. Meyer is an Oregon-registered geologist with more than 20 years of geological and geophysical mapping and interpretation experience. Mr. Meyer has worked on the Mist project for both exploration purposes and underground storage development at the Bruer and Flora pools continuously for the past 17 years.

Nick Potts, Storage Operations. Mr. Potts has a degree in mechanical engineering technology and has worked for NWN for the past 17 years in design and operations. For the past 13 years Mr. Potts has been the Superintendent of Storage, which includes the current Mist storage operations.

Todd Thomas, Field Development. Mr. Thomas has a degree in geology and has operated for the past 16 years as a drilling superintendent and field operations engineer. Mr. Thomas was a member of the reservoir development teams for both the Bruer/Flora project and the Phase II project. He has supervised the drilling of all the storage wells in the Mist Field. Mr. Thomas managed the onsite construction activity for the South Mist Feeder expansion completed in 1999.

The past performance of NWN is well known to the Council and its staff, and has not changed since the approval of Amendment No. 6 except for the successful completion of 27 miles of 24-inch pipe permitted in 1999. See pages 17-18, Application for Amendment No. 6

CONCLUSION.

In its Order approving Amendment No. 6, the Council stated:

"NWN's prior experience constructing and operating the Mist Storage Facility, its successful completion of the Calvin Creek expansion in 1997, and the fact that the proposed expansion would involve identical activities, provide reasonable assurance that NWN can successfully construct, operate and retire the facility. No new conditions are required."

Based on NWN's experience with its existing underground storage facility and the South Mist Feeder pipeline, the expertise of key personnel and its past performance with the existing storage and pipeline facilities, NWN demonstrated that it had a reasonable probability of successful construction and operation of the Project in Amendment No. 6 and had the requisite organizational, managerial and technical expertise. That expertise remains available to this Application.

STRUCTURAL (OAR 345-022-0020).

Under the structural standard, the Council determines whether

(1) The applicant, through appropriate site-specific study, has adequately characterized the site in terms of seismic zone and expected ground response during the maximum credible seismic events; and

(2) The facility can be designed, engineered, and constructed adequately to avoid potential dangers to human safety presented by seismic hazards affecting the site, as defined in ORS 455.447(1)(d) and including amplification, that are expected to result from all reasonably probable seismic events." OAR 345-022-0020.

The standard has two components, a site characterization requirement and a design and construction requirement. For Amendment No. 6, NWN engaged GeoEngineers, Inc. to prepare geotechnical investigations of the portions of the Project site that include the Reichhold Pool wells and gathering lines. The geotechnical investigation of the Reichhold Pool area was attached as Exhibit 14, Amendment No. 6.

Several minor improvements to Miller Station were approved in Amendment No. 6, based on the report prepared by Dames & Moore and attached as Exhibit 10 to the Phase II Application (1997). The addition of one new gas-dehydration tower and replacement of various meters did not require major new buildings or other major site alteration. The change to the allowable throughput to increase it to 245 MMcfd does not change Dames & Moore's predicted ground response at Miller Station during the maximum credible seismic events or change Dames & Moore's conclusion that the Miller Station facilities, if designed to meet Uniform Building Code Seismic Zone 3 requirements, can be constructed to avoid danger to human safety.

We discussed in the Application for Amendment 6 the regional geologic setting and seismic characterization of the elements related to increasing throughput. See Exhibit 14, Amendment No. 6. The request to increase the permitted throughput to 245 MMcfd does not change the discussion.

A discussion of seismic and geologic conditions is contained in Amendment No. 6, pp. 19-21, and Exhibits 14 and 19 to that application. This application does not affect the operations of the four reservoirs or any of the field equipment, but merely allows all reservoirs to be operated simultaneously to achieve the requested deliverability. None of the maximum allowable operating pressures for any of the equipment, pipelines or reservoirs are being changed, so there is no increased risk of a failure due to overpressurization.

In summary, Amendment No. 6 found that the locations for Reichhold Pool wellheads and gathering lines had been evaluated for seismic hazards including shaking, amplification, landsliding, soil liquefaction and surface rupture. The wellheads, the gathering lines were approved based on the finding that they could be designed and built with very low risk of any damage from seismic hazards and, therefore, with very low risk of any danger to human safety.

SOIL PROTECTION (OAR 345-022-0022)

Under this standard, the Council determines whether the design, construction and operation of the facility, taking mitigation into account, is likely to result in a significant adverse impact to soils.

All station modifications and gathering line modifications related to the soil standard were described and approved under this standard in Amendment No. 6. For the Miller Station portion of the Project, NWN relied upon the Dames & Moore study of the major soil types in the Miller Station area, which is attached as Exhibit 12 to the Phase II Application, which the Council approved in 1997 and 1999. A topographic map showing the elevations of Miller Station was included in the Application for Amendment No. 6 at Exhibit 19, Figure G-2a, and Exhibit 14 to the same document.

Soil Types: Miller Station; Effect on Soils.

The following description is taken from the application for Amendment No. 6: "Miller Station is an existing industrial site, already dedicated to gas storage activities. As with the project approved in Amendment No. 4 to the Storage Certificate, NWN has elected to add new dehydration and compression capacity to Miller Station in this Project, rather than to create a second facility near the Reichhold Pool. There will be very little earthwork at Miller Station for the new dehydration facilities and no significant increased loading of soils in the area. No significant cutting or trenching is expected. The planned equipment locations are already covered with crushed rock. Therefore, there will be no significant new adverse impact on soils at the Miller Station site."

Reichhold Pool Wellsites and Gathering Lines; Effect on Soils.

Amendment No. 6 demonstrated compliance with the soil standard for the gathering lines to the Reichhold Pool area. The discussion and results of studies approving it are found at Amendment No. 6, pp. 22-24 and Exhibit 14 to Amendment No. 6. That application stated that "In the context of the substantial impacts on area soils related to timber harvesting and agricultural activities in the same area, the effect of the proposed gathering line construction will be minimal."

LAND USE (OAR 345-22-030).

This standard was met in Amendment No. 6. No additional facilities are proposed for Amendment No. 7. The increased throughput will occur only in Columbia County and will require no change to facilities. NWN activities at Miller Station, its pipelines and storage wells and reservoirs are approved by conditional use permit from Columbia County as well as approved through EFSC land use decision in Amendment No. 6. Therefore, the prior approval by the council of Amendment No. 6 should satisfy the land use standard.

PROTECTED AREAS (OAR 345-022-0040).

This standard prohibits the siting of an energy facility in any of the protected areas listed in the rule. The standard permits the siting of a facility outside the listed protected areas so long as the “design, construction and operation” of the facility “is not likely to result in significant adverse impact to” any of the protected areas. OAR 345-022-0040(1).

Protected areas are defined in OAR 345-022-0040 and include national parks, national monuments, wilderness areas, national and state wildlife refuges, national coordination areas, national and state fish hatcheries, national recreation and scenic areas, state parks and waysides, state natural heritage areas, state estuarine sanctuaries, scenic waterways, experimental areas established by the Rangeland Resources Program, agricultural experimental stations, research forests, Bureau of Land Management areas of critical environmental concern and state wildlife and management areas.

For Amendment 6, to identify protected areas in the vicinity of the Project area, NWN's consultant reviewed a set of maps created by the Oregon Office of Energy covering national, state, Bureau of Land Management (“BLM”) and Oregon State University (“OSU”) protected areas. Information from ODFW was used to identify state hatcheries. Oregon Natural Heritage Program staff provided location information on state natural heritage areas.

The reservoirs and Miller station are not located in any protected area.

An OSU research forest is located about five miles northwest of the Mist storage facility, north of Mist. Other protected areas are found from 10 to more than 20 miles from the Project area.

This standard was met in Amendment No. 6. No changes to site boundaries are proposed.

As noted in the application for Amendment No. 6, Phase III was not located in any protected areas. Where it came closest to protected areas it was entirely underground. There were no off-site environmental impacts that could

affect protected areas. Accordingly, the design, construction and operation of the Project will not have any adverse impact on any of the areas listed as protected by OAR 345-022-0040.

FINANCIAL ASSURANCE (OAR 345-022-0050).

Under this standard, EFSC determines whether the applicant has a reasonable likelihood of obtaining a bond or comparable security, satisfactory to EFSC, in an amount adequate to restore the site if the site certificate holder (1) begins but does not complete construction of the facility or (2) permanently closes the facility before establishing a financial mechanism or instrument, satisfactory to the Council, that will ensure funds will be available to adequately retire the facility and restore the site.

This standard and the retirement standard in OAR 345-022-0130 are designed to ensure that funds are available to restore the site in three different circumstances: (1) the facility construction is begun but not completed by the time required in the site certificate, (2) the facility is permanently closed before a retirement fund is fully funded, and (3) the facility is permanently closed after the retirement fund is fully funded. Under this standard, EFSC addresses the availability of funds in the first two circumstances.

An underground storage facility has an indefinite useful life; retirement of the Mist storage facility is unforeseeable at this time. However, retirement is theoretically possible at any time.

In the application for Amendment No. 6, NWN estimated the cost of restoring the Mist site to be approximately \$323,000 in 1998 dollars. This amount will be offset by an estimated salvage value of installed equipment of \$604,000. This estimate remains the same for Amendment No. 7.

NWN's annual reports for 1995, 1996 and 1997 were attached as Exhibits 35, 36 and 37 to the application for Amendment No. 6. NWN's annual report for 1999 is attached as Exhibit 3 to this application.

Together, Amendment No. 6 and the annual reports demonstrate that the cost to restore the portions of the gas storage and pipeline sites related to the amendments proposed in this Application is small relative to the value of the existing certificated facilities at Mist and their salvage value. There is therefore no question that NWN could restore the gas storage site if NWN were to close the facility before establishing a funding mechanism for site restoration.

FISH AND WILDLIFE HABITAT (OAR 345-022-0060).

Under this standard, the Council determines whether the design, construction, operation and retirement of the facility, taking into account

mitigation, is consistent with the fish and wildlife habitat mitigation goals and standards of OAR 635-415-0030. The State Fish and Wildlife Commission recently amended OAR 635-415-0030. Among the changes, the amendment increases the number of habitat categories from 4 to 6. The Council's Fish and Wildlife Habitat standard has not yet been amended to reflect the changes to OAR 635-415-0030.

The version of OAR 635-415-0030 currently referenced in the Council's standard describes four categories of habitat in order of their value. The rule then establishes mitigation goals and corresponding implementation standards for each habitat category. See Amendment No. 6, pp. 81-82.

To ensure compliance with the fish and wildlife habitat mitigation goals and standards, NWN engaged Dames & Moore to conduct a biological resource investigation and evaluations of the area covered in Amendment No. 6. Dames & Moore conducted a study of the Mist storage area (including the new gathering lines). Dames & Moore's reports identify the major ecological habitats in the area, characterize the habitats by category, identify the potentially affected fish and wildlife species, and evaluate the potential impacts to habitats and recommend mitigation measures. (Amendment No. 6, Exhibit 15.)

As part of the studies, a biologist walked the entire length of the gathering line routes to identify all habitats, wetlands and streams that would be affected. A corridor 200 feet wide was evaluated to accommodate potential route adjustments. Dames & Moore identified areas as wetlands if they contained evidence of hydrophytic vegetation, hydric soils and wetland hydrology. Any watercourse with a defined channel was recognized as a stream.

The storage area study did not include the 12-acre Miller Station site because it is completely fenced, most of the site is paved with gravel or covered with buildings and the remainder is of no habitat value due to continuous human activity in the area.

Information presented in the application for Amendment No. 6 on the habitats affected by the gathering lines is summarized below and can be found in full on pp. 98-99 of Amendment No. 6.

GATHERING LINES.

Gathering lines to bring the gas for the increased throughput were approved in Amendment No. 6, based on the following discussion.

The new gathering lines into the Reichhold Pool area (see map at Exhibit 13, Amendment No. 6, and Exhibit 1 to this application for Amendment No. 7) cross young coniferous forest and recently cleared forest areas. Young coniferous forest is found along the longest connection between the 16-inch

terminus well site and the center ridge line well site and for most of the connection between the easternmost well site and the center well site. Clear-cut areas surround the center and southern well sites and gathering lines. A newly clear-cut area is also positioned immediately west of the eastern well site. The land crossed by all of these gathering lines and the well sites is owned and managed by Longview Fibre for timber production. The gathering lines will pass near two wetlands but will avoid both of them.

All young coniferous forest and forest clear-cut areas in the gathering line area are Category 4 habitat. Impacts to these habitats include the removal of vegetative cover and temporary disturbance of the soil in the trench and of the adjacent surface from movement of construction equipment. The vegetative cover will be encouraged to grow back in the construction corridor with the exception of trees and large shrubs in the area directly over the pipe. This maintenance right-of-way must be kept clear of tall vegetation to allow for visual inspections.

The impact to forest habitat in the construction right-of-way not containing the pipe will be temporary, and the habitat value will be gradually restored over time to the level allowed in a tree farm operation. In the maintenance right-of-way, trees will be discouraged but other vegetation will be encouraged to prevent erosion and provide some habitat value. The loss of habitat value is therefore minimized and no mitigation is needed.

All planned construction activity to fully develop Reichhold Pool was approved in Amendment No. 6 and will not affect habitat. For these reasons, the design, construction, operation and retirement of the requested increase in throughput, taking mitigation into account, is consistent with the habitat mitigation goals and standards of OAR 635-415-0030.

THREATENED & ENDANGERED SPECIES (OAR 345-022-0070).

Under this standard, the Council determines, with respect to plants, whether the design, construction, operation and retirement of a facility will be consistent with applicable conservation programs adopted pursuant to ORS 564.105(3) (plants). If no conservation program applies, the Council determines, for both plants and wild life, whether the facility has the potential to significantly reduce the likelihood of the survival or recovery of any threatened or endangered species listed under ORS 496.172(2) (wildlife) or ORS 564.105(2) (plants).

No conservation program adopted under ORS 564.105(3) applies to the study area.

The increased throughput requires no construction other than that already approved in Amendment No. 6. See discussion of threatened and endangered species at pp. 99-102 in relation to Miller Station and the gathering lines. In the

time since the Council approved Amendment No. 6, there have been no new listings that would affect the facilities in use for Amendment No. 7.

The application for Amendment No. 6 concluded that neither the gathering lines nor Miller Station improvements had the potential to reduce the likelihood of the survival or recovery of any species that is, or is likely to be, listed as threatened or endangered under Oregon law.

SCENIC/AESTHETIC (OAR 345-022-0080).

Under this standard, the Council determines whether “the design, construction, operation and retirement of the facility, taking into account mitigation, is * * * likely to result in significant adverse impact to scenic and aesthetic values identified as significant or important in applicable federal land management plans or in the local land use plan for the site or its vicinity.” OAR 345-022-0080.

This standard is discussed in detail in the application for Amendment No. 6 at pp. 102-106.

PROPOSED PROJECT’S IMPACT ON SCENIC RESOURCES.

Miller Station.

Amendment No. 6 approved the modifications proposed at Miller Station involving lifting the 6,650-BHP limit on the existing compressor equipment. This did not change the facility’s visual impact. In addition, Amendment No. 6 approved a natural-gas dehydration tower approximately 20 feet in height and four or five feet in diameter, to be built next to a similar existing structure. Due to the surrounding 30- to 40-foot fir trees (see Exhibit 38, Photos 3-6, Amendment No. 6), the existing dehydration tower is not visible from any significant distance. Therefore, the new tower (in essentially the same location) also will have no effect on the facility’s visual impact.

No additional structures are proposed for Amendment No. 7. Therefore, there will be no adverse impacts on scenic views.

Since no structures are proposed in addition to those already approved, Amendment No. 7 will not adversely impact any scenic or aesthetic value identified as significant or important in any applicable federal land management or local land use plan for the site or its vicinity.

HISTORIC, CULTURAL AND ARCHEOLOGICAL RESOURCES (OAR 345-022-0090).

Under this standard, the Council considers whether the construction, operation and retirement of a facility, taking mitigation into account, is likely to result in significant adverse impacts to:

Historic, cultural or archaeological resources that have been listed on, or would likely be listed on, the National Register of Historic Places;

For a facility on private land, "archaeological objects" as defined in ORS 358.905(1)(a) or "archaeological sites" as defined in ORS 358.905(1)(c); and

For a facility on public land, "archaeological sites" as defined in ORS 358.905(1)(c).

ORS 358.905(1)(a) defines an "archaeological object" as an object that (1) is at least 50 years old, (2) comprises "the physical record" of any culture and (3) is "material remains of past human life or activity that are of archaeological significance."

ORS 358.905(1)(c) defines "archaeological site" as any location that "contains archaeological objects and the contextual associations of the archaeological objects" with each other or biotic or geological remains or deposits.

Dames & Moore conducted archaeological inventories of the proposed gathering line in May and June 1998. (Exhibit 15, Amendment No. 6) No new cultural resources were identified along the gathering line route.

The gathering line route was approved in Amendment No. 6. The area proposed for Amendment No. 7 was studied for Amendment No. 6. A monitoring plan was proposed and approved in Amendment No. 6:

"If any artifacts or other cultural materials that might qualify as "archaeological sites" or "archaeological objects" are identified during monitoring, all ground-disturbing activities in the area will cease until the archaeologist can evaluate their potential significance. If the materials are potentially eligible for listing on the National Register of Historic Places or likely to qualify as archaeological sites or objects, NWN will consult with the SHPO and comply with archaeological permit requirements administered by the SHPO (currently set forth in OAR chapter 736, division 51)."

Therefore, the standard is met.

RECREATION (OAR 345-022-0100).

Under this standard, the Council determines whether the “design, construction and operation” of a facility will result in “significant adverse impact to important recreational opportunities in the impact area.” OAR 345-022-0100. Factors considered in judging the importance of a recreational opportunity include:

- (1) Any special designation or management of the location;
- (2) The degree of demand;
- (3) Uniqueness;
- (4) Outstanding or unusual qualities;
- (5) Availability or rareness; and
- (6) Irreplaceability or irretrievability of the opportunity.” Id.

NWN evaluated recreational impacts based on the study area defined in OAR 345-001-0010(50)(g) for a surface facility related to an underground gas storage reservoir. That study area is the area within five miles of the site boundary. The existing recreational facilities in Columbia County are described at p. 112 and proposed recreational facilities at p.113 of Amendment No. 6.

Changes made to Miller Station pursuant to Amendment No. 6 are all within the current fenced Miller Station site. The remainder of the Project is underground. Accordingly, the only impact to hunting was some habitat loss and possible minor disturbance of hunting activities during construction. This construction was approved in Amendment No. 6.

To NWN's knowledge there are no other recreational opportunities, important or otherwise, within the study area.

For these reasons, the Project will not result in a significant adverse impact to important recreational opportunities within the study area for this amendment.

SOCIOECONOMIC IMPACTS (OAR 345-022-0110).

Under this standard, the Council determines whether the construction and operation of a facility, taking mitigation into account, will result in significant adverse impact to the ability of communities within the study area to provide the following governmental services: sewers and sewage treatment, water, storm

water drainage, solid waste management, housing, traffic safety, police and fire protection, health care and schools.

The study area for socioeconomic impacts of a surface facility related to an underground gas storage reservoir is the area within 30 miles of the site boundary. OAR 345-01-010(50)(g)(G).

Since Amendment No. 7 does not seek any construction other than that already approved in Amendment No. 6, there will be no impacts from this request. This standard is discussed in detail at pp. 114-120 of Amendment No. 6. The standard was met in all aspects for Amendment No. 6 and no changes other than those already approved are contemplated.

WASTE MINIMIZATION (OAR 345-022-0120).

This standard requires an applicant, to the extent reasonably practicable, to "minimize generation of solid waste and wastewater in the construction, operation, and retirement of the facility, and when solid waste or wastewater is generated, recycle and reuse such wastes." OAR 345-022-0120(1).

In addition, to the extent reasonably practicable, "the accumulation, storage, disposal and transportation of waste generated by the construction and operation of the facility must have minimal adverse impact on surrounding and adjacent areas." OAR 345-022-0120(2).

There will be no generation of waste, hazardous or nonhazardous, beyond what was described in NWN's Application for Amendments No. 4 and 6 to the Storage Certificate and approved by the Council in those processes.

Minimization of Wastewater.

No activities are planned beyond what was described in Amendment No. 6 and approved at that time.

Minimization of Water Use.

Apart from the water use necessary for hydrostatic testing, directional drilling and dust control on gathering lines as described in Amendment No. 6, there will be no water use associated with Amendment No. 7 beyond what was described and approved in the process that resulted in Amendment No. 4 to the Storage Certificate.

Impact on Surrounding Areas.

As described in Amendment No. 6, the accumulation and storage of waste will take place at Miller Station and transportation of it will be from Miller Station. Miller Station is fully fenced and virtually surrounded by second growth forest with no neighbors nearby. The accumulation, storage and transportation of waste will therefore have little impact, if any, on surrounding and adjacent areas.

RETIREMENT (OAR 345-022-0130).

Under this standard, the Council determines whether “the site * * * can be restored adequately to a useful, nonhazardous condition following facility retirement.” OAR 345-022-0130.

Retirement of the Mist storage facility is unforeseeable at this time. This Application does not propose any changes at the storage facility. The estimated facility life is indefinite because it is not anticipated that the natural reservoirs will lose their storage capacity and the process equipment will be replaced as needed. The original Mist storage facility has been fully operational since 1988. The integrity of the formation and capacity of the reservoir have not changed in nearly 11 years of operation. However, if retirement is necessary, the site can be restored to a useful nonhazardous condition.

As described in NWN's 1997 application, the storage facility is composed of three distinct areas, plus the South Mist Feeder pipeline to which NWN recently added 27 miles of parallel pipeline. The three storage areas are the gas processing facility, the gathering lines and the injection/withdrawal wells. Retirement would be conducted in accordance with the nature of the equipment and structures in these areas.

The retirement process for these facilities would be the same as for those described in 1997 and approved in 1999 in Amendment No. 6. The approved plan from Amendment No. 6 is summarized below.

GAS PROCESSING FACILITY.

The gas processing facility at Miller Station is located on a 12-acre site and contains the gathering line manifold and six buildings, including the new compressor building. A chain-link fence surrounds the site. The buildings are steel prefabricated structures mounted on a concrete slab. The buildings house process equipment such as compressors, a gas dehydration system, control systems and safety equipment. The gathering line manifold consists of a series of above-ground pipes and valves.

Upon decommission, the process equipment would be removed and sold as used equipment or scrap. Any hazardous materials stored in the buildings or

located within the process equipment would be removed and disposed of following the applicable state hazardous materials statutes and rules. The building would be disassembled and the steel siding and frames would be sold as scrap metal. The concrete slabs would be broken up and the concrete would be disposed of at an appropriate landfill. The gathering line manifold and the above-ground portion of the pipelines would be removed and sold as scrap metal. The fence would be removed and sold as scrap metal. If necessary, NWN would revegetate the area to prevent erosion and encourage habitat redevelopment.

GATHERING LINES.

The gathering lines extend underground from the processing facility at Miller Station to the wellheads, including the twin 8-inch and 16-inch pipelines. Upon decommission, the pipelines would be left in place because removing the pipelines would cause unnecessary disruption to the environment. Before abandoning the pipelines, NWN would inspect them and would remove any hazardous materials in the pipelines. The above-ground portions of the pipelines would be removed and sold as scrap metal. If necessary, NWN will revegetate the right-of-way in the area above the pipelines to encourage habitat redevelopment.

INJECTION/WITHDRAWAL WELLS.

The injection/withdrawal wells [15] are comprised of an above-ground portion, the wellhead, and a below-ground portion, the encased well. The wellhead is installed on a concrete base. Upon decommission, the wellhead would be removed and the well would be plugged in compliance with DOGAMI regulations. The wellhead would be sold as scrap metal. The concrete base would be broken up and the concrete would be disposed of at an appropriate landfill. The well would be capped at a point below ground level. If necessary, NWN would revegetate the wellhead area to prevent erosion and encourage habitat redevelopment and would otherwise reclaim the well site in accordance with DOGAMI regulations.

COST OF RESTORATION.

The costs of retirement are nearly all associated with Miller Station. The restoration cost of the Miller Station plant site is equal to its salvage value less the removal and disposal cost of all the structures and foundations.

The major items that have significant salvage value are the station compressors, which consist of a single 5,035-horsepower turbine-driven centrifugal compressor and two 1,350-horsepower reciprocating compressors. The nominal salvage value of these units is estimated to be 15 percent of their cost. The remaining items are the buildings, valves, pressure vessels, above-

ground piping and all other auxiliary equipment. All of these items will also have some intrinsic value, but it is assumed they will be removed and disposed of for their salvage value.

The demolition and disposal cost will consist of the labor costs of disassembling the above-ground equipment and the disposal costs for the foundations. It is assumed that all gravel would be left on location and the grade left as is. It is also assumed that all buried piping will be purged then cut and capped below grade and left in place.

The total estimated salvage value is \$604,059 in 1998 dollars. This is offset by approximately \$323,000 of demolition and disposal costs. As the salvage value of the facility is greater than the removal and disposal costs, NWN estimates that a cash surplus would result from the retirement of the facility. All estimates are in 1998 dollars because Amendment No. 7 would not change any equipment.

FINANCIAL MECHANISM.

Under this standard, EFSC determines whether the site can be restored to a useful, nonhazardous condition upon retirement. EFSC has interpreted this standard to require a finding that the applicant will be able to cover the cost of that retirement.

As noted above, the salvage value of the facility exceeds the total cost of retiring the entire underground storage facility at Mist. Furthermore, the site certificate for the existing facility does not require NWN to establish a funding mechanism for facility retirement. These facts coupled with NWN's financial strength demonstrate that NWN will be able to cover the cost of facility retirement and that no new funding mechanism needs to be established in anticipation of facility retirement.

The foregoing discussion demonstrates that the site can be restored to a useful, nonhazardous condition following facility retirement.

DIVISION 23 STANDARDS

Applicability of Need for Facility Standard.

In general, an applicant for an amendment to an existing site certificate does not have to demonstrate compliance with the "Need for Facility" standard contained in OAR chapter 345, division 23. NWN will not address that standard in Amendment No. 7 of the Storage Certificate because underground storage was specifically exempted from the "need" standard by the former OAR 345-023-0010(1)(f) and no current Need for Facility standard applies to surface facilities associated with underground natural gas storage.

DIVISION 24 STANDARDS

Public Health and Safety Standards for Surface Facilities Related to Underground Gas Storage Reservoirs (OAR 345-024-0030).

This standard has been rewritten since Amendment No. 6 was granted. Since all physical changes to the plant that support the additional throughput were permitted under Amendment No. 6, the applicable standard at the time of Amendment No. 6, discussed at pp. 127-131 of Amendment No. 6, is summarized below. The new standard is not relevant because no new physical changes are contemplated by Amendment No. 7.

All major surface facilities are located at NWN's Miller Station. This facility is located in a second growth conifer forest approximately 2,750 meters (9,000 feet) north-northwest of the town of Mist. The nearest permanent habitable dwelling is located approximately 1,980 meters (6,500 feet) south-southwest of the facility.

All compressors are located at Miller Station.

Road construction was approved in Amendment No. 6 and was limited to improving existing logging roads and constructing short extensions (less than 500 feet) of existing logging roads to wellsites. There will be no road maintenance equipment housing constructed

The facilities will be constructed and maintained in accordance with the applicable requirements of the U.S. Department of Transportation as set forth in 49 CFR part 192 and OAR 860-024-0020. The existing underground storage facility at Mist was constructed and is maintained in accordance with the same regulations. The PUC, which administers these rules under a delegation from the federal government, last inspected the current facility and its operation and maintenance procedures in (May 1996 and found them to be in complete compliance. (Exhibit 17, Amendment No. 6). NWN intends to adhere to the same degree of compliance in the construction of the Project and to use the same operation and maintenance procedures.

The noise standard has been removed from Division 24. However, the existing facilities at Mist were designed to comply with the Department of Environmental Quality (the "DEQ") noise standards in OAR chapter 340, division 35. In its Order Approving Amendment No. 4 (July 21, 1997) at 25-26, the Council found that NWN had demonstrated compliance with the standards. The Council also imposed a condition requiring NWN to conduct additional noise tests following installation of the new equipment and to provide the results to the Office of Energy. (Final Order at 48.) The tests were conducted in July 1998. The results are included in Exhibit 48, Amendment No. 6, which states that all measured sound levels were "well below the Oregon standards for industrial and

commercial sources." The changes to the storage facility approved in Amendment No. 6 will not generate additional noise beyond the DEQ limits. We do not believe that increasing the throughput to 245 MMcfd will increase noise levels over those measured for Amendment No. 6. In fact, noise levels may decrease with by running equipment at full capacity and avoiding throttling back, which could increase noise

The subject facilities will be designed, constructed, operated and retired so as not to allow natural gas leakage that endangers public health and safety. As noted under Section 1 above, the facilities will be designed, constructed and operated in accordance with federal safety regulations enforced by the PUC. Among other things, these regulations require measures to prevent leakage, including factory-installed pipeline coating, individual joint wrap, cathodic protection and insulation from other pipes that could cause inadvertent electrical contact. NWN has a perfect record of compliance with these regulations at its existing Mist storage facility.

The wellhead and pipeline facilities' numerous safety features include relief valves and automatic shutdown systems. In addition, the facilities are monitored by trained personnel from NWN's nerve center at Miller Station.

As a normal course of abandonment, underground pipelines are plugged at intervals to ensure minimum migration of gas should leakage occur.

NWN has an existing practicable, reliable monitoring program for its surface facilities.

U.S. Department of Transportation Pipeline Safety Regulation, 49 CFR part 192 subpart D (Design of Pipeline Components), addresses specifically the design and operational safety requirements for compressor plants. These requirements have been strictly adhered to in the original plant design, completed modifications and the current proposed additions.

An Emergency Shutdown system is in place that can be either manually or automatically activated. It stops all active plant process, closes all plant inlet and outlet valves, shuts off engine fuel and start gas systems and, upon closure of necessary valves, vents to the atmosphere all process and fuel gas within the plant. As methane is lighter than air, the safe location is to vent vertically. These systems are maintained on a regular basis and tested at least annually to ensure proper response.

Systems are in place that monitor compressor, process and control building atmospheres for the presence of flammable vapors as well as systems that detect the presence of a fire. These instruments will trigger an alarm or plant shutdown when certain preset levels are reached.

The plant has a staff of seven operators and maintenance personnel working rotating shifts and one full-time supervisor working day shift. A communication link is maintained between the plant and the NWN operations control room in Portland.

In addition, the following items are indications of NWN's commitment to public health and safety:

- (1) fire training school for plant operators and maintenance personnel, generally on an annual basis;
- (2) written action emergency procedures for company gas dispatchers and plant personnel; and
- (3) maintenance of both Life Flight and C-Com procedures and phone numbers.

The emergency plan from the original storage development will be expanded to include the proposed additional reservoir and equipment at Miller Station.

Amendment No. 6 fully demonstrated at pp. 18-21 and Exhibits referenced therein that the facilities will not produce or contribute to seismic hazards that could endanger the public health and safety or result in property damage.

The public health and safety standards in OAR 345-024-0030 satisfied by Amendment No. 6 are satisfied for Amendment No. 7.

STANDARDS FOR ENERGY FACILITIES THAT EMIT CARBON DIOXIDE (OAR 345-024-0500 Et. Seq.)

Amendment No. 6 was already in process when the Council passed its carbon dioxide standards. The equipment at Miller Station that emits carbon dioxide was approved in an earlier siting process in Amendment No. 4. At its meeting on April 17, 1998, EFSC discussed the proposed carbon dioxide standards and received testimony. At that time, the Council gave NW Natural assurance that the rule would not be applied to its upcoming amendment application for Miller Station, which was Amendment No. 6. No new equipment is proposed for Amendment No. 7. Therefore, this standard does not apply.

PUBLIC HEALTH AND SAFETY STANDARDS FOR PIPELINES (FORMERLY OAR 345-024-0060).

This standard no longer exists in Division 24. The standard as it existed at the time of Amendment No. 6 is described in Amendment No. 6, pp 129-131, under which all changes to the gathering lines that support Amendment No. 7 have been or will be made. Therefore it is not relevant to this application for Amendment No. 7.

OTHER STATE STANDARDS

In its final Order approving Amendment No. 4, the Council concluded that the site certificate amendment process, like the original siting process, properly includes Council action on all state environmental permits needed for facility construction. (Final Order, pp. 5 and 6.) No permits other than the three obtained for Amendment No. 6 are needed to increase the throughput. See discussion of other permits for Amendment No. 6 at p. 132 and accompanying Appendices A, B and C.

(g) NOTICE LIST

The proposed Amendment No. 7 would not change the site boundary or extend construction deadlines. Therefore OAR 345-027-0060 (1) (g) is inapplicable.

CONCLUSION.

In summary, the requested increase in deliverability through Miller Station will have no impact on public health & safety. The equipment required for this increase in throughput has been previously approved, so the requested change is not for additional equipment, but rather for a change in a required condition, the maximum permitted operating rate. Each of the three compressors at Miller Station is currently permitted to run at its maximum rated horsepower and maximum rate, but the combined throughput is limited by the current permit. This application does not affect the operations of the four reservoirs or any of the field equipment, but merely allows all reservoirs to be operated simultaneously to achieve the requested deliverability. None of the maximum allowable operating pressures for any of the equipment, pipelines or reservoirs are being changed, so there is no increased risk of a failure due to overpressurization.

Therefore, the Applicant respectfully requests approval of Amendment No. 7, which is solely a numerical change to the daily allowed throughput. No new physical changes to the station or gathering lines are proposed other than those already permitted in Amendment No. 6.

LIST OF EXHIBITS

- | | |
|-----------|--|
| EXHIBIT 1 | New gathering lines into the Reichhold Pool Area |
| EXHIBIT 2 | Site Boundary |
| EXHIBIT 3 | NWN Annual Report |

X/Y :

1290000

1295000

1300000

860000

860000

855000

855000

1290000

1295000

1300000

Calvin Creek

Valve Station

A's Pool Gathering

Reichhold Pool Gathering Line

Ai's Pool

Additional 525 ft. Segment

Reichhold Pool Wellate

Reichhold Pool



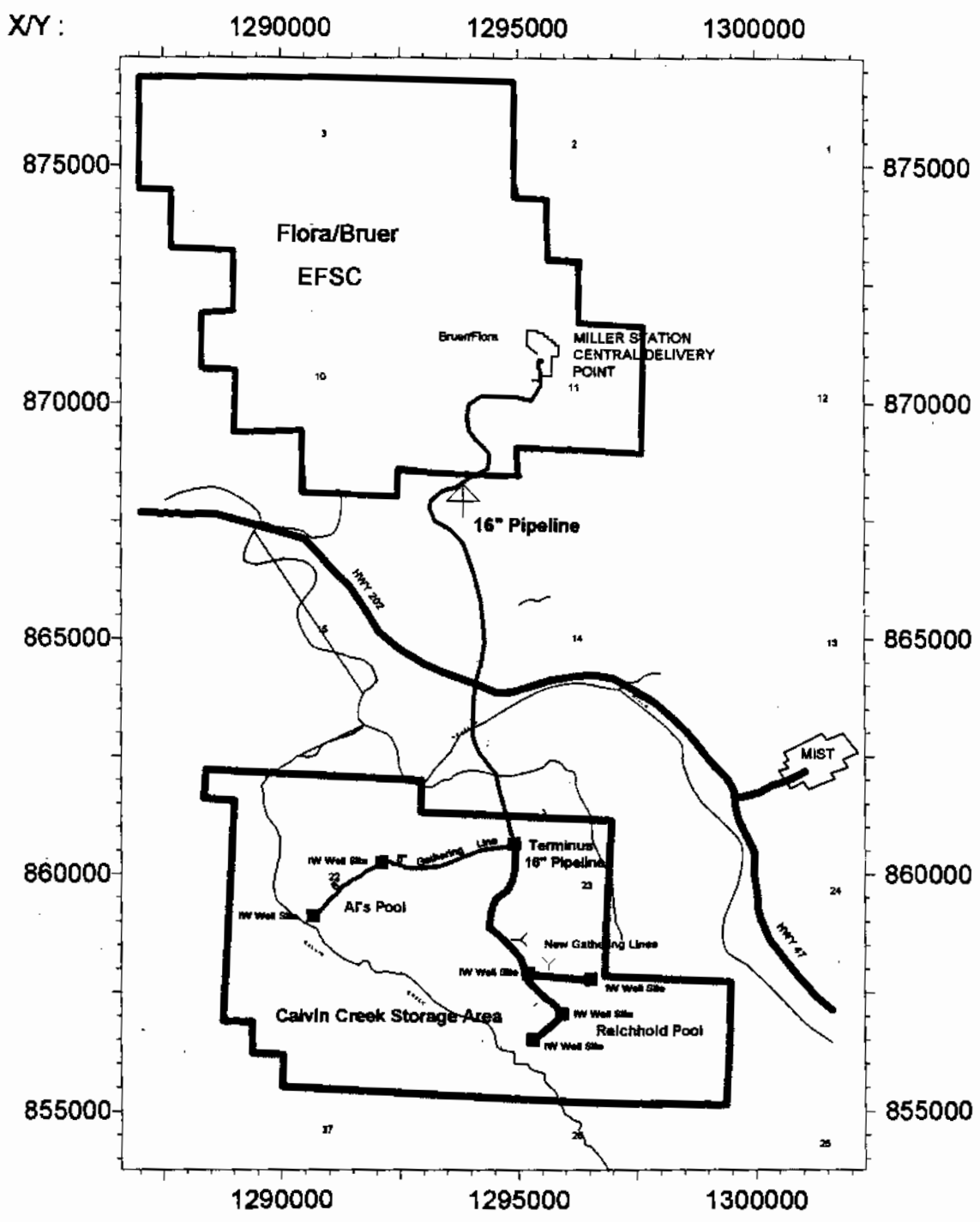
NW Natural

Calvin Creek Storage Area

Scale = 1:24000



Gathering Line Basemap



Basemap

Exhibit "A" Site Certificate
Amendment No. 6

Bridges to the Future

1999 ANNUAL REPORT



Corporate Profile

NW Natural, a 141-year-old company headquartered in Portland, Oregon, is one of the fastest growing natural gas local distribution companies in the country.

The Company serves more than 500,000 customers in northwest Oregon and southwest Washington, including the Portland-Vancouver metropolitan area, the Willamette Valley, the northern Oregon coast and the Columbia River Gorge. Nearly 200,000 customers have been added to NW Natural's distribution system in the past 10 years.

In keeping with its steady growth, NW Natural has increased annual dividends paid to shareholders every year for 44 consecutive years.

NW Natural purchases gas for its core market from a variety of suppliers in the western United States and Canada. In addition, the Company operates an underground gas storage facility in Columbia County, Oregon, and leases additional gas storage outside its service area. NW Natural also operates two liquefied natural gas plants in its service area.

Service Territory



Financial Briefs

	1999	1998	Percent increase (decrease)
Earnings			
Financial facts (\$000):			
Net operating revenues	243,637	230,966	5
Net income	45,296	27,301	66
Earnings applicable to common stock	42,781	24,724	73
Financial ratios (%):			
Return on average common equity	10.2	6.4	59
Capital structure at year-end:			
Long-term debt	46.0	45.0	
Preferred and preference stock	4.1	4.5	
Common stock equity	49.9	50.5	

Common stock

Shareholder data:			
Average shares outstanding (000)	24,976	24,233	3
Per share data (\$):			
Basic earnings	1.71	1.02	68
Diluted earnings	1.70	1.02	67
Dividends paid on common stock	1.225	1.22	1
Book value at year-end	17.12	16.59	3
Market value at year-end	21.938	25.875	(15)

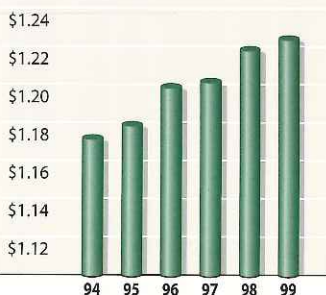
Operating highlights

Gas sales and transportation deliveries			
(000 therms)	1,214,146	1,138,416	7
Degree days (20-year average 4,193)	4,256	4,011	6
Customers at year-end	501,163	477,407	5
Number of utility employees	1,275	1,303	(2)

Dividends paid on common stock

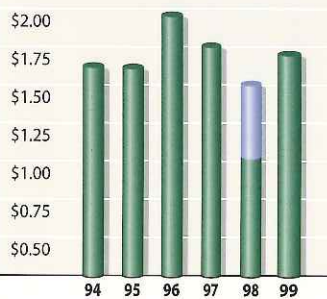
Payment date (per share)	1999	1998
February 12	\$ 0.305	\$ 0.305
May 14	0.305	0.305
August 13	0.305	0.305
November 15	0.305	0.305
December 15	0.005	-
Total dividends paid	\$ 1.225	\$ 1.220

DIVIDENDS PAID PER SHARE (IN DOLLARS)



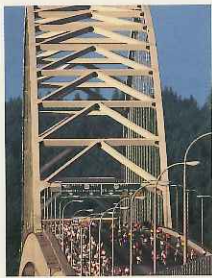
Annual dividends paid per share in 1999 increased for the 44th consecutive year, a growth record matched by few companies.

EARNINGS PER SHARE (IN DOLLARS)



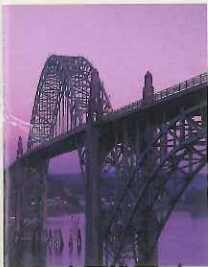
Legend:
 ■ DILUTED EARNINGS PER SHARE
 ■ LOSS OF 50 CENTS PER SHARE IN 1998 DUE TO ASSET IMPAIRMENT CHARGES

Diluted earnings were \$1.70 per share in 1999, a strong rebound from 1998.



Customer Growth

The Company upheld its reputation as one of the fastest growing natural gas distribution companies in the country with strong customer growth in 1999. *Page 9*



Gas Storage

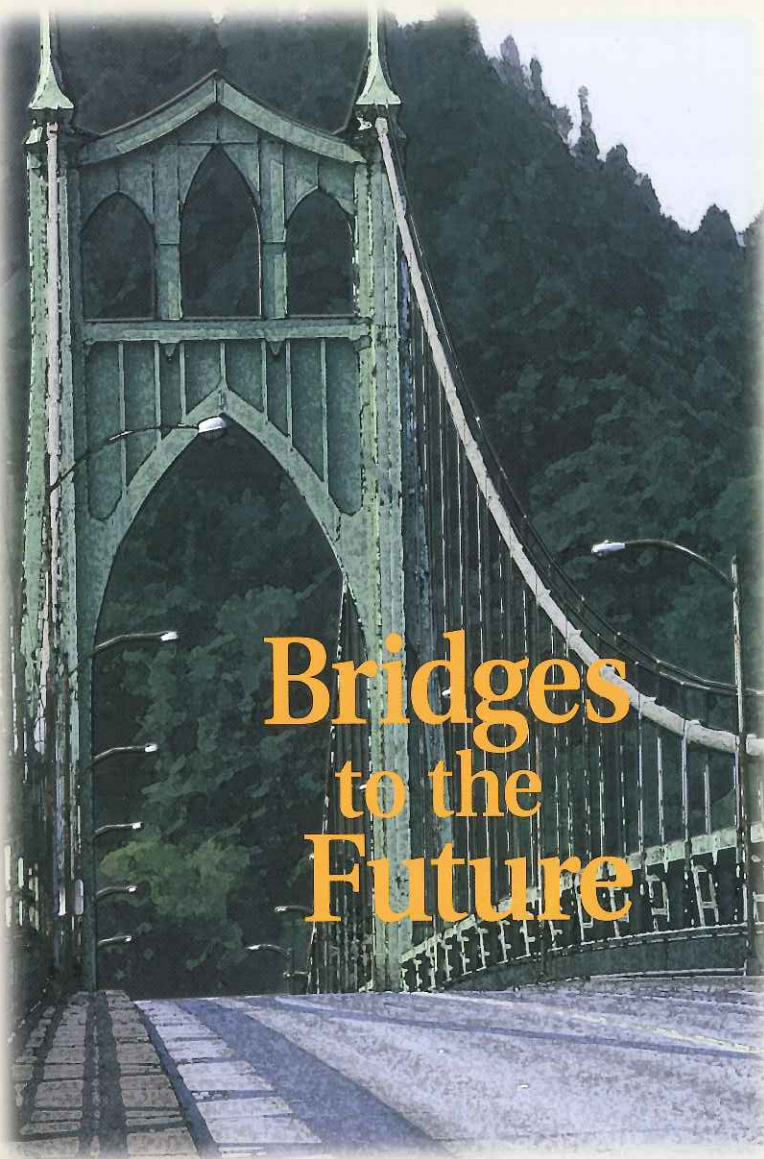
NW Natural completed an ambitious expansion of its underground gas storage facilities and

improved liquefied natural gas operations in time for the 1999-2000 winter heating season. *Page 11*

Technology and Efficiency

Through new technology, tailor-made programs and streamlined processes, NW Natural employees increased efficiency and reduced costs.

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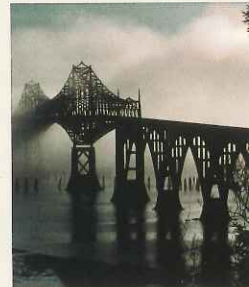
Bridges to the Future

Elegant gothic curves grace Portland's St. Johns Bridge (above). Completed in 1931, it was Oregon's first suspension bridge, predating San Francisco's Golden Gate Bridge by six years. The builders of these bridges and the other landmark crossings featured in this report creatively applied technology to overcome challenges, much as NW Natural employees are applying ingenuity to succeed in a new century.

Regulation and Public Policy

The Company scored major public policy wins and held its own in regulatory affairs in 1999, setting the stage for continued profitable growth.

Page 15



Celebrating 140 Years

A busy year still allowed time for commemorating the Company's history and joining with local communities to build the bridge from a proud past to a promising future.

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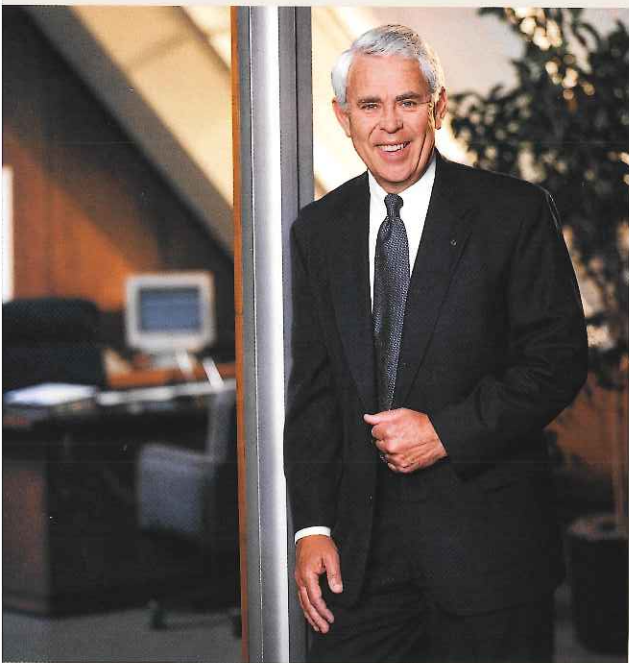


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President's Letter to Shareholders

"There can be little doubt that in many ways the story of bridge building is the story of civilization. By it we can readily measure an important part of people's progress."— Franklin D. Roosevelt

To Our Shareholders: NW Natural achieved one of its best years ever in 1999, capping more than a century of steady expansion and providing the springboard for continued profitable growth.



**NW Natural President and Chief Executive Officer
Richard G. Reiten**

It was a defining year for the Company, marked by significant accomplishments in key areas and the achievement of nearly all of our internal and external objectives.

NW Natural surpassed its financial goals for the year, ending 1999 with earnings of \$1.70 a diluted share compared to a budget of \$1.50 a share, up from 1998 results of \$1.02 a diluted share. Performance in 1999 was a strong rebound from 1998, when we addressed some impaired asset issues and experienced much warmer-than-normal weather. In 1999, employees set new records for customer satisfac-

tion, reduced expense per customer and achieved a record level of customer conversions. We acquired our 500,000th customer, crossed smoothly into Y2K and celebrated our 140th anniversary with customers and local communities. At the same time, employees strengthened the Company's foundation and began building bridges to even higher levels of performance.

Where we stand

The state of the Company is excellent. We are on track with our strategic plan and are achieving our financial and operating goals. Our employees are committed to the primary goal of sustained profitable growth, and their skills, determination and teamwork are paying off.

We are growing vigorously and profitably.

In 1999, our customer base grew by 5 percent—more than three times the national average. The Company achieved a record 9,000 conversions for the year, partially offsetting a decline in new residential construction. The high customer growth rate marked NW Natural's 10th consecutive year of growth exceeding 4 percent.

In 1999, NW Natural added 23,756 customers, for a year-end total of 501,163. The acquisition of our 500,000th customer accentuated the Company's momentum: It took NW Natural 102 years to acquire its first 100,000 customers (from 1859 to 1961). The Company's last 200,000 customers were acquired in 10 years, and

the last 100,000 in only four years. Our objective company wide is to continue and even intensify this accelerating rate of profitable growth.

We are committed to ensuring that the Company's growth is profitable. Our customer acquisition policies require each new customer to contribute a net gain to the bottom line. If we cannot profitably extend our main or service line to add a particular customer, we require the customer to pay the cost difference in advance. Revenues from customer contributions doubled in 1999.

The state of the Company is excellent. We are on track with our strategic plan and are achieving our financial and operating goals.

Meanwhile, employees are continuing to find ways to lower the overall cost of installations and conversions without compromising quality. Construction cost per foot has been reduced by more than 10 percent over the last two years, even before inflation and wage increases are taken into account.

We are using technology and the know-how of our employees to reduce costs.

By automating many of our processes, we have streamlined operations, reduced paperwork and sped up both internal and external customer service. Up-to-date computer systems are essential, but the resourcefulness of our own people provides the real competitive edge. NW Natural employees have developed and adapted programs to

monitor costs, track the performance of individual work teams, coordinate customer acquisitions, conduct target marketing and improve customer service.

TOTAL CUSTOMERS (IN THOUSANDS)



The Company added 23,756 new customers in 1999, expanding our customer base by 5 percent. In the decade of the '90s, the Company added more than 197,000 new customers.

In 1999, the Company achieved a record low in expense per customer: \$188 per customer, down from \$190 per customer in 1998 and \$201 per customer just five years ago (1994).

But our increased efficiency has not come at the expense of good service. In fact:

Customer satisfaction continues to climb.

NW Natural is a customer service-oriented company. Accordingly, we conduct monthly customer surveys to track the level of customer satisfaction with service provided by telephone and in person.

In 1999, our customer satisfaction reached an all-time high. Of the customers surveyed during the year, 65.7 percent gave us an "excellent" rating ("9" or "10" on a 10-point scale, with 10 being the highest). If one adds the number of satisfied customers (rating us "7" or "8"), the total level of customer satisfaction was 90 percent.

The Company takes pride in these results, but continuously strives to do better.

We are building for the future.

NW Natural is setting the stage for future expansion.

In 1999, we completed a major expansion of our Mist underground gas storage facilities; secured regulatory and public policy decisions that will help support our growth; and worked on the state and local level to win approval of funding for a new natural gas pipeline to Coos County, Oregon. The Coos Bay area is part of our designated service area, but it does not have natural gas. We believe it is the largest urban area in the United States that does not have gas service. We hope to be serving Coos Bay by 2002.

In 1999, through some excellent work by our regulatory and legal staff, the Company secured reasonable and equitable regulatory treatment for our Mist project and gas cost tracking. Results on some of the issues in our year-long Oregon general rate case were disappointing, but overall in 1999 we accomplished a good result for our shareholders in the regulatory arena.

Looking back over 1999, I'm not sure the number of important challenges faced by the Company could be duplicated in another year. The extent of our accomplishments against these challenges in a one-year period was amazing. It was an outstanding year for employees, managers and our executive team.

What's ahead

In 2000, the Company will be bridging to the future by focusing on:

- Sustained profitable growth

- Efficient operations
- Outstanding customer service
- Technological advancement
- Profitable storage development
- High performance culture

We have set clear targets in each of these areas and have built our incentive programs around achieving them.

We started 2000 by selling Canor, our Canadian oil and natural gas exploration and production subsidiary. The sale to Questar Corp. will help that company expand its involvement in Canadian oil and gas markets, while allowing us to redeploy our investment in Canor into our growing core local distribution business.

GAS SALES AND TRANSPORTATION DELIVERIES (IN MILLIONS OF THERMS)

(IN MILLIONS OF THERMS)



- RESIDENTIAL, COMMERCIAL AND INDUSTRIAL FIRM SALES
- INDUSTRIAL INTERRUPTIBLE SALES
- TRANSPORTATION

Gas sales and transportation deliveries were 1.214 billion therms in 1999, the fourth consecutive record high for the Company.

While Canor was a successful venture, the risks of being involved in exploration and production did not merit NW Natural's continued investment. Moreover, the cyclical nature of the energy exploration industry was not a good long-term fit with our corporate objectives.

The sale of Canor further improved our financial position. NW Natural now can meet almost all of its primary capital needs from internal cash flows. This is a major achievement—one that allows us to fund our ambitious growth agenda without incurring high underwriting costs and stock-related earnings dilution. It will also reduce our interest costs as a percentage of revenues.

Challenges in 2000

1. Ramping up growth. NW Natural is achieving high levels of growth. Nevertheless, the Company still has a relatively low market share (about 35 percent) for most gas applications. This means there is much more room to grow. Now that we have sharpened the corporate focus on profitable growth, improved our work processes, acquired new technology and empowered our work teams, we can take our growth initiatives to the next level.

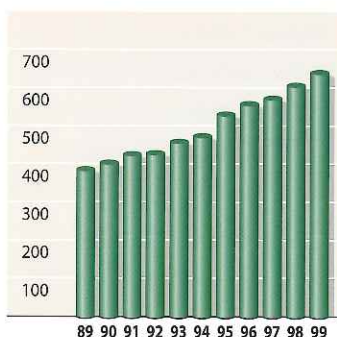
2. Settlement of our Washington general rate case. In early 2000, NW Natural filed for an average 18.8 percent rate increase in the state of Washington. We expect a positive outcome by the end of the year. We are also exploring the possibility of implementing the rate increase in phases, so customers are not affected all at once.

3. Further expansion of Mist storage. Planning is under way for the next two phases of our gas storage expansion project. They include the construction of 52 miles of 24-inch diameter natural gas pipeline connecting the south Mist feeder to the Company's Molalla gate station, which links to Williams Northwest Pipeline's natural gas transmission line. The completed pipeline will give NW Natural greater flexibility to use stored

gas as a backup to other supplies and to move gas in many directions.

In 2000, we plan to begin offering storage services in the Northwest regional market and using some of our gas storage capacity for off-system

NUMBER OF CUSTOMERS SERVED BY EACH OPERATING EMPLOYEE



Each operating employee served an average 643 customers in 1999, a 64 percent increase from 391 customers served per employee in 1989.

sales. As the demand for natural gas increases, so does the competition among suppliers. We believe our gas storage facilities will prove to be a valuable asset for NW Natural. Over the next few years we also expect a meaningful contribution to our earnings from gas storage activities.

4. Preparing for service to Coos Bay. NW Natural will negotiate with Coos County for gas transportation on the pipeline, and with the Oregon Public Utility Commission for reasonable regulatory treatment of our investment in the Coos Bay distribution system. At the same time, NW Natural will be planning its approach for constructing the system. As currently scheduled, service would begin in the winter of 2001-2002. We expect up to 8,000 new customers in the Coos Bay area.

5. Further developing our workforce. Great companies are made of great people. They provide the impetus for long-term, sustained profitable growth and earnings. We have an outstanding group of employees at NW Natural. It is important that we support, challenge and prepare them for new changes and opportunities.

We are instituting a new performance-related wage and benefit structure in 2000. It is based on the achievement of our strategic performance targets on an annual basis. We believe it will have an immediate and ongoing positive impact on our earnings results and culture.

NW Natural is well positioned for the future. We recognize the frequency of mergers and consolidations in the energy market, and we continue to be alert for opportunities to grow. At the same time, we are steadily becoming better at what we do. We don't think a gas distribution company has to be big to be successful. In fact, we've proven the contrary.

We consider it a great opportunity to be stewards of such a fine company. We approach each day with the interests of shareholders, customers and communities in mind.

An inscription chiseled over the National Archives Building in Washington D.C. says: "The past is prologue." At NW Natural we are confident that our successful 141-year history is prologue to an exciting and prosperous future. Sincerely,

Richard G. Reiten
President and Chief Executive Officer
March 1, 2000

Interview with the CEO

Q. What is the long-term outlook for natural gas demand?

Mr. Reiten: The outlook for our industry is better than ever. Natural gas has been termed “the fuel of the future,” and for good reason: It is the cleanest, most efficient fossil fuel, and it is safe, highly reliable and produced in North America.

Natural gas is in abundant supply, and is usually the most economical energy choice. Here in the Northwest, gas is up to 40 percent cheaper than electricity for space and water heating. So, we have a price advantage, a reliability advantage and an environmental advantage.

A recent energy study by Washington Policy and Analysis found that natural gas consumption in the U.S. could increase by as much as 32 percent by 2020, assuming continued efficiency gains for gas equipment and technological advances in energy supply and use. Demand could increase by as much as 60 percent if public policies are adopted that further stimulate gas consumption.

Q. How well is NW Natural positioned to grow?

Mr. Reiten: Superbly. In fact, we are one of the fastest growing local gas distribution companies in the nation.

We’re advantaged, first of all, because we’re in the Pacific Northwest, which has some of the lowest natural gas prices in the United States. Second, we’re located close to major supplies of natural gas in the western United States and Canada. Third, we have low market share, which gives us plenty of room to grow. And, fourth, consumers want our product. We want them to have it—

but we also want to make sure we are growing profitably. So we are fiscally prudent in our system expansion.

I’d probably add a fifth factor: All of us at NW Natural are committed to profitable growth. We have a saying—“Get ‘em all”—that means every employee is a marketer and each new customer or added appliance is important.

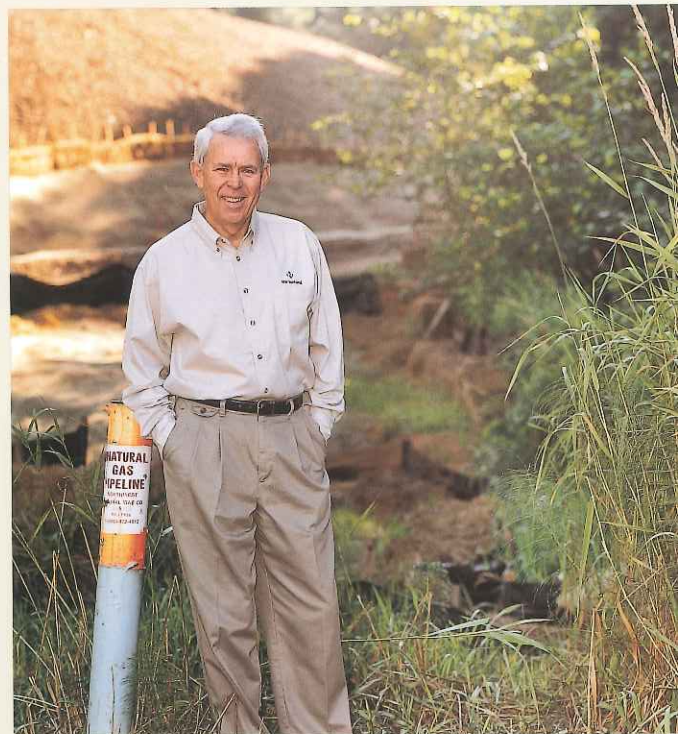
Q. What new markets do you see opening up?

Mr. Reiten: There is considerable talk in the industry about the increasing use of natural gas in central station electricity generation. While that certainly offers advantages, we agree with the American Gas Association that direct use of natural gas is really the best way to achieve a more efficient economy. About 90 percent of the natural gas supplied reaches consumers as useable energy. By contrast, consumers only get 27 percent useable energy from thermal electric generation. And homes using natural gas produce an estimated 60 percent less greenhouse gases than electric homes.

At the same time, we are intrigued by market possibilities for gas-fired fuel cells—a form of distributed generation which essentially puts a small-scale power generator at the customer’s doorstep. Distributed generation is less polluting and more energy-efficient than central station generation, and it fits with our role as a distribution company. So we’re exploring the possibilities for NW Natural in this market.

Q. What future do you see for your gas storage assets?

Mr. Reiten: A very exciting one. We think there are significant opportunities to market our gas storage capacity to other natural gas providers, while still retaining enough for our own customers’ needs. We’re planning to offer storage services to other firms in the



President and CEO Richard G. Reiten visits a restored creek crossing after installation of the new 27.6-mile Mist pipeline extension. Gas storage at Mist is one of the Company’s key strategic assets for growth.

industry this year. Over the long term, our gas storage assets may well provide the foundation for NW Natural’s sustained growth. Providers are attracted to stored gas because it is a reliable, lower-cost alternative to buying pipeline supplies and capacity during peak season.

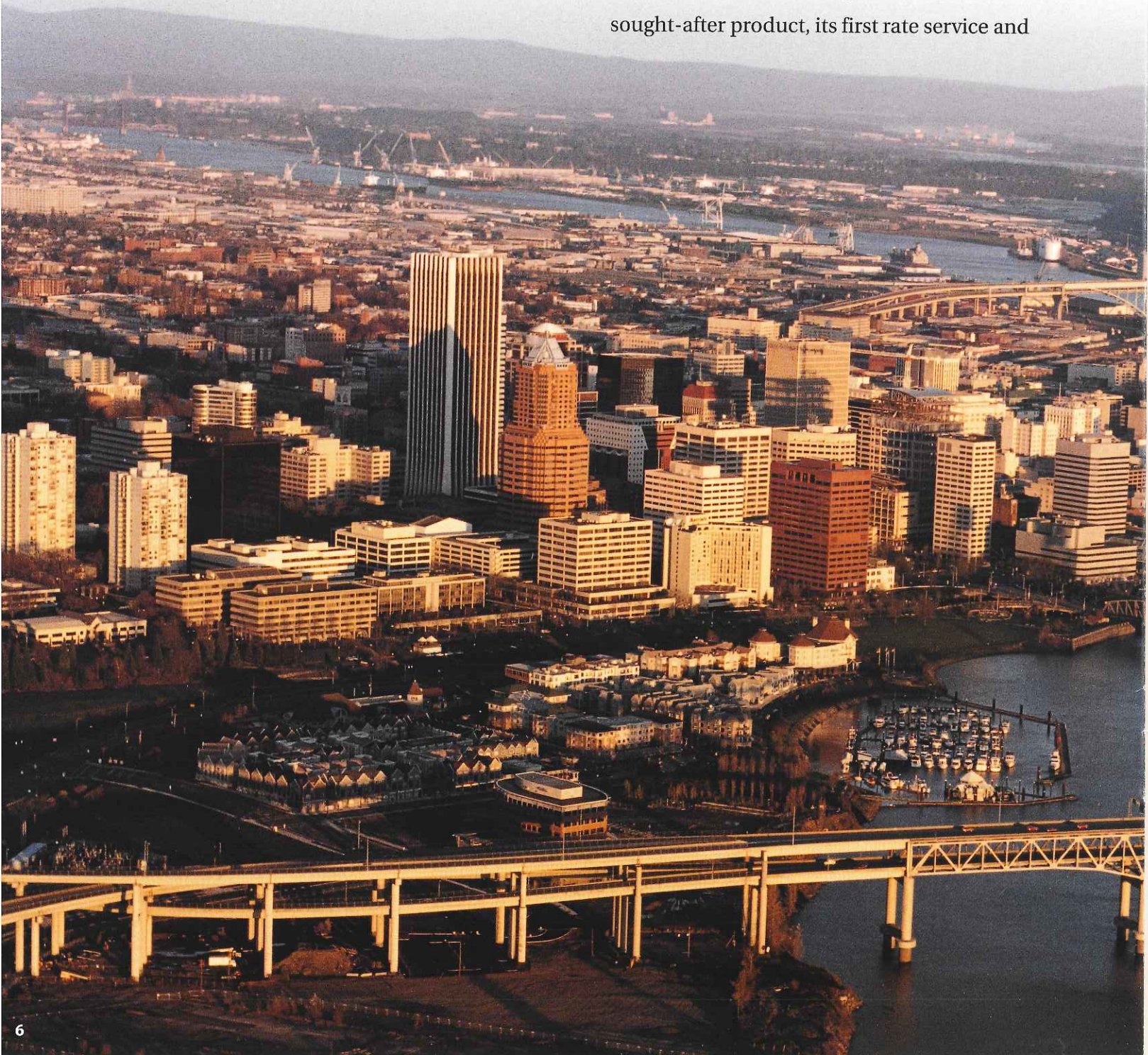
We believe gas storage is going to be a big winner for us—and another mark of distinction for NW Natural.

Expanding Our Horizons

Consider what it takes to build a bridge: A solid place to start, a means of traversing obstacles and a targeted destination.

As the new millennium begins, NW Natural is building bridges to a promising future for its shareholders, customers and employees.

For a starting point, the Company enjoys a rich, proud history as one of the oldest locally-owned businesses in Oregon. Known for its sought-after product, its first rate service and



its commitment to local communities, the Company is well positioned as it launches new initiatives.

NW Natural also has the tools and resources to overcome obstacles. With a keen management team, talented employees, ever-improving technology and a solid financial base, NW Natural can meet the challenges to engineer its future.

What is the destination? To become the nation's top-performing natural gas distribution company. To maintain consistently profitable growth. To

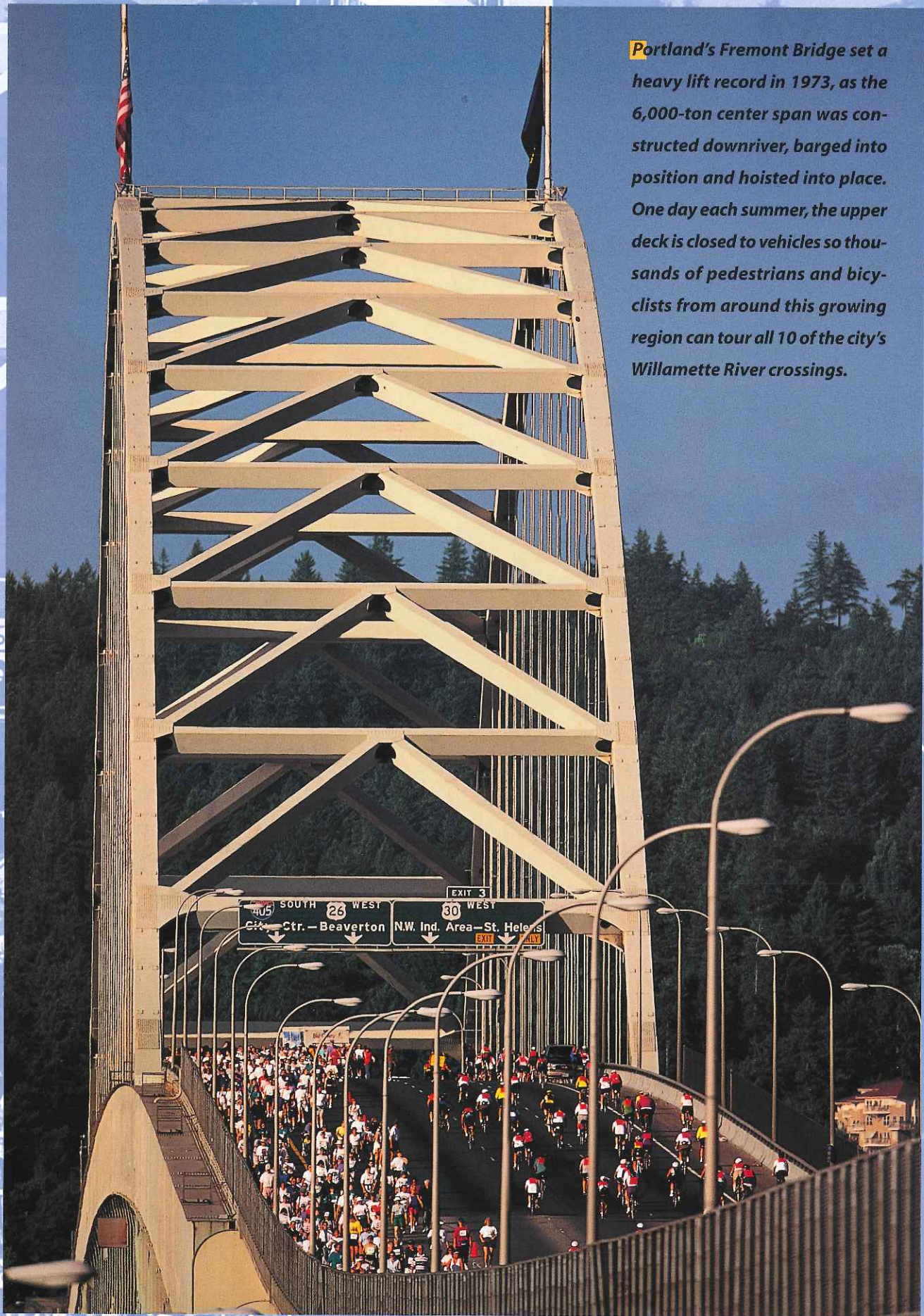
secure a majority market share for each customer group and market segment served.

Each time NW Natural adds a new customer, fuels more equipment, enlarges its service area, builds its infrastructure and unleashes the drive and determination of its employees, it is expanding its horizons — and crossing, with purpose and integrity, to a new level of success.



The hub of a prosperous economy and home to nearly 2 million people, the Portland metro area includes 10 major bridges that cross the Willamette River as it winds northward.

Portland's Fremont Bridge set a heavy lift record in 1973, as the 6,000-ton center span was constructed downriver, barged into position and hoisted into place. One day each summer, the upper deck is closed to vehicles so thousands of pedestrians and bicyclists from around this growing region can tour all 10 of the city's Willamette River crossings.



Growth triples the national average

NW Natural crosses the 500,000th customer mark

NW Natural continued its robust customer growth in 1999 through aggressive marketing and a company-wide commitment to profitable growth.

The number of customers served by NW Natural grew by 5 percent in 1999 — more than triple the national average of 1.5 percent per year for natural gas distribution companies. The Company ensures that new customers are individually profitable by running a specific calculation on each prospect, comparing estimated future revenue to likely construction cost, and charging the difference to the customer if necessary.

NW Natural added almost 23,800 customers in 1999, culminating in the addition of the Company's 500,000th customer in December.

Although NW Natural continued to attract more than 95 percent of the market for new single family homes within reach of its distribution system, slower economic growth tempered housing starts. To boost customer growth, the Company emphasized:

- Conversion of heating systems in existing homes from other fuels; and
- Growth in the commercial market.

Residential conversions pick up

Through aggressive marketing programs, NW Natural exceeded its ambitious target of 8,500 residential conversions, achieving a total of 9,000 conversions in 1999 — the most ever in one year. Marketing efforts included:

- A strengthened and expanded partnership with trade allies to attract more customers and increase the number of natural gas appliances per sale;
- Aggressive advertising, including radio ads and direct mail offering incentives for immediate conversion; and

- A heightened emphasis on proactive, targeted sales efforts.

Gains in the commercial market

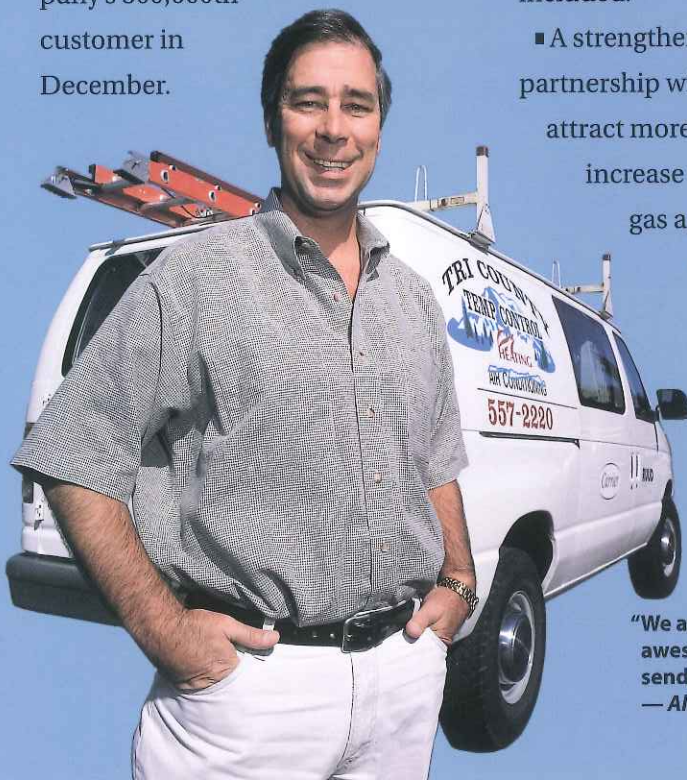
Revenues from commercial customers grew at a healthy rate in 1999. The Company focused on:

- Selling new technologies and additional gas equipment to existing customers;



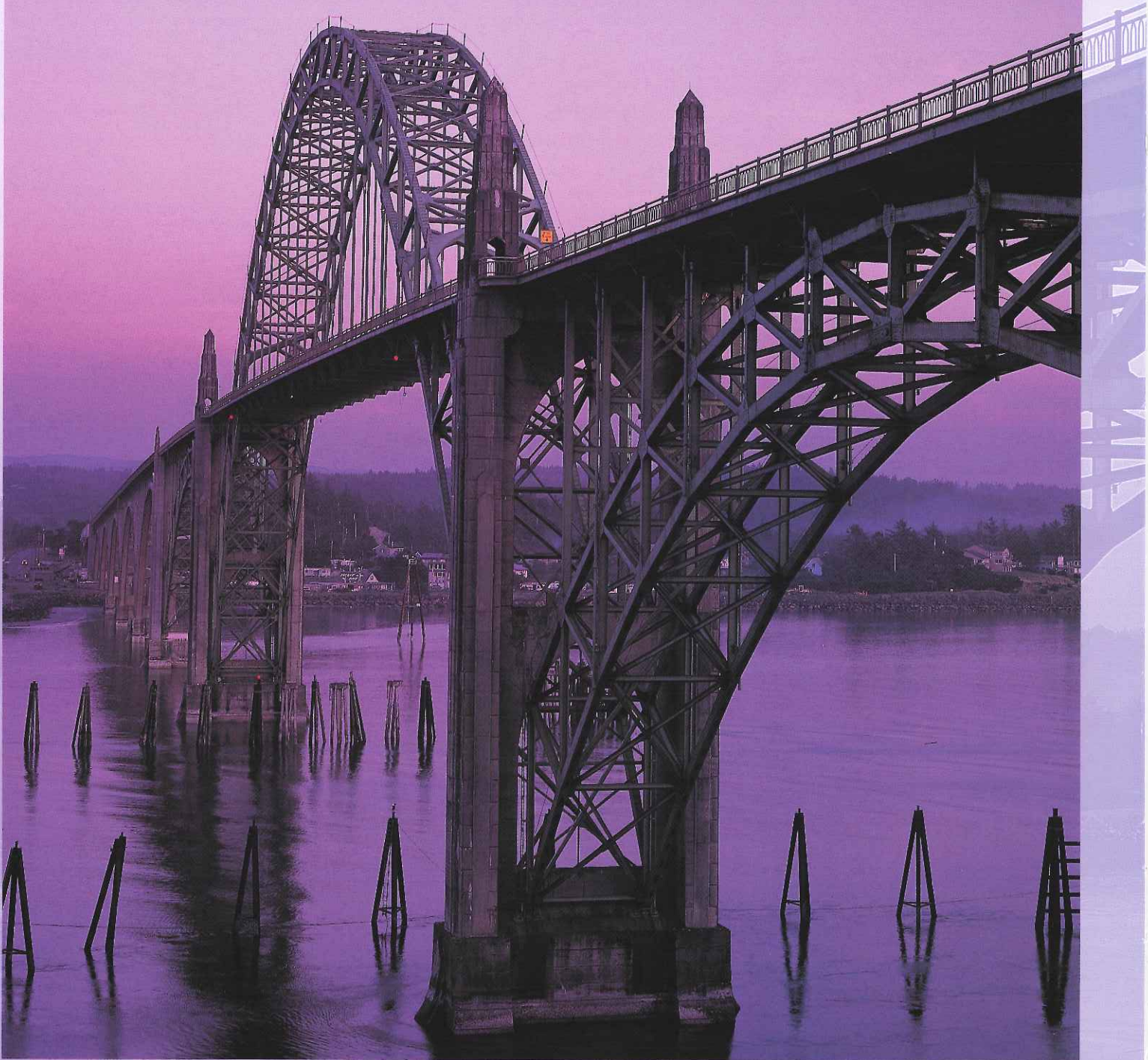
NW Natural Appliance Center salesperson Sally Hedges shows customer Terry Page the variety of natural gas hearth products now available.

- Converting heating oil users in the government, education and business sectors to natural gas; and
- Influencing developers, builders, architects, engineers, designers and property owners to select natural gas for new construction.



"We are NW Natural's outside sales people now, and that is just awesome. We sell equipment for the gas company, and they send us referrals. It's a relationship that works for both of us."
— Alan Sanchez, President/Owner, Tri County Temp Control

Completed in 1936, the Yaquina Bay Bridge is a landmark on the central Oregon Coast, and frames the sunsets visible from NW Natural's liquefied natural gas storage facility in Newport. Renowned bridge builder C.B. McCullough added graceful form to functionality with Art Deco-fluted pylons flanking the arched main span.



Storage expansion supports growth

Mist pipeline expansion completed on time, on budget

Solid project management, good technical work and plenty of hustle helped NW Natural improve and expand its gas storage facilities in 1999.



Contract welders make tie-in welds to connect sections of the 24-inch diameter pipe that was laid underground for the 1999 Mist gas storage expansion project.

New pipeline in service

NW Natural completed an expansion of its Mist storage facilities on budget and on time for the 1999-2000 winter heating season. The project involved laying 27.6 miles of new 24-inch pipe beside or near the original 16-inch pipeline, thus expanding the connection between the Company's gas storage fields and key areas of customer growth in the Portland metropolitan area.

Gas storage is NW Natural's lowest cost resource for serving the growing demand for natural gas. The Company buys natural gas

from suppliers in the summer when prices are low, and stores it in its underground reservoirs in northwest Oregon. In winter, when the cost of pipeline gas is higher, NW Natural withdraws the gas from storage and uses it to reduce purchases of natural gas from suppliers. Customers benefit through lower costs and increased reliability.

In completing the 1999 pipeline

expansion, NW Natural:

- Crossed 42 streams and 50 wetlands via surface trenching, while taking extreme care to protect habitat and wildlife;
- Completed eight directional bores to pass underneath roads and streams;
- Reduced in-paving work, which substantially lowered costs; and
- Improved local community relations through special outreach efforts.

The Company plans to expand the Mist pipeline another 52 miles south and east, connecting the Mist

gas storage facilities to the interstate pipeline near Molalla, Oregon. Analysis and permitting of a specific route will occur over the next two years.

LNG proves valuable

In 1999, NW Natural continued to improve operations at its liquefied natural gas plants in Newport and Portland. Liquefied natural gas is used to help meet peak demand during cold weather, and as a back-up supply source if pipeline service is interrupted.

At the Newport LNG plant, employees completed extensive improvements to the plant's liquefaction and vaporization processes, essentially creating a whole new control system for the 22-year-old plant. The new system operates faster, cheaper and more reliably.

"The relationship with the people from NW Natural has been excellent. I have been out on the gas lines with some of the contractors and they were polite, showed me things and explained things to me, so it really made sense what they were doing." – Louise Green, community advocate, Mist, Oregon



Technology spurs increased efficiency

Customers, employees benefit from improved processes

NW Natural used new technologies and employee ingenuity to achieve cost savings and efficiencies in 1999.

service calls for increased efficiency.

Through these changes and continuous process improvement, the service techs were able to in-

crease the number of customer orders completed each day by an average of 18 percent. During the year, they responded to more than 200,000 service calls at a reduced cost per call, saving the Company about \$600,000.

NW Natural also focused on improving the scheduling of customer service representatives in the call center.

As a result, the percent of calls answered within 90 seconds increased from 25 percent in the first half of the year to 86 percent by November. At the same time, the Company's monthly customer satisfaction ratings hit all-time highs of more than 70 percent "excellent" for customer service.

Employee innovation pays off

NW Natural employees modified the Company's computerized Geographic Information System to create "SalesFinder," a new marketing tool that identifies which homes in a given neighborhood are candidates for natural gas service. Sales-

Finder is being used to target and pursue conversion opportunities.

A cross-functional team adapted a Lawson computer software package to automate and coordinate purchasing, inventory management and accounts payable. The Lawson system creates a history of each purchase, smoothes the transfer of information from one department to another and reduces staffing needs.

In 1999, employees reduced the Company's construction costs by \$1 million through increased efficiency and improved planning, scheduling and cost tracking. NW Natural saved another \$1 million by partnering with key contractors to reduce costs. The Company reevaluated its contracting methods and worked with contractors to use new technology for pipe installation, revise contractor responsibilities and improve timing of work.



"Competition is forcing all of us to be more technically aware, whether it means adopting new technology or changing the way you do business. You have to have new technologies, and you have to have training for your people." – Bernard Lee, President, Institute of Gas Technology



NW Natural's Lawson Project Team gathers at the Company's South Center Service Center storeroom after completing the new computer system that automates and coordinates purchasing, inventory and accounts payable. From left to right are: Chris Schmitt, Bill Erdahl, Team Leader Paul O'Neal and Mark LaPlante. Not pictured is team member Patricia Knott.

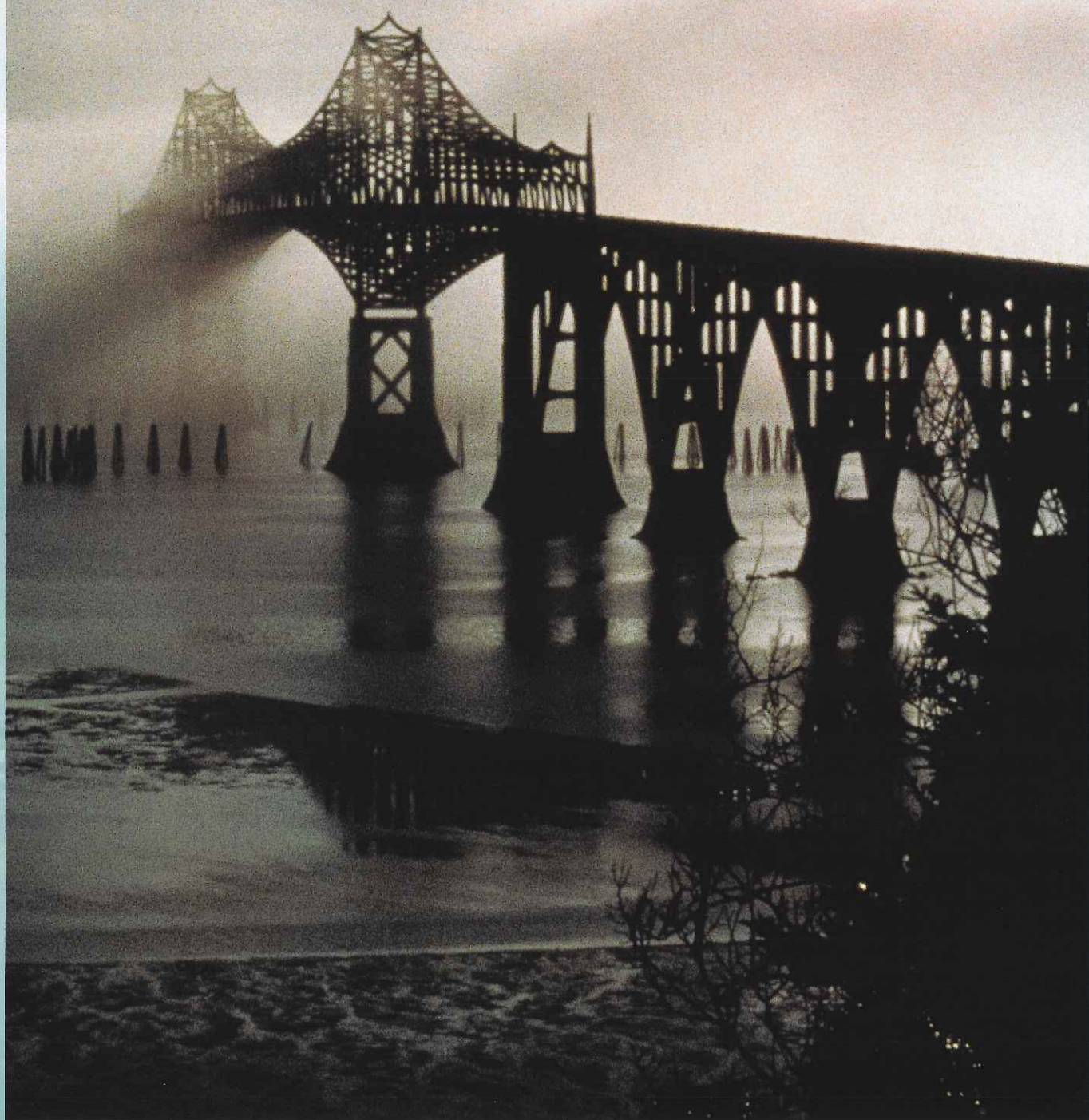
The Company's customer service technicians expanded their use of mobile data terminals (MDTs) to carry out work orders in the field. Use of the MDTs supports home-based reporting, which allows service technicians to take their service vehicles home at night and go directly to their first service call the next day, rather than having to go to the office first to pick up the vehicle.

The service techs also use MDTs to rearrange the sequence of their



Located in the heart of the inspiring Columbia River Gorge, the Bridge of the Gods was named for a Native American legend that describes a natural rock crossing at the site. Built in 1926, the bridge's cantilever truss technology modernized the crossing.

Dedicated posthumously to the builder of this and scores of other acclaimed Oregon bridges, the 1936 McCullough Memorial Bridge extends more than a mile across Coos Bay. NW Natural employees went the extra mile in 1999 to build legislative and local support for bringing natural gas to the Coos Bay area.



Shaping regulation and public policy

General rate case, Coos Bay initiative top challenging year

NW Natural successfully met major challenges in the regulatory and public policy arenas in 1999.

Oregon rate case decided

The Company worked throughout the year to achieve a positive outcome in its first Oregon general rate case in 10 years, filed in October 1998.

The Company sought a \$14.7 million annual revenue increase in part to cover investments of \$30 million in Mist gas storage and \$40 million for an updated, Y2K-compatible customer information system. The Company requested a return on equity (ROE) of 11.25 percent.

In its November 1999 order, the Oregon Public Utility Commission (OPUC) authorized an annual revenue increase of \$246,000 and an ROE of 10.25 percent.

In an earlier order, the commission allowed a 3 percent earnings band above the authorized ROE before the Company is required to share one-third of any additional earnings with customers.

NW Natural also gained OPUC approval to include the costs associated with the Company's 1999 Mist gas storage expansion in the Company's rates, along with the annual changes to update gas supply costs. This meant NW Natural did not have to file a separate general rate case for cost recovery on this phase of Mist investment.

A 35-year dream comes true

The Coos Bay area on the southern Oregon coast has been part of NW Natural's service territory for 35 years. However, bringing natural gas through the coastal mountains was not economically feasible. Now, with state and local support, the pipeline can be built.

In 1999, the Oregon Legislature approved \$20 million in lottery-backed bonds to construct a 65-mile, 12-inch natural gas pipeline from the interstate pipeline near Roseburg to Coos Bay, North Bend, Coquille, Myrtle Point and Bandon.

The grant was contingent on Coos County voters approving a local match for the project. The state had previously allocated another \$4 million for the pipeline.



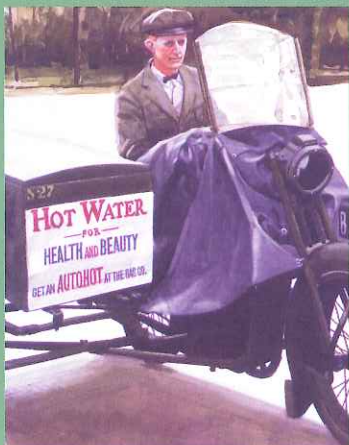
Susan Ackerman, NW Natural's Manager of Regulatory Affairs and Associate Counsel, reaches for legal papers atop one of the numerous stacks of binders and documents compiled for the Company's Oregon general rate case.

In November, Coos County voters approved issuing up to \$27 million in general obligation bonds to pay the local match for the pipeline. The pipeline funding, narrowly approved, was viewed in the local community as critical for economic development.

NW Natural hopes to begin serving the Coos Bay area in the winter of 2001-2002. It will be the Company's largest service territory expansion in 30 years.



"Bringing natural gas to Coos County has been a hands-on partnership with NW Natural. We benefit from NW Natural's expertise, vision and support, and our everyday working relationship is productive and enjoyable." – Doug Fletcher, business leader, Coos County



Celebrating 140 Years

NW Natural builds on its proud history

In 1999, NW Natural celebrated its 140th year in business.

The Company's anniversary year provided an opportunity to reflect on NW Natural's rich history, steady growth and local leadership.

Two merchants from Astoria, H.C. Leonard and Henry Green, started the Portland Gas Light Company in 1859 — just weeks before Oregon became a state. The Company began with 49 customers in less than one square mile. At the time, people were still arriving on the Oregon Trail in covered wagons.

"Many things have changed since 1859," said NW Natural President and CEO Richard G. Reiten. "We are proud of the fact that we grew up here and remain a locally-owned, independent company." NW Natural is now the second-oldest locally owned company in the state.

Anniversary party downtown

On Jan. 7, 1999, the Company celebrated its official 140th anniversary in chilly weather at Pioneer Courthouse Square in downtown

Portland. NW Natural brought portable gas heaters to warm the 1,800 people who enjoyed free hot dogs, chili and birthday cake. A local swing band played as Portland Mayor Vera Katz and NW Natural executives served food to all comers.

The event was open to the public and generated cash donations as well as 120 pounds of food for Fish Emergency Service, a local community action agency.

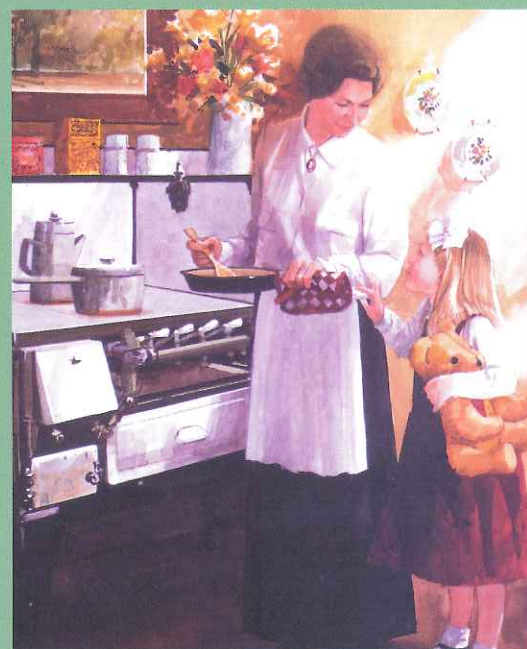
Community forums held

After the Portland celebration, NW Natural used its 140th anniversary as the backdrop for community gatherings in each of its districts. President and CEO Dick Reiten hosted the forums, which gathered local leaders to discuss company operations and issues important to the community.

"We wanted to emphasize our commitment to being involved in all of the communities we serve," said Reiten.

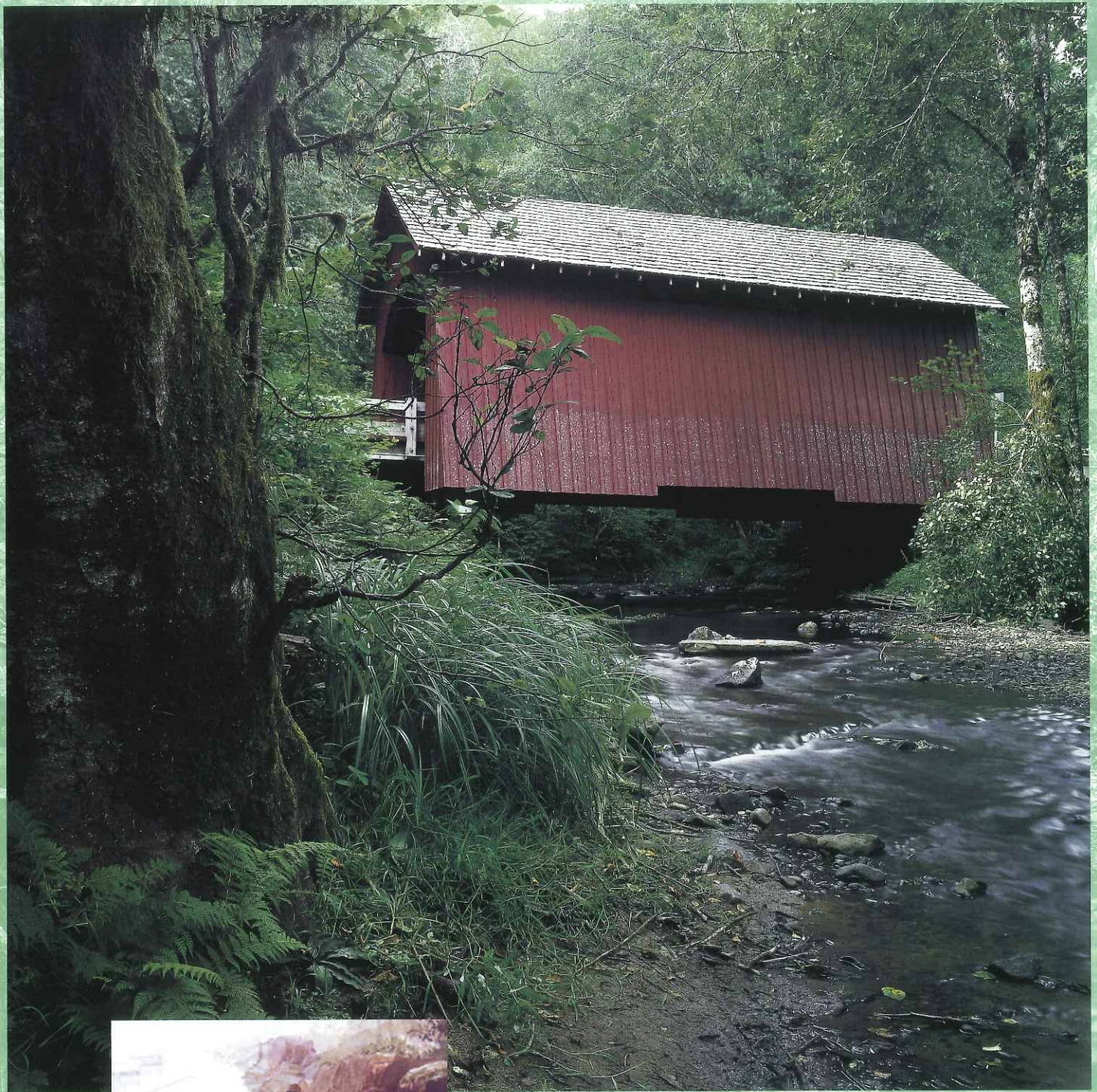
At each celebration, NW Natural made a donation to a local cause. Recipients included the Women's Violence Intervention Program in Lincoln City; hospitals

in Eugene, Albany, Corvallis and The Dalles; a community concert association in Astoria; the Chemeketa Community College Foundation Child Development Center in Salem; and the YMCA in Vancouver, Washington.



Portland artist Gene Gill revisits the natural gas company of bygone days with his watercolor paintings for NW Natural's 140th anniversary. Two of the scenes were inspired by photographs from the company's archives: A customer service employee on a motorbike (left) and a distribution crew near the company's old Linnton plant (right, opposite page). Gill also captured the warmth of natural gas with his reminiscent kitchen scene (above).

"We want to play an active role in improving our communities," Reiten said. "As a natural gas utility, our future success is directly tied to the health of the communities we serve."



The covered bridge across the north fork of the Yachats River recalls another era along the timeless Oregon Coast. Timber was the mainstay of the economy, and this 1938 wooden bridge's design included a cover for protection from the region's soggy weather.

Glossary

Basic earnings per share: earnings applicable to common stock for a period, divided by the average number of shares of common stock actually outstanding during that period.

Bcf: one billion cubic feet, a volumetric measure of natural gas, roughly equal to 10 million therms.

Book value: the common stock equity on a company's balance sheet, which was \$430 million for NW Natural at year-end 1999. The book value divided by the number of shares of common stock outstanding equals book value per share, or \$17.12 for NW Natural at year-end 1999.

BTU: British thermal unit, a basic unit of thermal energy measurement. One Btu equals the energy required to raise one pound of water one degree Fahrenheit. One hundred thousand Btus equal one therm.

Bypass: a direct connection to the interstate gas pipeline which circumvents the pipes of the local distribution company; usually considered only by large industrial users.

CIS: customer information system. NW Natural's computerized CIS is used for customer orders, bills, account histories and collections.

Demand charge: a component in all gas rates that covers the cost of securing pipeline capacity to meet peak demand, whether that full capacity is used or not.

Diluted earnings per share: earnings applicable to common stock for a period, divided by the average number of shares of stock that would be outstanding if all securities convertible into common stock were converted and all options to purchase common stock at prices lower than the average price for the period were exercised.

DRIP: dividend reinvestment plan enabling participating shareholders to further invest in a company by directly reinvesting dividends into the purchase of additional shares.

FERC: Federal Energy Regulatory Commission, the agency with regulatory jurisdiction over interstate natural gas transportation.

Firm service: natural gas service offered to customers under contracts or rate schedules that provide for no service interruptions.

General rate case: a periodic filing with state regulators to establish equitable rates and balance the interests of all classes of customers with those of a company and its shareholders. NW Natural's most recent general rate case was concluded in Oregon in November 1999.

Interruptible service: service offered to customers (usually large industrial or commercial) under contracts or rate schedules that allow for interruptions during times of peak demand.

Heating degree days: units of measure that reflect temperature-sensitive consumption of natural gas, calculated by subtracting the average of a day's high and low temperature from 65 degrees Fahrenheit.

LNG: liquefied natural gas, the cryogenic liquid form of natural gas. At temperatures below minus 258 degrees Fahrenheit, natural gas can be stored in a liquid form, which is 600 times more dense than its gaseous form.

LDC: local distribution company, such as NW Natural, which is mainly involved in the final distribution and sale of natural gas to customers.

Margin: in NW Natural's case, the difference between gross sales revenue and the cost of gas included in the sale.

Market value: also known as market capitalization. The market value of a company is the number of shares of common stock outstanding multiplied by the market price per share.

Mcf: one thousand cubic feet, a volumetric measure of natural gas, roughly equal to 10 therms.

Natural gas: a naturally occurring, flammable hydrocarbon found in porous underground formations, primarily consisting of methane (CH₄).

OPUC: Oregon Public Utility Commission, a three-member panel appointed by the Governor that has regulatory authority over public utilities in Oregon.

PGA: purchased gas adjustment, or gas tracker, a mechanism for changing rates due to changes in gas costs and recovering from customers deferred gas cost imbalances caused by fluctuating gas commodity costs.

Therm: the basic unit of natural gas measurement, equal to 100,000 Btus. An average residential customer in NW Natural's service area uses about 810 therms in an average weather year.

Throughput: the amount of natural gas transported through a distribution system in any given period.

Transportation customer: typically a large industrial customer that secures its own natural gas supply and pays only for use of the distribution system to transport it.

WUTC: Washington Utilities and Transportation Commission, a three-member panel appointed by the Governor that has regulatory authority over public utilities in Washington.

Management's Discussion and Analysis

The consolidated financial statements include:
Regulated utility:

- Northwest Natural Gas Company (NW Natural)

Non-regulated subsidiary businesses:

- NNG Financial Corporation (Financial Corporation), a wholly-owned subsidiary
- Canor Energy, Ltd. (Canor), a majority-owned subsidiary reclassified as a discontinued segment in 1999

Together these businesses are referred to herein as the "Company" (see "Subsidiary Operations" below and Note 2 to the Consolidated Financial Statements).

At Dec. 31, 1999, the Company's investment in Canor was reclassified to current assets and reported as a discontinued segment. In the income statements for 1999, 1998 and 1997, Canor's operating revenues and expenses are included in net income from discontinued segment. The balance sheets and statements of cash flows and capitalization for prior years have not been restated.

The following is management's assessment of the Company's financial condition including the principal factors that affect results of operations. The discussion refers to the consolidated activities of the Company for the three years ended Dec. 31, 1999.

■ Highlights and Outlook

Among its accomplishments in 1999, NW Natural:

- added 23,756 customers to the gas distribution system during the year, including the Company's 500,000th customer in December;
- completed a critical phase in the expansion of the Mist gas storage system and placed it in service Dec. 1, 1999, on time and on budget;
- wrapped up a major rate case in Oregon and secured fair regulatory treatment for the Mist storage project and annual gas cost changes; and
- increased productivity while raising customer satisfaction ratings to record levels.

Among its corporate strategies for 2000, NW Natural will focus on:

- supporting and strengthening its core gas distribution business;
- sustaining profitable customer growth while providing outstanding customer service;
- enhancing service and creating shareholder value through gas storage development;
- improving efficiency through technological advancements and a high performance culture; and
- reinvesting the proceeds from the sale of the Company's investment in Canor.

■ Earnings and Dividends

The Company's earnings applicable to common stock in 1999 were \$42.8 million, up from \$24.7 million in 1998 and \$40.4 million in 1997. Earnings for 1999 and 1997 were the second and third highest on record for the Company, respectively. Earnings for 1998 were reduced by write-downs of subsidiary assets and by warmer than normal weather.

Diluted earnings per share from consolidated operations were \$1.70 a share in 1999, compared to \$1.02 a share in 1998 and \$1.76 a share in 1997.

NW Natural earned \$1.66 a diluted share from gas utility operations in 1999, compared to \$1.43 in 1998 and \$1.68 in 1997. Weather conditions in its service territory in 1999 were 6 percent colder than in 1998 and 2 percent colder than the 20-year average. Weather in 1998 was 2 percent warmer than in 1997 and 5 percent warmer than the 20-year average. The estimated weather-related increase in net operating revenues (margin) during 1999 was equivalent to about 16 cents a share compared to actual conditions during 1998. The weather-related decrease in margin in 1998 was equivalent to about 9 cents a share as compared to actual conditions in 1997.

Subsidiary results for 1999, excluding a discontinued segment, were earnings of 3 cents a share compared to a loss of 42 cents a share in 1998 and earnings of 7 cents a share in 1997 (see Note 2). The loss in 1998 included write-downs of subsidiary assets equivalent to 43 cents a share. 1997 results included a gain equivalent to 5 cents a share from the sale of an interest in a California solar electric partnership. Results from the discontinued segment for each of the years ended Dec. 31, 1999, 1998 and 1997 were equivalent to earnings of 1 cent a share (see Note 2). Results in 1998 included write-downs of assets equivalent to 7 cents a share and a gain equivalent to 15 cents a share from a transaction involving Canor (see "Discontinued Segment," below).

1999 was the 44th consecutive year in which the Company's dividends paid have increased. Dividends paid on common stock were \$1.225 a share in 1999 compared to \$1.22 a share in 1998 and \$1.205 in 1997.

■ Results of Operations

Regulatory Matters

NW Natural provides gas utility service in Oregon and Washington, with Oregon representing approximately 93 percent of its revenues. Future earnings and cash flows from utility operations will be determined largely by the pace of continued growth in the residential and commercial markets and by NW Natural's ability to remain price competitive in the large industrial market, to control expenses, and to obtain reasonable and timely regulatory ratemaking treatment for investments made in utility plant.

In October 1998, NW Natural filed a general rate case in Oregon proposing a revenue increase of \$14.7 million per year through rate increases averaging 3.8 percent. In November 1999, the Oregon Public Utility Commission (OPUC) issued an order authorizing a revenue increase of \$0.2 million per year effective Dec. 1, 1999, through rate increases averaging 1.3 percent for residential customers, partially offset by rate decreases for certain commercial and large industrial customers. The OPUC authorized and based rates on a return on common equity (ROE) of 10.25 percent.

In an order issued in April 1999, the OPUC formalized a process that tests for excessive earnings in connection with gas utilities' annual filings of rate changes due to increases or decreases in gas costs. The OPUC confirmed NW Natural's ability to pass through 100 percent of its prudently incurred gas costs into rates. Under this order, NW Natural is authorized to retain all of its earnings up to a threshold level equal to its authorized ROE plus 300 basis points. One-third of any earnings above that level will be refunded to customers. In connection with the

Management's Discussion and Analysis

OPUC's order in the general rate case, this means that NW Natural can earn up to 13.25 percent on equity before sharing any additional earnings with customers. The excess earnings threshold is subject to adjustment up or down each year depending on movements in interest rates.

The OPUC approved rate increases averaging 9.1 percent effective Dec. 1, 1999, and increases averaging 3.4 percent, 6.1 percent and 11.4 percent effective Dec. 1, April 1 and Jan. 1, 1998, respectively. These rate changes reflected changes in NW Natural's purchased gas costs, the application of temporary rate adjustments to amortize regulatory balancing accounts and the removal of temporary rate adjustments effective the previous year.

The Washington Utilities and Transportation Commission (WUTC) approved rate increases averaging 11.1 percent, 5.8 percent and 10.5 percent effective Dec. 1, 1999, 1998 and 1997, respectively. These rate changes primarily reflected changes in NW Natural's purchased gas costs. In October 1997, the WUTC approved a general rate increase averaging 3 percent for NW Natural's customers in Washington and authorized an ROE of 11.25 percent.

Comparison of Gas Operations

The following table summarizes the composition of gas utility volumes and revenues for the three years ended Dec. 31:

Thousands (Except customers and degree days)

	1999		1998		1997	
Gas Sales and Transportation Volumes (Therms):						
Residential and commercial sales	605,351		544,810		531,605	
Unbilled volumes	(9,343)		8,645		3,615	
Weather-sensitive volumes	596,008	49%	553,455	49%	535,220	48%
Industrial firm sales	84,630	7%	87,275	8%	84,523	7%
Industrial interruptible sales	52,938	4%	51,521	4%	53,929	5%
Total gas sales	733,576		692,251		673,672	
Transportation deliveries	480,570	40%	446,165	39%	440,452	40%
Total volumes sold and delivered	1,214,146	100%	1,138,416	100%	1,114,124	100%
Utility Operating Revenues:						
Residential and commercial sales	\$ 382,377		\$ 323,277		\$ 278,512	
Unbilled revenues	(2,671)		8,314		1,647	
Weather-sensitive revenues	379,706	83%	331,591	82%	280,159	80%
Industrial firm sales	35,857	8%	34,303	8%	27,025	8%
Industrial interruptible sales	17,182	4%	15,337	4%	13,944	4%
Total gas sales	432,745		381,231		321,128	
Transportation revenues	21,351	5%	19,958	5%	22,029	6%
Other revenues	1,194	-	2,617	1%	7,884	2%
Total utility operating revenues	\$ 455,290	100%	\$ 403,806	100%	\$ 351,041	100%
Cost of gas sold	\$ 212,021		\$ 173,242		\$ 130,381	
Total number of customers (end of period)	501,163		477,407		458,021	
Actual degree days	4,256		4,011		4,092	
20-year average degree days	4,193		4,234		4,264	

Residential and Commercial

NW Natural continues to experience rapid customer growth, with 23,756 customers added since Dec. 31, 1998. This represents a growth rate of 5 percent, compared to a 4.2 percent growth rate in 1998 and a record growth rate of 5.7 percent in 1997. In the three years ended Dec. 31, 1999, approximately 68,000 customers were added to the system, representing an average annual growth rate of 5 percent.

Typically, 75 percent or more of NW Natural's annual operating revenues are derived from gas sales to weather-sensitive residential and commercial customers. Accordingly, variations in temperatures between periods will affect volumes of gas sold to and revenues derived from these customers.

Weather conditions were 2 percent colder than average in 1999, 5 percent warmer than average in 1998 and 4 percent warmer than average in 1997. Average weather conditions are calculated from the most recent 20 years of temperature data measured by heating degree days. Weather in 1999 was 6 percent colder than in 1998 and 1998 was 2 percent warmer than 1997.

The volumes of gas sold to residential and commercial customers during 1999 increased 8 percent compared to 1998, reflecting the continued customer growth and colder weather. Related revenues increased 15 percent due to increased volumes and the rate increases effective in 1998 and late 1999. Revenue from residential and commercial customers was up 18 percent in 1998 due to increased volumes and rate increases effective in late 1997 and 1998.

In order to match revenues with related purchased gas costs, NW Natural records unbilled revenues for gas delivered but not yet billed to customers through the end of the period.

Industrial Sales, Transportation and Other Revenues

Total volumes of gas delivered to industrial customers were 6 percent higher in 1999 than in 1998 and 1 percent higher in 1998 than in 1997. The combined margin from industrial sales and transportation increased slightly from 1998 and decreased by 7 percent in 1999 from 1997. The slight increase in industrial margin in 1999 and the decrease in 1998, despite increased volumes in both 1999 and 1998, primarily reflect the effect of low oil prices on an industrial schedule in which rates vary with oil prices, and transfers of some industrial customers to rate schedules or special contracts with lower margins.

WEATHER-SENSITIVE OPERATING REVENUES AND DEGREE DAYS

(IN MILLIONS OF DOLLARS)



Weather-sensitive operating revenues have been at record levels over the past three-year period. Weather conditions in 1999 were 2 percent colder than the 20-year average.

Other revenues relate primarily to accumulations or adjustments to regulatory accounts (see Note 1) and to miscellaneous fees assessed to gas sales customers. In 1999, other revenues totaled \$1.2 million, including fees assessed to customers (\$1.6 million) partially offset by other regulatory account adjustments (\$0.4 million).

In 1998, other revenues included the deferral of \$2.0 million in revenue reductions required under a settlement approved by the OPUC as part of the Jan. 1, 1998 rate changes, offset by \$3.1 million from the amortization of property tax savings and \$1.4 million from amortizations of other regulatory accounts. In 1997, other revenues included \$6.1 million from the amortization of property tax savings and \$1.2 million from the amortization of Oregon income tax savings.

Cost of Gas

NW Natural's cost per therm of gas sold was 15 percent higher in 1999 than in 1998, primarily due to higher prevailing prices in the natural gas commodity market. Its cost of gas sold was 29 percent higher in 1998 than in 1997. The cost per therm of gas sold includes current gas purchases, gas drawn from storage, demand cost equalization, regulatory deferrals and company use. The cost of gas sold was reduced by off-system gas sales of \$1.7 million in 1999 compared to \$4.6 million in 1998 and \$2.3 million in 1997. Under an agreement with the OPUC, revenues from these sales are treated as a reduction of gas costs.

NW Natural has a Purchased Gas Cost Adjustment (PGA) tariff under which its net income from Oregon operations is affected only within defined limits by changes in purchased gas costs. NW Natural absorbs 33 percent of the higher cost of gas sold, or retains 33 percent of the lower cost, in either case as compared to projections. The remaining 67 percent of the higher or lower gas costs are recorded as deferred debits or credits (regulatory assets or liabilities) for recovery from or refund to customers in future rates.

Subsidiary Operations

Results from continuing operations for Financial Corporation in 1999 were earnings equivalent to 3 cents a share, compared to losses of 42 cents a share in 1998 and earnings of 7 cents a share in 1997 (see Note 2).

Financial Corporation's operating results in 1999 were net income of \$0.5 million, compared to \$0.1 million in 1998 and \$1.6 million in 1997. The increase in income from 1998 to 1999 was primarily due to stronger operating results from its investments in limited partnerships in solar electric, wind-power electric and hydroelectric generation projects in California. The decline in income from 1997 to 1998 was primarily due to weaker operating results from its investments in the limited partnerships. Its 1997 results included a \$1.1 million gain from the sale of an interest in a solar electric partnership.

Financial Corporation recorded asset impairment charges in 1998 totaling \$16.6 million, equivalent to 43 cents a share. The charges resulted from the application of Statement of Financial Accounting Standards (SFAS) No. 121, "Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of," to Financial Corporation's limited partnership investments. The determinations of impairments for

Financial Corporation's assets resulted from lower estimates of prices for future sales of electricity from the partnerships' power projects.

The Company's investment in Financial Corporation at Dec. 31, 1999, was \$7.1 million, compared to \$6.6 million at Dec. 31, 1998.

Discontinued Segment

In the fourth quarter of 1999 the Company decided to sell its interests in Canor (see Note 2), with the effect that Canor has been reclassified as a discontinued segment.

Net income from the discontinued segment for 1999 and 1998 was \$0.4 million in both years, compared to income of \$0.2 million in 1997. Results for 1998 included asset write-downs totaling \$2.8 million, equivalent to 7 cents a share, and a \$3.5 million gain, equivalent to 15 cents a share, from a merger involving Canor. Approximately half of the write-downs were asset impairment charges due to the application of SFAS No. 121, resulting from the impact of low oil prices on Canor's oil properties in Alberta. The remaining write-downs were due to determinations that some oil and gas wells were no longer productive because of water encroachment. The gain from the merger was not subject to U.S. income tax. In 1997, Canor's results included a \$0.9 million write-down of unproven properties under SFAS No. 121.

The Company's investment in Canor of \$29.2 million at Dec. 31, 1999, is reported as an investment in discontinued segment in current assets. The Company's investment in Canor for the years ended Dec. 31, 1998 and 1997 was \$31.9 million and \$19.8 million, respectively. In 1998, the increase in the Company's investment in Canor included \$11.8 million converted to equity from inter-company debt at the time of Canor's merger.

Operating Expenses

Operations and Maintenance

Consolidated operations and maintenance expenses were \$5 million, or 6 percent, lower in 1999 than in 1998. NW Natural's operations and maintenance expenses decreased \$4.8 million, or 6 percent. The reduction was primarily due to credits to a litigation reserve totaling \$4.9 million resulting from favorable decisions by the Oregon Supreme Court and the Oregon Court of Appeals in a case involving claims by a commercial customer (see Note 12). Lower expenses in 1999 for uncollectible accounts (\$0.6 million), pensions (\$0.4 million) and other miscellaneous operating costs (\$2.0 million) were approximately offset by higher expenses for bonus accruals (\$2.5 million) and early retirement and severance charges (\$0.9 million).

Operations and maintenance expenses in 1998 were \$4.4 million, or 6 percent, higher than in 1997 primarily due to higher accruals for uncollectible accounts (\$1.4 million); maintenance expenses for a new customer information system (CIS) (\$1.1 million); amortizations of Year 2000 costs (\$0.8 million); higher market development expense (\$0.4 million); and employee severance charges (\$0.6 million).

Taxes Other Than Income

Taxes other than income, which are comprised of property, franchise, payroll and other taxes, increased \$2.7 million, or 12 percent, in 1999. Property tax expense was \$0.9 million, or 10

Management's Discussion and Analysis

percent, higher than in 1998 due to more plant in service. Franchise taxes, which are based on gross revenues, increased \$1.4 million, or 16 percent, reflecting higher revenues due to an increase in the Company's customer base and rate increases effective Dec. 1, 1998 and 1999.

Taxes other than income increased \$2.0 million, or 10 percent, in 1998. NW Natural's property taxes increased \$0.9 million, or 12 percent, due to more plant in service. Franchise taxes increased \$1.1 million, or 14 percent, reflecting higher revenues due to rate increases effective Jan. 1, April 1 and Dec. 1, 1998.

Depreciation, Depletion and Amortization

Depreciation, depletion and amortization expense increased \$7.1 million, or 16 percent, in 1999 compared to 1998, and \$4.9 million, or 13 percent, in 1998 compared to 1997. NW Natural's depreciation expense increased \$7.1 million from 1998 to 1999, primarily due to an asset write-down of the CIS (\$6.5 million) resulting from the OPUC's order in NW Natural's Oregon general rate case concluded in November (see "Results of Operations—Regulatory Matters," above). The \$4.9 million, or 13 percent, increase from 1997 to 1998 was due to additional utility plant placed in service.

Other Income (Expense)

The variations in other income (expense) during the past three years resulted primarily from non-recurring items. Other income for 1999 consisted primarily of interest income (\$3.9 million). In 1998, other income (expense) reflected \$16.6 million in asset write-downs recorded by Financial Corporation under SFAS No. 121 (see "Subsidiary Operations," above).

Interest Charges – Net

Interest charges decreased \$1.5 million, or 5 percent, in 1999 compared to 1998 primarily due to the favorable decisions by the Oregon Supreme Court and the Oregon Court of Appeals in a case involving claims by a commercial customer (see Note 12).

Interest charges in 1998 increased \$3.1 million, or 11 percent, compared to 1997. The 1998 increase resulted from increases in long-term debt and commercial paper due to higher gas costs, construction spending to fund customer growth and other spending for general corporate purposes.

Allowance for Funds Used During Construction (AFUDC) represents the cost of funds used during the construction of utility plant (see Note 1). In 1999, AFUDC reduced interest expense by \$1.2 million compared to \$1.4 million in 1998 and \$1.7 million in 1997. The weighted average AFUDC rates were 6.0 percent in 1999, 5.5 percent in 1998 and 5.8 percent in 1997 (see "Financing Activities," below).

Income Taxes

The effective corporate income tax rates for 1999, 1998 and 1997 were 35 percent, 35 percent and 33 percent, respectively. The effective tax rate in 1997 was lower than the statutory rate due to permanent tax savings from a change in book depreciation rates, an increase in tax credits and a reversal of amounts previously recorded for the California solar energy investment sold (see Note 8).

Redeemable Preferred and Preference Stock Dividend Requirements

Redeemable preferred and preference stock dividend requirements for 1999 and 1998 were lower by \$0.1 million, or 3 percent, due to sinking fund redemptions.

Financial Condition

Capital Structure

NW Natural's capital expenditures are primarily related to utility construction resulting from customer growth, system improvements and the development of underground gas storage. NW Natural finances these expenditures from cash provided by operations and from short-term borrowings which are periodically refinanced through the sale of long-term debt or equity securities. In addition to its capital expenditures, the weather-sensitive nature of gas usage by NW Natural's residential and commercial customers influences the Company's financing requirements. Short-term liquidity is satisfied primarily through the sale of commercial paper, which is supported by commercial bank lines of credit (see Note 6).

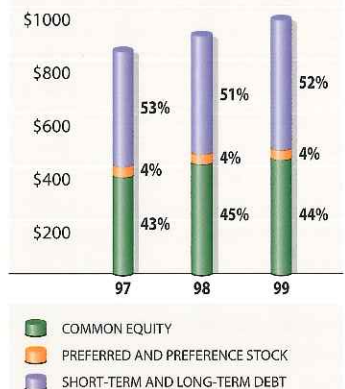
The Company's long-term goal is to maintain a capital structure comprised of 45 to 50 percent common stock equity, 5 to 10 percent preferred and preference stock and 45 to 50 percent short-term and long-term debt. When additional capital is required, the Company issues debt or equity securities depending upon both the target capital structure and market conditions. The Company also uses these sources to meet long-term debt and preferred and preference stock redemption requirements (see Notes 3 and 5).

Cash Flows

Operating Activities

Operating activities provided net cash of \$108.5 million in 1999 compared to \$66.9 million in 1998. The 62 percent increase was due to increased cash from operations (\$6.8 million) and lower working capital requirements (\$34.8 million). The increase in cash from operations compared to 1998 was primarily due to higher net income from continuing operations (\$18.0 million) and a greater reduction in deferred gas costs receivable (\$6.0 million). The increase in cash from operations in 1999 (\$16.1 million) was due to non-cash investment losses in 1998 including the asset write-downs by Financial Corporation. The decrease in working capital requirements in 1999 was primarily due to an increase in accounts payable

CAPITAL STRUCTURE (IN MILLIONS OF DOLLARS)



The Company's long-term goal is to maintain a capital structure of 45 to 50 percent common stock equity.

compared to a decrease in 1998 (\$19.6 million), and reductions in accrued unbilled revenue and accounts receivable compared to increases in 1998 (\$13.1 million and \$8.8 million, respectively). The decreases in working capital requirements were partially offset by a larger increase in inventories of gas, materials and supplies (\$8.8 million).

Cash provided by operating activities in 1998 was \$66.9 million compared to \$45.8 million in 1997. The 46 percent increase was due to increased cash from operations (\$26.6 million), offset in part by higher working capital requirements (\$5.5 million). The increase in cash from operations compared to 1997 was primarily due to lower deferred gas costs receivable (\$37.5 million), an increase in depreciation, depletion and amortization expense (\$11.2 million) and non-cash investment losses in 1998 including the asset write-downs by Financial Corporation (\$16.0 million). The increase in cash from operations was partially offset by lower net income from continuing operations (\$15.9 million), a reduction in deferred taxes and investment tax credits (\$17.0 million) and higher gains on sale of assets (\$2.9 million). The increase in working capital requirements was due to an increase in accounts receivable in 1998 compared to a reduction in 1997 (\$9.5 million), partially offset by a smaller reduction in accounts payable in 1998 (\$3.3 million).

The Company has lease and purchase commitments relating to its operating activities which are financed with cash flows from operations (see Note 12).

Investing Activities

Cash used in investing activities increased \$20.6 million, from \$98.6 million in 1998 to \$119.2 million in 1999. NW Natural's capital expenditures in 1999 totaled \$109 million, up \$29 million, or 36 percent, from 1998. The increase in cash requirements for utility construction in 1999 resulted from higher expenditures for gas storage development due to completion of a new phase of the Company's gas storage expansion project (Mist Storage III) (\$23.9 million); higher expenditures for computer hardware and software (\$2.3 million), communications technology (\$0.8 million) and large system improvement projects (\$1.3 million); and higher construction overhead (\$2.0 million).

Cash requirements for NW Natural's capital program in 1998 totaled \$80 million, down \$36 million, or 31 percent, from 1997. The decrease in cash requirements for utility construction in 1998 resulted from lower expenditures for completion of the new CIS (\$14.0 million), an earlier phase of the gas storage expansion project (Mist Storage II) (\$5.2 million) and several large system improvement projects (\$5.9 million); reduced expenditures for computer hardware and software (\$1.1 million); and lower construction overhead (\$2.0 million).

NW Natural's utility construction expenditures are estimated at \$82 million for 2000. Over the five-year period 2000 through 2004, these expenditures are estimated at between \$450 million and \$500 million. The high level of capital expenditures over the next five years reflects projected high customer growth plus a major system reinforcement project and the development of additional underground gas storage facilities. An estimated 60 percent of the required funds is expected to be internally generated, with the remainder to be funded through a combination of long-term debt and equity securities with

short-term debt providing liquidity and bridge financing.

NW Natural had non-utility capital expenditures of \$10.7 million in 1999, primarily relating to a contract for the construction of a new headquarters building for the Port of Portland. The purchase and sale agreement between NW Natural and the Port of Portland provides for the Port to pay at closing an established purchase price for construction of the core and shell of the building plus NW Natural's costs for construction of tenant improvements. NW Natural anticipates that closing will occur during the first or second quarter of 2000. In June and August 1999, the Port made construction progress payments in advance of closing totaling \$18.8 million, which were used to pay off the balance outstanding under a line of credit used for construction of the building.

There were no new capital investments in either of the Company's subsidiaries during 1999. Non-utility capital expenditures totaled \$19.8 million in 1998, including Canor's investments of \$13.5 million in Canadian exploration and production properties. NW Natural's non-utility expenditures in 1998 totaling \$6.3 million included expenditures relating to the Port of Portland contract (\$6.0 million) and additions to existing facilities (\$0.3 million).

NW Natural invested \$3.0 million in Canor's exploration and production program in 1997 to supplement Canor's internally generated funds.

Financing Activities

Cash provided by financing activities in 1999 totaled \$13.3 million, down from \$32.3 million in 1998. The decrease was due to lower proceeds from sales of common stock, partially offset by higher net proceeds from the issuance and retirement of long-term debt and an increase in short-term debt. Proceeds from the sales of \$20 million of Medium-Term Notes, Series B, in both September and December 1999, and \$12.7 million from the increase in short-term debt, were used in part to reduce long-term debt (\$10 million).

Cash provided by financing activities in 1998 was down \$44.5 million from \$76.8 million in 1997. This decrease was due to a \$2 million reduction in short-term debt in 1998 compared to a \$39 million increase in 1997, as the Company's higher proceeds from the sale of common stock in 1998 were approximately offset by lower net proceeds from the issuance and retirement of long-term debt. Proceeds from the sales of \$22 million, \$10 million and \$20 million of Medium-Term Notes, Series B, in March, June and November 1998, respectively, and \$44.7 million from the negotiated public offering and sale of 1,725,000 shares of NW Natural's common stock in April 1998, were used in part to reduce long-term debt (\$35 million) and short-term debt (\$2 million).

Management's Discussion and Analysis

Ratios of Earnings to Fixed Charges

For the years ended Dec. 31, 1999, 1998 and 1997, the Company's ratios of earnings to fixed charges, computed using the Securities and Exchange Commission method, were 3.12, 2.20 and 2.99, respectively. For this purpose, earnings consist of net income before taxes plus fixed charges. Fixed charges consist of interest on all indebtedness, the amortization of debt expense and discount or premium, and the estimated interest portion of rentals charged to income.

Contingent Liabilities

Year 2000 Readiness

During 1999 NW Natural completed corrections to the information technology (IT) and non-IT systems within its control that could be affected by the Year 2000 (Y2K) issue. Y2K project work included maintaining and managing the inventory of its date-sensitive IT and non-IT systems; renovating and testing high-priority internal IT systems; researching and evaluating the degree of Y2K readiness of IT and non-IT systems of suppliers and vendors; and developing contingency plans for high-risk systems or vendor products where products were known to be non-compliant or readiness levels could not be independently verified. NW Natural did not experience significant Y2K-related problems with its systems.

NW Natural's total cost for its Y2K readiness program was about \$7 million. The total estimated cost does not include the costs incurred for IT systems that were replaced rather than renovated. In accordance with an order of the OPUC, NW Natural's incremental operating costs for Year 2000 readiness were deferred and will be amortized over a five-year period.

Environmental Matters

Since 1993, NW Natural has recorded expenses of \$2.6 million for the costs of a continuing investigation of property it owns in Linnton, Oregon, that is the site of a former gas manufacturing plant that was closed in 1956 (see Note 12).

Quantitative and Qualitative Disclosures About Market Risk

The Company's primary market risk exposures associated with activities involving derivative financial instruments and other financial instruments are natural gas commodity price risk, foreign currency risk and interest rate risk. NW Natural uses derivative financial instruments as tools to mitigate certain of these market risks (see Note 11). NW Natural enters into such instruments for hedging purposes, not for trading purposes. Market risks associated with the derivative financial instruments are monitored by management personnel who do not directly enter into these contracts and by a committee of the Board of Directors.

Physical and Financial Commodity and Foreign Currency Transactions

NW Natural enters into short-term and long-term natural gas purchase contracts with demand and commodity fixed-price and variable-price components, along with associated

short-term and long-term natural gas transportation contracts. Many of the purchases made under these contracts are in Canadian dollars and NW Natural uses foreign currency forward contracts to hedge against foreign exchange rate fluctuations.

NW Natural historically has taken physical delivery of at least the minimum quantities specified in its natural gas purchase contracts. The contracts are subject to annual re-pricing, a process that is intended to reflect anticipated market price trends during the next year. NW Natural's PGA mechanism in Oregon provides for the recovery from customers of actual commodity costs in comparison with established benchmark costs, except that NW Natural absorbs 33 percent of the higher cost of gas sold, or retains 33 percent of the lower cost, in either case as compared to projections.

At Dec. 31, 1999, differences between notional values and fair values with respect to NW Natural's open positions in derivative financial instruments were not material to the Company's financial position or results of operations. However, to the degree that market risks exist due to potential adverse changes in commodity prices and foreign exchange rates in relation to these financial and physical contracts, the Company considers the risks to be:

Commodity Price Risk

The prices of natural gas commodity are subject to fluctuations due to unpredictable factors including weather, pipeline transportation congestion and other factors that affect short-term supply and demand. NW Natural uses natural gas commodity swap agreements to convert certain long-term gas purchase contracts from floating prices to fixed prices. As of Dec. 31, 1999, the Company had not entered into any natural gas commodity swaps or other derivative commodity instruments extending beyond the end of 2000. If all of the commodity swap agreements had been settled on Dec. 31, 1999, NW Natural would have realized a loss of \$7.7 million.

Foreign Currency Risk

The costs of natural gas commodity and certain pipeline services are subject to changes in the value of Canadian currency in relation to U. S. currency. NW Natural uses foreign currency forward contracts to hedge against fluctuations in currency values with respect to its purchases of at least 80 percent of its estimated daily requirements for natural gas purchased from suppliers in Canada. As of Dec. 31, 1999, the Company had not entered into any derivative financial instruments relating to foreign currency exchange rates extending beyond the end of 2000. If all of the contracts had been settled on Dec. 31, 1999, NW Natural would have realized a gain of \$0.2 million.

Interest Rate Risk

Interest rate risk relates to new debt financing needed to fund capital requirements, including maturing debt securities, and to the issuance of commercial paper. NW Natural manages interest rate risk through the issuance of fixed-rate debt with varying maturities and the refunding of debt through optional redemption when interest rates are favorable. NW Natural had no derivative financial instruments to hedge interest rates in place at Dec. 31, 1999.

Consolidated Statements of Income

<i>Thousands, except per share amounts (year ended December 31)</i>	1999	1998	1997
Operating revenues:			
Gross operating revenues	\$ 455,834	\$ 404,390	\$ 351,709
Cost of sales	<u>212,197</u>	<u>173,424</u>	<u>130,599</u>
Net operating revenues	<u>243,637</u>	230,966	221,110
Operating expenses:			
Operations and maintenance	73,209	78,226	73,864
Taxes other than income taxes	24,652	21,939	19,952
Depreciation, depletion and amortization	<u>51,008</u>	<u>43,937</u>	<u>39,051</u>
Total operating expenses	<u>148,869</u>	<u>144,102</u>	<u>132,867</u>
Income from operations	94,768	86,864	88,243
Other income (expense)	4,816	(13,723)	4,138
Interest charges – net	30,052	31,586	28,469
Income before income taxes	69,532	41,555	63,912
Income taxes	24,591	14,604	21,034
Net income from continuing operations	44,941	26,951	42,878
Net income from discontinued segment	355	350	181
Net income	45,296	27,301	43,059
Redeemable preferred and preference stock dividend requirements	2,515	2,577	2,646
Earnings applicable to common stock	\$ 42,781	\$ 24,724	\$ 40,413
Average common shares outstanding	24,976	24,233	22,698
Basic earnings per share of common stock			
From continuing operations	\$ 1.70	\$ 1.01	\$ 1.77
From discontinued segment	0.01	0.01	0.01
Total basic earnings per share	<u>\$ 1.71</u>	<u>\$ 1.02</u>	<u>\$ 1.78</u>
Diluted earnings per share of common stock			
From continuing operations	\$ 1.69	\$ 1.01	\$ 1.75
From discontinued segment	0.01	0.01	0.01
Total diluted earnings per share	<u>\$ 1.70</u>	<u>\$ 1.02</u>	<u>\$ 1.76</u>
Dividends per share of common stock	\$ 1.225	\$ 1.22	\$ 1.205

See Notes to Consolidated Financial Statements.

Consolidated Statements of Earnings Invested in the Business

<i>Thousands (year ended December 31)</i>	1999		1998		1997	
Earnings invested in the business:						
Balance at beginning of year	\$ 106,513		\$ 113,098		\$ 100,026	
Net income	45,296	\$ 45,296	27,301	\$ 27,301	43,059	\$ 43,059
Cash dividends paid:						
Redeemable preferred and preference stock	(2,525)		(2,587)		(2,660)	
Common stock	(30,569)		(29,615)		(27,321)	
Common stock expense	(4)		(1,684)		(6)	
Balance at end of year	\$ 118,711		\$ 106,513		\$ 113,098	
Accumulated other comprehensive income (loss):						
Balance at beginning of year	\$ (2,460)		\$ (2,235)		\$ (1,650)	
Other comprehensive income (loss) –						
Foreign currency translation adjustments from discontinued segment	(721)	(721)	(225)	(225)	(585)	(585)
Comprehensive income		<u>\$ 44,575</u>		<u>\$ 27,076</u>		<u>\$ 42,474</u>
Balance at end of year	\$ (3,181)		\$ (2,460)		\$ (2,235)	

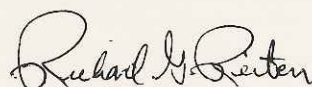
See Notes to Consolidated Financial Statements.

Management's Responsibility for Financial Statements

The financial statements in this report were prepared by management, which is responsible for their objectivity and integrity. The statements have been prepared in conformity with generally accepted accounting principles and, where appropriate, reflect informed estimates based on judgments of management. The responsibility of the Company's independent accountants is to render an independent report on the financial statements.

The Company's system of internal accounting controls is designed to provide reasonable assurance that assets are safeguarded and transactions are executed in accordance with management's authorizations, that transactions are recorded to permit the preparation of financial statements in conformity with orders of regulatory authorities and generally accepted accounting principles and that accountability for assets is maintained. The Company's system of internal controls has provided such reasonable assurances during the periods reported herein. The system includes written policies, procedures and guidelines, an organization structure that segregates duties and an established program for monitoring the system by internal auditors. In addition, the Company has prepared and annually distributes to its employees a Code of Ethics covering its policies for conducting business affairs in a lawful and ethical manner. Ongoing review programs are carried out to ensure compliance with these policies.

The Board of Directors, through its Audit Committee, oversees management's financial reporting responsibilities. The Committee meets regularly with management, the internal auditors, and representatives of the Company's independent accountants. Both internal auditors and external accountants have free and independent access to the Committee and the Board of Directors. No member of the Committee is an employee of the Company. The Committee reports the results of its activities to the full Board of Directors. Annually, the Committee recommends the nomination of independent accountants to the Board of Directors for shareholder approval.



Richard G. Reiten
President and Chief Executive Officer

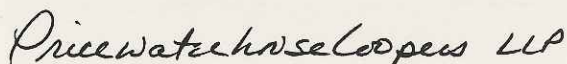


Bruce R. DeBolt
Senior Vice President, Finance, and Chief Financial Officer

Report of Independent Accountants

To the Board of Directors and
Shareholders of NW Natural

In our opinion, the accompanying consolidated balance sheets and related consolidated statements of income, of earnings invested in the business, of cash flows and of capitalization present fairly, in all material respects, the financial position of Northwest Natural Gas Company (doing business as NW Natural) and its subsidiaries (the "Company") at December 31, 1999 and 1998, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 1999, in conformity with accounting principles generally accepted in the United States. These financial statements are the responsibility of the Company's management; our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with auditing standards generally accepted in the United States, which require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for the opinion expressed above.



PRICEWATERHOUSECOOPERS 

Portland, Oregon
February 18, 2000

Consolidated Balance Sheets

<i>Thousands (December 31)</i>	1999	1998
Assets:		
Plant and property:		
Utility plant	\$1,331,415	\$ 1,239,690
Less accumulated depreciation	<u>436,386</u>	<u>404,117</u>
Utility plant – net	<u>895,029</u>	<u>835,573</u>
Non-utility property	8,548	89,050
Less accumulated depreciation and depletion	<u>7,654</u>	<u>29,927</u>
Non-utility property – net	<u>894</u>	<u>59,123</u>
Total plant and property	<u>895,923</u>	<u>894,696</u>
Investments and other	<u>16,557</u>	<u>16,714</u>
Current assets:		
Cash and cash equivalents	10,013	7,383
Accounts receivable, less allowance for uncollectible accounts of \$1,669 in 1999 and \$1,547 in 1998	43,349	47,476
Accrued unbilled revenue	31,550	34,258
Inventories of gas, materials and supplies	33,919	21,258
Investment in discontinued segment	29,163	–
Property held for sale	16,712	–
Prepayments and other current assets	<u>18,349</u>	<u>16,105</u>
Total current assets	<u>183,055</u>	<u>126,480</u>
Regulatory tax assets	<u>51,060</u>	<u>56,860</u>
Deferred gas costs receivable	<u>20,950</u>	<u>27,795</u>
Deferred debits and other	<u>76,878</u>	<u>69,191</u>
Total assets	<u>\$1,244,423</u>	<u>\$ 1,191,736</u>
Capitalization and liabilities:		
Capitalization (see Consolidated Statements of Capitalization):		
Common stock	\$ 79,458	\$ 78,701
Premium on common stock	234,608	229,650
Earnings invested in the business	118,711	106,513
Accumulated other comprehensive income (loss)	<u>(3,181)</u>	<u>(2,460)</u>
Total common stock equity	<u>429,596</u>	<u>412,404</u>
Redeemable preference stock	25,000	25,000
Redeemable preferred stock	10,564	11,499
Long-term debt	<u>396,379</u>	<u>366,738</u>
Total capitalization	<u>861,539</u>	<u>815,641</u>
Minority interest	<u>–</u>	<u>16,322</u>
Current liabilities:		
Notes payable	94,149	87,264
Accounts payable	68,163	56,039
Long-term debt due within one year	10,000	10,000
Taxes accrued	4,101	7,486
Interest accrued	4,673	6,204
Other current and accrued liabilities	<u>39,153</u>	<u>23,477</u>
Total current liabilities	<u>220,239</u>	<u>190,470</u>
Deferred investment tax credits	<u>10,393</u>	<u>11,248</u>
Deferred income taxes	<u>136,150</u>	<u>140,310</u>
Regulatory liabilities and other	<u>16,102</u>	<u>17,745</u>
Commitments and contingencies (see Note 12)	<u>–</u>	<u>–</u>
Total capitalization and liabilities	<u>\$1,244,423</u>	<u>\$ 1,191,736</u>

See Notes to Consolidated Financial Statements.

Consolidated Statements of Cash Flows

<i>Thousands (year ended December 31)</i>	1999	1998	1997
Operating activities:			
Net income from continuing operations	\$ 44,941	\$ 26,951	\$ 42,878
Adjustments to reconcile net income to cash provided by operations:			
Depreciation, depletion and amortization	51,008	55,822	44,619
Gain on sale of assets	-	(3,782)	(849)
Deferred income taxes and investment tax credits	(5,015)	(344)	16,609
Equity in (earnings) losses of investments	(490)	15,572	(468)
Income from discontinued segment	355	350	181
Allowance for funds used during construction	(1,153)	(1,426)	(1,868)
Deferred gas costs receivable	6,845	833	(36,686)
Regulatory accounts and other - net	(3,795)	(8,109)	(5,159)
Cash from operations before working capital changes	92,696	85,867	59,257
Changes in operating assets and liabilities:			
Accounts receivable - net	792	(8,056)	1,413
Accrued unbilled revenue	2,708	(10,347)	(1,571)
Inventories of gas, materials and supplies	(12,661)	(3,873)	(2,946)
Accounts payable	16,910	(2,736)	(6,020)
Accrued interest and taxes	(4,916)	2,976	2,122
Other current assets and liabilities	12,992	3,108	(6,439)
Cash provided by operating activities	108,521	66,939	45,816
Investing activities:			
Acquisition and construction of utility plant assets	(109,144)	(80,022)	(115,886)
Investment in non-utility property	(10,713)	(19,780)	(9,229)
Proceeds from sale of non-utility assets	-	-	1,014
Investments and other	647	1,226	(35)
Cash used in investing activities	(119,210)	(98,576)	(124,136)
Financing activities:			
Common stock issued	5,356	52,384	6,465
Redeemable preferred stock retired	(935)	(930)	(1,320)
Long-term debt:			
Issued	40,000	52,000	90,000
Retired	(10,000)	(35,000)	(27,000)
Change in short-term debt	12,717	(2,054)	39,259
Cash dividend payments:			
Redeemable preferred and preference stock	(2,525)	(2,587)	(2,660)
Common stock	(30,569)	(29,615)	(27,321)
Foreign currency translation and capital stock expense	(725)	(1,909)	(591)
Cash provided by financing activities	13,319	32,289	76,832
Increase (decrease) in cash and cash equivalents	2,630	652	(1,488)
Cash and cash equivalents - beginning of year	7,383	6,731	8,219
Cash and cash equivalents - end of year	\$ 10,013	\$ 7,383	\$ 6,731
Supplemental disclosure of cash flow information:			
Cash paid during the year for:			
Interest	\$ 30,506	\$ 32,323	\$ 28,756
Income taxes	\$ 27,302	\$ 8,205	\$ 7,288
Supplemental disclosure of non-cash financing activities:			
Conversion to common stock:			
7-1/4% Series of Convertible Debentures	\$ 359	\$ 565	\$ 535

See Notes to Consolidated Financial Statements.

Consolidated Statements of Capitalization

<i>Thousands, except share amounts (December 31)</i>	1999		1998	
Common stock equity:				
Common stock – par value \$3-1/6 per share; authorized 60,000,000 shares: outstanding – 1999, 25,091,938 shares; 1998, 24,853,121 shares	\$ 79,458		\$ 78,701	
Premium on common stock	234,608		229,650	
Earnings invested in the business	118,711		106,513	
Accumulated other comprehensive income (loss)	<u>(3,181)</u>		<u>(2,460)</u>	
Total common stock equity	429,596	50%	412,404	51%
Redeemable preference stock , authorized 2,000,000 shares; \$6.95 Series, stated value \$100 per share; outstanding – 1999, 250,000 shares; 1998, 250,000 shares	<u>25,000</u>		<u>25,000</u>	
Total redeemable preference stock	25,000	3%	25,000	3%
Redeemable preferred stock , authorized 1,500,000 shares; all outstanding series have a stated value of \$100 per share:				
\$4.75 Series, outstanding – 1999, 643 shares; 1998, 2,485 shares	64		249	
\$7.125 Series, outstanding – 1999, 105,000 shares; 1998, 112,500 shares	<u>10,500</u>		<u>11,250</u>	
Total redeemable preferred stock	10,564	1%	11,499	1%
Long-term debt:				
First Mortgage Bonds				
9-3/4% Series due 2015	50,000		50,000	
Medium-Term Notes				
First Mortgage Bonds:				
7.69% Series A due 1999	–		10,000	
5.96% Series B due 2000	5,000		5,000	
5.98% Series B due 2000	5,000		5,000	
6.62% Series B due 2001	10,000		–	
6.75% Series B due 2002	10,000		–	
8.05% Series A due 2002	10,000		10,000	
5.55% Series B due 2002	20,000		20,000	
6.40% Series B due 2003	20,000		20,000	
6.34% Series B due 2005	5,000		5,000	
6.38% Series B due 2005	5,000		5,000	
6.45% Series B due 2005	5,000		5,000	
6.80% Series B due 2007	10,000		10,000	
6.50% Series B due 2008	5,000		5,000	
8.26% Series B due 2014	10,000		10,000	
7.00% Series B due 2017	40,000		40,000	
6.60% Series B due 2018	22,000		22,000	
8.31% Series B due 2019	10,000		10,000	
7.63% Series B due 2019	20,000		–	
9.05% Series A due 2021	10,000		10,000	
7.25% Series B due 2023	20,000		20,000	
7.50% Series B due 2023	4,000		4,000	
7.52% Series B due 2023	11,000		11,000	
6.52% Series B due 2025	10,000		10,000	
7.05% Series B due 2026	20,000		20,000	
7.00% Series B due 2027	20,000		20,000	
6.65% Series B due 2027	20,000		20,000	
6.65% Series B due 2028	10,000		10,000	
Unsecured:				
8.47% Series A due 2001	10,000		10,000	
Convertible Debentures				
7-1/4% Series due 2012	<u>9,379</u>		<u>9,738</u>	
	406,379		376,738	
Less long-term debt due within one year	<u>10,000</u>		<u>10,000</u>	
Total long-term debt	396,379	46%	366,738	45%
Total capitalization	<u>\$ 861,539</u>	100%	<u>\$ 815,641</u>	100%

See Notes to Consolidated Financial Statements.

Notes to Consolidated Financial Statements

1 Summary of Significant Accounting Policies

Organization and Principles of Consolidation

The consolidated financial statements include:

Regulated utility:

- Northwest Natural Gas Company (doing business as NW Natural)

Non-regulated subsidiary businesses:

- NNG Financial Corporation (Financial Corporation), a wholly-owned subsidiary
- Canor Energy Ltd. (Canor), a majority-owned subsidiary, reclassified as a discontinued segment in 1999

Together these businesses are referred to herein as the "Company." Intercompany accounts and transactions have been eliminated.

Investments in corporate joint ventures and partnerships in which the Company's ownership is 50 percent or less are accounted for by the equity method or the cost method (see Note 9).

Certain amounts from prior years have been reclassified to conform with the 1999 presentation.

Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect reported amounts in the consolidated financial statements and accompanying notes. Changes in such estimates may affect amounts reported in future periods.

Industry Regulation

The Company's principal business is the distribution of natural gas which is regulated by the Oregon Public Utility Commission (OPUC) and the Washington Utilities and Transportation Commission (WUTC). Accounting records and practices conform to the requirements and uniform system of accounts prescribed by these regulatory authorities in accordance with Statement of Financial Accounting Standards (SFAS) No. 71, "Accounting for the Effects of Certain Types of Regulation."

Utility Plant

Utility plant for NW Natural is stated at cost (see table in Note 9). When a depreciable unit of property is retired, the cost is removed from both utility plant and the accumulated provision for depreciation together with the cost of removal, less any salvage. No gain or loss is recognized upon normal retirement.

NW Natural's provision for depreciation of utility property, which is computed under the straight-line, age-life method in accordance with independent engineering studies and as approved by regulatory authorities, approximated 4.0 percent of average depreciable plant in 1999, 3.9 percent in 1998 and 3.8 percent in 1997. The rate of depreciation approximates the economic life of the utility property.

Certain additions to utility plant include an allowance for funds used during construction (AFUDC), a non-cash item. AFUDC represents the cost of funds borrowed during construction and is calculated using actual commercial paper interest rates. If commercial paper borrowings are insufficient to finance the total work in progress, then a composite rate of interest on all debt, shown as a reduction to interest charges, and a return on equity funds, shown as other income, is used to compute AFUDC. While cash is not realized currently from AFUDC, it is realized in the ratemaking process over the service life of the related property through increased revenues resulting from higher rate base and higher depreciation expense. NW Natural's weighted average AFUDC rates were 6.0 percent for 1999, 5.5 percent for 1998 and 5.8 percent for 1997.

Regulatory Accounts

In applying SFAS No. 71, NW Natural has capitalized certain costs and benefits as regulatory assets and liabilities pursuant to orders of the state utility regulatory commissions, in general rate proceedings or expense deferral proceedings, in order to provide for recovery of revenues or expenses from, or refunds to, NW Natural's utility customers in future periods. At Dec. 31, 1999 and 1998, regulatory tax assets were \$51.1 million and \$56.9 million, respectively, while other regulatory assets and liabilities (net) were \$37.4 million and \$40.4 million, respectively.

If NW Natural should determine in the future that all or a portion of these regulatory assets and liabilities no longer meet the criteria for continued application of SFAS No. 71, then NW Natural would be required to write off that portion which it could not recover or refund.

Cash and Cash Equivalents

For purposes of reporting cash flows, cash and cash equivalents include cash on hand and highly liquid temporary investments with expected maturity dates of three months or less.

Unbilled Revenue

NW Natural accrues for gas deliveries not billed to customers from the meter reading dates to month end.

Inventories

NW Natural's inventories of gas in storage and materials and supplies are stated at the lower of average cost or net realizable value.

Derivatives Policy

NW Natural's "Derivatives Policy" allows up to a 100 percent hedge position in currency derivatives to match and lock in prices on individual Canadian natural gas purchase transactions; interest rate derivatives to match specific outstanding debt instruments maturing in less than five years; and natural gas commodity derivatives to lock in or cap prices on gas purchased for a future period under contracts with market-indexed pricing. The policy requires derivatives to be used within prescribed limitations and only in order to reduce price risk, so as to qualify for hedge accounting treatment. Changes in market values of foreign currency contracts, and gains or losses on

commodity derivative contracts, are deferred and recognized as adjustments to gas purchase costs upon concurrent settlement of these contracts (see Note 11).

In June 1999, the Financial Accounting Standards Board (FASB) issued SFAS No. 137, "Accounting for Derivative Instruments and Hedging Activities—Deferral of the Effective Date of FASB Statement No. 133," which postponed the effective date of SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities," to all fiscal years beginning after June 15, 2000 (Jan. 1, 2001 for the Company). SFAS No. 133 requires that all derivative instruments be recorded each period either in current earnings or in other comprehensive income, depending on whether a derivative is designated as part of a hedge transaction and, if so designated, what type of hedge transaction it is. The Company expects all of its derivative instruments and hedging activities to be classified as cash flow hedges. Changes in the fair market value of these cash flow hedges will be included in other comprehensive income in accordance with SFAS No. 133. The Company has not determined the impact that adoption of SFAS No. 133 will have on other comprehensive income or on its financial position.

Segment Reporting

The Company principally operates in a single line of business consisting of the distribution of natural gas. Other segments are primarily investments in alternative energy projects in California and a discontinued gas and oil exploration business.

The following table presents information about reportable segments for 1999, 1998 and 1997. Inter-segment transactions are insignificant.

Thousands	Utility	Other	Total
1999			
Net operating revenues	\$ 243,269	\$ 368	\$ 243,637
Income from operations	94,744	24	94,768
Income (loss) from financial investments	-	(82)	(82)
Net income from continuing operations	44,323	618	44,941
Net income from discontinued segment	-	355	355
Assets	1,197,673	46,750	1,244,423
1998			
Net operating revenues	\$ 230,564	\$ 402	\$ 230,966
Income (loss) from operations	86,981	(117)	86,864
Income (loss) from financial investments	-	(17,192)	(17,192)
Net income (loss) from continuing operations	37,530	(10,579)	26,951
Net income from discontinued segment	-	350	350
Assets	1,120,706	71,030	1,191,736
1997			
Net operating income	\$ 220,660	\$ 450	\$ 221,110
Income from operations	88,127	116	88,243
Income from financial investments	-	468	468
Net income from continuing operations	41,226	1,652	42,878
Net income from discontinued segment	-	181	181
Assets	1,049,289	62,328	1,111,617

Income Taxes

NW Natural uses the balance sheet method of accounting for deferred income taxes. Deferred tax liabilities and assets reflect the expected future tax consequences, based on enacted tax law, of temporary differences between the tax basis of assets and liabilities and their financial reporting amounts (see Note 8).

Consistent with rate and accounting instructions of regulatory authorities, deferred income taxes are not currently collected for those temporary income tax differences where the prescribed regulatory accounting methods do not provide for current recovery in rates. NW Natural has recorded a regulatory tax asset for amounts pending recovery from customers in future rates. These amounts are primarily differences between the book and tax basis of net utility plant in service. This asset balance was \$51.1 million and \$56.9 million at Dec. 31, 1999 and 1998, respectively.

Investment tax credits on utility property additions and leveraged leases which reduce income taxes payable are deferred for financial statement purposes and are amortized over the life of the related property or lease. Investment and energy tax credits generated by non-regulated subsidiaries are amortized over a period of one to five years.

Other Income (Expense)

Other income (expense) consists of interest income; gain on sale of assets; investment income (loss) of Financial Corporation, including write-downs due to asset impairments in 1998; and other miscellaneous income from merchandise sales, rents, an aircraft lease and other items.

Earnings Per Share

Basic earnings per share are computed based on the weighted average number of common shares outstanding each year. Diluted earnings per share reflect the potential effects of the conversion of any outstanding convertible debentures and the exercise of outstanding stock options. Diluted earnings are calculated as follows:

Thousands, except per share amounts	1999	1998	1997
Earnings applicable to common stock	\$ 42,781	\$ 24,724	\$ 40,413
Debt interest less taxes	415	431	455
Net income available for diluted common stock	\$ 43,196	\$ 25,155	\$ 40,868
Average common shares outstanding	24,976	24,233	22,698
Stock options	21	41	32
Convertible debentures	471	489	518
Diluted average common shares outstanding	25,468	24,763	23,248
Diluted earnings per share of common stock	\$ 1.70	\$ 1.02	\$ 1.76

2 Consolidated Subsidiary Operations and Discontinued Segment

At Dec. 31, 1999, the Company had one active subsidiary, Financial Corporation, a wholly-owned subsidiary, and one discontinued segment, Canor, a majority-owned subsidiary.

NNG Financial Corporation

Financial Corporation provided short-term financing for Canor and has several financial investments, including investments as a limited partner in solar electric generating systems, windpower electric generating projects, a hydroelectric facility and low-income housing projects. It also holds interests in certain gas producing properties in the western United States (see Note 9). During the fourth quarter of 1998, Financial Corporation

Notes to Consolidated Financial Statements

recorded asset impairment charges resulting from the application of an impairment model based on SFAS No. 121, "Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of," to limited partnership investments in solar electric, wind-power electric and hydroelectric generation projects in California. The pre-tax write-down of \$16.6 million is included in other income (expense) in the consolidated statements of income.

Canor Energy, Ltd.

On Dec. 16, 1999, the Company decided to sell its interest in Canor, an Alberta, Canada corporation engaged in natural gas and oil exploration, development and production in Alberta and Saskatchewan, Canada. Canor has been reclassified as a discontinued segment and its operating revenues and expenses are included in net income from a discontinued segment, net of tax of \$0.3 million, \$(2.4) million and \$0.1 million for 1999, 1998 and 1997, respectively. The balance sheets and statements of cash flows and capitalization for prior years have not been restated. At Dec. 31, 1999, the Company's investment in Canor was \$29.2 million and is shown as investment in discontinued segment in current assets. Net assets of Canor at Dec. 31, 1998 and 1997 were \$31.9 million and \$19.8 million, respectively.

Canor began operations in 1990 as a wholly-owned indirect subsidiary. In 1998, Canor acquired all of the capital stock of Southlake Energy, Inc. (Southlake), an indirect subsidiary of NIPSCO Industries, Inc. (NI), in exchange for shares of common stock representing a 34 percent interest in Canor. Subsequent to year-end 1999, the Company acquired NI's interest in Canor and then sold 100 percent of Canor's stock. The sale of Canor in January 2000 will result in an estimated gain of \$2.5 million, net of tax.

During 1998, Canor recorded asset write-downs of \$4.2 million for its oil and gas production properties. Approximately half of the write-downs were due to impairment charges under SFAS No. 121 resulting from the impact of low oil prices on Canor's oil properties in Canada. The additional write-downs were due to determinations that some of Canor's oil and gas wells were no longer productive due to water encroachment.

3 Capital Stock

Common Stock

At Dec. 31, 1999, NW Natural had reserved 36,925 shares of common stock for issuance under the Employee Stock Purchase Plan, 353,497 shares under its Dividend Reinvestment and Stock Purchase Plan, 787,337 shares under its 1985 Stock Option Plan (see Note 4), 531,636 shares for future conversions of its 7-1/4% Convertible Debentures and 3,000,000 shares under the Shareholder Rights Plan.

Redeemable Preference Stock

The \$6.95 Series of Preference Stock is not redeemable prior to Dec. 31, 2002, but is subject to mandatory redemption on that date.

Redeemable Preferred Stock

The mandatory preferred stock redemption requirements aggregate \$0.8 million in 2000, 2001, 2002, 2003 and 2004. These requirements are non-cumulative. At any time NW Natural is in default on any of its obligations to make the prescribed sinking fund payments, it may not pay cash dividends on common stock or preference stock. Upon involuntary liquidation, all series of redeemable preferred stock are entitled to their stated value.

The remaining shares of the \$4.68 Series of redeemable preferred stock were redeemed on June 2, 1997.

The redeemable preferred stock is callable at stipulated prices, plus accrued dividends. At Dec. 31, 1999, the redemption price for the \$4.75 Series was \$100 per share. Shares of the \$7.125 Series are redeemable on or after May 1, 2000 at a price of \$103.80 per share decreasing each year thereafter to \$100 per share on or after May 1, 2008.

The following table shows the changes in the number of shares of NW Natural's capital stock and the premium on common stock for the years 1999, 1998 and 1997:

	Shares			Premium on common stock (thousands)
	Common stock	Redeemable preference stock	Redeemable preferred stock	
Balance, Dec. 31, 1996	22,555,184	250,000	137,490	\$ 176,977
Sales to employees	27,525	-	-	514
Sales to stockholders	211,532	-	-	4,561
Exercise of stock options - net	43,216	-	-	496
Conversion of convertible debentures to common	26,871	-	-	450
Sinking fund purchases	-	-	(13,205)	-
Balance, Dec. 31, 1997	22,864,328	250,000	124,285	182,998
Sales to the public	1,725,000	-	-	40,789
Sales to employees	17,637	-	-	366
Sales to stockholders	194,835	-	-	4,644
Exercise of stock options - net	22,946	-	-	377
Conversion of convertible debentures to common	28,375	-	-	475
Sinking fund purchases	-	-	(9,300)	1
Balance, Dec. 31, 1998	24,853,121	250,000	114,985	229,650
Sales to employees	13,619	-	-	295
Sales to stockholders	188,821	-	-	4,028
Exercise of stock options - net	18,355	-	-	334
Conversion of convertible debentures to common	18,022	-	-	301
Sinking fund purchases	-	-	(9,342)	-
Balance, Dec. 31, 1999	25,091,938	250,000	105,643	\$ 234,608

4 Stock Option and Purchase Plans

NW Natural's 1985 Stock Option Plan (Plan) authorizes an aggregate of 1,200,000 shares of common stock for issuance as incentive or non-statutory stock options. These options may be granted only to officers and key employees designated by a committee of NW Natural's Board of Directors.

All options are granted at an option price not less than the market value at the date of grant and may be exercised for a period not exceeding 10 years from the date of grant. Option holders may exchange shares they have owned for at least one year, at the current market price, to purchase shares at the option price.

Since the Plan's inception in 1985, options on 769,173 shares of common stock have been granted at prices ranging from \$11.75 to \$27.875 per share, and options on 66,296 shares have expired. NW Natural applies Accounting Principles Board (APB) Opinion No. 25, "Accounting for Stock Issued to Employees," and related interpretations in accounting for its stock-based compensation plans. Accordingly, no compensation cost has been recognized for either the Plan or the Employee Stock Purchase Plan. If compensation cost for awards under NW Natural's two stock-based compensation plans had been determined based on the fair value at the grant dates using the method prescribed by SFAS No. 123, "Accounting for Stock-Based Compensation," net income and earnings per share would have been reduced to the pro forma amounts indicated below:

	1999	1998	1997
Earnings applicable to common stock (\$000):			
As reported	\$ 42,781	\$ 24,724	\$ 40,413
Pro forma	42,525	24,518	40,302
Basic earnings per share			
As reported	\$ 1.71	\$ 1.02	\$ 1.78
Pro forma	1.70	1.01	1.78
Diluted earnings per share			
As reported	\$ 1.70	\$ 1.02	\$ 1.76
Pro forma	1.69	1.01	1.75

For purposes of determining the pro forma expense, the fair value of each option is estimated on the grant date using the Black-Scholes option pricing model with the following weighted-average assumptions used for grants in 1998 and 1996, respectively: a dividend yield of 4.7 and 5.0 percent; expected volatility of 27 and 22 percent; risk-free interest rates of 5 and 6 percent; and expected lives of seven years.

Information regarding the Plan is summarized as follows:

	Options		
	1999	1998	1997
Outstanding, beginning of year	320,032	227,733	308,663
\$16.59 Options:			
Exchanged by holders	-	(2,608)	(20,598)
Exercised	-	(2,264)	(10,432)
\$24.00 Options:			
Exchanged by holders	-	-	(7,184)
Exercised	(7,500)	(8,082)	(12,243)
Expired	-	-	(4,773)
\$20.17 Options:			
Exchanged by holders	(1,465)	-	-
Exercised	(5,755)	(247)	(500)
\$20.92 Options:			
Exchanged by holders	-	(1,147)	(5,159)
Exercised	(5,100)	(12,353)	(20,041)
\$27.875 Options:			
Granted	-	116,000	-
Expired	(10,000)	(1,000)	-
\$26.75 Options:			
Granted	-	4,000	-
Outstanding, end of year	290,212	320,032	227,733
Available for grant, end of year	497,125	487,125	606,125

NW Natural's Employee Stock Purchase Plan allows employees to purchase common stock at 92 percent of the average bid and ask market price on the subscription date which is set annually. Each eligible employee may purchase up to 900 shares through payroll deduction over a six to 12 month period.

5 Long-Term Debt

The issuance of first mortgage bonds, including secured medium-term notes, under the Mortgage and Deed of Trust (Mortgage) is limited by property, earnings and other provisions of the Mortgage. The Mortgage constitutes a first mortgage lien on substantially all of NW Natural's utility property.

The 7-1/4% Series of Convertible Debentures may be converted at any time into 50-1/4 shares of common stock for each \$1,000 face value (\$19.90 per share).

The maturities for the five years ending Dec. 31, 2004, on the long-term debt outstanding at Dec. 31, 1999 amount to: \$10.0 million in 2000, \$20.0 million in 2001, \$40.0 million in 2002, \$20.0 million in 2003 and no maturity in 2004.

6 Notes Payable and Lines of Credit

NW Natural has available through Sept. 30, 2000, committed lines of credit with five commercial banks totaling \$120 million, consisting of a primary fixed amount of \$60 million plus an excess amount of up to \$60 million available as needed. Financial Corporation has available through Sept. 30, 2000, committed lines of credit with two commercial banks totaling \$20 million. Financial Corporation's lines are supported by the guaranty of NW Natural.

Under the terms of these lines of credit, which are used as backup lines for commercial paper programs, NW Natural and Financial Corporation pay commitment fees but are not required to maintain compensating bank balances. The interest rates on borrowings under these lines of credit are based on current market rates as negotiated. There were no outstanding balances on these lines of credit as of Dec. 31, 1999 or 1998.

During 1998, NW Natural entered into an additional \$18 million line of credit with a commercial bank for the purpose of constructing a new headquarters building for the Port of Portland on property owned by NW Natural. At Dec. 31, 1999, there was no outstanding balance. At Dec. 31, 1998, the outstanding balance was \$6 million.

NW Natural and Financial Corporation issue domestic commercial paper, which is supported by the committed bank lines, under agency agreements with a commercial bank. Financial Corporation's commercial paper is supported by the guaranty of NW Natural. The amounts and average interest rates of commercial paper outstanding were as follows at Dec. 31:

Thousands	1999		1998	
	Amount	Rate	Amount	Rate
NW Natural	\$ 94,149	5.8%	\$ 75,400	5.2%
Financial Corporation	-	-	-	-
Total	\$ 94,149		\$ 75,400	

Notes to Consolidated Financial Statements

7 Pension and Other Postretirement Benefits

NW Natural has two qualified non-contributory defined benefit plans covering all regular employees with more than one year of service, a non-qualified supplemental pension plan for eligible executive officers and other postretirement benefit plans for its employees. The following tables provide a recon-

ciliation of the changes in the plans' benefit obligations and fair value of assets over the three-year period ended Dec. 31, 1999 and a statement of the funded status as of Dec. 31, 1999, 1998 and 1997:

Thousands	1999	Pension Benefits			Other Benefits	
		1998	1997	1999	1998	1997
Change in benefit obligation:						
Benefit obligation at Jan. 1	\$142,619	\$127,879	\$112,281	\$ 15,717	\$ 12,332	\$ 10,863
Service cost	4,259	3,430	2,858	162	288	238
Interest cost	9,379	9,282	8,424	715	891	844
Expected benefits paid	(6,911)	(6,762)	(6,041)	(766)	(578)	(570)
Plan amendments	4,057	(2,948)	3,175	(1,583)	-	-
Net actuarial (gain) loss	(17,205)	11,738	7,182	(2,343)	2,784	957
Benefit obligation at Dec. 31	<u>136,198</u>	<u>142,619</u>	<u>127,879</u>	<u>11,902</u>	<u>15,717</u>	<u>12,332</u>
Change in plan assets:						
Fair value of plan assets at Jan. 1	175,554	158,118	134,375	-	-	-
Actual return on plan assets	24,104	23,532	29,298	-	-	-
Employer contributions	680	666	529	766	578	570
Benefits paid	(6,911)	(6,762)	(6,084)	(766)	(578)	(570)
Fair value of plan assets at Dec. 31	<u>193,427</u>	<u>175,554</u>	<u>158,118</u>	<u>-</u>	<u>-</u>	<u>-</u>
Funded status:						
Funded status at Dec. 31	57,229	32,935	30,239	(11,902)	(15,717)	(12,332)
Unrecognized transition obligation	1,035	1,072	1,027	5,667	7,896	8,460
Unrecognized prior service cost	9,184	5,601	10,054	210	-	-
Unrecognized net actuarial (gain) loss	(67,656)	(40,936)	(44,060)	(755)	1,553	(1,230)
Net amount recognized	<u>\$ (208)</u>	<u>\$ (1,328)</u>	<u>\$ (2,740)</u>	<u>\$ (6,780)</u>	<u>\$ (6,268)</u>	<u>\$ (5,102)</u>
Amounts recognized in the consolidated balance sheets:						
Prepaid benefit cost	\$ 7,712	\$ 5,900	\$ 3,271	\$ -	\$ -	\$ -
Accrued benefit liability	(8,578)	(8,902)	(9,987)	(6,780)	(6,268)	(5,102)
Intangible asset	658	1,674	3,976	-	-	-
Net amount recognized	<u>\$ (208)</u>	<u>\$ (1,328)</u>	<u>\$ (2,740)</u>	<u>\$ (6,780)</u>	<u>\$ (6,268)</u>	<u>\$ (5,102)</u>

The Company's non-qualified supplemental pension plan was the only pension plan with an accumulated benefit obligation in excess of plan assets. The plan's accumulated benefit obligation was \$9.8 million, \$11.1 million and \$13.5 million at Dec. 31, 1999, 1998 and 1997, respectively. There were no plan assets in the non-qualified plan due to the nature of the plan, but the Company funds its obligation with trust-owned life insurance. The amount of the life insurance coverage is designed to provide sufficient returns to recover all costs of the plan. The

Company's plans for postretirement benefits other than pensions also have no plan assets. The aggregate benefit obligation for those plans is \$11.9 million, \$15.7 million and \$12.3 million at Dec. 31, 1999, 1998 and 1997, respectively.

The following tables provide the components of net periodic cost for the plans for the years ended Dec. 31, 1999 and 1997 and the assumptions used in the measurement of these costs and the Company's benefit obligations:

Thousands	1999	Pension Benefits			Other Benefits	
		1998	1997	1999	1998	1997
Service cost	\$ 4,259	\$ 3,430	\$ 2,858	\$ 162	\$ 288	\$ 238
Interest cost	9,379	9,282	8,424	715	890	845
Expected return on plan assets	(15,570)	(13,926)	(10,915)	-	-	-
Amortization of transition (asset) obligation	37	(45)	(45)	436	564	564
Amortization of prior service cost	827	1,481	865	-	-	-
Recognized actuarial (gain) loss	(781)	(969)	(676)	(35)	2	(87)
Special termination benefits	1,410	-	-	-	-	-
Net periodic benefit cost	<u>\$ (439)</u>	<u>\$ (747)</u>	<u>\$ 511</u>	<u>\$ 1,278</u>	<u>\$ 1,744</u>	<u>\$ 1,560</u>
Weighted average assumptions as of Dec. 31:						
Discount rate	7.75%	6.75%	7.25%	7.75%	6.75%	7.25%
Expected return on plan assets	10.00%	10.00%	9.00%	n/a	n/a	n/a
Rate of compensation increase	4.25%-5.0%	4.50%	4.50%	n/a	n/a	n/a

The assumed health care cost trend used in measuring the accumulated postretirement benefit obligation was 9.0 percent during 1999. These rates were assumed to decrease gradually each year to a rate of 4.5 percent for 2005 and remain at that level thereafter.

Assumed health care cost trend rates have a significant effect on the amounts reported for the health care plans. A 1 percent change in assumed health care cost trend rates would have the following effects:

	1% Increase	1% Decrease
Effect on the total service and interest cost components of net periodic postretirement health care benefit cost	\$ 52,923	\$ (49,392)
Effect on the health care component of the accumulated postretirement benefit obligation	\$446,471	\$(407,863)

NW Natural also has a qualified defined benefit contribution plan under Internal Revenue Code Section 401(k) and a non-qualified deferred compensation plan for eligible employees. These plans are designed to enhance the existing retirement program of employees and to assist them in strengthening their financial security by providing an incentive to save and invest regularly. NW Natural's contributions to these plans were \$1.0 million in 1999 and \$1.1 million in both 1998 and 1997.

8 Income Taxes

A reconciliation between income taxes calculated at the statutory federal tax rate and the tax provision reflected in the financial statements is as follows:

Thousands	1999	1998	1997
Computed income taxes based on statutory federal income tax rate of 35%	\$ 24,336	\$ 14,544	\$ 22,369
Increase (reduction) in taxes resulting from:			
Differences between book and tax depreciation	222	310	221
Current state income tax, net of federal tax benefit	2,450	1,976	1,944
Federal income tax credits	(357)	(574)	(360)
Restoration of investment and energy tax credits	(855)	(700)	(844)
Removal costs	(485)	(424)	(544)
Reversal of amounts provided in prior years	(655)	(361)	(1,455)
Gains on Company-owned life insurance	(703)	(504)	(470)
Other—net	638	337	173
Total provision for income taxes	\$ 24,591	\$ 14,604	\$ 21,034

The provision for income taxes consists of the following:

Thousands	1999	1998	1997
Income taxes currently payable:			
Federal	\$ 20,518	\$ 13,004	\$ 5,855
State	3,288	1,790	(1,644)
Total	23,806	14,794	4,211
Deferred taxes—net:			
Federal	1,283	(876)	13,032
State	357	1,386	4,635
Total	1,640	510	17,667
Investment and energy tax credits restored:			
From utility operations	(800)	(645)	(800)
From subsidiary operations	(55)	(55)	(44)
Total	(855)	(700)	(844)
Total provision for income taxes	\$ 24,591	\$ 14,604	\$ 21,034
Percentage of pretax income	35%	35%	33%

Deferred tax assets and liabilities are comprised of the following:

Thousands	1999	1998
Deferred tax liabilities:		
Property, plant and equipment	\$ 114,664	\$ 112,495
Regulatory asset	15,894	21,388
Total	130,558	133,883
Deferred tax assets:		
Regulatory liability	(10,784)	(14,684)
Other deferred assets	5,192	8,257
Total	(5,592)	(6,427)
Net accumulated deferred income tax liability	\$ 136,150	\$ 140,310

9 Property and Investments

The following table sets forth the major classifications of NW Natural's utility plant and accumulated provision for depreciation at Dec. 31:

Thousands	1999		1998	
	Amount	Average Depreciation Rate	Amount	Average Depreciation Rate
Transmission and distribution	\$1,086,891	3.3%	\$ 995,214	3.5%
Storage	98,750	2.6%	98,172	2.1%
General	80,509	4.7%	78,729	7.4%
Intangible and other	45,173	21.1%	49,628	8.6%
Utility plant in service	1,311,323	4.0%	1,221,743	3.9%
Gas stored long-term	11,301		11,301	
Work in progress	8,791		6,646	
Total utility plant	1,331,415		1,239,690	
Less accumulated depreciation	436,386		404,117	
Utility plant—net	\$ 895,029		\$ 835,573	

The following table summarizes the Company's investments in non-utility plant at Dec. 31:

Thousands	1999	1998
Canadian oil and gas properties and other	\$ -	\$ 74,503
Port of Portland building	-	6,016
Dock, land and oil station	3,565	3,565
Other	4,983	4,966
Total non-utility plant	8,548	89,050
Less accumulated depreciation	7,654	29,927
Non-utility plant—net	\$ 894	\$ 59,123

Investments in Canadian oil and gas properties and the Port of Portland building are included in current assets at Dec. 31, 1999. The Canadian oil and gas properties are included in investment in a discontinued segment and the Port of Portland building is classified as property held for sale.

The following table summarizes the Company's investments in affiliated entities accounted for under the equity and cost methods, and its investment in a leveraged lease at Dec. 31:

Thousands	1999	1998
Electric generation	\$ 5,165	\$ 5,509
Aircraft leveraged lease	7,925	8,439
Gas pipeline and other	2,919	1,950
Long-term notes receivable	548	816
Total investments and other	\$ 16,557	\$ 16,714

Notes to Consolidated Financial Statements

Financial Corporation has ownership interests ranging from 4.0 to 5.3 percent in solar electric generation plants located near Barstow, California. Power generated by these plants is sold to Southern California Edison Company under long-term contracts.

Financial Corporation also has ownership interests ranging from 8.5 to 41 percent in U. S. Windpower Partners electric generation projects located near Livermore and Palm Springs, California. The wind-generated power is sold to Pacific Gas and Electric Company and Southern California Edison Company under long-term contracts.

In 1987, the Company invested in a Boeing 737-300 aircraft which was leased to Continental Airlines for 20 years under a leveraged lease agreement.

10 Fair Value of Financial Instruments

The estimated fair values of NW Natural's financial instruments have been determined using available market information and appropriate valuation methodologies. The following is a list of financial instruments whose carrying values are sensitive to market conditions:

Thousands	December 31, 1999		December 31, 1998	
	Carrying Amount	Estimated Fair Value	Carrying Amount	Estimated Fair Value
Redeemable preference stock	\$ 25,000	\$ 23,500	\$ 25,000	\$ 25,250
Redeemable preferred stock	\$ 10,564	\$ 9,618	\$ 11,499	\$ 11,520
Long-term debt including amount due within one year	\$ 406,379	\$ 415,412	\$ 376,738	\$ 436,224

Fair value of the redeemable preference stock and the redeemable preferred stock was estimated using quoted market prices. Interest rates that are currently available to the Company for issuance of debt with similar terms and remaining maturities were used to estimate fair value for debt issues.

The carrying amount of long-term notes receivable was stated at estimated fair value at Dec. 31, 1999 and 1998.

11 Use of Financial Derivatives

In connection with its Canadian gas purchase commitments, NW Natural uses foreign currency forward contracts to hedge against fluctuations in currency values. The forward contracts have terms ranging up to 12 months. Such contracts are purchased in an amount up to 100 percent but not less than 80 percent of estimated daily requirements for commodity gas purchased in Canadian currency from gas suppliers in Canada. The notional amount of these contracts at Dec. 31, 1999 and 1998, totaled \$8.6 million and \$7.9 million, respectively, and, if settled on those dates, NW Natural would have realized a negligible gain in 1998 and a gain of \$0.2 million in 1999.

As part of an overall strategy to maintain an acceptable level of exposure to the risk of gas price fluctuation, NW Natural has developed a targeted mix of fixed-rate and cap-pro-

TECTED natural gas commodity contracts versus variable rate contracts. To efficiently manage this mix, NW Natural utilizes natural gas commodity swap and cap agreements to effectively convert the gas purchase commitments into an acceptable fixed-rate and capped rate mix. NW Natural uses natural gas commodity swap agreements to convert certain long-term gas purchase contracts from floating prices to fixed prices. Under the commodity swap agreements, NW Natural receives or makes payments based on the differential between a specified price and the actual price of natural gas as measured by price indices relating to the market area where it purchases the gas. The swap agreements have terms ranging up to 12 months. At Dec. 31, 1999 and 1998, the Company had swap agreements with broker-dealers to cover notional quantities of 100,000 and 136,741 MMBtu per day of gas, respectively. Under the swap agreements in effect at Dec. 31, 1999 and 1998, the Company paid fixed prices averaging \$2.396 and \$1.898 per MMBtu, respectively. In return, it received a price that varied from month to month with market conditions. The notional amounts of the swap agreements at Dec. 31, 1999 and 1998 were \$57.7 million and \$48.7 million, respectively, and, if settled on those dates, NW Natural would have realized a loss of \$6.9 million and a gain of \$0.6 million, respectively. (See Note 1 for a summary of accounting for gains and losses.)

Canor, a discontinued segment, also manages its commodity price risk through the use of gas and oil commodity swaps and collars. At Dec. 31, 1999 and 1998, the notional amount of these contracts was \$4.3 million and \$1.4 million, respectively, and, if settled on those dates, Canor would have realized a loss of \$0.8 million in 1999 and a negligible gain in 1998.

12 Commitments and Contingencies

Lease Commitments

The Company leases land, buildings and equipment under agreements that expire in various years through 2004. Rental expense under operating leases was \$5.2 million, \$6.0 million and \$6.4 million for the years ended Dec. 31, 1999, 1998 and 1997, respectively. The table below reflects the future minimum lease payments due under non-cancelable leases at Dec. 31, 1999. Such payments total \$23.0 million for operating leases. The net present value of such payments on capital leases was \$1.1 million after deducting imputed interest of \$0.1 million. These commitments principally relate to the lease of the Company's office headquarters, underground gas storage facilities, vehicles and computer systems.

Millions	2000	2001	2002	2003	2004	Later years
Operating leases	\$ 4.5	\$ 4.3	\$ 4.0	\$ 2.6	\$ 2.0	\$ 5.6
Capital leases	\$ 0.4	\$ 0.4	\$ 0.4	-	-	-
Minimum lease payments	\$ 4.9	\$ 4.7	\$ 4.4	\$ 2.6	\$ 2.0	\$ 5.6

Purchase Commitments

NW Natural has signed agreements providing for the availability of firm pipeline capacity under which it must 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. In addition, NW Natural has entered into long-term agreements to release firm pipeline capacity. The aggregate amounts of these agreements were as follows at Dec. 31, 1999:

Thousands	Capacity Purchase Agreements	Capacity Release Agreements
2000	\$ 79,982	\$ 3,870
2001	79,299	3,870
2002	76,359	3,870
2003	71,967	3,870
2004	49,664	3,870
2005 through 2028	<u>358,488</u>	<u>22,575</u>
Total	715,759	41,925
Less: Amount representing interest	<u>210,748</u>	<u>11,566</u>
Total at present value	<u>\$ 505,011</u>	<u>\$ 30,359</u>

NW Natural's total payments of fixed charges under capacity purchase agreements in 1999, 1998 and 1997 were \$78.2 million, \$76.2 million and \$76.7 million, respectively. Included in the amounts for 1999, 1998 and 1997 were reductions for capacity release sales totaling \$3.8 million, \$3.9 million and \$4.2 million, respectively. In addition, NW Natural is required to pay per-unit charges based on the actual quantities shipped under the agreements. In certain of NW Natural's 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.

Environmental Matters

NW Natural owns property in Linnton, Oregon, that is the site of a former gas manufacturing plant that was closed in 1956. In 1993, pursuant to Oregon Department of Environmental Quality (ODEQ) procedures, NW Natural submitted a notice of intent to participate in the ODEQ's Voluntary Cleanup Program and, in 1994, the site was listed on ODEQ's Confirmed Release List and Inventory. During 1995, initial tests revealed environmental contamination, but the extent or the estimated cost of remediation cannot yet be determined.

During 1998, the ODEQ and the U.S. Environmental Protection Agency (EPA) completed a study of sediments in a 5.5 mile segment of the Willamette River that includes the area adjacent to the site. Remediation of the site may be affected by the sediments management plan now being developed in response to the ODEQ/EPA sediments study.

Since 1993, NW Natural has recorded expenses of \$2.6 million for the estimated costs of consultants' fees, ODEQ oversight cost reimbursements, and the voluntary investigation, plus an estimate for costs of the continuing investigation. NW Natural expects that its costs of investigation and any remediation for which it may be responsible should be recoverable, in large part, from insurance. In the event these costs are not recovered from insurance, NW Natural will seek recovery through future rates.

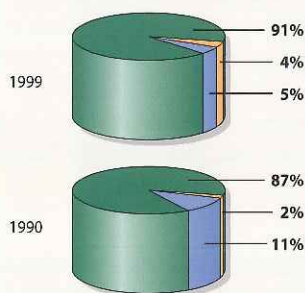
Litigation

In July 1995, a jury in an Oregon state court returned a verdict against NW Natural in the case of *Northwest Natural Gas Company v. Chase Gardens, Inc.* (Lane County Circuit Court Case No. 16-91-01370). In the fourth quarter of 1996, after the Oregon Court of Appeals affirmed the trial court decision, NW Natural recorded charges to operating expense and interest expense equivalent to 15 cents per share, as a reserve against payment of the judgment, related costs and post-judgment interest. NW Natural petitioned for review by the Oregon Supreme Court, which issued its opinion in May 1999 reversing the Court of Appeals' decision, overturning the trial court verdict on the larger of the two claims in the case and remanding the case to the Court of Appeals for further proceedings on NW Natural's appeal of the judgment on the smaller of the two claims. Reflecting the Supreme Court's decision, NW Natural reduced the litigation reserve by a total of \$3.9 million in the second quarter of 1999, reducing operating expense by \$3.0 million and interest expense by \$0.9 million. The Court of Appeals subsequently issued an opinion in favor of NW Natural on the remaining issues in the case. Based on that decision, NW Natural reversed the remaining reserve balance of \$2.7 million at Dec. 31, 1999, reducing operating expense for 1999 by \$1.9 million and interest expense by \$0.8 million.

The Company is party to certain other legal actions in which claimants seek material amounts. Although it is impossible to predict the outcome with certainty, based upon the opinions of legal counsel, management does not expect disposition of these matters to have a materially adverse effect on the Company's financial position, results of operations or cash flows.

Comparative Consolidated Statements of Income

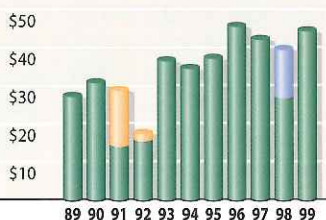
UTILITY GAS REVENUES (BY CUSTOMER CLASS)



- RESIDENTIAL, COMMERCIAL AND INDUSTRIAL FIRM
- INDUSTRIAL INTERRUPTIBLE
- TRANSPORTATION

Revenues from residential, commercial and industrial firm sales have consistently exceeded 87 percent of total gas revenues in the 1990s.

NET INCOME (IN MILLION OF DOLLARS)



- NET INCOME
- REDUCTION OF \$2.8 MILLION NET INCOME IN 1992 AND \$14.4 MILLION NET INCOME IN 1991 FROM THE LOSS ON AGRICO COGENERATION CORPORATION
- REDUCTION OF \$10.8 MILLION NET INCOME FOR FINANCIAL CORPORATION AND \$1.7 MILLION FOR CANOR FROM ASSET IMPAIRMENT CHARGES IN 1998

The Company earned \$45.3 million in net income in 1999.

<i>Thousands, except per share amounts (year ended December 31)</i>	1999 [†]	1998 [†]
Operating revenues:		
Gross operating revenues*	\$ 455,834	\$ 404,390
Cost of sales*	<u>212,197</u>	<u>173,424</u>
Net operating revenues*	243,637	230,966
Operating expenses:		
Operations and maintenance	73,209	78,226
Taxes other than income taxes	24,652	21,939
Depreciation, depletion and amortization	51,008	43,937
Loss on cogeneration facility	-	-
Total operating expenses	<u>148,869</u>	<u>144,102</u>
Income from operations*	94,768	86,864
Other income (expense)*	4,816	(13,723)
Interest charges - net	<u>30,052</u>	<u>31,586</u>
Income before income taxes	69,532	41,555
Income taxes	<u>24,591</u>	<u>14,604</u>
Net income from continuing operations	44,941	26,951
Net income from discontinued segment	<u>355</u>	<u>350</u>
Net income	45,296	27,301
Redeemable preferred and preference stock dividend requirements	<u>2,515</u>	<u>2,577</u>
Earnings applicable to common stock	\$ 42,781	\$ 24,724
Average common shares outstanding	24,976	24,233
Basic earnings per share of common stock		
From continuing operations	\$ 1.70	\$ 1.01
From discontinued segment	<u>0.01</u>	<u>0.01</u>
Total basic earnings per share	<u>\$ 1.71</u>	<u>\$ 1.02</u>
Diluted earnings per share of common stock		
From continuing operations	\$ 1.69	\$ 1.01
From discontinued segment	<u>0.01</u>	<u>0.01</u>
Total diluted earnings per share	<u>\$ 1.70</u>	<u>\$ 1.02</u>
Dividends per share of common stock	<u>\$ 1.225</u>	<u>\$ 1.22</u>

See Notes to Consolidated Financial Statements

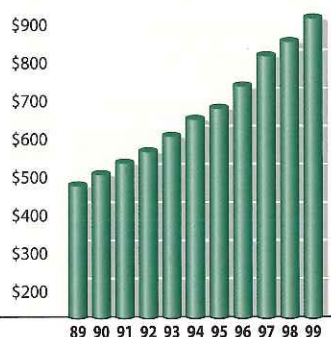
* Interest on deferred regulatory accounts for years prior to 1998 was reclassified from gross operating revenues or cost of sales to other income (expense).

† Net income from discontinued segment prior to 1996 is not available.

1997†	1996†	1995	1994	1993	1992	1991	1990	1989
\$ 351,709	\$ 370,826	\$ 355,627	\$ 367,861	\$ 358,452	\$ 274,397	\$ 295,933	\$ 296,281	\$ 260,924
<u>130,599</u>	<u>141,842</u>	<u>142,025</u>	<u>162,199</u>	<u>138,751</u>	<u>101,672</u>	<u>110,294</u>	<u>113,984</u>	<u>103,163</u>
221,110	228,984	213,602	205,662	219,701	172,725	185,639	182,297	157,761
73,864	76,204	72,018	70,881	70,723	64,249	65,529	64,746	53,557
19,952	21,597	24,181	24,263	25,561	20,865	21,104	21,288	19,108
39,051	37,971	40,594	38,058	39,683	33,035	33,623	27,967	23,193
<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>4,575</u>	<u>23,200</u>	<u>-</u>	<u>-</u>
<u>132,867</u>	<u>135,772</u>	<u>136,793</u>	<u>133,202</u>	<u>135,967</u>	<u>122,724</u>	<u>143,456</u>	<u>114,001</u>	<u>95,858</u>
88,243	93,212	76,809	72,460	83,734	50,001	42,183	68,296	61,903
4,138	6,891	9,055	8,393	1,116	(542)	1,106	390	1,056
<u>28,469</u>	<u>26,711</u>	<u>25,679</u>	<u>24,919</u>	<u>25,107</u>	<u>26,733</u>	<u>26,591</u>	<u>24,333</u>	<u>18,770</u>
63,912	73,392	60,185	55,934	59,743	22,726	16,698	44,353	44,189
<u>21,034</u>	<u>27,118</u>	<u>22,120</u>	<u>20,473</u>	<u>22,096</u>	<u>6,951</u>	<u>2,321</u>	<u>13,629</u>	<u>15,769</u>
42,878	46,274	38,065	35,461	37,647	15,775	14,377	30,724	28,420
<u>181</u>	<u>519</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
43,059	46,793	38,065	35,461	37,647	15,775	14,377	30,724	28,420
<u>2,646</u>	<u>2,723</u>	<u>2,806</u>	<u>2,983</u>	<u>3,488</u>	<u>2,560</u>	<u>2,593</u>	<u>2,729</u>	<u>2,814</u>
<u>\$ 40,413</u>	<u>\$ 44,070</u>	<u>\$ 35,259</u>	<u>\$ 32,478</u>	<u>\$ 34,159</u>	<u>\$ 13,215</u>	<u>\$ 11,784</u>	<u>\$ 27,995</u>	<u>\$ 25,606</u>
22,698	22,391	21,817	19,943	19,611	17,864	17,547	17,283	16,199
\$ 1.77	\$ 1.95	\$ 1.62	\$ 1.63	\$ 1.74	\$ 0.74	\$ 0.67	\$ 1.62	\$ 1.58
<u>0.01</u>	<u>0.02</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
<u>\$ 1.78</u>	<u>\$ 1.97</u>	<u>\$ 1.62</u>	<u>\$ 1.63</u>	<u>\$ 1.74</u>	<u>\$ 0.74</u>	<u>\$ 0.67</u>	<u>\$ 1.62</u>	<u>\$ 1.58</u>
\$ 1.75	\$ 1.92	\$ 1.60	\$ 1.61	\$ 1.72	\$ 0.74	\$ 0.67	\$ 1.59	\$ 1.54
<u>0.01</u>	<u>0.02</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
<u>\$ 1.76</u>	<u>\$ 1.94</u>	<u>\$ 1.60</u>	<u>\$ 1.61</u>	<u>\$ 1.72</u>	<u>\$ 0.74</u>	<u>\$ 0.67</u>	<u>\$ 1.59</u>	<u>\$ 1.54</u>
<u>\$ 1.205</u>	<u>\$ 1.20</u>	<u>\$ 1.18</u>	<u>\$ 1.173</u>	<u>\$ 1.167</u>	<u>\$ 1.147</u>	<u>\$ 1.127</u>	<u>\$ 1.10</u>	<u>\$ 1.073</u>

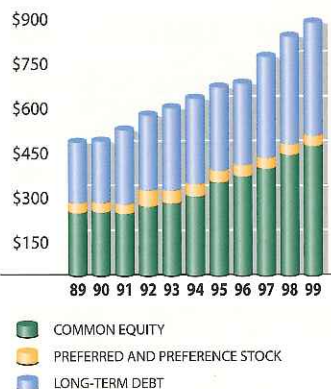
Comparative Consolidated Balance Sheets

NET UTILITY PLANT (IN MILLIONS OF DOLLARS)



Utility plant continued to increase in 1999 as a result of customer growth and investments in technology and gas storage.

CAPITALIZATION (IN MILLIONS OF DOLLARS)



\$5.4 million in common stock and \$40 million in Medium-Term Notes were issued in 1999. \$30.6 million in cash dividends were paid to common shareholders.

Thousands of dollars (December 31)

Assets:

Plant and property:

Utility plant	\$1,331,415	\$1,239,690
Less accumulated depreciation	<u>436,386</u>	<u>404,117</u>
Utility plant – net	<u>895,029</u>	<u>835,573</u>
Non-utility property	8,548	89,050
Less accumulated depreciation and depletion	<u>7,654</u>	<u>29,927</u>
Non-utility property – net	<u>894</u>	<u>59,123</u>
Total plant and property	<u>895,923</u>	<u>894,696</u>

Investments and other

Current assets:

Cash and cash equivalents	10,013	7,383
Accounts receivable – net	43,349	47,476
Accrued unbilled revenue	31,550	34,258
Inventories of gas, materials and supplies	33,919	21,258
Investment in discontinued segment	29,163	–
Property held for sale	16,712	–
Prepayments and other current assets	<u>18,349</u>	<u>16,105</u>
Total current assets	<u>183,055</u>	<u>126,480</u>

Regulatory tax assets

Deferred gas costs receivable	<u>20,950</u>	<u>27,795</u>
Deferred debits and other	<u>76,878</u>	<u>69,191</u>
Total assets	<u>\$1,244,423</u>	<u>\$1,191,736</u>

Capitalization and liabilities:

Capitalization:

Common stock equity	\$ 429,596	\$ 412,404
Redeemable preference stock	25,000	25,000
Redeemable preferred stock	<u>10,564</u>	<u>11,499</u>
Total capital stock	<u>465,160</u>	<u>448,903</u>
First mortgage bonds	377,000	347,000
Unsecured debt	19,379	19,738
Secured debt	–	–
Total long-term debt	<u>396,379</u>	<u>366,738</u>
Total capitalization	<u>861,539</u>	<u>815,641</u>

Minority interest

Current liabilities:

Notes payable	94,149	87,264
Accounts payable	68,163	56,039
Long-term debt due within one year	10,000	10,000
Taxes accrued	4,101	7,486
Interest accrued	4,673	6,204
Other current and accrued liabilities	<u>39,153</u>	<u>23,477</u>
Total current liabilities	<u>220,239</u>	<u>190,470</u>

Deferred investment tax credits

Deferred income taxes	<u>10,393</u>	<u>11,248</u>
Deferred gas costs liability	–	–
Regulatory liabilities and other	<u>16,102</u>	<u>17,745</u>
Total capitalization and liabilities	<u>\$1,244,423</u>	<u>\$1,191,736</u>

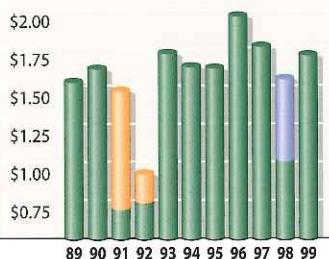
* Deferred gas costs were included in deferred debits or regulatory accounts prior to 1995.

1997	1996	1995	1994	1993	1992	1991	1990	1989
\$ 1,164,499	\$ 1,055,112	\$ 969,075	\$ 908,238	\$ 840,030	\$ 779,274	\$ 722,069	\$ 668,664	\$ 623,114
366,607	336,141	308,702	279,112	255,282	233,385	207,165	183,404	163,678
797,892	718,971	660,373	629,126	584,748	545,889	514,904	485,260	459,436
52,422	45,689	53,807	49,586	42,764	44,629	51,265	70,316	53,651
22,843	19,388	16,997	24,456	20,646	15,480	13,161	10,023	7,718
29,579	26,301	36,810	25,130	22,118	29,149	38,104	60,293	45,933
827,471	745,272	697,183	654,256	606,866	575,038	553,008	545,553	505,369
35,126	34,723	37,882	37,097	34,574	40,336	33,145	30,286	19,525
6,731	8,219	7,782	8,068	4,198	7,537	46,465	2,797	1,923
39,420	40,833	34,385	42,152	43,972	33,008	27,752	31,696	24,768
23,911	22,340	21,493	20,320	25,890	20,738	18,135	27,497	18,228
17,385	14,439	14,254	14,958	16,838	15,797	17,294	16,875	16,752
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
17,226	12,483	12,396	10,041	16,412	8,220	8,248	9,553	7,791
104,673	98,314	90,310	95,539	107,310	85,300	117,894	88,418	69,462
56,860	57,940	60,430	60,430	62,130	-	-	-	-
28,628	-	-	*	*	*	*	*	*
58,859	52,620	43,472	41,982	38,156	31,160	27,447	23,578	17,030
<u>\$ 1,111,617</u>	<u>\$ 988,869</u>	<u>\$ 929,277</u>	<u>\$ 889,304</u>	<u>\$ 849,036</u>	<u>\$ 731,834</u>	<u>\$ 731,494</u>	<u>\$ 687,835</u>	<u>\$ 611,386</u>

\$ 366,265	\$ 346,778	\$ 323,552	\$ 274,408	\$ 258,565	\$ 241,538	\$ 216,280	\$ 219,446	\$ 206,424
25,000	25,000	25,000	26,252	26,633	26,766	1,869	2,025	2,320
12,429	13,749	14,840	15,950	17,041	28,218	29,148	30,102	31,539
403,694	385,527	363,392	316,610	302,239	296,522	247,297	251,573	240,283
324,000	236,000	238,000	234,000	215,000	205,458	197,596	187,606	149,175
20,303	35,838	41,945	57,076	57,931	48,308	43,499	14,024	54,328
-	-	-	-	-	-	11,900	13,600	17,000
344,303	271,838	279,945	291,076	272,931	253,766	252,995	215,230	220,503
747,997	657,365	643,337	607,686	575,170	550,288	500,292	466,803	460,786
-	-	-	-	-	-	-	-	-
89,317	50,058	28,832	53,654	72,548	47,109	88,619	74,408	23,322
58,775	64,795	41,784	48,517	44,318	40,282	43,789	38,074	29,873
16,000	26,000	21,000	1,000	-	2,138	2,125	11,068	-
4,656	3,196	10,281	6,584	6,757	4,790	3,631	5,570	7,229
6,058	5,396	4,617	4,570	4,438	6,792	7,070	6,897	8,528
21,390	19,418	13,204	11,757	10,180	9,387	6,742	5,546	3,474
196,196	168,863	119,718	126,082	138,241	110,498	151,976	141,563	72,426
11,949	11,668	12,493	13,530	14,567	15,603	16,658	18,648	19,047
139,953	123,625	118,692	112,433	104,300	34,929	34,989	38,783	39,514
-	8,058	19,914	*	*	*	*	*	*
15,522	19,290	15,123	29,573	16,758	20,516	27,579	22,038	19,613
<u>\$ 1,111,617</u>	<u>\$ 988,869</u>	<u>\$ 929,277</u>	<u>\$ 889,304</u>	<u>\$ 849,036</u>	<u>\$ 731,834</u>	<u>\$ 731,494</u>	<u>\$ 687,835</u>	<u>\$ 611,386</u>

Comparative Financial Statistics

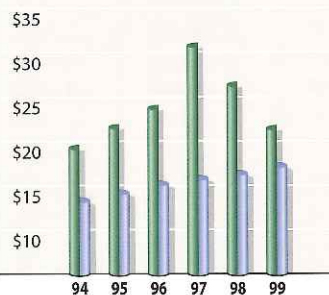
EARNINGS PER SHARE (IN DOLLARS)



- DILUTED EARNINGS PER SHARE
- REDUCTION OF 16 CENTS PER SHARE IN 1992 AND 82 CENTS PER SHARE IN 1991 FROM THE LOSS ON AGRICO COGENERATION CORPORATION
- LOSS OF 50 CENTS PER SHARE IN 1998 DUE TO ASSET IMPAIRMENT CHARGES

Diluted earnings of \$1.70 per share in 1999 represented a strong rebound from 1998.

YEAR-END MARKET PRICE AND BOOK VALUE PER SHARE (IN DOLLARS)



- MARKET PRICE PER SHARE
- BOOK VALUE PER SHARE

The year-end market-to-book ratio averaged 1.57x over the past five years. Total return to shareholders from dividends paid and market appreciation averaged 7.5 percent per year for this period.

1999 1998

Common stock

Ratios – year-end:

Price/earnings ratio	12.9	25.4*
Dividend yield at year-end rate – %	5.6	4.7
Dividend payout – %	71.6	119.6*
Return on average common equity – %	10.2	6.4*

Per share data – (\$):

Basic earnings	1.71	1.02*
Diluted earnings	1.70	1.02
Dividends paid	1.225	1.22
Dividend rate at year-end	1.24	1.22
Book value at year-end	17.12	16.59*

Market price:

High	27.875	30.75
Low	19.50	24.25
Year-end	21.938	25.875
Average	24.629	27.248

Number of shares of common stock outstanding (000):

Year-end	25,092	24,853
Average	24,976	24,233

Coverage data – times earned

Fixed charges – Securities and Exchange Commission	3.12	2.20*
Fixed charges – Standard & Poor's	3.19	2.72

Utility plant

Capital expenditures (000)	\$ 109,144	\$ 80,022
Depreciation – % of average depreciable utility plant	4.0	3.9
Accumulated depreciation – % of depreciable utility plant	33.4	33.2

Capital structure – year-end (%)

(Exclusive of current portion of long-term debt)

First mortgage bonds	43.6	42.6
Unsecured debt	2.3	2.4
Secured debt	—	—
Total long-term debt	45.9	45.0
Redeemable preferred stock	1.2	1.4
Redeemable preference stock	2.9	3.1
Common stock equity	50.0	50.5
Total capital stock	54.1	55.0
Total capital structure	100.0	100.0

Effective tax rate

Effective tax rate – % of pretax income	35	35
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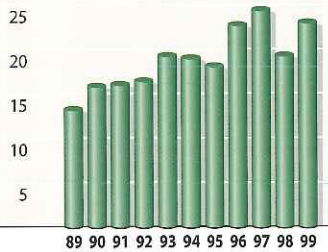
* Includes losses of \$0.16 per share in 1992 and \$0.82 per share in 1991 on Agrico Cogeneration Corporation, and losses of \$0.50 per share in 1998 due to asset write-downs for Financial Corporation and Canor.

1997	1996	1995	1994	1993	1992	1991	1990	1989
17.4	12.2	13.6	12.1	13.1	25.7*	28.5*	10.6	10.5
3.9	5.0	5.5	6.0	5.1	6.0	6.0	6.5	6.6
67.7	60.9	73.1	72.1	67.0	155.0*	167.3*	67.9	67.9
11.3	13.0	11.8	12.2	13.7	5.8*	5.4*	13.1	13.3
1.78	1.97	1.62	1.63	1.74	0.74*	0.67*	1.62	1.58
1.76	1.94	1.60	1.61	1.72	0.74	0.67	1.59	1.54
1.205	1.20	1.18	1.173	1.167	1.147	1.127	1.10	1.073
1.22	1.20	1.20	1.173	1.173	1.147	1.147	1.12	1.093
16.02	15.37	14.55	13.63	13.08	12.41*	12.23*	12.60	12.04
31.25	25.75	22.667	24.333	25.333	22.50	22.167	17.667	17.833
23.125	20.833	18.667	19.00	19.00	17.667	16.833	14.083	12.75
31.00	24.00	22.00	19.667	22.833	19.00	19.167	17.167	16.667
25.292	23.054	20.75	21.25	22.167	20.00	18.917	16.417	15.50
22,864	22,555	22,243	20,129	19,766	19,460	17,678	17,406	17,145
22,698	22,391	21,817	19,943	19,611	17,864	17,547	17,283	16,199
2.99	3.53	3.15	3.08	3.22	1.81*	1.59*	2.64	2.75
3.05	3.71	2.87	2.98	3.47	2.08	2.51	2.88	2.72
\$ 115,886	\$ 83,400	\$ 67,163	\$ 77,668	\$ 70,404	\$ 60,709	\$ 58,362	\$ 50,529	\$ 57,587
3.8	3.8	4.2	4.1	4.1	4.0	4.2	3.9	3.9
32.6	33.2	32.8	31.7	31.1	30.4	29.3	28.1	26.9
43.3	35.9	37.0	38.5	37.4	37.3	39.5	40.2	32.4
2.7	5.5	6.5	9.4	10.1	8.8	8.7	3.0	11.8
-	-	-	-	-	-	2.4	2.9	3.7
<u>46.0</u>	<u>41.4</u>	<u>43.5</u>	<u>47.9</u>	<u>47.5</u>	<u>46.1</u>	<u>50.6</u>	<u>46.1</u>	<u>47.9</u>
1.7	2.1	2.3	2.6	3.0	5.1	5.8	6.5	6.8
3.3	3.8	3.9	4.3	4.6	4.9	0.4	0.4	0.5
<u>49.0</u>	<u>52.7</u>	<u>50.3</u>	<u>45.2</u>	<u>44.9</u>	<u>43.9</u>	<u>43.2</u>	<u>47.0</u>	<u>44.8</u>
<u>54.0</u>	<u>58.6</u>	<u>56.5</u>	<u>52.1</u>	<u>52.5</u>	<u>53.9</u>	<u>49.4</u>	<u>53.9</u>	<u>52.1</u>
<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
33	37	37	37	37	31	14	31	36

Comparative Operating Statistics

CUSTOMER GROWTH 1989-1999

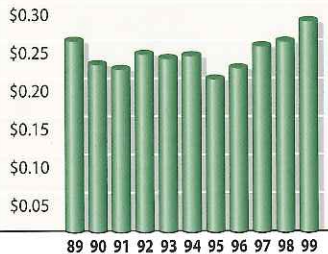
(IN THOUSANDS OF CUSTOMERS)



The Company added 23,756 new customers in 1999. The customer base has grown at a compound annual rate of 5 percent over the past 10 years.

COST OF GAS PURCHASED

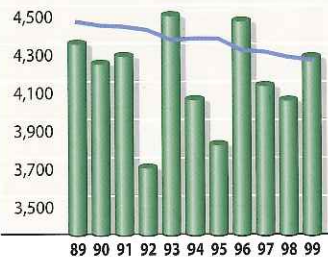
(IN CENTS PER THERM)



Cost of gas, including demand charges, increased 11 percent in 1999 but was only 10 percent higher than 10 years ago.

HEAT REQUIREMENTS

(IN HEATING DEGREE DAYS)



Weather conditions in NW Natural's service area have been warmer than the rolling 20-year average in seven of the past 10 years.

Selected utility data

Customers at year-end

	1999	1998
Residential	447,659	425,606
Commercial	52,870	51,159
Industrial firm	388	411
Industrial interruptible	115	108
	<u>501,032</u>	<u>477,284</u>
Transportation customers	131	123
Total customers	<u>501,163</u>	<u>477,407</u>

Gas sales and transportation deliveries (000 therms)

Residential	352,969	315,686
Commercial	252,382	229,124
Industrial firm	84,630	87,275
Industrial interruptible	52,938	51,521
Total gas sales	742,919	683,606
Transportation	480,570	446,165
Unbilled therms	(9,343)	8,645
Total volumes delivered	<u>1,214,146</u>	<u>1,138,416</u>

Operating revenues and cost of sales (000)

Sales revenues:		
Residential	\$ 242,952	\$ 205,388
Commercial	139,425	117,889
Industrial firm	35,857	34,303
Industrial interruptible	17,182	15,337
Total gas sales revenues	435,416	372,917
Transportation	21,351	19,958
Unbilled revenues	(2,671)	8,314
Other*	1,194	2,617
Total utility operating revenues*	455,290	403,806
Cost of gas*	212,021	173,242
Net utility operating revenues*	243,269	230,564
Non-utility net operating revenues	368	402
Net operating revenues	<u>\$ 243,637</u>	<u>\$ 230,966</u>

Customer data

Heat requirements:		
Actual degree days	4,256	4,011
20-year average degree days	4,193	4,234
Average use per customer in therms:		
Residential	810	749
Commercial	4,851	4,540
Average rate per therm (cents):		
Residential	68.8	65.1
Commercial	55.2	51.5
Industrial firm	42.4	39.3
Industrial interruptible	32.5	29.6
Total sales	58.6	54.6

Gas purchases (000 therms)	773,258	712,602
Gas purchased cost per therm - net (cents)	27.85	25.09
Average sendout cost of gas (cents)*	28.90	25.03
Maximum day firm sendout (000 therms)	4,170	6,260
Maximum day total sendout (000 therms)	6,211	7,526

Payroll (000)

Operating	\$ 38,066	\$ 37,573
Construction and other	24,322	24,625
Total	<u>\$ 62,388</u>	<u>\$ 62,198</u>

Utility employees

Number of customers served by each operating employee	643	611
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* Interest on deferred regulatory accounts for years prior to 1998 was reclassified from gross operating revenues or cost of sales to other income (expense).

1997	1996	1995	1994	1993	1992	1991	1990	1989
407,061	385,213	363,903	346,950	329,157	311,216	295,955	281,265	266,872
50,315	47,309	45,402	44,078	42,657	41,156	39,805	38,102	36,469
403	407	410	401	396	381	367	364	337
122	119	143	142	153	90	60	54	128
457,901	433,048	409,858	391,571	372,363	352,843	336,187	319,785	303,806
120	121	91	67	64	135	171	177	177
<u>458,021</u>	<u>433,169</u>	<u>409,949</u>	<u>391,638</u>	<u>372,427</u>	<u>352,978</u>	<u>336,358</u>	<u>319,962</u>	<u>303,983</u>
306,356	306,310	256,462	260,218	267,818	206,131	233,079	208,940	201,144
225,249	225,115	196,723	201,925	209,642	169,406	189,384	173,508	170,143
84,523	91,122	82,958	81,348	80,588	67,847	65,535	62,252	54,761
53,929	63,261	84,173	89,899	66,370	22,399	13,155	13,554	14,816
670,057	685,808	620,316	633,390	624,418	465,783	501,153	458,254	440,864
440,452	410,062	379,116	364,461	415,367	595,397	591,171	532,703	556,713
3,615	3,759	4,946	(7,519)	3,844	4,163	(16,943)	18,774	3,950
<u>1,114,124</u>	<u>1,099,629</u>	<u>1,004,378</u>	<u>990,332</u>	<u>1,043,629</u>	<u>1,065,343</u>	<u>1,075,381</u>	<u>1,009,731</u>	<u>1,001,527</u>
\$ 177,835	\$ 183,802	\$ 165,662	\$ 176,510	\$ 168,217	\$ 124,834	\$ 142,056	\$ 129,830	\$ 121,938
100,677	104,582	99,079	108,452	103,476	78,614	90,263	84,463	81,710
27,025	30,672	31,268	34,443	31,340	24,867	25,222	24,603	21,502
13,944	17,097	24,113	27,361	18,884	6,920	3,352	5,273	5,352
319,481	336,153	320,122	346,766	321,917	235,235	260,893	244,169	230,502
22,029	22,533	16,650	14,702	17,892	25,564	29,424	30,423	29,143
1,647	1,627	1,173	(5,571)	5,153	2,603	(9,362)	9,268	322
7,884	9,824	9,411	429	2,625	2,812	113	66	(905)
351,041	370,137	347,356	356,326	347,587	266,214	281,068	283,926	259,062
130,381	141,789	142,025	162,437	138,751	101,489	107,093	110,534	103,163
220,660	228,348	205,331	193,889	208,836	164,725	173,975	173,392	155,899
450	636	8,271	11,773	10,865	8,000	11,664	8,905	1,862
<u>\$ 221,110</u>	<u>\$ 228,984</u>	<u>\$ 213,602</u>	<u>\$ 205,662</u>	<u>\$ 219,701</u>	<u>\$ 172,725</u>	<u>\$ 185,639</u>	<u>\$ 182,297</u>	<u>\$ 157,761</u>
4,092	4,427	3,779	4,020	4,452	3,662	4,248	4,208	4,310
4,264	4,273	4,306	4,324	4,313	4,354	4,379	4,391	4,409
777	823	726	776	844	685	812	769	777
4,670	4,874	4,420	4,680	5,029	4,214	4,874	4,670	4,813
58.0	60.0	64.6	67.8	62.8	60.6	60.9	62.1	60.6
44.7	46.5	50.4	53.7	49.4	46.4	47.7	48.7	48.0
32.0	33.7	37.7	42.3	38.9	36.7	38.5	39.5	39.3
25.9	27.0	28.6	30.4	28.5	30.9	25.5	38.9	36.1
47.7	49.0	51.6	54.7	51.6	50.5	52.1	53.3	52.3
702,820	692,894	640,976	642,607	628,172	455,343	498,916	489,768	484,265
24.05	22.25	20.67	23.44	23.11	23.76	21.91	22.67	25.25
19.35	20.56	22.71	25.95	22.08	21.60	22.12	23.17	23.19
4,450	6,020	4,359	3,913	4,047	3,432	3,390	5,019	4,732
5,746	7,446	5,701	5,285	5,479	5,300	4,696	6,154	5,302
\$ 35,669	\$ 34,037	\$ 33,669	\$ 33,888	\$ 33,539	\$ 30,398	\$ 28,898	\$ 26,929	\$ 25,991
24,630	22,920	22,074	20,795	21,056	19,802	18,392	15,881	13,968
\$ 60,299	\$ 56,957	\$ 55,743	\$ 54,683	\$ 54,595	\$ 50,200	\$ 47,290	\$ 42,810	\$ 39,959
1,337	1,304	1,288	1,338	1,293	1,328	1,276	1,261	1,190
583	560	533	478	469	437	431	403	391

Board of Directors



NW Natural's Board of Directors assembles on the terrace at Portland's RiverPlace Hotel during a planning retreat, with the city's Hawthorne Bridge in the background. Seated are (left to right) Richard G. Reiten, Robert L. Ridgley, Wayne D. Kuni. Middle row (left to right): Melody C. Teppola, Thomas E. Dewey, Jr., Mary Arnstad. Back row (left to right): Dwight A. Sangrey, Russell F. Tromley, Benjamin R. Whiteley, Randall C. Papé, Tod R. Hamachek and Richard B. Keller.

Mary Arnstad, 51

Former President and CEO
Broken Top, Inc.
(Residential community and golf club
development)
Bend, Oregon
(1992) (2) (5)

Thomas E. Dewey, Jr., 67

Member
McFarland Dewey & Co., LLC
(Investment banking)
New York, N.Y.
(1986) (2) (6)

Tod R. Hamachek, 54

Chairman and Chief Executive Officer
Penwest Pharmaceuticals Company
(Development of pharmaceutical
delivery products and technologies)
Patterson, New York
(1986) (3) (4)

Richard B. Keller, 71

President and CEO
Keller Enterprises Inc.
(A family holding company)
Vancouver, Washington
(1983) (1) (3) (4)

Wayne D. Kuni, 69

Chairman
Kuni Enterprises
(Automobile dealerships)
Beaverton, Oregon
(1980) (1) (2) (3) (6)

Randall C. Papé, 49

President and Chief Executive Officer
The Papé Group, Inc.
(Sales and service of capital equipment)
Eugene, Oregon
(1996) (2) (5) (6)

Richard G. Reiten, 60

President and Chief Executive Officer
NW Natural
(1996) (1)

Robert L. Ridgley, 66

Retired Chairman of the Board
NW Natural
(1984) (1) (4) (6)

Dwight A. Sangrey, 59

Business Development Consultant
(Information technology and
health care)
Portland, Oregon
(1992) (4) (5)

Melody C. Teppola, 57

Managing Partner
National Builders Hardware Company
(Regional and national distributor of
builders hardware, decorative plumbing
and woodworking machinery)
Portland, Oregon
(1987) (1) (4) (5)

Russell F. Tromley, 60

President and Chief Executive Officer
Tromley Industrial Holdings, Inc.
(Manufacture of foundry equipment
and distribution of nonferrous metals)
Tualatin, Oregon
(1994) (2) (6)

Benjamin R. Whiteley, 70

Chairman and CEO Retired
Standard Insurance Company
(Financial services)
Portland, Oregon
(1989) (1) (3)

NW Natural Environmental Policy

NW Natural is dedicated to protecting and enhancing the quality of the natural environment. The Company will conduct its business consistent with this philosophy and in a manner which will reflect this dedication to our customers, employees, investors and the public.

All employees of NW Natural have a responsibility to protect the environment and perform their assigned work in accordance with this policy. It is management's responsibility to educate employees and contractors in the use of sound environmental practices.

NW Natural will comply with all applicable environmental laws, codes, regulations and standards. We will work constructively with all agencies and entities empowered to develop environmental laws and regulations to ensure that rules are reasonable and attainable.

The Company will maintain active relationships with environmental organizations and other interested parties to develop environmental programs and partnerships that improve our quality of life.

The Company will work to reduce waste, especially hazardous waste, and will recycle whenever possible. Emphasis will be placed on reducing the use of toxic materials where practical.

The Company is committed to the efficient use of energy, and offers energy conservation services to customers to assist them in making wise use of energy.

NW Natural is committed to managing its own assets in an environmentally responsible way.

The Company will assess its compliance with this policy through environmental audits.

Environmental Policy Statement

Adopted by NW Natural Board of Directors

December 17, 1998

(Year elected to the board)

(1) Executive Committee

(2) Audit Committee

(3) Organization and Executive Compensation Committee

(4) Retirement and Pension Committees

(5) Environmental Policy Committee

(6) Finance Committee

Corporate Officers



Officers of NW Natural gather behind natural gas appliances sold at the Company's Appliance Center in Portland. From left to right are C.J. Rue, Stephen P. Feltz, Gregg S. Kantor, Mark S. Dodson, Dwayne L. Foley, Richard G. Reiten, Bruce R. DeBolt, Diana J. Johnston, W.R. Harper and Michael S. McCoy.

Richard G. Reiten, 60
President and Chief Executive Officer
(1995)

Bruce R. DeBolt, 52
Senior Vice President, Finance,
and Chief Financial Officer (1980)

Mark S. Dodson, 55
Senior Vice President and
General Counsel (1997)

Dwayne L. Foley, 54
Senior Vice President
(1967)

Michael S. McCoy, 56
Executive Vice President,
Customer and Utility Operations
(1969)

W. R. Harper, 46
Vice President, Market Services
(1992)

Diana J. Johnston, 55
Vice President, Human Resources
and Administrative Services (1966)

Gregg S. Kantor, 42
Vice President, Public Affairs
and Communications (1996)

C.J. Rue, 54
Secretary and Assistant Treasurer
(1974)

Stephen P. Feltz, 44
Treasurer and Controller
(1982)

(Date joined NW Natural)

Corporate Information

Notice of Annual Meeting

The 2000 Annual Meeting will be held at 2 p.m. Thursday, May 25, at the DoubleTree Hotel-Portland-Lloyd Center, 1000 N.E. Multnomah Street, Portland, Oregon. A meeting notice and proxy statement will be sent to all shareholders in mid-April.

Form 10-K

The Company will provide its shareholders, without charge, a copy of the 1999 Annual Report on Form 10-K to the Securities and Exchange Commission. Requests should be made to the Corporate Secretary.

Stock Transfer Agent and Registrar

For all Preferred, Preference and Common Stock Issues:
NW Natural
220 N.W. Second Avenue
Portland, Oregon 97209
Attention: Shareholder Services

Trustee, Conversion and Interest Paying Agent

For Convertible Debentures:
The Bank of New York
Corporate Debt Operations, Floor 7-E
101 Barclay Street
New York, New York 10286
(800) 254-2826

Trustee and Bond Paying Agent

For all bond issues:
Bankers Trust Company
Security Holder Relations
P.O. Box 305050
Nashville, Tennessee 37230
(800) 735-7777

Common Stock Prices

Nasdaq National Market System trading range (ticker: NWNNG):

1999 Quarter	High	Low
1	27.000	21.000
2	27.000	19.500
3	27.875	23.313
4	27.000	21.125

1998 Quarter	High	Low
1	30.750	25.750
2	28.250	26.375
3	28.000	24.250
4	30.250	25.750

Dividend Reinvestment Plan

Common shareholders of record may reinvest all or part of their dividends in additional shares under the Company's plan. Cash purchases also may be made at the current market price under this plan, and no brokerage fees will be charged. A prospectus will be sent to any registered shareholder on request.

Dividend Payment Dates

February 15, 2000
May 15, 2000
August 15, 2000
November 15, 2000

Quarterly Financial Information (unaudited)

Dollars (thousands except per share amounts)	Quarter ended				Total
	March 31	June 30	Sept. 30	Dec. 31	
1999					
Operating revenues	167,873	94,252	55,737	137,972	455,834
Net operating revenues	85,905	55,241	33,605	68,886	243,637
Net income from continuing operations	24,184	10,529	(3,608)	13,836	44,941
Net income from discontinued segment	(141)	255	48	193	355
Net income	24,043	10,784	(3,560)	14,029	45,296
Basic earnings (loss) per share	0.94	0.41	(0.17)	0.53	1.71*
Diluted earnings (loss) per share	0.93	0.40	(0.17)	0.53	1.70*
1998					
Operating revenues	133,803	80,327	50,186	140,074	404,390
Net operating revenues	76,413	46,676	30,836	77,041	230,966
Net income from continuing operations	19,693	4,248	(5,164)	8,174	26,951
Net income from discontinued segment	3,493	(155)	(756)	(2,232)	350
Net income	23,186	4,093	(5,920)	5,942	27,301
Basic earnings (loss) per share	0.98	0.14	(0.26)	0.21**	1.02*
Diluted earnings (loss) per share	0.97	0.14	(0.26)	0.21**	1.02*

* Quarterly earnings per share are based upon the average number of common shares outstanding during each quarter. Because the average number of shares outstanding has increased in each quarter shown, the sum of quarterly earnings does not equal earnings per share for the year. Variations in earnings between quarterly periods are due primarily to the seasonal nature of the Company's business.

** Results for the fourth quarter of 1998 include a charge equivalent to 43 cents per share resulting from asset write-down charges by Financial Corporation.



James R. Boehlke
Investor Relations
(503) 721-2451
(800) 422-4012,
Ext. 2451
jrb@nwnatural.com



Linda R. Williams
Shareholder Services
(503) 220-2590
(800) 422-4012,
Ext. 3402
lrw@nwnatural.com



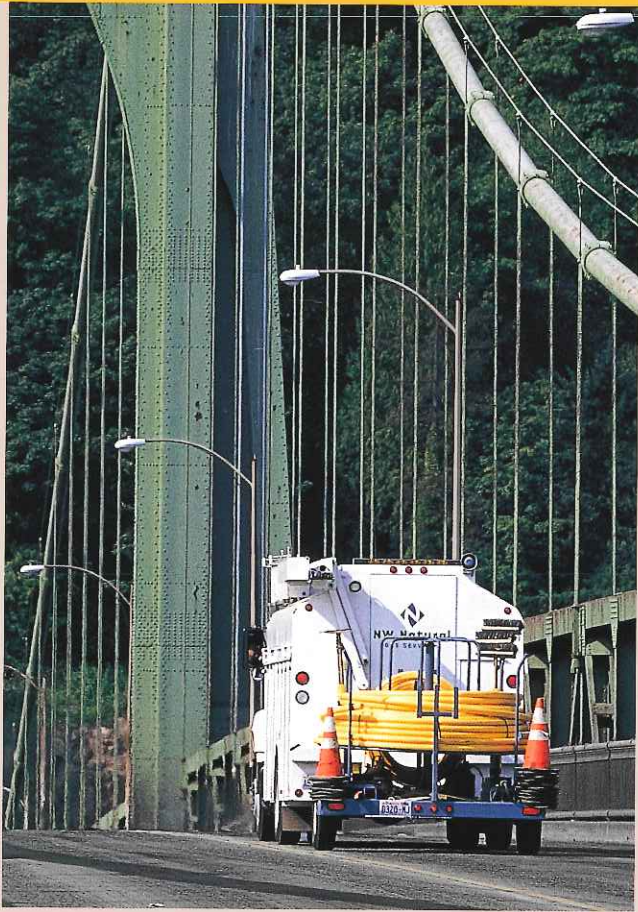
NW Natural

220 N.W. Second Avenue
Portland, Oregon 97209
(503) 226-4211
(800) 422-4012
www.nwnatural.com

Forward-looking statements

The Company's future operating results will be affected by various uncertainties and risk factors, many of which are beyond the Company's control, including governmental policy and regulatory action, the competitive environment, economic factors and weather conditions. Some statements in this annual report may be forward looking, and actual results may differ materially as a result of these uncertainties. For a more complete description of these uncertainties and risk factors, please refer to the Company's filings with the Securities and Exchange Commission on Forms 10-K and 10-Q.

Design: Graphic Solutions - Feature Photography: Charlie Borland - Portraits: CEO, Board, Officers, P12 Bruce Beaton - Stock Photography: P6 Northern Light Studio - P8 Viewfinders/c Bruce Forster - P10 Wayne Aldridge/Borland Photo - P14 Jason Stoll - Illustrations: P16, 17 Gene Gill - Production: Graphicon Design - Printed on Cover: Ron Westphal - Printed on recycled stock



NW Natural

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www.nwnatural.com