BEFORE THE
WASHINGTON UTILITIES \& TRANSPORTATION COMMISSION

UG- $\qquad$
GENERAL RATE APPLICATION

OF
NORTHWEST NATURAL GAS COMPANY

December 18, 2020

Direct Exhibit of Robert J. Wyman

WEATHER NORMALIZED LOAD COST OF SERVICE STUDY
RATE SPREAD \& RATE DESIGN

## Exh. RJW-2

The native version of this exhibit will be provided in the work papers.

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## NW Natural

Washington Jurisdictional Rate Case
Test Year Twelve Months Ended September 30, 2020
Test Year Twelve Months Ended September 30, 202
Cost of Service Study (EmCOSS) Summary Results
Cost of Service Study (EmCOSS) Summary R
Summary of Cost of Service Determinants and Allocators


## NW Natural

Washington Jurisdictional Rate Case
Test Year Twelve Months Ended September 30, 2020
Cost of Service Study (EmCOSS) Summary Results
Summary of Cost of Service Determinants and Allocators


12 SERVICE LINES
Avg Service Installed Cost-Indirect Allocation
13 meters
METRES
13 Average Installed Cost
136 Direct-Com
13b Direct-Com
133 Direct-Ind
13d Direct-Res
14 customer service /biluing
14a Gas Management/ Operations - Direct Allocation 14a Gas Mangement OPerations - Direct Allocation
14io Accounts - Direcet Allocation 14c Avg Weighted Cost per Customer- Indirect Allocation
14d Direct-Com


5 administative \& General and general plant 15a Allocated Plant
15 b Salary and Wag
155 Total Throughput
15d Total eeverue
15d Total Revene
15e Common-Net Stor/Dist/Trmm Plant, Customers, O\&M

$\begin{array}{lll}158 & \text { Total o\&M } \\ 15 h & \text { Customers }\end{array}$



$$
\begin{array}{llll}
\text { Line-1 } & \begin{array}{l}
100.00 \% \\
\text { Line-2 }
\end{array} & \begin{array}{l}
1.18 \% \\
\text { Lino }
\end{array} & 82.60 \% \\
\hline
\end{array}
$$


$\begin{array}{ccccc}\begin{array}{c}0.00 \% \\ 12,870\end{array} & \begin{array}{c}0.00 \% \\ 24,855\end{array} & \begin{array}{c}0.00 \% \\ 17,529\end{array} & \begin{array}{c}0.00 \% \\ 35,305\end{array} & \begin{array}{c}0.00 \% \\ 40,071\end{array}\end{array}$


Gnrl-1
Gnrl-2
Conl-3
Cmn-1

| 100.0\% | 0.62\% | 69.58\% | 0.47\% |
| :---: | :---: | :---: | :---: |
| .00\% -- | nses tha |  |  |
| 100.0\% | 0.21\% | 54.88\% | 0.46\% |
| 100.00\% | 0.36\% | 67.88\% | 0.47\% |
| 100.00\% | 0.81\% | 79.49\% | 0.68\% |
| 100.00\% | 0.60\% | 68.63\% | 0.45\% |
| 100.00\% | 0.80\% | 79.04\% | 0.71\% |

$\begin{array}{ll}0.14 \% \\ 0.00 \% \\ 5.99 \% \\ 0.00 \% & 0\end{array}$
$0.13 \%$
$0.00 \%$
$5.55 \%$
$0.00 \%$

| $0.20 \%$ |
| :--- |
| $0.00 \%$ |
| $8.57 \%$ |
| $0.00 \%$ |


| 7,753 6,023 6 |
| :---: |
| 0.09\% |
| 0.00\% |
| 13.48\% |
| 0.00\% |
| 6.49\% |

$2,535 \$$
1,506
$0.02 \%$
$0.00 \%$
$0.03 \%$
$0.00 \%$
$1.62 \%$
$14,902 \$$
6,649
$0.06 \%$
$0.00 \%$
$8.99 \%$
$0.00 \%$
$4.32 \%$

| 7,451 | 16,764 |
| :---: | :---: |
| 3,324 | 7,480 <br> $0.07 \%$ |
| 0.00\% | 0.00\% |
| 4.99\% | 10.11\% |
| 0.00\% | 0.00\% |
| 2.16\% | 4.86\% |


| 18,627 |
| :---: |
| 8.311 |
| $0.08 \%$ |
| $0.00 \%$ |
| $11.20 \%$ |
| $0.00 \%$ |
| $5.41 \%$ |

0.09\% $\quad 21.15 \% \quad 0.21 \% \quad 1.99$

| $0.30 \%$ | $0.27 \%$ |
| :--- | :--- |
| $0.72 \%$ | $0.94 \%$ |
| $0.06 \%$ | $0.55 \%$ |
| $0.17 \%$ | $0.15 \%$ |
| $0.3 \%$ | $0.28 \%$ |
| $0.21 \%$ | $0.18 \%$ |

$\begin{array}{ll}0.54 \% & 0.66 \% \\ 1.09 \% & 1.44 \% \\ 0.06 \% & 1.48 \% \\ 0.06 \% & 0.43 \% \\ 0.55 \% & 0.68 \% \\ 0.62 \% & 0.5 \% \\ 0.59 \%\end{array}$
$0.13 \%$
$0.32 \%$
$0.22 \%$
$0.09 \%$
$0.13 \%$
$0.14 \%$
$0.00 \%$
$0.15 \%$
$0.44 \%$
$0.24 \%$
$0.15 \%$
$0.15 \%$
$0.31 \%$
0.55\% 1.61\% $0.46 \%$
$0.33 \%$
$0.57 \%$
$0.11 \%$
$0.00 \%$

# Exh. RJW-2 

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## WWatural




# Exh. RJW-2 

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${ }^{\text {NW Natatur }}$




Test Year Twelve Months Ended September 30, 2020
Test Year Twelve Months Ended September 30, 2020





|  |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | rotal

いい

$$
\begin{array}{llllll}
\$ & 17,11,547 & \mathbf{s} & 134,315 & \$ & 13,227,484 \\
\mathbf{s} & \mathbf{s} \\
\mathbf{\$} & 15,51,949 & \mathbf{\$} & 37,558 & \$ & 11,163,024
\end{array}
$$

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$$
\begin{array}{ll}
\$ & (154,208,23 \\
\$ & (4,418,35 \\
\$ &
\end{array}
$$

$(16,095)$ s
$(342,465)$ s

$$
\begin{array}{r}
(109,524) \\
(2,832,142) \\
(87,727)
\end{array}
$$

$$
\begin{gathered}
(14,766) \\
(403,777) \\
(13,168) \\
0
\end{gathered}
$$

$$
\backsim \backsim
$$

$$
\begin{aligned}
& \text { s } \\
& \$ \\
& \$
\end{aligned}
$$












16,502
806,377





| s | 17,118,547 | s | 30,888 | s | 112,750 | S | 102,235 | \$ | 22,824 | \$ | 46,357 | s | 65,088 | s | 178,598 | s | 190,549 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \$ | 15,521,949 | s | 53,039 | s | 140,337 | s | 148,903 | s | 18,052 | \$ |  | s |  | s |  |  |  |
| \$ | 78,570 | s | 268 | s | 710 | s | 754 | \$ | 91 | \$ | 0 | \$ |  | s | 0 | s | 0 |
| \$ | 2,464,234 | s | 8,420 | s | 22,280 | s | 23,640 | \$ | 2.866 | \$ | 0 | s |  | s | 0 | s | 0 |
| \$ | 1,133,403 | s | 3,873 | s | 10,247 | s | 10,873 | \$ | 1,318 | \$ | 0 | \$ |  | s | 0 | s | 0 |
| \$ | 5,648,001 | s | 18,522 | \$ | 48,962 | \$ | 51,974 | \$ | 6,462 | \$ | 641 | s | 1,367 | s | 3,878 | s | 4,112 |
| s | 24,236,624 | s | 86,716 | s | 216,893 | s | 237,608 | \$ | 30,498 | \$ | 5,306 | \$ | 25,138 | s | 74,844 | s | 78,237 |
| s | 310,336,888 | s | 761,364 | s | 1,463,483 | s | 1,839,114 | \$ | 381,023 | \$ | 455,624 | \$ | 1,760,499 | s | 5,160,914 |  | 5,43,814 |
| \$ | 39,518,859 | s | 80,357 | s | 179,448 | s | 207,684 | \$ | 41,880 | \$ | 56,841 | \$ | 165,378 | S | 478,494 | \$ | 505,199 |
| \$ | 9,938,907 | s | 26,520 | s | 53,485 | s | 65,315 | \$ | 12,852 | \$ | 14,552 | \$ | 54,710 | S | 160,342 | s | 168,806 |
| s | 416,671,773 | s | 1,038,883 | s | 2,166,395 | s | 2,600,859 | \$ | 507,129 | s | 578,680 | s | 2,070,812 | s | 6,053,192 |  | 6,376,601 |
| \$ | 3,293,802 | s | 5,091 | s | 13,109 | s | 14,097 | \$ | 2,983 | \$ | 5,083 | \$ | 10,837 | s | 30,747 | s | 32,601 |
| \$ | 3,293,802 | s | 5,091 | s | 13,109 | s | 14,097 | \$ | 2,983 | \$ | 5,083 | s | 10,837 | s | 30,747 | s | 32,601 |
| \$ |  | s |  | s |  | s | 0 | \$ |  | \$ |  | s |  | s | 0 | s |  |
| s | 0 | s | 0 | s | 0 | s | 0 | \$ | 0 | \$ | 0 | \$ |  | s | 0 |  | 0 |
| \$ | 0 | s | 0 | s | 0 | s | 0 | \$ | 0 | \$ | 0 | s |  | s | 0 | s | 0 |
| \$ | 0 | s | 0 | s | 0 | s | 0 | \$ | 0 | \$ | 0 | s |  | s | 0 | s |  |
| s | 0 | s | 0 | s | 0 | s | 0 | \$ | 0 | s | 0 | s |  | 5 | 0 |  | 0 |
| s | 0 | s | 0 | s | 0 | s | 0 | \$ | 0 | \$ | 0 | \$ |  | s | 0 |  |  |
| \$ | 0 | s | 0 | s |  | s | 0 | \$ | 0 | \$ | 0 | \$ |  | s | 0 | s | 0 |
| \$ | 0 | s | 0 | s | 0 | s | 0 | \$ | 0 | s | 0 | s |  | s | 0 |  | 0 |
| s | 0 | s | 0 | s | 0 | s | 0 | \$ | 0 | \$ | 0 | \$ |  | s | 0 | s |  |
| \$ | 0 | s | 0 | s | 0 | s | 0 | \$ | 0 | \$ | 0 | s | 0 | s | 0 | s |  |
| \$ | (7,718,327) | s | (12,907) | s | (31,573) |  | (34,875) | \$ | $(7,219)$ | \$ | (11,305) | s | (26,809) | s | (76,596) | s | (81,095) |
| s | (154,208, 234) | s | (335,766) | s | (739,965) |  | (864,187) | \$ | (168,734) | \$ | (200,317) | \$ | (650,169) | s | (1,889,211) |  | (1,993,150) |
| \$ | $(4,418,533)$ | s | (11,789) | s | $(23,77)$ | s | (29,036) | \$ | (5,74) | \$ | (6,469) | \$ | (24,321) | s | (71,280) |  | (75,043) |
| \$ | 0 | s | 0 | s |  | s | 0 | \$ |  | \$ |  | s |  | s | 0 | s | 0 |
| s | 0 | s | 0 | s | 0 | s | 0 | \$ | 0 | s | 0 | s |  | s | 0 |  | 0 |
| s | 0 | s | 0 | s | 0 | s | 0 | \$ | 0 | \$ | 0 | \$ |  | S | 0 | s | 0 |
| \$ | 0 | s | 0 | s | 0 | s | 0 | \$ | 0 | \$ | 0 | \$ |  | s | 0 | s | 0 |
| s | 0 | s | 0 | s | 0 | s | 0 | \$ | 0 | s | 0 | \$ | 0 | s | 0 | s | 0 |
| \$ | 0 | s | 0 | s | 0 | s | 0 | \$ | 0 | \$ | 0 | \$ |  | s | 0 | s | 0 |
| \$ | 0 | s | 0 | s | 0 | s | 0 | \$ | 0 | \$ | 0 | \$ | 0 | s | 0 | s | 0 |
| s | 2,454,137 | s | 8,386 | s | 22,188 | s | 23,543 | \$ | 2,854 | \$ |  | \$ |  | s | 0 | s |  |
| s | 263,793,125 | s | 704,804 | s | 1,437,951 | s | 1,745,276 | \$ | 338,519 | s | 376,976 | s | 1,407,159 | s | 4,123,448 | s | 4,341,008 |
| 5 | 0 | s |  | s | 0 | s | 0 | \$ | 0 | \$ | 0 | \$ | 0 | S | 0 | s | 0 |
| s | 0 | s |  | s | 0 | s | 0 | \$ |  | \$ |  | s | 0 | s | 0 | s |  |
| s | 266,793,125 | s | 704,804 | s | 1,437,951 | s | 1,745,276 | \$ | 338,519 | s | 376,976 | s | 1,407,159 | s | 4,123,448 | s | 4,341,008 |
| s | 0 | \$ | 0 | s | 0 | s | 0 | \$ | 0 | \$ | 0 | \$ | 0 | s | 0 | s | 0 |
| \$ | 0 | s | 0 | s | 0 | s | 0 |  | 0 | \$ | 0 | s | 0 | s | 0 | s | 0 |
| s | 0 | s | 0 | s | 0 | s | 0 | \$ | 0 | \$ | 0 | s | 0 | s | 0 |  | 0 |
| s | 0 | \$ | 0 | s | 0 | s | 0 | \$ | 0 | s | 0 | s | 0 | S | 0 | s |  |

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$$
\begin{array}{r}
242,989 \mathrm{~s} \\
15,641,168 \mathrm{~s} \\
6,255,810 \\
31,20,187 \mathrm{~s} \\
\hline
\end{array}
$$





NW Natural
Summary of Adjustments
Service territory : Washington
Service: Natural Gas
Time period : Twelve Months ended September 30, 2020
GCOST: D Summary of Adjustments
Restating Adjustments

| Column | Work paper reference | Description of Adjustment | Washington Natural Gas |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | NOI | Rate Base |  | Revenue Requirement |  | ROR |
| E | WA-ROO | WA-ROO | \$ | 10,863,181 | \$ | 194,666,559 | \$ | 3,426,113 | 5.58\% |
| F | RR Adj (a) | Weather Normalized Gas Sales \& Purchases | \$ | $(176,057)$ | \$ | - | \$ | 232,523 | -0.09\% |
| G | RR Adj (b) | Misc. Revenues Adjustments | \$ | 1,791,475 | \$ | - | \$ | $(2,366,060)$ | 0.94\% |
| H | RR Adj (c) | Bonus Adjustment | \$ | $(33,532)$ | \$ | $(56,750)$ | \$ | 39,105 | -0.02\% |
| 1 | RR Adj (d) | Property Tax Adjustment | \$ | 39,859 | \$ | - | \$ | $(52,643)$ | 0.02\% |
| J | RR Adj (e) | Uncollectible Accounts Adjustment | \$ | 20,756 | \$ | - | \$ | $(27,413)$ | 0.01\% |
| K | RR Adj (f) | Working Capital Adjustment | \$ | 17,085 | \$ | 3,526,472 | \$ | 299,408 | -0.09\% |
| L | RR Adj (g) | Marketing \& Customer Communication Adju | \$ | 224,528 | \$ | - | \$ | $(296,539)$ | 0.12\% |
| M | RR Adj (h) | Claims Adjustment | \$ | $(3,220)$ | \$ | $(1,556)$ | \$ | 4,111 | 0.00\% |
| N | RR Adj (i) | Rate Case Adjustment | \$ | $(86,900)$ | \$ | - | \$ | 114,771 | -0.04\% |
| 0 | RR Adj (j) | Clearing Accounts Adjustment | \$ | 23,988 | \$ | $(79,301)$ | \$ | $(38,921)$ | 0.01\% |
| P | RR Adj (k) | HoldCo Adjustment | \$ | $(11,082)$ | \$ | - | \$ | 14,636 | -0.01\% |
|  |  | Restated Total | \$ | 12,670,079 | \$ | 198,055,424 | \$ | 1,349,092 | 6.43\% |

Proforma Adjustments

| Column | Work paper reference | Description of Adjustment | Washington Natural Gas |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | NOI |  | Rate Base |  | Revenue Requirement |  | ROR |
| R | RR Adj (m) | Payroll Adjustment | \$ | $(319,673)$ | \$ | - | \$ | 422,200 | -0.16\% |
| S | RR Adj ( n ) | Payroll Overhead Adjustment | \$ | $(126,783)$ | \$ | - | \$ | 167,446 | -0.07\% |
| T | RR Adj (o) | 250 Taylor Lease Expense Adjustment | \$ | $(242,654)$ | \$ | - | \$ | 320,479 | -0.12\% |
| U | RR Adj (p) | Post-Test Year 1 Capital Adjustment | \$ | $(610,489)$ | \$ | 21,735,766 | \$ | 2,790,798 | -0.84\% |
| V | RR Adj (q) | EDIT Rate Base Adjustment | \$ | 2,725 | \$ | 562,500 | \$ | 47,758 | -0.01\% |
| W | RR Adj ( r ) | End of Period Rate Depreciation Exp Adjustr | \$ | $(497,412)$ | \$ | - | \$ | 656,944 | -0.26\% |
| X | RR Adj (s) | End of Period Rate Base Adjustment | \$ | 26,709 | \$ | 5,513,053 | \$ | 468,075 | -0.14\% |
| Y | RR Adj (t) | Plant EDIT Amortization Adjustment | \$ | $(25,000)$ | \$ | - | \$ | 33,018 | -0.01\% |
|  |  | Pro Forma Total | \$ | $(1,792,578)$ | \$ | 27,811,319 | \$ | 4,906,718 | -1.62\% |
|  |  | Total Adjustments |  | \$10,877,502 |  | \$225,866,743 |  | \$6,255,809 | 4.82\% |

Exh. RJW-2
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| NW Natural <br> Summary of Adjustments <br> Service territory : Washington <br> Service: |
| :---: |
| Tatural Gas |
| Time period : Twelve Months ended September 30, 2020 |



Exh. RJW-2

| NW Natural <br> Summary of Adjustments <br> Service territory: :Washington <br> Sevrice: Natural Gas |
| :---: |
| Time period : Twelve Months ended September 30, 2020 |



