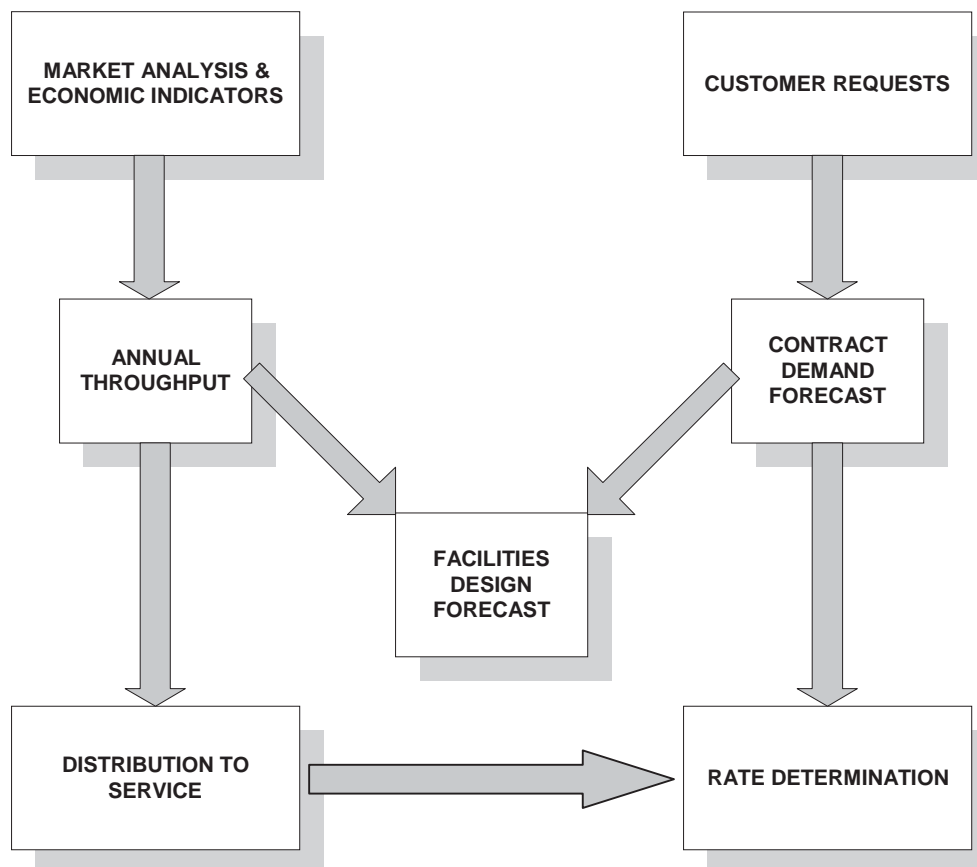


1 **5.0 CONTRACT DEMAND QUANTITY AND THROUGHPUT**

2 **5.1 OVERVIEW**

3 In this Section, NGTL provides Contract Demand Quantity and Throughput information
4 for the purposes of determining the 2004 illustrative rates, tolls and charges in Section 6.
5 The following flow chart outlines the interrelationship between Firm Transportation
6 Contract Demand, Annual Throughput, the Facilities Design Forecast, and rate
7 determination.

Figure 5-1



1 A forecast of Firm Transportation Contract Demand is used in the determination of the
2 Firm Transportation Demand rate, from which approximately 75 percent of Alberta
3 System revenue is recovered. Firm Transportation Contract Demand is forecast through
4 an assessment of customer requests for Firm Transportation at Receipt and Delivery
5 Points after consideration of contract renewals, current market conditions and
6 downstream pipeline expansions. The 2004 average Receipt Point Contract Demand
7 (which includes all Firm Services contracted at receipt points) is forecast to be
8 ~~242.8~~250.8 $10^6\text{m}^3/\text{d}$ (~~8.68.9~~ Bcf/d). The 2004 average Export Delivery Point Contract
9 Demand (which includes all Firm Services contracted at export delivery points) is
10 forecast to be ~~232.4~~236.2 $10^6\text{m}^3/\text{d}$ (~~8.28.4~~ Bcf/d).

11 Throughput is forecast through an assessment of market demand in all markets served by
12 Canadian gas, a projection of the available capacity, and system load factors on all
13 interconnecting downstream pipelines. Considerable input in this process is received from
14 Alberta System customers, downstream pipeline operators, industry associations, and the
15 end-users of Canadian gas to determine the annual throughput forecast. The 2004 average
16 Annual Throughput for the Alberta System is forecast to be ~~306.9~~300.1 $10^6\text{m}^3/\text{d}$ (~~10.9~~10.7
17 Bcf/d).

18 The forecasts of the 2004 Annual Throughput and Firm Transportation Contract Demand
19 are used in the determination of Interruptible Transportation service. The volume flowing
20 under Interruptible Transportation service is determined by taking the total Annual
21 Throughput, and subtracting the volume forecast to flow under Firm Transportation
22 service. Since not all Firm Transportation Contracts are fully utilized, projected system
23 load factors are applied to determine the volume flowing under Firm Transportation
24 service.

25 NGTL proposes to use a Revenue Deferral Account to manage the revenue variances that
26 result from differences between forecasted and actual quantities. This deferral account
27 combines the following two deferral accounts used in previous years:

- 1 • the Firm Transportation Demand Revenue Deferral Account and
- 2 • the Throughput Volume Revenue Deferral Account.

3 NGTL is applying to combine these two deferral accounts in order to simplify reporting.
4 Please refer to Section 7, Deferral and Reserve Accounts, for additional information on
5 deferral accounts requested in 2004.

6 **5.2 FIRM TRANSPORTATION**

7 There are two primary categories of Firm Transportation Contracts (Receipt and
8 Delivery) available on the Alberta System. Firm Transportation Receipt Point Contracts
9 refer to quantities contracted by customers under Firm Transportation agreements that
10 enter the Alberta System at receipt meter stations. Firm Transportation Export Delivery
11 Point Contracts refer to quantities contracted by customers under Firm Transportation
12 agreements that leave the Alberta System to another province or state. Alberta Delivery
13 Point Contracts refer to quantities that leave the Alberta System to a market within
14 Alberta.

15 **5.2.1 Firm Transportation Receipt Point Contract Demand**

16 The Receipt Point Contract Demand forecast is determined after considering the total
17 quantity contracted by customers under Firm Transportation agreements, and adjustments
18 for any new and expiring Contract Demand forecast to occur during 2004. Quantities used
19 in the forecast are based on information available as of [August 2003](#) [January 2004](#). The
20 adjustments result from the following:

- 21 1. New Receipt Point Contract Demand – Tables 5.2-1 and 5.2-2 include the
22 estimated quantity of new Firm Transportation contracts during 2004.
- 23 2. The non-renewal of Receipt Point Contract Demand – The Gas Transportation
24 Tariff requires customers to provide renewal commitments one year prior to the
25 expiration of a contract. Contract renewals are known up until [July](#) [December](#)

2004; however, August to December renewals can only be estimated. Tables 5.2-1 and 5.2-2 include the non-renewal information.

The total Receipt Point Contract Demand illustrated in Table 5.2-1 shows a decrease from ~~255.7~~257.3 $10^6\text{m}^3/\text{d}$ (9.1 Bcf/d) at the beginning of the year to ~~230.1~~231.8 $10^6\text{m}^3/\text{d}$ (8.2 Bcf/d) at the end of the 2004. The 2004 average Receipt Point Contract Demand, which is calculated as an average of twelve monthly forecasts, is forecast to be ~~242.8~~250.8 $10^6\text{m}^3/\text{d}$ (~~8.6~~8.9 Bcf/d). The monthly forecast detail used to calculate the 2004 average Receipt Point Contract Demand forecast is shown in Table 5.2-2. Table 5.2-1 also includes figures for 2002 and 2003.

Revised Table 5.2-1¹
2002-2004 Firm Transportation Receipt Point Contract Demand

Receipt Contract Demand	2002 Actual		2003 Estimated ² Actual		2004 Forecast	
	Bcf/d	$10^6\text{m}^3/\text{d}$	Bcf/d	$10^6\text{m}^3/\text{d}$	Bcf/d	$10^6\text{m}^3/\text{d}$
Beginning of Year	10.5	295.2	10.4	292.2	9.1	255.7 <u>257.3</u>
Adjustments						
• New Firm Transportation	1.28	36.1	0.4 <u>0.5</u>	12.0 <u>13.1</u>	0.7 <u>0.9</u>	18.3 <u>24.1</u>
• Non-Renewals	(1.39)	(39.1)	(1.72) <u>(1.70)</u>	(48.5) <u>(48.0)</u>	(1.56) <u>(1.76)</u>	(43.9) <u>(49.6)</u>
End of Year	10.4	292.2	9.1	255.7 <u>257.3</u>	8.2	230.1 <u>231.8</u>
Average Monthly Quantity	10.9	305.6	9.8	275.5 <u>276.1</u>	8.6 <u>8.9</u>	242.8 <u>250.8</u>

1. Numbers may not add due to rounding.

2. ~~Includes actuals to August and estimates for the remainder of the year.~~

Revised Table 5.2-2¹
2004 Monthly Firm Transportation Receipt Point Contract Demand
(Bcf/d)

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Previous Month-End	<u>9.13</u>	<u>9.32</u>	<u>9.30</u>	<u>8.95</u>	<u>8.92</u>	<u>8.81</u>	<u>8.76</u>	<u>8.73</u>	<u>8.71</u>	<u>8.70</u>	<u>8.27</u>	<u>8.34</u>
Estimated Incremental FT-R	<u>0.21</u>	0.04	0.11	<u>0.19</u>	0.04	0.00	0.01	0.01	0.00	0.00	0.11	<u>0.14</u>
Start of Month	<u>9.34</u>	<u>9.36</u>	<u>9.41</u>	<u>9.14</u>	<u>8.97</u>	<u>8.81</u>	<u>8.77</u>	<u>8.74</u>	<u>8.71</u>	<u>8.70</u>	<u>8.38</u>	<u>8.48</u>
Less Non-Renewals	0.03	0.05	<u>0.46</u>	<u>0.22</u>	<u>0.16</u>	0.05	0.04	0.03	0.01	<u>0.44</u>	<u>0.04</u>	<u>0.25</u>
End of Month	<u>9.32</u>	<u>9.30</u>	<u>8.95</u>	<u>8.92</u>	<u>8.81</u>	<u>8.76</u>	<u>8.73</u>	<u>8.71</u>	<u>8.70</u>	<u>8.27</u>	<u>8.34</u>	<u>8.23</u>

Monthly Average (Start of Month)

8.90

(10⁶ m³/d)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Previous Month-End	<u>257.3</u>	<u>262.5</u>	<u>262.1</u>	<u>252.2</u>	<u>251.4</u>	<u>248.1</u>	<u>246.8</u>	<u>245.9</u>	<u>245.5</u>	<u>245.1</u>	<u>232.9</u>	<u>235.0</u>
Estimated Incremental FT-R	<u>5.9</u>	<u>1.1</u>	3.0	<u>5.3</u>	1.2	0.1	0.2	0.3	0.1	0.1	3.2	3.8
Start of Month	<u>263.2</u>	<u>263.6</u>	<u>265.1</u>	<u>257.5</u>	<u>252.6</u>	<u>248.2</u>	<u>247.0</u>	<u>246.2</u>	<u>245.5</u>	<u>245.2</u>	<u>236.1</u>	<u>238.9</u>
Less Non-Renewals	0.7	<u>1.5</u>	<u>12.9</u>	<u>6.1</u>	<u>4.5</u>	<u>1.3</u>	1.1	<u>0.8</u>	<u>0.4</u>	<u>12.3</u>	<u>1.1</u>	<u>7.0</u>
End of Month	<u>262.5</u>	<u>262.1</u>	<u>252.2</u>	<u>251.4</u>	<u>248.1</u>	<u>246.8</u>	<u>245.9</u>	<u>245.5</u>	<u>245.1</u>	<u>232.9</u>	<u>235.0</u>	<u>231.8</u>

Monthly Average (Start of Month)

250.8

1. Numbers may not add due to rounding.

1 **5.2.2 Firm Transportation Export Delivery Point Contract Demand**

2 The Export Delivery Point Contract Demand is determined after considering the total
3 quantity signed by customers under Firm Transportation agreements for the 2003/04 and
4 2004/05 Gas Years, and adjustments for any new and expiring Contract Demand forecast to
5 occur during 2004. Components of the total 2004 Export Delivery Point Contract Demand of
6 232.4 $10^6\text{m}^3/\text{d}$ (8.258.38 Bcf/d) are shown in Table 5.2-3. Figures are also included
7 for 2002 and 2003. The monthly forecast detail used to calculate the 2004 average Export
8 Delivery Point Contract Demand forecast is shown in Table 5.2-4.

Revised Table 5.2-3¹
2002-2004 Firm Transportation Export Delivery Point Contract Demand

Export Delivery Point	2002		2003		2004	
	Bcf/d	$10^6\text{m}^3/\text{d}$	Bcf/d	$10^6\text{m}^3/\text{d}$	Bcf/d	$10^6\text{m}^3/\text{d}$
Empress	4.59	129.4	3.49	98.4	<u>3.39</u>	<u>95.5</u>
			<u>3.57</u>	<u>100.6</u>	<u>3.11</u>	<u>87.7</u>
McNeill	2.18	61.3	2.10	59.1	<u>1.98</u>	<u>55.9</u>
			<u>2.27</u>	<u>64.0</u>	<u>2.26</u>	<u>63.5</u>
Alberta/B.C.	2.72	76.6	2.83	79.8	<u>2.84</u>	<u>79.9</u>
				<u>79.9</u>	<u>2.98</u>	<u>83.9</u>
Other Borders	0.04	1.0	0.04	1.0	0.04	1.0
Total Average Quantity	9.52	268.3	<u>8.46</u>	<u>238.3</u>	<u>8.25</u>	<u>232.4</u>
			<u>8.71</u>	<u>245.5</u>	<u>8.38</u>	<u>236.2</u>

9 1. Numbers may not add due to rounding

10 ~~2. Includes actuals to August and estimates for the remainder of the year.~~

REVISED February 2004

Revised Table 5.2-4¹**2004 Monthly Firm Transportation Export Delivery Point Contract Demand**

(Bcf/d)

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Previous Month-End	<u>8.18</u>	<u>8.17</u>	<u>8.17</u>	<u>8.31</u>	<u>8.31</u>	<u>8.31</u>	<u>8.31</u>	<u>8.31</u>	<u>8.31</u>	<u>8.31</u>	<u>6.56</u>	<u>8.89</u>
Estimated Incremental FT-D	<u>0.01</u>	0.00	<u>0.14</u>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<u>2.34</u>	0.00
Start of Month	<u>8.19</u>	<u>8.17</u>	<u>8.31</u>	<u>8.31</u>	<u>8.31</u>	<u>8.31</u>	<u>8.31</u>	<u>8.31</u>	<u>8.31</u>	<u>8.31</u>	<u>8.90</u>	<u>8.89</u>
Less Non-Renewals	0.02	<u>0.01</u>	<u>0.00</u>	0.00	0.00	0.00	0.00	0.00	0.00	<u>1.75</u>	<u>0.01</u>	<u>0.01</u>
End of Month	<u>8.17</u>	<u>8.17</u>	<u>8.31</u>	<u>8.31</u>	<u>8.31</u>	<u>8.31</u>	<u>8.31</u>	<u>8.31</u>	<u>8.31</u>	<u>6.56</u>	<u>8.89</u>	<u>8.88</u>

Monthly Average (Start of Month)

8.38(10⁶ m³/d)

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Previous Month-End	<u>230.5</u>	<u>230.3</u>	<u>230.1</u>	<u>234.0</u>	<u>234.0</u>	<u>234.0</u>	<u>234.0</u>	<u>234.0</u>	<u>234.0</u>	<u>234.0</u>	<u>184.8</u>	<u>250.6</u>
Estimated Incremental FT-D	0.3	0.0	<u>3.9</u>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<u>66.0</u>	0.0
Start of Month	<u>230.8</u>	<u>230.3</u>	<u>234.0</u>	<u>234.0</u>	<u>234.0</u>	<u>234.0</u>	<u>234.0</u>	<u>234.0</u>	<u>234.0</u>	<u>234.0</u>	<u>250.8</u>	<u>250.6</u>
Less Non-Renewals	0.5	<u>0.2</u>	<u>0.0</u>	0.0	<u>0.0</u>	0.0	0.0	0.0	0.0	<u>49.2</u>	<u>0.2</u>	<u>0.3</u>
End of Month	<u>230.3</u>	<u>230.1</u>	<u>234.0</u>	<u>234.0</u>	<u>234.0</u>	<u>234.0</u>	<u>234.0</u>	<u>234.0</u>	<u>234.0</u>	<u>184.8</u>	<u>250.6</u>	<u>250.2</u>

Monthly Average (Start of Month)

236.2

1. Numbers may not add due to rounding.

1 **5.3 ANNUAL THROUGHPUT**

2 **5.3.1 Background**

3 NGTL delivers gas to markets within Alberta and to downstream pipelines that connect to
4 other Canadian and United States market. Throughput forecasts are prepared for the
5 following Export Border Points and Alberta Delivery Points on the Alberta System:

- 6 • Empress border, which connects with TCPL’s Mainline system and supplies gas to
7 Canadian markets east of Alberta, the U.S. Midwest and U.S. Northeast markets;
- 8 • McNeill border, which connects with Foothills Pipe Lines (Sask.) Ltd., which, in turn,
9 connects to Northern Border Pipeline Company and supplies the U.S. Midwest market;
- 10 • Alberta-BC border, which connects with TCPL’s B.C. System and supplies southern
11 B.C. markets, and also connects with the PG&E’s Gas Transmission Northwest (GTN)
12 pipeline system and supplies the Pacific Northwest and California markets;
- 13 • Unity and Cold Lake borders, which connect with TransGas Limited and supply the
14 Saskatchewan market;
- 15 • Gordondale and Boundary Lake borders, which connect with the Duke Energy Gas
16 Transmission system and supply the British Columbia and Pacific Northwest markets.
- 17 • Alberta-Montana border, which connects with NorthWestern Energy’s system and
18 supplies the Montana market; and
- 19 • Alberta delivery stations.

20 NGTL’s forecast is based on economic growth assumptions in Canada and the United
21 States and an analysis of the aggregate supply, competition for supply with other
22 pipelines, gas market share expectations, taking into account customer delivery contracts,
23 downstream pipeline capacity, and competitiveness of Canadian gas versus other sources
24 of gas.

1 **5.3.2 Throughput by Alberta System Delivery Point**

2 The following table summarizes the Annual Throughput forecast for the Alberta System by
3 Delivery Point. Total Alberta System deliveries are forecast to remain relatively flat as
4 illustrated in the following table.

Revised Table 5.3-1¹
Alberta System Throughput Forecast

Delivery Point	2002 Actual		2003 <u>Estimated</u> ² <u>Actual</u>		2004 Forecast	
	Bcf/d	10 ⁹ m ³ /d	Bcf/d	10 ⁹ m ³ /d	Bcf/d	10 ⁹ m ³ /d
Empress	2,093	59.0	<u>1,941</u>	<u>54.7</u>	<u>1,752</u>	<u>49.4</u>
			<u>1,887</u>	<u>53.2</u>	<u>1,745</u>	<u>49.2</u>
McNeill	779	21.9	<u>772</u>	<u>21.7</u>	<u>732</u>	<u>20.6</u>
			<u>777</u>	<u>21.9</u>	<u>739</u>	<u>20.8</u>
Alberta/B.C.	773	21.8	<u>686</u>	<u>19.3</u>	<u>787</u>	<u>22.2</u>
			<u>674</u>	<u>19.0</u>	<u>701</u>	<u>19.7</u>
Other Borders	27	0.8	<u>56</u>	0.2	14	0.4
Sub-Total Borders	3,672	103.4	<u>3,404</u>	<u>95.9</u>	<u>3,285</u>	<u>92.6</u>
			<u>3,344</u>	<u>94.2</u>	<u>3,199</u>	<u>90.1</u>
Intra-Alberta	475	13.4	<u>561</u>	<u>15.8</u>	<u>656</u>	18.5
			<u>539</u>	<u>15.2</u>	<u>655</u>	
Total System (excl. Fuel)	4,146	116.8	<u>3,965</u>	<u>111.7</u>	<u>3,940</u>	<u>111.0</u>
			<u>3,883</u>	<u>109.4</u>	<u>3,854</u>	<u>108.6</u>
Fuel	44	1.2	<u>3734</u>	1.0	<u>3533</u>	1.0
						<u>0.9</u>
Total System (incl. Fuel)	4,190	118.1	<u>4,001</u>	<u>112.7</u>	<u>3,976</u>	<u>112.0</u>
			<u>3,917</u>	<u>110.4</u>	<u>3,887</u>	<u>109.5</u>

5 1. Numbers may not add due to rounding.

6 2. Includes actuals to August and estimates for the remainder of the year.

7 The 2004 throughput at Export Delivery Points is forecast to decrease by 3.54.3% from the
8 estimate for 2003 amount, while throughput at Alberta Delivery Points is forecast to increase
9 by 16.921.5%. The 2004 total system Annual Throughput is forecast to decrease only

1 slightly from the ~~estimate for~~ 2003 amount.

2 **5.3.3 Distribution of 2004 Annual Throughput to Services**

3 Annual throughput is made up of gas volumes flowing under the following transportation
4 services:

- 5 • Receipt Services (FT-R, FT-RN, IT-R);
- 6 • Delivery Services (FT-D, STFT, FT-A, IT-D); and
- 7 • Other Transportation Services (LRS, LRS-2, LRS-3, FT-P).

8 The various Firm and Interruptible service options available to customers combined with
9 market volatility make it difficult to accurately forecast the utilization of these services. The
10 forecast distribution of throughput by service type shown in Tables 5.3-2 and 5.3-3 is based
11 upon historical use, trend analysis, and NGTL's judgment of its customers' use of these
12 services. The throughput numbers shown below correspond to the 2004 calendar year.
13 Throughput numbers used for calculating 2004 transportation rates are based on volumes
14 forecast for the 12-month period from December 1, 2003 to November 30, 2004.

Revised Table 5.3-2¹

2004 Receipt Throughput by Service

Throughput Service Category	Bcf	10 ⁹ m ³	Percent of Annual Throughput
Firm Transportation Receipts*	<u>3,1882,628</u>	<u>74.089.8</u>	<u>80.267.6%</u>
Interruptible Transportation Receipts	<u>1,064830</u>	<u>30.023.4</u>	<u>26.821.4%</u>
Other Transportation Services**	<u>360393</u>	<u>10.111.1</u>	<u>9.010.1%</u>
Total Services	<u>4,6123,851</u>	<u>129.9108.5</u>	<u>116.099.1%</u>
Less -Net Receipts into - <u>from</u> Storage	<u>63636</u>	<u>17.91.0</u>	<u>16.00.9%</u>
Total Throughput	<u>3,9763,887</u>	<u>112.0109.5</u>	100.0%

1. Numbers may not add due to rounding.

* Includes fuel, FT-R and FT-RN

** Includes LRS, LRS-2, LRS-3 and FT-P

Revised Table 5.3-3¹**2004 Delivery Throughput by Service**

Throughput Service Category	Bcf	10⁹m³	Percent of Annual Throughput
Firm Transportation Deliveries	2,938 <u>2,958</u>	82.8 <u>83.3</u>	73.9 <u>76.1</u> %
Interruptible Transportation Deliveries*	<u>347</u> <u>241</u>	<u>9.7</u> <u>6.8</u>	<u>8.7</u> <u>6.2</u> %
Firm Transportation Alberta Deliveries**	656 <u>655</u>	18.5	16.5 <u>16.9</u> %
Total Delivery Services	3,941 <u>3,854</u>	111.0 <u>108.6</u>	99.1 <u>99.2</u> %
NGTL Fuel	<u>35</u> <u>33</u>	<u>1.0</u> <u>0.9</u>	<u>0.9</u> <u>0.8</u> %
Total Throughput	3,976 <u>3,887</u>	112.0 <u>109.5</u>	100.0%

¹ Numbers may not add due to rounding.

* Volumes are net of Alternate Access

** Includes volumes from FT-A, Extraction and Taps