

APPLICATION
BY TRANS MOUNTAIN PIPELINE ULC
AS GENERAL PARTNER OF TRANS MOUNTAIN PIPELINE L.P.
FOR APPROVAL OF A MULTI-YEAR INCENTIVE TOLL SETTLEMENT
AND RELATED MATTERS
2019 - 2021

2019-2021 INCENTIVE TOLL SETTLEMENT

INCENTIVE TOLL SETTLEMENT

FOR THE TRANS MOUNTAIN PIPELINE SYSTEM

2019 - 2021

ATTACHMENT 1
Table of Contents

1	Introduction	3
2	General Agreement.....	4
3	Interpretation	5
4	Determination of Annual Tolls and Surcharges/Surcredits	12
5	Annual Toll Filings	13
6	System Throughput.....	13
7	Revenue Requirement	13
8	Flow Through Costs.....	13
9	Fixed Costs	14
10	Capital Cost Recovery	14
11	Adjustments	15
12	Rate Base	19
13	Non-Routine Adjustments	20
14	Westridge Dock Premium Surcredit	21
15	Pipeline Reclamation Surcharge	22
16	New Business Opportunities.....	22
17	Audit Requirements	22
18	Deferral Accounts	23
19	Dispute Resolution	24
20	General Provisions	24
21	Transactions with Affiliates.....	25
22	Conditions Precedent.....	25
23	Extension of 2019-2021 ITS	26
24	Expiration of 2019-2021 ITS.....	26

1 Introduction

- 1.1 Trans Mountain Pipeline L.P. is a limited partnership organized under the laws of Alberta. Trans Mountain Pipeline ULC is a company incorporated under the laws of Alberta. Trans Mountain Pipeline ULC is the general partner of Trans Mountain Pipeline L.P. (collectively “**Trans Mountain**”).
- 1.2 Trans Mountain Pipeline L.P. owns an oil pipeline system (the “**System**”) originating at Edmonton, Alberta and terminating at Burnaby, British Columbia, with intermediate points of receipt and delivery.
- 1.3 Trans Mountain is regulated by the National Energy Board (the “**NEB**”). Trans Mountain Pipeline ULC holds Certificate of Public Convenience and Necessity OC-2 as amended and Certificate of Public Convenience and Necessity OC-49 as amended which permit the operation of the System.
- 1.4 Trans Mountain and its Shippers have developed this incentive toll settlement (the “**2019-2021 ITS**”), which shall, subject to the approval of the NEB, provide for settlement of the Revenue Requirement and toll issues applicable to the System for a three (3) year period, commencing January 1, 2019 with an extension period agreed to by Trans Mountain and Shippers pursuant to Section 23.
- 1.5 Trans Mountain and Shippers understand that the incentives provided for in this 2019-2021 ITS provide an opportunity to achieve incremental revenues and cost savings but they are not a guarantee of such revenues and savings.
- 1.6 Trans Mountain understands that the costs accounted for in this 2019-2021 ITS shall not include costs otherwise accounted for as Costs and Expenses, as defined in the Trans Mountain Pipeline Expansion Project Facility Support Agreements.
- 1.7 Westridge Dock Bid Premiums collected during the Term shall be refunded to Shippers as a Westridge Dock Premium Surcredit over a period of time approved by the NEB. The disposition of Westridge Dock Bid Premiums is governed by NEB Reasons for Decision dated 20 July 2006¹ and as set out in Section 14.
- 1.8 On January 1, 2015, in compliance with the NEB Reasons for Decision, Set-aside and collection mechanisms MH-001-2013 issued May 2014, Trans Mountain commenced the collection of pipeline abandonment funds from Shippers through the collection of a Pipeline Reclamation Surcharge. Trans Mountain’s

¹ NEB filing ID: A12678.

Pipeline Reclamation Surcharge is governed by NEB Order TO-002-2015² and as set out in Section 15.

2 General Agreement

- 2.1 This 2019-2021 ITS was developed by Trans Mountain and Shippers to provide an overall settlement for the determination of the Revenue Requirement and toll issues for the System for the Term. This 2019-2021 ITS is to be viewed as a whole and no component of it, taken in isolation, shall be construed as representing the position of any party other than as part of the overall incentive toll settlement. No element of this 2019-2021 ITS shall be considered acceptable to any party in isolation, nor shall it form a precedent, nor prejudice the position of any party in future discussions or proceedings.
- 2.2 It is intended that the incentive based methodology contemplated in this 2019-2021 ITS will align the interests of Trans Mountain with those of its Shippers by aligning risks and rewards associated with the costs and benefits of transporting greater volumes and reducing costs than may otherwise be achieved. Trans Mountain shall strive to create opportunities to enhance the overall capacity of the System through operational improvements and other opportunities as outlined in Sections 11.4 and 16.
- 2.3 Trans Mountain will continue to provide, at a minimum, the current level of service and responses to requests from its Shippers. The current level of service generally exceeds the minimum service standard as contained in Trans Mountain's Service Standards, as may be amended from time to time in response to requests from Shippers.
- 2.4 This 2019-2021 ITS shall be applicable solely to the System and shall have no application to, or form a precedent for, other NEB regulated pipelines or pipelines regulated by the Federal Energy Regulatory Commission.
- 2.5 If any matter pertaining to the Net Toll, toll surcharges/surcredits or Revenue Requirement of the System arises that is not anticipated or adequately provided for in this 2019-2021 ITS, it is agreed that Trans Mountain and its Shippers shall discuss such matter and attempt to resolve it in a fair and equitable manner. In the event that any such matter cannot be resolved, the dispute resolution provisions in Section 19 of this 2019-2021 ITS shall apply.
- 2.6 Trans Mountain shall request the NEB's approval of this 2019-2021 ITS.

² NEB filing ID: A68377.

2.7 Trans Mountain shall also request from the NEB:

- (a) relief from the requirement to file financial forecasts and financial surveillance reports quarterly; and
- (b) approval to file annually the schedules contemplated herein.

3 Interpretation

3.1 Definitions

Unless otherwise defined below in this 2019-2021 ITS, capitalized terms shall have the meanings set out in the Petroleum Tariff.

- (a) **2019-2021 ITS** has the meaning given to it in Section 1.4 above.
- (b) **Affiliate** means with respect to Trans Mountain, any Person (i) that controls Trans Mountain, (ii) that is controlled by Trans Mountain, or (iii) that is under common control with Trans Mountain; it being understood and agreed that for purposes of this definition the terms controls and controlled by shall mean the power to direct or cause the direction of the management and policies of another Person whether through the ownership of shares or partnership interest, a contract, trust arrangement or any other means, either directly or indirectly, that results in control in fact and without restricting the generality of the foregoing includes, with respect to the control of or by a corporation or a partnership, the ownership of shares or partnership interest carrying not less than fifty percent (50%) of the voting rights regardless of whether such ownership occurs directly or indirectly, as contemplated above.
- (c) **AFUDC** means an allowance for funds used during construction of capital projects, calculated on monthly as-spent-dollars, and is the sum of:
 1. an amount representing Trans Mountain's cost of debt, equal to the cost of debt multiplied by the debt portion of deemed capital structure; and
 2. an amount representing Trans Mountain's return on equity multiplied by the equity portion of deemed capital structure,
 using the deemed capital structure, debt rate and return on equity as set forth in Section 10.1.

AFUDC shall be included in capital project costs that have the following characteristics:

1. Duration of construction exceeds three (3) months;

2. Construction is of a complex nature (i.e. excludes simple purchases); and
 3. Individual capital project costs exceed \$75,000.
- (d) **Capacity Incentive Code of Conduct** or **CI Code** means the code of conduct established to govern interactions between Trans Mountain and Shippers with respect to the capacity incentive.
 - (e) **Capital Cost Incentive** or **CCI** means the negotiated adjustment included in Rate Base to remove a portion of the capital cost overruns calculated under the terms of the 2006 – 2010 Incentive Toll Settlement (approved by NEB Order TO-06-2006), all in respect of the capital expansions contemplated within that Settlement.
 - (f) **Capital Cost Recovery** means the Return on Capital and Depreciation included in the Revenue Requirement and as set out in Section 10.
 - (g) **Carrying Charges** means carrying costs calculated on the balances owed to Shippers as of December 31 of the applicable year (unless the context dictates a different date). The Carrying Charge rate shall be the average of the monthly Trans Mountain overnight bank rate (TD Prime minus 2%, or as may be changed from time to time). The calculation method for the Carrying Charge rate is set out in Schedule 9.
 - (h) **Debt Rate Adjustment** means the adjustment, if any, calculated in accordance with the method provided in Schedule 2.2.
 - (i) **Deemed Heavy Percentage** means a deemed heavy percentage calculated pursuant to the method provided in Schedule 5.
 - (j) **Depreciation** means the annual decline in asset value as a result of wear and tear, age, obsolescence and replacement. The annual Depreciation expense is set out in Schedule 2.
 - (k) **Direct G&A** means general administration costs, pursuant to the NEB's *Oil Pipeline Uniform Accounting Regulations*, as amended or replaced from time to time including contract services provided for general administration, corporate costs (such as legal, audit, banking and communications costs) and facilities rents for pump stations and the Westridge Marine Terminal. These costs are fixed as per Sections 9.1 and 9.2.
 - (l) **Dispute** shall mean the failure of Trans Mountain and Shippers to reach agreement or concurrence on any matter herein that requires such agreement or concurrence or the failure of Trans Mountain and Shippers to resolve any disagreement on the application or interpretation of this 2019-2021 ITS,

including the alleged failure of any party to act in good faith with reasonable efforts.

- (m) **Edmonton Terminalling Revenues** means the amount of revenues collected by Trans Mountain from Shippers that use the System's facilities at Edmonton terminal; and is calculated as a Net Toll, as set out in the Petroleum Tariff for movements from Edmonton to Edmonton, multiplied by the annual actual volumes handled using this service, plus amounts paid to receive non-standard service.
- (n) **Environmental Compliance and Remediation** means the cost to develop and maintain the environmental protection program in compliance with applicable legal requirements and costs to assess and remediate contaminated sites associated with the operation of the System.
- (o) **Fire, Safety and Security** means the costs to inspect and maintain fire protection systems, the costs to safeguard System assets and those working for, on behalf of or in proximity to the System, and the costs to develop and maintain the health and safety, security and emergency management programs in compliance with applicable legal requirements that protect the public as well as System personnel and facilities.
- (p) **Fixed Costs** means Direct G&A and Trans Mountain Personnel as detailed in Section 9.
- (q) **Flow Through Costs** means the cost of NEB Cost Recovery; Power; Property Taxes; Insurance; Environmental Compliance and Remediation; Integrity Management; Land and Right of Way Management; and Fire, Safety and Security.
- (r) **GAAP** means generally accepted accounting principles contained in the United States FASB Accounting Standards Codification, as amended or replaced from time to time.
- (s) **In-Service** means, in respect of any facility, the date upon which the facility is capable of providing the intended service, unless the NEB mandates otherwise.
- (t) **Integrity Management** means the costs to: (i) maintain and execute the pipeline integrity management program, including without limitation, in-line inspections, corrosion control and monitoring, hazard management, and risk assessments; (ii) maintain and execute the facility integrity management program, including without limitation, ongoing routine maintenance and inspection of tanks, pump stations, metering equipment, and other station equipment; and (iii) maintain the facilities located at the Westridge Marine

Terminal, including without limitation, the maintenance and operation of the incinerator and the sulphate-treat unit, Trans Mountain's vessel inspector and tugs, and the maintenance and deployment of the booms, and vacuum trucks to drain loading arms.

- (u) **Land and Right of Way Management** means the costs to: (i) maintain station property; (ii) maintain access and egress to the pipeline right of way including without limitation, removal of vegetation to ensure the ability to access the right of way or to complete visual inspection; and (iii) maintain and execute the damage prevention program, including without limitation, pipeline patrols and encroachment removals.
- (v) **National Energy Board Act or NEB Act** means the National Energy Board Act, RSC 1985, c.N-7 as the same may be amended or supplemented from time to time, and for certainty includes any replacement or successor legislation.
- (w) **NEB** has the meaning given to it in Section 1.3 above, and includes any successor or replacement agency.
- (x) **NEB Cost Recovery** means all amounts payable by Trans Mountain to the NEB pursuant to the NEB Cost Recovery Regulations.
- (y) **Net Toll** means the dollar amount per volume unit of Petroleum transported on the System, as established by Trans Mountain in accordance with the terms of this 2019-2021 ITS and the System Throughput to transport Petroleum from a specified point of receipt to a specified point of delivery, as further explained in the TL Schedule 1, and published in a Petroleum Tariff. Net Toll does not include any surcredit or surcharge that has been separately approved or directed by the NEB, such as the Westridge Dock Premium Surcredit or the Pipeline Reclamation Surcharge.
- (z) **Non-Routine Adjustment or NRA** means an amount not otherwise provided for within Direct G&A, or as may be otherwise negotiated, and which on an annual basis per incident is equal to or greater than \$100,000, or in aggregate is equal to or greater than \$250,000 unless otherwise indicated herein. The NRAs are detailed in Sections 11.8 and 13.
- (aa) **Operational Capacity Incentive Adjustment** means the adjustment, if any, calculated pursuant to Section 11.4.
- (bb) **Petroleum Loss Allowance Percentages or PLAP** means physical petroleum losses administered as a percentage (%) of volume delivered as determined in accordance with Section 11.7.

- (cc) **Petroleum Tariff** means the Trans Mountain rules and regulations that govern the transportation of Petroleum on the System and the Trans Mountain toll schedules, as approved by the NEB from time to time.
- (dd) **Provision for Income Tax** means application of statutory income tax rates (applicable in the provinces of Alberta and British Columbia) to the equity return (calculated as the individual Rate Bases multiplied by the equity component and the equity rate as contained in Section 10.1), utilizing the flow through method of accounting for income taxes, and applicable taxable differences, appropriately adjusted to a pre-tax amount, in a manner consistent with that approved by the NEB in its RH-3-93 Reasons for Decision. The method for the calculation of the Provision for Income Tax is set out in Schedule 7.
- (ee) **Rate Base** means the accumulated original capital cost of assets, net of accumulated Depreciation, both as adjusted to remove the CCI amounts, plus a Working Capital Provision as set out in Section 12.
- (ff) **Return on Capital** means the cost of debt and equity on Rate Base which is included in the Revenue Requirement and as set out in Section 10.1.
- (gg) **Revenue Requirement** means the total cost of service incurred by Trans Mountain for the transportation and handling of Petroleum on the System, as set out in Schedule 1, which is to be recovered in Net Tolls.
- (hh) **System** has the meaning given to it in Section 1.2 above.
- (ii) **System Throughput** means Trans Mountain's forecast of anticipated deliveries for the System as set out in Section 6.
- (jj) **Target System Capacity** means the calculated hydraulic capacity for volumes exiting Edmonton and Edson, expressed in cubic meters per day, as determined using the 2010 hydraulic model, the Deemed Heavy Percentage and the agreed to target of 96%; as adjusted for any (i) System shutdowns, (ii) reductions in System Throughput as a result of maintenance activities, (iii) Shipper actions including but not limited to Delivery Point delays and Kamloops Excess Nominations, and (iv) Force Majeure.
- (kk) **Term** means the three (3) year period beginning on January 1, 2019 at 7:00 a.m. (Mountain Standard Time) and ending on January 1, 2022 at 7:00 a.m. (Mountain Standard Time), and any extension of such period pursuant to Section 23 and any early termination pursuant to Section 24.2.
- (ll) **Trans Mountain** has the meaning given to it in Section 1.1.

- (mm) **Trans Mountain Affiliate Code of Conduct** means the code of conduct established to govern interactions between Trans Mountain, Trans Mountain personnel, Trans Mountain affiliates, and Trans Mountain affiliate personnel, with respect to the provision of transportation services, as directed by the NEB in the letter dated 6 March 2008 in relation to Order XO-T246-04-2008.
- (nn) **Trans Mountain Expansion Project** means the proposed expansion project for the System as described in the Trans Mountain Application pursuant to Part IV of the NEB Act approved by the NEB in the RH-001-2012 Reasons for Decision and as described in the Trans Mountain Expansion Project Application pursuant to Section 52 of the NEB Act and information filed with the NEB in relation thereto.
- (oo) **Trans Mountain Personnel** means the cost paid by Trans Mountain for the provision of personnel in accordance with Trans Mountain's Cost Allocation Methodology filed with the NEB in July 2002 (which includes personnel's salaries and wages, benefits, overhead, and allocation of capital assets such as the control centre building and the centralized pipeline operating and control system and the Calgary head office) and as set out in Sections 9.3 and 9.4. For clarity, personnel benefits include pension costs.
- (pp) **Transportation Revenue Adjustment** or **TRA** means the adjustment, if any, calculated pursuant to Section 11.3.
- (qq) **Westridge Dock Bid Premiums** means the premiums paid by Shippers for volumes loaded over the Westridge Marine Terminal, as approved in the aggregated Reasons for Decision for Trans Mountain's Capacity Allocation Procedures for March 2006 to August 2007, as amended from time to time.
- (rr) **Working Capital Provision** means for any year the sum of:
1. Total annual operating costs minus annual insurance costs, plus provision for annual cash payments that are not included in the operating costs including but not limited to cash income taxes, all multiplied by fifteen (15) days and divided by the appropriate number of days in the year; and
 2. The average of the opening and closing inventory and prepaid expense balances for the year (balance sheet accounts).
- 3.2 This 2019-2021 ITS and related Petroleum Tariff are subject to the approval of the NEB in accordance with the NEB Act. At any time during the Term, Trans Mountain may apply to the NEB for approval of amendments to the 2019-2021 ITS schedules, methodology or calculations, provided that such amendments are consistent with the terms of this ITS and that such amendments shall be subject

to review with Shippers prior to filing with the NEB. Nothing herein shall prevent or preclude any Shipper from exercising its right to intervene or object to any such application. Amendments to the 2019-2021 ITS schedules, methodology or calculations shall be effective on approval by the NEB, or as otherwise directed by the NEB.

- 3.3 Whenever the singular or plural is used in this 2019-2021 ITS, it shall be construed as meaning the plural or singular as the context requires.
- 3.4 Any references to current practices or level of service in this 2019-2021 ITS shall be construed as meaning practices or levels of service prevailing as of January 1, 2019 at 7:00 am.
- 3.5 Any reference to a monetary amount is to a lawful currency of Canada.
- 3.6 The following schedules and toll calculations and attachments shall form part of this 2019-2021 ITS:

Schedule 1	Method for Calculation of Revenue Requirement
Schedule 2	Method for Calculation of Rate Base, Capital Cost Recovery, and Adjustment
Schedule 2.1	Summary of Capital Additions by Major Categories
Schedule 2.2	Method for Calculation of Debt Rate
Schedule 3	Summary of Fixed Costs and Trans Mountain Personnel Adjustment
Schedule 4	Summary of Flow Through Costs and Adjustments
Schedule 4.1	Summary of Power Transmission Volume and BC Energy Costs
Schedule 4.2	2018 Power Cost Incentives, Sharing and Adjustments
Schedule 4.2(a)	2018 Transmission Volume Incentive
Schedule 4.2(b)	2018 BC Energy Price Incentive
Schedule 4.3	Method for Calculation of the Petroleum Loss Allowance Percentages
Schedule 5	Method for Calculation of Operational Capacity Incentive Adjustment
Schedule 6	Method for Calculation of Transportation Revenue Adjustment
Schedule 7	Method for Calculation of Income Tax Provision and Adjustment
Schedule 7.1	CCA for the Rate Base
Schedule 8	Summary of Non-Routine Adjustments
Schedule 8.1	Method for Calculation of the NRA for the Edmonton Terminalling Revenues
Schedule 8.2	Westridge Dock Bid Premium Refunds
Schedule 9	Method for Calculation of Carrying Charge Rate
NEB Compliance Reporting	
NEB 1 Income Statement	

	NEB 2 Average Rate Base
	NEB 3 Throughput Details
	NEB 4 Annual Integrity Spending
	NEB 5 Firm Service Report Pursuant to Board Order RH-2-2011
	NEB 6 Trans Mountain Expansion Project Bulk Oil Cargo Fee Due from Westridge Shippers Pursuant to Board Order TO-001-2016
	NEB 7 Costs Recovered from Merchant Services at the Edmonton Terminal Pursuant to Board Order XO-T246-04-2008
TL Schedules	Toll Design Explanatory Notes, System Throughput, Net Toll Calculations, and Surcharge and Surcredit Toll Calculations (from 1-9)
Procedures	CI Code, Inventory Settlement Procedure, Refined Petroleum Reconciliation Procedure

3.7 Where a schedule attached hereto provides for:

- (a) a fixed amount, the amounts are as negotiated;
- (b) a calculation method, such calculation method and the numbers as proposed are as negotiated;
- (c) an illustration of a calculation method, such illustrative calculation as set out may change subject to review with Shippers prior to filing for approval of the Net Tolls.

3.8 Attachments hereto provide information to support or enhance the calculations completed pursuant to the schedules.

3.9 In the event of a conflict between the body of this 2019-2021 ITS and the numbers or calculation methods set out in the schedules, the numbers or calculation methods set out in the schedules shall govern.

4 Determination of Annual Tolls and Surcharges/Surcredits

4.1 Trans Mountain shall calculate the Net Tolls for each year of the Term in accordance with the method set out in the toll schedules, calculated on a prospective basis.

4.2 In order to calculate the Net Tolls, Trans Mountain shall determine the Revenue Requirement as contemplated in Section 7 and the System Throughput as contemplated in Section 6.

4.3 In addition to the Net Tolls, toll surcharges and surcredits such as the Pipeline Reclamation Surcharge and Westridge Dock Premium Surcredit, may be applied from time to time for costs or credits directly imposed or approved by the NEB.

5 Annual Toll Filings

- 5.1 Not later than March 1 of each year of the Term, Trans Mountain shall provide Shippers with initial draft(s) of the respective 2019-2021 ITS schedules for that year, updated to incorporate prior year adjustments pursuant to Section 11 and to include fixed and forecasted numbers for the year.
- 5.2 After review by Shippers of the respective 2019-2021 ITS draft schedules and Trans Mountain having addressed any questions raised by Shippers with respect to the draft schedules, Trans Mountain shall file with the NEB for approval a final version of the updated 2019-2021 ITS schedules and a new Petroleum Tariff requesting that such Petroleum Tariff be effective no later than May 1 of each year, or such subsequent date as may be required based on the filing date with the NEB and the date NEB approval is forthcoming.
- 5.3 From January 1, of each year, until such time as a new Petroleum Tariff shall be approved by the NEB as contemplated in Section 5.2, Trans Mountain shall continue to apply the Petroleum Tariff then in effect on an interim basis to invoice Shippers, unless otherwise approved by the NEB.

6 System Throughput

- 6.1 The System Throughput forecast shall take into account current and near-term market conditions, customer demand, supply, previous year's performance and, at a minimum, shall be based on 93% of hydraulic capacity at the forecast heavy composition. The forecast of the System Throughput shall be provided in TL Schedule 2.

7 Revenue Requirement

- 7.1 Trans Mountain shall calculate the Revenue Requirement to be recovered through Net Tolls for each year of the Term, taking into account the items set out in Section 7.2 and calculated using the method set out in Schedule 1.
- 7.2 The Revenue Requirement shall be calculated as the sum of the forecasted Flow Through Costs (Section 8), Fixed Costs (Section 9), Capital Cost Recovery (Section 10), Provision for Income Tax (Section 3.1(dd)), and Adjustments (Section 11).

8 Flow Through Costs

- 8.1 Flow Through Costs shall be recovered from Shippers on an actual basis as set

out in Schedule 4.

9 Fixed Costs

- 9.1 **Direct G&A** for 2019 shall be the amount that is the lower of 2018 Approved and 2018 Actual Direct G&A, escalated at a fixed rate of 2%.
- 9.2 **Direct G&A** for the remaining years of the Term shall be escalated annually at a fixed rate of 2%.
- 9.3 **Trans Mountain Personnel** shall be \$65.274 million for 2019.
- 9.4 **Trans Mountain Personnel** for the remaining years of the Term shall be escalated annually at a fixed rate of 2.5%.
- 9.5 The method of calculation for the Fixed Costs is set out in Schedule 3.

10 Capital Cost Recovery

10.1 Return on Capital

- (a) Trans Mountain shall calculate the 2019 Return on Capital using the following financial parameters:
 - 1. deemed capital structure of 45% equity and 55% debt;
 - 2. return on equity of 9.5%; and
 - 3. debt rate of 5.0%
- (b) For the remaining years of the Term, Trans Mountain shall calculate the Return on Capital using the following financial parameters:
 - 1. deemed capital structure of 45% equity and 55% debt;
 - 2. return on equity of 9.5%; and
 - 3. prior year debt rate plus a Debt Rate Adjustment, calculated in accordance with the method provided in Schedule 2.2. The Debt Rate Adjustment may be positive or negative; however, the debt rate after adjustment shall not be lower than 4.5% and shall not exceed 5.5%.
- (c) The 2019 financial parameters shall be utilized in the following equations to determine return on Rate Base:
 - 1. $\text{Debt Return} = \text{Rate Base} \times 0.55 \times 0.05$

$$2. \text{ Equity Return} = \text{Rate Base} \times 0.45 \times 0.095$$

- (d) For the remaining years of the Term, the financial parameters shall be utilized in the following equations to determine return on Rate Base:

$$1. \text{ Debt Return} = \text{Rate Base} \times 0.55 \times (\text{prior year debt rate} + \text{Debt Rate Adjustment})$$

$$2. \text{ Equity Return} = \text{Rate Base} \times 0.45 \times 0.095$$

- (e) The method of calculation for the Return on Capital is set out in Schedule 2.

10.2 Depreciation

- (a) Trans Mountain shall retain the current Depreciation rates for 2019.
- (b) Trans Mountain and its Shippers agree to initiate a Depreciation study in 2019. Trans Mountain shall file with the NEB for approval of the Depreciation study and apply revised Depreciation rates for each subsequent year of the Term subject to NEB approval.
- (c) The Depreciation rates shall be applied to Trans Mountain's fixed asset accounts, as maintained in accordance with: (i) the NEB's *Oil Pipeline Uniform Accounting Regulations*, as amended or replaced from time to time; and (ii) GAAP. The resulting total Depreciation expense shall be set out in Schedule 2.

11 Adjustments

11.1 2018 Adjustments

- (a) Trans Mountain shall flow through adjustments, if any, from the 2016-2018 Incentive Toll Settlement³ into the 2019 Revenue Requirement. For clarity, these flow through adjustments shall include all annual reconciled amounts as contained in the Schedules attached hereto, which are substantially in the same form as those filed with the request for approval of the 2018 final tolls but may have been renumbered to conform with the format of this 2019-2021 ITS.

³ Incentive Toll Settlement for the Trans Mountain System, 2016-2018, Section 24.1

11.2 Capital Cost Recovery Adjustment

- (a) A Capital Cost Recovery adjustment shall be calculated for each year of the Term.
- (b) The adjustment shall be calculated as the difference between the actual and forecast amounts. The adjustment may be positive or negative and shall be charged or refunded to Shippers through the Revenue Requirement in the subsequent year.
- (c) Carrying Charges shall be applied on amounts owed to Shippers.
- (d) The method of calculation for the Capital Cost Recovery adjustment is set out in Schedule 2.

11.3 Transportation Revenue Adjustment

- (a) A Transportation Revenue Adjustment shall be calculated for each year of the Term.
- (b) The TRA shall be calculated as the difference between the actual tolled revenues collected for the year and the approved Revenue Requirement applicable to such year. The TRA may be positive or negative and shall be refunded or charged to Shippers through the Revenue Requirement in the subsequent year.
- (c) The TRA shall be calculated so as to avoid the duplication or double counting of any other adjustment.
- (d) To the extent that Trans Mountain refunds any TRA amounts described in parts (a) and (b) above to Shippers, such TRA amounts shall include Carrying Charges.
- (e) The method of calculation for the TRA is set out in Schedule 6.

11.4 Operational Capacity Incentive Adjustment

- (a) An Operational Capacity Incentive Adjustment shall be calculated for each year of the Term.
- (b) An Operational Capacity Incentive Adjustment, to the extent applicable, shall be included in the Revenue Requirement in the subsequent year.
- (c) The toll revenues for the Operational Capacity Incentive Adjustment shall be determined by multiplying the annual volumes for sharing by \$15.75/m³.
- (d) The annual volume for sharing shall be determined by taking the difference

between the annual delivered volume and the Target System Capacity.

- (e) The Operational Capacity Incentive Adjustment shall be 25% of the revenues to be shared in accordance with the method of calculation set out in Schedule 5; however, such amount shall not exceed \$4 million.
- (f) The remainder of such revenues to be shared shall be for the account of Shippers.
- (g) Carrying Charges shall be applied on amounts owed to Shippers.
- (h) The hydraulic formula used for the Target System Capacity and the method of calculation for the Operational Capacity Incentive Adjustment is set out in Schedule 5.
- (i) Annual reviews of the Operational Capacity Incentive Adjustment shall be performed pursuant to Section 20.4.

11.5 Trans Mountain Personnel Adjustment

- (a) A Trans Mountain Personnel adjustment, to the extent applicable, shall be included in the Revenue Requirement in the subsequent year.
- (b) The Trans Mountain Personnel adjustment shall be 50% of the negative difference between the amount recorded in Trans Mountain's books of record and the 2019 fixed amount established in accordance with Section 9.3.
- (c) The remainder shall be for the account of Trans Mountain.
- (d) Carrying Charges shall be applied on amounts owed to Shippers.
- (e) The method for calculation of the Trans Mountain Personnel adjustment is set out in Schedule 3.
- (f) Trans Mountain and Shippers shall review the Trans Mountain Personnel amount annually to determine whether further adjustments are required, pursuant to Section 20.4.

11.6 Flow Through Cost Adjustments

- (a) The Flow Through Cost adjustments shall be calculated for each year of the Term.
- (b) The adjustment shall be calculated as the difference between the amounts recorded in Trans Mountain's books of record and the forecasted amounts included in the Revenue Requirement.

- (c) The Flow Through Cost adjustments may be positive or negative and shall be charged or refunded to Shippers through the Revenue Requirement in the subsequent year.
- (d) Carrying Charges shall be applied on amounts owed to Shippers.
- (e) The method for calculation of the Flow Through Cost adjustments is set out in Schedule 4.

11.7 Petroleum Loss Allowance Percentages

- (a) On a monthly basis, Trans Mountain shall issue separate invoices to Shippers for physical petroleum losses in accordance with the procedure for reconciling physical petroleum losses defined in the Inventory Settlement Procedure and the Refined Petroleum Reconciliation Procedure which are both attached hereto and available on the Trans Mountain website at:

<https://www.transmountain.com/tolls-tariffs>

- (b) For the first four (4) months of 2019 the PLAPs are:
 - Mainline System Crude Petroleum Percentage – 0.00%
 - Refined Petroleum Percentage – 0.00%
 - Non-Mainline Petroleum Percentage – 0.00%
- (c) If during the review of the 2019 Final Tolls as contemplated in Section 5 of this 2019-2021 ITS, it is determined that the Petroleum Loss Balance Sheet amount has been reduced to less than \$1 million, then effective May 1, 2019, the PLAPs will be reset at:
 - Mainline System Crude Petroleum Percentage – 0.03%
 - Refined Petroleum Percentage – 0.02%
 - Non-Mainline Petroleum Percentage – 0.01%
- (d) If the PLAPs are reset, then for the remainder of the Term, the PLAPs shall be subject to an annual adjustment in accordance with the calculation method set out in Schedule 4.3.
- (e) If the Petroleum Loss Balance Sheet amount (due to Shippers) has not been reduced to less than \$1 million then the PLAPs will continue at 0% until the earlier of (1) the review of the 2020 Final Tolls as contemplated in Section 5 of this 2019-2021 ITS or (2) until such balance has been reduced to less than \$1 million at which point the PLAPs will be reset at the percentages described in Section 11.7(c).
- (f) For the remainder of the Term, the PLAPs shall be subject to an annual adjustment in accordance with the calculation method set out in Schedule 4.3.

- (g) Subsequent to the reset of the PLAPs as contemplated in Sections 11.7(c) and 11.7(e), the intent is to keep the PLAPs relatively stable from year to year.

11.8 NRAs and NRA Adjustments

- (a) NRAs, as set out in Section 13, shall be included in the Revenue Requirement as an adjustment.
- (b) NRA adjustments shall be calculated annually as the difference between the amount recorded in Trans Mountain's books of record and the forecasted amount included in the Revenue Requirement.
- (c) The NRAs and adjustments may be positive or negative and shall be charged or refunded to Shippers through the Revenue Requirement in the subsequent year.
- (d) Carrying Charges shall be applied on amounts owed to Shippers.
- (e) The method for the calculation of NRAs and NRA adjustments is set out in Schedule 8.

11.9 Provision for Income Tax Adjustment

- (a) A Provision for Income Tax adjustment shall be calculated for each year of the Term.
- (b) The adjustment shall be calculated as the difference between the actual and forecast amounts. The adjustment may be positive or negative and shall be charged or refunded to Shippers through the Revenue Requirement in the subsequent year.
- (c) Carrying Charges shall be applied on amounts owed to Shippers.
- (d) The method for the calculation of the Provisions for Income Tax Adjustment is set out in Schedule 7.

12 Rate Base

12.1 Rate Base

- (a) The Rate Base shall be calculated for each year of the Term on a flow through basis as set out in Schedule 2. The flow through amounts are categorized as: (i) open plant in service assets and open accumulated Depreciation, all as recorded in Trans Mountain's books of record for rate regulated operations at the end of the prior calendar year less adjustment for CCI amounts (for 2019

the opening Rate Base is the 2018 closing amounts); (ii) capital additions for assets placed In-Service in the calendar year; (iii) Depreciation; (iv) retirements; and (v) net proceeds / costs.

- (b) The Rate Base shall exclude those assets that are not utilized by all Shippers on the System. Examples of excluded assets and related costs are Westridge non-regulated facilities, pipe rack assigned costs, assets contracted to third parties including the Edmonton Terminal Expansion tanks constructed pursuant to Order XO-T246-04-2008, as amended, Edmonton Tank 29 and Tank 30 constructed pursuant to Order XO-T260-025-2013 and Edmonton Pumps, Piping and Facilities constructed pursuant to Order XO-T260-011-2014 and any other assets contracted for use by a specific Shipper as a result of such Shipper's non-standard or non-common service requirements.

12.2 Rate Base / Working Capital Provision

- (a) The calculation of the annual Working Capital Provision is set out on Schedule 2.

13 Non-Routine Adjustments

13.1 A NRA shall be an adjustment to the Revenue Requirement necessary to permit Trans Mountain to recover or credit any impacts resulting from an event described in this Section 13 over the appropriate time period. NRAs, with the exception of government imposed changes or uncontrollable events that may impact Trans Mountain, shall be reviewed with and supported by Shippers prior to filing the annual 2019-2021 ITS schedules as noted in Section 5.2. NRAs may be any one or more of the following:

- (a) Fixed Costs arising from changes in programs, required NEB reporting or operating costs associated with the installation of facilities as a result of changes in legislation, regulation, orders or direction by the NEB or other government authority where the matter was not initiated by Trans Mountain or its Affiliates. This category includes, without limitation, costs related to:
 1. maintaining compliance with NEB Directives and/or Orders regarding pipeline abandonment funds and communicating the status of the collection and set-aside of pipeline abandonment funds in accordance with the NEB's RH-2-2008 Reasons for Decision and the NEB's MH-001-2013 Reasons for Decision or other NEB direction related thereto (which shall not be subject to the cost limitations for a NRA as set out in Section 3.1(z)); and

2. the development and implementation of programs pursuant to NEB Directives and/or Orders including but not limited to regulatory reform stemming from the *Jobs, Growth and Long-Term Prosperity Act* (Bill C38, Bill C-45), the *Pipeline Safety Act* (Bill C-46), and the *Impact Assessment Act* (Bill C-69).
- (b) Increases in Fixed Costs for testing, programs or facilities requested by Shippers and agreed to by Trans Mountain. This category includes, without limitation, costs related to:
 1. A 2019 Depreciation study as requested by Shippers (which shall not be subject to the cost limitations for a NRA as set out in Section 3.1(z)); and
 2. The establishment of a shipper focus group to evaluate and prepare a business case for the enhancement of secure access to Trans Mountain's information systems as requested by Shippers (which shall not be subject to the cost limitations for a NRA as set out in Section 3.1(z)).
 - (c) Increases in Fixed Costs as a result of programs necessary to address new or unanticipated failure mechanisms after commencement of this 2019-2021 ITS which may impact System integrity;
 - (d) The cost of audits reimbursed pursuant to Section 17.5 of this 2019-2021 ITS (which shall not be subject to the cost limitations for a NRA as set out in Section 3.1(z));
 - (e) Sharing of Edmonton Terminalling Revenues (which shall not be subject to the amounts for a NRA as set out in Section 3.1(z)); and which shall be shared based on the calculation method set out in Schedule 8.1; and
 - (f) Receipt of Alternate Delivery Point Fees, Demurrage Charges and/or Non-Performance Penalties. In the event that such fees, charges or penalties are collected by Trans Mountain, they shall be returned to Shippers (which shall not be subject to the amounts for a NRA as set out in Section 3.1(z)).

14 Westridge Dock Premium Surcredit

- 14.1 Westridge Dock Bid Premiums collected during the Term may be dealt with under separate filings to the NEB to address the disposition of the funds, as the magnitude of prior and future collections may necessitate separate discussions with Shippers and reporting on these discussions to the NEB.
- 14.2 During the course of prior annual toll filings, it has become customary for Trans Mountain to deal with both base toll changes and the Westridge Dock Premium

Surcredit in the same filing, unless the magnitude of prior and future collections necessitates separate filings as outlined in Section 14.1.

- 14.3 Trans Mountain will determine, through discussions with Shippers during the annual toll filing process as contemplated in Section 5, the disposition of the Westridge Dock Bid Premiums.

15 Pipeline Reclamation Surcharge

- 15.1 The pipeline abandonment funds collected through the Pipeline Reclamation Surcharge are set-aside in the Trans Mountain Pipeline Reclamation Trust.
- 15.2 Trans Mountain shall keep Shippers apprised of the status of the pipeline abandonment funds collected over time.
- 15.3 All costs incurred by Trans Mountain to maintain compliance with NEB Directives and/or Orders regarding pipeline abandonment funds and to communicate the status of the collection and set-aside of pipeline abandonment funds that are not otherwise paid or payable from the Trans Mountain Pipeline Reclamation Trust shall be treated as a NRA as contemplated in Section 13.1(a).

16 New Business Opportunities

- 16.1 Any current or prospective Shipper or Trans Mountain may request a review of opportunities that may enhance utilization of the current System.
- 16.2 If it is agreed, and to the extent that Trans Mountain can enable new volumes or improve overall utilization of the current System through new business opportunities, Trans Mountain shall share incremental revenues net of incremental costs with Shippers based on an agreed upon formula.
- 16.3 Trans Mountain shall keep Shippers apprised of any such opportunities and the potential benefits.
- 16.4 In addition to the requirements of Section 20.4, any new business that enhances the capacity utilization beyond the capacity limitations at the commencement of this Agreement will require a review of the Operational Capacity Incentive with Shippers.

17 Audit Requirements

- 17.1 Upon reasonable notice to Trans Mountain, Shippers collectively may elect to have a third party audit this 2019-2021 ITS to confirm the reasonableness of the

costs attributable to operation of the System and to confirm Trans Mountain's compliance with the provisions of this 2019-2021 ITS.

- 17.2 The auditor selected pursuant to this Section 17 must be an independent firm of public accountants. The audit must be conducted during normal business hours on such days as agreed to by Trans Mountain.
- 17.3 Trans Mountain shall provide such auditors with reasonable access to the relevant source data and other relevant information necessary for the conduct of the audit, including relevant Trans Mountain files. The auditors shall not be provided with access to any records held by Trans Mountain's contractors, subcontractors or suppliers.
- 17.4 All persons involved in performing any such audit shall sign a confidentiality agreement at the request of Trans Mountain.
- 17.5 Trans Mountain shall reimburse Shippers for the direct cost incurred, or as agreed, in respect of any audits undertaken on their behalf pursuant to this Section 17, provided that the amount of such reimbursement shall be recoverable by Trans Mountain as a NRA pursuant to Section 13.
- 17.6 Shippers shall provide a copy of the final audit report to Trans Mountain within ten (10) days of the date of Shippers' receipt of such report.
- 17.7 Trans Mountain and Shippers shall use all reasonable efforts to resolve any claims or discrepancies disclosed by an audit report as soon as reasonably practicable, and in any event within one hundred and eighty (180) days following provision of the audit report to Trans Mountain.
- 17.8 Claims or discrepancies that remain unresolved one hundred and eighty (180) days following provision of the audit report to Trans Mountain shall be resolved in accordance with the dispute resolution provisions in Section 19.
- 17.9 Shippers shall not audit Trans Mountain more than once in any calendar year.

18 Deferral Accounts

- 18.1 Trans Mountain shall establish deferral account(s) to record the following amounts, including applicable Carrying Charges thereon, to be implemented as adjustments to the Revenue Requirement as defined and more fully described in the aforementioned sections:
 - (a) Capital Cost Recovery Adjustment;
 - (b) Trans Mountain Personnel Adjustment;

- (c) Flow Through Cost Adjustments;
- (d) Operational Capacity Incentive Adjustment;
- (e) Transportation Revenue Adjustment;
- (f) Provision for Income Tax Adjustment;
- (g) NRAs and NRA Adjustments; and
- (h) New Business Opportunity Adjustments.

19 Dispute Resolution

- 19.1 It is agreed that any requirement of or obligation set out in this 2019-2021 ITS to agree to, concur with, support, accept or negotiate the effect of any matter identified herein shall be construed as an obligation to act in good faith with all reasonable efforts to achieve resolution of the matter at issue.
- 19.2 In the event of a Dispute, any Shipper may initiate Dispute resolution by providing written notice to Trans Mountain. Trans Mountain, shall thereafter, provide written notice to parties known to have an interest in the Dispute or the resolution thereof. In the event of a Dispute, Trans Mountain may also initiate Dispute resolution by providing written notice to parties known to have an interest in the Dispute or the resolution thereof.
- 19.3 No later than seven (7) days following the receipt of such notice, Trans Mountain and Shippers shall each appoint a representative or representatives to attempt to resolve the Dispute. The representatives appointed by each party shall be individuals who are technically qualified to appreciate and assess the Dispute and who have authority to negotiate a resolution to the Dispute. If the Dispute is not resolved within thirty (30) days of receipt of the notice, the Dispute resolution shall be deemed to have failed.
- 19.4 Upon the failure of the Dispute resolution process, Trans Mountain or the Shipper initiating the Dispute may refer the Dispute to the NEB, with the request that the Dispute be resolved by the NEB on an expedited basis.

20 General Provisions

- 20.1 If at any time any metric or externally obtained factor referred to hereunder is not available or ascertainable, the parties agree to promptly meet to negotiate a mutually satisfactory replacement for such metric or externally obtained factor.

- 20.2 Trans Mountain shall, at all times during the Term, insure its property and potential liability exposures against loss or damage in a manner that is commercially reasonable having regard to the nature of the System.
- 20.3 This 2019-2021 ITS shall be governed by, construed and interpreted in accordance with the laws of the Province of Alberta and the federal laws of Canada applicable therein.
- 20.4 Trans Mountain and Shippers shall review annually the Operational Capacity Incentive Adjustment as set out in Section 11.4 and the CI Code, and the Trans Mountain Personnel adjustment as set out in Section 11.5. If parties agree on any changes thereto, Trans Mountain shall apply to the NEB for approval of such changes.

21 Transactions with Affiliates

- 21.1 Trans Mountain and its Affiliates (including Trans Mountain Canada Inc., the operator of the System) and each of their respective personnel are required to abide by the Trans Mountain Affiliate Code of Conduct and the CI Code. The CI Code is attached hereto. The Trans Mountain Affiliate Code of Conduct and the CI Code are posted on Trans Mountain's website at <https://www.transmountain.com/tolls-tariffs>
- 21.2 Trans Mountain shall maintain books of account for the System in accordance with the requirements of the NEB's *Oil Pipeline Uniform Accounting Regulations*, as amended or replaced from time to time, and any applicable Orders or Directives of the NEB.
- 21.3 Trans Mountain shall ensure that all of its personnel are aware of and comply with the requirements of the Trans Mountain Affiliate Code of Conduct and the CI Code.

22 Conditions Precedent

- 22.1 This 2019-2021 ITS and the Net Tolls for each year of the Term determined in accordance with this 2019-2021 ITS shall be subject to the approval of the NEB.
- 22.2 If any provision of this 2019-2021 ITS or the Net Tolls does not receive regulatory approval or is altered by a regulatory decision that makes this 2019-2021 ITS or Net Tolls non-manageable or unacceptable to Trans Mountain or the Shippers, it is agreed that the parties shall review and rectify this 2019-2021 ITS and the Net Tolls or this 2019-2021 ITS shall be terminated.

23 Extension of 2019-2021 ITS

- 23.1 On or before July 1, 2021, Trans Mountain and Shippers commit to review this 2019-2021 ITS. Such review shall include, at a minimum, a review of the Operational Capacity Incentive Adjustment and the Trans Mountain Personnel adjustment.
- 23.2 Subsequent to the review and taking into account any negotiated amendments resulting from this review, this 2019-2021 ITS may be extended for one (1) additional year or two (2) additional years, or until such time as the Trans Mountain Expansion Project is In-Service provided that such period does not exceed two (2) years.
- 23.3 Trans Mountain shall file for approval of the NEB an addendum to this 2019-2021 ITS to reflect such extension.

24 Expiration of 2019-2021 ITS

- 24.1 Upon expiration of this 2019- 2021 ITS, all amounts owed to or recoverable from Shippers in accordance with this 2019-2021 ITS, other than as determined for the refund of the Westridge Dock Bid Premiums, shall be carried forward into the subsequent year's Revenue Requirement, or dealt with in accordance with a negotiated resolution between Trans Mountain and its Shippers, or as otherwise approved by the NEB.
- 24.2 Upon commencement of service of the Trans Mountain Expansion Project this 2019-2021 ITS shall terminate. If termination of this 2019-2021 ITS is a result of the commencement of service of the Trans Mountain Expansion Project, the prior year adjustments pursuant to Section 11 shall be calculated as the differences between the actual and forecast amounts on a pro-rata basis for the number of days that are governed under this 2019-2021 ITS. The amounts owed to or recoverable from Shippers in accordance with this 2019-2021 ITS, other than as determined for the refund of the Westridge Dock Bid Premiums, shall be carried forward into the Annual Reconciliation process for the Variable Toll component of the Firm Service Tolls and Uncommitted Tolls in accordance with the Trans Mountain Expansion Toll Methodology⁴.

⁴ Trans Mountain Pipeline ULC, Application Pursuant to Part IV of the National Energy Board Act for Approval of the Toll Methodology to be Applied on the Expanded Trans Mountain Pipeline System, dated 29 June 2012 (NEB filing ID: A42489) and the Revised Application thereafter, dated 10 January 2013 (NEB filing ID A50046). The Application was approved by NEB Order TO-004-2013, dated 23 April 2013 (NEB filing ID: A51914).

APPLICATION
BY TRANS MOUNTAIN PIPELINE ULC
AS GENERAL PARTNER OF TRANS MOUNTAIN PIPELINE L.P.
FOR APPROVAL OF A MULTI-YEAR INCENTIVE TOLL SETTLEMENT
AND RELATED MATTERS
2019 - 2021

2019-2021 INCENTIVE TOLL SETTLEMENT
SCHEDULES

TRANS MOUNTAIN
Methodology for Calculation of Tolls
Supporting Schedules and Toll Calculations
Pursuant to the 2019 - 2021 Incentive Toll Settlement
TABLE OF CONTENTS

SCHEDULES		Page
<i>Schedule 1</i>	Method for Calculation of Revenue Requirement	ITS - 2
<i>Schedule 2</i>	Method for Calculation of Rate Base, Capital Cost Recovery, and Adjustment	ITS - 3
	2.1 Summary of Capital Additions by Major Categories	ITS - 5
	2.2 Method for Calculation of Debt Rate	ITS - 6
<i>Schedule 3</i>	Summary of Fixed Costs and Trans Mountain Personnel Adjustment	ITS - 7
<i>Schedule 4</i>	Summary of Flow Through Costs and Adjustments	ITS - 8
	4.1 Summary of Power Transmission Volume and BC Energy Costs	ITS - 9
	4.2 2018 Power Cost Incentives, Sharing and Adjustments	ITS - 10
	4.2 (a) 2018 Transmission Volume Incentive	ITS - 11
	4.2 (b) 2018 BC Energy Price Incentive	ITS - 12
	4.3 Method for Calculation of the Petroleum Loss Allowance Percentages	ITS - 13
<i>Schedule 5</i>	Method for Calculation of Operational Capacity Incentive Adjustment	ITS - 14
<i>Schedule 6</i>	Method for Calculation of Transportation Revenue Adjustment	ITS - 16
<i>Schedule 7</i>	Method for Calculation of Income Tax Provision and Adjustment	ITS - 17
	7.1 CCA for the Rate Base: (i) 2018; and (ii) Illustration for 2019	ITS - 18
<i>Schedule 8</i>	Summary of Non-Routine Adjustments	ITS - 19
	8.1 Method for Calculation of the NRA for the Edmonton Terminalling Revenues	ITS - 20
	8.2 Westridge Dock Bid Premium Refunds	ITS - 21
<i>Schedule 9</i>	Method for Calculation of Carrying Charge Rate	ITS - 23
NEB COMPLIANCE REPORTING		
	NEB 1 Income Statement	ITS - 24
	NEB 2 Average Rate Base	ITS - 25
	NEB 3 Throughput Details	ITS - 26
	NEB 4 Annual Integrity Spending	ITS - 27
	NEB 5 Firm Service Report	ITS - 28
	NEB 6 Trans Mountain Expansion Project Bulk Oil Cargo Fee Due from Westridge Shippers	ITS - 29
	NEB 7 Costs Recovered from Merchant Services at the Edmonton Terminal	ITS - 30
TOLL CALCULATIONS		
<i>TL Schedule 1</i>	Explanatory Notes for the Toll Design and Calculations	ITS - 31
<i>TL Schedule 2</i>	Summary of Forecast System Throughput Volumes	ITS - 34
<i>TL Schedule 3</i>	Revenue Comparison using Interim and Proposed Tolls	ITS - 36
<i>TL Schedule 4</i>	Summary of Proposed Tolls by Crude Type	ITS - 38
<i>TL Schedule 5</i>	Calculation of Proposed Mainline Tolls	ITS - 40
<i>TL Schedule 6</i>	Calculation of Proposed Westridge Marine Terminal Loading Charge	ITS - 41
<i>TL Schedule 7</i>	Calculation of Proposed Tankage Tolls	ITS - 42
<i>TL Schedule 8</i>	Calculation of Proposed Terminalling Tolls	ITS - 43
	8.1 Calculation of Proposed Terminalling Receipt Tolls	ITS - 43
	8.2 Calculation of Proposed Terminalling Delivery Tolls	ITS - 44
<i>TL Schedule 9</i>	Calculation of Proposed Separate Toll for the Westridge Dock Bid Premium Refund	ITS - 45

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement
Schedule 1
Method for Calculation of Revenue Requirement
(\$000)

Line	Description	Schedule & Line ref.	2018 Approved	2018 Actual Example	[1] 2018 Variance	2019 Illustration	[1]
1	A. Revenues for Annual Toll Change						
2	Capital Cost Recovery	[Schedule 2, Sheet 1, line 26]	114,784	114,784	-	112,609	
3	Income Tax Provision	[Schedule 7, line 12]	13,922	13,922	-	13,740	
4	Fixed Costs	[Schedule 3, line 11]	47,035	47,035	-	68,233	
5	Flow Through Costs	[Schedule 4, line 11]	118,086	118,086	-	122,857	
6	Trans Mountain Personnel Adjustment ^[2]	[Schedule 3, line 12]	n/a	n/a		-	
7	Power Incentive Adjustment (Shippers' share) ^[3]	[Schedule 4.2, line 11]	-	-	-	n/a	
8	Transportation Revenue Adjustment ^[2]	[Schedules 6, line 15]	-	-	-	-	
9	Operational Capacity Incentive Adjustment ^[2]	[Schedules 5, Sheet 1, line 17]	-	-	-	-	
10	Summary of NRAs and Adjustments	[Schedule 8, line 9]	(582)	(582)	-	(562)	
11	Total Revenues		293,245	293,245	-	316,877	
12	Carrying Charges	[Schedule 9, Note 2]	(144)			-	
13	Prior year adjustment ^[4]		(9,637)			-	
14	Total Annual Revenue Requirement		283,463			316,877	
15	B. Adjustment required for partial year Net Tolls						
16	Revenues collected from 2018 Interim Net Tolls ^[5]		(95,294)				
17	Revenues collected from 2019 Interim Net Tolls ^[5]					-	
18	Revenues for Partial Year Net Tolls		188,169			316,877	
19	C. Average change in Revenue Requirement	[(line 14: 2018 Approved ÷ 2017 of \$287,244K) - 1] [(line 14: 2019 Illustration ÷ 2018 Approved) - 1]	-1.3%			11.8%	
20	Refund Westridge Dock Bid Premiums ^[6]						
21	Separate Tariff Sur-credit	[Schedule 8.2, line 9]	(81,840)	(81,840)		-	
22	Additional refund to offset Pipeline Reclamation Surcharge	[Schedule 8.2, line 10]	(13,498)	(13,498)		-	
23	Total Separate Tariff Sur-credit		(95,338)	(95,338)		-	
24	Average change in Tolls						
25	Without Westridge Dock Bid Premiums		-11.1%	-11.1%			
26	With Westridge Dock Bid Premiums		-21.8%	-21.8%			

Note(s):

- [1] The 2018 Approved will be updated to reflect 2018 Actuals calculated pursuant to the 2016-2018 ITS and as part of the 2019 Final Toll filing. The 2019 Illustration conforms with the principles defined in the 2019 - 2021 ITS and will be updated to 2019 Proposed as part of the 2019 Final Toll filing.
- [2] For examples of the Trans Mountain Personnel Adjustment, Operational Capacity Incentive Adjustment, and Transportation Revenue Adjustment, refer to Schedule 3, Schedule 5 and Schedule 6 respectively.
- [3] Power Incentive Adjustment will be calculated for 2018 pursuant to the 2016-2018 ITS and included in the 2019 Final Toll filing as a prior year adjustment. The Power Incentive Adjustment is not included in the 2019-2021 ITS.
- [4] The 2018 Approved Prior year adjustment can be found in the 2018 Final Toll filing, Toll Calculation Schedules, Schedule 1, Line 12. NEB filing ID: A91089
- [5] Interim Toll amounts are the sum of Interim Net Tolls multiplied by deliveries identified for January through April.
- [6] The 2019 Interim Net Tolls and Refund Westridge Dock Bid Premiums will be determined in conjunction with the 2019 Final Toll filing.
- [7] ALL AMOUNTS SHOWN ON THE SCHEDULES ARE CALCULATED TO THE DOLLAR AND HAVE NOT BEEN ROUNDED WHEN PRESENTED IN THOUSANDS. AS A RESULT TOTALS MAY NOT ADD.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

Schedule 2

Method for Calculation of Rate Base, Capital Cost Recovery, and Adjustment

Sheet 1 of 2

(\$millions)

Line	Description	Capital Structure	Returns / Rates		2018	2018	2018	2019
			2018	2019	Approved	Actual Example	Variance	Illustration
1	Open Plant In Service Assets				1,601.4	1,601.4	-	1,643.2
2	Open Accumulated Depreciation				(641.0)	(641.0)	-	(687.4)
3	Total Open Net Plant ^[1]				960.3	960.3	-	955.9
4	Capital Additions to Rate Base as of							
5	1-Jan [Schedule 2.1, line 22]				-	-	-	-
6	31-Dec [Schedule 2.1, line 23]				41.9	41.9	-	32.5
7	Additions without Westridge Marine Terminal				41.9	41.9	-	32.5
8	Westridge Marine Terminal				-	-	-	-
9	Reportable Additions				41.9	41.9	-	32.5
10	Depreciation Expense ^[5]							
11	31-Dec	[2]	3.06%	3.06%	(46.4)	(46.4)	-	(45.0)
12	Reportable Depreciation Expense				(46.4)	(46.4)	-	(45.0)
13	Retirements				-	-	-	-
14	Net Proceeds / (Costs)				(0.1)	(0.1)	-	-
15	Close Plant In Service				1,643.2	1,643.2	-	1,675.7
16	Close Accumulated Depreciation				(687.4)	(687.4)	-	(732.3)
17	Total Close Net Plant				955.9	955.9	-	943.4
18	Average Plant In Service				958.1	958.1	-	949.6
19	Average Working Capital ^[4]				14.8	14.8	-	13.4
20	Net Rate Base				972.9	972.9	-	963.1
21	Return on Capital							
22	Equity	45%	9.50%	9.50%	41.6	41.6	-	41.2
23	Debt ^[3]	55%	5.00%	5.00%	26.8	26.8	-	26.5
24	Total Return on Capital				68.3	68.3	-	67.7
25	Depreciation Expense				46.4	46.4	-	45.0
26	Total Capital Cost Recovery				114.8	114.8		112.6
27	Capital Cost Recovery Variance						-	
28	Carrying Charges			[If line 27<0, line 27 * rate on Sch 9]			-	

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

Schedule 2

Method for Calculation of Rate Base, Capital Cost Recovery, and Adjustment

Sheet 2 of 2

Note(s):

- [1] Excluded assets: Capital Cost Incentive or CCI pursuant to NEB Order TO-06-2006.
- [2] The 2019 Depreciation rates shall retain the Depreciation rates set out in the 2010 Depreciation study. For the remainder of the Term, Trans Mountain will apply revised Depreciation rates established in the 2019 Depreciation study pursuant to Section 10.2 of the 2019-2021 ITS.
- [3] The 2019 debt rate is set at 5%. For the remainder of the Term, the debt rate will be determined pursuant to the calculation on Schedule 2.2 and Section 10.1 (b) of the 2019-2021 ITS. The debt rate includes fees, if any, for the line of credit required pursuant to NEB Order FRO-002-2017.

Forecast Working Capital Provision:	2018	2018	2018	2019
	Approved	Actual Example	Variance	Illustration
Fixed & Flow Through Operating Expenses	166.0	166.0	-	123.8
Less Insurance	(2.9)	(2.9)	-	(3.3)
Plus Income Taxes Payable	10.2	10.2	-	10.0
Cash Cost of Service	173.3	173.3	-	130.5
Provision for Cash Requirement ^[ii]	7.1	7.1	-	5.4
Average Prepaid Expenses ^[iii]	2.4	2.4	-	2.7
Average Inventory	5.3	5.3	-	5.3
Average Working Capital Provision	14.8	14.8	-	13.4
[i] Days in year	365	365		365
[ii] Provision for Cash uses Days in year [i] times # of days set at:	15	15		15

[iii] For 2019, Average Prepaid Expenses calculated as 83% of the forecast insurance expense.

- [5] Calculation of annual depreciation adjustment to actual booked depreciation expense for disallowed plant (\$000)

Disallowed Plant	Asset		Expense	Expense	Expense
Expansion CCI - 2010	(6,673)				
Accumulated Depreciation - 2018	1,337	2.76%	184	184	184
Total Depreciation Expense Adjustment			184	184	184

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

Schedule 2.1

Method for Calculation of Rate Base, Capital Cost Recovery, and Adjustment

Summary of Capital Additions by Major Categories

(\$000)

Line	Description	Schedule & Line ref.	2018 Approved	2018 Actual Example	2018 Variance	2019 Illustration
1	A. Mainline Repair Projects ^[1]					
2	1-Jan			-	-	
3	31-Dec		26,573	26,573	-	15,515
4	Total	[line 2 + line 3]	26,573	26,573	-	15,515
5	B. Facility Pipeline Projects ^[2]					
6	1-Jan			-	-	
7	31-Dec		10,974	10,974	-	12,812
8	Total	[line 6 + line 7]	10,974	10,974	-	12,812
9	C. Tanks ^[3]					
10	1-Jan			-	-	
11	31-Dec		4,341	4,341	-	3,869
12	Total	[line 10 + line 11]	4,341	4,341	-	3,869
13	D. Westridge Marine Terminal Upgrades ^[4]					
14	1-Jan		-	-	-	
15	31-Dec		-	-	-	-
16	Total	[line 14 + line 15]	-	-	-	-
17	E. Others ^[5]					
18	1-Jan		-	-	-	
19	31-Dec		-	-	-	291
20	Total	[line 18 + line 19]	-	-	-	291
21	F. Total Capital Additions					
22	1-Jan	[sum of (lines 2, 6, 10, 14 & 18)]	-	-	-	-
23	31-Dec	[sum of (lines 3, 7, 11, 15 & 19)]	41,888	41,888	-	32,487
24	Grand Total	[line 22 + line 23]	41,888	41,888	-	32,487

Note(s):

- [1] Mainline repairs, natural hazard assessment/remediation, cathodic protection, Mainline valve replacement, and other Mainline related projects are included.
- [2] Safety improvements, pumping equipment, piping modification, arc flash mitigation, seismic upgrades, leak detection flow meters, voltage sag correction, and other facility related projects are included.
- [3] Secondary tank containment upgrades, heel reduction, tankage upgrades and other tank related projects are included.
- [4] Westridge Marine Terminal upgrade projects are included.
- [5] Other minor capital projects are included such as equipment replacements and minor facilities repairs that are not specifically budgeted.
- [6] Capital projects that are of material value (i.e. > \$1M) will be reviewed and discussed with Shippers as part of the annual toll filing.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement
Schedule 2.2
Method for Calculation of Rate Base, Capital Cost Recovery, and Adjustment
Method for Calculation of Debt Rate
(units as shown)

			2019	2020 Illustration	
			Fixed	2018	2019
Line	Month	Schedule & Line ref.		Benchmark Rate Example	Benchmark Rate Example
1	A. Debt Rate Adjustment ^[1]				
2	January			1.15%	1.15%
3	February			1.25%	1.10%
4	March			1.35%	1.05%
5	April			1.45%	1.00%
6	May			1.55%	0.95%
7	June			1.45%	0.90%
8	July			1.55%	0.85%
9	August			1.65%	0.80%
10	September			1.65%	0.75%
11	October			1.75%	0.70%
12	November			1.85%	0.65%
13	December			1.95%	0.60%
14	Monthly average rate			1.55%	0.88%
15	Debt Rate Adjustment	[2019 AVG rate - 2018 AVG rate]			-0.68%
16	B. Debt rate		5.00%		
17	Debt rate ^[2]	[(Prior year rate + line 15) but within the range of 4.5% and 5.5%]			4.50%

Note(s):

- [1] Debt Rate Adjustment is calculated based on the monthly average rate of the Government of Canada Benchmark Bond Yields - 5 Year. The monthly yield data could be retrieved on the Bank of Canada website under series number V122540.
- [2] 2019 debt rate is fixed at 5% pursuant to Section 10.1 (a) of the 2019-2021 ITS. For remainder of the Term, the debt rate shall be calculated pursuant to Section 10.1 (b) of the 2019-2021 ITS. The rate shall not be lower than 4.5% and shall not exceed 5.5%.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

Schedule 3

Summary of Fixed Costs and Trans Mountain Personnel Adjustment

(\$000 or units as shown)

						Calculation Examples				
		Schedule & Line ref.	2018 Approved	2018 Rebase	Esca- lator ^[6]	2019 Fixed	Example 1		Example 2	
Line	Description						2019	2020	2019	2020
1	A. Direct G&A ^[1]									
2	Total Fixed Direct G&A Costs		2,901	2,901	2%	2,959		3,018		3,018
3	B. Trans Mountain Personnel ^[2]									
4	Fixed Trans Mountain Personnel ^[3]		44,134		2.5%	65,274	65,274	66,906	65,274	66,906
5	Trans Mountain Personnel Adjustment ^[4]									
6	Actual Trans Mountain Personnel						62,274		68,274	
7	Difference between Actual and Fixed amounts	[line 6 - line 4]					<u>(3,000)</u>		<u>3,000</u>	
8	Total saving to share ^[5]	[Negative shown on line 7]					<u>(3,000)</u>		<u>-</u>	
9	Shippers' share of the saving	[50% * line 8]					(1,500)		-	
10	Trans Mountain's share of the saving	[line 8 - line 9]					(1,500)		-	
11	Total Fixed Operating Expenses	[line 2 + line 4]	<u>47,035</u>			<u>68,233</u>		<u>69,924</u>		<u>69,924</u>
12	Trans Mountain Personnel Adjustment	[line 9]					<u>(1,500)</u>		<u>-</u>	<u>-</u>
13	Carrying Charges	[line 9 * rate on Sch 9]					(30)			

Note(s):

- [1] Amounts shown exclude Flow Through Costs. Forecast Flow Through Costs are provided on Schedule 4. The 2018 Rebase amount will be updated using the lower amount of 2018 Approved and Actual as part of the 2019 Final Toll filing.
- [2] Trans Mountain Personnel means personnel costs as transferred to Trans Mountain. Trans Mountain Personnel include pension costs pursuant to Section 3.1 (nn) of the 2019-2021 ITS.
- [3] 2019 Trans Mountain Personnel is a fixed amount as agreed to by the Shippers and Trans Mountain pursuant to Section 9.3 of the 2019-2021 ITS. For the remainder of the Term, Trans Mountain Personnel shall be escalated annually at a fixed escalator pursuant to Section 9.4 of the 2019-2021 ITS.
- [4] Trans Mountain and Shippers have agreed to review the Trans Mountain Personnel amount annually, to determine whether further adjustments are required pursuant to Section 11.5 of the 2019-2021 ITS.
- [5] Only negative difference between the actual amount and 2019 fixed amount will be shared between Trans Mountain and Shippers.
- [6] Annual escalator for Direct G&A is fixed at 2% for the Term pursuant to Section 9.1 of the 2019-2021 ITS .
Annual escalator for Trans Mountain Personnel is fixed at 2.5% for the Term pursuant to Section 9.4 of the 2019-2021 ITS.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement
Schedule 4

Summary of Flow Through Costs and Adjustments
(\$000)

Line	Description	Schedule & Line ref.	2018 Approved	2018 Actual Example	2018 Variance	2019 Illustration
1	Flow Through Costs					
2	Power		30,904	30,904	-	32,000
3	Property Taxes		26,871	26,871	-	27,616
4	Integrity Management		33,830	33,830	-	33,859
5	Land and Right of Way Management		5,405	5,405	-	5,641
6	Environmental Compliance and Remediation		8,752	8,752	-	10,845
7	Fire, Safety and Security		2,919	2,919	-	7,215
8	Pension Costs ^[2]		4,127	4,127	-	n/a
9	Insurance		2,897	2,897	-	3,300
10	NEB Cost Recovery		<u>2,381</u>	<u>2,381</u>	<u>-</u>	<u>2,381</u>
11	Total Flow Through Costs		<u>118,086</u>	<u>118,086</u>	<u>-</u>	<u>122,857</u>
12	Carrying Charges	[if line 11<0, line 11 * rate on Sch 9]			-	

Note(s):

- [1] This schedule is used to summarize the Flow Through Costs and adjustments to be included in the subsequent year's Revenue Requirement.
- [2] 2018 Pension Costs is a Flow Through Cost. In the 2019-2021 ITS, Pension Costs is included as a Fixed Cost.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

Schedule 4.1

Summary of Power Transmission Volume and BC Energy Costs

(units in \$000 or as otherwise shown)

Line	Description	Schedule & Line ref.	Baseline Example	Reporting Example
1	A. Transmission Volume Cost Management Report ^[1]			
2	Average billing demand (MW) ^{[3] [4]}		128.40 ^[2]	115.84 ^[2]
3	Demand rate (\$000/MW) ^[5]		112.23	112.23
4	Total transmission costs ^[3]		14,410	13,000
5	Transmission savings			1,410
6	Demand reduction fees ^[6]			10
7	Total transmission volume savings ^[7]	[line 5 - line 6]		1,400
8	B. BC Energy Price Management Report ^[8]			
9	BC Energy rate (\$/MWh) ^[9]		47.36	42.13
10	BC energy consumption (MWh) ^[10]		200,000	200,000
11	Total BC energy costs ^[10]	[line 9 * line 10/1000]	9,472	8,426
12	BC energy price savings			1,046
13	Negotiation costs ^[11]			46
14	Total BC energy price savings	[line 12 - line 13]		1,000
15	C. Total Savings	[line 7 + line 14]		2,400

Note(s):

- [1] Trans Mountain manages system transmission volume on behalf of the Shippers and expects to reduce the annual average monthly billing demand by managing power supply contracts and physical consumption, without impacting throughput. Minimum contract levels can be optimized to match physical needs of the Trans Mountain System. In addition, while there is always a pair of stations that are at maximum flow rates (reflecting current System design and bottlenecks), all other stations can be managed to ensure additional costs are not being incurred.
- [2] Variable inputs used above
Ex-Edm Throughput (m³/day) 47,500 47,500
- [3] The actual average billing demand and transmission costs are determined from the actual vendor invoices. Both components are determined as the sum of the monthly invoiced amounts for all mainline pump stations.
- [4] The baseline average billing demand = $0.00209459 \times (\text{annual Ex-Edm throughput in m}^3) + 28.90935272$ (MW).
- [5] Demand rate is determined as the actual total transmission costs, before demand reduction fees, divided by the actual average billing demand.
- [6] Demand reduction fees may be incurred to obtain reductions in average monthly billing demand and may include fees charged by transmission supplier and consulting fees. Carryover from prior years may occur when demand reduction fees are greater than transmission savings.
- [7] Total savings is the savings after deducting the demand reduction fees and carryovers from prior years.
- [8] The majority of the mainline pump stations in BC obtain electric service under BC Hydro's Electric Tariff, Rate Schedule 1823. The default Energy Rate under Rate Schedule 1823 is determined under subsection (a). Trans Mountain may elect to obtain energy under an alternate rate, subsection (b), and negotiate with BC Hydro to obtain credits under the Power Smart program to purchase energy at lower prices. The driver for this saving arises from the additional administrative management costs incurred to use Rate Schedule 1823 subsection (b) as eligibility for this rate requires annual reviews and negotiations with BC Hydro.
Where energy consumption has increased to the extent that there are no savings under Rate Schedule 1823 subsection (b), the savings will be zero. This may occur if Trans Mountain's throughput increases substantially due to achieving incentive volumes. Should a significant throughput increase be expected, Trans Mountain may elect to purchase energy under Rate Schedule 1823 subsection (a) until a new Power Smart baseline can be negotiated for the increased throughput level.
- [9] The actual energy rate is determined as the actual total BC energy costs, before negotiation costs, divided by the actual energy consumption.
- [10] The Total BC energy costs and the energy consumption are determined from the actual vendor invoices. Both components are determined as the sum of the monthly invoiced amounts for all mainline pump stations under BC Hydro's Electric Tariff, Rate Schedule 1823.
- [11] Negotiation costs are the third party costs incurred to manage the BC Power Smart Program and to negotiate power credits and rate reduction.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement
Schedule 4.2
2018 Power Cost Incentives, Sharing and Adjustments
(\$000)

Line	Description	Schedule & Line ref.	2018 Approved	2018 Illustration
1	Power Costs Related to Base Throughput			
2	Total Power Costs ^[2]		30,904	32,000
3	Add back total savings			
4	Transmission Volume	[Schedule 4.2(a) line 7]		1,400
5	BC Energy Price	[Schedule 4.2(b) line 6]		1,000
6	Deduct Shippers' share			
7	Transmission Volume	[Schedule 4.2(a) line 8]		(1,050)
8	BC Energy Price	[Schedule 4.2(b) line 7]		(500)
9	Power Costs to flow through to Shippers		<u>30,904</u>	
10	Power Costs to flow through to Shippers	[sum (lines 2 to 5)]		<u>34,400</u>
11	Power Incentives to Shippers	[line 7 + line 8]		(1,550)
12	Carrying Charges	[line 11 * 2018 Carrying Charge rate]		(23)

Note(s):

- [1] 2018 Power Incentive Adjustment will be reconciled pursuant to Section 11.5 of the 2016-2018 ITS. Power Incentive Adjustment is eliminated in the 2019-2021 ITS.
- [2] The final (actual) Power costs will be included in the financial statements (NEB 1) for the year. 2018 actual Power costs includes the demand reduction fee and negotiation costs shown under the two Power Incentives as well as 100% of the savings achieved.

[3] Power Cost Proof:		Shippers	TM
Total Power Costs included in tolls	[line 9]		30,904
Final account to Shippers	(= flow through adjustment plus Shippers' share)		1,946
Total Actual Power Costs + fees	[line 2]	32,000	
Add back Power Incentives before sharing	[line 4 + line 5]	2,400	
Deduct Shippers' share	[line 7 + line 8]	(1,550)	
Net Power Costs		<u>32,850</u>	<u>32,850</u>

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

Schedule 4.2(a)

2018 Power Cost Incentives, Sharing and Adjustments

2018 Transmission Volume Incentive

[1]

(units in \$000 or as otherwise shown)

Line	Description	Schedule & Line ref.	Sharing	Baseline Example	2018 Illustration
1	Average billing demand (MW) ^[3] ^[4]			128.40 ^[2]	115.84 ^[2]
2	Demand rate (\$000/MW) ^[5]			112.23	112.23
3	Total transmission costs ^[3]			14,410	13,000
4	Transmission savings				1,410
5	Demand reduction fees ^[6]				10
6	Carryover from prior years ^[7]				-
7	Total savings to share ^[8]	[line 4 - (lines 5 + 6)]			1,400
8	Shippers' share		75%		1,050
9	Trans Mountain's share		25%		350
10	Carryover (to subsequent year)				-

Note(s):

- [1] This incentive is expected to reduce the annual average monthly billing demand by managing power supply contracts and physical consumption, without impacting throughput. Minimum contract levels can be optimized to match physical needs of the Trans Mountain System. In addition, while there is always a pair of stations that are at maximum flow rates (reflecting current System design and bottlenecks), all other stations can be managed to ensure additional costs are not being incurred.
- [2] Variable inputs used above
Ex-Edm Throughput (m³/day) 47,500 47,500
- [3] The actual average billing demand and transmission costs are determined from the actual vendor invoices. Both components are determined as the sum of the monthly invoiced amounts for all mainline pump stations.
- [4] The baseline average billing demand = $0.00209459 \times (\text{annual Ex-Edm throughput in m}^3) + 28.90935272$ (MW). If actual throughput in a given year is outside of the range 43,520 m³/day to 51,740 m³/day, the parties have agreed to establish an alternative benchmark (43,520 m³/day is the 2011 actual throughput and the 51,740 m³/day is TM's hydraulic capacity at 15% heavy).
- [5] Demand rate is determined as the actual total transmission costs, before demand reduction fees and carryover from prior year, divided by the actual average billing demand.
- [6] Demand reduction fees may be incurred to obtain reductions in average monthly billing demand and may include fees charged by transmission supplier and consulting fees.
- [7] Carryover from prior years may occur when demand reduction fees are greater than transmission savings.
- [8] Total savings to share is the savings after deducting the demand reduction fees and carryovers from prior years. It is only for incentive calculation purposes.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

Schedule 4.2(b)

2018 Power Cost Incentives, Sharing and Adjustments

2018 BC Energy Price Incentive ^[1]

(units in \$000 or as otherwise shown)

Line	Description	Schedule & Line ref.	Sharing	Baseline Example	2018 Illustration
1	Energy rate (\$/MWh) ^{[1] [2]}			47.36	42.13
2	BC energy consumption (MWh) ^[3]			200,000	200,000
3	Total BC energy costs ^[3]	[line 1 * line 2]		9,472	8,426
4	BC energy price savings				1,046
5	Negotiation costs ^[4]				46
6	Total savings to share	[line 4 - line 5]			1,000
7	Shippers' share (\$000)		50%		500
8	Trans Mountain's share (\$000)		50%		500

Note(s):

- [1] The majority of the mainline pump stations in BC obtain electric service under BC Hydro's Electric Tariff, Rate Schedule 1823. The default Energy Rate under Rate Schedule 1823 is determined under subsection (a). Trans Mountain may elect to obtain energy under an alternate rate, subsection (b), and negotiate with BC Hydro to obtain credits under the Power Smart program to purchase energy at lower prices. The driver for this incentive arises from the additional administrative management costs incurred to use Rate Schedule 1823 subsection (b) as eligibility for this rate requires annual reviews and negotiations with BC Hydro.

Where energy consumption has increased to the extent that there are no savings under Rate Schedule 1823 subsection (b), the incentive to Trans Mountain will be zero. This may occur if Trans Mountain's throughput increases substantially due to achieving incentive volumes. Should a significant throughput increase be expected, Trans Mountain may elect to purchase energy under Rate Schedule 1823 subsection (a) until a new Power Smart baseline can be negotiated for the increased throughput level.

- [2] The actual energy rate is determined as the actual total BC energy costs, before negotiation costs, divided by the actual energy consumption.
- [3] The Total BC energy costs and the energy consumption are determined from the actual vendor invoices. Both components are determined as the sum of the monthly invoiced amounts for all mainline pump stations under BC Hydro's Electric Tariff, Rate Schedule 1823.
- [4] Negotiation costs are the third party costs incurred to manage the BC Power Smart Program and to negotiate power credits and rate reduction.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

Schedule 4.3

Method for Calculation of the Petroleum Loss Allowance Percentages ^[1]

(units in \$000 or as otherwise shown)

Line	Description	Comments / Units	2018 Approved	2019 Illustration	Subsequent Year
1	A. 2018 PLAP ^[2]				
2	Mainline System Crude Petroleum PLAP		0.00%		
3	Mainline System Refined Petroleum PLAP		0.00%		
4	Non Mainline System Petroleum PLAP		0.00%		
5	B. Assessment of Petroleum Loss Provision				
6	Balance Sheet amount at date of assessment				
7	Due from shippers (positive), due to shippers (negative)			\$ (850)	
8	Assessment for reset of PLAP				
9	Reset if absolute value line 7 < \$1million, otherwise No Reset			<div>Reset</div>	
10	C. No Reset (if Reset, go to D) ^[2]				
11	2019 PLAP				
12	Mainline System Crude Petroleum PLAP			0.00%	
13	Mainline System Refined Petroleum PLAP			0.00%	
14	Non Mainline System Petroleum PLAP			0.00%	
15	D. Reset ^[3]				
16	Reset of 2019 PLAP				
17	Mainline System Crude Petroleum PLAP			0.03%	
18	Mainline System Refined Petroleum PLAP			0.02%	
19	Non Mainline System Petroleum PLAP			0.01%	
20	E. Calculation to adjust for subsequent years after Reset				
21	Balance Sheet amount at Dec 31, due from shippers (positive), due to shippers (negative)				\$ 1,000
22	Average annual price of crude	per m ³			\$ 350.00
23	Calculated volume equivalent (m ³)	m ³			2,857
24	Total Deliveries	m ³			18,000,000
25	F. Percentage Adjustment to subsequent year PLAP	[line 23 ÷ line 24]			0.02%
26	Percentage adjustment applied to each PLAP				52.91%
27	Adjustment to subsequent year PLAP				
28	Mainline System Crude Petroleum PLAP	[line 17 times (1 + line 26)]			0.05%
29	Mainline System Refined Petroleum PLAP	[line 18 times (1 + line 26)]			0.02%
30	Non Mainline System Petroleum PLAP	[line 19 times (1 + line 26)]			0.01%

Notes

- [1] The Petroleum Loss Allowance Percentages work in conjunction with the Inventory Settlement Procedure and Refined Petroleum Reconciliation Procedure filed with the 2019-2021 ITS.
- [2] If No Reset occurs then the PLAP continues at 0% and is reviewed periodically until such time as the Reset requirements are triggered.
- [3] Once the Reset has occurred B and C are no longer applicable, however, Trans Mountain and Shippers have agreed to review the PLAP periodically to determine whether further adjustments are required. The intent after the Reset is to keep PLAP relatively stable from year to year.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive T (As Amended) ^[8]

Schedule 5

Method for Calculation of Operational Capacity Incentive Adjustment

(units as shown)

Sheet 1 of 2

Line	Description	Schedule	Sharing	Annual Example ^[8] (Jan - Dec)	Annual Example ^[8] (Jan - Dec)
1	A. System capacity percentages				
2	Target capacity (fixed for Term)			96.0%	96.0%
3	Achieved capacity			96.2%	98.6%
4	B. System volumes				
5	Delivered volume (m ³ /d) ^[1]			48,300	49,500
6	Deemed Heavy Percentage ^{[4] [5] [6]}			20.0%	20.0%
7	100% hydraulic volume (m ³ /d) ^[2]			50,204	50,204
8	Target hydraulic volumes w/o maintenance adjustment (m ³ /d) [line 2 x line 7]			48,196	48,196
9	Adjustment hours ^[3]			50	50
10	Maintenance capacity adjustment (m ³ /d)	[line 9 ÷ 24 ÷ days in a year x line 8]		275	275
11	Target System Capacity (m ³ /d)	[line 8 - line 10]		47,920	47,920
12	C. Annualized volumes for sharing (m ³ /d)	[line 5 - line 11]		380	1,580
13	D. Revenue sharing calculation				
14	Toll for sharing \$/m ³ (fixed for Term)			15.7500	15.7500
15	Days available for sharing			365	365
16	Revenues to be shared (\$000)	[line 12 x line 14 x line 15]		2,182	9,081
17	Operational Capacity Incentive Adjustment	Trans Mountain's share ^[7]	Lower of 25% of line 16 or \$4 million	546	2,270
18		Shippers' share	[line 16 - line 17]	1,637	6,810
19	Carrying Charges (\$000)	[- (line 18 * rate on Sch 9)]		(33)	(136)

Notes:

- [1] For capacity incentive sharing purposes, only those volumes injected at Edmonton / Edson and delivered out of the System are used along with the Deemed Heavy Percentage as determined in Note [6].
- [2] Hydraulic Formula:
 For $x \leq 20.01\%$, $y = (809386115x^5 - 618225002x^4 + 163964466x^3 - 15952931x^2 - 193925x + 395343)/95\%/6.2898108$
 For $x > 20.01\%$, $y = (-24844444x^6 + 62290768x^5 - 62888803x^4 + 31439150x^3 - 7464327x^2 + 480997x + 333140)/95\%/6.2898108$
 Where $y = 100\%$ hydraulic capacity, $x =$ Deemed Heavy Percentage as determined in Note [6].
- [3] Adjustment hours include system shutdowns, maintenance activities, Shipper actions including but not limited to Delivery Point delays, Kamloops Excess Nominations, and/or Force Majeure, and they are reflected in the Target System Capacity.
- [4] A heavy percentage indicator will be measured for the volumes injected at Edmonton and delivered out of the system for determination of the monthly Adjusted Heavy Percentage:
 Blended Heavy Percentage: measure based on petroleum grade category indicated on delivery tickets for a batch.
 Pre-blend Heavy Percentage: measure based on the deemed petroleum type indicated at Edmonton injection of the component material within a batch.
- [5] Two heavy percentage indicators will be measured and recorded on a monthly basis. Monthly Adjusted Heavy Percentage will be determined as follows:
 (a). If Blended Heavy Percentage and Pre-blend Heavy Percentage are both greater than 14%, the Adjusted Heavy Percentage is set as the Blended Heavy Percentage.
 (b). If Blended Heavy Percentage and Pre-blend Heavy Percentage are both less than 14%, the Adjusted Heavy Percentage is set as the Blended Heavy Percentage.
 (c). If Blended Heavy Percentage is less than 14% and Pre-blend Heavy Percentage is greater than 14%, the Adjusted Heavy Percentage is set as 14%.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive T (As Amended) ^[8]
Schedule 5

Method for Calculation of Operational Capacity Incentive Adjustment
(units as shown)

Sheet 2 of 2

[6] The Deemed Heavy Percentage will be the annual average of monthly Adjusted Heavy Percentages.

2019 Illustration - Deemed Heavy Percentage:

Month	Blended Heavy Percentage	Pre-blend Heavy Percentage	Adjusted Heavy Percentage	Days in a Month
January	10%	15%	14%	31
February	18%	20%	18%	28
March	20%	25%	20%	31
April	25%	30%	25%	30
May	20%	25%	20%	31
June	20%	25%	20%	30
July	25%	30%	25%	31
August	20%	25%	20%	31
September	18%	20%	18%	30
October	20%	25%	20%	31
November	20%	25%	20%	30
December	20%	25%	20%	31
Annual simple average/Deemed Heavy Percentage			20.0%	365

[7] The Operational Capacity Incentive Adjustment for the account of Trans Mountain for the year shall not exceed \$4 million.

[8] The two columns provide examples of the pipeline achieving different levels of hydraulic capacity and the resulting calculation of revenues for sharing.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

Schedule 6

Method for Calculation of Transportation Revenue Adjustment

(units as shown)

Line	Description	Schedule & Line ref.	Calculation Example ^[1]	
			System Deliveries (m ³ /day)	Annual Revenues (\$000)
1	Transportation Revenue Adjustment ("TRA")			
2	A. Interim Toll Period	January to April	120 days	120 days
3	Forecast Amounts for Toll Purposes ^[2]		45,492	95,294
4	Actual Amounts		45,200	92,000
5	Interim TRA	[line 4 - line 3]	(292)	(3,294)
6	B. Final Toll Period	May to December	245 days	245 days
7	Forecast Amounts for Toll Purposes ^[2]		49,464	188,169
8	Actual Amounts		50,000	195,000
9	Toll Period TRA	[line 8 - line 7]	536	6,831
10	Other Adjustments			-
11	Total TRA - (Shortfall) / Surplus	[line 5 + line 9 + line 10]		3,537
12	Annual TRA (\$000)			
13	TRA Surplus refundable to Shippers	[positive shown on line 11]		(3,537)
14	TRA Shortfall chargeable to Shippers	[negative shown on line 11]		-
15	TRA to be included in the subsequent year (\$000)			(3,537)
16	Carrying Charges	[line 13 * rate on Sch 9]		(71)

Note(s):

[1] Proof without carrying charges.

Reconciliation of amounts			Shippers	TM
	Interim Revenues collected	[line 4]	92,000	
	Final Toll Revenues collected	[line 8]	195,000	
	Other Adjustment	[line 10]	-	
	Total Revenues collected		287,000	
	TRA	[line 15]	(3,537)	
	Total Tolerated Revenues	[Schedule 1, line 14]		283,463
	Net revenues paid / collected		283,463	283,463

[2] The 2018 forecast system deliveries for interim and final toll periods can be found in the 2018 Final Toll filing, Toll Calculation Schedules, TL Schedule 2, Line 12. The 2018 forecast annual revenues for interim and final toll periods can be found in the 2018 Final Toll filing, Toll Calculation Schedules, TL Schedule 3, Sheet 2, Line 7. NEB filing ID: A91089.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

Schedule 7

Method for Calculation of Income Tax Provision and Adjustment

(\$000)

Line	Description	Schedule & Line ref.	2018 Approved	2018 Actual Example	2018 Variance	2019 Illustration
1	Forecast Provision for Income Taxes Payable					
2	Return on Equity					
3	2018 Base System / 2019 Rate Base	[Schedule 2, line 22]	41,592	41,592	-	41,172
4	Total Return on Equity		41,592	41,592	-	41,172
5	Permanent & Timing Differences					
6	Capital Cost Allowance ^[1]		(50,058)	(50,058)	-	(48,796)
7	Depreciation	[Schedule 2, line 25]	46,437	46,437	-	44,952
8	Cost of Retirements & other differences	prior year's adjustment	(100)	(100)	-	-
9	Capitalized Interest AFUDC		(231)	(231)	-	(179)
10	Tax Base		37,640	37,640	-	37,149
11	Income Tax Provision ^[2]	[line 10 * tax rate / (1 - tax rate)]	13,922	13,922	-	13,740
12	Income Tax Provision		13,922	13,922	-	13,740
13	Carrying Charges	[if line 12<0, line 12 * rate on Sch 9]			-	

Note(s):

[1] CCA forecast is provided on Schedule 7.1. 2018 Approved do not reflect July 1 tax filing review.

[2] Income tax rates (combined Federal and Provincial). 27.0% 27.0% 27.0%

[3] Taxes Payable used in Working Capital Calculation in Sch 2 Note [4] 10,163 10,163 10,030

**Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement
Schedule 7.1**

CCA for the Rate Base: (i) 2018; and (ii) Illustration for 2019

(\$ as shown)

Year	Description	CEC 7%	Class 1 4%	Class 2 6%	Class 3 5%	Class 6 10%	Class 7 15%	Class 8 20%	Class 10 30%	Class 17 8%	Class 49 8%	Class 50 55%	TOTAL
2017	UCC at Dec. 31	2,223,780	128,999,784	5,235,515	2,013,147	70,518,654	12,069,198	23,512,832	1,139,245	4,261,731	350,644,867	55,577	600,674,329
2018	Additions ^[1]	-	7,188,304	-	-	5,970,996	-	5,258,227	1,109,387	-	21,581,804	-	41,108,718.01
2018	Proceeds	-	-	-	-	-	-	-	-	-	-	-	-
		2,223,780	136,188,088	5,235,515	2,013,147	76,489,650	12,069,198	28,771,059	2,248,632	4,261,731	372,226,671	55,577	641,783,047
	CCA	155,665	5,159,991	314,131	100,657	7,051,865	1,810,380	4,702,566	341,774	340,939	28,051,589	30,567	48,060,124
	CCA: Additions	-	143,766	-	-	298,550	-	525,823	166,408	-	863,272	-	1,997,819
2018	Total CCA	155,665	5,303,757	314,131	100,657	7,350,415	1,810,380	5,228,389	508,182	340,939	28,914,861	30,567	50,057,943
2018	UCC at Dec. 31	2,068,116	130,884,331	4,921,384	1,912,489	69,139,235	10,258,818	23,542,670	1,740,450	3,920,793	343,311,809	25,009	591,725,104
2019	Additions ^[1]	-	5,574,952	-	-	4,630,858	-	4,078,064	860,394	-	16,737,956	-	31,882,225
2019	Proceeds	-	-	-	-	-	-	-	-	-	-	-	-
		2,068,116	136,459,283	4,921,384	1,912,489	73,770,092	10,258,818	27,620,734	2,600,845	3,920,793	360,049,766	25,009	623,607,329
	CCA	144,768	5,235,373	295,283	95,624	6,913,923	1,538,823	4,708,534	522,135	313,663	27,464,945	13,755	47,246,827
	CCA: Additions	-	111,499	-	-	231,543	-	407,806	129,059	-	669,518	-	1,549,426
2019	Total CCA	144,768	5,346,872	295,283	95,624	7,145,466	1,538,823	5,116,340	651,194	313,663	28,134,463	13,755	48,796,253
2019	UCC at Dec. 31	1,923,348	131,112,411	4,626,101	1,816,865	66,624,626	8,719,996	22,504,394	1,949,650	3,607,129	331,915,303	11,254	574,811,076

Note(s):

[1] Additions exclude AFUDC amounts.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement
Schedule 8
Summary of Non-Routine Adjustments
(\$000)

Line	Description	Schedule & Line ref.	2018 Approved	2018 Actual Example	2018 Variance	2019 Illustration
1	Non-Routine Adjustments					
2	Costs for NEB mandated regulatory changes (e.g. Pipeline Abandonment)		50	50	-	10
3	Costs for NEB OPR change (ISLMS)		868	868	-	728
4	Costs for 2019 Depreciation study		n/a	n/a		100
5	Costs for Focus Group		n/a	n/a		100
6	NRA for Edmonton Terminalling Revenues	[Schedule 8.1]	(1,500)	(1,500)	-	(1,500)
7	Non-Performance Damage Assessment, Demurrage and/or Other Refund		-	-	-	-
8	Alternate Delivery Point Fees		-	-	-	-
9	Total NRAs and NRA Variances to be included in subsequent year's tolls		<u>(582)</u>	<u>(582)</u>	<u>-</u>	<u>(562)</u>
10	Carrying Charges	[if line 9<0, line 9* rate on Sch 9]			-	
11	Westridge Dock Bid Premium Refund	[Schedule 8.2]				
12	Refund to Reduce Tolls		(81,840)	(81,840)	-	-
13	Refund to offset Pipeline Reclamation Surcharge		<u>(13,498)</u>	<u>(13,498)</u>	<u>-</u>	<u>-</u>
14	Total Refund		<u>(95,338)</u>	<u>(95,338)</u>	<u>-</u>	<u>-</u>

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

Schedule 8.1

Summary of Non-Routine Adjustments

Method for Calculation of the NRA for the Edmonton Terminalling Revenues

(\$000)

Line	Description	2018 Approved	2018 Actual Example	2018 Share	2018 Variance	2019 Illustration	2019 Share
1	A. Revenue Sharing						
2	Revenues collected and available for sharing	3,000	3,000		-	3,000	
3	B. Revenue Returned to Shippers ^[1]						
4	\$0 - \$3M (including \$3M)	1,500	1,500	50%	-	1,500	50%
5	Between \$3M and \$5M (including \$5M)	-	-	60%	-	-	60%
6	Between \$5M and \$7.5M (including \$7.5M)	-	-	70%	-	-	70%
7	Greater than \$7.5M	-	-	75%	-	-	75%
8	Total Shippers' share	<u>1,500</u>	<u>1,500</u>		<u>-</u>	<u>1,500</u>	
9	C. Refund amount	(1,500)	(1,500)		-	(1,500)	
10	Impact on Revenue Requirement				<u>-</u>	<u>(1,500)</u>	

Note(s):

[1] The sharing percentage is determined when the collected revenues are:

	Share %
(i) less than or equal to \$3M, Shippers will be refunded with 50% of the revenue.	50%
(ii) between \$3M and \$5M (including \$5M), Shippers will be refunded with 60% of the revenue.	60%
(iii) between \$5M and \$7.5M (including \$7.5M), Shippers will be refunded with 70% of the revenue.	70%
(iv) greater than \$7.5M, Shippers will be refunded with 75% of the revenue.	75%

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

Schedule 8.2

Summary of Non-Routine Adjustments

Westridge Dock Bid Premium Refunds

(\$000)

Sheet 1 of 2

Line	Description	Amount Collected	2018 Approved	2018 Actual Example	2019 Illustration	[2]
1	A. 2016 & 2017 Collection:					
2	Remaining 2016 Amount Collected	13,299				
3	2017 Amount Collected	67,386				
4	Total Collection as of Dec 31 2017	80,684				
5	Carrying Charges as of Dec 31 2016	14,653				
6	Total to be refunded as of Jan 1 2017	95,338				
7	Total to be refunded as of Jan 1 2018				-	
8	B. Disposition: ^[1]					
9	Refund Amount - Part A - Toll Reduction (Jan - Dec)		(81,840)	(81,840)	-	
10	Refund Amount - Part B - Offset to Pipeline Reclamation Surcharge (Jan - Dec)		(13,498)	(13,498)	-	
11	Total Refund ^[2]		(95,338)	(95,338)	-	
12	C. Total net balance					
13	2018 net balance			-		
14	Carrying Charges for 2016 -2017 collected (to be provided in 2019 Final Toll filing)			-		
15	2018 collection (to be provided in 2019 Final Toll filing)			-		
16	Carrying Charges for 2018 collected (to be provided in 2019 Final Toll filing)			-		
17	Total net balance as of Dec 31, 2018			-		
18	Total net balance for future year refund			-		

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement
Schedule 8.2
Summary of Non-Routine Adjustments
Westridge Dock Bid Premium Refunds

Sheet 2 of 2

Note(s):

[1] For 2018, the estimated applicable carrying charges on the outstanding balance of the 2016 and 2017 Westridge Dock Bid Premiums are:

Month	Monthly Rate	Balance Outstanding (Beginning of month)	2018 Actual/Estimated Refunds	Carrying Charges	Balance Outstanding (End of month)
January	1.31%	95,338	(6,831)	104	88,611
February	1.45%	88,611	(6,155)	107	82,562
March	1.45%	82,562	(6,793)	100	75,869
April	1.45%	75,869	(7,003)	92	68,958
May	1.45%	68,958	(8,758)	83	60,283
June	1.45%	60,283	(7,913)	73	52,443
July	1.61%	52,443	(8,650)	70	43,864
August	1.70%	43,864	(9,347)	62	34,578
Sept	1.70%	34,578	(8,226)	49	26,401
Oct	1.70%	26,401	(8,554)	37	17,885
November	1.70%	17,885	(8,554)	25	9,357
December	1.70%	9,357	(8,554)	13	817
As of Dec 31			<u>(95,338)</u>	<u>817</u>	

2018 Collected Amount (to be provided in 2019 Final Toll filing)

Carrying Charges on 2018 Collected (to be provided in 2019 Final Toll filing)

2018 Ending Balance

Opening Balance as of Jan 1, 2019

817

817

[2] The refund amounts for 2019 final toll period will be determined in conjunction with the filing of the 2019 Final Tolls.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement
Schedule 9Method for Calculation of Carrying Charge Rate ^[1]
(units as shown)

Line	Month	TD Prime Rate	Days/ Month	Total Days/ Month	2019 Illustration
					Monthly Rate
1	January	3.95%	17		
2	January	4.00%	14	31	1.97%
3	February	4.00%	28	28	2.00%
4	March	4.00%	31	31	2.00%
5	April	4.00%	30	30	2.00%
6	May	4.00%	31	31	2.00%
7	June	4.00%	30	30	2.00%
8	July	4.00%	31	31	2.00%
9	August	4.00%	31	31	2.00%
10	September	4.00%	30	30	2.00%
11	October	4.00%	31	31	2.00%
12	November	4.00%	30	30	2.00%
13	December	4.00%	31	31	2.00%
14	Average rate		365		2.00%

Note(s):

- [1] The Carrying Charge rate is the average of the monthly Trans Mountain overnight bank rate (TD prime minus 2%, or as may be changed from time to time).
- [2] Summary of 2019 Carrying Charges (\$000)

Description	Schedule & Line ref.	2019 Illustration
Capital Cost Recovery Adjustment	[Schedule 2, Sheet 1, line 28]	-
Trans Mountain Personnel (Shippers' share)	[Schedule 3, line 13]	(30)
Flow Through Cost Adjustment	[Schedule 4, line 12]	-
Capacity Incentive (Shippers' share)	[Schedule 5, line 19]	(33)
Transportation Revenue Adjustment	[Schedule 6, line 16]	(71)
Income Tax Adjustment	[Schedule 7, line 13]	-
NRA Adjustments	[Schedule 8, line 10]	-
Total		(133)

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

NEB 1

NEB Compliance Reporting

Income Statement

(\$000) unless otherwise indicated

(For 12 Months Ended December 31, 2017)

Line	Particulars	NEB Accounts	Annual Actuals ^[2]	Filed Forecast	Variance Col.
1	(a)	(b)	(c)	(d)	(c) - (d)
2	Revenues				
3	Transportation Revenue	501	283,290	287,244	(3,953)
4	Terminalling Revenues	556	3,426	3,000	426
5	Prior Year Adjustments	501	4,580	4,580	-
6	Current Year Adjustments	501	(9,782)	-	(9,782)
7	Other Revenue	554	5,852	-	5,852
8	Total Revenue ^[3]		287,366	294,823	(7,457)
9	Operating Expenses				
10	Allocations from TMCI ^[1]	710-01, 720-01, 730-01	49,207	47,674	1,533
11	Fuel & Power	720-02	30,247	29,657	590
12	Other Operating & Maintenance ^[3]	710, 720, 730	49,687	55,345	(5,658)
13	Depreciation & Amortization	414, 423	46,093	48,201	(2,107)
14	Income Taxes	413	13,073	8,392	4,680
15	Taxes Other than Income	730-16	26,078	26,935	(857)
16	NEB Cost Recovery	730	2,984	2,984	-
17	Total Operating Expenses		217,369	219,189	(1,820)
18	Operating Income		69,996	75,634	(5,638)
19	Less:				
20	Financial Charges deemed at 55% of Rate Base ^[4]	417	27,077	27,183	(106)
21	Preferred Share Dividends		n/a	n/a	n/a
22	Equity Return		42,919	48,452	(5,532)
23	Rate of Return on Rate Base		7.11%	7.65%	
24	Rate of Return on Common Equity ^[5]		9.69%	10.89%	

Note(s):

[1] Staff costs are allocated to Trans Mountain from Trans Mountain Canada Inc (TMCI).

[2] Annual Actuals include all amounts as booked Dec. 31, of each year plus required adjustments to reflect amounts as calculated in this filing.

[3] Includes all revenues earned on regulated assets.

[4] The Financial Charges are calculated based on 5% deemed rate of return on debt pursuant to the terms of the 2016-2018 ITS. As at December 31, 2017, Trans Mountain Pipeline LP did not have any debt outstanding to its affiliates or third parties.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

NEB 2

NEB Compliance Reporting

Average Rate Base

(\$000) unless otherwise indicated

(For 12 Months Ended December 31, 2017)

Line	Particulars	Annual Actual
1	(a)	(b)
2	Plant in Service	
3	Net Plant	970,202
4	Total Plant	<u>970,202</u>
5	Working Capital	
6	Cash	6,771
7	Materials and Supplies	5,238
8	Transmission Line Pack	n/a
9	Prepayments and Deposits	2,413
10	Other (please specify)	-
11	Total Working Capital	<u>14,422</u>
12	Deferrals	
13	Deferred Income Taxes	-
14	Total Deferrals	<u>-</u>
15	Total Average Rate Base ^[1]	<u><u>984,623</u></u>

Note(s):

[1] Actual Rate Base includes :

- (i) all capital spending which equals Total Rate Base. The averaging is based on simple half-year average for the Base System Rate Base.
- (ii) all capital spending related to the expansions, i.e. includes the disallowed capital pursuant to the calculation of the CCI; and
- (iii) all capital invested in other regulated assets.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

NEB 3

NEB Compliance Reporting

Throughput Details

Deliveries (m³ / d)

(For 12 Months Ended December 31, 2017)

Line	Particulars	Annual Actuals	Toll Forecast	Variance Forecast
1	(a)	(b)	(c)	(d)
2	Edmonton Kamloops	1,738	1,731	6
3	Total Kamloops Deliveries	1,738	1,731	6
4	Edmonton Sumas	26,452	30,427	(3,975)
5	Kamloops Sumas	-	-	-
6	Total Sumas Deliveries	26,452	30,427	(3,975)
7	Edmonton Burnaby	16,218	13,742	2,476
8	Kamloops Burnaby	71	0	71
9	Total Burnaby Deliveries	16,289	13,742	2,547
10	Edmonton Westridge	4,519	3,630	889
11	Kamloops Westridge	-	-	-
12	Total Westridge Deliveries	4,519	3,630	889
13	Total System (Volumes recorded as delivered)	48,998	49,530	(532)

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

NEB 4

NEB Compliance Reporting

Annual Integrity Spending

(\$000)

(For 12 Months Ended December 31, 2017)

Actual Annual Expenditures ^[1]

	Annual Actual
(a)	(b)
Operating	
Program Management	2,959
Surveillance, Condition Monitoring and Integrity Hazard Assessment	8,049
Mitigation and Remediation	17,841
Other Expenditures	-
Total Operating	<u>28,849</u>
Capital	
Program Management	-
Surveillance, Condition Monitoring and Integrity Hazard Assessment	-
Mitigation and Remediation	18,630
Other Expenditures	-
Total Capital	<u>18,630</u>

Notes:

[1] Separation into historical expenditures categories are provided to the extent available.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

NEB 5

NEB Compliance Reporting

Firm Service Report

Pursuant to Board Order RH-2-2011

(\$000) unless otherwise indicated

(For 12 Months Ended December 31, 2017)

(For 12 Months Ended December 31, 2017)			LTD													LTD	
Line	Description		YE 2016	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	2017 Total	YE 2017
1	<u>A. Project Spending Details</u>																
2	Edmonton Term Expansion	In-service month Jun-14															
3	Build 1 Regulated Tank	Capital Spending	34,084	-	-	-	-	-	-	-	-	-	-	-	-	-	34,084
4		FS Funds applied	(34,084)	-	-	-	-	-	-	-	-	-	-	-	-	-	(34,084)
5	TM Expansion Project	In-service month Dec-20															
6	Development costs	Capital Spending	521,007	10,232	12,573	3,443	21,312	23,278	68,117	52,542	43,189	54,231	31,732	63,517	45,111	429,276	950,283
7		Net FS Funds applied	(103,872)	(2,433)	(2,195)	(2,437)	(2,355)	(2,489)	(2,389)	(2,430)	(2,430)	(2,352)	(2,430)	(2,352)	(2,541)	(28,834)	(132,706)
8	Prior month AFUDC / Interest			2,841	2,912	2,702	3,013	3,043	3,287	3,579	4,019	4,286	4,472	4,822	5,048		
9	Net Monthly Balances before Carrying Charges	AFUDC/Interest	417,135	10,639	13,290	3,707	21,970	23,832	69,015	53,691	44,778	56,165	33,773	65,987	47,618	400,442	817,578
10	Net Balance before current month AFUDC / Interest			488,041	501,331	505,038	527,008	550,841	619,855	673,546	718,324	774,489	808,262	874,250	921,867		
11	Monthly Carrying Charge Calculation	AFUDC/Interest	63,108	2,912	2,702	3,013	3,043	3,287	3,579	4,019	4,286	4,472	4,822	5,048	5,500	46,682	109,790
12	Closing Net Monthly Balances		480,243	490,953	504,033	508,051	530,051	554,127	623,434	677,565	722,610	778,961	813,085	879,297	927,368		927,368
13	<u>B. Firm Service - Special Deposit Account Details</u>																
14	Step 1: Assign Firm Service Fees to ETE Regulated Tank																
15	Monthly Firm Service Fees received		(137,956)	(2,433)	(2,195)	(2,437)	(2,355)	(2,489)	(2,389)	(2,430)	(2,430)	(2,352)	(2,430)	(2,352)	(2,541)	(28,834)	(166,790)
16	Less Spending on ETE - Build 1 Tank		34,084	-	-	-	-	-	-	-	-	-	-	-	-	-	34,084
17	Remaining after ETE assignment of FS Funds		(103,872)	(2,433)	(2,195)	(2,437)	(2,355)	(2,489)	(2,389)	(2,430)	(2,430)	(2,352)	(2,430)	(2,352)	(2,541)	(28,834)	(132,706)
18	Step2: Reconciliation of Special Deposit Account for Firm Service Fees																
19	Cumulative Firm Service Fees available		(137,956)	(140,389)	(142,584)	(145,021)	(147,376)	(149,865)	(152,254)	(154,684)	(157,114)	(159,466)	(161,896)	(164,249)	(166,790)		(166,790)
20	Cumulative Capital Spending (all Eligible Projects)		555,091	565,323	577,896	581,338	602,650	625,928	694,045	746,587	789,777	844,007	875,739	939,256	984,367		984,367
21	Net Balance w/o AFUDC / Interest		417,135	424,934	435,312	436,317	455,274	476,063	541,791	591,903	632,662	684,541	713,843	775,008	817,578		817,578
22	Cumulative prior months AFUDC / Interest			63,108	66,019	68,721	71,734	74,777	78,064	81,643	85,662	89,947	94,419	99,242	104,290		
23	Net Balance before current month AFUDC / Interest			488,041	501,331	505,038	527,008	550,841	619,855	673,546	718,324	774,489	808,262	874,250	921,867		
24	Monthly Carrying Charge Calculation	AFUDC/Interest	63,108	2,912	2,702	3,013	3,043	3,287	3,579	4,019	4,286	4,472	4,822	5,048	5,500		109,790
25	Closing Net Monthly Balances		480,243	490,953	504,033	508,051	530,051	554,127	623,434	677,565	722,610	778,961	813,085	879,297	927,368		927,368
26	<u>C. Carrying Costs Details</u>																
27	Bank Interest (-ve balances on Line 24)		(10)	-	-	-	-	-	-	-	-	-	-	-	-	-	(10)
28	AFUDC (+ve balances on Line 24)		63,117	2,912	2,702	3,013	3,043	3,287	3,579	4,019	4,286	4,472	4,822	5,048	5,500	46,682	109,800
29	Monthly AFUDC / Bank Interest		63,108	2,912	2,702	3,013	3,043	3,287	3,579	4,019	4,286	4,472	4,822	5,048	5,500	46,682	109,790

Notes:

[1] "Carrying Charges" means AFUDC or Bank Interest for a given month, when applicable.

[2] AFUDC and AFUDC Rates:

To the extent that cumulative Eligible Project spending does not exceed available funds, no AFUDC is charged.

To the extent that cumulative Eligible Project spending exceeds available funds, AFUDC is charged. Such AFUDC is assigned to Eligible Projects based on priority of funds used (i.e. ETE Regulated tank uses funds first (therefore no AFUDC is assigned) and then TMEP development costs).

2017 AFUDC rate	Equity	ROE	9.5%	times	structure	45%	equals	4.28%
	Debt	Rate	5.0%	times	structure	55%	equals	2.75%
	Combined AFUDC rate							7.03%

[3] Bank Interest means the net percentage interest paid by the bank for this account (interest earned net of bank fees) when there are available funds to earn interest.

2017 Monthly rate	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%	0.85%	0.95%	1.15%	1.20%	1.20%	1.20%	1.20%
Days in Month	31	28	31	30	31	30	31	31	30	31	30	31	365

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

NEB 6

NEB Compliance Reporting

Trans Mountain Expansion Project Bulk Oil Cargo Fee Due from Westridge Shippers

Pursuant to Board Order TO-001-2016

(\$000) unless otherwise indicated

(For 12 Months Ended December 31, 2017)

Line	Description	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Total
1	A. TMEP BOCF Due from Westridge Shippers													
2	Opening Balance	6,069	9,303	9,341	9,380	12,628	12,681	12,734	15,996	16,062	16,129	16,196	16,264	6,069
3	Addition	3,195			3,195			3,195						9,586
4	Monthly Financing Cost [line 9]	39	39	39	52	53	53	66	67	67	67	67	68	677
5	Closing Balance [line 2 + line 3 + line 4]	9,303	9,341	9,380	12,628	12,681	12,734	15,996	16,062	16,129	16,196	16,264	16,332	16,332
6	B. Financing cost details													
7	Balance [line 2 + line 3]	9,264	9,303	9,341	12,576	12,628	12,681	15,929	15,996	16,062	16,129	16,196	16,264	
8	Financing Rate	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
9	Monthly Financing Cost [line 7 x (line 8 /12)]	39	39	39	52	53	53	66	67	67	67	67	68	677

Notes:

[1] As published in Canada Gazette Part I dated 3 December 2016, the TMEP BOCF rate applicable is \$5.607 per tonne of bulk oil, plus all applicable taxes, from January 1, 2017.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

NEB 7

NEB Compliance Reporting

Costs Recovered from Merchant Services at the Edmonton Terminal

Pursuant to Board Order XO-T246-04-2008

(\$000) unless otherwise indicated

(For 12 Months Ended December 31, 2017)

Line	Description	Schedule & Line ref.	2017
1	A. Rate Base ^[1]		
2	Net Rate Base		487,249
3	Equity ^[2]		20,830
4	Debt ^[2]		13,399
5	Depreciation ^[3]		13,201
6	Capital Cost Recovery	[Sum (Lines 4,5 & 6)]	47,431
7	B. Income Tax Provision		
8	C. Operating Expenses		
9	Power		643
10	Property Tax		1,970
11	Insurance		1,223
12	O&M		1,085
13	Employee Services		3,966
14	Total Operating Expenses	[Sum (Lines 10,11,12,13 & 14)]	8,887
15	Total Annual Revenue Requirement for Merchant Services	[Sum (Lines 6, 7 & 14)]	56,318

Notes:

[1] The assets included in the Rate Base are Tanks 24, 25, 27, 28, 29, 30,31, 32, 33, 34, 35, 36, 37, 38 and 39, and ancillary facilities at the Edmonton Terminal

[2] The financial parameters for calculating the Return on Capital are consistent with the parameters used in the ITS at the time.
For greater clarity, the financial parameters used are:

	2017
Capital Structure (Debt/Equity)	55%/45%
Return on equity	9.5%
Return on debt	5.0%

[3]. The depreciation rates applied are consistent with the rates used in the ITS and as approved by the Board in Order TO-02-2011.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

ITS - 31

TL Schedule 1

Explanatory Notes for the Toll Design and Calculations

The basic design of Trans Mountain's tolls evolved over many years and resulted in four primary categories of service: Terminalling, Tankage, Mainline Transportation, and Other. The current tolls embody the toll design principles established in 1995 and 2009 where all volumes are subject to the same fee for the same service and represent a user-pay and cost-based allocation methodology.

As Trans Mountain's Revenue Requirement is expected to be recovered from the approved tolls each year, the division of the Revenue Requirement into a specific set of service fees that comprise the individual tolls ensures that the principles of the toll design are met. Within the Trans Mountain toll design, Receipt and Delivery Tankage and Terminalling are unbundled into individual direct and indirect use service fees at each location (Edmonton, Kamloops, Sumas, and Burnaby). The Mainline Transportation are unbundled into Mainline Transmission and different material types through the commodity surcharge/surcredit to recognize their impacts during transportation.

a. Direct Use

The fee for this service includes 100% of the cost of the asset (e.g. meters, manifolds, blending/boosters, and tanks) and any structures or improvements that support or house these assets plus an allocation of common assets (land, roads, support services, etc.) less any forecast indirect usage fees.

b. Indirect Use

To the extent that the indirect use of an asset pushes costs onto direct users, an indirect fee is applied. For example, the Indirect Use tank fee is a percentage of the applicable Direct Use fee based on the impact that an average outage for an average batch or batch train would impose on other pipeline shippers if the batch or batch train was delayed or cancelled. This estimate is 1 days' notice for a change or delay in the 6 day batch cycle or 5 days in an average month (30.5 days) which is approximately 15% of the Direct Use fee. The Indirect Use fee is applied whenever the Direct Use fee is not applied.

By subdividing the services, allocating costs and applying direct/indirect fees at each location, the tankage and terminalling credits used prior to 2009 were no longer required.

The primary categories of service are subdivided as follows:

a. Receipt Terminalling:

- i. Inlet piping and metering (direct/indirect);
- ii. Manifold transfer into receipt tanks (direct/indirect);
- iii. Manifold transfer and blending out of the receipt tanks (direct/indirect); and
- iv. Transfer to mainline through outbound boosters and metering (direct/indirect)

b. Receipt Tankage:

- i. Direct use; and
- ii. Indirect use.

c. Delivery Tankage

- i. Direct use; and
- ii. Indirect use.

d. Delivery Terminalling

- i. Pumps and manifold in/out
- ii. Meters (direct/indirect)

e. Mainline Transportation

- i. Mainline Transmission from Receipt to Delivery locations
- ii. Commodity surcharges/surcredit for different material types

f. Other

- i. Administrative or Special Service Fees
- ii. Westridge Marine Terminal Loading Charge

The pipeline tolls ("Net Tolls") are composed of all the fees for Receipt and Delivery Terminalling, Receipt and Delivery Tankage, Mainline Transportation and other special service fees or charges as appropriate for the different levels of service provided from/to the various receipt and Delivery locations. Edmonton and Kamloops are receipt locations and Kamloops, Sumas and Burnaby are Delivery locations. The Carrier also provides Terminalling service at Edmonton for volumes not entering the mainline. The toll design and the application of other fees recognize the nature of the volumes transported through the mainline and for volumes not entering mainline.

TL Schedule 1

Explanatory Notes for the Toll Design and Calculations

The following table summarizes the types of assets installed and used within the Toll Design service fees.

Location	Meters	Manifold	Blending and/or Booster	Tank
Edmonton Terminal (Receipt)	✓	✓	✓	✓
Kamloops (Receipt)	✓		✓	✓
Kamloops (Delivery)	✓	✓	✓	
Sumas (Delivery)		✓	✓	✓
Burnaby Terminal and Westridge Marine Terminal (Delivery)	✓	✓	✓	✓

Tankage, Terminalling, and Westridge Marine Terminal Fees

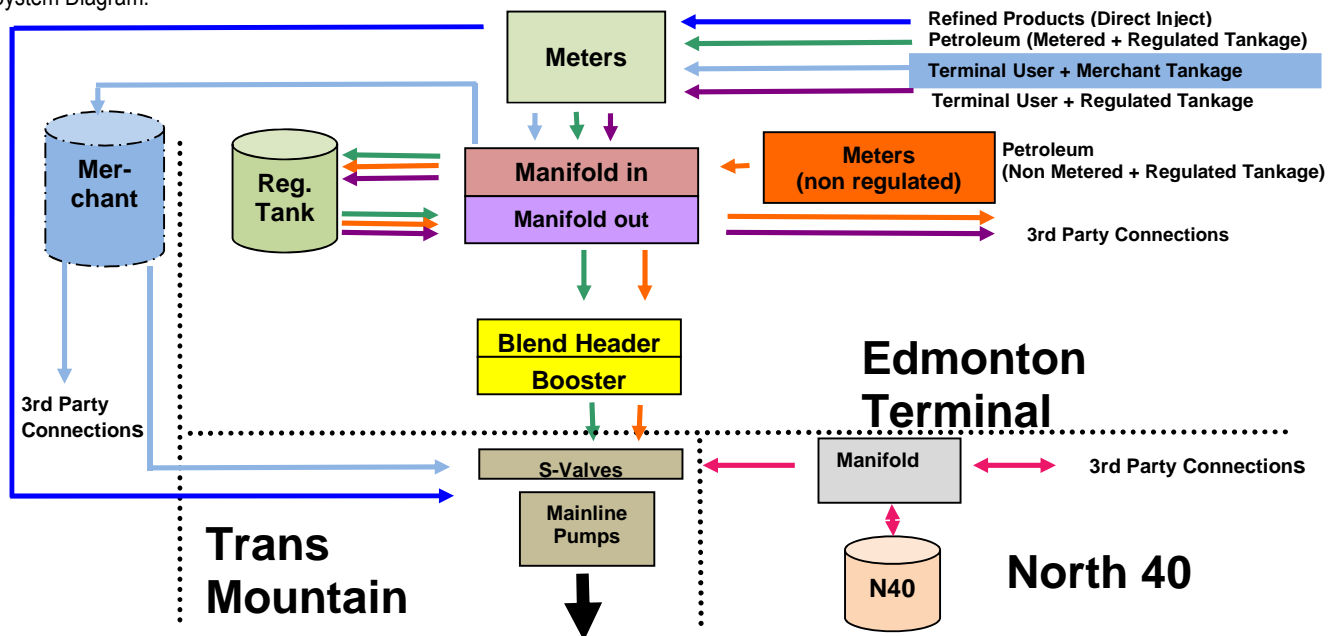
Edmonton fees (receipt location):

Edmonton Terminalling fee is first separated into two types of receipt fees: Direct and Indirect. Direct terminalling fees are comprised of four receipt service fees: i) One for inlet metering services; ii) Two for manifold transfer service into and out of tankage; and iii) One for outlet blending and booster service into the mainline. The Indirect fee recognizes that Trans Mountain has invested in facilities, incurs annual operating and maintenance capital expenses, and requires scheduling flexibility to accommodate both direct and indirect use of the Terminal assets. The Indirect fee is estimated at 15% of the Direct fee (estimated as the proportion of required scheduling flexibility in Trans Mountain's "normal" pumping schedule, i.e. 1 day in 6 days). The Indirect fee is applied to the four receipt fees individually.

Edmonton Tankage fee is separated into two types of receipt fees: Direct and Indirect. Shipper volumes that directly use the tanks will be assessed a Direct tankage fee and those that do not will be assessed an Indirect Tankage fee. The Indirect Tankage fee is set based on the same principle as outlined under the Terminalling fees, again estimated at 15%.

The receipt fees can then be combined based on use by each Shipper, current and new, requesting receipt services at Edmonton terminal.

System Diagram:



TL Schedule 1**Explanatory Notes for the Toll Design and Calculations****Kamloops fees (receipt location):**

Kamloops Terminalling fees were reviewed using the principles established for Edmonton terminal. As this location is significantly less complex than the Edmonton terminal, the cost has been entirely allocated to the inlet metering service fee. Additionally, Kamloops terminalling is also used for mainline breakout and relief purposes. As a result, the terminalling costs are shared between the mainline fees, 15%, and the receipt terminalling fees, 85%.

Kamloops Tankage fees were reviewed in light of the principles used for Edmonton terminal, that being the direct and indirect use of tanks for receipt functions. Additionally, Kamloops tankage is also used for mainline breakout and relief purposes. As a result, the tankage costs are shared between the mainline fees, 5%, and the receipt tankage fees, 95%. Use of the Direct and Indirect fees are also applied to Kamloops volumes.

Kamloops fees (delivery location):

Kamloops Terminalling fee uses the costs for providing a delivery location at the Suncor (previously Petro Canada) owned site upstream of the Trans Mountain Kamloops station, rather than an allocation of the asset costs at Kamloops station.

Kamloops Tankage fee is an Indirect Use fee as no delivery tankage is provided at the Suncor site and no delivery pipeline assets were provided in lieu of tankage at this site.

Sumas fees (delivery location):

Sumas Terminalling fee is based on the functional design of Sumas station, that being to provide coincidental pumping to both the connected Trans Mountain (Puget Sound) LLC pipeline and to the Trans Mountain mainline into Burnaby, BC. When Sumas station was rebuilt, approximately 50% of the costs at this location was incurred to allow pumping to each location. As a result, 50% of the Sumas station costs are rolled into the delivery terminalling fees and the remainder are rolled into the mainline fees.

The Indirect metering fee is assessed for all volumes being transferred / delivered into Trans Mountain (Puget Sound) LLC pipeline as no meters were installed for delivery to Trans Mountain (Puget Sound) LLC.

Sumas Tankage fee is based on the costs at Sumas tank farm (a location distinct from Sumas station) and the assessment of use by volumes destined for delivery to Washington State refineries. It was determined that 90% of Sumas tank farm costs are to be rolled into the delivery tankage fee and the remainder rolled into the mainline fees.

Westridge Marine Terminal Loading Charge (delivery location):

The Westridge Marine Terminal Loading Charge recovers costs for incremental operation and maintenance incurred at Westridge Marine Terminal (both operating and capital costs).

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

TL Schedule 2

Summary of Forecast System Throughput Volumes

Sheet 1 of 2

Deliveries (m³/day)

Line	Source	Destination	km	Schedule & Line ref.	Used in Proposed Net Toll Calculations ^[1]		
					2018 Interim <i>JAN to APR</i> <i>120 days</i>	2018 Proposed <i>MAY to DEC</i> <i>245 days</i>	2018 Total <i>Annual</i> <i>365 days</i>
1	Edmonton	Kamloops	819		1,652	1,801	1,752
2	<i>Total Kamloops Deliveries</i>				<i>1,652</i>	<i>1,801</i>	<i>1,752</i>
3	Edmonton	Sumas	1,096		25,808	28,188	27,405
4	Kamloops	Sumas	271		-	-	-
5	<i>Total Sumas Deliveries</i>				<i>25,808</i>	<i>28,188</i>	<i>27,405</i>
6	Edmonton	Burnaby	1,149		10,131	15,158	13,506
7	Kamloops	Burnaby	324		-	-	-
8	<i>Total Burnaby Deliveries</i>				<i>10,131</i>	<i>15,158</i>	<i>13,506</i>
9	Edmonton	Westridge	1,153		7,901	4,317	5,496
10	<i>Total Westridge Marine Terminal Deliveries</i>				<i>7,901</i>	<i>4,317</i>	<i>5,496</i>
11	Total Ex Edmonton/Edson Throughput				45,492	49,464	48,158
12	Total System Throughput				45,492	49,464	48,158
13	Total Heavy Crude (Ex Edmonton/Edson)				9,908	6,733	7,777
14	Percentage Heavy (Ex Edmonton/Edson)				21.78%	13.61%	16.15%
15	Hydraulic Capacity (Ex Edmonton/Edson) at Percentage Heavy ^[2]				49,370	52,295	51,371
16	Deliveries as Percentage of Hydraulic Capacity [line 11/line 15]				92%	95%	94%
17	Total Land Deliveries				37,591	45,147	42,663
18	Total Offshore Deliveries				7,901	4,317	5,496
19	Deliveries Ex Kamloops				-	-	-
20	Total System Deliveries (m ³)						17,577,842

Note(s):

[1] Proposed throughput is based on actual deliveries and updated nominations for January 1 to March 31, and forecast volumes for the remainder of the year as agreed to with Shippers.

[2] Hydraulic Formula:

For $x \leq 20.01\%$, $y = (809386115x^5 - 618225002x^4 + 163964466x^3 - 15952931x^2 - 193925x + 395343)/95\%/6.2898108$

For $x > 20.01\%$, $y = (-24844444x^6 + 62290768x^5 - 62888803x^4 + 31439150x^3 - 7464327x^2 + 480997x + 333140)/95\%/6.2898108$

Where $y = 100\%$ hydraulic capacity, $x =$ annual average % heavy injected at Edmonton and Edson and delivered out of the System.

[3] Under normal operating conditions, the System throughput will be set at a minimum 93% of hydraulic capacity at the forecast heavy composition as contemplated in Section 6 of the 2016 - 2018 ITS.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

TL Schedule 2

Calculation of Annual Cubic Meter Kilometers ^[2]

Sheet 2 of 2

(000,000 m³km)

Line	Source	Destination	km	Used in Proposed Net Toll Calculations ^[1]		
				2018 Interim <i>JAN to APR</i> 120	2018 Proposed <i>MAY to DEC</i> 245	2018 Total <i>Annual</i> 365
1	Edmonton	Kamloops	819	162	361	524
2	<i>Total Kamloops Deliveries</i>			162	361	524
3	Edmonton	Sumas	1,096	3,393	7,566	10,959
4	Kamloops	Sumas	271	-	-	-
5	<i>Total Sumas Deliveries</i>			3,393	7,566	10,959
6	Edmonton	Burnaby	1,149	1,397	4,266	5,663
7	Kamloops	Burnaby	324	-	-	-
8	<i>Total Burnaby Deliveries</i>			1,397	4,266	5,663
9	Edmonton	Westridge	1,153	1,093	1,219	2,313
10	<i>Total Westridge Marine Terminal Deliveries</i>			1,093	1,219	2,313
11	Total			6,045	13,413	19,458

Note(s):

[1] Proposed throughput is based on actual deliveries and updated nominations for January 1 to March 31, and forecast volumes for the remainder of the year as agreed to with Shippers.

[2] Annual cubic meter kilometers means distance (km) * volume * days in the year ÷ one million.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

TL Schedule 3

Revenue Comparison using Interim and Proposed Tolls

Sheet 1 of 2

(units as shown)

Line	Receipt	Destination	Receipt Service	Petroleum Type	Volumes (m ³ /day)	2018 Tolls		Annual Revenue (\$'000)		
						Interim	Proposed	Interim ^[1] (\$'000)	Proposed ^[2] (\$'000)	Change (%)
1	Edmonton	Kamloops	All	All	1,752	All	All	7,514	6,875	-8.5%
2	Edmonton	Sumas	All	All	27,405	All	All	165,697	151,846	-8.4%
3	Edmonton	Burnaby	All	All	13,506	All	All	83,938	76,890	-8.4%
4	Edmonton	Westridge	All	All	5,496	All	All	45,162	38,422	-14.9%
5	Kamloops	Sumas	All	All	-	All	All	-	-	-
6	Kamloops	Burnaby	All	All	-	All	All	-	-	-
7	Total Mainline				<u>48,158</u>			302,311	274,033	-9.4%
8	Partial year correction ^[4]							(18,848)	42,844	21.1%
9	Total Revenues							<u>283,463</u>	<u>316,877</u>	<u>11.8%</u>

Note(s):

[1] 2018 Interim Tolls, Tariff No. 101, was approved by NEB Order TO-002-2017.

2018 Interim Tolls, based on 2017 partial year Revenue Requirement, will generate approximately \$95,294K between January 1 and April 30 of 2018.

[2] Proposed Edmonton to Westridge Tolls include the Westridge Marine Terminal Loading Charge of \$1.4917 per m³.

[3] Number of days used in revenue calculation = 365

[4] Partial year correction depends on timing of change (i.e. month) and any substantive changes in volume mix or revenues.

[5] Calculation of percentage change in partial year tolls for 2017:

Description	Calculation	Interim	Final	Change
Mainline Tolls	TL Sch 3.2 Line 7: Revenue*1000 ÷ Volumes	17.4561	15.5271	-11.05%
Westridge Dock Bid	(i) TL Sch 9, Line 4 * -1 * 1000 divided by			
Premium Refund Sur-credit	(TL Sch 3.2, Line 7: Throughput for 120 days)	(3.9536)	-	-
	(ii) TL Sch 9, (Line 5 - Line 3) * 1000 divided by			
	(TL Sch 3.2, Line 7: Throughput for 245 days)	-	(4.9722)	-10.78%
Net Tolls		<u>13.5025</u>	<u>10.5550</u>	<u>-21.8%</u>

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

TL Schedule 3

Revenue Comparison Using Interim and Proposed Tolls for 2018 - Details

Sheet 2 of 2

(units as shown)

Line	From:	Receipt Service	Petroleum Type	JAN to APR Revenues			MAY to DEC Revenues			Total Revenues	Change
				Interim Tolls ^[1]	Throughput for 120 days	Revenues Interim Tolls	Proposed Tolls	Throughput for 245 days	Revenues Proposed Tolls		
				(\$/m ³)	m ³	(\$ 000)	(\$/m ³)	m ³	(\$ 000)	(\$ 000)	(%)
<u>Edmonton To:</u>											
1	Kamloops	All	All	All	198,262	2,330	All	441,201	4,744	7,073	-8.5%
2	Sumas	All	All	All	3,096,941	51,086	All	6,906,063	105,070	156,156	-7.8%
3	Burnaby	All	All	All	1,215,772	20,672	All	3,713,738	57,954	78,625	-8.2%
4	Westridge	All	All	All	948,123	21,207	All	1,057,742	20,402	41,609	-13.8%
<u>Kamloops To:</u>											
5	Sumas	All	All	All	-	-	All	-	-	-	
6	Burnaby	All	All	All	-	-	All	-	-	-	
7	Total				5,459,098	95,294		12,118,744	188,169	283,464	-11.1%
<u>Other Charges:</u>											
9	Edm Term Tank										
	Metered		All	\$ 1.0306/m ³			\$ 1.0999/m ³		-	-	6.7%
	Tank Non										
10	Edm Term Metered		All	\$ 0.8612/m ³			\$ 0.9101/m ³		-	-	5.7%
	Metered In,										
11	Edm Term 3rd Party		All	\$ 0.2260/m ³			\$ 0.2515/m ³		-	-	na
12	Total								188,169	283,464	

Note(s):

[1] 2018 Interim Tolls, Tariff No. 101, was approved by NEB Order TO-002-2017.

[2] Total volume in m³ as shown above converted to m³/day to match volumes shown on TL Schedule 2:Above volumes stated in m³ / day 45,492 and 49,464 = 48,158

[3] Volumes used for partial year Westridge Marine Terminal Loading Charge (shown on TL Schedule 6): 948,123

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

TL Schedule 4

Summary of Proposed Tolls by Crude Type

Sheet 1 of 2

(\$/m³)

Line	Receipt	Destination	Type of Service	Petroleum Type	Mainline Tolls	Surcharge (Surcredit)	Tankage		Terminalling		Westridge Loading	Net Toll
							Receipt	Delivery	Receipt	Delivery		
1	Edmonton	Edmonton	Tank Metered, Non Pipe	All	na	-	0.8063	-	0.2936	-	-	1.0999
2	Edmonton	Edmonton	Tank Non Metered	All	na	-	0.8063	-	0.1038	-	-	0.9101
3	Edmonton	Edmonton	Metered In, 3rd Party	All	na	-	na	-	0.2515	-	-	0.2515
4	Edmonton	Kamloops	Tank Metered	Super Light	9.1525	(0.1830)	0.8063	0.1872	0.4057	0.3833	-	10.7519
5	Edmonton	Kamloops	Tank Non Metered	Super Light	9.1525	(0.1830)	0.8063	0.1872	0.2158	0.3833	-	10.5621
6	Edmonton	Kamloops	Direct Injected	Super Light	9.1525	(0.1830)	0.1209	0.1872	0.2506	0.3833	-	9.9116
7	Edmonton	Kamloops	3rd Party Injected	Super Light	9.1525	(0.1830)	0.1209	0.1872	0.0608	0.3833	-	9.7218
8	Edmonton	Sumas	Tank Metered	Light	12.2434	-	0.8063	1.2482	0.4057	0.2978	-	15.0014
9	Edmonton	Sumas	Tank Non Metered	Light	12.2434	-	0.8063	1.2482	0.2158	0.2978	-	14.8116
10	Edmonton	Sumas	Direct Injected	Light	12.2434	-	0.1209	1.2482	0.2506	0.2978	-	14.1610
11	Edmonton	Sumas	3rd Party Injected	Light	12.2434	-	0.1209	1.2482	0.0608	0.2978	-	13.9712
12	Edmonton	Sumas	Metered In, Direct Mainline	Light	12.2434	-	0.1209	1.2482	0.2746	0.2978	-	14.1849
13	Edmonton	Sumas	Tank Metered	Medium	12.2434	0.6122	0.8063	1.2482	0.4057	0.2978	-	15.6136
14	Edmonton	Sumas	Tank Non Metered	Medium	12.2434	0.6122	0.8063	1.2482	0.2158	0.2978	-	15.4238
15	Edmonton	Sumas	Direct Injected	Medium	12.2434	0.6122	0.1209	1.2482	0.2506	0.2978	-	14.7732
16	Edmonton	Sumas	3rd Party Injected	Medium	12.2434	0.6122	0.1209	1.2482	0.0608	0.2978	-	14.5834
17	Edmonton	Sumas	Metered In, Direct Mainline	Medium	12.2434	0.6122	0.1209	1.2482	0.2746	0.2978	-	14.7971
18	Edmonton	Sumas	Tank Metered	Heavy	12.2434	1.8365	0.8063	1.2482	0.4057	0.2978	-	16.8379
19	Edmonton	Sumas	Tank Non Metered	Heavy	12.2434	1.8365	0.8063	1.2482	0.2158	0.2978	-	16.6481
20	Edmonton	Sumas	Direct Injected	Heavy	12.2434	1.8365	0.1209	1.2482	0.2506	0.2978	-	15.9975
21	Edmonton	Sumas	3rd Party Injected	Heavy	12.2434	1.8365	0.1209	1.2482	0.0608	0.2978	-	15.8077
22	Edmonton	Sumas	Metered In, Direct Mainline	Heavy	12.2434	1.8365	0.1209	1.2482	0.2746	0.2978	-	16.0214
23	Edmonton	Sumas	Tank Metered	Super Heavy	12.2434	2.4487	0.8063	1.2482	0.4057	0.2978	-	17.4501
24	Edmonton	Sumas	Tank Non Metered	Super Heavy	12.2434	2.4487	0.8063	1.2482	0.2158	0.2978	-	17.2603
25	Edmonton	Sumas	Direct Injected	Super Heavy	12.2434	2.4487	0.1209	1.2482	0.2506	0.2978	-	16.6097
26	Edmonton	Sumas	3rd Party Injected	Super Heavy	12.2434	2.4487	0.1209	1.2482	0.0608	0.2978	-	16.4199
27	Edmonton	Sumas	Metered In, Direct Mainline	Super Heavy	12.2434	2.4487	0.1209	1.2482	0.2746	0.2978	-	16.6336
28	Edmonton	Burnaby	Tank Metered	Super Light	12.8384	(0.2568)	0.8063	1.2482	0.4057	0.3833	-	15.4251
29	Edmonton	Burnaby	Tank Non Metered	Super Light	12.8384	(0.2568)	0.8063	1.2482	0.2158	0.3833	-	15.2353
30	Edmonton	Burnaby	Direct Injected	Super Light	12.8384	(0.2568)	0.1209	1.2482	0.2506	0.3833	-	14.5847
31	Edmonton	Burnaby	3rd Party Injected	Super Light	12.8384	(0.2568)	0.1209	1.2482	0.0608	0.3833	-	14.3949
32	Edmonton	Burnaby	Tank Metered	Light	12.8384	-	0.8063	1.2482	0.4057	0.3833	-	15.6819
33	Edmonton	Burnaby	Tank Non Metered	Light	12.8384	-	0.8063	1.2482	0.2158	0.3833	-	15.4921
34	Edmonton	Burnaby	Direct Injected	Light	12.8384	-	0.1209	1.2482	0.2506	0.3833	-	14.8415
35	Edmonton	Burnaby	3rd Party Injected	Light	12.8384	-	0.1209	1.2482	0.0608	0.3833	-	14.6517
36	Edmonton	Burnaby	Metered In, Direct Mainline	Light	12.8384	-	0.1209	1.2482	0.2746	0.3833	-	14.8655
37	Edmonton	Westridge	Tank Metered	Light	12.8839	-	0.8063	1.2482	0.4057	0.3833	1.4917	17.2190
38	Edmonton	Westridge	Tank Non Metered	Light	12.8839	-	0.8063	1.2482	0.2158	0.3833	1.4917	17.0292
39	Edmonton	Westridge	Direct Injected	Light	12.8839	-	0.1209	1.2482	0.2506	0.3833	1.4917	16.3787
40	Edmonton	Westridge	3rd Party Injected	Light	12.8839	-	0.1209	1.2482	0.0608	0.3833	1.4917	16.1889
41	Edmonton	Westridge	Metered In, Direct Mainline	Light	12.8839	-	0.1209	1.2482	0.2746	0.3833	1.4917	16.4026
42	Edmonton	Westridge	Tank Metered	Medium	12.8839	0.6442	0.8063	1.2482	0.4057	0.3833	1.4917	17.8632
43	Edmonton	Westridge	Tank Non Metered	Medium	12.8839	0.6442	0.8063	1.2482	0.2158	0.3833	1.4917	17.6734
44	Edmonton	Westridge	Direct Injected	Medium	12.8839	0.6442	0.1209	1.2482	0.2506	0.3833	1.4917	17.0229
45	Edmonton	Westridge	3rd Party Injected	Medium	12.8839	0.6442	0.1209	1.2482	0.0608	0.3833	1.4917	16.8331
46	Edmonton	Westridge	Metered In, Direct Mainline	Medium	12.8839	0.6442	0.1209	1.2482	0.2746	0.3833	1.4917	17.0468

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

TL Schedule 4

Summary of Proposed Tolls by Crude Type

Sheet 2 of 2
(\$/m³)

Line	Receipt	Destination	Type of Service	Petroleum Type	Mainline tolls	Surcharge (Surcredit)	Tankage		Terminalling		Westridge Loading	Net Toll
							Receipt	Delivery	Receipt	Delivery		
47	Edmonton	Westridge	Tank Metered	Heavy	12.8839	1.9326	0.8063	1.2482	0.4057	0.3833	1.4917	19.1516
48	Edmonton	Westridge	Tank Non Metered	Heavy	12.8839	1.9326	0.8063	1.2482	0.2158	0.3833	1.4917	18.9618
49	Edmonton	Westridge	Direct Injected	Heavy	12.8839	1.9326	0.1209	1.2482	0.2506	0.3833	1.4917	18.3113
50	Edmonton	Westridge	3rd Party Injected	Heavy	12.8839	1.9326	0.1209	1.2482	0.0608	0.3833	1.4917	18.1215
51	Edmonton	Westridge	Metered In, Direct Mainline	Heavy	12.8839	1.9326	0.1209	1.2482	0.2746	0.3833	1.4917	18.3352
52	Edmonton	Westridge	Tank Metered	Super Heavy	12.8839	2.5768	0.8063	1.2482	0.4057	0.3833	1.4917	19.7958
53	Edmonton	Westridge	Tank Non Metered	Super Heavy	12.8839	2.5768	0.8063	1.2482	0.2158	0.3833	1.4917	19.6060
54	Edmonton	Westridge	Direct Injected	Super Heavy	12.8839	2.5768	0.1209	1.2482	0.2506	0.3833	1.4917	18.9555
55	Edmonton	Westridge	3rd Party Injected	Super Heavy	12.8839	2.5768	0.1209	1.2482	0.0608	0.3833	1.4917	18.7657
56	Edmonton	Westridge	Metered In, Direct Mainline	Super Heavy	12.8839	2.5768	0.1209	1.2482	0.2746	0.3833	1.4917	18.9794
57	Kamloops	Sumas	Tank Metered	Light	3.0287	-	0.8063	1.2482	0.2506	0.2978	-	5.6317
58	Kamloops	Sumas	Direct Injected	Light	3.0287	-	0.1209	1.2482	0.2506	0.2978	-	4.9463
59	Kamloops	Sumas	Tank Metered	Medium	3.0287	0.1514	0.8063	1.2482	0.2506	0.2978	-	5.7831
60	Kamloops	Sumas	Direct Injected	Medium	3.0287	0.1514	0.1209	1.2482	0.2506	0.2978	-	5.0977
61	Kamloops	Sumas	Tank Metered	Heavy	3.0287	0.4543	0.8063	1.2482	0.2506	0.2978	-	6.0860
62	Kamloops	Sumas	Direct Injected	Heavy	3.0287	0.4543	0.1209	1.2482	0.2506	0.2978	-	5.4006
63	Kamloops	Burnaby	Tank Metered	Light	3.6237	-	0.8063	1.2482	0.2506	0.3833	-	6.3122
64	Kamloops	Burnaby	Direct Injected	Light	3.6237	-	0.1209	1.2482	0.2506	0.3833	-	5.6268

Note(s):

[1] Commodity surcharges/surcredits applied to Mainline charges only. Level of Toll Credits applied:

Classification:

SUPER LIGHT PETROLEUM
LIGHT PETROLEUM
MEDIUM PETROLEUM
HEAVY PETROLEUM
SUPER HEAVY PETROLEUM

Typical Representative Petroleum:

Gasoline, Alkylate
Rainbow, Pembina, Diesel, Butane, or as blended
SSX, or as blended
Peace Heavy, or as blended
Cold Lake, AHS, or as blended

Commodity

Surcharge
(Surcredit)

-2%
0%
5%
15%
20%

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

TL Schedule 5

Calculation of Proposed Mainline Tolls

(units as shown)

Line	Description	Schedule & Line ref.	Toll Design Amount	Net Transmission
1	A. Calculation of Mainline Revenues (\$000)			
2	Total Revenues	[Schedule 1, line 13]		283,463
3	Partial Year Revenues	[TL Schedule 3, Sheet 2, line 7]		<u>(95,294)</u>
4	Partial Year Revenue Requirement	[TL Schedule 3, Sheet 2, line 7]		<u>188,169</u>
5	LESS:			
6	Petroleum Loading Revenues	[TL Schedule 6, sum of [i] & [ii]]	(1,578)	
7	Toll Commodity Revenues (net)		(3,292)	
8	Tankage Revenue Requirement	[TL Schedule 7, line 12]	(24,430)	
9	Terminalling Revenue Requirement ^[1]		<u>(8,970)</u>	
10	Total non-Mainline Transmission Revenues		<u>(38,271)</u>	<u>(38,271)</u>
11	Partial-year Mainline Transmission Revenue (\$000)			<u>149,898</u>
12	B. Calculation of Partial Year Mainline Transmission Charge			
13	Partial Year Cubic Meter Kilometers (000)	[TL Schedule 2, Sheet 2, line 11*1000]		13,413,128
14	Transmission Charge (\$ / m ³ km)	[line 11 ÷ line 13]		0.0111755
15	C. Summary of Mainline Transmissions Tolls (\$ / m ³):			
16	Receipt	Destination	Kilometers	Transmission Toll ^[2]
17	Edmonton	Kamloops	819.0	9.1525
18	Edmonton	Sumas	1,095.6	12.2434
19	Edmonton	Burnaby	1,148.8	12.8384
20	Edmonton	Westridge Marine Terminal	1,152.9	12.8839
21	Kamloops	Sumas	271.0	3.0287
22	Kamloops	Burnaby	324.3	3.6237

Note(s):

[1] Terminalling Revenue Requirement is comprised of total Adjusted Receipt Revenues (TL Schedule 8, Sheet 1, line 10) and total Adjusted Delivery Revenues (TL Schedule 8, Sheet 2, line 11).

[3] Transmission Tolls equal Kilometers by destination times Transmission Charge on line 14.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

TL Schedule 6

Calculation of Proposed Westridge Marine Terminal Loading Charge

(\$000 unless otherwise shown)

Line	Description	Amount
1	A. Calculation of partial year Revenue Requirement for Operating & Maintenance costs (\$000):	
2	Revenue Requirement ^[1]	2,931
3	Revenues collected during interim toll period ^[2a]	(1,774)
4	Net partial year revenues	[i] 1,156
5	Partial Year Volumes (m ³) [TL Schedule 3, Sheet 2, line 4]	1,057,742
6	Operating & Maintenance Fee (\$ / m ³)	1.0930
7	B. Calculation of partial year Revenue Requirement for Capital Expenditures:	
8	Revenue requirement associated with Westridge Marine Terminal Upgrades ^[3]	1,647
9	Revenues collected during interim toll period ^[2b]	(1,225)
10	Net partial year revenues	[ii] 422
11	Partial Year Volumes (m ³) [TL Schedule 3, Sheet 2, line 4]	1,057,742
12	Capital Fee (\$ / m ³)	0.3986
13	C. Summary of Loading Charges (\$ / m ³)	
14	Operating & Maintenance Fee from Section A above	1.0930
15	Capital Improvements Fee from Section B above	0.3986
16	Proposed Loading Charge (\$ / m ³)	1.4917

Note(s):

[1] The Revenue Requirement is comprised of two components (i) Operating and Maintenance costs and (ii) Capital expenditures. The Capital expenditures reflect improvements completed since 2007 to date.

[2] Interim Revenue Calculation:		Schedule	Volumes (m ³)	Interim Toll (\$/m ³)	Revenues (\$)
2a	Operating & Maintenance Fee	[Volumes from TL Schedule 3]	948,123	1.8715	1,774,415
2b	Capital Improvement Fee	[Volumes from TL Schedule 3]	948,123	1.2925	1,225,429
[3] Calculation of Revenue Requirement for Capital Fee (\$000)			2017	2017	2018
			Filed	Final	Proposed
Plant	Open		17,244	17,244	17,273
	Additions		322	50	-
Retirements			-	(21)	-
	Close		17,566	17,273	17,273
Accumulated Depreciation	Open		2,977	2,977	3,462
	Additions		485	485	492
	Close		3,462	3,462	3,954
Average Working Capital	[(O&M + Taxes Payable) x 15 days /365]		6	6	6
Average Rate Base			14,191	14,055	13,571
Equity Rate			9.50%	9.50%	9.50%
Debt Rate			5.00%	5.00%	5.00%
Equity Return	45%		607	601	580
Interest Expense	55%		390	387	373
Depreciation Expense			485	485	492
Income Tax Provision			205	205	212
Revenue Requirement			1,687	1,677	1,657
Plus prior year variance			4		(10)
Total Revenue Requirement			1,691		1,647

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

TL Schedule 7

Calculation of Proposed Tankage Tolls

(units as shown)

Line	Description	Allocation Factors	Total System	Share	Total Receipt	Total Delivery	TOTAL
1	Revenues (\$000) ^[1]						
2	Annual Revenues		283,463				
3	Edmonton				14,493	-	14,493
4	Kamloops				1,367	-	1,367
5	Sumas				-	3,646	3,646
6	Burnaby				-	18,193	18,193
7	Total Annual Revenues		<u>283,463</u>		<u>15,860</u>	<u>21,839</u>	<u>37,699</u>
8	Edmonton Terminal Revenues ^[2]	74.2%		(1,755)	(1,302)	-	(1,302)
9	Total Shared Amounts			<u>(1,755)</u>	<u>(1,302)</u>	<u>-</u>	<u>(1,302)</u>
10	Net Revenues				<u>14,557</u>	<u>21,839</u>	<u>36,396</u>
11	Adjustment for partial year		-		(4,786)	(7,180)	(11,966)
12	Adjusted Revenues (\$000)		<u>283,463</u>		<u>9,771</u>	<u>14,659</u>	<u>24,430</u>
13	Regulated Tankage Throughput ('000 m³):						
14	Edmonton				12,119	-	
15	Kamloops				-	-	
16	Sumas				-	6,906	
17	Burnaby				-	3,714	
18	Westridge				-	1,058	
19	Total Regulated Tankage Throughput:				<u>12,119</u>	<u>11,678</u>	
20	Tankage Charges (\$/m³):				0.8063	1.2482	
21	Indirect Tankage Throughput ('000 m³):						
22	Edmonton				-	-	
23	Kamloops				-	441	
24	Sumas				-	-	
25	Burnaby				-	-	
26	Total Indirect Tankage Throughput:				<u>-</u>	<u>441</u>	
27	Indirect Tankage Charges (\$/m³):	15.0%			0.1209	0.1872	

Note(s):

[1] The Tankage Revenues have been rebased to reflect the forecast cost of operation for these locations.

[2] Edmonton Terminal Revenues are prorated between Tankage and Terminalling based on 2017 final tolls:

Receipt Tankage	0.7646	74.20%
Receipt Terminalling	0.2659	25.80%

Edmonton Terminal Revenues include 2017 variance and 2018 proposed Shippers' share of the Edmonton Terminal Revenues.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

TL Schedule 8

Calculation of Proposed Terminalling Tolls

Sheet 1 of 2. Receipt Terminalling

(units as shown)

Line	Description	Allocation Factors	Total System	Share	Meters	Manifold In	Manifold Out	Boost & Blend	Total Receipt
1	Revenues (\$000) ^[1]								
2	Annual Revenues before sharing		283,463						
3	Edmonton				2,297	552	437	2,412	5,698
4	Kamloops				2,079	-	-	-	2,079
5	Total Annual Revenues before sharing		283,463		4,376	552	437	2,412	7,777
6	Edmonton Terminal Revenues ^[2]	25.8%		(1,755)	(345)	(43)	(34)	(31)	(453)
7	Total Shared Amounts			(1,755)	(345)	(43)	(34)	(31)	(453)
8	Net Revenues				4,031	508	403	2,381	7,324
9	Adjustment for partial year		-		(1,325)	(167)	(132)	(783)	(2,408)
10	Adjusted Revenues (\$000)		283,463		2,706	341	270	1,598	4,916
11	Total Throughput ('000 m ³):								
12	Edmonton Receipts Tank Metered		12,119		12,119	12,119	12,119	12,119	
13	Tank Non Metered		-		-	-	-	-	
14	Kamloops Receipts Tank Metered		-		-	-	-	-	
15	Total Throughput:				12,119	12,119	12,119	12,119	
16	Direct Terminalling Charges (\$/m ³):				0.2233	0.0282	0.0223	0.1319	
17	Indirect Throughput ('000 m ³):								
18	Edmonton Receipts Tank Metered		12,119		-	-	-	-	
19	Kamloops Receipts Tank Metered		-		-	-	-	-	
20	Total Throughput:				-	-	-	-	
21	Indirect Terminalling Charges (\$/m ³):	15.0%			0.0335	0.0042	0.0033	0.0198	
22	Summary of Receipt Terminalling Charges (\$/m ³):								
23	Edmonton Tank Metered, Pipeline				0.2233	0.0282	0.0223	0.1319	0.4057
24	Tank Metered, Non Pipeline				0.2233	0.0282	0.0223	0.0198	0.2936
25	Tank Non Metered				0.0335	0.0282	0.0223	0.1319	0.2158
26	Tank Non Metered, Non Pipeline				0.0335	0.0282	0.0223	0.0198	0.1038
27	Metered In, Direct Mainline ^[3]				0.2233	0.0282	0.0033	0.0198	0.2746
28	Metered In, 3rd Party ^[3]				0.2233	0.0282	na	na	0.2515
29	Direct Injections				0.2233	0.0042	0.0033	0.0198	0.2506
30	3rd Party Injected				0.0335	0.0042	0.0033	0.0198	0.0608
31	Kamloops Tank Metered				0.2233	0.0042	0.0033	0.0198	0.2506
32	Direct Injections				0.2233	0.0042	0.0033	0.0198	0.2506

Note(s):

[1] The Terminalling Revenues have been rebased to reflect the forecast cost of operation for these locations.

[2] Edmonton Terminal Revenues are prorated between Tankage and Terminalling based on 2017 final tolls.

Receipt Tankage 0.7646 74.20%

Receipt Terminalling 0.2659 25.80%

Edmonton Terminal Revenues include 2017 variance and 2018 proposed Shippers' share of the Edmonton Terminal Revenues.

[3] These terminalling charges were introduced to accommodate merchant tanks within Trans Mountain's Edmonton Terminal. Corresponding movements commenced in December 2013.

[i] Metered In, Direct Mainline represents the movements that go through regulated meters and manifold in, enter merchant tanks and then directly inject into the mainline.

[ii] Metered In, 3rd Party represents the movements that go through regulated meters and manifold in, enter merchant tanks, and then go to a 3rd Party facility. As this type of movement does not impose opportunity costs to the regulated system, no indirect fees are charged.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

TL Schedule 8

Calculation of Proposed Terminalling Tolls

*Sheet 2 of 2. Delivery Terminalling**(units as shown)*

Line	Description	Total	Allocation	Meters	Terminal	Total
1	Revenues (\$000) ^[1]					
2	Annual Revenues before sharing	283,463				
3	Kamloops ^[2]			117	913	1,030
4	Sumas				1,986	1,986
5	Burnaby			819	2,206	3,025
6	Total Annual Revenues before sharing	<u>283,463</u>		<u>936</u>	<u>5,104</u>	<u>6,040</u>
7	Edmonton Terminal Revenues		n/a	-	-	-
8	Total Shared Amounts			-	-	-
9	Net Revenues			<u>936</u>	<u>5,104</u>	<u>6,040</u>
10	Adjustment for partial year	<u>-</u>		<u>(308)</u>	<u>(1,678)</u>	<u>(1,986)</u>
11	Adjusted Revenues (\$000)	<u>283,463</u>		<u>628</u>	<u>3,426</u>	<u>4,054</u>
12	Direct Throughput ('000 m³):					
13	Edmonton Receipts					
14	Tank Metered	12,119		12,119	12,119	
15	Tank Non Metered	-		-	-	
16	Direct Injections	-		-	-	
17	3rd Party Injected	-		-	-	
18	Kamloops Receipts					
19	Tank Metered	-		-	-	
20	Direct Injections	-		-	-	
21	Sumas Deliveries	(6,906)		<u>(6,906)</u>	-	
22	Total Throughput:			<u>5,213</u>	<u>12,119</u>	
23	Direct Terminalling Charges (\$/m³):			0.1006	0.2827	
24	Indirect Throughput ('000 m³):					
25	Sumas Deliveries	6,906		<u>6,906</u>	-	
26	Total Throughput:			<u>6,906</u>	-	
27	Indirect Terminalling Charges (\$/m³):		15%	0.0151	0.0424	
28	Summary of Delivery Terminalling Charges (\$/m³):					
29	Kamloops			0.1006	0.2827	0.3833
30	Sumas			0.0151	0.2827	0.2978
31	Burnaby			0.1006	0.2827	0.3833
32	Westridge			0.1006	0.2827	0.3833

Note(s):

[1] The Terminalling Revenues have been rebased to reflect the forecast cost of operation for these locations

[2] Kamloops Metering Revenues, column titled "Meters", are calculated as the Burnaby Metering Revenue times the ratio of the number of meters at Kamloops (2) divided by the number of meters at Burnaby (14). The Kamloops Total Revenue, column titled "Total", is determined using the rate base / cost of service methodology. The Kamloops Terminal Revenue is the difference between the two.

Methodology for Calculation of Tolls Pursuant to the 2019 - 2021 Incentive Toll Settlement

TL Schedule 9

Calculation of Proposed Separate Toll for the Westridge Dock Bid Premium Refund

(units as shown)

Line	Description	Schedule & Line ref.	Additional Refunds		Total Amount	
			Westridge	Kamloops		
1	A. Calculation of Partial Year Premium Refund(\$000)					
2	Total Premiums to be refunded for toll reduction (\$000) [Schedule 8.2, line 11]				(81,840)	
3	Additional Refunds to Shippers (\$000) ^[1]		(1,016)	-	1,016	
4	Interim Westridge Dock Bid Premiums refunded for toll reduction (\$000)				21,583	
5	Partial Year Premiums to be Refunded (\$000)		<u>(1,016)</u>	<u>-</u>	<u>(59,241)</u>	
6	B. Calculation of Partial Year Refund Charge					
7	Partial Year Cubic Meter Kilometers		[TL Schedule 2, Sheet 2, line 11 *1000]		13,413,128	
8	Partial Year Westridge Marine Terminal Volumes (m³)		1,057,742			
9	Partial Year Transmission Surcredit (\$ / m³km)				(0.00441664)	
10	C. Summary of Refund Surcredit Tolls (\$ / m³):					
11	Receipt	Destination	Kilometers	Surcredit	<u>Add. Refund Credit</u>	Total
12	Edmonton	Kamloops	819.0	(3.6171)		(3.6171)
13	Edmonton	Sumas	1,095.6	(4.8387)		(4.8387)
14	Edmonton	Burnaby	1,148.8	(5.0739)		(5.0739)
15	Edmonton	Westridge	1,152.9	(5.0918)	(0.9601)	(6.0519)
16	Kamloops	Sumas	271.0	(1.1970)	(0.8930)	(2.0900)
17	Kamloops	Burnaby	324.3	(1.4321)	(0.8743)	(2.3064)

Note:

- [1] To achieve a reasonably uniform average net toll (pipeline Net Toll + Westridge Dock Bid Premium surcredit), an additional credit has been assigned to the Westridge delivered volumes and the Kamloops receipt volumes.

APPLICATION
BY TRANS MOUNTAIN PIPELINE ULC
AS GENERAL PARTNER OF TRANS MOUNTAIN PIPELINE L.P.
FOR APPROVAL OF A MULTI-YEAR INCENTIVE TOLL SETTLEMENT
AND RELATED MATTERS
2019 - 2021

2019 – 2021 INCENTIVE TOLL SETTLEMENT

REFERENCED PROCEDURES

CAPACITY INCENTIVE CODE OF CONDUCT

INVENTORY SETTLEMENT PROCEDURE

REFINED PETROLEUM RECONCILIATION PROCEDURE



Trans Mountain Pipeline ULC Capacity Incentive Code Of Conduct ("CI Code" or "Code")

1. Purpose of the Code

The purpose of this Code is to establish guidelines to govern interactions between Trans Mountain and Shippers in relation to the provision of transportation services during the period of time that a capacity incentive is in place pursuant to the 2019 - 2021 Incentive Toll Settlement ("2019-2021 ITS").

Capitalized terms not otherwise defined herein shall have the meanings given to them in the 2019-2021 ITS and the Tariff.

2. Objectives of the Code

The objectives of the Code ("**Objectives**") are to:

- 2.1. create a set of guidelines to be followed by Trans Mountain and Shippers interacting for the purpose of providing and receiving transportation services on the System.
 - 2.1.1. Shippers will comply with all terms of the Petroleum Tariff, and understand the scope and goals of the service standards ("Service Standards") and the commodity approval process ("Commodity Approval Process") on file with the NEB and available on the Trans Mountain website at:

<https://www.transmountain.com/tolls-tariffs>.
 - 2.1.2. Trans Mountain will comply with all terms of the Petroleum Tariff and will continue to implement the Service Standards and the Commodity Approval Process.
- 2.2. achieve incremental capacity without willfully or significantly impacting Petroleum quality. In the event that the achievement of incremental capacity results in significant and willful degradation of Petroleum quality, the capacity incentive may be terminated. To terminate, Trans Mountain and Shippers shall review the results of the capacity incentive for the prior calendar year on or before the end of February for each year of the Term. If either Trans Mountain, or the Shippers acting collectively, decides to terminate the capacity incentive, such termination will be effective January 1 of the current calendar year. For clarity: Annual review of the 2018 capacity incentive achieved is:

Step 1: Such review to occur before the end of February 2019;



Step 2: If, after such review, either party decides to terminate the capacity incentive, the termination shall be effective January 1, 2019;

For each subsequent calendar year, Trans Mountain and Shippers shall meet and follow the same process as set out in steps 1 and 2.

2.2.1. Trans Mountain will continue to provide, at a minimum, the same level of service and responses to Shippers requests that was in place January 1, 2019. This current level of service generally exceeds the minimum service standard as contained in Trans Mountain's Service Standards. Specifically, Trans Mountain will endeavor to maintain existing Petroleum segregation and transportation services that existed January 1, 2019, as may be revised from time to time as outlined in Section 5.2.7 below.

3. General Provisions

3.1. Compliance

3.1.1. Trans Mountain is committed to upholding the Objectives.

3.1.2. Shippers are committed to upholding the Objectives.

3.2. Term of the Code

The Code will become effective January 1, 2019 or as soon thereafter as NEB approval of the 2019-2021 ITS is received and termination will be coincident with termination or expiry of the 2019-2021 ITS.

4. Equal Access and Treatment

4.1. Enforcement of the Tariff and Equal Access

Trans Mountain will provide transportation services impartially and without undue preference to any Shipper and in accordance with the Petroleum Tariff.

5. Responsibilities

5.1. Shippers

5.1.1. Shipper's responsibilities and rights are embodied in the Petroleum Tariff; the Code does not override the Petroleum Tariff, the Service Standards or the Commodity Approval Process but is a reinforcement of those responsibilities. Some of those responsibilities are:

- a. Unless otherwise requested by the Carrier, Shippers shall, on a best efforts basis, make all volumes available on a ratable basis and



capable of being delivered to Trans Mountain to meet scheduled batch requirements;

- b. Shippers will interact and communicate with Trans Mountain's customer service representatives in a timely and respectful manner;
- c. Shippers will work with Trans Mountain's customer service representatives to request and resolve individual scheduling and service requirements to meet the terms of the Petroleum Tariff, the Service Standards and the Commodity Approval Process;
- d. Shippers will communicate to Trans Mountain as soon as is practical any disruption of service, including but not limited to Force Majeure events, unplanned or planned refinery downtime that materially impact service and any event that may interrupt the scheduled delivery of volumes on the System; and
- e. Shippers must provide sufficient notice to Trans Mountain when requesting service for a new commodity or a new service from a feeder pipeline. Such notice must permit sufficient time to develop and construct infrastructure improvements as may be required (approximately 2 years) or sufficient time for Trans Mountain to conduct a comment period with existing Shippers when requesting comingled service (4 to 6 weeks). Provision of the characteristics of a new commodity must follow the Commodity Approval Process. Shippers commit to work reasonably and collaboratively with Trans Mountain to understand the impacts of new commodities on the System.

5.2. Trans Mountain

- 5.2.1. Trans Mountain's responsibilities and rights are embodied in the Petroleum Tariff, the Service Standards and the Commodity Approval Process; the Code does not override the Petroleum Tariff but is a reinforcement of those responsibilities. Some of those responsibilities are:
 - a. All volumes will be received and delivered as set out regularly in the delivery schedule available on Trans Mountain's scheduling system, "Vista";
 - b. Trans Mountain will interact with and communicate with Shippers in a timely and respectful manner;
 - c. Trans Mountain will work with Shippers to understand and resolve individual scheduling and service requirements to meet the terms of the Petroleum Tariff, the Service Standards and the Commodity Approval Process;



d. In the event of any disruption of service (including material changes to quality), Trans Mountain will communicate to Shippers as soon as practical following the disruption of service, including but not limited to Force Majeure events, unplanned or planned maintenance activities that materially impact service and any event that may interrupt the scheduled delivery of volumes on the System;

5.2.2. Trans Mountain will review the Operational Capacity Incentive Adjustment with Shippers annually. Trans Mountain understands that the capacity incentive is an opportunity to achieve incremental revenues but it is not a guarantee of such revenues; and

5.2.3. Trans Mountain and its Shippers shall meet as required to review the capacity incentive and any proposed changes to enhance System capacity and to review potential changes to the Service Standards or Commodity Approval Process that may result from such discussion.

In the event, that the need for new tankage is identified, Trans Mountain will work with Shippers to identify potential solutions. If such a solution impacts Trans Mountain's costs, such new costs will be dealt with under the New Business Development provision of the ITS.

6. Compliance with the Code

6.1. Trans Mountain will ensure that Trans Mountain personnel are aware of their obligation to comply with the contents of the Code.

6.2. Shippers will ensure that Shippers personnel and delivery point recipients are aware of their obligations to comply with the Code.



Trans Mountain Pipeline ULC Inventory Settlement Procedure

1. INTRODUCTION

Inventory gains and losses between commodities are a normal part of transporting unlike materials in a batched pipeline. These gains and losses can be attributed to interfacial batch cuts, shared tank movements and the normal intermixing of commodities as they transit the pipeline system. Due to differences in quality between commodities, inventory gains or losses cannot be settled through the reallocation of Physical Inventory. To maintain a proportional balance of Physical Inventory relative to Book Inventory, Carrier requires Shippers to settle such gains and/or losses through financial transactions. All Shippers are required to participate in this process. Carrier's goal is to minimize physical gains or losses between commodities, and ensure that financial transactions utilize transparent pricing. This document describes the Inventory Settlement Procedure as applicable to Trans Mountain Pipeline ULC as general partner of Trans Mountain Pipeline LP ("Trans Mountain").

Capitalized terms that are not defined in this procedure are as defined in Trans Mountain Pipeline ULC's Petroleum Tariff: Rules and Regulations.¹

Refined Petroleum is not subject to this procedure. Inventory gains and losses for Refined Petroleum are subject to the Refined Petroleum Reconciliation Procedure.

2. DEFINITIONS

Batches in Transit: Remaining Physical Inventory after removing Working Stock and Linefill.

Book Inventory: The sum of opening inventory, Inventory Settlement Adjustments, receipt volumes and volumes transferred in and out, less Delivered volumes and Petroleum Loss Allowance, in a given Month.

Inventory Settlement Adjustment: Settlement Volume as it appears on the following Month's Shipper Balance Statement.

Petroleum Loss Allowance: A fraction (expressed as a percentage) of Delivered volume withheld by Carrier to cover the cost of losses inherent in the transportation and settlement of Crude Petroleum inventory. The Petroleum Loss Allowance Percentages ("PLAPs") in effect are provided in the Trans Mountain Pipeline ULC Tariff: Tolls Applying on Petroleum¹.

Net Settlement Value: Net Settlement Value is the value of the financial transaction required to balance Book Inventory to Physical Inventory and is the product of the Settlement Price times Settlement Volume.

Physical Inventory: Physical volumes within the Mainline System that are assigned to a Shipper, normally comprising of Working Stock and Line Fill and Batches in Transit.

¹ The Trans Mountain Pipeline ULC Tariffs: Tolls Applying on Petroleum and Rules and Regulations Governing the Transportation of Petroleum are on file with the National Energy Board and can be located on the Carrier's website at <https://www.transmountain.com/tolls-tariffs>.



Settlement Price: The price assigned to each commodity based on the average of all accepted price quotes received from Shippers. Carrier requires Shippers to provide a price quote for their commodities at time of Nomination.

Shippers are not required to provide quotes for those commodities identified as “Widely Traded” in Schedule B. All price quotes shall be prepared in accordance with Schedule B. Price quotes may take the form of an index price such as Natural Gas Exchange Postings (“NGX”), NYMEX differential postings (“NYMEX”), or other form of pricing agreeable to Carrier. Carrier reserves the right to reject any price quote that it deems misrepresents current market conditions. Schedule B will be updated as new commodities are approved from time to time. In the event NGX or NYMEX are no longer (i) available, (ii) in existence, or (iii) provide adequate pricing information on the commodities listed in Schedule B, Carrier will discuss with Shippers an appropriate replacement.

Settlement Volume: The difference between each Shipper’s Book Inventory and Physical Inventory.

Shipper Balance Statement: A summarized Monthly statement provided to each Shipper that shows Book Inventory, Physical Inventory, Settlement Volume, Settlement Price and Net Settlement Value.

Working Stock and Linefill: As defined in Carrier’s Petroleum Tariff: Rules and Regulations, typically pertains to volume associated with tank bottoms, tank lines and station piping that are necessary to operate the pipeline. Working Stock and Linefill is assigned on a monthly basis.

3. INVENTORY SETTLEMENT PROCEDURE

Step 1: Determination of Book Inventory

At the close of each Month, Carrier determines the Book Inventory for each commodity and each Shipper.

Step 2: Determination of Physical Inventory

At the close of each Month, Carrier determines the Physical Inventory of each commodity by Shipper.

Step 3: Determination of Settlement Volume

At the close of each Month, Carrier determines the Settlement Volume for each commodity by Shipper.

Step 4: Determination of Monthly Settlement Price

Carrier will determine the Settlement Price for each commodity as follows:

- (a) For commodities identified in Schedule B as “Widely Traded”: Carrier will apply the average monthly NGX price for each commodity;
- (b) For commodities identified in Schedule B as “Narrowly Traded”: Carrier will use the NGX supplied calendar month average WTI price, adjusted by the average of all Shipper supplied differential price quotes for such commodity.
- (c) For crudes not identified in Schedule B or for proprietary crude streams that do not normally trend to either NGX or NYMEX pricing, Carrier will accept price bids from



Shippers of these commodities. Such price bids will be averaged among Shippers of identical commodities. Carrier reserves the right to limit its exposure to this pricing mechanism, and as a consequence, may request documentation in support of Shipper price bids such as a verified price statement, completed sales contract or agreement, or other verifiable document. Carrier will hold such documents in confidence.

Step 5: Determination of Net Settlement Value

At the close of each Month, Carrier determines the Net Settlement Value for each commodity by Shipper. The Net Settlement Value is shown on the Shipper Balance Statement and invoice as either a debit (charge) or credit (refund), and is payable under terms set out in Carrier's Petroleum Tariff: Rules and Regulations.

This financial transaction allows the Settlement Volume to be recorded on the next Shipper Balance Statement as an Inventory Settlement Adjustment, thus ensuring Book to Physical Inventory balancing for all commodities and Shippers on the System.

An example of the Inventory Settlement Procedure is shown in Schedule A.

Commodities that are subject to either NGX or NYMEX pricing are listed in Schedule B. Carrier's PLAPs in effect are provided in the Trans Mountain Pipeline ULC Tariff: Tolls Applying on Petroleum.

Schedule A: Example of Inventory Settlement Procedure and Illustrative Shipper Balance Statement

A simplified example of a Shipper Balance Statement is shown below.

The first half of the statement (Section B) shows the calculations used to determine Book Inventory.

The second half of the statement (Section C and D) shows the calculations used to determine Settlement Volume (Net (Over)/Short) and Net Settlement Value.

In Month 1 the Shipper's Physical Inventory is greater than its Book Inventory, resulting in a Settlement Volume of 172 m³. A financial transaction is required to balance this Book to Physical Inventory discrepancy. The Cold Lake Crude Petroleum ("CLK") price is determined to be \$440/m³. The Net Settlement Value is therefore \$75,460 which is payable to Carrier.

The Settlement Volume (172 m³) is recorded on Month 2 of Shipper's Balance Statement as an Inventory Settlement Adjustment (Net Short).

In Month 2 the Shippers Physical Inventory is less than its Book Inventory, resulting in a Settlement Volume of 422 m³. A financial transaction is required to balance this Book to Physical Inventory discrepancy. The CLK price is determined to be \$460/m³ (Net Over). The Net Settlement Value is therefore \$194,120, payable to Shipper.



Shipper Balance Statement

(units as noted)

A. Shipper:

Single Point Destination Refinery

Period		Month 1		Month 2	
B. Book Inventory (m ³)	Notes	Commodity	Volume	Commodity	Volume
Opening Inventory:	1	CLK	50,000	CLK	54,929
Net Over / (Short):	1	CLK		CLK	172
Subtotal		CLK	50,000	CLK	55,100
Inventory Settlement Adjustment					
Receipts (+):	2	0.0	50,000	0.0	50,000
Transfers In (+):	3	0.0	10,000	0.0	10,000
Transfers Out (-):	4	0.0	0	0.0	0
Deliveries (-):	5	0.0	55,000	0.0	60,000
Petroleum Loss Allowance (-):	6	0.0	72	0.0	78
Book Inventory Total:		0.0	54,929	0.0	55,022
C. Physical Inventory (m³)					
(settlement included in tariff invoice)					
Less Working Stock:	7	0.0	3,600	0.0	3,600
Less Batches In Transit	8	0.0	51,500	0.0	51,000
Physical Inventory Total:			55,100		54,600
Settlement Volume (m³)			(172)		422
D. Net Settlement Value					
Price * Settlement Volume	9	\$440.00	(\$75,460)	\$460.00	\$194,120
(Price as set out in Procedure)					

Notes:

- [1] Opening Inventory is the Book Inventory total for the prior month. See Part B & C of prior month.
- [2] Monthly volumes received from feeder pipeline.
- [3] Transfer from another shipper.
- [4] Transfer to another shipper.
- [5] Monthly deliveries as invoiced to Shipper.
- [6] Petroleum Loss Allowance equals Deliveries * 0.13%.
- [7] Carrier assigned working stock = inventory in tanks and lines.
- [8] Physical batches in the pipeline at month end.
- [9] Net Settlement Value = Commodity Settlement Price times Settlement Volume in Section C above.

**Schedule B: List of Commodity Prices**

Product Code	Description	Material Grade Code	Benchmark	Index	Reference Crude/Post	Differential
1. Widely Traded						
C5	Condensate	L	WTI	NGX	C5	N/A
CL	Cold Lake Blend	SH	WTI	NGX	CL	N/A
KOC	Central Alberta KOC – (MSR)	L	WTI	NGX	CAL	N/A
PCSR	Peace River Sour – (MSR)	L	WTI	NGX	PSO	N/A
MSW	Mixed Sweet Blend	L	WTI	NGX	MSW	N/A
SSP	Syncrude	L	WTI	NGX	SYN	N/A
2. Narrowly Traded						
HEAVY/SUPER HEAVY CRUDES (Non-Pooled)		H/SH	WTI	NGX	WCS	Shipper Supplied
LSO	Light Sour Oil – (MSR)	L	WTI	NGX	CAL	Shipper Supplied

Legend:

L *Light*
M *Medium*
H *Heavy*
SH *Super Heavy*

For Trans Mountain Approved Commodity List, in effect at the time, please refer to the following website:
<https://www.transmountain.com/tolls-tariffs>



Trans Mountain Pipeline ULC Refined Petroleum Reconciliation Procedure

1. INTRODUCTION

Trans Mountain Pipeline ULC as general partner of Trans Mountain Pipeline L.P. (“Trans Mountain”) transports a wide variety of Petroleum commodities (Crude Petroleum, Refined Petroleum and semi-refined Petroleum) together in the same pipeline. Trans Mountain transports Refined Petroleum (diesel, gasoline and iso-octane) to Shipper owned facilities in Kamloops and Burnaby and to Trans Mountain’s Burnaby terminal, all located in British Columbia. The movement of multiple Petroleum products is achieved through a process known as “batching”.

When different Petroleum batches are lined up next to each other in the pipeline, some mixing between the batches can occur. This mixing - or interface - is kept to a minimum by sequencing the Refined Petroleum (or “RP”) batches in a specific order. A typical batch sequence (or “batch train”) consists of heavy crude, light crude, gasoline, iso-octane, diesel, light crude and heavy crude. The intermixing of Crude Petroleum and Refined Petroleum is called Transmix.

Gains and losses can be attributed to interfacial batch cuts and the normal intermixing of Petroleum products as they transit the pipeline system. Carrier’s typical batch train sequence for Refined Petroleum is: a lead batch of gasoline destined for Burrard terminal; followed by gasoline destined for Kamloops; followed by gasoline for Burrard terminal; followed by iso-octane for the Burnaby terminal; then gasoline for Burrard terminal and finally diesel for Burrard terminal. Transmix occurs at the front and back-end of the Refined Petroleum batch trains.

All Refined Petroleum delivered by Trans Mountain is subject to a Petroleum Loss Allowance Percentage (“PLAP”). The PLAPs in effect are provided in the Trans Mountain Pipeline ULC Tariff: Tolls Applying on Petroleum¹. Gains or losses for individual Refined Petroleum batches are settled through this procedure; the resulting aggregate net loss is reconciled and identified as Transmix. All Refined Petroleum Shippers are required to participate in this procedure. This document describes the Refined Petroleum Reconciliation Procedure as it applies to Trans Mountain.

Capitalized terms that are not defined in this procedure are as defined in Trans Mountain Pipeline ULC’s Petroleum Tariff: Rules and Regulations or in Trans Mountain’s Inventory Settlement Procedure.¹

2. RECONCILIATION PROCEDURE

Step 1: Refined Petroleum Batch Information (“RPBI”)

Trans Mountain issues the RPBI to all Refined Petroleum Shippers (“RP Shippers”) at the completion of each Refined Petroleum batch train (“RP Train”). A partial RPBI consist of completed deliveries at Kamloops terminal.

The RPBI calculates the batch over/short based on injected volume at Edmonton less custody transfer metered deliveries at either Kamloops or Burrard terminals and tank gauge receipts at

¹ The Trans Mountain Pipeline ULC Tariffs: Tolls Applying on Petroleum and Rules and Regulations Governing the Transportation of Petroleum are on file with the National Energy Board and can be located on the Carrier’s website at <https://www.transmountain.com/tolls-tariffs>.



Trans Mountain's Burnaby terminal.

Step 2: Determination of Delivery and Transportation Tolling Volumes

Each batch within the RP Train delivers and is tolled at the injected volume at Edmonton, with the following exceptions:

- The lead gasoline batch destined for Burrard delivery;
- The lead gasoline batch destined for Kamloops delivery; and
- The final diesel batch destined for Burrard delivery.

The lead Burrard gasoline batch will assume the over/short volume for all Burrard destined gasoline and iso-octane batches. The lead Kamloops batch will assume the over/short volume for all Kamloops destined batches and the last diesel batch assumes over/short volume for all diesel in a RP Train.

Step 3: Determination of Initial Transmix

At the close of each RP Train, the over/short volume for all gasoline batches as defined in Step 2 form the front-end Transmix, while the over/short volume for all diesel batches form the back-end Transmix.

Step 4: Determination of Book Inventory

At the close of each Month, Carrier determines the Book Inventory for each RP commodity and Shipper, as reported on the Shipper Balance Report.

Step 5: Determination of Physical Inventory

At the close of each Month, Carrier determines the Physical Inventory of each RP commodity and Shipper.

Step 6: Determination of Final Transmix Volume

At the close of each Month, Carrier determines the Book to Physical volume differences for each RP commodity and Shipper. Such differences are then applied to the appropriate Transmix commodity (gasoline or diesel) through a Final Transmix Volume adjustment; thus ensuring that the Book to Physical Inventory for all RP remains balanced.

Schedule A: Petroleum Loss Allowance Percentages

The Petroleum Loss Allowance Percentages can be found in the Trans Mountain Pipeline ULC Tariff: Tolls Applying on Petroleum in effect at the time.