FINANCIAL ANALYSIS FOR BC FERRY COMMISSION'S PRICE CAP REVIEW — THIRD PERFORMANCE TERM

MAXIMUM ALLOWABLE REVENUE FROM FARES AND RESERVATION FEES (MARFR)

Submitted to:

BC Ferry Commission

Mr. Martin Crilly
BC Ferry Commissioner

Mr. Sheldon Stoilen
Deputy Commissioner

Prepared by:

MMK Consulting Inc.
Stuart MacKay
Glenn Mair
Treena Cook

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1. Introduction

On behalf of the BC Ferry Commission ("the Commission"), MMK Consulting has undertaken a *Financial Analysis for BC Ferries Price Cap Review for the Third Performance Term – Regulated Revenue Requirements.*

All findings and conclusions presented in this report have been developed by MMK Consulting, based on our review of forecasts provided by BC Ferry Services ("BC Ferries"). Our findings and conclusions do not necessarily reflect the views of either the Commission or BC Ferries.

1.1. Study objectives and scope

This project reviews the operating and financial information contained in a submission by the BC Ferry Services ("BC Ferries") to the Commission with regard to BC Ferries' Third Performance Term (PT3) running from 2012 to 2016. BC Ferries' PT3 submission, dated September 30, 2010, is required under Section 40 of the BC Coastal Ferry Act.

The study has analyzed BC Ferries' actual results and forecasts for the current Second Performance Term (PT2) from April 1, 2008 to March 31, 2012, as well as BC Ferries' forecasts for the upcoming Third Performance Term (PT3) from April 1, 2012 to March 31, 2016. The main purpose of the analysis is to assess the reasonableness of the assumptions and forecasting methodologies underlying BC Ferries' forecast of "Maximum Allowable Revenues from Fares and Reservations" (MARFR) for PT3, and to recommend adjustments where appropriate.

The scope of the review includes all of the regulated routes covered under BC Ferries' Coastal Ferry Services Contract with the provincial government. The analysis has been performed on the basis of four route groups – (1) Major Routes (Routes 1, 2 and 30, between the Lower Mainland and Vancouver Island) (2) Route 3, between Vancouver and the Sechelt Peninsula, (3) Northern Routes, and (4) Minor Routes.

The results of this analysis are to be used by the Commission in determining the MARFR for each route group, for each year of PT3. The Commission will then apply the study findings in establishing a price cap formula to limit the amount by which BC Ferries may increase fares and reservation fees) for each route group, during each year of PT3.

1.2. Key questions

The study terms of reference include the following key questions:

- Can the Cognos forecasting model used by BC Ferries to project revenues and expenses for the six year period April 1, 2010 to March 31, 2016 be relied upon to produce accurate projections of net income for BC Ferries?
- On a route and route group basis, is the information provided by BC Ferries accurate, reasonable and supportive of the forecast for the third Performance Term?
- Are the operating assumptions for revenue and expense projections for the third performance term reasonable and consistent with results projected for the second performance term?
- Are there reasonable assumptions built into the projections for productivity improvements?

- Have BC Ferries satisfactorily explained unusual trends or variances between actual and forecasted results? What adjustments do you recommend should be made to the forecasts provided by BC Ferries?

2. Review of capital expenditure levels

BC Ferries' forecast PT3 capital expenditure levels of $545 million, with comparative figures for PT2, are illustrated in Exhibit 2a.

Exhibit 2a - Comparison of PT2 and proposed PT3 capital expenditure levels

	PT2 Initial (2006) and Updated (2010) Capital Expenditure Projections				PT3 Capital Expenditure Projections			
	Projected in Sept 2006[1]	Actual & Projected as of Sept 2010[2]	Increase (Decrease) 2010 over 2006			Projected in Sept 2010[3]	Increase (Decrease) vs PT2 (Sept 2010)	
	($million)	($million)	($million)	(%)		($million)	($million)	(%)
Vessels					**Vessels**			
FY2009	$365.6	$422.7 actual	$57.1	16%	2012/13	$57.8		
FY2010	$16.8	$29.1 actual	$12.3	73%	2013/14	$52.6		
FY2011 - ex duty remission[4]	$46.5	$48.3 forecast	$1.8	4%	2014/15	$130.6		
- Less: Duty remission		-$119.4	-$119.4					
FY2012	$27.7	$39.0 forecast	$11.3	41%	2015/16	$104.5		
Total Vessels	**$456.6**	**$419.7**	**-$36.9**	**-8%**	**Total**	**$345.5**	**-$74.2**	**-18%**
- excluding duty remission		*$539.1*	*$82.5*	*18%*			*-$193.6*	*-36%*
Terminals					**Terminals**			
FY2009	$22.4	$49.5 actual	$27.1	121%	2012/13	$20.1		
FY2010	$21.2	$29.8 actual	$8.6	41%	2013/14	$12.3		
FY2011	$33.5	$62.9 forecast	$29.4	88%	2014/15	$36.5		
FY2012	$48.9	$56.0 forecast	$7.1	15%	2015/16	$45.8		
Total Terminals	**$126.0**	**$198.2**	**$72.2**	**57%**	**Total**	**$114.7**	**-$83.5**	**-42%**
Other					**Other**			
FY2009	$17.2	$21.7 actual	$4.5	26%	2012/13	$18.3		
FY2010	$12.8	$22.5 actual	$9.7	76%	2013/14	$35.3		
FY2011	$17.4	$34.0 forecast	$16.6	95%	2014/15	$17.1		
- Plus: HQ capital lease[5]		$49.6	$49.6					
FY2012	$25.7	$18.7 forecast	-$7.0	-27%	2015/16	$14.1		
Total Other	**$73.1**	**$146.5**	**$73.4**	**100%**	**Total**	**$84.8**	**-$61.7**	**-42%**
Total Vessels, Terminals, Other					**Total Vessels, Terminals, Other**			
FY2009	$405.2	$493.9 actual	$88.7	22%	2012/13	$96.2		
FY2010	$50.8	$81.4 actual	$30.6	60%	2013/14	$100.2		
FY2011 - ex duty remission[6]	$97.4	$194.8 forecast	$97.4	100%	2014/15	$184.2		
- Less: Duty remission		-$119.4	-$119.4					
FY2012	$102.3	$113.7 forecast	$11.4	11%	2015/16	$164.4		
Total	**$655.7**	**$764.4**	**$108.7**	**17%**	**Total**	**$545.0**	**-$219.4**	**-29%**
- excluding duty remission		*$883.8*	*$228.1*	*35%*			*-$338.8*	*-38%*

1. Source: BCFS' PT2 submissions, dated September 30, 2006, p.72
2. Source: BCFS' PT3 submissions, dated September 30, 2010, p.47, plus capital lease per p.76
3. Source: BCFS' PT3 submissions, dated September 30, 2010, p.60
4. Total actual capital expenditure, before allowing for duty remission received
5. The lease of the new headquarters is recorded as a capital expenditure as this lease must be capitalized based on accounting policy
6. Total actual capital expenditure before allowing for duty remission received, but including the capital lease for the headquarters building

2.1. Vessel-related expenditures

BC Ferries' PT2 capital expenditures were originally projected in 2006 as $457 million, and are now projected to be $539 million through March 31, 2012.[1] BC Ferries' proposed vessel-related capital expenditures for PT3 are forecast as $346 million, significantly lower than the PT2 levels. The $346 million figure reflects the lower levels of vessel replacement (four) and major refits (four) planned for PT3 compared with PT2.

[1] PT2 expenditures are before consideration of the $119.4 million duty remission on four foreign built vessels, which had not been built into the original 2006 projections.

Our assessment is that BC Ferries' proposed $346 million allowance for PT3 vessel-related capital expenditures is reasonable.

2.2. Terminal-related expenditures

BC Ferries' terminal-related expenditures in PT2 were originally forecast as $126 million in 2006, and are now currently projected as $198 million through March 31, 2012. BC Ferries has experienced a number of unforeseen terminal-related capital expenditures in PT2, including a terminal rehabilitation at Tsawwassen and installation of sewage pump-out facilities at several terminals.

PT3 forecast capital expenditure levels of $115 million are significantly lower than both the originally forecast and currently forecast PT2 projections

Based on our review of the individual proposed terminal-related capital items, we assess the $115 million PT3 allowance for terminal-related capital expenditures as reasonable. If anything, this allowance may tend to be on the low side, since it does not include any allowance for unforeseen PT3 capital expenditure requirements.. On the other hand, the $115 million includes a number of terminal capital expenditures, including building replacements at Swartz Bay in the latter stages of PT3, that may be deferrable if more urgent terminal capital requirements arise.

2.3. IT/other capital expenditures

For PT2, BC Ferries' IT/other capital expenditures (including corporate) were originally forecast as $73 million, but are now forecast as $146 million. This latter figure includes the $50 million new headquarters building, acquired through a capital lease with purchase option.

For PT3 BC Ferries' forecast of $85 million[1] is higher than the original PT2 forecast but is lower than the current PT2 forecast. Proposed IT/other expenditures in PT3 include number of significant IT initiatives including a new point-of-sale/reservation system.

Based on our review of individual proposed IT/other capital expenditures, our assessment is that BC Ferries' proposed $85 million allowance for other/IT capital expenditures during PT3 is reasonable.

2.4. Long run sustainability of capital asset base

We have also reviewed information provided by BC Ferries and the Commission regarding whether the $545 million in proposed PT3 capital investments is consistent with BC Ferries being able to sustain its capital asset base in the long run.

Our preliminary assessment is that the proposed PT3 vessel and terminal-related expenditure levels appear low in relation to the average long-run capital expenditure requirements for long-run sustainability. At the same time, this does not necessarily mean that the capital schedule for PT3 is too low, given the cyclical nature of BC Ferries' capital expenditures patterns. For example, higher capital expenditures are expected in PT4, when many of BC Ferries' smaller vessels are scheduled to be replaced.

[1] Subsequently increased by $10 million by BC Ferries in December 2010. This increase is not included in BC Ferries' MARFR calculations.

2.5. Inclusion of PT2 capital expenditures in determining PT3 revenue requirements

The formula for determining BC Ferries' PT3 regulated revenue requirements (MARFR) is based in part on the capital expenditures actually undertaken in PT2. Higher capital expenditures in PT2 result in higher levels of capitalization during PT3, as well as higher annual amortization expenses. Partly because of its higher-than-forecast capital expenditures during PT2, BC Ferries' capitalization and net book value at the end of PT2 is now forecast to be significantly higher than had been initially forecast in 2006.

The Commission may wish to consider whether a portion of the capital expenditures undertaken by BC Ferries during PT2, such as the new headquarters lease with purchase option (treated as a capital expenditure for accounting purposes), should not be included in its determination of PT3 regulated revenue requirements and MARFR.

2.6. Conclusion - reasonableness of PT3 capital expenditure forecasts

On balance, our assessment is that the $545 million of forecast PT3 capital expenditures, as contained in BC Ferries' September 2010 submission to the Commission, is reasonable.

This assessment is based on the following assumptions about the level of capital expenditures actually undertaken by BC Ferries during PT3:

- **Vessels** - That vessel-related capital expenditures are undertaken in general accordance with the $345 million in capital expenditures planned by BC Ferries; specifically, that:
    - BC Ferries actually acquires four new vessels (including a new cable ferry), and
    - The four planned significant vessels refits/upgrades for PT3 are undertaken.
- **Terminals** - That terminal-related capital projects are undertaken in general accordance with the $115 million in capital expenditures forecast by BC Ferries.

  BC Ferries has not provided an allowance for unforeseen capital expenditures in PT3. If these are significant, then BC Ferries may face a decision whether to exceed its forecast expenditure levels, or whether to defer some of its planned PT3 terminal capital expenditures to PT4.
- **IT/other** - That the proposed $85 million in IT and other capital expenditures (prior to the $10 million increase in December 2010) are properly scoped and implemented.

3. Regulated revenue requirements (MARFR)

This chapter assesses BC Ferries' forecasts with respect to its regulated revenue requirements (Maximum Allowable Revenues from Fares and Reservations – MARFR).

Regulated revenue (MARFR) is the forecast amount required by BC Ferries from fares and reservation fees, in order for it to achieve a given net earnings target during PT3.

3.1. Corporate-level revenue requirements (all route groups combined)

3.1.1. Review of PT2 revenues and expenditures

For the **first two years of PT2** (FY2009 and FY2010), BC Ferries' actual performance has been significantly weaker than had been originally forecast. For FY2010, net earnings were $3.4 million, versus the original PT2 forecast of $56.8 million:

- Approximately $28.8 million (54%) of the variance is attributable to revenue shortfalls, reflecting significantly lower traffic volumes than BC Ferries had forecast.
- Approximately $15.7 million (29%) is attributable to higher-than-forecast operating expenses, driven in some cases by forces beyond BC Ferries' direct control (e.g. changes in federal crewing regulations).
- Approximately $9.7 million (18%) is attributable to higher-than-forecast amortization, reflecting higher-than-forecast capital expenditure levels.

For the **final two years of PT2** (FY2011 and FY2012), BC Ferries' PT3 submission forecasts 3.3%-3.5% annual increases in total revenues, 4.5% (2011) and 1.9% (2012) increases in operating expenses, and additional increases in amortization and financing expenses. While BC Ferries' PT3 submission forecasts modest profitability in FY2011 and FY21012, BC Ferries has since advised that it now expects FY2011 earnings to be significantly lower because of lower traffic levels. Barring a major traffic increase in FY2012, BC Ferries' balance sheet entering PT3 is now expected to be significantly weaker than was forecast in its September 2010 PT3 submission.

The Commission may wish to consider whether to allow all of BC Ferries' operating expense increases during PT2 to be considered in determining PT3 regulated revenue requirements. Areas identified for consideration by the Commission include (1) executive compensation and (2) the new downtown Vancouver Travel Centre.

3.1.2. Review of corporate-level forecasts for Year 1 of PT3

BC Ferries' forecast corporate-level (all routes) expenditures and revenues in the **first year of PT3** (FY2013) are illustrated in Exhibit 3a, and are assessed in the balance of this section.

Exhibit 3a – Year-over-year changes between PT2 Year 4 and PT3 Year 1

	FY2012 → FY2013			
	FY2012 Forecast (p. 76[1,3])	FY2013 Forecast (p. 77[2,3])	Year-Over-Year Forecast Change	
Revenues				
Tariff Revenue (Forecast/Required[4])	$515.1	$582.2	$67.1	13.0%
Reservation Revenue	$17.5	$19.2	$1.6	9.3%
Net Ancillary Revenue	$61.6	$62.2	$0.5	0.8%
Ferry Transportation Fees	$128.5	$129.0	$0.5	0.4%
Federal Contract Revenues	$27.4	$28.0	$0.5	2.0%
	$750.2	$820.5	$70.2	9.4%
Operating Expenses				
Ships:				
Wages, Staff Pool/Crews Not Onboard	$169.0	$169.0	$0.0	
Fuel	$97.2	$110.8	$13.6	
Refit & Maintenance	$62.2	$59.2	-$3.0	
Marine Insurance & Other Costs	$14.0	$14.3	$0.3	
Terminals (Operations, Maintenance, Catering)	$83.0	$83.5	$0.4	
Regional Services	$48.9	$49.2	$0.3	
Corporate (HR & Payroll, Support Services, Other)	$72.8	$91.3	$18.5	
Subsidiaries, Unregulated Route Op. Costs	$0.7	$0.7	$0.0	
	$547.8	$577.9	$30.1	5.5%
EBITDA	$202.5	$242.6	$40.1	19.8%
Amortization	$123.9	$122.8	-$1.1	
Net Financing Expense	$74.2	$76.3	$2.1	
Net Earnings	$4.4	$43.5	$39.1	
Return on Equity	1.40%	13.16%		
Capital Structure				
Capital Expenditures	$113.6	$96.2		
Total Debt (Year End)[5]	$1,385.4	$1,361.1		
- net of deferred financing costs [1,2]	$1,375.5	$1,352.2		
Equity (Year End)	$311.7	$349.1		

1: Page 76 of BC Ferries' Performance Term Three Submission to the BC Ferries Commissioner
2: Page 77 of BC Ferries' Performance Term Three Submission to the BC Ferries Commissioner
3: Operating expense details supplemented with data from Cognos EVA satements, as is a minor adjustment of revenue between tariffs and reservations ($0.3 million)
4: Tariff revenue represents current forecast for FY2012, and required tariff revenue to meet target return on equity of 13.16% in FY2013, based on forecast level of other revenues and expenses
5: As provided by BC Ferries. Includes deferred financing costs.

Forecast non-regulated revenues for FY2013

For the first year of PT3, BC Ferries' forecast non-regulated revenues (i.e. revenues other than fares and reservations revenue) are assessed as generally reasonable, with the exception of catering revenues and cost of goods sold (COGS). BC Ferries' forecast catering revenues and COGS are not inflation-indexed. Our recommendation is that, for the purposes of estimating regulated revenue requirements, forecast catering revenues and COGS should be inflation-indexed. (BC Ferries has indicated that it disagrees with this recommendation, noting that the Commission did not index ancillary revenues to inflation in setting PT2 price caps.) This recommended adjustment is minor, and does not substantially change the calculation of MARFR.

Forecast operating expenses for FY2013

For the first year of PT3, BC Ferries' forecasts for operating expenses are also assessed as being reasonable, for most line items.

The FY2013 forecast shows an increase in operating expenses of 5.5% ($30.2 million over FY2010. The two main components of this increase are:

- A $13.6 million increase, to reflect an adjustment in the "set price" of fuel, as the baseline price used for managing the fuel surcharge/rebate program whereby fuel price changes are reflected in fare adjustments. We assess this adjustment as reasonable, because (1) the revised "set price" is more reflective of recent fuel price levels than the current set price, and (2) the adjustment to the set price does not affect the total price paid by the customer. The total price paid by the customer includes fuel rebates or surcharges, and the "set price" for fuel represents only the starting point for calculating rebates and surcharges.
- An allowance of $15.0 million for a number of proposed cost increases, collectively referred to by BC Ferries as "replacement of expense reductions."[1] These items include:
  - increased pension contribution rates
  - increased costs of employee benefits
  - sailing newer vessels more frequently during off-peak times
  - reinstating 11 staff positions
  - reinstating management training
  - enhancing risk assessment and security programs
  - reinstating marketing programs and planning/travel activities.

This $15.0 million proposed additional allowance for FY2013 represents 2.6% of BC Ferries' forecast $577 million in operating expenses in FY2012, and in this context we assess the overall size of the proposed allowance as being generally reasonable. However, the Commission may wish to make adjustments to some of the proposed allowances.

[1] In April 2011 discussions with BC Ferries, we have confirmed that the requested $15.0 million allowance includes some proposed new expense items, as well as the replacement of previous expense reductions.

Forecast MARFR for FY2013

BC Ferries' forecast PT3 Maximum Allowable Revenues from Fares and Reservation fares (MARFR) represents the revenues required to restore BC Ferries' profitability 13.16%, based on the "ROE approach" used of BC Ferries (see discussion in section 3.1.4). Assuming that reservation fee revenues increase in proportion to fare revenues within each route group, BC Ferries estimates an overall required increase in regulated fare revenues of 13.0% in FY2013, and an increase in regulated reservation fee revenues of 9.3% in FY2013.[1]

3.1.3. Review of corporate-level forecasts for the final three years of PT3

For the final three years of PT3 (FY2014 through FY2016), BC Ferries' corporate-level forecasts are assessed as generally consistent with those for FY2013. Thus the issues for those years are the same as those discussed with regard to FY2013.

3.1.4. Alternate "ROE versus WACC" approaches to determining regulated revenue requirements

Our review has also examined alternate "ROE versus WACC" approaches with regard to the formula for determining PT3 regulated revenue requirements.

- In its PT3 submission, BC Ferries calculated its target net earnings (and hence its proposed MARFR) by applying a target percentage ROE to BC Ferries' average equity during each year of PT3. Under this approach, if BC Ferries' equity were to grow as forecast in its PT3 submission, net earnings would also grow during each year of PT3, from $43 million in FY2013 to $68 million in FY2016.
- The alternate approach, which the Commission advises was used in PT2, is to establish a fixed Weighted Average Cost of Capital (WACC) based on BC Ferries' debt/equity ratio at the beginning of PT3, and to apply this fixed WACC to the forecast NBV for each year of PT3.[2]

3.2. Revenue requirements, by route group

We have also reviewed BC Ferries' basis for allocating costs and revenues among the four route groups, for the purpose of determining the MARFR for each route group. Our findings are summarized as follows:

- **Reasonableness of allocation rules** - While revenue and expense allocations are by their nature subjective (especially for allocations of central costs), BC Ferries' allocation rules for assigning revenues and expenses among route groups appear reasonable.

1 Within each route group, the percentage increase in fare revenues and reservations revenues is assumed to be identical in BC Ferries' forecasts. However, because Route Group 1 accounts for most of the reservations revenues, and because it has a lower required increase in revenue requirements than the other route groups, the corporate-wide percentage increase for reservations revenues is somewhat lower than for fare revenues.

[2] BC Ferries has indicated its contention that this approach is contrary to the provisions of the Coastal Ferry Act.

- **Consistency of modelling allocations with allocation rules** – BC Ferries' allocations of revenues and costs among route groups are performed using the IBM "Cognos" financial forecasting model. In reviewing its PT3 submission with us, BC Ferries determined that for a few minor items the forecast modelling allocations did not align with its allocation rules for actual results. Most of these inconsistencies have been addressed in "Version 14", upon which this review is based, with one notable exception.

  For the last three years of PT3, there is an inconsistency between BC Ferries' stated cost allocation rules for actual results and the Cognos model's allocation of some corporate expenses. For the final three years of PT3, corporate expenses have been allocated on the basis of FY2013 revenues, rather than on the basis of revenues within the year in question. Allocating corporate expenses on the basis of current-year revenues tends to decrease regulated revenue requirements on Route Groups 1 and 2, and to increase them on Route Groups 3 and 4. We recommend that future PT3 modelling should allocate corporate expenses according to current-year revenues.[1]

- **Allocation of refit and maintenance costs –** The forecasting model's percentage allocations of refit and maintenance costs among route groups is held constant from year to year, despite the differences in actual costs that may result depending on which vessels are due for major refits in any given year, and which route groups they service.

  For modelling purposes, BC Ferries allocates a fixed percentage of annual refit and maintenance expenses to each route group, based on each vessel's estimated share of long-term refit/maintenance costs. Thus, the dollar value of refit and maintenance costs forecast for each route group will vary from year to year with the total level of forecast refit and maintenance expenses, but not with which particular group of vessels are planned to be undergoing major refits in any given year. Our assessment is that this "smoothing" approach is appropriate for the purposes of forecasting MARFR.

Overall, our assessment is that BC Ferries' basis for allocating revenues and costs among route groups is reasonable, with the exception as noted with regard to the basis for allocating corporate expense among route groups.

[1] While BC Ferries agrees in principle with this recommendation, it has not adjusted its modelling approach on the grounds that implementing the change would lead to a significant increase in the complexity of the model, while the impact on the allocation of costs among route groups would be relatively immaterial.

4. Other issues

A number of other issues may also be relevant to the Commission's determination of MARFR and the resulting price caps on PT3 fares and reservation fees.

4.1. Productivity improvement assumptions

BC Ferries' PT3 submission describes numerous productivity-related initiatives. While not directly factored into BC Ferries' PT3 forecasts, the initiatives appear to have been implicitly considered in BC Ferries' forecast moderate increases for most operating expense line items between PT2 and PT3 (i.e., with the notable exceptions of fuel costs and corporate expenses).

Given BC Ferries' actual expense trends in PT2, where operating expenses have been significantly higher than forecast (driven in large measure by external factors such as federal crewing and sewage disposal regulations), our assessment is that it would not be appropriate for BC Ferries to be building more ambitious productivity improvement assumptions into its PT3 expense forecasts.

4.2. Sensitivity of revenue requirements to alternate modelling assumptions

BC Ferries' sensitivity analyses indicate that the calculation of MARFR is:

- **Sensitive to cost inflation** – if general cost inflation was assumed to be 3.0% annually, rather than the 2.0% assumed in the base case, then the forecast MARFR would be increased by 3.0% by Year 4 of PT3 (FY2016).
- **Somewhat sensitive to wage levels** – if wage levels were to assumed to increase by 1.0% per year more than assumed in the base case, then the FY2016 MARFR would be increased by 1.9%.
- **Not overly sensitive to moderate shifts in other modeling assumptions** regarding (1) interest rates, (2) fuel set prices, (3) ROE targets, (4) capital expenditures (5) traffic levels[1], and (6) whether the two most significant planned vessel replacements for PT3 (Burnaby, Nanaimo) are undertaken.

4.3. Reliability of the Cognos forecasting model

We have assessed the reliability and accuracy of BC Ferries' Cognos forecasting model through:

- Comparison of Cognos-generated FY2011 forecasts with actual FY2010 audited results, as reported by BC Ferries.
- Reconciliation of Cognos "Economic Value Added" forecasts with Route Statements provided by BC Ferries.
- Development of income statements that combine both formats.
- Year-over-year analysis of the reasonableness of Cognos' line item projections for all routes.

[1] While traffic level projections do not have a significant impact on forecast MARFR requirements, they do have a very significant impact on the determination of Price Caps, with higher traffic forecasts leading to lower Price Caps (and vice versa).

- Follow-up with BC Ferries with respect to apparent anomalies.
- Analysis of Cognos' cost allocations by route group, including assessment of "smoothing" features.
- Liaison with BC Ferries in understanding and validating the adjustments in cost allocations associated with versions 11, 12, 13 and 14 of the Cognos-based forecasts.

Like any forecasting model, the reliability of the analytic results depends both on the technical accuracy of the model and on the quality of the data. While BC Ferries has undertaken a number of revisions to the model between Versions 11 and 14, resulting in changes in cost allocations, these types of adjustments are not unusual for a model of the size and complexity of BC Ferries' Cognos model. .

While we have identified a few issues with the modelling assumptions (e.g., non-indexing of catering revenues and COGS, allocation of some corporate expenses among route groups), our overall assessment is that the Cognos forecasting model is reliable.

5. Conclusions and recommendations

5.1. Key findings

The key questions posed in the study terms of reference are answered as follows:

- **Reliability of Cognos** - The Cognos forecasting model can be relied upon to accurately provide projections of revenues, expenses and net income for BC Ferries – to the extent that the model's assumptions regarding the future are realistic.
- **Quality of information** - On a route group and overall basis, the information provided by BC Ferries is generally accurate, reasonable, and supportive of the forecast for PT3, with minor exceptions as noted.
- **Forecasting assumptions** - The operating assumptions for revenue and expense projections for PT3 are reasonable and consistent with the results projected for the second performance term, again with minor exceptions as noted.
- **Productivity improvement** - BC Ferries has not explicitly included a productivity improvement factor in its analysis. However, BC Ferries' proposed PT3 capital expenditure levels are lower than for PT2, and its target operating cost increases over FY2012 are generally "tight", especially in relation to its actual experience in PT2. The exception in this regard is the proposed $15.0 million allowance for a group of costs collectively referred to by BC Ferries as "replacement of expense reductions."[1]
- **Explanation of Variances -** BC Ferries has satisfactorily explained the variances between actual and forecast results for the first two years of PT2, as well as the initially-forecast and currently-forecast results for the balance of PT2. For 2010, the $53.4 million negative variances reflects a combination of lower than forecast traffic volumes ($28.8 million – 54%), higher than forecast operating expenses ($15.7 million – 29%), and much higher than forecast capital expenditures resulting in higher amortization expenses ($9.7 million – 18%).

The adjusted regulated revenue (fare revenue and reservations revenue) requirements, as provided by BC Ferries in "Version 14" of its PT3 forecast, are illustrated in Exhibit 5a.

At the corporate level (all routes combined), there is no material difference between V14 and the original PT3 submission dated September 30, 2010. However, Version 14 does incorporate several minor adjustments to the allocations of revenues and costs among route groups.

[1] See footnote on page 9.

Exhibit 5a – BC Ferries' calculations of MARFR for PT3

	PT3			
	FY2013 Forecast	FY2014 Forecast	FY2015 Forecast	FY2016 Forecast
Fare revenue				
- Route Group 1 (Majors)	$402.8	$411.7	$417.7	$430.0
- Route Group 2 (Route 3)	$43.4	$44.8	$45.8	$47.1
- Route Group 3 (Northern)	$28.3	$31.2	$32.0	$34.2
- Route Group 4 (Minors)	$107.6	$115.8	$118.3	$123.6
	$582.2	**$603.5**	**$613.7**	**$634.9**
Reservations revenue				
- Route Group 1 (Majors)	$17.2	$17.5	$17.8	$18.3
- Route Group 2 (Route 3)	$1.1	$1.2	$1.2	$1.2
- Route Group 3 (Northern)	$0.1	$0.1	$0.1	$0.1
- Route Group 4 (Minors)	$0.8	$0.9	$0.9	$0.9
	$19.2	**$19.7**	**$20.0**	**$20.6**
MARFR				
- Route Group 1 (Majors)	$420.0	$429.2	$435.5	$448.3
- Route Group 2 (Route 3)	$44.6	$45.9	$47.0	$48.3
- Route Group 3 (Northern)	$28.4	$31.3	$32.1	$34.3
- Route Group 4 (Minors)	$108.4	$116.7	$119.1	$124.6
	$601.3	**$623.1**	**$633.6**	**$655.5**

1. Per BC Ferries Cognos Long Term Forecasting Model, Version 14

5.2. Consultant's recommendations

The consultant has identified two recommended adjustments to BC Ferries' Version 14 calculations:

- We recommend that PT3 catering revenues and costs should be inflation-indexed. (As noted earlier, BC Ferries does not agree with this recommendation.) This adjustment would have a very small impact on the overall calculations.
- We recommend that the allocations of corporate expenses among route groups in FY2014 through 2016 should be adjusted in accordance with shifts in relative revenue. This adjustment would not impact overall costs, but would shift the allocation of costs away from Route Groups 1 and 2, towards Route Groups 3 and 4.[1]

A number of other issues also have been identified for consideration by the Commission in determining MARFR and the resulting price caps:

[1] While BC Ferries agrees in principle with this recommendation, it has proposed not to revise its forecasting model, citing the significant impact on model complexity and time effectiveness relative to the small impact on the calculations of MARFR and the price caps.

- Whether to allow all of BC Ferries' actual/forecast PT2 capital expenditures to be included in the calculation of amortization costs as an input to PT3 MARFR, given the much higher levels of capital expenditures during PT2 than had been forecast (including the $50 million capital lease, with option to purchase, of the new headquarters building).
- Whether to allow all of BC Ferries' forecast FY2012 operating expenses to be included in the basis for forecasting PT3 operating expenses, given that the current forecast of $547.7 million in operating expenses for FY2012 is $32.8 million higher than had been forecast in 2006. Specific areas identified for consideration by the Commission include (1) executive compensation and (2) advertising and marketing programs (including the new Vancouver Travel Centre).
- Whether to allow all or a portion of BC Ferries' proposed $15.0 million in "replacement of expense reductions"[1] to be included in the determination of PT3 MARFR.
- Whether to base the calculation of regulated revenue requirements for PT3 on the "ROE approach" used in BC Ferries' PT3 submission, or on the "WACC approach" used by the Commission in PT2. (As noted earlier, BC Ferries contends that the WACC approach used in PT2 is contrary to the provisions of the BC Coastal Ferry Act.)

5.3. Disclaimer

This study was completed in draft on February 2, 2011, and except as otherwise noted does not reflect information received or events occurring subsequent to that date.

[1] See footnote on page 9