Q. The project explanation at page B-71 of the Application indicates capital expenditures of $3.048 million in 2004 and $5.8 million in 2005. The financial analysis contained in Appendix A.4 of the *Business Case for VHF Mobile Radio System Replacement* (Application, Section G, Appendix 4) indicates capital expenditure of $3.0 million in 2004 and $2.7 million in 2005.

Please explain the apparent discrepancy in the 2005 capital expenditures found at page B-71 of the application ($5.8 million) and that used in the financial analysis used in Appendix A.4 of the *Business Case* ($2.7 million).

A. The capital costs shown in Appendix A.4 contained an error. The correct cash flow is $2.7 million in 2004 and $3.0 million in 2005. These are approximate costs for the supply of the new system only and do not include internal or overhead costs. Attached are the corrected copies of Appendix A.1, A.2, A.3, A.4, A.5, A.6 and A.7. There is no significant change in the overall outcome or ranking of the options. Revised tables indicating the changes as well as discount rate sensitivity are included in the response to NP-6.

VHF Mobile Radio Replacement

Switch Replacement in 2004 (Option 1)

Study Discount Rate: 9.60%

	Switch Replacement				Trunked Radio System				NPV Comparison (Alt. 2 - Alt. 1)
Year	Capital Costs	O&M Costs	Total	CPW to 2004	Capital Costs	O&M Costs	Total	CPW to 2004	CPW to 2004
2004	1,444,842	551,250	1,996,092	1,996,092	2,700,000		2,700,000	2,700,000	$ 703,908
2005		633,938	633,938	2,574,502	3,000,000	689,250	3,689,250	6,066,104	$ 3,491,602
2006		729,028	729,028	3,181,410		689,250	689,250	6,639,898	$ 3,458,487
2007	2,880,457	838,382	3,718,840	6,006,133		689,250	689,250	7,163,432	$ 1,157,299
2008	3,200,508	964,140	4,164,648	8,892,397		689,250	689,250	7,641,109	$ (1,251,288)
2009	(103,322)	689,250	585,928	9,262,900		689,250	689,250	8,076,946	$ (1,185,954)
2010		689,250	689,250	9,660,561		689,250	689,250	8,474,607	$ (1,185,954)
2011		689,250	689,250	10,023,391		689,250	689,250	8,837,437	$ (1,185,954)
2012		689,250	689,250	10,354,440		689,250	689,250	9,168,486	$ (1,185,954)
2013		689,250	689,250	10,656,492		689,250	689,250	9,470,538	$ (1,185,954)
2014		689,250	689,250	10,932,087		689,250	689,250	9,746,133	$ (1,185,954)
2015		689,250	689,250	11,183,542		689,250	689,250	9,997,588	$ (1,185,954)
2016		689,250	689,250	11,412,972		689,250	689,250	10,227,018	$ (1,185,954)
2017		689,250	689,250	11,622,306		689,250	689,250	10,436,352	$ (1,185,954)
2018		689,250	689,250	11,813,304		689,250	689,250	10,627,350	$ (1,185,954)
2019		689,250	689,250	11,987,572		689,250	689,250	10,801,619	$ (1,185,954)

Notes:

1. Summary of Capital Costs for Switch Replacement:

2004	The cost of switch replacement was calculated based on the 1997 estimate of $1,269,200. Using an average inflation rate of 2.16% per year, the cost of switch replacement was estimated at $1,444,842 in 2004.
2007-2008	The useful life of the existing system would be extended by 5 years with the replacement of the central switch. A new system would still need to be installed and operational in 2008. The cost of completely replacing the existing system was estimated using the Trunked Radio System estimate, assuming an average inflation rate of 2.18%.
2009	It is estimated that the central switch would have a salvageable value of $103,322 (using a declining balance depreciation calculation at 30% per year).

2. Summary of O&M Costs for Switch Replacement

2004-2008	Due to the increasing age of the current system, the O&M costs were assumed to be the same as the Conventional Radio System in the first year and then increasing 15% per year for each subsequent year that the system is in service.

VHF Mobile Radio Replacement
Switch Replacement in 2004 (Option 2)

Study Discount Rate: 9.60%

	Switch Replacement				Trunked Radio System				NPV Comparison (Alt. 2 - Alt. 1)
Year	Capital Costs	O&M Costs	Total	CPW to 2004	Capital Costs	O&M Costs	Total	CPW to 2004	CPW to 2004
2004	1,444,842	551,250	1,996,092	1,996,092	2,700,000		2,700,000	2,700,000	$ 703,908
2005		633,938	633,938	2,574,502	3,000,000	689,250	3,689,250	6,066,104	$ 3,491,602
2006		729,028	729,028	3,181,410		689,250	689,250	6,639,898	$ 3,458,487
2007		838,382	838,382	3,818,221		689,250	689,250	7,163,432	$ 3,345,211
2008		964,140	964,140	4,486,408		689,250	689,250	7,641,109	$ 3,154,702
2009		1,108,761	1,108,761	5,187,516		689,250	689,250	8,076,946	$ 2,889,430
2010	3,072,976	1,275,075	4,348,051	7,696,115		689,250	689,250	8,474,607	$ 778,493
2011	3,414,418	1,466,336	4,880,754	10,265,404		689,250	689,250	8,837,437	$ (1,427,967)
2012	(35,439)	689,250	653,811	10,579,432		689,250	689,250	9,168,486	$ (1,410,945)
2013		689,250	689,250	10,881,484		689,250	689,250	9,470,538	$ (1,410,945)
2014		689,250	689,250	11,157,079		689,250	689,250	9,746,133	$ (1,410,945)
2015		689,250	689,250	11,408,534		689,250	689,250	9,997,588	$ (1,410,945)
2016		689,250	689,250	11,637,964		689,250	689,250	10,227,018	$ (1,410,945)
2017		689,250	689,250	11,847,298		689,250	689,250	10,436,352	$ (1,410,945)
2018		689,250	689,250	12,038,296		689,250	689,250	10,627,350	$ (1,410,945)
2019		689,250	689,250	12,212,564		689,250	689,250	10,801,619	$ (1,410,945)

Notes:

1. Summary of Capital Costs for Switch Replacement:

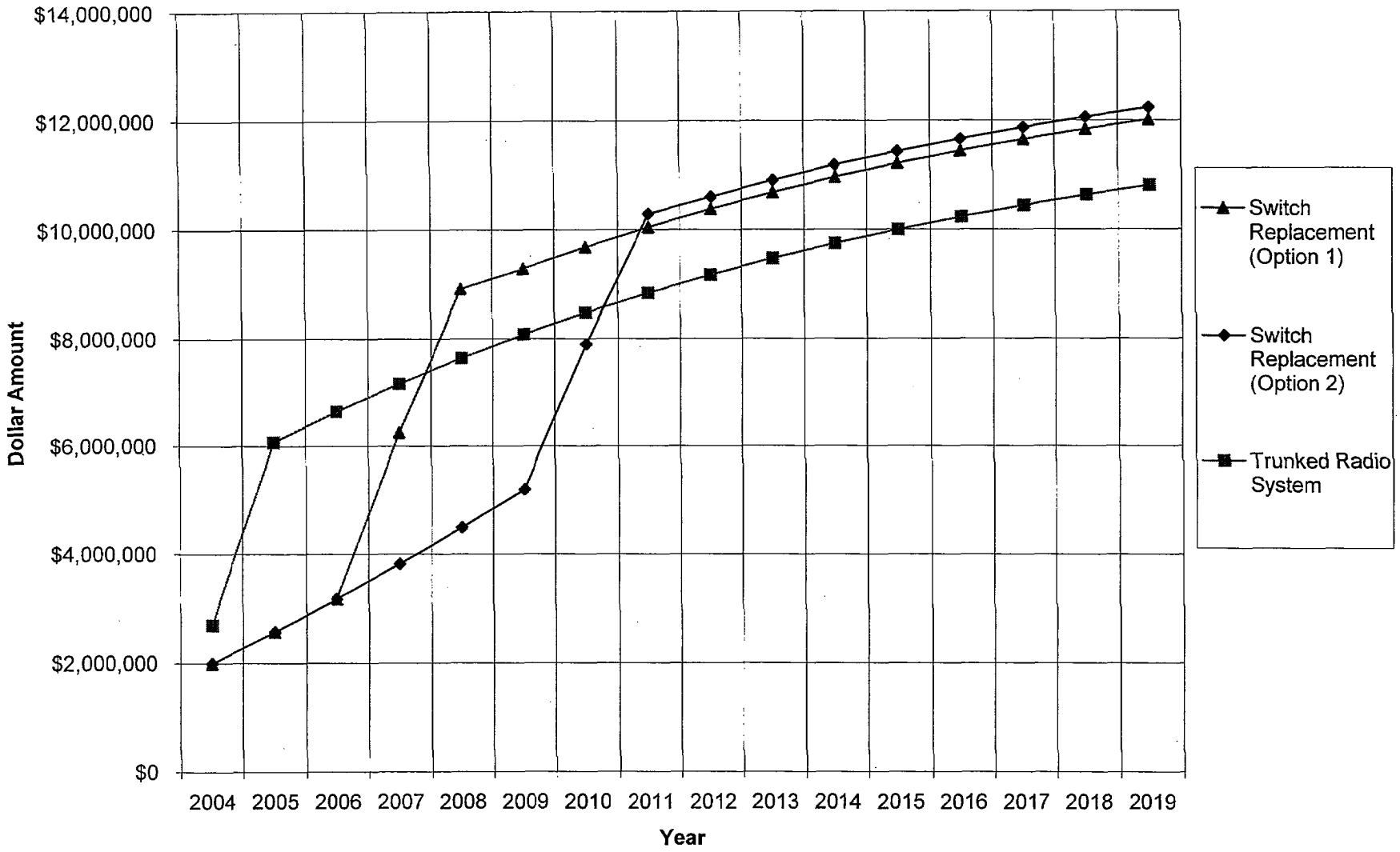
2004	The cost of switch replacement was calculated based on the 1997 estimate of $1,269,200. Using an average inflation rate of 2.16% per year, the cost of switch replacement was estimated at $1,444,842 in 2004.
2010-2011	The useful life of the existing system would be extended by 8 years with the replacement of the central switch. A new system would still need to be installed and operational in 2011. The cost of completely replacing the existing system was estimated using the Trunked Radio System estimate, assuming an average inflation rate of 2.18%.
2012	It is estimated that the central switch would have a salvageable value of $35,439 (using a declining balance depreciation calculation at 30% per year).

2. Summary of O&M Costs for Switch Replacement

2004-2011	Due to the increasing age of the current system, the O&M costs were assumed to be the same as the Conventional Radio System in the first year and then increasing 15% per year for each subsequent year that the system is in service.

APPENDIX A.3

Comparison of VHF Mobile Radio Replacement Options



VHF Mobile Radio Replacement (Hydro Sole User)

Study Discount Rate: 9.60%

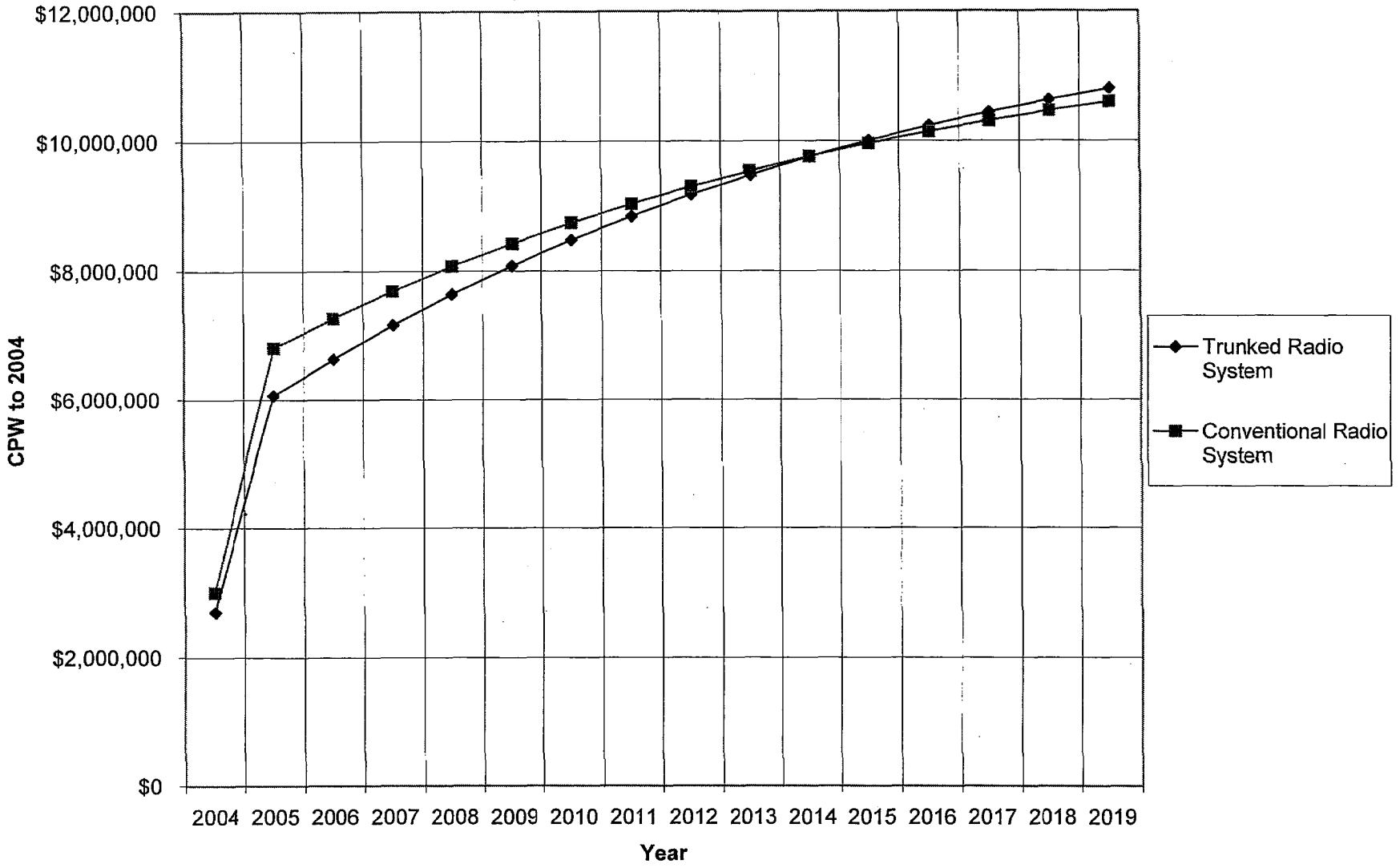
	Trunked Radio System				Conventional Radio System				NPV Comparison (Alt. 2 - Alt. 1)	
Year	Capital Costs	O&M Costs	Total	CPW to 2004	Capital Costs	O&M Costs	Total	CPW to 2004		CPW to 2004
2004	2,700,000		2,700,000	2,700,000	3,000,000		3,000,000	3,000,000	$	300,000
2005	3,000,000	689,250	3,689,250	6,066,104	3,625,000	551,250	4,176,250	6,810,447	$	744,343
2006		689,250	689,250	6,639,898		551,250	551,250	7,269,357	$	629,459
2007		689,250	689,250	7,163,432		551,250	551,250	7,688,071	$	524,639
2008		689,250	689,250	7,641,109		551,250	551,250	8,070,108	$	428,999
2009		689,250	689,250	8,076,946		551,250	551,250	8,418,683	$	341,737
2010		689,250	689,250	8,474,607		551,250	551,250	8,736,726	$	262,118
2011		689,250	689,250	8,837,437		551,250	551,250	9,026,910	$	189,473
2012		689,250	689,250	9,168,486		551,250	551,250	9,291,678	$	123,191
2013		689,250	689,250	9,470,538		551,250	551,250	9,533,254	$	62,715
2014		689,250	689,250	9,746,133		551,250	551,250	9,753,670	$	7,536
2015		689,250	689,250	9,997,588		551,250	551,250	9,954,779	$	(42,809)
2016		689,250	689,250	10,227,018		551,250	551,250	10,138,273	$	(88,745)
2017		689,250	689,250	10,436,352		551,250	551,250	10,305,695	$	(130,658)
2018		689,250	689,250	10,627,350		551,250	551,250	10,458,452	$	(168,899)
2019		689,250	689,250	10,801,619		551,250	551,250	10,597,828	$	(203,790)

Notes:

1. Trunked Radio System estimate based on figures used in Capital Job cost. Conventional Radio System estimate based on typical costs for a system of this nature.
2. Operations and Maintenance costs are assumed to be fixed for a 15 year contract with a third party supplier.
3. Maintenance costs for both systems are assumed to be identical.
4. 15 year life span of system assumed.
5. It is assumed that Hydro will be the sole user.

APPENDIX A.5

VHF Mobile Radio Replacemnt (Hydro Sole User)



VHF Mobile Radio Replacement (With WST Involvement)

Study Discount Rate: 9.60%

	Trunked Radio System				Conventional Radio System				NPV Comparison (Alt. 2 - Alt. 1)	
Year	Capital Costs	O&M Costs	Total	CPW to 2004	Capital Costs	O&M Costs	Total	CPW to 2004		CPW to 2004
2004	1,350,000		1,350,000	1,350,000	1,500,000		1,500,000	1,500,000	$	150,000
2005	1,500,000	344,625	1,844,625	3,033,052	1,812,500	275,625	2,088,125	3,405,224	$	372,172
2006		344,625	344,625	3,319,949		275,625	275,625	3,634,679	$	314,730
2007		344,625	344,625	3,581,716		275,625	275,625	3,844,035	$	262,319
2008		344,625	344,625	3,820,555		275,625	275,625	4,035,054	$	214,500
2009		344,625	344,625	4,038,473		275,625	275,625	4,209,342	$	170,869
2010		344,625	344,625	4,237,304		275,625	275,625	4,368,363	$	131,059
2011		344,625	344,625	4,418,719		275,625	275,625	4,513,455	$	94,737
2012		344,625	344,625	4,584,243		275,625	275,625	4,645,839	$	61,596
2013		344,625	344,625	4,735,269		275,625	275,625	4,766,627	$	31,358
2014		344,625	344,625	4,873,067		275,625	275,625	4,876,835	$	3,768
2015		344,625	344,625	4,998,794		275,625	275,625	4,977,390	$	(21,405)
2016		344,625	344,625	5,113,509		275,625	275,625	5,069,137	$	(44,373)
2017		344,625	344,625	5,218,176		275,625	275,625	5,152,847	$	(65,329)
2018		344,625	344,625	5,313,675		275,625	275,625	5,229,226	$	(84,449)
2019		344,625	344,625	5,400,809		275,625	275,625	5,298,914	$	(101,895)

Notes:

1. Trunked Radio System estimate based on figures used in Capital Job cost. Conventional Radio System estimate based on typical costs for a system of this nature.
2. Operations and Maintenance costs are assumed to be fixed for a 15 year contract with a third party supplier.
3. Maintenance costs for both systems are assumed to be identical.
4. 15 year life span of system assumed.
5. It is assumed that the Provincial Department of Works, Services, and Transportation (WST) contributes 50% of the costs of the system.

APPENDIX A.7

VHF Mobile Radio Replacemnt (With WST Involvement)