

Table of Contents	Pages
1 Executive Summary	2
2 Introduction	8
3 Mandate/Scope	9
4 Chronology/Context	11
4.1 Early Years - 1996 to 1998	
4.2 Project Execution - 1999 to 2004	
4.3 Project Parameters - Budget, Area, Beds and MOHLTC Funding	
5 Incremental Cost Analysis, Shareable Costs	23
5.1 Final Costing/Variance Analysis	
5.2 Change Order Review	
5.3 Capital Variance Template	
5.4 Shareable Cost Analysis	
5.5 Cost Mitigation / Cost Recovery	
6 Decommissioning/Disposition	30
7 Lessons Learned	40
7.1 Overview of Construction Management Delivery Model	
7.2 Review of Management Mechanisms	
7.2.1 Cost Monitoring, Authorization Policies	
7.2.2 Scope Monitoring	
7.2.3 Best Practices	
7.3 Project Management/Procurement	
7.3.1 Project Management Approach	
7.3.2 Construction Management Agreement	
7.3.3 Sequential Tendering Approach	
7.3.4 Change Management	
7.3.5 Best Practices	
7.4 Governance	
7.4.1 Overview	
7.4.2 Thunder Bay Regional Health Sciences Centre Framework	
7.4.3 Board and Building Committee Meetings	
7.5 Communication with MOHLTC	
7.6 Assessment of Design Process and Outcomes	

Project Background

In February 2004, the Thunder Bay Regional Health Sciences Centre's (TBRHSC, or the Hospital) redevelopment project was completed and the community of Thunder Bay opened a long awaited new hospital building located on Oliver Road, bringing to an end a seven-year conceptualization, planning and construction process. TBRHSC's new hospital is a 375-bed acute care facility within 686,000 square feet situated on a 70-acre greenfield site.

The project was borne out of the Health Services Restructuring Commission's (HSRC) directions for the restructuring of the Thunder Bay hospital system issued in October 1996. HSRC called for the consolidation of all acute care hospital services in Thunder Bay on the Port Arthur site and the closing of the McKellar site no later than March 31, 1999. In December 1996, the Hospital's Board of Governors rejected the directions, promoting instead a vision of a new hospital on a "greenfield" site. On October 28, 1998, this new direction was given approval by both the Premier and the Minister of Health and Long-Term Care.

The Project Cost Estimate that accompanied the ministry's approval for a new hospital development was \$126 million. However, with the submission of the Master Plan and Supplement to the Functional Program, the ministry approved a budget of \$162.61 million. Over the subsequent period of design and construction the Project Estimate grew to \$260.19 million, an increase of \$97.58 million (60%). The ministry approved this higher budget in May, 2003. Again, the project costs grew by an additional \$ 21 million.

Upon opening, the new hospital building had increased in size by 18%, opened one full year behind schedule, and had been built \$85.67 (38.7%) per square foot more expensively than a comparative project over the same time period. Final Project Cost has been determined to be \$ 284 million.

PRISM Mandate

In May 2004 Ontario's Minister of Health and Long-Term Care appointed Mr. Tom Closson, President and Chief Executive Officer of Toronto's University Health Network as a Special Advisor with a two-fold mandate of 1) developing an Action Plan to enable TBRHSC to fulfill its role as a Regional Hospital with a teaching mandate, and 2) to assess TBRHSC's recently completed capital redevelopment project.

PRISM was retained by Mr. Tom Closson in consultation with the MOHLTC to review the TBRHSC capital redevelopment project with a mandate to provide:

- An analysis of cost increases subsequent to the ministry approved revised budget of May 2003 (\$260.19 million);
- An outline of the final project costs and an overview of the recommended cost sharing arrangement between the Hospital and the ministry;
- An assessment of the management mechanisms and processes with respect to Project Scope and Cost Control;
- Strategies for project cost mitigation and/or cost recovery;
- A determination of the key decision milestones and the Hospital's process for obtaining MOHLTC approval for adjustments to the approved scope of the Project;
- An in-depth review and evaluation of the entire project procurement process with a focus on the Hospital's tendering, project management and change control process as compared to the industry standard for construction management;
- An assessment of both the Board's governance practices and the roles/actions of Senior Management against ministerial accountability strategies;
- An assessment of the design process and outcomes, particularly in respect to increased scope and cost;
- An assessment of the decommissioning/disposal plans for the two former sites.

Key Findings

Planning / Design

1. No evidence was found to support that options for the Project Master Plan and Building Design/Envelope had been developed and presented to MOHLTC for review and consideration.
2. State of the overall building design was insufficiently advanced upon commencement of tendering. Tender packages were released with incomplete drawings and insufficient allowances to account for outstanding design issues.
3. Project Scope was never "tied-down" and kept evolving throughout the life of the Project.

Project Management / Monitoring

1. The Prime Consultant's/architect's contract for professional services, a significant contract, was never tendered or subjected to any competitive-bidding process.
2. A Construction Management (CM) Procurement Model was approved by MOHLTC in a form that transferred the majority of project risk to the Hospital. The Contract for CM services took over two years to negotiate terms and conditions; tendering and awarding of the sub-contracts occurred in the meantime. The ever-evolving scope of the Project coupled with a

Construction Management Contract that was never executed resulted in the fact that there was no enforceable guaranteed-maximum-price and that the Contract was not enforceable by either party.

3. Under the terms of the Construction Management (CM) Services RFP, the fees of the Construction Manger were to have been fixed. As the Project scope continued to increase and because the CM Contract was never executed, the Construction Management fees continued to increase above and beyond the original budgeted amount.
4. Processes for changes, as identified in contract documents, were not followed. All changes were to be formally initiated and approved by the architect, which is a process designed to ensure that both the interests of the Owner and the Contractor are protected, and that contract changes and associated costs are justified. PRISM's review of change orders indicated instances where change orders / directives were issued directly by the construction manager without review by the architect. There were also instances of change requests directly communicated to the trades by TBRHSC, the work was completed, and then a formal change directive was issued.
5. Inadequate project management resources were assigned to the Project resulting in numerous break-downs in process, an excessive volume of change orders (over 2,800 change orders) and a significant delay in schedule. The scale and scope of the Project (even as initially envisioned) warranted that the Hospital as Owner properly dedicate resources to the Project to monitor the work being performed by the consultants and the CM.
6. There was no overall project execution/management plan (scope, cost, schedule, risk, etc) or underlying detailed policies and procedures.
7. Project cost reporting was often not timely or accurate, thus impeding effective monitoring of the Project, at all levels.
8. At the time PRISM was engaged, there existed little opportunity to meaningfully mitigate costs (with the exception, perhaps, of legal action). Nearly all amounts had been spent and the Hospital was completing the claims settlement process.
9. There was no evidence of "best practices" controls around the use of Project contingency; it is difficult to determine to what extent the Project cost overrun would have been minimized or even entirely avoided had such proper contingency controls been implemented.

Funding

1. Based on a total project cost of \$ 283.9 million, the Hospital will be responsible for a local share of approximately \$ 75 million. PRISM, working with MOHLTC staff, has arrived at this determination of local share using the ministry's cost sharing methodology.
2. MOHLTC policy of funding up to \$ 65,000 / annum for each of three positions (a total of \$ 195,000 / annum) for project management services severely constrained TBRHSC's ability to appropriately manage the Project.
3. MOHLTC stipulated that all tender packages related to the Project must be reviewed and approved by the ministry's Capital Branch prior to releasing them. PRISM's review indicates that from the outset this policy was not consistently followed and that as the Project progressed there was little evidence of formal review of tender packages by the Capital Branch. The process largely ceased, contracts were tendered without formal approval, and yet, MOHLTC continued to finance the Project.
4. There were numerous requests for additional funding (at least four) throughout the life of the Project. The most significant request occurred in November, 2001 for \$100 million over the then-approved budget of \$162.6 million. The hospital had already committed to or spent much of the additional funds being sought before even making the request. This meant that the ministry's 'review' of and response to this request was based on funds that had already been spent. This resulted in less than adequate reviews and approvals with the ministry not able to be proactive. The reasons cited were equipment - \$28.2 million; contingency - \$20.3 million; cost escalation - \$38 million; and project scope - \$12 million. The sheer magnitude of this request should have set off the "alarm bells". PRISM was unable to ascertain the degree of the review performed by the ministry or the criteria used to grant the approval for this excessive increase. However, PRISM did conclude that the additional \$100 million had little to do with patient services or programs.

Governance

1. The New Hospital's Building and Facilities Committee was ill-informed as to the reality of the Project and, therefore, was unable to perform an appropriate governance role.
2. The Board of Governors delegated excessive authority jointly to the Chief Executive Officer (CEO) and the Project Coordinator. Change orders exceeding \$ 1 million in value required approval by the Board of Governors. Of the 2,846 change orders, totaling \$ 47.51 million, only 2 were for an amount exceeding \$ 1 million, having a combined value of approximately \$ 5 million. TBRHSC's CEO and Project Coordinator had the authority to approve, and did approve, approximately \$ 42 million in changes resulting in the full use of the contingency

and a further \$ 21 million in unbudgeted base building construction costs, post-substantial work and claims.

3. PRISM has been unable to ascertain the level of review performed by ministry staff throughout the Project. Undoubtedly, limited ministry resources coupled with the untimely and inaccurate information provided contributed to a capital project “out of control”. The inadequate reporting mechanisms and controls continually placed the ministry in a “reactionary “ position.

Recommendations

1. Getting the design right is critical. Hospitals need to develop and submit the most cost-effective building design, against prescribed criteria or standards, for MOHLTC approval.
2. A detailed Project Execution Plan should be required before MOHLTC approval is granted. This plan should include comprehensive project and risk management plans.
3. Hospitals should be required to engage independent services for each of Project Management, Cost Control and Monitoring, and Project Scheduling. Each of these roles must be fulfilled independent of each other, the owner (hospital) and the constructor with an appropriate and clearly defined segregation of duties for each role.
4. All major contracts must be properly tendered and executed and evidence of this supplied to MOHLTC prior to funding (s) taking place.
5. Project approval should be withheld pending the finalization and execution of key contracts such as those relating to the Prime Consultant and Construction Manager.
6. If a Construction Management Procurement Model is approved, it must be one in which the Construction Manager assumes responsibility for the performance of the trade contractors (subcontractors), the Project Scope must be defined in the contract and there must be an enforceable guaranteed-maximum-price provision.
7. Project Cost Control Policies and Procedures, incorporating “best practices”, should be developed and approved by the Hospitals’ Finance and Audit Committees and the Boards of Trustees. Key elements would include: delegated signing authority, change order management and use of contingency funds.
8. Project funding formulas should be structured to encourage hospitals to retain adequate project management resources.
9. Quarterly Certificates should be initiated that would be signed by Board Chairs, CEOs and CFOs. Establish a “change order covenant” that must be adhered to prior to receiving funding advances from MOHLTC.
10. Accountability/Funding Agreements should be established between the Hospitals and MOHLTC prior to the commencement of major capital projects.

Summary and Conclusion

From its inception to completion the TBRHSC New Hospital Project experienced an increase of \$157 million in a five-year timeframe. It's difficult to accurately quantify how much of this increase related to patient service or program requirements. However, the review performed by PRISM did allow for an estimate to be determined. Of the total increase, a value of approximately \$58 million in space and equipment can be directly attributed to "the patient". In PRISM's opinion, the new Thunder Bay hospital facility could have been designed and constructed for \$ 180 million to \$ 200 million, with nearly \$100 million of the "project cost creep" resulting from a costly building design at the outset and poor project management practices throughout the life of the Project.

The "Lessons Learned" are many and it is PRISM's hope that the information provided in this report will be helpful to the ministry and other hospitals as they move forward with the implementation of future hospital infrastructure projects.

In late February 2004, the Thunder Bay Regional Health Sciences Centre (TBRHSC, or the Hospital) vacated the Port Arthur and McKellar sites and moved into the New Hospital building located on Oliver Road (the Project), thus bringing to an end a seven-year conceptualization, planning and construction process.

The Master Plan document submitted by TBRHSC to the MOHLTC in May 1999 outlined a 580,393 Building Gross Square Feet (bgsf) facility with a capital cost of \$ 140.27 million (up from the estimate provided to MOHLTC in October, 1998 of \$126 million). By comparison, the new facility occupied by TBRHSC in February 2004 was 686,027 square feet in size and constructed for a total project cost of \$ 283.9 million, an increase of almost 18% in build area and 100% in capital value. In addition, over 2,800 change orders with a value exceeding \$ 47.51 million (or 24.7% of the approved Base Building budget) had been issued resulting in a project cost overrun of \$ 20.68 million against a ministry approved, revised Project Budget of \$260.19 million. And finally, the full occupancy date had slipped by one year.

The TBRHSC project experience has also called into question the viability and value-for-money outcome of the Construction Management (CM method) or so-called “fast-track” project delivery model in a healthcare context in Ontario.

The analysis of what went wrong reveals a host of problems. It also brings into focus some systemic weaknesses in the MOHLTC’s planning and approvals process and highlights the need to strengthen various elements of the process ¹ to ensure major capital redevelopment projects 1) begin with substantially complete designs, 2) start off with a robust project management approach/framework in place, and 3) are effectively monitored and managed during the execution phase.

This report sets out the findings and recommendations of PRISM@uhn’s (PRISM, or the reviewers) review of the TBRHSC Project.

¹ It is noted that the MOHLTC has recently adopted a variety of initiatives aimed at improving the effectiveness of the Hospital capital planning and approval processes. It is also acknowledged the Ministry of Public Infrastructure Renewal’s “Infrastructure Planning, Financing and Procurement Framework for Ontario’s Public Sector” may further mitigate the systemic weaknesses observed with the planning and execution of the TBRHSC project.

The Minister of Health and Long-Term Care appointed Mr. Tom Closson, President and CEO of University Health Network as a Special Advisor with a two-fold mandate of 1) developing an Action Plan to enable TBRHSC to fulfill its roles as a Regional Hospital with a teaching mandate, and 2) to assess TBRHSC's recently completed capital redevelopment project. The Special Advisor, in consultation with the MOHLTC, retained the services of PRISM to carry out the following mandate in regards to the Project:

- Analyze cost increases in the amount of \$ 20.68 million that occurred subsequent to the ministry's May 2003 increase of the Project's approved budget to \$ 260.19 million [\$ 254.9 million for Hospital and the existing allocation of \$ 5.29 million (construction only) for the expansion of Northwestern Ontario Regional Cancer Centre] → **Section 5.1.**
- Develop an outline of the final cost of the completed capital project, including equipment and all ancillary fees related to the project, and the recommended associated percentage cost share as per MOHLTC guidelines → **Section 5.4.** [final cost sharing calculations to be determined by MOHLTC upon receipt and review of this report]
- Develop, on a best efforts basis, a strategy to mitigate any costs owing to stakeholders (contractors, subcontractors, consultants, architects, etc...) and / or to recover any funds paid out either in error or paid out for work that was not completed. → **Section 5.5.**
- Review and assess the management mechanisms and decision-making processes that TBRHSC put in place to contain and monitor Project costs and scope, and to ensure its adherence to the approved Functional Program → **Section 7.2.**
- Determine the key decision milestones and the Hospital's process for obtaining MOHLTC approval for adjustments to the approved scope of the Project → **Section 4.3.**
- Perform an in-depth review and evaluation of the entire project procurement process with a focus on the Hospital's tendering, project management and change control process as compared to the industry standard for construction management → **Section 7.3.**
- Assess the role and actions of senior management and the Hospital's Board of Governors against ministerial accountability strategies and an evaluation of governance practices and mechanisms related to the capital project → **Section 7.4.**
- Assess the design process and outcomes, particularly in respect to the increased scope and cost of the project → **Section 7.6.**
- Advise as to the efficiency and the reasonableness of the decommissioning/disposal plans for the McKellar and Port Arthur sites → **Section 6.**

PRISM began its work in June 2004 and has:

- Reviewed over 150 documents, including Project cost and status reports, Project change documentation, management memoranda, submissions to MOHLTC, correspondence between MOHLTC and the Hospital, correspondence between the Hospital and its
- Consultants, key consulting reports, New Hospital Building and Facilities Committee minutes from 60 meetings that occurred between Jan 1999 and Jan 2004;
- Held interviews with members of the Hospital's Board of Governors and New Hospital Building and Facilities Committee;
- Met with members of the Hospital's Senior Management Team and Project Management Office;
- Met with senior staff from EllisDon, the Hospital's Construction Manager (ED, or Construction Manager);
- Met with Helyar & Associates Chartered Quantity Surveyors (Helyar), retained by the Hospital during the latter stages of the Project to provide "shadow" management services;
- Met with former principals in Salter Farrow Pilon Architects Inc., the Hospital's Prime Consultants (SFP, or Prime Consultants).

It should be noted that PRISM was not engaged to perform a financial or forensic audit. As is evident from the elements outlined above, PRISM's primary mandate was to develop an enhanced understanding of specific aspects of the Project, and to assess and comment on the project management framework in place over the course of the Project. Accordingly, the scope of work undertaken by PRISM does not constitute detailed audit work; the work performed consisted primarily of enquiry, analytical procedures and discussion related to information supplied to PRISM by the MOHLTC, TBRHSC and the consultants/professionals retained both by MOHLTC and TBRHSC for the planning and execution of the Project.

4.1 Brief Overview, 1996-1998

In its directions on the restructuring of the Thunder Bay hospital system issued in October 1996, the Health Services Restructuring Commission (HSRC) called for the consolidation of all acute care hospital services in Thunder Bay on the Port Arthur site and to close the McKellar site no later than March 31, 1999. In December 1996, the Hospital's Board of Governors rejected the HSRC directions, promoting instead a vision of a new hospital on a central site on the grounds that the latter enjoyed strong local support² and was clearly in the region's best interest.

In early 1997, the Hospital submitted a functional program with a value of \$ 161 million to the ministry and HSRC for consideration; however the proposal was rejected and the HSRC directions reasserted.

To further support its position, the Hospital submitted a business case to the MOHLTC and the HSRC in February 1998 that, among things, demonstrated the cost of building a new 334-bed, 547,432 bgsf acute care facility on a Design-Build basis was only \$ 2 million more than it would cost to proceed with the proposed retrofit of the Port Arthur site (\$ 126 million vs. \$123.6 million)³. Inherent in both the New Hospital cost figure and the Port Arthur retrofit cost figures was a \$ 10.3 million⁴ provision for new equipment.

Over the next several months, considerable discussion and negotiation ensued between the Hospital, MOHLTC and the HSRC, primarily regarding 1) key business case and project budget assumptions, 2) the Hospital's financing plan to cover its share of the overall project cost, and 3) the chosen project delivery model (Design-Build, Stipulated Price and Construction Management) and the impact that the method ultimately would have both on the ability to competitively tender project elements and on the project budget. The outcome of the discussions was the following:

² To gauge community support and the fundraising feasibility for the new hospital initiative, the Hospital and its Foundation commissioned two separate market surveys in late 1996; the results of both studies indicated majority support for a new acute care hospital over the redevelopment of the Port Arthur site. In addition, the Thunder Bay Regional Council conducted a plebiscite on November 10, 1997; of the votes cast, 53.5% were in favour of increased property taxes for a grant towards a new hospital.

³ In a letter to the Hospital dated February 13, 1998, EllisDon "guaranteed" (performance bond) a **Design-Build** cost of **\$ 101,296,560** (Construction - \$ 84,121,560, Site Development - \$ 4,000,000, Architectural/Consultant fees - \$ 9,000,000, Development fees - \$ 1,025,000, and non-recoverable GST - \$ 1,150,000) for the 467,342 bgsf new general hospital program and a guaranteed design/build cost of **\$ 14,400,00** for a new 80,000 bgsf Cancer Clinic. The retrofit comparator of **\$ 124,000,000** was a figure derived by the Hospital and its consultants by making certain adjustments to the retrofit costing of **\$ 99,150,000** calculated by consultants retained by the HSRC to review the October 1996 Final Directives

⁴ The \$ 10.3 million provision arose from the HSRC consultant's review of the October 1996 Final Directive; in turn, the \$ 10.3 million was confirmed as being reasonable in an analysis performed by the Hospital's consultants and included as an attachment to the Hospital's February 16, 1998 Business Case.

- Rejection by the MOHLTC of the Design-Build approach⁵;
- Approval from MOHLTC for Hospital to proceed with the Project on a Construction Management (CM) basis⁶;
- Agreement between the Hospital and MOHLTC on the need to tender all elements of the Project, including the contract Construction Management services (CM Contract);
- Assertion by MOHLTC that the \$ 126 million Design-Build cost included in the Hospital's business case represents a reasonable benchmark, something that was explicitly questioned by the Hospital and which remains an item of disagreement;
- MOHLTC cost share commitment stands at \$ 71.8 million based on the \$ 126 million cost estimate, or a 59% share, but with the caveat that additional cost sharing by the MOHLTC will be considered pending the submission of the Hospital's Functional Plan;
- Request to HSRC to reconsider its directions to TBRHSC to allow it to build a new acute care hospital on new site based on a total project cost of \$ 126 million;
- Release by HSRC of Supplement to Directions allowing TBRHSC to pursue New Hospital option; however, the HSRC clearly reiterates its view that the Port Arthur site retrofit and expansion remains the most cost-effective option and that proceeding with the New Hospital option will place significant burden on the community.

On October 28, 1998 the Premier and the Minister of Health and Long-Term Care announce approval for the Thunder Bay Regional Hospital to build a new acute-care hospital on a new, centrally-located site.

4.2 Chronology - 1999 to 2004

The Minister's announcement marked the official kick-off of the Thunder Bay Regional Hospital New Hospital Project process, one that, at least in terms of major decision-making and project milestones, would end some 5.5 years later with the occupancy of the newly-constructed facility in February 2004. In order to properly contextualize the presentation of facts and analysis provided throughout this report, we present here a detailed summary of events that occurred over the course of the Project. It should be noted that the dates and figures provided below are as they appeared in the documentation (correspondence, reports and meeting minutes) reviewed and in some instances may not correspond to final submission figures.

⁵ MOHLTC expressed as concerns 1) the lack of competitive tendering that would result from the Design/Build approach being proposed by the Hospital, and 2) the fact that they view this as unproven in a building project of comparable magnitude and complexity in North America and therefore deemed the model of high-risk.

⁶ The ministry approved the CM approach as it fit well with the TBRSHC project as envisioned, addressed many of competitive tendering concerns associated with the design build approach and also allowed for the Project to proceed on an expedited manner.

Exhibit 1: Detailed Chronology of Events

Date	Event/Issue	Comment
1999 January 6	New Hospital Building and Facilities Committee (the Committee) Forms	Advisory Committee to Board of Governors and composed of members of the Board, TBRHSC Senior Management and Community Members with direct relevant construction experience (architects and contractors).
1999 January 18	Selection of Construction Manager	After short-listing and interviewing PCL, Vanbots and EllisDon, Board of Governors accepts Committee recommendation to award CM Contract to EllisDon; contract expected to be finalized and ready for execution in 3 weeks time. In actuality, contract negotiations and discussions between TBRHSC, MOHLTC and EllisDon as Construction Manager ensue for almost 2.5 years before contract is formally approved by MOHLTC; however, contract never executed by TBRHSC and EllisDon.
1999 January 27	Written Confirmation From Minister regarding October 28, 1999 Announcement	Confirmation of ministry's support to build a new acute care facility including mental health forensic services and replication of the Cancer Centre. MOHLTC to apply previously confirmed grant of \$ 71.8 million approved on February 11, 1998 toward estimated total project cost of \$ 126 million. The Functional Program and eventual tendering of the project to determine the capital costs of the project and the cost sharing arrangements to be reviewed once these stages completed.
1999 March 23	Functional Program Submission	Program reflects 334 beds, the HSRC directed number. The submission does not contain a project cost estimate.
1999 April 29	Letter from MOHLTC Outlining Project Approval Requirements	The letter provides a summary of discussions that occurred between TBRHSC and MOHLTC on April 13, 1999 regarding items for which the Ministry's approval and/or understanding required before finalizing arrangements for construction of the project: <ul style="list-style-type: none"> ▪ Master Plan and Functional Program ▪ Project Budget based on independent quantity surveyor's report ⁷ and approval of Functional Program ▪ Pre-construction operating budget ▪ Depreciable equipment budget ▪ Construction Management Contract ⁸ ▪ Endorsement of Construction Manager ▪ Waiver of Liability from Hospital's Board of Governors
1999 May 5	Master Plan (MP) Submission	Submission of MP to MOHLTC; estimated project cost of \$ 140.27 million.
1999 May 18	Letter from MOHLTC on Equipment Budget	Ministry indicates that it considers the equipment budget an integral part of TBRHSC's total project cost and that the equipment budget is needed to finalize the project cost estimate and cost sharing. Ministry raises option of using the HSRC estimate of \$ 10.3 million, but expresses concern with option as it would impact the local share and TBRHSC's project financing plan. Hospital is urged to expedite preparation of their equipment budget submission.
1999 June	Letter of Intent (LOI) with Construction Manager	TBRHSC issues LOI to EllisDon in order to allow its participation in pre-construction phase of Project's development.
1999 June 18	Expanded Cancer Centre Functional Program	FP discussed at Committee meeting; noted that FP approved by Cancer Care Ontario and has been forwarded to MOHLTC.
1999 June 18	Clarification of Master Plan Project Cost Estimate	The Hospital responds to a request from MOHLTC for additional information regarding key assumptions inherent in the \$ 140.27 million estimate: <ul style="list-style-type: none"> ▪ Escalation - Hospital noted that escalation included in the estimate and based on a project schedule of June 15, 1999 to Spring 2003, however indication of actual amount is not

⁷ Helyar retained directly by MOHLTC for the purposes of providing an independent cost estimate.

⁸ MOHLTC was particularly interested in obtaining additional detail regarding the monitoring and accountability mechanisms that the Hospital intended to establish in order to manage the legal and financial risks inherent in the Construction Management delivery model. Also raised in the letter was the need for the Hospital to provide assurance that the Hospital's tendering practices would be consistent with the province's obligations under its interprovincial trade agreements requiring publicly funded construction to be tendered and not to allow for local preference in awarding contracts.

		<p>provided.</p> <ul style="list-style-type: none"> ▪ Elements of Cash Allowance (\$ 14.475 Million) - MOHLTC wanted to know whether the allowance included a contingency for changes that would likely arise as a result of the staged design for the project. The Hospital indicates the allowance comprised \$ 1 million for a Project Coordinator, \$ 10.3 million for FF&E, \$ 1.025 million for Permits and Development Fees, \$ 1 million for Hospital Contingency and \$ 1.15 million for GST. ▪ Cost Associated with Post Construction Changes - the Hospital notes the Project will be built to the approved Functional Program and Master Plan parameters, and that any additions beyond the established parameters will fall outside the \$ 140 million estimate.
1999 July	CM Contract	Hospital sends Ministry first draft of contract.
1999 August 12	Independent Cost Estimate	Helyar provides MOHLTC with independent cost estimate of Master Plan; accorded a value of \$160 million.
1999 August 24	Liability Waiver and Related Information	MOHLTC provides Hospital with Terms and Conditions governing the Ministry's funding for the New Hospital project and templates to be used in preparing the required Letter of Assurance and Board Resolution. Following confirmation of Ministry's approval of total capital project cost and the Ministry's capital contribution, Hospital is to provide MOHLTC with documentation. Approval of Construction Management contract contingent upon receipt of Board assurances.
1999 September	Tendering Process	Clearing and grubbing contract awarded, marking commencement of primary procurement phase.
1999 September 7	Project Coordinator	Incumbent assumes responsibilities; mandate is to represent TBRHSC in its dealings with Architects and Construction Manager.
1999 November 1	Supplement to March 23, 1999 Functional Program	Supplement reflects an increase of 41 beds to the HSRC targeted number 334, for a total of 375 beds . Submission contains a revised cost estimate of \$ 162.6 million (per EllisDon).
1999 November 15	Tendering Approach Pending Master Plan and Functional Program Review	MOHLTC confirms agreement with Hospital with respect to tendering components of Project. Ministry staff notes that tender package "B" (Site Grading and Servicing) was tendered without Ministry approval; retroactive approval is provided. Clear instruction given not to award or release further packages (specifically, tender packages for i) Pilings, ii) Cast in Place, and iii) Structural Steel) until the Ministry completes its review of Functional Program and Master Plan; review expected to be complete within 2 weeks. Instruction also given to follow existing Ministry capital approvals process until such time as the Ministry approves the use of CM.
1999 December 24	Tender Package "C" - Pilings	Ministry indicates it has reviewed Tender Package C and expresses concern that drawings appear inconsistent with current draft of Functional Program. Ministry staff also 1) notes that since size and scope of project not yet finalized, it would be inappropriate to award piling contract, and 2) reiterates position articulated in November 15, 1999 letter instructing Hospital to withhold releasing and/or awarding additional tender packages until review of Functional Program and Master Plan complete. Hospital awards Piling contract to Birmingham Construction mid-January 2000, prior to receiving MOHLTC approval.
2000 January 5	CM Contract	Discussion during Committee meeting of MOHLTC's recommendations regarding terms of CM contract, specifically i) EllisDon should act as Constructor, not as Agent, thus transferring both legal liability and health/safety risk from TBRHSC to EllisDon, ii) Bonding that would allow EllisDon to bond entire Project, and iii) inclusion of Guaranteed Maximum Price (GMP) option; noted at meeting that in principle EllisDon does not have reservations with proposed changes.
2000 February 23	Increase in MOH Share	Minister advises that MOHLTC has reviewed the Hospital's preliminary design submission and will increase its share of the cost from \$ 71.8 million to a maximum contribution of \$ 98.5 million .
2000 March	Correspondence between MOHLTC and Hospital -	Hospital seeks additional explanation from MOHLTC regarding calculation of revised grant amount. Contends grant amount

	Assumptions Inherent in \$ 98.5 Million Grant	should be based on the cost estimate included in the Hospital's November 1, 1999 submission and reflect the standard 70/30 cost share formula for HSRC directed projects. MOHLTC provides Hospital with breakdown ⁹ of grant and reiterates its expectation that the Hospital will proceed with its project design work on the basis of a funding envelope equal to the \$ 98.5 million grant and available local resources.
2000 April 5	Added Scope to Pilings Contract	Noted during Committee meeting that refinement of Cancer Centre bunker design and the enlarged footprint of the Inpatient Pediatric Psychiatric Unit have resulted in an additional 225 piles to date.
2000 April 12	Liability Waiver	Board of Governors signs liability waiver ¹⁰ that sets out specific terms and conditions for the use of the Construction Management approach, and explicitly acknowledges that the Hospital is willing to assume all financial risks arising from the CM approach. Board also agrees to Terms and Conditions for the SuperBuild Growth fund for Capital Projects Directed by the HSRC.
2000 April 12	Delegation of Approval Authority	Upon recommendation of TBRHSC's Resource Planning Committee, Board of Governors delegates up to \$ 1 million approval authority to TBRHSC CEO and Project Coordinator on all tender awards.
2000 June 7	Cancer Centre Functional Program	Discussion at Committee meeting regarding outstanding approval of FP for expanded Centre; noted that delay in approval will impact overall design of Project due to size and intricacy of Cancer Centre facility.
2000 June 14	"Local Content " Clause	Letter from MOHLTC stating the introduction of local preferences by the Hospital to the tendering process is not acceptable to the ministry. The MOHLTC direction on this matter is debated at some length by the Hospital's Building and Facilities Committee and its Board of Governors in the following months. ¹¹
2000 July 5	Prime Consultant Contract	Noted at Committee meeting that Salter Farrow Pilon contract executed; also noted that sign-off of CM contract expected to occur in August.
2000 July 5	Space Increase	Project Coordinator notes at Committee meeting that TBRHSC Management and SFP are analyzing potential discrepancies in Functional Program and that may result in the need for another 13,500 bgsf for Surgical Services and Maternal Newborn.
2000 August 23	Space Increase	Noted at Committee meeting that an additional 5,000 bgsf to be added to Maternal/Newborn and 12,000 bgsf to Perioperative Services; including Cancer Centre expansion, New Hospital build area will stand at approximately 686,000 bgsf; President notes that MOHLTC needs to be contacted for approval and funding of additional space (a letter had in fact been sent to MOHLTC's Capital Branch on August 22, 2000 by TBRHSC Project Coordinator).
2000 October 3	CM Contract Review/Space Increase	Ministry staff inquires as to status of final draft of the CM Contract and acknowledges receipt of August 22, 2000 letter from TBRHSC informing MOHLTC of increase in build area above the approved 640,000 as per the Functional Program Supplement.
2000 October 4	Cost Pressures	Results of bids received on Roofing, Exterior Masonry and Exterior Vapour Barrier and Insulation are discussed at Committee meeting; lowest bids on packages all well in excess of

⁹ Shown as a non-shareable cost is \$.9 million provided in the Hospital's November 1, 1999 submission for Project Management, and ministry notation that only \$ 60,000 per year is shareable for a Project Coordinator.

¹⁰ Actual signed waiver (Letter of Assurance and Board Resolution) never provided to reviewers; however, MOHLTC briefing documents and correspondence indicate said documentation was executed by the Board and returned to ministry.

¹¹ Ministry policy and inter-provincial trade agreements to which Ontario is a signatory do not allow the use of local preferences. In addition, both the SuperBuild Terms and Conditions and the Construction Management Liability Waiver cover the non-permissibility of local preferences. On October 20, 2000 the Building and Facilities Committee votes 6 to 4 to recommend to the Board that the clause be removed. At a meeting on December 8, 2000, the Committee reconsiders its motion of October 20, 2000; TBRHSC Foundation expresses concern regarding the removal of the clause; Committee again votes to recommend to the Board the clause be removed. Matter is discussed at the January 10, 2001 meeting of the Board of Governors; moved that the matter be referred back to the Committee for additional consideration. At its January 17, 2001 meeting, the Committee further deliberates on the local content clause and the Board's position that subject clause is part of a *preamble* of the tender packages; ultimately, Committee votes to leave local content clause in tender packages, and therefore the matter is not referred back to or further discussed at the Board level.

		EllisDon estimates and available budget; suggestion made to have EllisDon thoroughly review all cost estimates for remaining tender packages.
2000 November 2	Cancer Centre Expansion	MOHLTC approves expansion to the Northwestern Ontario Regional Cancer Centre. Total project cost estimated at \$ 7.245 million, in which MOHLTC will cost share in \$ 5.89 million with a maximum grant of \$ 3.93 million.
2000 November 8	Business Case for Increased Funding	Overview in growth of Project provided at Board meeting; noted that total build area for New Hospital now approximately 683,000 bgsf (with a cost estimate of \$ 174.9 million), up from 640,000 bgsf (\$ 162 million cost estimate) as per November 1999 Supplement to FP. President informs Board that a Project Management Consultant retained to assist TBRHSC in developing Business Case to present to MOHLTC for formal recognition and approval of project that is 683,000 in size, and confirmation of revised cost estimate.
2000 November 8	Circulation of Committee Minutes	Chair notes practice of circulating Committee Minutes to public and media to be stopped. Minutes will be marked as "confidential" and will be issued to Board members for acceptance only. Chair stresses that \$ 174.9 million cost estimate reported in Minutes is not an official figure and that until such time as there is an approved budget, a figure will not be released.
2000 December 13	New Hospital Budget Approval by Board	Request made that Board Minutes formally record the budget that has to date been approved by Board; minutes from November 8, 2000 Board meeting amended to include following wording: "The Thunder Bay Regional Hospital Functional Plan as submitted by the Board of Governors of Thunder Bay Regional Hospital to the Ministry of Health in the Fall of 2000 ¹² , with a cost estimate of \$162 million was based on 640,000 square feet."
2001 January 10	Local Content - Mechanical/Electrical	Foundation representative expresses concern about TBRHSC's decision not to break-up Mechanical/Electrical work to allow local participation and the impact the decision may have on ability to fundraise in the community.
2001 January 24	CM Contract Review	TBRHSC submits revised draft of contract.
2001 February	Equipment List	The Hospital submits a list with a value of approximately \$ 43.2 million. Ministry provides preliminary written comments on the submission and advises it will review the Hospital's revised submission within the guidelines of a maximum of between 15-20% of construction costs for new eligible equipment.
2001 February 5	Mechanical/Electrical Tender	Project Coordinator notes at Committee meeting that 3 bids received on each of the Mechanical and Electrical packages; all considerably over budget; recommendation to go through post-tender addendum with all three bidders.
2001 February 14	Interior Drywall Tender	Project Coordinator notes at Committee meeting that 3 bids received and considerably over budget; meeting recommendation to go through post-tender addendum with all three bidders.
2001 April 6	CM Contract Review	Ministry staff provides additional detailed comments, particularly with respect to Fixed Fee structure and Guaranteed Maximum Price clauses.
2001 April	Cost Pressure Discussions Commence	Several letters exchanged between MOHLTC and TBRHSC officials regarding mounting cost pressure and steps Hospital must undertake before discussions regarding additional funding can occur, those being 1) submit of a Business Case, 2) explain reasons for project cost increases, 3) demonstrate all reasonable steps have been taken by TBRHSC in attempting to manage increases, and 4) provide a revised capital financing plan.
2001 April 18	Mechanical/Electrical Contract	Board accepts Committee's recommendation to award main Mechanical and Electrical contract in the amount of \$ 57 million to Comstock Canada Ltd; November 2000 budget (last formally approved budget for Project) assumes cost estimate of \$ 44.9 million for Mechanical and Electrical divisions.
2001 June 6	Substantial Completion Date	At Committee meeting Project Coordinator reports anticipated completion date revised from December 2002 to June 2003.

¹² The date should in fact read Fall 1999, as TBRHSC submitted the Functional Program Supplement to MOHLTC in November 1999.

2001 June 13	CM Contract	Board approves contract as negotiated with EllisDon, subject to approval of contract by MOHLTC. TBRSHC submits a finalized draft Construction Management contract to the ministry for approval later in month.
2001 October 10	Prime Consultant Contract	President informs Board that SFP has requested a review of their contract on the basis that the Project has grown considerably in size.
2001 November 7/8	Business Case For Increased Funding	TBRHSC submits materials to support its case for increased project funding by almost \$ 100 million from the ministry-approved total of \$ 162.6 million. Included in submission is Helyar draft report dated November 1, 2001 which lists cost increase elements as follows: Equipment - \$ 28.2 million, Design/Coordination Contingency - \$ 20.3 million, Cost Escalation - \$ 38 million and Project Scope - \$ 12 million. Also submitted is a <i>Project Management Resource Plan</i> that identifies the resources that TBRHSC requires to continue to manage the project (plan calls for an increase approximately \$ 2.72 million in funding to support 10 FTEs for balance of project).
2001 December 10	CM Contract	TBRHSC provides written confirmation to the ministry that the June 2001 Construction Management is final. Important to note that the Contract is never executed between TBRHSC and EllisDon - see Section 7.3.2 for additional discussion.
2001 December 14	MOHLTC Feedback and Outline of Next Steps re. Business Case	MOHLTC provides follow-up letter to meeting that occurred on December 7, 2001. Reiterates support for Cancer Centre Expansion (16,049 bgsf) and supports identified space increase for Child & Adolescent Specialized Psychiatric Unit; indicates Public Health Laboratory (10,852 bgsf) is not cost-shareable by ministry; notes that review of additional space required for maternal and child programs (9,888 bgsf) to be finalized shortly. MOHLTC also advises that until TBRHSC's equipment list is re-submitted, reviewed and approved, project cost will only include the \$ 10.3 million HSRC estimate for furnishings and equipment.
2002 January 10	Equipment Planner	Noted at Committee meeting that Hospital has retained services of consultant to assist with identification and specification of critical pieces of equipment, and to facilitate the coordination of all final equipment requirements.
2002 February 14	EllisDon Project Manager	Change in EllisDon staffing; new Senior Project Manager arrives on site.
2002 April 9	Ministerial Approval and Funding Increase	Minister approves CM Approach, Functional Program and \$ 29.15 Million Funding Increase (MOHLTC grant now stands at \$ 127.7 million). Notes review of "final sealed" Construction Management Services Contract submitted June 21, 2001, TBRHSC's December 10, 2001 written confirmation of substantial completion date, along with Board's resolution of April 12, 2000 providing assurances and acceptance of Terms and Conditions governing the ministry's financial support for the HSRC-directed capital project.
2002 May 15	Scheduling Consultants	EllisDon Senior Manager notes at Committee meeting that consultants have been retained to assist with developing a global project schedule; draft schedule suggests anticipated substantial completion date of July 2003 still achievable.
2002 June 14	Administrative Follow-Up To Minister's Letter of April 9, 2002 Letter	Outlines breakdown of \$ 29.15 million funding increase; confirms approval of both March 23, 1999 Functional Program and November 1, 1999 Functional Program Supplement; requests a signed copy of the CM Contract.
2002 September 11	Budget Update	TBRHSC CFO provides update on revised Project budget to Board of Governors; material presented will form basis of Final Estimate of Cost submission to MOHLTC in October.
2002 October 25	Final Estimate of Cost (FEC)	TBRHSC submits FECs and supporting schedules for both the Hospital project (Total cost of \$ 223.98 million, excluding equipment) and the Cancer Centre Expansion (total cost of \$ 7.05 million); amounts subsequently adjusted by ministry to arrive at May 2003 approval.
2002 December 18	Schedule Status	Noted at Committee meeting that anticipated substantial completion date now revised to Sept/Oct 2003, and move date now planned for Dec 2003/Jan 2004.

2003 February 25	MOHLTC Follow-Up on FECs	Ministry staff requests explanation on numerous items; TBRHSC provides response on March 3, 2003.
2003 March 12	Prime Consultant Changes, Contract Dispute	President informs Board that Salter Farrow Pilon Architects Ltd. to split into two separate corporate entities; raises concern regarding Architect of Record implications; also advises that Helyar Chartered Quantity Surveyors to act as mediators in contract dispute negotiations with SFP.
2003 May 23	Minister Approved Increased Scope and Project Cost	Minister approved revised project cost of \$ 254.9 million (\$ 260.19 million including construction cost related to Cancer Centre expansion) and increases ministry grant to \$ 168.57 million, up from \$ 127.7 million.
2003 July		At the ministry's request, the hospital engaged Deloitte and Touche (D&T) to validate the feasibility of the hospital's financing plan for the local share of costs. Over the course of their engagement the Ministry advised D&T that the hospital had a projected \$5M deficit from operations and a cost estimate from the hospital's quantity surveyor estimating the cost of the project to be approximately \$272.5M. With these latter two financial obligations, the hospital's plan for repayment of long term debt was deemed unfeasible
2003 Aug/Oct	Project Cost Increase	Base Building estimated cost to complete for August 2003 and October 2003 is \$ 193.2 million and \$ 209.0 million, respectively, an increase of approximately \$ 16 million (due to high volume of Change Orders).
2003 September 10	Prime Consultant Contract Dispute Negotiations	President provides detail to Board regarding sign-off by Hospital and SFP of the Helyar-negotiated Mediation Settlement; Architect Fee Mediation Settlement amounts to \$ 14.878 million (original fixed base fee of \$ 10.113 million); after considerable discussion on matter, Board votes to ratify the TBRHSC and SFP Mediation Report as presented at a subsequent Board meeting (October 8, 2003).
2003 September 10	Construction Budget Update	President informs Board that construction budget approved by MOHLTC in May 2003 (\$ 191 million) will be exceeded.
2003 October 28	MOHLTC Queries re. Project Cost Increase	Ministry staff request additional detail regarding \$ 16 million increase and use of \$ 10 million contingency inherent in May 2003 approval. Also requested are: 1) updated Capital Variance Template, 2) resumption of Helyar reporting, 3) an explanation of management mechanisms put into place by TBRHSC to contain costs on project, 4) copies of documentation that have altered total construction costs, and 5) copies of "as-built" drawings used at the construction site. Hospital responds on October 30 th and commits to providing an updated Capital Variance Template and variance analysis by end of November 2003.
2004 May 10	MOHLTC Queries re. Project Status Reports No. 13 and No. 14	Ministry staff again requests additional detail on cost increases observed since May 2003 approval. Also raises concerns with respect to change order management process, Construction Manager Fees & Expenses and lien placed on project by hospital's architect. Hospital responds on June 16 th and commits to provide updated Capital Variance Template and variance analysis by June 18 th .

4.3 Project Parameters

Key Messages

- Final build area 106,000 bgsf larger than approved Master Plan (18.2% increase).
- Final construction costs (base building / site) \$ 101.43 million higher than Master Plan (86.9% increase).
- Adjusted per square foot construction costs are \$ 85.67/bgsf (38.7%) higher than those incurred in downtown Toronto at University Health Network during the same time frame.
- Clear and articulate planning guidelines and standards are needed both by hospitals and MOHLTC in the development and review of Master Plan and Functional Program documents.

The following section offers a summary of the change in the key variables of the project, those being project cost, build area, number of beds, funding break-down and program size change:

Exhibit 2: Increase in Budget (in millions), Funding (in millions), Build Area, Beds Over Life of Project¹³

(\$ millions)	New Hospital Business Case (1998 Feb)	Master Plan (1999 May)	Supplement to Functional Program (1999 Nov)	Cancer Centre Expansion Revision (2000 Nov)	Cost Increase Business Case (2001 Nov)	MOH Resets Budget (2003 May)	Projected Cost (2004 Aug 31)
Construction/Site Work	\$ 102.52	\$ 116.67	\$ 132.90	\$ 137.26	\$ 191.69	\$ 191.69	\$ 217.93
Ancillary	13.18	13.30	18.09	18.55	34.22	39.58	30.02
Sub-Total	115.70	129.97	150.98	155.81	225.90	231.27	247.95
Original Equipment Budget	10.30	10.30	10.30	10.30	10.30	10.30	10.30
Sub-Total	126.00	140.27	161.28	166.11	236.20	241.57	257.95
Additional Equipment	-	-	1.32	1.32	26.61	17.83	21.54
Decommissioning/Other	-	-	-	-	-	0.79	4.43
Total Project Cost	\$ 126.00	\$ 140.27	\$ 162.61	\$ 167.44	\$ 262.81	\$ 260.19	\$ 283.92
Building Gross Square Feet (BGSF)	547,342	580,393	640,000	656,049	686,027	686,027	686,027
Construction Cost/BGSF	187.31	201.01	207.65	209.22	279.41	279.42	317.92
Total Cost/BGSF	230.20	241.68	254.08	255.22	383.09	379.27	409.41
# of Beds	334	364	375	375	375	375	375
BGSF/Bed	1,639	1,594	1,707	1,749	1,829	1,829	1,829
Funding							
MOHLTC - Hospital	71.80	71.80	98.50	98.50	98.50	168.57	168.04
MoHLTC - Special (Equipment)	-	-	-	-	-	-	9.43
MOHLTC - Special (Advance)	-	-	-	-	-	-	13.87
MOHLTC -Cancer Centre	-	-	-	3.27	3.27	3.27	3.39
CCO - Cancer Centre	-	-	-	1.64	1.64	1.64	2.43
Local Funding	54.20	54.20	54.20	58.00	60.65	80.87	86.76
Unfunded Gap	0.00	14.27	9.91	6.03	98.75	5.84	-

Note:The 'Local Funding' figures as noted above for the period 2000-2003 were obtained from Monthly Cost Report Summary as prepared by TBRHSC for period: assumed within the Local Share line is \$ 9 million in debt, the required amount of external financing identified in original Financing Plan. Unfunded Gap as outlined above is differential of Total Project Cost and sources of funding as listed.

Exhibit 2 provides a summarized view of how the project evolved over time. As the figures above indicate, the build area of the project increased by approximately 106,000 bgsf, or 18.2% from the approved Master Plan submitted by TBRHSC in May 1999. By comparison, construction costs (base building/site work) increased by \$ 101.43 million, or 86.9%. Per square foot construction costs changed from \$ 201.01 as indicated in the Master Plan, to \$ 317.92 as indicated in the August 31, 2004 reconciled cost report issued by EllisDon and TBRHSC, an increase of 58.1%.

For comparison purposes, it is interesting to note that University Health Network (UHN), located in downtown Toronto, procured and constructed a similar sized (603,000 bgsf) clinical services building on a CM basis, over roughly the same time period¹⁴, for base building construction cost of \$ 221.49/bgsf¹⁵. To adjust for differences in how UHN and TBRHSC accounted for Division 11

¹³ Figures obtained from several different sources, including MOHLTC and TBRHSC correspondence, TBRHSC submissions and project cost reports.

¹⁴ The tendering of trade packages on the UHN project commenced October 27, 2000 and ended January 31, 2002; substantial completion was achieved July 31, 2003 and the building was fully occupied by September 3, 2003 as per UHN's "Project 2003" Project Status Report (May 2004).

¹⁵ UHN "Project 2003" Cost Status Report (April 2004).

(Fixed Equipment) and Division 12 (Furnishings) costs, the TBRHSC cost of \$ 317.94/bgsf must be adjusted downwards by \$ 10.78¹⁶ to \$ 307.16/bgsf, thus resulting in a differential of \$ 85.67/bgsf.

The construction cost index compiled annually in a leading industry construction cost benchmarking guide¹⁷ indicates that, all other things being equal, the cost to construct in downtown Toronto is on average slightly greater than the cost of construction in Thunder Bay¹⁸. In rough terms, then, the comparison between the two construction costs is a reasonable one and suggests factors other than regional market variances account for the relatively high cost per square foot cost witnessed on the TBRHSC project.

The following chart provides additional comparative figures between the TBRHSC and UHN projects:

Comparative				
Parameter	UHN Clinical Services Building			TBRHSC
Build Area - Square Feet	603,000			686,000
Base Building Cost	\$	133,558,766	(1), (3)	\$ 218,107,000 (2)
Total Cost (excl. Equipment)	\$	162,245,489	(1)	\$ 249,626,000 (2)
Base Building Cost/Sq. Foot	\$	221.49		\$ 317.94
Total Cost/Sq. Foot (excl. Equipment)	\$	269.06		\$ 363.89
Project Management Costs	\$	6,554,940		\$ 1,301,000
# of Change Orders		420		2,846
Value of Change Orders	\$	3,949,000	(4)	\$ 47,510,000 (5)

Notes:

- (1) April 30, 2004 UHN "Project 2003" Cost Status Report
- (2) Reconciled August 31.04 Estimated Cost to Complete figures as per TBRHSC/EllisDon
- (3) UHN's Base Building Cost includes the cost of demolition of the former Bell Building. The TBRHSC amount excludes any provision for the costs associated with the demolition of the two former sites.
- (4) UHN was able to absorb the value of its Change Orders within its approved budget. Change Orders did not add increased costs for UHN.
- (5) The Change Orders fully utilized the established Project Contingency of \$ 20.88 million inherent within the \$ 260.19 million May 2003 approved budget and added a further unbudgeted \$ 12 million in Base Building construction costs.

¹⁶ Anticipated cost at completion of \$ 6.32 million for Division 11 (\$ 9.21/bgsf) and \$ 1.08 million for Division 12 (\$ 1.57/bgsf)

¹⁷ Helyar Construction Cost Guide (October, 2003).

Increase in Build Area

Exhibit 3: Elements of Build Area Increase

	<u>BGSF</u>	<u>Beds</u>
Master Plan (May 1999)	580,395	364
Less: Reduction in Adult Mental Health Beds	(11,000)	(10)
Add: Increase in Acute Beds	29,400	21
Add: Increase in Gross-Up Ratio, 1.22 to 1.265	21,408	-
Add: Omission from Original Functional Plan	11,465	-
Add: Miscellaneous Program Differences	8,334	-
	<hr/>	<hr/>
Functional Program Supplement (November 1999)	640,002	375
Add: Public Health Lab	10,852	-
Add: Cancer Centre Expansion	15,000	-
Add: High Dose Brachytherapy Room	1,049	-
Add: Perioperative Program Incorporation	16,126	-
Add: Maternal/Newborn and Pediatrics Care Revisions	9,888	-
Less: Miscellaneous Program Differences	(6,890)	-
	<hr/>	<hr/>
Final	686,027	375

As Exhibit 3 suggests, the increase in the build area of over the life of the project is divisible into two separate components: the increase in space that occurred between the Master Plan submission in May 1999 (580,395 bgsf) and that of the November 1999 Functional Program Supplement (640,002 bgsf), and those increases that occurred subsequent to November 1999 and which ultimately resulted in the final build area of 686,027 bgsf.

Master Plan to Functional Program Supplement

The Functional Program Supplement was formally approved by MOHLTC in April 2002 which suggests all stakeholders understood this portion of the increase. It is, however, worthwhile to briefly touch on the identified increase in the gross-up ratio and the resultant increase in the building area. As has been the case with other hospital redevelopment projects across Ontario, the correct application of the gross-up factor that translates departmental gross square feet to building gross square feet has proven to be somewhat of a challenge.

It is not clear to the reviewers why a factor of 1.22 was used in grossing-up the programmed component gross area instead of the standard Ontario Health sector allowance of 1.265, or why MOHLTC did not challenge the usage of the lower factor during its review of the Functional Program. However, it is clear the foregoing provides yet another example of the need for clearly

¹⁸ Downtown Toronto = 112, Thunder Bay = 110, where Metropolitan Toronto = 100; Helyar Index, page 31, Helyar Construction Cost Guide (October, 2003)

articulated and documented planning guidelines and standards to assist both facilities and MOHLTC staff in the compilation and review of functional programs, respectively.

Functional Program Supplement to Final

As noted in the Detailed Chronology, this second series of space increases was first brought to the attention of MOHLTC in August 2000 and acknowledged by MOHLTC in October 2000. Evidence of discussion of the space increase requirement at the Building Committee level first appeared in the minutes of a July 2000 meeting in which the Project Coordinator raised the likelihood of space revisions (13,500 bgsf for Surgical Services and Maternal Newborn combined and another 15,000 bgsf for the Cancer Centre). Further discussion occurred at Committee meetings in August 2000 and, as noted in the Detailed Chronology, TBRHSC informed MOHLTC of the revised estimate of total space for the new building in a letter dated August 22, 2000 (which MOHLTC subsequently acknowledged on October 3, 2000).

Based on PRISM's review of the Board and Committee Minutes, there appeared to be general acceptance of the increased space needs that were being presented by TBRHSC Management. One Committee member, who was also sat on the Board of Governors, did appear to challenge Management on the information they were presenting¹⁹, posed several questions regarding specifics of the approvals process for the increased space and the impact the additional space would have on the established project budget. The member also expressed general concern with respect to how changes in both project scope/cost were being managed, and how such were being reported to the Board, thus enabling it to discharge its governance mandate in a responsible and accountable fashion.

A full review of the evolution in the project scope and build area increase was provided to the Board during at meeting that occurred on November 8, 2000. Management informed the Board that a consultant had been retained for the purposes of assisting TBRHSC in developing a business case²⁰ to be presented to the MOHLTC, the purpose of which would be to obtain formal recognition and approval for the growth in the project from 640,000 bgsf (approved Functional Program Supplement) to the 683,000²¹ bgsf that would result from the changes noted above. The MOHLTC expressed its support for the additional space related to the Cancer Centre Expansion and Maternal/Child Programs and in letters dated November 2, 2000²² and December 14, 2001²³. Refer to **Appendix A** for a by-program continuity of space increases over the life of the Project.

¹⁹ New Hospital Building and Facilities Committee Minutes from meetings occurring on July 19, 2000, August 2, 2000 and September 20, 2000.

²⁰ Submitted to MOHLTC on November 7/8, 2001.

²¹ Figure noted in Minutes was 683,000 bgsf, however, as noted throughout this report, final build area in fact 686,027 bgsf.

²² Cancer Centre Expansion approval

²³ Reiteration of support for Cancer Centre Expansion, notification that additional space requirements for Maternal/Child Programs to be finalized shortly; MOHLTC indicates the Public Health Lab is not cost-shareable with the ministry as part of the as an HSRC-directed New Hospital project.

Key Message

Incremental costs were impacted by:

- Incomplete working drawings throughout process;
- Sub-optimal application of sequential tendering;
- Design omissions;
- Delay in developing a firm equipment plan;
- Changes requested by Owner primarily for aesthetic purposes.

5.1 Estimated Cost at Completion

Exhibit 4 - August 31, 2004 Variance Analysis

PROJECT COST SUMMARY (\$millions)		May 2003		August 31, 2004		Over/(Under)	
		Revised Budget	Cost To Date	Estimated Cost at Completion	Var - \$	Var - %	
Division 1	General Conditions	\$ 16.54	\$ 19.88	\$ 19.88	\$ 3.34	20%	
Division 2	Site Work	12.81	15.18	15.23	2.42	19%	
Division 3	Concrete and Formwork	5.70	9.10	9.10	3.40	60%	
Division 4	Masonry	5.38	6.29	6.29	0.91	17%	
Division 5	Metals	17.10	17.90	17.91	0.80	5%	
Division 6	Wood and Plastics	5.88	7.45	7.45	1.57	27%	
Division 7	Thermal and Moisture Protection	4.39	6.20	6.20	1.81	41%	
Division 8	Doors, Entrances and Windows	12.30	14.21	14.21	1.91	15%	
Division 9	Finishes	15.87	20.50	20.50	4.63	29%	
Division 10	Specialties	2.05	1.98	1.98	(0.08)	-4%	
Division 11	Equipment	6.54	6.32	6.32	(0.22)	-3%	
Division 12	Furnishings	0.94	1.08	1.08	0.15	16%	
Division 13	Special Construction	1.85	0.45	0.45	(1.40)	-76%	
Division 14	Conveying Systems	1.63	1.55	1.55	(0.08)	-5%	
Division 15	Mechanical	36.62	48.32	50.81	14.19	39%	
Division 16	Electrical	25.19	31.54	31.54	6.35	25%	
Division 18	Changes	-	0.60	0.60	0.60	-	
		\$ 170.81	\$ 208.55	\$ 211.09	\$ 40.29	24%	
Additional/Post Substantial Work		-	7.30	7.40	7.40	-	
Insurance Recoveries		-	(0.03)	(0.40)	(0.40)	-	
Contingency		20.88	-	-	(20.88)	-	
		20.88	7.28	7.01	(13.88)	-	
BASE BUILDING		\$ 191.69	\$ 215.83	\$ 218.10	\$ 26.41	14%	
Ancillary Costs		31.67	26.22	26.98	(4.69)	-15%	
Non-Recoverable GST		2.55	3.06	3.06	0.51	20%	
		34.22	29.28	30.04	(4.18)	-12%	
One-Time Shareable Cost		2.14	1.50	1.50	(0.64)	-	
BASE BUILDING/ANCILLARY		228.05	246.61	249.64	21.59	9%	
Equipment - Owner Funded (incl. Adj.)		32.14	31.23	34.28	(2.14)	6%	
		32.14	31.23	34.28	(2.14)	6%	
GRAND TOTAL		\$ 260.19	\$ 277.84	\$ 283.92	23.73	9%	

The variance commentary that follows is based on and drawn from several sources:

- Discussions with key stakeholders of the TBRHSC Project Team;
- Observations arising from the review of Change Orders and Change Directives performed by PRISM (refer to Section 5.1);
- Review for reasonability of analyses provided by sub-consultants who, in conjunction with Helyar & Associates, provided a detailed analysis of cost increases observed in most of the construction divisions.

In combination with the sub-consultants who worked on the TBRHSC project, EllisDon created a framework that allowed for the categorization of changes witnessed over the course of the project. Given that an exhaustive review of change orders/change directives was not within the scope of the reviewers' mandate (as would be expected in a financial and forensic audit), it is useful to provide below and comment on the EllisDon categorization ²⁴:

Exhibit 5 - Trades Change Order/Directive Categorization (\$ millions)

Category Description	Main Project	Post Substantial	TOTAL	%
Contract/Purchase Order Issues	\$ 9.81	\$ 0.40	\$ 10.21	21.50%
Coordination Issues	9.43	1.06	10.49	22.08%
Site Conditions	5.53	0.45	5.98	12.60%
Construction Schedule Impact	5.16	0.74	5.89	12.41%
FF&E Requirements	3.67	1.62	5.29	11.14%
PC540 *	3.45	-	3.45	7.26%
Owner Requirements	3.34	1.45	4.78	10.07%
Other	1.02	0.38	1.40	2.95%
	\$ 41.40	\$ 6.11	\$ 47.51	100.00%

* Proposed Change 540 broken down as follows:

Coordination Issues	\$ 2.07
Site Conditions	0.69
Owner Requirements	0.69
	\$ 3.45

Detailed descriptions of the each of the categories are provided in **Appendix B**. Several themes emerged as the review of the sub-consultants' reports was undertaken:

- **Drawings frequently incomplete** due to evolving building design as trade packages were tendered; re-issuance of drawings would occur as building and system design evolved [e.g.

²⁴ EllisDon August 1, 2004 Cost Report and EllisDon March 31, 2004 Reno Cost Analysis; excludes approx. \$.9 million in Post Substantial work performed by TBRHSC.

Finn-Way Glass, Door, Entrances and Windows (Division 8), \$ 142,125.26 for added glazing types resulting from update of drawings]

- **Removal of cash allowance prior to tender award** - \$ 820,000 cash allowance for items related to “stand-alone” heat plant that were included in contract documents but excluded from final contract award; the Hospital ended-up opting for the stand alone plant ²⁵.
- **Less than optimal application of sequential tendering** relative to state of design resulting in delay claims and otherwise avoidable re-work [E.S. Fox, Structural Steel (Division 5) - \$ 769,819.44 delay claim and Gunnlaugson (Division 7), Fireproofing - \$ 134,502.93 due to damage caused by other trades to steel that had already been fireproofed].
- **Design omissions** that later became apparent and deemed necessary [e.g. E.S. Fox, Structural Steel (Division 5) - \$ 52,281.90 for addition of building control joints subsequent to commencement of structural fabrication].
- **Delay in developing a firm equipment plan** resulting in varied changes [e.g. Comstock, Mechanical/Electrical (Divisions 15/16) - \$ 439,998.65 due to incorporation of articulating arms].
- **Changes requested by Owner primarily for aesthetic purposes** - [Centis Tile and Terrazzo Inc., Finishes (Division 9) - \$ 297,384 for upgrade to terrazzo flooring in atrium to include ‘fish & rock’ scheme].

As noted in Exhibit 4, the identified Base Building cost overrun as at August 31, 2004 amounts to \$ 26.41 million over the MOHLTC revised and approved Base Building construction budget of \$ 191.69 million. As such, it is clear that not all of the \$ 47.51 million in Trade change value listed in Exhibit 5 exceeded the May 2003 revised and approved budget. However, the high volume of Change Orders did result in the full usage of the \$ 20.88 million Project contingency (see section 7.2.1 for additional discussion), as well as added \$ 12 million in unbudgeted Base Building construction costs ²⁶.

²⁵ Per discussion with the Prime Consultant on September 30, 2004 there were other instances where cash allowances were included in original contract documents but excluded from the final contract award. The items for which the cash allowances were originally provided were then initiated by means of Change Orders. Because of the late date at which this information became known to PRISM, additional work was not performed.

²⁶ The application of sequential tendering and the state of the completion of the drawings that accompanied the tender packages necessarily meant the value of the work as initially tendered would be less than the by-division budgets as established and inherent in the October 2002 Final Estimates of Cost submitted by TBRHSC (which formed the basis of the MOHLTC budget approval in May 2003); construction contracts let during the tendering process amounted to \$ 161.7 million vs. an approved Base Building budget (before contingency) of \$ 170.8 million.

5.2 Change Order Review²⁷

In order to assess the reasonability of the analysis above and to determine the nature of the changes for the purposes of determining the cost-shareable element, the reviewers conducted a review of changes issued on the TBRHSC project. A focused sample²⁸ of 91 changes representing value of \$ 20,461,700 was selected (**Appendix C**). The specific objective of the review was to determine the cause of the changes as they relate to the categories of:

1. Program Scope - increases in operational program area as defined in tender documents;
2. Coordination/Clarification changes as defined by the architect; and,
3. Construction Scope changes that are questionable as a necessity to patient care.

Changes resulting directly from the approved expansion of functional programs were considered program changes. Those associated with changes to existing functional programs were categorized as construction scope changes. The following results were observed:

- None of the Change Orders reviewed could be conclusively linked to changes in Program Scope. Evidence suggests that the changes reviewed as part of the sample were all related to items previously identified or inferable from initial program requirements.
- 23% of the changes examined can be attributed to the requirement for additional detail. 70% of these were clearly identified as equipment related, which suggests either incomplete or poorly coordinated equipment schedules at the time of tender or owner-driven equipment changes after contract award that were not accounted for through cash allowances. In all, these equipment related changes amounted to \$4.33 million.
- Of the changes sampled, \$5.19 million dollars worth were identified by the architect as relating to work issued by EllisDon. Of these, 32% of the Change Orders reviewed were acknowledged as issued without review by the consultants; these total \$959,313.81.
- Reasons for the changes sampled were identified by the architect on fewer than half of the Change Orders issued, with Owner requests and/or coordination issues listed as the cause

²⁷ "The \$284 million total project cost includes \$ 7.4 million in 'Post Substantial Work' as described on page 22. PRISM's review indicates 'Post Substantial Work' were changes to the tender documents that occurred after the project achieved 'substantial completion' status from the architect."

²⁸ Changes dated prior to submission of the October 2002 Final Estimate of Cost and those valued at less than \$50,000 were excluded from the sample.

90% of the time. Other reasons cited include vendor/shop drawings, clarification, and closeout.

The documentation reviewed also suggests that processes for changes, as identified in the contract documents, were not always followed. Several Change Orders appear to have been issued by the construction manager without formal review of the documentation by the architect. In most cases, changes initiated by the construction manager were followed up with an official Change Order issued by the architect; the architect's cover often would only refer back to the construction manager initiated change, sometimes with a disclaimer that the architect had not reviewed the change. The trade contracts awarded (based on the standard Canadian Construction Documents Committee, CCDC2 - Stipulated Price Contract) indicate that all changes were to be both formally initiated and approved by the architect, a process designed to ensure both the interests of Owner and Contractor are protected, and that contract changes and associated costs are justified.

Discussions with a representative of the construction manager revealed that some of the changes they initiated were issued only after work requested directly by TBRHSC to the trades had been completed. In these instances, neither the construction manager nor the architect was consulted prior to the work taking place. Trades were also allowed claims for indirect costs that were said to have resulted from the cumulative effect of the total number of changes on the job. These costs were reviewed on individual basis and the process used for assessing them is unclear, though if the architect/owner considered these costs justified it would be prudent to have a defined costing structure in place for these claims.

The review performed revealed evidence of an apparent disregard in many instances of formalized processes relating to the issuance of Change Orders and Change Directives that have had an impact on final costs. It is possible that the sheer volume of changes resulting from the incomplete design and numerous user requests may have contributed to a backlog in formal processing, which results in after-the-fact tracking of work and costs that can be difficult to substantiate.

The backlog of the change process is evident by the introduction of PC 540, under which revised drawings were issued to the trades in order to track and price changes to contracts that had been made, but were not yet covered under any existing Change Order. The trades were to "re-bid" the job based on the new documentation, and Change Orders were issued to cover any discrepancies between the work originally tendered and the revised scope in order to reconcile outstanding contract costs. PC 540 could have and should have been avoided if the change process had been effectively managed and kept current.

5.3 Programmatic Allocation of Cost Increase

Included as **Appendix D** is the Capital Variance Template as prepared by Helyar and Associates. The template allocates the base building construction cost increase of \$ 26.96 million ²⁹ incurred on the Project since the May 2003 funding approval across all programs other than the Cancer Centre Expansion on a pro-rata per square foot basis. In light of the quantity of Change Orders/Directives issued, the reviewers' feel this is a reasonable approach.

With respect to the Cancer Centre Expansion, change documentation issued was specifically identified as relating to the Cancer Centre, and therefore the cost increase of \$ 1.82 million is based on actual costs incurred.

5.4 Shareable Cost Analysis³⁰

The TBRHSC project is a HSRC directed project. Historically these projects have been cost shared between the ministry and the Hospitals on a 70:30 ratio. The ministry funds up to 70 % of *shareable* costs with the Hospital responsible for 30 % of these costs in addition to any and all costs that are not shareable as determined by the ministry.

On May 31, 2004 the Minister of Health and Long-Term Care announced that the ministry would fund up to 80 % of the shareable project costs for the TBRHSC project. It is unclear if this announcement implies a full 80 % funding of all costs or of traditional shareable costs. PRISM, working in conjunction with ministry officials, has attempted to use the ministry's traditional methodology in determining the shareable costs and the ministry and hospital's respective 'shares'. Final calculations and specific funding commitments remain at the discretion of the ministry through the Health Reform Implementation Team.

Based on a total project cost of \$ 283.92 million an assessment of the final costing reports by PRISM with a reconciliation against the ministry's cost sharing methodology (and traditionally allowable shareable costs) has yielded a ministry share of approximately \$ 208.6 million and a hospital local share of approximately \$ 75.3 million (see Appendix E).

²⁹ As at June 30, 2004, the reporting cut-off date on which Helyar based their analysis; the base building cost variance of \$ 26.41 million reported in Exhibit 4 is as at August 31, 2004.

³⁰ A detailed analysis of specific cost increases attributable to 'design' or non-clinical building elements has not been undertaken. On a cost benefit analysis basis PRISM, in consultation with other parties, did not recommend such an analysis for the preparation of this report. Any such analysis would have to be undertaken by design and architectural professionals.

5.5 Cost Mitigation / Cost Recovery

Substantial completion on the Project was achieved in October 2003, with PRISM having been engaged in June 2004. A review of the June 30, 2004 trade “substantial completion” report indicated over 70% of the trade packages as being closed-out. After reviewing this report and discussing its findings with Management, it was determined that, with the exception of the Comstock contract, there were no material opportunities for cost mitigation or for the recovery of funds to be achieved on the project.

With respect to the Comstock claim, TBRHSC initially retained the services of Revay and Associates to assist with the claim negotiation. More recently, Helyar and Associates were retained by the Hospital to assess the claim analysis previously performed and to assist in ongoing negotiations with Comstock. The reviewers’ understanding is the Helyar draft report on the Comstock claim has been completed; however, it has not been provided to PRISM for review.

Inherent in the August 31, 2004 estimate of final cost is a provision in the amount of \$ 2.47 million³¹; TBRHSC has indicated to PRISM that Helyar’s review work suggests the provision is adequate.

³¹ \$ 1.5 million accrual and \$.974 million the remains unpaid against previously issued CO# 1130.

Key Messages

- Conclusions and Recommendations from the Hospital's April 2004 submission to MOHLTC should not be implemented.
- Both McKellar and Port Arthur sites should be posted for sale on a national level.

This section provides a recommendation for the disposition of the redundant assets at both the McKellar and Port Arthur sites. This section will begin by stating the objective of the review, highlight items in TBRHSC plan communicated to MOHLTC in April 2004, provide a review of options based on current market values and cost estimates, and provide an analytical framework resulting in a recommendation.

Following the disposition recommendation, a review of the Professional Building, a 70,000 square structure housing primarily office space and located adjacent to the new hospital building, will be included. This report's objective has been expanded recently to include a review of the Professional Building at the New Thunder Bay Hospital location. Section 6.5 will include the summary of the Professional Building review.

It is understood that a disposition strategy of redundant assets is required since the MOHLTC approved Project Budget/Cost for the new TBRHSC facility did not include any provisions for the decommissioning and disposition of TBRHSC redundant assets. Associated costs or benefits have not been captured in any MOHLTC approvals to date. MOHLTC approval is required prior to the possible contribution of capital to enable the disposition of redundant real property.

6.1 Review Objective

Based upon our findings and in consultation with The Hospital, the ministry and the Special Advisors, our team will advise as to the efficiency and the reasonableness of the decommissioning / disposal plans for the McKellar and Port Arthur sites based upon our expertise, experience and within a principle of providing value for money. TBRHSC submitted a Decommissioning Plan for both McKellar and Port Arthur sites in April 2004 and serves as the basis for this review.

This review will begin by highlighting the key findings in the TBRHSC decommissioning plan for Port Arthur and McKellar Sites as it has been structured in the April 2004 report.

At this stage, it is important for the reader of this document to clearly distinguish between two main valuation measures when considering real estate as an asset - that is Market Value and Investment Value. The TBRHSC report is based on the premise that the Hospital is charged with the responsibility of determining investment value in its recommendation as it relates to the broader Thunder Bay Area. TBRHSC offer options that consider operating concerns for ALC beds and ultimately recommend a course of action to:

- Maintain ALC beds at the McKellar Site through partial private investment;
- Convert part of the Port Arthur site to outpatient Mental Health for St. Joseph's; and,
- Sell the balance of the lands upon demolition of redundant buildings.

This report will offer the perspective of value for money by maintaining Market Value and Investment Value as two separate measures. Market Value being a measure of the current value, whereas Investment Value carries a consideration of value required in real property as it enables benefits - financial or otherwise - over a longer period of time. A recommendation of value for money will materialize as different disposition options are considered. This report will present various options that keep Market Value and Investment Value in variable weight, contrasting estimates identified in TBRHSC April 2004 report, and forwarding a recommendation based on maximizing value for money.

6.2 Key Elements of the TBRHSC Decommissioning Plan

To simplify the review of key points from the TBRHSC Plan, this section follows a similar format as to the Decommissioning Plans submitted by TBRHSC. For reference purposes, the April 2004 and May 2003 Decommissioning Plans prepared by TBRHS have been included as **Appendices F and G**, respectively.

6.2.1 Introduction

Objectives of the Submitted Decommissioning Plan - April 2004

As set out in the April 2004 Decommissioning Plan submitted to the Ministry of Health and Long-Term Care by TBRHSC, the objectives of the decommissioning plan were set as:

- Ensure the disposal plan is in the best interests of the public;
- Ensure best efforts are made to secure adequate compensation of publicly funded lands and buildings; and
- Ensure the disposal of the lands and buildings will be at a minimal cost to the public

At this point it is assumed that the objective, as set by the MOHLTC response to previously submitted plans, is to develop options for maximizing value for money; in this case, maximizing value for the redundant Port Arthur and McKellar Sites.

Closure of Existing Sites

Upon completion of the new TBRHSC green field project, both Port Arthur and McKellar Sites were decanted of Hospital operations - as outlined in the report.

Alternative Level of Care

There are no longer any healthcare operations at the Port Arthur site. The McKellar site, however, continues to accommodate up to 60-bed capacity for alternative level of care (ALC); long-term care beds operated by a private provider - S&R Asset Management.

Although the report states that the temporary beds are approved to operate until March 31, 2005, it is not clear from the report, nor has it been confirmed to date by MOHLTC, whether TBRHSC has the responsibility or commitment to continue to provide accommodation for the 60-bed capacity. This is a key point when generating options for the disposition of McKellar Site. It is not clear how much S&R contributes financially for the accommodation in McKellar.

Decommissioning Process

The report outlines TBRHSC's approach to the decommissioning process as follows:

1. Solicited an Appraisal Report to:
 - Determine the marketability of the properties; and,
 - Estimate market value of all properties.
2. Issued a Request for Expressions of Interest Tender Document # 03-126 and June 28, 2002 - Call For Proposals). Intent was to generate interest for the purchase of McKellar and/or Port Arthur Sites.
3. Preparation of a Phase I Environmental Site Assessment.
4. Preparation of a Designated Substances Study.
5. Analysis of all Reports and Studies.
6. Submission of the Decommissioning Plan to MOHLTC by June 2003.

To date, no action has been pursued. Further to discussion with TBRHSC Chief Financial Officer, and pursuant to the April 2004 plan submitted to MOHLTC, there has been on-going

discussion as to the monetary values and cost estimates presented, and reviewed further in this report.

6.2.2 Appraisal of Vacated Sites

TBRHSC contracted out for the preparation of a professional appraisal of each of the vacated sites. For the purpose of this review, **Appendix F** contains the technical description of the

Table 6.1

Table of Values - Review of April 2004 vs Updated Values
Review of Data in TBRHSC Reports vs Update values by PRISM

Site	Buildings sq.ft	Acres	Market Value (\$) May-03	Appraisal Demo (\$) Cost May-03	Update Demo Cost (\$) w/ Golder Apr-04	Segregation Costs (\$)	Manahan (\$) * Sep-04	Demolition (\$) * Sep-04
McKellar	375,294	6	755,000	3,335,000	4,906,178	17,500	960,000	3,752,940
McKellar - Archibald			-				200,000	
Port Arthur	202,700	9	1,444,800	2,500,000	3,127,462	17,500	1,786,000	2,027,000
Port Arthur - Cancer Centre	51,502		1,347,700			575,000	737,700	

properties and buildings located at McKellar and Port Arthur Sites. Key items identified in the April 2004 plan are contained in **Table 6.1**.

*Prism engaged a Local Planning Consultant to conduct a separate review. The report by Manahan Consulting is included as **Appendices H and I**.

It is important to note that the April 2004 plan uses dated information. For example, Land Value estimates first appear in the May 2003 plan and are not updated in the April 2004 plan. In addition, projections on Market Conditions for both real property and demolition costs are not included, making the investment value difficult to measure as it relates to land value.

Prism has tested some of the values presented and results are summarized in Table 6.1 as compared to the April 2004 reported values.

6.2.3 Designated Substance Studies

TBRHSC has proceeded with a number of studies that will be required independent of which option for disposition plan is assumed. The studies conducted have been:

- Phase 1 Environmental Studies for both McKellar and Port Arthur sites;
- Designated Substances Surveys for both McKellar and Port Arthur sites;
- Asset Recovery Study; and,
- Radioactive Materials Review.

Cost estimates, applicable to the disposition plan, have been included in Table 6.1. There are no values reported for the recovery study, nor are any recovery values included in TBRHSC estimates/cost summaries. Prism's demolition estimates, included in Table 6.1, are inclusive of expected recovery values and could be considered complete.

6.2.4 Alternate Uses of the Properties

In June 2002, TBRHSC issued a public call for Expressions of Interest/Request for Proposals (RFP) for the potential purchase and redevelopment of the McKellar and Port Arthur sites. A second RFP was issued in November 2003.

The information presented in the TBRHSC April 2004 report have been summarized in **Table 6.2 (Appendix J)** and listed as McKellar Site options A, B, C and Port Arthur Site Option A, B, C, D.

In addition to the TBRHSC options, Table 6.2 contains updated information from Prism on demolition costs and real property market values.

6.2.5 Demolition

As stated, the TBRHSC preferred choice is to find a buyer for the existing facilities in order to allow for the use of existing infrastructure and to minimize the risk associated with demolition. TBRHSC is requesting to proceed with the evaluation of isolating the former Cancer Centre from the current Port Arthur central plant systems. This would allow a more marketable component of the building to remain while removing the older building portions. TBRHSC is recommending a technical and financial assessment be completed to determine if this option should be pursued.

Demolition costs are identified as \$8,643,640 before discounting the proceeds from potential sales. For the purpose of this report, this option has been identified as Combined Option No. 1 in Table 6.2, Appendix J.

6.2.6 Ongoing Operating Costs

Currently, both the Port Arthur and McKellar sites are incurring operating costs. To that end, this section of the report stresses the importance of executing a disposition plan as quickly as possible. The forecasted operating costs, as computed by TBRHSC and stated in the April 2004 report, are estimated at \$237,616 per month or \$2,851,392 per year. Detail to the estimate has been included in the April 2004 report (refer to Appendix F).

Heating and electrical costs make up approximately \$151,418 of the monthly operating estimate or 64% of the operating forecast.

The April 2004 report states that heating is required to avoid freezing of water lines, and electricity required at reduced levels. The utilities forecast is based on 75% historic heating costs at McKellar, 50% historic heating costs at Port Arthur and 50% historic electrical costs at both sites. It is difficult to state whether these assumptions are reasonable for several reasons as noted below:

1. Water freezes at zero degrees Celsius and using historic costs (normally at 23.5 degrees Celsius for a fully occupied building) as a guide does not reflect the minimum utilities required to keep an empty building safe.
2. The report does not estimate required utility consumption for a vacated building.
3. Utility costs are volatile, and without consumption estimates, forecasting isn't very meaningful.

It should be understood, however, that operating costs will be incurred by the Hospital until the time of disposition and or demolition of redundant buildings. As the operating costs will be constant regardless of the disposition plan selected, for the purpose of this report, operating costs will not be included in the financial review of possible disposition options or strategies. It is recommended to simply hoard and secure the buildings (i.e. board-up the buildings) and vacate redundant buildings.

6.2.7 Conclusion and Recommendation from the April 2004 Plan

After consideration of all existing proposals and reports generated, the following is the recommended action to be taken by TBRHSC:

- McKellar Site - Option A;
Peterson + Habib proposal to build 173 ALC and Private Beds;
- Port Arthur Site - Option B, Option C and demolish balance of Port Arthur buildings.

The Port Arthur Options above recommend segregation of the Clavet Street Parking Lot and the former Cancer Centre building. Once segregated, attempt to maximize value under current market conditions for the respective lands and building. Demolition of the remaining Port Arthur buildings is recommended prior to being sold.

Table 6.2 in Appendix J summarizes the above in as combined Option 2. Using the values presented in the April 2004 report, the cost to implement the above will require up to \$ 4.2 Million to execute.

Prism has tested the values in the April 2004 based on current costs at University Health Network for demolition and have updated the market value estimates for land. The updated values are contained in Table 6.2, Appendix J. Prism's preliminary estimates suggest the amount required to implement the plan could cost MOHLTC an additional \$ 10.3 Million as the plan relies successful proponents to be funded operationally by MOHLTC.

6.3 Disposition Plan - maximizing value for money

Potential acquisition or disposition of Real Property is deeply founded with a critical quantitative perspective in financial decision-making along with an understanding of qualitative characteristics of the property, market factors and investors.

This perspective brings together an understanding of cash flow and investment analysis, capital budgeting, tax considerations, debt and equity financing, risk analysis, and financial and capital market structures.

This review will focus on the financial costs, as related to upfront capital, current market values, and updated estimates for completion of critical activities such as demolition. For the purpose of this review, cost of capital, discounted cash flow, reasonable operating costs and transaction costs have not been considered.

For the most part, this report strives to arrive at a strategy for implementation, and not intended to detail a possible real property transaction resulting in the disposition of TBRHSC lands to another MOHLTC funded program. The following sections will define market value, investment value and set a strategy for implementation.

6.3.1 Market Value

Market value is the expected price at which an asset can be sold in the current market.

Market Values as outlined in the April 2004 plan have been summarized in Table 6.1. Appraisal values used in the April 2004 have been tested by exploring various development options included in the Appendices H and I and summarized in the Table 6.1 as September 2004 values. Further, cost estimates for key activities such as demolition, have been captured in Table 6.1.

For the purpose of this review, September 2004 Market Values will be used in the financial review capital recovery through disposition of the redundant properties.

Investment value is the value of an asset to a particular owner, reflecting that owner's unique situation. In real estate, the existence of the real estate asset market means that both investment value and market value can be (and should be) evaluated when making choices.

6.3.2 Investment Value

Investment value is measured by considering the cash flows expected to result under the particular owner's management and operation of the asset, as well as the owner's income tax situation.

A discounted cash flow has not been included in this review based on the premise that the minimizing of on-going operating costs is the priority as operating costs will out-weigh any gains through a lengthy sale or development process. To that end, eliminating on-going operating costs will result in the highest investment value for the real property reviewed.

From the options identified from the TBRHSC RFP process, the recommended course of action presented in the April 2004 Submission is to maximize investment value of the properties through MOHLTC involvement and additional funding. In contrast, eliminating on-going operating costs through the sale to a third party is the real option to maximize investment value. Simply stated, maximizing market value through the sale to an entity other than a MOHLTC funded program will maximize value for money.

6.3.3 Strategy for Implementation

To recap, maximizing value for money will result through:

- The pursuit of maximizing market value (based on current zoning) for the McKellar and Port Arthur properties to a third party other than a MOHLTC funded program or initiative; and,
- The pursuit of eliminating on-going operating costs as an attempt to increase investment value.

In this context, the option to sell all properties to the highest bidder will result in the greatest value for money.

The unfortunate reality is the costs to demolish both McKellar and Port Arthur are considerably higher than the current market value of the properties. Relative to the on going operating costs identified in the April 2004 Plan, the cost of disposition will be less than the on going operating costs.

Combined Option No. 3, as identified in the Table 6.2, Appendix J, offsets Market Value estimates with the cost of demolition required to achieve Market Values for the prospective lands and buildings. Combined Option No. 3 is estimated at a cost of \$2.1M. Option No. 3 carries the least cost to MOHLTC and is less than the annual on-going operating cost estimated in the April 2004 report.

As the RFP issued by TBRHSC was sent to local concerns, it would be beneficial to extend another RFP nationally/internationally in attempts to maximize market value, minimize demolition costs, and maximize value for money. As land values generally increase overtime, a non-local proposal will carry consideration for the time value of real estate in the overall market value equation of the McKellar and Port Arthur sites.

It is the recommendation of this report to outright sell all properties through a nationally posted, if not internationally, sale of the McKellar and Port Arthur properties.

6.4 Review Summary

The objective of this report is to provide a recommendation that maximizes value for money. Based on updated valuations and a complete review of potential costs to MOHLTC, it is recommended that the McKellar and Port Arthur sites be posted for sale on a national level in an attempt to maximize market value and minimize demolition costs of redundant real property assets. The highest bid should be awarded the properties. Proceeding with the complete sale of McKellar and Port Arthur may be complicated with current operations accommodated in the former hospital site(s). Expected proceeds from current tenants and efforts to board-up empty buildings, however, can help minimize on-going operations costs until the properties are sold.

6.5 Professional Building Review

PRISM's mandate was recently expanded to include a review of the Professional Building at the New Thunder Bay Hospital location based on a discussion with MOHLTC. The Professional Building, located adjacent to the new Hospital building, is approximately 70,000 square feet in size and occupies land within the Thunder Bay Regional Health Sciences Centre site. During its first site visit, PRISM made the inquiry as to the details of the construction of this building, which

appeared to be significantly advanced. PRISM was told that the building was being constructed by a private developer. At a subsequent meeting with ministry staff, PRISM mentioned the topic of the Professional Building; the ministry staff had little to no information concerning a transaction between the Hospitals and a private developer.

Appendix K includes the detailed site information recorded with the City of Thunder Bay that PRISM was able to obtain. Transaction details were requested from the TBRHSC CEO; however, the information has not been shared. PRISM was advised by the CEO that the transaction did not require MOHLTC approval and that the Ministry's Regional Office staff did have the details.

Based on information registered with the City of Thunder Bay, it appears that the Hospital is in the process of entering a long-term lease with a Private Company for the Professional Building - approximately 70,000 square feet in size. Discussion with The Ministry of Health and Long-Term Care representatives confirm that TBRHSC did not seek the approval of the Ministry before the professional building construction started. The Thunder Bay Regional Health Sciences Centre does not have Ministry approval to proceed with the transaction; however the building is nearing substantial completion.

PRISM took no further action on this matter.

Key Message

PRISM recommends that the following strategies and/or management tools be implemented to ensure capital infrastructure projects are delivered on time and on budget:

1. Develop and submit the most cost-effective Building Design for MOHLTC approval.
2. Submit a detailed Project Execution Plan for MOHLTC approval.
3. Engage independent³² Project Management Services.
4. Engage independent Cost Control and Monitoring Services.
5. Engage independent Project Scheduling Services (may be provided by either the Project Management Group or the Cost Control and Monitoring Group).
6. Ensure all major contracts are properly tendered and executed.
7. If a Construction Management Procurement Model is approved, ensure there is a “Guaranteed Maximum Price” provision.
8. Develop Cost Control Policies and Procedures that are approved by the Hospital’s Finance Committee and Board of Trustees.
9. Establish Accountability/Funding Agreement between the Hospitals and MOHLTC.
10. Initiate Quarterly Certificates to be signed by the Board Chairs, CEOs and CFOs. Establish a “change order covenant” that must be adhered to prior to receiving funding advances from MOHLTC.

7.1 Construction Management Approach - A Primer

Before proceeding with a review of the processes, approaches and mechanism in place at TBRHSC, and in order to frame the discussion that follows, it’s necessary to engage in a brief examination of 1) the very nature of Construction Management (CM) 2) the variants of the CM delivery method, 3) the advantages and disadvantages of each variant, and 4) the risks and key success factors inherent in delivering a large, complex project on a CM basis.

Nature of CM

Perhaps the best way to define the CM model is to start with contrasting it with the other broad categories of project delivery models, those being I) the “traditional” Stipulated-Sum/Lump-Sum, the model most often adopted in the public sector in general (and quite prevalently at the MOHLTC), due to its relative cost-certainty, and II) the Design-Build (DB) model.

³² In terms of Project Management, Scheduling, Cost Monitoring and Cost Controls, industry ‘best practices’ strongly support that each of these roles be fulfilled *independent* of each other, the owner (hospital) and the constructor with an appropriate and clearly defined segregation of duties for each role.

Under the Stipulated-Sum approach, the Owner contracts first with a design consultant to design the Project, then solicits bids from general contractors based on *completed* design and, finally, contracts with a general contractor to build the project. Under the Design-Build system, the Owner solicits proposals based on a statement of requirements and then contracts with a single entity to both design and build the project under a single contract.³³

By contrast, under the CM approach the Owner contracts separately with a design consultant (the architect/prime consultant) and with a firm whose primary expertise is construction (i.e. the Construction Manager). The Owner will typically procure the management services of the Construction Manager early in the design phases, thus affording the Construction Manager the opportunity to provide significant cost, schedule, constructability, and serviceability input to design; this may be a continuation from working in an advisory capacity during project development.

As was the general intent with the TBRHSC project, under the CM approach trade contracts may be entered into on a sequential basis, which is to say as soon as a specific part of the design is complete, trade packages can be put out to tender and bids sought. The concurrency of design and construction, often referred to as “fast-tracking”, is a feature most often associated with CM.

Variants of the CM Approach

Construction Manager as Agent, or Construction Manager as Advisor

In this form of CM, the Construction Manager acts as an agent of, and advisor to, the Owner. It is the Owner, not the Construction Manager that enters into multiple trade contracts with the assorted trade contractors and suppliers. The Construction Manager is retained on a fee for service basis and acts on the Owner’s behalf in managing and coordinating the trade contracts in the best interests of the Owner. The Owner retains all the contracting risks inherent in each of the trade contracts, which means the Owner acts as its own general contractor or ‘constructor’.

Construction Manager as Constructor

In this form of CM, the Construction Manager retains the contracting risk by entering into multiple trade contractors and suppliers. The Construction Manager assumes responsibility for the performance of the trade contracts much as a general contractor would under the ‘traditional method’, and is paid for the trade contract work on a cost reimbursement basis. The Construction Manager may also provide a Guaranteed Maximum Price and schedule to the Owner under a

³³ As noted in Section 4.1 of this Report, the Design-Build approach was the delivery model was initially proposed by TBRHSC.

cost-plus type arrangement, or enter into a stipulated price contract to the extent the state of completion of the design makes doing so practical.

Advantages and disadvantages of CM as Agent Variant from the Owner's are as follows:

Advantage:

- CM as Agent clearly has less risk, in that the Construction Manager is not contractually responsible for coordination of the trade contracts and it is not responsible for any of the trade work itself. Thus, there is less chance for conflicting interests to develop since the CM fee is not usually affected by the decisions the Construction Manager makes.

Disadvantages:

- The Owner assumes all of the contracting risks under each individual trade contract.
- Owner assumes a potentially onerous administrative burden due to the large number of individual trade contracts entered into, each of which necessitate separate administration in terms of contract signing, payment, holdback, warranty etc.
- By the very nature of the contractual relationship, the CM as Agent is not in a position to provide a GMP or stipulated price for the project and as such, the Owner assumes the risk of cost growth.

Under the CM as Constructor model, the obvious advantage to the Owner is the fact that the contracting risk is borne by the Construction Manager. However, Owners should be aware that inherent in the 'at-risk' variant is the risk that an adversarial relationship will develop as there will be a bias for the Construction Manager to act in self-interest, to the detriment of the Owner.

Key Success Factors and Requisite Conditions

Although not a comprehensive listing, the following are some generally accepted attributes and conditions that are likely to make the CM Approach both feasible and attractive:

- Need for Superior Teamwork;
The CM approach requires extensive coordination and interfacing between the design team preparing the drawings and specifications and the construction manager compiling and issuing tender documents for owner-supply and construction work.
- Priority is for timely completion;
- Cost certainty is less of a priority than cost minimization;
- Owner-designer-construction manager cooperation can be relied on to enable enhancement of design by utilizing construction expertise;
- The Owner wants control of trade contractor selection;
- There are expectations to hire locally.

7.2 Review of Management Mechanisms

Whether as initially envisaged or in its as-built form, the TBRHSC construction project was an inherently complex one, by virtue not only of its size and the aggressive timeline that TBRHSC Management imposed on the process, but also due to the fact TBRHSC had in place a “bare-bones” project management infrastructure (discussed in greater detail in Section 7.3) for the first two years of the project.

Essential to mitigating and controlling the risks that impact variables such as cost and scope on a project of this magnitude is a set of robust management mechanisms. What follows is an enumeration and assessment of the control and management mechanisms that TBRHSC had in place.

7.2.1 Cost Monitoring, Authorization Policies

Cost Control and Reporting Function

Accurate and reliable cost accounting/reporting is an integral element of the project management process. At its essence - and its best - cost accounting/reporting enables the clear communication of project-critical information and, by doing so, allows for informed and transparent decision-making at all levels, be it by front-line staff in the field, by middle and senior management, or by governance bodies such as Corporate Boards.

Although never executed, the draft Construction Management Contract established the de-facto terms and conditions of the relationship between TBRHSC and EllisDon that provided for cost control and accounting services that involved primarily:

- Developing, implementing and maintaining of an effective system of project cost control;
- Revising and refining the initially approved project construction budget;
- Incorporating approved changes as they occur;
- Developing cash flow reports and forecasts on monthly basis;
- Identifying variances between actual and budgeted estimated costs and advising Owner and Architect whenever projected cost exceeded budgets or estimates.

The above represents a reasonable and common cost control and reporting framework to the extent the individual elements were consistently and effectively implemented on the TBRHSC project. A detailed assessment of EllisDon’s project cost accounting and reporting system, and of the related controls, was not part of PRISM’s mandate. That said, discussions with various

members of the TBRHSC project team and a review of both actual monthly reports and of related correspondence ³⁴suggests the reports (based on a rather rudimentary Excel-based template involving significant manual input), were prone to error, inconsistency and delays ³⁵ from month-to-month.

Partly in response to the observed weaknesses in EllisDon's reporting, TBRHSC retained Helyar & Associates to act as "shadow management" consultants to provide, among other things, cost monitoring services that included a separately compiled monthly cost report (based on information furnished primarily from the construction manager). The compilation process involved checking the EllisDon figures for mechanical accuracy, ensuring the correct carry-forward of previous month balances, and the reconciliation of summary of report balances to source documentation such as invoices and various EllisDon provided sub-reports. Also provided was general commentary and analysis with respect to on going matters such as claims, change orders, etc.

While Helyar's scrutiny of the monthly project cost information provided by the construction cost reports clearly added value to and enhanced the quality of project cost reporting process, the reviewers did note there sometimes were significant lags³⁶ between the actual end date of the period on which they were commenting and the issuance of the report. It is not the reviewers' role to examine or assess the validity of the reasons for the time delay in releasing the reports and, as such, no comment is offered on the matter other than to say the lags were, to a certain extent, probably a function of the very nature of the mandate and the delays in obtaining information from the construction manager. The fact remains, however, that reliable and complete reporting was not always available on a timely basis, and therefore the key stakeholders' ability to make fully informed decisions on a timely basis surely must have been impaired.

Also lacking were formally documented policies and procedures ³⁷ pertaining to cost matters. Before proceeding, it should be noted that the absence of formalized, easy-to-reference, and updated as required project-specific policy/procedural documentation available for reference and review by all participants in the project process does not mean TBRHSC did not have basic

³⁴ Memo dated February 4, 2002 send to EllisDon management by TBRHSC in which serious concern expressed regarding aspects of the fulfillment of EllisDon's cost control and reporting responsibilities, and various Helyar reports

³⁵ Reports would be issued, however, would not contain current cost information e.g. December 31, 2002 cost report containing costs up to November 30, 2002 only

³⁶ Examples include the September 2002 Project Status Report (Issued on November 26, 2002) and the January 2004 Project Status Report (Issued in draft on May 15, 2004).

³⁷ The consultants inquired on several occasions as to the existence of a formally approved (by the Board) Cost Control Policies & Procedures Manual, but were repeatedly told such document was never created.

policies³⁸ in place regarding tendering, contract execution, invoice and change approval, and payment processing. However, what the lack of documented policies and procedures does underscore is the less-than-systematic approach taken by TBRHSC and its consultants in clearly and systematically establishing at the front-end of the project a robust set of policies to guide the project during its execution stage. Indeed, had a more transparent and comprehensive approach been taken from out the outset, it might have highlighted weaknesses inherent in policies that ultimately were applied. A key example is the approvals process for Change Orders/Change Directives, as noted below.

PRISM understands that the Board of Governors had delegated contract/commitment approval authority of up to \$ 1 million jointly to the Chief Executive Officer (CEO) and the Project Coordinator. That is, whether the contract document related to initial tender packages or subsequent change orders, only those in excess of \$ 1 million had to go to the Board for approval. PRISM finds this policy to be a major weakness in the overall project management and governance framework in that no distinction was drawn between commitments that were within the approved budget and those commitments which caused total project costs to exceed the approved budget. In the experience of the reviewers, there should have been a firm and clear requirement for the CEO and Project Coordinator to bring in front of the Board any and all Changes that resulted in a budget overrun. With two exceptions³⁹, the 2,844 Change Order/Directives issued were less than \$1 million in value. This translates to the CEO and Project Coordinator jointly having sign-off for approximately \$ 42 million in changes that ultimately contributed to a Base Building cost overrun of \$ 26.41 million.

The above raises the question as to how the Project contingency was managed. All large, complex construction projects should carry a “contingency” for “unforeseen” costs which are likely to occur within the project’s defined scope of work. Moreover, disciplined management and control of contingency is a key element of ensuring overall success on a given project. Controlled usage of the project contingency will only be possible if there are clearly defined and well-understood mechanisms and controls in place to ensure the contingency is utilized only for specific reasons (such as to offset incremental costs arising from labour strikes, the introduction of new technology, construction market conditions affecting pricing). Costs identified as eligible for contingency funding should then be discussed and approved on an item-by-item basis in the appropriate forum such as an organization’s Finance and Audit Committee, or Building Committee.

³⁸ The TBRHSC Project Coordinator did provide the reviewers with a 2-page memo regarding the tendering process in place that had been prepared by the Project Coordinator at the specific request of a Building Committee member.

³⁹ Change value resulting from PC540/#933 (\$ 3.45 million) and PC1130/#1130 (\$ 1.88 million).

In the case of the TBRHSC Project, the Base Building budget of \$ 191.69 million included contingency amounts totaling \$ 20.88 million. The \$ 47.51 million in Trade Change Orders that was approved over the course of the project utilized fully the available contingency. There is no evidence that the draw down of the contingency occurred in a systematic and controlled fashion such as that described in the paragraph above. That is, a review of the minutes of both the Building Committee and the Board of Governors revealed that there were no detailed discussions with respect to the rate at which the available contingency was being utilized, or the reasons for which it was being used.

Suggested Cost Control Model

As discussed in the paragraphs above, the accuracy, timeliness and reliability of the cost control/reporting system, and the effectiveness and even existence of effective policies/procedures underpinning the system is clearly a matter of concern. However, the broader issues for consideration on future CM or stipulated price projects are:

- Who should have responsibility for the cost control and reporting function on a project the magnitude of TBRHSC's?
- What should the scope of the function be?
- To whom should the responsible party have been accountable, especially in light of the ostensibly severe constraints imposed on TBRHSC and its Board of Governors by the MOHLTC mandated "Accountability Framework" (i.e. responsibility for cost overruns arising from use of the CM approach)?

To address the above, the reviewers feel strongly that for future capital projects the MOHLTC and healthcare facilities should collaboratively:

- **Engage professional, independent cost control monitoring and reporting expertise**

While it is not uncommon for construction managers to perform the cost control/monitoring function for all construction related costs/contracts, having them do so, in the reviewers' opinion, results in an over-reliance on one party and in a less-than-ideal separation of distinct functions. As such, as a condition of grant funding, the MOHLTC should mandate, without exception, that healthcare facilities hire firms/individuals specialized in the in this area for projects above an established value threshold.

- **Establish a comprehensive cost control and reporting mandate**

Ideally, the scope of the cost controller role should include the recording, administrative review and processing of all *source* documentation, including 1) project commitments (contracts, purchase orders etc.), 2) contract/PO changes, 3) requests for payments by contractors/trades, 4) ancillary cost invoices, and 5) cheque generation⁴⁰. The usage of purpose-specific project accounting software is preferable to that of basic Excel spreadsheets and should be used in combination with clearly established policies to instill a discipline in the project accounting and documentation process. A smoothly running, adequately resourced project cost control and accounting framework allows for the generation of timely and reliable project reports in which all stakeholders have a high degree of confidence.

- **Ensure direct accountability to the Board/Building Committee**

By definition, the role of a governance body is not to “micro-manage” or to in any way undermine senior administration’s management mandate. However, if a Board/Building Committee is to effectively and prudently discharge its fiduciary responsibilities, then it must have confidence that the appropriate tools and systems are in place to manage and report on areas of major risk, especially those in which the healthcare facility senior management team has little or no direct experience, such as a multi-year, multi-million dollar construction project. Much in the same way the internal audit function of an organization reports its findings directly to a Finance & Audit Committee, the independent cost control firm/entity should present its cost report on a regular basis to the Board or established Building Committee.

Anticipated Total Cost as Reported

Based on discussions with both TBRHSC management and the Construction Manager, and on a review of the project cost reports issued over the life of the project, it’s apparent the Anticipated Total Cost figure was only an arithmetic total of 1) cost to date, 2) approved/pending change orders, 3) a general estimate of non-tendered work. There was no evidence of effort to apply forecasting methodologies such as Earned Value, an approach that, among other things, would have given a more useful representation of overall project progress and cost performance against budget to date, thus allowing for an extrapolation of these indicators to arrive at an expected cost at completion for the project. It is reasonable to suggest that had a more sophisticated

⁴⁰ The degree to which control and accounting processes are de-coupled for the healthcare facility’s existing accounting group/infrastructure must of course be assessed on project-by-project, facility-by-facility basis, and is in large part determined by the existence - or lack thereof - of in-house expertise and available resources. While the natural reaction/preference of Finance Departments may be to retain as much direct involvement as possible in all accounting cycles, the reviewers’ own experience in control and accounting issues surrounding the delivery of a \$ 350 million, “brownfield” site redevelopment on a CM basis suggests a dedicated project accounting/control staff and system, under the direction of externally hired cost control consultants, was a very successful model. It enabled **timely** and **accurate** review and processing of project-related documentation and report generation in a manner satisfactory to both the facility’s Project Management Team, Finance Department and, ultimately, its Board of Trustees.

methodology been used, schedule slippage on some of the early tender packages (structural steel, roofing, metal siding, exterior masonry), combined with higher than budgeted costs seen early on, might have been flagged more quickly as indications that the overall project budget was at serious risk. That is, potential opportunities for some serious/effective corrective action *could have* been seized upon earlier had more major cost pressures been interpreted as being such earlier in the process.

7.2.2 Scope Monitoring

The information presented in Section 5 clearly demonstrates that change notices did not result from program changes during the construction process. Rather, design or construction changes resulting from Owner Request after tender was the major cause identified.

Through interviews with the owner representatives, architect and contractors, it became clearly evident that construction drawings were sent out in a semi-completed state of 85 to 90%. Budgets were then tested through the tender process; however allocations necessary to cover the construction scope under design at the point of tender were not maintained.

Cost estimates or quantity surveys were not occurring beyond the guidance information provided by the Construction Manager/Project Coordinator at the time of tender or shortly thereafter. Progressing directly into construction, there was little opportunity for owner, architect or construction manager to generate options for consideration, or to out-right delete change orders resulting in increased costs.

It would be very difficult, if not impossible, for an owner to actively monitor scope in a scenario where changes are generated without hard estimates on options considered be it for equipment installation or aesthetic benefit. Quality, budget and schedule became difficult to monitor without timely, objective, and complete review of change order options; it clearly did not happen.

For the most part, patient program areas identified in the May 1999 Salter Farrow Pilon Master Plan for TBRHSC did not change. All programs listed, as identified in the Master Plan, were built with immaterial changes to size of program, including the total number of beds and size of the Cancer Centre.

The Master Plan process did not offer various options to consider in building design or layout. Conversations with the owner representatives and the architect confirm the Master Plan was deemed to be acceptable early on without scrutiny. In the absence of viewing various building types or options to accommodate Master Plan programs, it is difficult to substantiate change in

functional program areas as an unavoidable issue. From the start, hiring the lead consultant without a competitive process and not considering various Master Plan diagrammatical options to accommodate program requirements, suggest that the entire project implementation was fraught with the peril of not considering more than one solution to solving a problem. This process continued to manifest itself through the construction phase; an extremely risky means to build a hospital facility.

7.2.3 Best Practices

Following is a listing of management mechanisms that are essential to have in place in order to control costs and scope on projects similar in size and complexity to that of TBRHSC:

- **Make the Investment - Retain Specialized, Independent Cost Control/Monitoring Expertise**
Responsibility for cost control and monitoring should not be left to the construction manager; implementing a robust and effective function requires a comprehensive mandate (as described above) be given to an independent party with experience in the field.
- **Take the Time - Develop Process Policies/Procedures Manual**
Formalizing and documenting process is often considered an afterthought, especially when a given project is understaffed and under tight timelines, however taking the time to go through the process of developing detailed policies and procedures should be accorded top-priority. It's essential that there be focused consideration and consistency in understanding amongst the relevant stakeholders regarding tendering practice, commitment/contract awards and tracking, change order management, progress payment processing, use of contingency guidelines, cost report formats etc. Such front-end investment will increase the likelihood of smooth and accurate information flow during project execution that, in turn, will increase and facilitate fact-based decision-making.

7.3 Evaluation of Project Management/Procurement

7.3.1 Project Management Approach

Project Management Office (PMO)

It's been well observed by all stakeholders that TBRHSC started the Project off with an understaffed Project Management Office. Lacking an already-established Planning Department, and seemingly constrained by MOHLTC policies that provided for cost sharing only up to

\$ 195,000 / annum for project management, (\$ 65,000 / annum for each of three positions) TBRHSC opted to hire only one Project Coordinator⁴¹ at the outset of the project to represent the Hospital's interests and to act as liaison between the prime consultant (Salter Farrow Pilon) and the construction manager (EllisDon).

While perhaps obvious from the title, it should be noted that the mandate of the Project Coordinator position was not equivalent to that commonly associated with a Project Director mandate i.e. overall responsibility for the planning and delivery of the project and key decision making authority; the TBRHSC Chief Executive Officer assumed this broader mandate and was involved extensively throughout the project.

It must be clearly stated that the size of the project, even as initially envisaged (i.e. a \$162.6 million project) clearly warranted, indeed, demanded that TBRHSC dedicate additional resources towards developing an in-house team of Owner's representatives to monitor the work being performed by the consultants and construction manager, and ultimately to ensure the Hospital's interests and objectives were being safeguarded.

It is hard to understand how this could not have been obvious from the outset of the project, and why developing a team with the sufficient breadth and depth before tendering commenced and the project "momentum" began to build was not accorded critical-path priority. Discussions with consultants involved in the project revealed that recommendations were made to TBRHSC management early on regarding the need for TBRHSC to hire additional staff to ensure the efficient flow of communication and to allow for quick responses when owner-related questions or issues would arise. To borrow an expression used in the Health Capital Planning Review⁴² document issued in January 2004, this approach is indeed a pointed example of being "penny-wise and pound-foolish", by both TBRHSC and MOHLTC⁴³.

In November 2001, TBRHSC submitted to MOHLTC a document entitled "Project Management Resource Plan"⁴⁴ (PMRP - **Appendix L**) prepared by a project management consultant at the request of TBRHSC. The objective of the review exercise was to assess TBRHSC's current project management framework, to identify areas of weakness, and to formulate a go-forward

⁴¹ The incumbent had a construction background and had been involved in at least one major healthcare project in Western Canada delivered on a CM basis.

⁴² Health Capital Planning Review Report: January 16, 2004

⁴³ As noted in Section 4.0 "Detailed Chronology" of this Report, the cost estimate submitted by TBRHSC with its November 1999 Functional Program Supplement included a allocation of \$.9 million for project management; in subsequent correspondence, MOHLTC clearly reiterated its long-standing policy of cost sharing only on \$60,000/annum for project management related services

⁴⁴ Prepared by Michael Sheeres & Associates Inc.; draft plan submitted to TBRHSC on October 16, 2001

action plan to address the identified weaknesses. Albeit two years into the project-delivery process when the report was submitted to MOHLTC for review, TBRHSC should, to a certain extent, be commended for recognizing the need for such a review to take place.

Three overarching themes emerged from the review and subsequent report:

- The existing management resources were spread too thinly to pro-actively manage all project elements;
- Project elements such as equipment were falling behind and, if left unchecked, would negatively impact on both project cost and schedule;
- Effective solutions to the problem areas noted would involve additional resources at staff, contract and consultant levels.

TBRHSC followed the guidance set in the PRMP for creating an internal project management framework by committees, and created an internal project management office with senior hospital employees.

Managing by committee is difficult at best of times. In a fast-track construction management process, it is paramount for the owner representative to be able to make timely decisions and transfer information to the design team as quickly as possible. Although management-by-committee is a convenient method in gathering various disciplines within the Hospital together, it does not lend itself to timely decisions.

While the recommendation to increase project management staff as laid-out in the PMRP did ultimately result in the hiring by TBRHSC of three additional coordinators⁴⁵ in December 2001, it was also partially implemented by placing senior hospital staff into project management roles; hospital staff assumed quasi-PM roles, although their existing responsibilities were their main priority.

Comments from owner representatives and the architect suggest that TBRHSC did not make a significant commitment to have dedicated project staff that would link the day-to-day requirement of the project with operational needs of the future hospital. One of the problems that can be attributed to the absence of consistent involvement of a project manager from programming, design through to construction and occupancy is miscommunication from one stage of the project to another. There was a significant amount of rework, as confirmed by the construction manager

⁴⁵ The areas of coverage for the Coordinators were Mechanical/Electrical, Architectural/Design and Critical Equipment.

and identified in changes orders as owner requests, that suggest that there really wasn't a framework to ensure that operational concerns were tested at critical design and implementation milestones. The end results were changes that, in turn, resulted in additional, unbudgeted costs.

Weaknesses highlighted:

- No central Project Management Office with central decision making authority - Management by Committee;
- No dedicated staff to execute project deliverables - as highlighted in interviews;
- Information missed or never made to construction drawings.

When performing a project under a construction management model, it is critical for the owner to keep pace with the project schedule by enabling timely decisions. Setting up a central project management office that monitors projects from functional programming to occupancy is critical in minimizing the risk of miscommunication resulting in change orders, added costs and re-work.

Moreover, having an empowered central project management office, consisting of skills confluent with the development process, enables an owner to foster a discipline of option review, cost checks, and delivering to the needs of programs in the ability to serve patients, staff and the broader community in a prudent manner.

Project Management Plans

In performing our review, several requests were made of both the TBRHSC and Construction Managers for evidence of documented detailed plans related to fundamental project management concepts such as scope, scheduling, cost, contract management and general risk management. With the exception of the PRMP (which, as noted above, was created 2 years into the project), the reviewers were not provided with any evidence to suggest there was a serious attempt to systematically and realistically identify risk areas inherent in the delivery of a major capital project on a fast-track basis.

Functional Programs and Master Plans identify the nature and detail of what is to be built and how the new space is to be utilized. Business Cases attempt to establish the financial viability of the proposed project. Project Management Plans articulate the "how", that is, *the execution* - and all that it entails - required to deliver the proposed project on time and on budget. While it could be argued that inordinate emphasis on documenting approaches and establishing written policies/procedures is not necessary or even helpful in so-called "real world" situations, the reviewers' own experience, and for that matter, generally accepted project management practice suggests otherwise. If nothing else, the creation of project management plans force structured,

collaborative thinking and the early identification of roles and responsibilities and generally assist in establishing and maintaining an integrated project management approach.

Key risk areas that undoubtedly would have been more comprehensively thought out in the early stages of the project had a more systematic approach been taken developing project management plans are 1) the inadequacy of the Project Management Office (as discussed extensively above), and 2) the lack of an integrated project schedule. With respect to scheduling, responsibility for developing the construction schedule and updating it as required was that of the construction manager. However, it was not until early 2002 that serious attempts⁴⁶ were made to develop a global, integrated schedule that tied-in construction activity and progress with other key elements of the overall project, most notably the sub-schedules related to move/occupancy planning and equipment procurement/installation. The lack of proactive planning with respect to Equipment undoubtedly contributed to the \$ 5.3 million in Change Orders or so linked to FF&E⁴⁷. It is not clear why a global schedule was not developed until early 2002, or, for that matter, why the very need to do so was seemingly not seriously contemplated and fully articulated until the release TBRHSC's Project Management Resource Plan in late 2001. Again, the development of a comprehensive project execution plan and risk analysis matrix at the beginning of the project would have identified the need not only for the on-going maintenance of a construction schedule, but also of a broader, "global" schedule with clearly defined decision milestones against which *overall* project progress could be tracked.

7.3.2 Construction Management Approach/Agreement

TBRHSC Experience

The Hospital decided to use a Construction Management (CM) approach on a "fast-track" basis in delivering its New Hospital project primarily to reduce the amount of time it would otherwise have taken using the traditional Stipulated-Sum methodology. By recognizing the CM approach had inherently different risks, the Hospital selected both Construction Managers and Prime Consultants who ostensibly had expertise and experience in delivering large-scale, complex projects on a CM basis.

As noted elsewhere in the report, the discussions and negotiations regarding the finalization of the CM contract extended for almost 2.5 years, from submission of the first draft of the CM

⁴⁶ Based on advice from its construction manager and existing consultants, TBRHSC retained the services of Project Control Group Inc, an entity with expertise in, among other things, critical path method analysis and project timeline tracking and control.

⁴⁷ An example of such a change would be the drywall and painting re-work that was required in certain areas due to the late finalization of radiation equipment layouts and installation details.

contract to the MOHLTC in June 1999 through to final review by the MOHLTC in late 2001. Also, as noted elsewhere in the report, the CM contract was ultimately never formally executed between the construction manager and TBRHSC.

Both the protracted contract negotiations and omission of final execution are, in the reviewers' opinion, symptomatic of process weaknesses in the management of capital projects at a MOHLTC/macro level.

The final draft of the CM Contract between TBRSHC and EllisDon assumed a CM as Agent model. A review of correspondence between MOHLTC and TBRHSC reveals the CM as Agent model was not the approach preferred by ministry staff. Rather, the ministry's preference was for EllisDon to act as the "constructor" and therefore assume both legal liability and the health and safety risk associated with the numerous trade contracts. The ministry also insisted that a Guaranteed Maximum Price (GMP) clause be inserted into the agreement to enable TBRHSC, at its option, to request the construction manager enter into a stipulated price contract for the project (additional discussion provided below). Finally, there was considerable discussion between MOHLTC and TBRHSC regarding the quantum of construction management fees, salaries of the construction manager's staff and the extent of project work to be performed by the construction manager's "own forces".

With the above-noted variables in mind, the following observations can be made with respect to the final version of the CM contract:

- The construction manager was designated as "constructor" for the purposes of the Ontario Health and Safety Act; however all trade contracts were held by TBRHSC.
- A GMP option was inserted into the CM contract. However, exercising it was never seriously contemplated, primarily because the clause was deemed impracticable both by the Construction Manager and the Hospital; reasons cited were the ever-evolving project design/scope, a lack of time and resources required to be able to successfully negotiate a GMP, and the potential union-related complications that would arise in assigning trade contracts to EllisDon; put another way, the GMP clause was one largely without substance and was viewed as such by both TBRHSC and EllisDon.
- Based on the August 31, 2004 project cost report as provided to the reviewers by the TBRHSC, final construction management fees paid to EllisDon amount to \$ 2.416 million (1.10% of the \$ 218.1 million anticipated cost to complete), as compared to the \$ 1.981 million in fixed fees as stipulated in the draft CM contract (1.03 % of the based building construction budget of \$ 191.7 million); the increase in fees was negotiated between TBRHSC and EllisDon on the basis of the increase in the size of the Project.

- Project Staff costs of the construction manager as reported in the August 31, 2004 project cost report amounted to \$ 5.52 million, as compared to the \$ 4.47 million assumed in the base building construction budget of \$ 191.7 million; while the CM services RFP required the proponents to base their bids on fixed price (both pure fee and staffing costs) project staff costs ultimately were not fixed in the final draft of the CM contract.

Although the MOHLTC ultimately approved the final version of CM Contract, it's clear the suggestions cited by ministry staff, suggestions the reviewers consider to have been reasonable and appropriate when taken together, were not implemented. It should be pointed out, however, that the agency approach generally precludes the modification of the CM agreement into a GMP. The reviewers therefore question the rationale for the inclusion of a GMP clause in the draft CM contract *after* it was determined the Hospital would be party to the trade contracts and not EllisDon.

Lastly, and perhaps most significantly, the fact the CM Contract was never formally executed, let alone not being so before major construction activities commenced, can only be described as a "sloppy" and highly risky procurement practice. Moreover, it illustrates a broader theme observed elsewhere in the project process, that being, completion of project work, irrespective of the resultant added costs or incremental risk, seemed to supersede prudent project management. It also should be noted that the April 9, 2002 approval letter from the Minister makes reference to the ministry having reviewed "the Hospital's final sealed Construction Management Services Contract submitted on June 21, 2001..."; it is not clear to the reviewers how this review could in fact have been performed given the contract was never signed.

7.3.3 Sequential Tendering Approach

When deciding how to best achieve value for money on behalf of the citizens of Thunder Bay, the project team (owner's representative, architect and project manager/construction manager as agent) requested the MOHLTC's approval to proceed with a sequential tendering method to procure the new TBRHSC facility. MOHLTC approved the sequential tendering method assuming that the project would be delivered to the approved schedule and budget at the time. The end result was a project considerably over original budget and schedule.

Sequential tendering can add great value to projects if tendering occurs with completed packages or divisions. At TBRHSC, sequential tendering of construction divisions occurred with incomplete information as demonstrated by the number of change orders (2846 change orders) consistent through all contracts. For example, the pile contract closed 20% above tendered close, mechanical and electrical closed 25% above tendered amount, thermal over 50% tendered

amount, and so on. Sequential tendering should not be used to escape accountability for the amount of changes that were issued after tendering; clearly original budgets and schedules were not achieved, nor a guiding principle in the execution of the project.

The actual amount of information issued after tendering demonstrates a flawed process for managing the owner's financial risk. The rate of information change, or commitment to limit financial impact to the owner, did not change from start to finish. This leads to the question of why did the executive (or project team) not stop this risky process.

7.3.4 Change Management

The only certainty in a construction process is uncertainty. That is, notwithstanding all efforts taken to mitigate and manage threats to project success, changes, issues and claims will arise. Untimely changes are often disruptive, involving inefficiencies, rework and delay and can cost much more than would the case if the intent of the changes had been covered by the original requirements. In the context of a fast-tracked project, a change in one discipline may easily affect construction already commenced in another; the Owner has less opportunity for direct influence during design without causing construction contract changes. As discussed in Sections 5.1 and 5.2, this outcome was seen with alarming frequency on the Project.

Excessive changes on a construction project relate to the effort, or lack of, placed towards managing information required for the completion of the project. This section looks at change management, or how changes evolved, from various perspectives.

Drawings

Incomplete contract documents were issued at the time of tender. The amount of changes that resulted after tendering (over 2,800 change orders with a value exceeding \$ 47.51 million, or 24.7% of the approved Base Building budget) clearly demonstrates that drawings went out before they should have or before all the information had been coordinated.

During the interview process with key consultants, the point was made that the amount of changes was simply a result of the process of sequential tendering. Sequential tendering is definitely more difficult from a coordination standpoint. Presumably, the missing information is known to be missing at the time of tender should documents go out without it and can be identified and accounted for in cash allowances, or left out and tendered separately when the information becomes available. Although recommended by sub-consultants as pointed out in the

review compiled by H.H. Angus (**Appendix M**), sub-consultants to Salter Farrow Pilon, this did not occur when tenders were closed.

A prudent project team can make estimates and assumptions that give a more accurate picture of what the costs will actually be, and in turn limit the changes to the smaller details associated with the missing information. Well prepared contract documents result in change orders being reserved for "new information".

During interviews with hospital administration, board members, consultants and contractors, and the TBRHSC project coordinator, it became evident that the project process rarely considered options when determining a course of action. The decision to use a construction management approach did not consider the various forms a CM process can take. TBRHSC's approach is clearly one model, however, if they were advised or given the option to use the CM process that used a sequential tendering method with drawings and specifications closer to 100%, much of the project risk would have been managed more efficiently. The number of change notices issued would have been considerably less.

Bottom line, contract documents that are as complete as possible in detail and scope, that identify and deal with known unknowns, and are properly coordinated are absolutely essential in managing project risk, regardless of the procurement method selected, especially in a "Fast-Track" CM process. Benchmarking against industry standards regarding the execution of change orders, the reviewers suggest that there wasn't a defined and accountable process in place in the TBRHSC project.

Equipment Schedule

Producing an equipment schedule suitable for design was identified early on in the project as a critical event in the project's schedule. This fact suggests there was enough time to get the equipment schedule organized for construction purposes.

Although the equipment schedule was produced early on, changes related to equipment occurred. There are vendor specific known and unknowns, but there are also generalities related to equipment that can be accounted for or assumed ahead of time in order to reduce the number and scope of changes. Certain things can be planned for and then fine-tuned to suit individual vendors as selected. Interviews with ED suggest that the architect did not include equipment information until later stages. Changes of this nature could have been avoided, if not significantly reduced.

Process

It appears the processes for changes as outlined in the contract documents were not observed. For example, there are instances of changes issued to trades directly by EllisDon (ED) (this was explained by ED as necessary since the architect was 'gone' after substantial completion). The ED representative in Thunder Bay has said these were issued to wrap up contractual changes that had been completed without the necessary documentation (either the architect fell behind in issuing it or trades were told to go ahead by either ED or the owner and documentation would follow). Whatever the explanation, ED (or the owner) should not have initiated changes directly, and trades most certainly should not have been paid for any changes that were not at the very least reviewed and approved by the architect.

Many of the ED changes had formal prime consultant covers put on them later with the disclaimer that they had not even reviewed the work. It is not always possible or realistic to follow the change process in every instance on a job, but for the most part, particularly when costs are out of control and there is a breakdown in the relationships of the key stakeholders, one would certainly expect changes to be very carefully monitored, assessed and controlled.

In addition, there are examples of changes issued that question the value of the architect and construction manager during the construction process. In particular, there is one change order, PC540, described during interviews with project team members as simply reissued drawings so trades had a more complete set to work from; however, that was not the intent as drawings in the change order carried price of over \$3 million, which clearly indicates scope was added.

Project Management Team's Contribution to Changes

The issue of not having an adequate "Owner's Team" in place is a message that was outlined again and again during interviews. While it is certainly true that TBRHSC did not have a sufficient team together to manage the Project, the fact remains that the Hospital signed standard CCDC2 contracts with each individual trade (as recommended by the Architect and Construction Manager). In a CCDC2 context, it is both the contractual obligation as well as the professional responsibility of the prime consultant to initiate, monitor, assess costs and approve all changes on the project. Thus, irrespective of the relative adequacy or inadequacy of TBRHSC's Owner's Team, one of the contractual responsibilities of the Architect was to ensure the change process was tightly managed and controlled.

With respect to the pricing of changes, it is important to note that the Architect was directed by TBRHSC and the Construction Manager not to review changes for reasonableness of cost. That

is, the Architect commented on scope only; responsibility for pricing was the sole domain of EllisDon.

7.3.5 Best Practices

- Develop detailed Project Management/Execution Plan that addresses key areas of scope, schedule, and cost, quality, human resources, procurement and risk management.
- Make the investment in assembling an adequately staffed Project Management Office consistent with the size of the redevelopment project being contemplated
- If a Construction Management Procurement Model is approved, ensure that the Construction Manager is the “constructor”, the project scope is clearly defined within the contract terms and that all parties agree to the inclusion of an *enforceable* “Guaranteed Maximum Price” provision.

7.4 Assessment of Role of Senior Management and Board of Governors

7.4.1 Governance Overview

In general, the past few years have seen increased focus on governance in both private and public sectors. Governance is not only necessary for the ongoing operations of an organization but is also critically important when the organization undertakes major projects, such as infrastructure redevelopment projects.

A hospital’s governance through its Board of Trustees, is responsible for⁴⁸:

- Establishing objectives (mission, vision, values);
- Goal setting and Monitoring
- Advising the management;
- Identifying communities to be served;
- Establishing role within community;
- Establishing programs and services to be offered;
- Communicating and Advocating the hospitals strategies
- Ensuring regulatory and ethical compliance;
- Ensuring fiscal responsibility.

For specific projects a hospital’s governance and governance structures must:

- Define the purpose and the objectives of the project;

⁴⁸ The reader is directed towards [Hospital Governance and Accountability in Ontario](#), OHA, Quigley and Scott, April 2004, [From Accountability to Control: The Implications of Recent Initiatives on Independent Hospital Governance in Ontario](#), OHA, Boisclair, April 2004, and the UHN Board of Trustees Terms of Reference.

- Monitor the projects;
- Ensure fiscal integrity.

Hospital Boards are responsible to:

- Patients;
- Communities;
- Staff;
- The Province.

The Board must also:

- Monitor the quality of services, whether ongoing services or project delivery;
- Ensure that management processes are in place to measure, monitor, and maintain the quality of both ongoing services and specific projects (this is of critical importance in hospital redevelopment projects given the importance of ensuring the continuation of clinical patient centered services prior to, during, and following an infrastructure project);
- Ensure quality in all aspects of hospital operations.

To meet these objectives a Board of Trustees will often establish a special project committee or 'new building' committee to oversee the management of the infrastructure project and to report to the Board as a whole.

There has been much recent literature surrounding healthcare capital projects and their governance, including the Ontario Hospital Association's "Capital Planning and Investment in Ontario's Hospitals" report (November, 2003), and the OHA's Hospital Governance and Accountability in Ontario (Quigley & Scott, April, 2004). Additionally, the Ministry of Health and Long-Term Care has received a report on Capital and Capital Procurement from Michael Decter⁴⁹.

These reports build on and are consistent with the ministry and the government's internal work on infrastructure projects, including the recently released, "Building a Better Tomorrow: An Infrastructure Planning, Financing, and Procurement Framework for Ontario's Public Sector. (Ministry of Public Infrastructure Renewal, July 2004). This work is further strengthened by the recent passing of Bill 8 which seeks to ensure accessibility to the health care system and enhance a hospital and its management and board's accountability to taxpayers.

⁴⁹ Mr. Decter was recently appointed founding chair of the Health Council of Canada. He is a former Deputy Minister of Health and Long-Term Care for Ontario, and a former chair of the Canadian Institute for Health Information.

7.4.2 Governance Framework for the TBRHSC Project

An analysis of overall project governance at TBRHSC, and the efficacy thereof, will occur in several stages. Firstly, we provide a detailed description of the framework developed by TBRHSC. We then assess to what extent the Hospital's governance bodies were successful in complying with the requirements set out in MOHLTC's "Accountability Framework". Finally, we provide a summation of discussions/interviews with several members of the New Hospital's Building and Facilities Committee, and of our review of minutes from both the Committee and Board over the duration of the project.

TBRHSC Framework

There were three distinct governance bodies that fulfilled an oversight and/or advisory role over the course of the planning and execution of the project, those being TBRHSC's 1) Board of Governors, 2) New Hospital Building and Facilities Committee, and 3) Resource Planning Committee.

The Hospital Board of Governors' role was to monitor the progress towards completion of the project within the established parameters and as implemented by the management team. The Board was to receive monthly progress reports on project status including progress towards completion, significant project issues and budget status. Additionally, the Board directly authorized all contracts in excess of \$1 million and received tender analysis outlining the approved budget, actual tender results received and the recommended award.

The Board created a New Hospital Building and Facilities Committee (the Committee), the minutes and reports of which were distributed to the Board for review and acceptance up to early 2002⁵⁰, then for information purposes only through to the end of the project.

The following positions sat on the Committee:

- Chair of the Board of Governors;
- 3 to 4 other members of the Board of Governors including the President and CEO;
- Senior Vice-President Corporate Services and Operations
- Project Coordinator
- 5 Community members with applicable skills/experience (retired Chartered Accountant, two retired architects, a retired mechanical/electrical contractor and a retired developer)

⁵⁰ In reviewing Board Minutes, it was noted that the practice of formal acceptance by the Board of Committee Minutes ceased in early 2002; TBRHSC Management explained that the practice ceased because at the time the Governance Committee of the Board had observed, and correctly so, that Committee minutes could only be approved by the Committee that created them.

The general mandate of the Committee was to monitor, review and comment on issues pertaining to project cost, scope and schedule, specifically:

- The award of prime consultant contracts;
- The sequential tendering process, tender results and prime consultants' recommended contract awards;
- The recommendation to the Resources Planning Committee of the Board regarding the award of contracts in excess of \$ 1 million;
- Periodic reports received from the project coordinator, senior administration, the prime consultant and construction manager regarding the Project's status;
- Monthly financial reports; and,
- Recommended scope changes.

The Committee met approximately sixty times over a 4-year period, extending from January 1999 to January 2004. Notwithstanding the regularity with which the Committee and the time commitment made by all, it is clear that cost and schedules were not kept in check over the duration of the project.

Requirements of the MOHLTC Accountability Framework

As a condition of its acceptance of TBRHSC's request to adopt a Construction Management delivery model, the MOHLTC stipulated the Hospital agree to the conditions outlined within the following documents:

- Terms and Conditions governing the ministry's funding for the project;
- Letter of Assurance and a certified copy of the Board Resolution stating agreement with the Term and Conditions.

The intent of the above was for the Hospital to provide assurances to the ministry that the Hospital was willing and able to assume on its own all financial risks arising from the Hospital's proposed alternative construction management approach. As noted in the Detailed Chronology, it is the reviewer's understanding that the required documentation was provided to the ministry by the TBRHSC Board of Governors in April 2000.

The Terms and Conditions of Funding (**Appendix N**) document covered off on a variety of areas, from tendering practices, to insurance coverage requirements, to reporting guidelines, and others. Following is a summation of the terms and conditions relevant to the reviewer's mandate along

with commentary regarding the Hospital's adherence thereto, based on a review of documentation provided to the reviewers:

- **T&C No. 10 - Purchasing Goods and Services Through Competitive Process**
 - Trade packages were consistently tendered
 - There are instances of professional services contracts not being tendered; examples are the sole-sourcing of the Prime Consultant contract to Salter Farrow Pilon, and cost monitoring services contract to Helyar & Associates

- **T&C No. 15 - Construction Progress Reports**
 - TBRHSC Project Coordinator did consistently provide MOHLTC with project status and cost reports.

- **T&C No. 16 - Cost Monitor**
 - As noted in Section 7.2.1, the Hospital did retain Helyar & Associates to fulfill a "shadow" project management and cost monitoring mandate, effective June 2001.

- **T&C No. 18 - Fairness is a Two Way Street Act**
 - As noted in footnote 10 in the Section 4.2, TBRHSC ultimately did not comply with ministry⁵¹ stipulation that local content could not be used as an evaluative criterion in its tendering process

Discussion with Board and Building Committee Members, Review of Minutes

The ultimate indicator of the effectiveness of an organizational governance body is whether the organization was successful in achieving or exceeding its stated objectives by employing reasonable and responsible business practices. For if the organization was successful, then it is likely the governance framework successfully discharged its stewardship mandate, that is, its responsibility for the use of resources, particularly money, time and human resources towards stated objectives.

Effective Board stewardship involves 7 key tasks:

- Steering toward the mission and guiding strategic planning;
- Developing appropriate structures;
- Ensuring the board understands its role;
- Ensuring that an effective management team is in place;

⁵¹ Correspondence from Capital Branch, June 14, 2000

- Communicating to members, stakeholders and the public;
- Implementing assessment and control systems;
- Planning for the succession and diversity of the board.

Using the above as a basic guide, and by taking into account the facts and figures discussed throughout this report, the following global observation can be made in the context of the TBRHSC project: the governance framework in place at TBRHSC ultimately was not successful in ensuring that a new hospital facility capable of meeting the region's healthcare needs, as defined by the HSRC, was built on time and within the ministry-approved budget. It is clear this did not happen.

To obtain a better understanding of the role played by the Board and its Building Committee over the course of the project, the review time relied extensively on a review of the minutes kept by both bodies and conducted interviews with 4 members who sat on the Committee (two of whom were both former Chairs of the Board of Governors during the project).

With respect to the review of the minutes provided by TBRHSC management, the reviewers have assumed the minutes fairly capture the substance of discussions that occurred regarding project-related matters.

The following are key observations arising from the review of Minutes and discussions with Committee members:

- **Level of Awareness Regarding Change Orders**
 - Although reported by trade in the monthly cost reports provided to both the Committee and Board members, there was a general lack of awareness and discussion regarding the volume and dollar value of changes, and the resultant impact on the overall project budget.
 - One Committee member revealed he was under the impression that around 250 change orders had been issued, not the 2,846 that were actually processed.
 - Another Committee member was seemingly surprised to learn the total project cost had increased above the previously approved \$ 254 million.
 - All Committee members agreed there was little discussion regarding the specifics of change orders; a review of minutes supports this.

- It was observed that only tender package contract awards were required to be discussed and reviewed by the Committee, the President and CEO, and Project Coordinator were delegated the authority to approve changes
- **High Degree of Reliance Placed on Building Committee Decisions and Deliberations**
 - One interviewee stated that with the exception of the discussions surrounding the Local Content Clause and the negotiated fee settlement with Salter Farrow Pilon, there were almost no notable instances of the Board challenging or critically assessing recommendations or the content of Minutes from the Committee
 - The review of Board minutes substantiates this assessment
- **Lack Of Alternatives Presented**
 - When asked whether any significant options were presented to the Board to deal with the \$ 100 million project budget increase and the significant cost overrun that was formally raised with the ministry in November 2001, the response from interviewees was there had not been.
 - A review of the minutes corroborates this

7.5 Communications with and Support from the Ministry of Health and Long -Term Care

To develop a balanced picture of the TBRHSC experience, it is critical to examine some of the aspects between the Hospital and its ministry contacts, those being:

- Poor communication resulting in a lack of timely and definitive resolution with respect to certain key issues, such as funding envelope parameters (e.g. applicability and interpretation of the 70/30 funding split for HSRC directed projects) and base contracts (e.g. CM Contract) contributed to early misperceptions with respect to project scope and available funding, and resulted in a strain in relations between TBRHSC and the MOHLTC
- Lack of approvals process tailored to timing dictated by Construction Management approach and inconsistent adherence to the MOHLTC's Capital Planning Manual for approval of tender packages.

Resolution of Key Parameters Prior to Commencement of Project

In a letter sent to the Hospital in January 1999⁵², the ministry reaffirmed its support for the TBRHSC project and its \$ 71.8 million grant toward the estimate project cost of \$ 126 million. The letter also indicated that “the functional program and eventual tendering of the project will determine the capital costs of the project” and that “Cost sharing arrangements will be reviewed

⁵² January 27, 1999

once these stages have been completed”. It was noted by TBRHSC in follow-up correspondence in March 1999 that the funding arrangement did not represent the traditional 70/30 funding split for HSRC-directed projects and that the Hospital’s expectation was that the funding arrangements (i.e. the application of the 70/30 split) warranted reexamination upon submission of the Functional Program.

In November 1999, TBRHSC submitted its Functional Program Supplement with a value of \$ 162.6 million. In February 2000 the ministry increased its grant to \$ 98.5 million, and again TBRHSC questioned the calculation of the grant amount and how it reconciled to the expected 70/30 funding split, a year after the Hospital had first raised the issue on March 1999. A review of the correspondence in the intervening 12 months revealed explanations and clarifications were offered by the ministry as to the application of the 70/30 ratio in the context of the TBRHSC Project. Based on their interpretation of the exchanges of information on the matter, TBRHSC was under the impression that there would be a blanket application of the 70/30 split applied to the Functional Program value when finally determined. Ministry representatives maintained that at no point in time was there ever a firm commitment to do so as the detailed calculation underlying the 70/30 framework did not allow for a blanket application i.e. within an HSRC-directed project there may be components that are cost-shared on a 50/50 basis, and others determined to be own-funds components.

A detailed interpretation of the content of the explanations exceeds the intent of this section. The underlying theme to note is simply that in March of 2000, with the Project six months into construction, there was a lack of understanding between the parties as to the basic parameters of the Project; in this case, the funding formula. That the Project proceeded on a “fast-track” basis should not have precluded TBRHSC and MOHLTC from reaching a very firm understanding when the matter was first raised by the Hospital in March 1999. This lack of agreement in turn may have contributed to the mindset that additional funding ultimately would be forthcoming from the MOHLTC. Ideally, the application of the 70/30 funding split to the TBRHSC Project should have been unequivocally resolved before construction commenced.

Although discussed in some detail in Section 7.3.2, the length of time it took finalize the CM Contract is also worth noting in this section. As indicated, it took approximately 2.5 years to go from submission of the first draft (June 1999) to final review by MOHLTC (late 2001). When the first draft of the contract was submitted, it was expected that it would be finalized within a month’s time. As time progressed and as the Project grew in size, terms that formed part of the early drafts of the contract such as a fixed cost for ED project staff were discarded. Also, early suggestions made by the MOHLTC such as the inclusion of an effective GMP clause and for ED

to assume the role as “constructor” both for purposes of the Ontario Health and Safety Act as well as in terms of holding the contracts with the various sub-trades were never fully implemented.

The project commenced and continued to grow without proper up-front planning and without the finalization and execution of the CM Contract. If proper planning had been undertaken at the commencement of construction, a CM Contract more reflective of the true scope of the Project would have been executed.

Adherence to Capital Planning Manual

It was recognized early on by the MOHLTC⁵³ that there was a need to revise the Capital Planning Manual to incorporate the process surrounding the planning and implementation of projects delivered on CM basis. Ultimately, the update of the Capital Planning Manual never occurred; however and the Accountability Framework developed instead to mitigate the risks presented by the CM approach (refer to section 7.2.4).

As an interim process measure pending the finalization of the CM Contract, the MOHLTC stipulated that TBRHSC would have to follow existing Capital Planning Manual policies, particularly with respect tendering and awarding of contracts. Once the tendering process commenced, the MOHLTC reiterated the need for all tender packages to be reviewed and approved by the Capital Branch prior to releasing them. Our review indicates that from the outset this policy was not consistently followed by TBRHSC (site preparation and pilings contracts tendered without approval) and that as the project progressed, there was little evidence of formal review of subsequent tender packages by the Capital Branch and as such it appears the process largely ceased subsequent to the fifth tender package (structural steel).

Internal Communication at MOHLTC

Our review and discussion with all stakeholders has also revealed a lack of clarity and clear communication of roles and responsibilities within the ministry vis-a-vis its dealings with the Hospital. As with all infrastructure projects hospitals are requested to deal with various departments and personnel within the ministry, most notably the Regional Office, the Health Reform Implementation (responsible for HSRC directed projects) and the Capital Planning and Services Branch. Over the lifecycle of a project of this magnitude it is critical that there remain consistent roles and policies in place so as to mitigate against errors in communication and decision making. It is clear that turnover of personnel at both the Hospital and the ministry throughout the course of the project also contributed to and compounded delays in

⁵³ Briefing notes from July 98 suggested the capital planning process be revised to set out parameters for the Construction Management method.

communication and decision making. This may be somewhat difficult to avoid, particularly from the perspective of the ministry. However, it is clear that, at times, various departments of the ministry were not fully aware of issues relating to or decisions being considered by other departments within the ministry which only serves to complicate and confuse.

While beyond the specific scope of this report, there may be an opportunity for the ministry itself to examine its own decision making processes and organizational structures, particularly when considering how to deal with projects under the supervision of several different departments and decision makers.

7.6 Design Process Outcomes

Positive attributes from the design process are many. The architect engaged the owner's operational team from many levels including the CEO's input, operational leaders and support services input. Our interviews confirmed that there was community involvement with the project's design and captured the imagination of the community. Considering the condition of the McKellar and Port Arthur sites, the new TBRHSC is truly a product of visionary thinking and has given Thunder Bay one of its most important and aesthetically pleasing buildings.

With any process, there are always opportunities to improve; however, our review has not yielded any evidence to suggest there was any linkage between the costly design and improved patient outcomes. Simply stated, there wasn't an underlying business case that attempted to quantify the incremental benefits of the \$ 281 million final project cost. It is difficult to arrive at a conclusion as to whether value for money was achieved from a capital perspective.

Capital assets should follow operational form; that is, enable benefit to the community it serves through operations. Facts show that budget and schedule continuously changed throughout the Thunder Bay project. There is no evidence to demonstrate advance thinking through option review, no evidence of examining prices for changes and understanding whether changes were truly valuable for the price paid, and having capacity problems shortly after opening raises the question as to the ability of management to understand operational requirements; an item not associated with an architect's ability to perform, but a shortfall in the design process and its leadership.

A central project management office accountable to the board and ministry could have ensured that business fundamentals were achieved, and have avoided intentional or inadvertent mismanagement. Further, a central project management office would have enabled the design process to apply operational priorities during user group meetings. An opportunity to improve the

design process rests with the physical task of meeting with end-user groups. Our interviews clearly indicate that there wasn't a lead person from the initial design stages to final move in, neither from the design nor owner's team. The project was predominantly managed by committee and had a great deal of hospital review; however, there wasn't a lead from the various user-groups that advocated on the end-users' needs. There wasn't one individual that fulfilled the task of supervising the design process, monitoring construction, and ultimately the move-in to the completed departments. Interviews uncovered that change notices were generated to make up for functionally necessary items that were not translated through the design and construction process.

For example, patient rooms design went through various user-group input stages. A mock up was created, and items were pointed out by end-users regarding the functionality of the mock-up. Items had been missed that were critical to the operations of the inpatient rooms. Upon occupancy, the end-users realized that the requested items were not included and a change order was issued to correct the omission, adding costs to the project. Arguably, a lead person for the inpatient units, adept at monitoring and interpreting construction drawings, would have caught the omission at the time of tender, eliminating the need for the change order and user frustration.

Conclusion

It was not the intent of the ministry, the Special Advisor, or PRISM to undertake this review solely to determine 'what went wrong' with the TBRHSC project or to lay blame with any particular individuals or organizations. It is clear that responsibility for the project failing to come in 'on time and on budget' rests with all parties, both at the ministry and the Hospital. It is also clear that it is unfair to lay blame on the procurement model chosen of Construction Management as has often been cited as the single cause of the project's failure to meet budget or schedule.

More importantly, PRISM has sought to bring the TBRHSC issues to light and to provide solutions to better assist both the MOHLTC and Ontario's hospital community as they consider, plan and implement capital infrastructure projects going forward. Ontario's hospital system will continue to be a major component of Ontario healthcare system, and while the size and scope of hospital infrastructure projects will vary significantly based on community and regional needs there are a number of underlying lessons which both the MOHLTC and the Hospital community can take from the TBRSHC example in order to ensure that Ontario's health infrastructure projects remain effective, efficient, while providing maximum value for taxpayer dollars.

Summary

PRISM's work and review of the TBRHSC capital project has resulted in the following findings and recommendations:

Findings	Recommendations
<p><i>Planning/Design</i></p> <ul style="list-style-type: none"> ▪ No evidence that options for Project Master Plan and Building Design / Envelope had been presented for review ▪ State of the overall building design not sufficiently advanced upon commencement of tendering; tender packages were released with incomplete drawings and insufficient allowances to account for outstanding design. ▪ Scope creep an issue throughout Project, with Project Scope never 'tied down'. 	<ul style="list-style-type: none"> ▪ Require facilities to develop multiple Master Plan options and to submit analysis of options to MOHLTC as part of the Master Plan submission. ▪ Hospitals must develop and submit for approval the most effective building design (against prescribed standards) from the outset of a Project.
<p><i>Project Management / Monitoring</i></p> <ul style="list-style-type: none"> ▪ Insufficient resources allocated towards the development of an adequate Owner's team. ▪ Failure to tender the Prime Consultant contract; no consideration given to alternate Master Plan options. ▪ The adoption of the Construction Management "fast-track" concept and the desire to commence the project as quickly as possible, due partly to pressure from the community and Board of Governors, resulted in poor front-end planning. ▪ Failure to execute the Construction Management contract, and 2.5 years taken to negotiate final Terms and Conditions. 	<ul style="list-style-type: none"> ▪ Funding formulas should be structured to encourage facilities to hire adequate independent project management teams (contingent upon receipt of project management plan). ▪ Withholding project approval pending the finalization and execution of key contracts such as those relating to the Prime Consultant and Construction Manager. ▪ If a Construction Management model is chosen the Construction Manager must assume responsibility for the performance of trade contractors. The Project Scope must be clearly defined in a signed contract and there must be an enforceable guaranteed maximum price. ▪ All projects above an established capital budget threshold must retain the services of independent Cost Control consultants and Scheduling consultants, with direct accountability to the facilities' Boards.

<ul style="list-style-type: none"> ▪ Failure to develop an overall project execution/management plan (scope, cost, schedule, risk) and underlying detailed policies, procedures and global schedule. ▪ Construction Management as Agent model adopted by Hospital resulted in Hospital assuming excessive contract and cost increase risk. ▪ Tender packages released without MOHLTC approval. ▪ Project cost reporting was often not timely or accurate. ▪ Meaningful schedule and progress monitoring impaired by lack of defined project scope for first two years of Project. 	<ul style="list-style-type: none"> ▪ Incorporating into the project approvals process the need for facilities to submit comprehensive project and risk management plans for project over an established threshold. ▪ If a Construction Management Procurement Model is approved, ensure that the Construction Manager is the “constructor”, the project scope is clearly defined within the contract terms and that all parties agree to the inclusion of an <i>enforceable</i> “Guaranteed Maximum Price” provision.
<p><i>Funding</i></p> <ul style="list-style-type: none"> ▪ The MOHLTC limit of shareable funding up to \$ 65,000 / annum for each of three project management position severely constrained the Hospital’s ability to properly manage a project. ▪ Based on a total project cost of \$ 284 million the preliminary determination of the hospital’s local share is \$ 87 million. Final approval and negotiations with the hospital have not yet taken place. ▪ Ministry review and approval process of tender packages prior to their release was not consistent throughout the Project. As the Project progressed there is little evidence of formal review and approval by the ministry. 	<ul style="list-style-type: none"> ▪ The ministry should revisit its shareable funding limit for Project Management services to assist the hospital sector in obtaining adequate professional project management. ▪ Clarity is required with regards to the 80% funding level announced by the ministry as to whether this is 80% total costs or of traditional shareable costs. (Further review is anticipated upon ministry receipt of this report) ▪ All policies as outlined by the ministry must be followed consistently and must be enforced throughout the life of a Project.

<p><i>Governance</i></p> <ul style="list-style-type: none"> ▪ Excessive delegation of authority by Board of Governors to TBRHSC Management. ▪ Failure to ensure adequate control systems were in place to manage risks associated with project e.g. no stipulation by Board that any and all Change Orders in excess of approved budget must be brought to Board for approval. ▪ The New Hospital Building and Facilities Committee was ill-informed as to the reality of the Project and, therefore, was unable to perform an appropriate governance role. ▪ Limited ministry resources coupled with untimely and inaccurate information provided contributed to a capital project “out of control”, thus placing the ministry in a “reactionary” position. 	<ul style="list-style-type: none"> ▪ Consistent with evolving governance practices in the private sector, require sign-off by facilities’ governance bodies and Chief Financial Officers of Statement of Project Costs on a quarterly basis. ▪ Accountability / Funding Agreements must be established between the hospitals and the ministry prior to the commencement of any major capital project. ▪ The ministry’s policies for its decision making and approvals processes provide a solid foundation; however, there are clearly resource issues which limit the ministry’s effectiveness in overseeing and governing major capital infrastructure projects. The ministry must proactively address these issues within an environment of limited resources and fiscal constraint, whether through additional or more properly allocated internal resources or with the assistance and support of external resources.
--	---