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Chief Review Services / Chef - Service d'examen

CRS / CS Ex

CONSTRUCTION ACQUISITION EVALUATION ASSESSMENT

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LIST OF ACRONYMS

ADM	Assistant Deputy Minister
ADM(IE)	Assistant Deputy Minister (Infrastructure and Environment)
ADM(Fin CS)	Assistant Deputy Minister (Finance and Corporate Services)
CDS	Chief of the Defence Staff
CF	Canadian Forces
CRS	Chief Review Services
DCC	Defence Construction Canada
DCC ISS	Defence Construction Canada Infrastructure Support Services
DCPEP	Director Construction Projects and Engineering Policy
DFA	Director Financial Accounting
DFPPC	Director Force Planning and Program Coordination
DG Fin Ops	Director General Financial Operations
DGSP	Director General Strategic Planning
DMS	Defence Management System
DND	Department of National Defence
DSFC	Director Strategic Finance and Costing
EM	Economic model
FMAS	Financial Managerial Accounting System
L1	Level One
LTCP(C)	Long Term Capital Plan (Construction)
MCP	Major Crown Project
MND	Minister of National Defence
POE	Post Occupancy Evaluation
PY	Person year
SCIP	Strategic Capability Investment Plan
SL	Source List
SLA	Service Level Agreement
SOA	Standing Offer Agreement
SOR	Statement of Requirement
SRB	Senior Review Board
TM	Tailored model
VCDS	Vice Chief of the Defence Staff

RESULTS IN BRIEF

The current construction acquisition process was developed to deal with the rather unique circumstances that pertain to defence construction, while at the same time being responsive to the departmental and governmental structures and requirements. This assessment was undertaken as a first step to reviewing the reasons why a large percentage of construction projects required revised approval, and why the original project funding was often inadequate.

Construction acquisition must move from what is essentially a bottom-up system of replacement of current infrastructure, to a top-down system cognizant of the new strategic realities and responsive to the emerging force structure that is being created to deal with them. Long-term construction acquisition planning should be fully coordinated with the departmental Strategic Capability Investment Plan (SCIP) and should be more closely aligned with available funding. The Construction Plan is considerably more ambitious than its allocated funding. In part this is due to over-programming. Furthermore, large construction investments should be incorporated into the departmental Capital Investment Program. With the devolution of most construction funding to the various Level Ones (L1), there is no mechanism for centralized funding of these major projects.

Overall Assessment

While not without risks, in many ways the construction acquisition process is efficient and innovative. The concept of annual approval of the construction program encompassed in the Long Term Capital Plan (Construction) (LTCP(C)) was thought to be an effective solution to the problem that resulted from individual approval of numerous and diverse projects. As well, the graduated approval approach from Assistant Deputy Minister (ADM) to Cabinet Committee is intuitively sound, efficient and cost-effective; however, a number of systemic issues persist in regard to strategic planning, authorities and responsibilities, the acquisition process itself and oversight controls.

The LTCP(C) is the major vehicle for displaying and providing visibility and approval of the construction program. Based on an annual approval framework, the process itself is a cause of project revisions, as estimates are often nine months old before they are approved. It is understood that Assistant Deputy Minister (Infrastructure and Environment) (ADM(IE)) staff are currently examining options to address this issue.

Findings

This assessment found that there is a need for revised approval as a direct result of insufficient attention being paid to the front end of the process, particularly the Statement of Requirement (SOR). SORs tend to be compromise documents between the capability required and the available funding. Estimates developed without sufficient independent supervision lead to a need to revise costing at a later date. Lack of rigor in the SOR also leads to lack of scope control prior to implementation and results in major changes later. Finally, the process suffers from problems with the estimates, either as a result of commodity price increases, time lags or lack of experience and continuity.

This lack of continuity relates in part to the devolved environment implemented over the last decade. There is also an issue of management expertise and a lack of a critical mass and capability in some of the smaller L1s. There is a further requirement for additional effort in developing a Lessons Learned Program, Project Completion Reports, and a corporate training program specifically related to the Department of National Defence (DND). Finally, while there has recently been some effort to increase corporate oversight, especially by requiring the Assistant Deputy Minister (Finance and Corporate Services) (ADM(Fin CS)) to sign off on all costing, more is required especially through the Senior Review Boards (SRB). These Boards should play a more proactive oversight role in tracking, guiding and directing projects throughout the life of the project.

Note: For a detailed list of CRS recommendations and management response, please refer to Annex A—Management Action Plan.

INTRODUCTION

Background

In July 2004, Chief Review Services (CRS) was requested by ADM(IE) to undertake a review of the delivery process of projects dealing with construction of DND infrastructure including the broader systemic issues related to this process. The review was to determine if the overall process was functioning effectively and to suggest areas for improvement. It was envisaged that CRS would first conduct a broad overview of the process, followed by an evaluation assessment to outline problems and alternatives, and define areas for more detailed analysis to be undertaken as follow-on work.

This review was proposed due to a concern that too many projects were requiring revised approval, as the original cost estimates often proved insufficient. A review of ADM(IE) construction projects submitted for expenditure authority was completed in the fall of 2004. It found that there were 269 project submissions in the past three years and, of that number, 72 (or 27 percent) were for revisions. There was also a trend that the number of revisions for each year was increasing. In 2004, 40 percent of the submissions required revisions.

The Construction Program accounts for a large slice of the Defence budget. Estimated capital expenditures in construction from 2005 to 2010 are $2B. The overall replacement value of realty assets is estimated at $18.8B. Managing this component is essential to ensuring that DND infrastructure supports the evolving force structure as articulated by the Chief of the Defence Staff (CDS) in March 2005. This vision seeks to integrate people and institutions to face the current global threat and recognizes the need for increased readiness to allow for a global response, while at the same time calls for the Canadian Forces (CF) to be more operational at home. These changes, coupled with the need to accommodate significant growth in both the Regular and Reserve Force and its impact on infrastructure, set the backdrop for the review of the Construction Acquisition Process. Any assessment of the current system as well as the proposed changes and recommendations must be responsive to these evolving circumstances.

Scope

This assessment is intentionally wide in scope because of the extent of the analysis that is required. The study will examine:

- The strategic planning phases of the construction acquisition processes, including the program approval process, the Capital Investment Plan (Realty Asset and Construction), and the LTCP(C);
- The construction phase including scope, cost estimates, authorities, risk management, oversight and control; and
- The closure process.

The analysis will be divided into two or more phases. The first, this evaluation assessment, which will provide an overview of the main areas mentioned above, will identify potential evaluation issues for follow-on work, determine evaluation approaches and methodologies that will be used, and estimate the time and resources that will be required to complete the evaluation study. Some preliminary recommendations are also offered for management consideration. The second phase will include evaluations or studies that follow from the first phase and may be included in future CRS work plans.

Methodology

This assessment was conducted in accordance with standard evaluation practices and procedures. The assessment included a comprehensive interview program with ADM(IE) staff at NDHQ, with those involved in strategic planning in the Vice Chief of the Defence Staff (VCDS) office, and those involved in program oversight in Director General Strategic Planning (DGSP) and ADM(Fin CS). The conduct of this study also included a review of relevant documents and background information on the Construction Program approval process and program management. Comprehensive approval documents, such as the Capital Investment Plan (Realty Asset and Construction) 2005, which includes a subcomponent, the LTCP(C), and the 2005 L1 Business Plans were also studied. In addition, data supplied for preliminary work in addressing these issues in ADM(IE) were also utilized. Finally, the assessment was able to draw on information and expertise gathered for the CRS study on Capital Project Oversight and Accountability.

ISSUES

This study flows from the general to the specific, starting with issues related to strategic planning and working through the construction acquisition process, approval authorities, project management and oversight and control. Finally the study identifies areas for future work.

Strategic Planning

Overview

- Acquisition planning in DND follows a logical step-by-step problem-solving approach, starting with policy and budgets and moving downward through comprehensive program planning phases to the refinement and approval of individual projects.
- The current process is in a state of transition; however, there have been a number of developments and improvements that should instil more stability and rigour into the system.
- While Canada's new Defence Policy continues to evolve, the government has already taken significant steps to improve CF capabilities through significant investments. There is also a new senior management direction and consensus on program development as outlined through the CDS Vision Statement, and the supporting Defence Capability Plan.
- For capital equipment, the Defence Capability Plan is implemented through the SCIP. It has a 15-year outlook, including a detailed capital equipment program covering the first five years.
- Long-term planning for construction is compiled in the Capital Investment Plan (Realty Asset and Construction). This plan has a 20-year horizon and includes as a subcomponent, the LTCP(C), which is a more detailed five-year program for new construction.
- These various plans and programs must be co-ordinated to ensure efficient departmental management.
- The dollar value and planning horizons of the main planning documents are shown in Table 1.

Planning Documents	Planning Horizon	FY 2005/06 Allocation	Total Plan Allocation	Forecasted Requirement
Strategic Capital Investment Plan (Equipment)	15 yrs	$1.6B	$34B	N/A
Capital Investment Plan (Realty Asset and Construction)	20 yrs	$250M	$4B	$8.6B
Long Term Capital Plan (Construction)	5 yrs	$250M	$1B	$2B
Total Capital Construction Allocation*	1 yr	$335M	N/A	$2B

*Functional assessment 2005/06 dated January 2005.

Table 1. DND Strategic Planning. *Dollar value and planning horizons of main planning documents.*

Capital Investment Plan (Realty Asset and Construction)

- This document is designed to provide construction planning for the Department over a 20-year period.
- It is not apparent that sufficient coordination exists between the construction and the equipment long-term acquisition plans.
- ADM(IE) long-term planning needs a strategic vision. The current process appears to be a bottom-up process based on a formula of 2 percent annual replacement of inventory.
- The Capital Investment Plan 2005–2025 forecasts a funding requirement of $8.6B against an estimated budgetary allocation of $4B, leaving a shortfall of $4.6B. Given the track record, where 30 percent of projects have exceeded original estimates, the $4.6B figure must be seen as a minimum.
- Follow-on work should examine the basis for determining the long-term funding requirement, the plans for addressing the shortfall other than "bow waving" the requirement, and how best to integrate the construction plan into the Department's long-term planning process. Whether the dollar value of planned projects should be reduced in accordance with available funding is another point to consider.

Long Term Capital Plan (Construction)

- This is the construction five-year program detailing the departmental plan for new construction, including planned cost changes and recapitalization expenditures over that time frame.
- It is also the vehicle for yearly approval of the construction program by the Minister of National Defence (MND) for those projects where MND has delegated authority ($5–60M).
- The LTCP(C) 2005–2010 contains 299 projects at an indicative total value of $2B.
- While having a year's program approved in one document has a number of distinct advantages, it is not without some risks and drawbacks. Estimates developed in the spring of one year are compiled, aggregated and sent for Ministerial approval the following February/March. Estimates during this 9- to 10-month time frame can be overtaken by unforeseen events. The following questions should be addressed:
  - Do the LTCP(C) timing requirements lead to project overruns?
  - Should other alternatives be developed such as updating the "Plan" twice a year?
  - Is the approval process out of step with project delivery?
  - Is the emphasis on the process to the detriment of the quality of the estimates?
  - Are we trying to do too much with one document?
- In any event, the estimate process must take into account the cost of LTCP(C) process time.
- Follow-on evaluation work should address the issue of whether "the LTCP(C) is the best vehicle to adequately develop future Departmental Construction requirements and expenditures."

Program Management

- Over-programming has been a consistent feature of the construction program.
- From 2005 to 2008 the DND construction budget will be over-programmed by approximately 80 percent.
- Consistent over-programming shows that something is systemically wrong with the expectations for project delivery and that there is a large gap between the expectations and the reality of what can be delivered.
- The Department is not using planning documents as intended. The resultant outcome is that energy is being directed or diffused among too many projects.
- The annual construction program of work is based on requirements, whereas the funding is based on 2 percent annual replacement of a percentage of inventory, the accessibility of qualified personnel or available funding. The accepted practice has been a program of work based on the estimate that inventory lasts 50 years on average and that therefore 2 percent of construction infrastructure should be replaced annually.
- Follow-on work should examine the causes and implications of continuous long-term over-programming, and should address mechanisms to set priorities and assess departmental capacity.

Capital Investment Program

- Large capital investments for equipment (those over $100M) are part of a Capital Investment Program and are funded and controlled by VCDS. However, construction projects are not included in this process.
- In the current devolved environment, each L1 has been allocated money for construction projects.
- However, L1s, especially the smaller organizations, do not have enough money in their program to pursue major projects such as the Jetty Replacement in Esquimalt at $250M.
- A strategic investment program for construction projects should be established or included in the Strategic Investment Program that exists for Equipment, to ensure that these large projects will be carried out.
- Follow-on evaluation work should examine the issues and problems of integrating large construction projects (those over $100M) into the Department's Strategic Investment Program.

Acquisition Process

Statement of Requirement (SOR)

- It appears that there is insufficient detail and attention paid to the SOR within the acquisition process.
- The SOR appears to lack objective assessment or oversight.
- SORs are rarely discussed or addressed at SRBs, and the only control tends to be total dollars allocated. Consequently, the nature of the construction, the type of building, its main design features, key subsystems and costs have been determined before any corporate oversight takes place.

- The SOR tends to be a compromise document between requirements and the funding available. When this compromise eventually becomes unworkable, it leads to revised costing at a later date.
- Having the SOR reviewed and endorsed by the SRB would assist in making these more useful and realistic documents and enable the SRB to properly play its oversight role.

Changes in Scope

- Changes in scope are largely due to changes in the size of the facility.
- The acquisition system is characterized by lack of scope control prior to implementation and major changes during the implementation stage.
- SRBs must exercise more control over changes in scope.
- Changes in scope are interrelated with the SOR process/issue in that they reflect, in part, inadequate definition of the requirement at the front end of the process.
- Changes in scope are a major problem area. They account for 40 percent of all revisions from 2003 to 2005, including the six largest cost revisions.

Quality of the Estimates

- As documented by ADM(IE) staff, 27 percent of projects approved between 2002 and 2005 have required revised cost estimates. Of these, 25 percent were due to estimating issues. This has been caused largely by poor consultant estimates. Until the late 1990s, DND had an in-house construction estimating capability. Now, all estimates are provided by consultants who develop the Technical Statement of Requirement and building designs that converts the operational requirement into technical terms. Continually employing new consultants makes it difficult to use standard pattern designs or to apply lessons learned from previous projects, a problem compounded by the effects of devolution. As well, the study determined that construction costs have in many areas risen dramatically due to price increases in fuel, steel, cement and labour. Construction industry costs had been escalating at more than 12 percent annually prior to 2005. This was well above the rate forecasted in the DND economic model, which is used to set the inflation rate for construction projects and has in recent years been in the 3 percent range. In addition, the time lag between the completion of estimates and award of contract is in the order of nine months. With inflation running well ahead of economic model estimates, these time lags often lead to cost overruns.
- Further training of project directors or increased oversight at the front end of the process will improve the estimating process and help to contain construction project cost overruns.

Authorities/Responsibilities

Signing Authorities

- The current structure/process related to signing authorities is seen as having a major impact on the responsiveness of the system, and subsequently on time and costs of individual projects.

- Signing authorities of Treasury Board, MND, and ADM(IE) for approval of construction projects has been established as over $60M, up to $60M and up to $5M, respectively.
- Any cost revision to a project approved by Treasury Board or the MND must be authorized by the original signing authorities for re-approval, regardless of the size of the revision. This causes time delays and uncertainty, often adding to the costs of the projects or leading to expenditure without approval.
- Delegating to ADM(IE) signing authority for revisions up to $5M has been suggested as a means of dramatically reducing the time required for approval and subsequently reducing the number and size of cost overruns.
- Follow-on work should address this issue in some detail. While this increased delegation may appear to be an obvious solution to the issue that will reduce costs and time without incurring much additional risk, in effect, it is addressing the symptoms and not the cause of the problem. Too many projects—up to 40 percent in the last fiscal year—are requiring re-approval for the reasons mentioned above.
- While this process solution may provide some short-term improvement, the systemic issues must be addressed.

Program Devolution

- The devolved environment for construction whereby all L1s have their own budget has led to a number of challenges in managing the construction program.
- The devolutionary concept is based on the philosophy that if you make people accountable for their own infrastructure, they will effectively determine program priorities.
- However, in practice, devolution has led to short-term thinking and, with the lack of centralized direction, it has become difficult to determine departmental priorities for construction. While devolution may facilitate an effective priority-setting process at the local level, this process may be less than effective for corporate management.
- It is also difficult to achieve economies of scale with lack of centralized direction.
- Centralized management of risk becomes problematic. Risk reduction by diverse means such as adopting standard patterns of design for like function facilities or by avoiding construction in abnormally high cost areas becomes difficult to put in place.
- The current environment begs the question, “How do you ensure that devolved programs are in accordance with corporate management objectives?”
- There is a problem of management expertise, especially in the smaller L1s, where in some cases there is only one individual responsible for managing the construction program; this does not allow for a critical mass for learning. Balancing the construction programs of larger L1s with the lack of expertise apparent in smaller L1s may call for a compromise, hybrid program where the major L1s who have 50 percent of the program continue to manage their own program and the smaller L1s revert back to a centralized corporate approach managed by ADM(IE).
- The concept of centralized strategic planning with decentralized implementation is an approach that should be investigated in further study.

Contingencies

- Given the number of cost revisions (40 percent last year), the issue of contingency allowance has been given increased visibility. An increase in the contingency allowance has been suggested as a solution to the problem of cost revisions.
- Currently, construction project contingency is divided into two parts: a construction allowance for unexpected arisings, usually 15 percent of the construction component of the project, and a contingency allowance on the whole project, usually in the order of 10 to 15 percent.
- Anecdotal evidence indicates that funding the primary structure often demands the original budget for the structure, plus contingency funds, plus funds that had been earmarked for furniture, landscaping, parking and communications. When this occurs, funds for these latter items must then be obtained from other sources so that the project can be completed.
- The DND economic model is used to assess and compensate projects for inflation on a yearly basis, so that contingency funds are not used for monetary inflation. In certain markets, such as Alberta and British Columbia, the construction inflation rate reached 12 percent in 2005. This rate has dramatically exceeded the national inflation rate at that time by as much as 10 percent.
- It becomes apparent that tailored economic models to reflect regional and/or industrial sector inflation rates are needed to better capture the project's nature/specifications.
- What is also needed is a departmental approach to planning that recognizes particularly active construction markets, and prioritizes projects accordingly. For example, this could include an approach whereby the Department would defer all but essential construction in British Columbia until after the 2010 Olympics.

Project Management

- There are no current controls built into the Financial Managerial Accounting System (FMAS) to prevent project expenditures from exceeding their approved amounts. A maximum expenditure ceiling in FMAS should be created that engages automatically and prevents project managers from spending beyond their approval authority.
- Anecdotal evidence suggests a tendency by project managers to accept tenders that are under the contract limit, but that ultimately leave insufficient funds to complete the project within the cost allocated.
- A set of guidelines should be developed, based on a ratio of tendered costs to project costs, with explanations required when that ratio is exceeded.
- The Department is not learning from its mistakes or capitalizing on its successes. End of project reports are not being completed and salient issues are not being discussed at SRBs. A program to capture lessons learned from each completed project should be created. A separate cell in ADM(IE) should be established which captures lessons learned and retains corporate continuity and experience, which can be passed on to project managers. Project managers should be required to dialogue with this cell at specific milestones in the project.

Oversight Controls

Senior Review Boards

- Oversight of construction projects is largely provided through the SRB. In theory SRBs review the following documentation at decision nodes throughout the life of a project:
  - Project Charter;
  - Statement of Requirement;
  - Preliminary Project Approval;
  - Effective Project Approval; and
  - The Project Completion Report.
- However, in reality, SRBs tend to monitor only the Preliminary Project Approval and Effective Project Approval phases as well as cost revisions once they are identified. In practice, SRBs are not involved early enough in the process. The major problems driving cost overruns, i.e., inadequate estimates, compromises on design due to funding constraints, changes in scope, delays in the approval processes, regional or sectoral inflation, have already had an impact on the project before the SRB departmental oversight and guidance are put in place. In effect, early on in the construction process, the project director and the project managers are monitoring themselves. This is compounded by the negative impacts of devolution and lack of experience and training.
- The role of SRBs in the Department as a whole is problematic resulting from their dual functions as both oversight and information. When SRBs do become involved in the construction process, they often are set up as an information session only. SRBs require restructuring to concentrate more on the oversight issues and become more meaningfully involved earlier in the process, or when the Project Charter is approved.

Independent Review

- Objective assessment at SRBs is provided by VCDS staff, and by a group established in ADM(Fin CS) which must now sign off on all construction project costs before they are sent forward for approval. As the role and expertise and experience of this group become established, this review may have a positive impact on the process by reducing the number and amounts of cost revisions.
- Program experience and analysis is provided by the VCDS staff. Specialized analysis/oversight could be provided by a small cell in ADM(IE). This cell could provide analytical support to ADM(IE) as well as providing advice and training to project managers.
- To be effective, oversight should be co-ordinated with the approval process and the project schedule. It should not contribute to the problem by adding undue delay.

Training

- A construction acquisition course specifically tailored to DND requirements should be developed. This course would impart knowledge of the DND structure and governmental processes as well as mechanisms for assessing and dealing with risk, and project management skills directly related to DND projects.

- The DGSP Capital Acquisition Course could be modified to allow two of the twelve serials to deal with construction acquisition or a tailored construction acquisition course should be developed.

Case Studies

A follow-on report should look in detail at two or three projects to determine or define problem areas, and develop lessons learned and recommendations for future project management. Suggested projects for study are as follows:

a. **Renovations Defence Research Development Canada, Toronto, Project #526.** Built in Toronto, originally approved at $4M, cost increased to $14M.

b. **Reinforcement of Roofs, Val Cartier, Project #201.** Originally approved at $4.5M, reapproved at $16M, later reapproved at $18M in 2004, and reapproved in 2005 at $38M.

c. **Comparative Analysis.** An examination of other departments' or countries construction processes such as RCMP and PWGSC would provide a comparative assessment of DND processes. This would determine if the problems of DND were unique or across the construction spectrum due to Canadian or structural issues.

RECOMMENDATIONS

Strategic Planning

1. The estimate process needs more rigour and should benefit from further training of project directors and increased oversight at the front end of the process.

Acquisition Process

2. The SOR needs more oversight and control, and should be reviewed by SRBs before approval. SRBs should concentrate more on oversight issues such as accuracy of the estimates and proposed changes in scope.

Authorities/Responsibilities

3. An automatic expenditure maximum ceiling in FMAS should be investigated in order to prevent project managers from spending beyond their approved limit, as this was a factor in the initiation of this evaluation assessment.

4. The Department needs a set of guidelines, based on a ratio of tendered costs to project costs, which would require SRB approval when the ratio is exceeded.

5. Tailored economic models to reflect regional and/or industrial sector inflation rates are needed to better capture the project's nature/specifications.

6. A formal program to capture lessons learned from each completed project should be put in place as well as the mechanisms to ensure that projects benefit from this activity.

Oversight/Controls

7. A training course specifically for acquisition construction and based on modification of the DGSP Capital Acquisition Course should be developed to impart knowledge and training in the areas of risk and project management for construction projects.

8. The inclusion of ADM(Fin CS) in the oversight role should become a regular part of the process. This should reduce cost revisions as their expertise becomes established.

9. A small support cell should be established in ADM(IE) to provide program or project advice to the ADM, and Project Managers, and to provide for review, training and process monitoring.

FOLLOW-ON WORK

1. Detailed case studies should be completed on two or three projects to determine lessons learned and to apply conclusions to other projects.
2. The basis for determining the long-term funding requirement for the construction program should be re-examined.
3. Further study should determine the role and function of LTCP(C) and assess if it is the best vehicle to adequately display future departmental construction requirements and expenditures.
4. There is a need to determine how the Construction Plan should be fully integrated into the Department's long-term planning process.
5. Although there is currently only one project in excess of $100M in the LTCP(C), the mechanics of integrating these large construction projects into the SCIP should be assessed.
6. Future analysis should examine the rationale, causes and implications of continuous long-term over-programming.
7. The proposal to grant signing authority to ADM(IE) for overruns up to $5M should be studied in some detail. Solutions should address the systemic issues causing cost overruns.
8. The concept of devolution of a construction program to the smaller L1s should be re-examined, as should the concept of centralized planning with decentralized implementation.
9. Comparative Analysis of the Construction Processes of other organizations should be undertaken to confirm or refute concerns raised in this study and seek out other solutions and approaches.

Resources Required

Listed below is an estimate of the time and person years required to complete the follow-on studies. Please note that the estimates do not include reporting time.

- **Item #1.** This would be a detailed audit of two or three construction projects. Given that a template or methodology for such audits is currently in place, this study could be completed by two people over a four-month time frame, i.e., eight person months.
- **Items #2 through #5.** These are essentially process issues; they could be completed in a single study with reliance on discussions at National Defence Headquarters in four person months.
- **Items #6 through #8.** These tend to deal with broader more conceptual issues. They could be completed in one study utilizing three person months.
- **Item #9.** This study would require some time developing the right contacts and centres of information and would require some travel. It could be completed in three person months.

ANNEX A—MANAGEMENT ACTION PLAN

Ser	CRS Recommendation	OPI	Management Action	Target Completion Date
Strategic Planning				
1.	The cost estimate process needs more rigour and should benefit from further training of project directors and increased oversight at the front end of the process.	ADM(IE)	DCPEP in cooperation with DSFC has been working at improving the quality of cost estimates. Many initiatives have been either initiated or completed: – **Standing Offer Agreement (SOA).** A temporary SOA for $100K to respond to the present need until a National Source List is created and is in place. – **Source List (SL).** The document is being translated and will be posted shortly on MERX. It will take 3–4 months before a list of pre-qualified firms (by regions) is ready for use. This list will be managed by DCC. – **Additional Expertise from ISS.** A quantity surveyor with a project management background is now part of the DCC ISS group for DCPEP. His duties will be to assist DCPEP in cost estimator work. – **DCPEP Historical Costing Database.** A costing database is being developed to provide substantiation to costing practices. – **Cost Estimating SLAs.** SLAs are being developed with other agencies to provide cost estimations for furniture, moveable assets, and telecommunications.	 In place May 2007 February 2007 September 2007 April 2007
Acquisition Process				
2.	The SOR needs more oversight and control and should be reviewed by SRBs before approval. SRBs should concentrate more on oversight issues such as accuracy of the estimates and proposed changes in scope.	DSFC	ADM(Fin CS)/DSFC conducts a review of the SOR and completes a cost validation prior to the SRB meeting. This is in accordance with the DMS process. DSFC has increased its oversight of all submissions.	

ANNEX A

Ser	CRS Recommendation	OPI	Management Action	Target Completion Date
Authorities/Responsibilities				
3.	An automatic expenditure maximum ceiling in FMAS should be investigated in order to prevent project managers from spending beyond their approved limit as this was a factor in the initiation of this evaluation assessment.	DFA	While there is a way to do this, it will affect all projects and cause more work. It will also require approval from the Enterprise Application Configuration Control Board in ADM(IM) as the change will have multiple hits on source systems. However, prior to that, DG Fin Ops and DCC will have to be apprised of the impacts and then allow a policy change approval. This change is a low priority. It is the responsibility of project managers to operate within their allocations and every effort is being made by DCPEP, on a monthly basis, to ensure that spending approval limits are not exceeded.	
4.	The Department needs a set of guidelines based on a ratio of tendered costs to project costs which would require SRB approval when the ratio is exceeded.	DCPEP	The usefulness of having such an indicator will be investigated by ADM(IE) staff and the appropriate concerned OPIs.	June 2007
5.	Tailored economic models to reflect regional and/or industrial sector inflation rates are needed to better capture the project's nature/specifications.	ADM(Fin CS)	Section 6 in the DND economic model (EM) provides tailored inflation rates (escalator) forecast for various regions of Canada, and DSFC 7 is currently revisiting the models in use. As part of the revisiting process, DSFC 7 examined the issue of providing forecast at a more disaggregated regional level. Findings indicate that non-residential construction price indices are not available below the current level used in Section 6 of the EM. It should be noted that the current regional breakdown is based on the availability of data from Statistics Canada. Furthermore, most of the other variables (metals price index, wood price index, copper, etc.) to be used in the models exist only at the national level, which significantly limits the possibility to regionalize construction price escalation forecast.	

ANNEX A

Ser	CRS Recommendation	OPI	Management Action	Target Completion Date
Authorities/Responsibilities (cont'd)				
5.	(cont'd)		Although appealing, the proposal to use tailored models (TMs) specific to construction projects cannot be applied across the board to all projects for the following reasons: • TMs are usually developed for Major Crown Projects (MCP). By definition, a project is deemed to be an MCP when its estimated cost exceeds $100 million and the Treasury Board assesses the project as high risk. Abiding by these rules would limit TMs development only to a few projects; • From the regional forecast perspective, there is no gain to be obtained from using TMs, since the same data availability limitations stated above apply; and • The development of TMs is labour- and time-intensive. DSFC/DSFC 7 does not have the needed resources that would be required to apply a TM approach to all construction projects. Currently, construction TMs may be developed on request (as for any other MCPs) if the project meets the MCP conditions.	
6.	A formal program to capture lessons learned from each completed project should be put in place as well as the mechanisms to ensure that projects benefit from this activity.	DCPEP	Continued Post Occupancy Evaluation (POE) program by DCPEP. An additional person year (PY) to support this quality assurance manager function is required. Request is to be submitted in ADM(IE)'s 2008/09 business plan.	Ongoing January 2009
Oversight/Controls				
7.	A training course specifically for acquisition construction (PM, PD) and based on modification of the DGSP Capital Acquisition Course should be developed to impart knowledge and training in the areas of risk and project management for construction projects.	DFPPC	A Project Approval Course is under development by DFPPC and, although it is primarily directed towards equipment acquisition, it will apply equally to construction.	Fall 2007

ANNEX A

Ser	CRS Recommendation	OPI	Management Action	Target Completion Date
Oversight/Controls (cont'd)				
8.	The inclusion of ADM(Fin CS) in the oversight role should become a regular part of the process. This should reduce cost revisions as their expertise becomes established.	ADM(Fin CS)	DSFC has implemented a process of validating major construction project costs.	
9.	A small support cell should be established in ADM(IE) to provide program or project advice to the ADM, and project managers, and to provide for review, training and process monitoring.	DCPEP	DGME recognizes the requirement for ADM(IE) to have a centre of excellence for infrastructure- and environment-related project management. Presently, this exists in DCPEP but is limited to one PY. Plans are in place to expand this role and create a larger cell that is capable of responding to the demand.	January 2009