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Risk Analysis of Capital Projects

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7050-11 (CRS)



Canada 

CAVEAT

The review conclusions do not have the weight of an audit or formal evaluation. While sufficient to enable the development of recommendations for consideration by management, the assessments provided and conclusions rendered are not based on the rigorous inquiry or evidence required of an audit or program evaluation. Accordingly, they are not represented as such.

This review is not intended to assess the performance of contractors; rather, it is an internal review of processes and practices within the DND/CF. Contractors have not been interviewed or otherwise asked to provide comment or feedback.



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LIST OF ACRONYMS

ADM	Assistant Deputy Minister	DMGHR	Director Materiel Group Human Resources
ADM(HR-Civ)	Assistant Deputy Minister (Human Resources – Civilian)	DMGPI	Director Materiel Group Programme Integrity
ADM(IM)	Assistant Deputy Minister (Information Management)	DMPP	Director Materiel Policy and Procedures
ADM(Mat)	Assistant Deputy Minister (Materiel)	DND	Department of National Defence
CBRN	Chemical, Biological, Radiological and Nuclear	DSFC	Director Strategic Finance Costing
CCMP	Canadian Cryptographic Modernization Project	FMAS	Financial Managerial Accounting System
CID	Capability Investment Database	FMS	Foreign military sales
CMP	Chief Military Personnel	MOTS	Military off-the-shelf
COS(Mat)	Chief of Staff (Materiel)	NBC	Nuclear, Biological, Chemical
COTS	Commercial off-the-shelf	PAG	Project Approval Guide
C Prog	Chief of Programme	PMO	Project Management Office
CRS	Chief Review Services	PMPR	Project Management Personnel Resource
CSE	Communications Security Establishment	PPRA	Project Profile and Risk Assessment
DFPPC	Director Force Planning and Program Coordination	RA	Risk assessment
DGMSSC	Director General Materiel Systems and Supply Chain	SS(EPA)	Synopsis Sheet (Effective Project Approval)
DMG Compt	Director Materiel Group Comptroller	SS(ID)	Synopsis Sheet (Identification)
		SS(PPA)	Synopsis Sheet (Preliminary Project Approval)
		SRB	Senior Review Board
		VCDS	Vice Chief of the Defence Staff



RESULTS IN BRIEF

A risk analysis of capital equipment projects was performed to identify higher-risk¹ projects that warrant audit. The analysis was able to determine higher-risk projects from a total of 162 projects worth \$51.2 billion.

A risk scoring system was developed with 19 risk criteria that ultimately identified 12 higher-risk projects of which five warrant Chief Review Services (CRS) audit. The information was obtained from three data sources and the results were confirmed through interviews with representatives of the Vice Chief of the Defence Staff (VCDS) organization.

Findings and Recommendations

Higher-Risk Projects. The analysis identified 12 higher-risk capital projects listed at [Appendix 6](#) of Annex B that amount to \$7.3 billion.

It is recommended that CRS conduct a comprehensive audit of the five capital projects worth \$4.3 billion listed at [Appendix 6](#) to Annex B, and that appropriate Assistant Deputy Ministers (ADM) review the remaining six capital projects worth \$3.0 billion. The planning phase of each audit will validate this risk assessment.

Contingency and Definition Funding. There was no apparent linkage between the project contingency funding and the project risk assessment, nor was there a clear linkage between the definition funding and the sourcing or contracting strategies for projects. Some projects had a low proportion of contingency funding in spite of a risk assessment of medium or high, and other projects with complex competitive bid evaluations did not have a related allocation of definition funding.

Overall Assessment

The analysis of 162 capital projects identified five projects with risk attributes that warrant a comprehensive audit. Management of the capital equipment program could be strengthened by:

- Conducting a CRS audit of higher-risk projects in the definition phase to add value early in the acquisition process, rather than using a lessons-learned approach;
- Incorporating CRS risk analysis methodology into active monitoring;
- Linking contingency funding to project risk, and definition funding to the contracting strategy; and
- Allocating Project Management Personnel Resources (PMPR) based on project risk assessment.

¹ “Higher risk” will be used throughout the report to refer to projects that scored highest on certain risk indicators/criteria. It is not to be confused with the Project Profile and Risk Assessment (PPRA) that is done by the project office, as this is just one of the many criteria applied to projects in this risk analysis.



It is recommended that the Project Approval Guide (PAG) be amended to improve the linkage of contingency funding to project risk and definition funding to both the sourcing and contracting strategies.

Project Management Office Staffing Levels. Project Office staffing levels were generally not related to the risk assessment of the projects. For example, some projects with a low risk assessment were 100 percent staffed, while some with a high risk assessment may have 75-percent staffing.

It is recommended that higher-risk projects be given priority for PMPR staffing.

Continuous Risk Assessment. There is no automated process to assess the risk of the entire capital program. Only individual project risk assessments are done on an annual basis.

It is recommended that a risk-based methodology to rank higher-risk projects in the capital equipment program be adopted with revised inputs and query tools in the Capability Investment Database (CID) to allow for automated risk assessment of the capital equipment program.

Note: For a more detailed list of CRS recommendations and management response, please refer to [Annex A](#)—Management Action Plan.



INTRODUCTION

Background

One of the responsibilities of a Chief Audit Executive is to link the audit plan to risk and exposures of the organization to ensure that the internal audit activity focus is on potential impediments to achieving organizational objectives². The most relevant Department of National Defence (DND) organizational objective and five-year target to this risk analysis of the capital equipment program are as follows:

- **Resource Stewardship.** Adopt a comprehensive approach to planning, management, and comptrollership focused on operational requirements to prepare us to respond rapidly and effectively to change.
- **Five-Year Target.** Revitalize the departmental acquisition process with the aim of reducing acquisition time for departmentally approved projects by 30 percent.³

This risk analysis intends to provide management with information to assess the risks in accomplishing the Department's capital acquisition objective. A major challenge is the determination of project risk indicators that may act as a barrier to achieving the Department's objective. By examining lessons learned and audit findings from past capital acquisitions, CRS has developed risk criteria and a scoring methodology to ensure that limited CRS audit resources are committed to auditing projects with the highest risk rating. This methodology could be further developed to facilitate a continuous risk monitoring capability of the capital equipment program.

Objective

To develop a method of objectively identifying higher-risk projects in the capital equipment program that warrant audit by CRS or follow-up by appropriate ADMs.

² Practice Advisory 2010-2, *The Professional Practices Framework*, The Institute of Internal Auditors, p. 109.

³ Strategy 2020 Objective 8, 28 June 2003, http://cds.mil.ca/pubs/strategy2k.s2k97_e.asp.



Scope

162 active capital projects⁴ in May 2006 amounting to \$51.2 billion, excluding miscellaneous requirements and construction.

Methodology

Source of Data. Sources were Financial Managerial Accounting System (FMAS), Director Materiel Group Comptrollership (DMG Compt) staff, IM Group Comptroller staff, and CID. The FMAS project module is not mandatory and could not be used as the only source for planned project costs. Director Force Planning and Program Coordination (DFPPC) staffs were interviewed to confirm results.

Analysis Process. A three-step process was designed to accommodate the limited CRS analysis resources and information available. The results of each step are summarized in Table 1. The complete description of the methodology is provided at [Annex B](#).

- **Step 1.** Application of one filter and four criteria to 162 projects to determine 25 higher-risk projects.
- **Step 2.** Scored 25 projects against nine criteria to determine 12 higher-risk projects.
- **Step 3.** Scored 12 projects against six criteria to determine five projects that warrant audit.

Step	No. of Projects	Project Value (\$B)	Unspent Project Value (\$B)
Start	162	\$51.2	\$23.9
Step 1	25	\$12.9	\$10.9
Step 2	12	\$7.3	\$6.7
Step 3	5	\$4.3	\$4.0

Table 1. Risk Analysis Steps. *Of the \$23.9 billion unspent in 162 projects, the analysis determined five highest-risk projects with \$4.0 billion unspent funds that warrant audit.*

⁴ Active projects were those with a funding in either Definition phase and/or Implementation. More info: http://vcds.mil.ca/dgsp/pubs/pag/pag_e.asp?chp=1&sec=20 (VCDS Project Approval Guide).



Criteria

Step 1 (162 Projects). Filter of “Not previously audited,” percentage of project total spent, Project Management Office (PMO) size, materiality (project value) combined with project type, and high-risk FMAS transactions.

Step 2 (25 Projects). Percentage of milestones met, original risk assessment (RA), contingency funding is consistent with the RA, definition cost percentage of implementation cost, number of interdependent projects, interoperability with allies, contracting strategy, date CID last updated, and sourcing.

Step 3 (12 Projects). Current RA compared to original RA, briefing and quantification of risk at Senior Review Boards (SRB), PMO staffing level, cost/schedule change linkage to scope change, definition cost linkage to sourcing/contracting strategy, and current project performance.



Contingency and Definition Funding

The amount of contingency funding was not consistent with the project risk assessment, nor was definition funding linked to the contracting or sourcing strategies.

Contingency Funding. Since contingency funds protect a project in case risk materializes, high-risk projects would require a higher level of contingency funding. However, a comparison of contingency funding to the project risk assessment revealed some inconsistencies from one project to the next. Although the PAG recommends a range of 5 to 15 percent of the total project costs, in a sample of 25 projects, the following ranges of contingency funding were observed:

- Seven low-risk projects—contingency ranged from 4.5 to 13.4 percent;
- Sixteen medium-risk projects—contingency ranged from 4 to 24 percent; and
- Two high-risk projects—contingency ranged from 0 to 9 percent.

In the last three years, Director Strategic Finance Costing (DSFC) established a project cost validation process to review project estimates prior to the definition and implementation phases that will improve the alignment of contingency funds with project risk.

Definition Funding. A project with a competitive sourcing and a developmental contracting strategy will need to allocate more definition funding because of the effort associated with bid evaluation. On the other hand, a sole-source foreign military sales (FMS), commercial-off-the-shelf (COTS) or military-off-the-shelf (MOTS) procurement strategy would require less definition funding as there is no need for a tendering process and bid evaluation. However, in a sample of 21 higher-risk projects, there was no apparent relationship between the amount of definition funding (as a percentage of implementation cost) and the complexity level associated with the contracting and sourcing strategies. It was observed, in increasing order of complexity:

- Five sole-source, FMS/ MOTS/COTS projects—definition funds ranged from 2.0 to 29.4 percent;
- Eleven competitive, MOTS/COTS projects—definition funds ranged from 0.0 to 15.8 percent; and
- Five competitive, developmental projects—definition ranged from 1.71 to 32.1 percent.

Recommendations. It is recommended that VCDS amend the PAG to improve linkage of:

- Contingency funding to project risk and the cost validation process; and
- Definition funding to the sourcing and contracting strategies.



Project Management Office Staffing Levels

There is no apparent relation between the staffing level in the PMO and the project risk assessment.

Staffing Priority. Project offices at DND are staffed with both civilian and military PMPRs. This designation allows for staffing of military personnel into capital projects on a higher-priority basis over other headquarters positions (“Priority 2” vs. “Priority 6”). Even with this priority, not all PMPR positions are filled. In the sample of 12 higher-risk projects, the PMO averaged a 10-percent vacancy with an average size of 17 personnel (ranging from 2 to 50 personnel). Before staffing a capital project with a military member or a civilian employee, it would be a sound risk management strategy to staff the high-risk projects before the low- to medium-risk ones. However our analysis found:

- Four low-risk projects—PMO staffing ranged from 0 to 50 percent;
- Six medium-risk projects—PMO staffing ranged from 75 to 250 percent; and
- Two high-risk projects—PMO staffing ranged from 82 to 100 percent.

Recommendations. It is recommended that ADM(Mat):

- Advise CMP of projects that should be given posting priority (within the VCDS Priority 2 strategy); and
- Adopt a risk-based civilian PMPR staffing approach.



Continuous Risk Assessment

There is no automated capability to assess risk of the entire capital equipment program. Risk management practices for individual capital projects did not include the quantification and reporting of risk at SRBs.

Program Risk. There is no present capability to measure relative risk across the entire capital equipment program. This requirement was tabled at the Program Management Board by the Chief of Programme (C Prog) in February 2007. Currently risk assessments are only done for individual projects but not consolidated to provide a broader risk profile of capital acquisition. This risk methodology acts to compile individual project information for objective comparison, and a risk perspective at the program level.

Information for 16 of the 19 risk criteria developed in this report, shown in Table 3, is already recorded in the CID and can be used as a basis for the capital program risk assessment. However, monitoring could be automated if the CID was modified to better accommodate the candidate field data in Table 3.

Existing Data Field	Candidate Fields	
1. Materiality (Vote 5 Cash Flow)	8. Definition Cost – SS(PPA)	15. Definition, Source, Contract Strategy – SS(PPA)
2. Milestones (Progress Report)	9. Interdependent Projects – SS(ID/PPA)	16. PMO Size (currently not in CID)
3. Contract Strategy (Progress Report)	10. Interoperability – SS(PPA)	17. PMO Staffing Level (currently not in CID)
4. Date CID Updated (Project Home Page)	11. Original Risk Assessment – PPRA	18. High-Risk FMAS Transactions (not in CID)
5. Sourcing (Progress Report)	12. Contingency %/RA – SS(PPA/EPA)	19. Cost or Schedule Change/Scope SRB
6. Project Performance (Progress Report)	13. Original vs. Current RA – PPRA	
7. Spent Amount (Vote 5 Cash Flow)	14. Risk Briefing – SRB	

Table 3. CID Data Fields. *Input of the candidate data fields in the CID would enable continuous risk assessment.*

- Data fields in the CID already exist for seven of the criteria.
- Illustrator CID templates already exist for 7 of the 12 candidate data fields (in Table 3).



- Direct entry of the CID template data rather than uploading PDF documents would enable automated query tools similar to the CRS query report currently in the CID.

Project Risk. Risk assessments are only updated on an individual project basis at annual SRBs. Analysis of the risk assessments of the 12 higher-risk projects listed at [Appendix 6](#) to Annex B found:

- 2 of the 12 projects did not report on risk at their respective SRBs; and
- None of the 12 projects quantified their risks at SRB briefings, a standard risk management practice.⁵

CRS has recommended in the past that the Department acquire risk quantification software applications that are used in the private sector.⁶

Recommendations:

- VCDS adopt a risk-based methodology to rank higher-risk projects in the capital equipment program.
- VCDS revise the inputs and query tools in the CID to allow for automated risk assessment of the capital program.

⁵ Project Management Body of Knowledge (PMBOK), Chapter 11, PMI 2004.

⁶ CRS report of Wheeled Light Armoured Vehicle Life Cycle Support Contract, June 2006.



ANNEX A—MANAGEMENT ACTION PLAN

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Ser	CRS Recommendation	OPI	Management Action	Target Date
1.	Higher-Risk Projects. Appropriate ADMs review their respective capital projects (listed at Appendix 6 , Annex B) and the NMSC project after rescoping.	VCDS CSE/CCMP PMO COS(Mat)/ DMGPI DGMSSC/ DMPP	A VCDS review directive will be prepared with specific objectives before this action starts. CCMP project office has updated the CID project information, reports risks monthly, and is staffing four project office positions. Contingency funds are under review. Conditional upon further review of the risk scoring criteria, DMGPI, in collaboration with DMPP, will undertake a review of the Materiel Group projects identified at Appendix 6 , at Annex B.	Jul 07 In progress Mar 08
2.	Contingency and Definition Funding. VCDS amend the PAG to improve linkage of contingency funding to project risk, the cost validation process, and definition funding to the contracting and sourcing strategies.	VCDS/ DFPPC	Upon further review and study, amendments to the PAG will be considered.	Jul 07
3.	Project Management Office Staffing Levels. ADM(Mat) adopt a risk-based civilian PMPR staffing approach, and advise CMP of projects that should be given posting priority (within the VCDS Priority 2 strategy).	VCDS ADM(Mat)/ DMG Compt DMGHR	The VCDS will act as the OPI to coordinate the overall strategic staffing of project offices with the ADMs. A PMPR working group, DMG Compt and DMGHR, will develop a military PMPR Apportionment Plan to communicate priorities/concerns emerging within the next two fiscal years by mid-June each year. The process will be improved by DMG Compt in an iterative manner in the next few planning cycles. DMGHR will coordinate with CMP the establishment approval process to ensure positions are manned.	Jul 07 Jun 07 Sep 07 In progress



ANNEX A

Ser	CRS Recommendation	OPI	Management Action	Target Date
3.	(cont'd)	DMGHR	With assistance from ADM(HR-Civ), a framework will enable individuals to be appointed to civilian PMPR positions from a pool of talent with the ability to reassign as needs or priorities change.	Dec 07
		DMGHR	Material Group HR strategy includes general job descriptions, performance measurement, and personal learning plans that will facilitate the reallocation of resources based on project priority and risk identified by Ser 4 improvements to the CID.	In progress
4.	Continuous Risk Assessment. VCDS adopt a risk-based methodology to rank higher-risk projects in the capital equipment program. VCDS revise the inputs in the CID to enable an automated risk assessment of the capital program.	VCDS	C Prog has initiated a performance measurement system for the entire capital program that will include an aggregate assessment of risk.	Sep 07
		VCDS/ DFPPC	DFPPC will develop a plan to enable the CID to provide an automated assessment of the entire capital program.	July 07



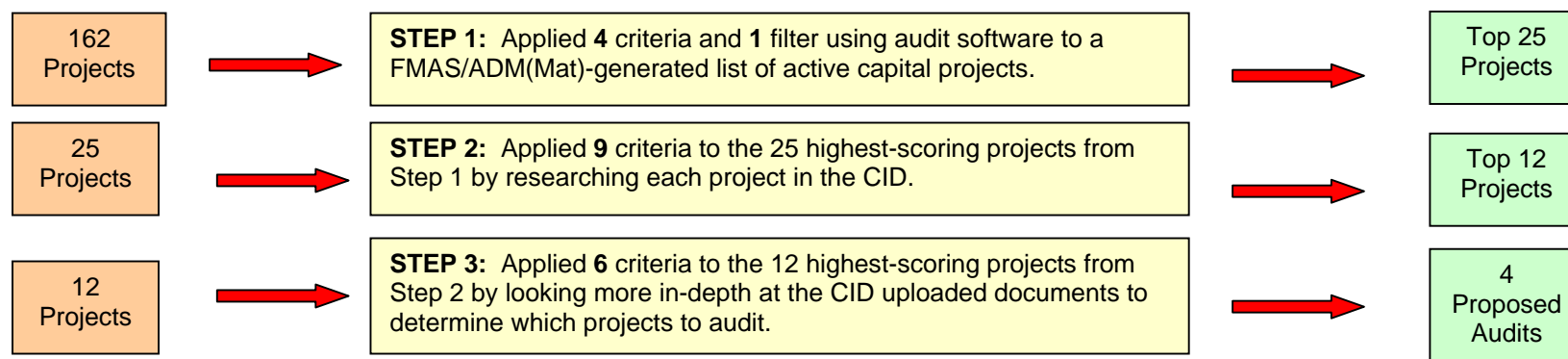
ANNEX B—RISK ANALYSIS METHODOLOGY

The methodology involves two population attributes and the application of one filter and 19 criteria over three separate steps.

Population Attributes

- **Active Projects:** Projects having “A” status funding in at least one component of the project (e.g., Definition or Implementation) were deemed to be “active” as of May 2006.
- **Capital Equipment Projects:** Construction/Infrastructure and Miscellaneous Requirement projects were excluded from this analysis. An FMAS download of projects with these attributes was corroborated with a list of 162 projects provided by DMG Compt.

The 3-Step Methodology



It is important to note that each step is scored independently from the previous one. For example, the highest-ranked project after Step 2 may not be the highest after Step 3.



ANNEX B

Step 1—Criteria/Filter Applied to 162 Projects (see [Appendices 1](#) and [2](#) for criteria scoring and results)

Filter. Projects not previously audited (Materiel Acquisition and Supply Information System, Submarine Capability Life Extension, Canadian Search and Rescue Helicopter, Canadian Forces Health Information System, and Tracked Light Armoured Vehicle M113 Life Extension were excluded).

Percentage of Project Spent. Preference was given to projects with some spending but with a larger amount of unspent funds. The reason for this was the potential for identifying monetary recoveries as well as assessing management controls early on in the life of the project. The average project expenditure was 59 percent.

Project Materiality. Higher-value projects with unmitigated risks would have a greater impact and were scored accordingly. More weighting was given to non-strategic projects because there is less approval oversight than with strategic projects.

PMO Size (Percentage of Project Cost). A smaller PMO to project cost ratio could lead to increased risk because of less project management oversight, while a larger PMO to project cost ratio could indicate poor value for money or non-optimal resource allocation. The average PMO/project cost ratio was 6 percent (contracted PMO staffs were excluded because of difficulty in compiling accurate data). Those projects with significantly higher- or lower-than-average PMO costs were considered higher risk.

Average PMO costs represented 6 percent of the total project cost. Definition funding was found to be 8.9 percent of the project implementation cost, on average.

High-Risk Transactions. Thirty-six computer-assisted audit tests were applied to FY 2005/06 payment transactions to identify high-risk vendors, high-risk commitments, and high-risk cost centres. Audit software was required to analyze the large amount of data from FMAS for this criterion. Projects were scored higher if identified in more than one of the three categories.

Step 2—Criteria Applied to 25 Projects (see [Appendices 3](#) and [4](#) for criteria scoring and results)

Definition Percentage (Definition/Implementation Cost). Low definition phase costs could lead to higher risks in the implementation phase due to insufficient options analysis or design effort. The average definition cost was 8.9 percent of the project implementation value. Projects with significantly higher- or lower-than-average definition costs were considered higher risk.



ANNEX B

Interdependent Projects. If a capital project falls behind in schedule, or has integration issues, risks will be introduced to each project dependent on it. The average number of interdependent projects in the sample was five. Projects with higher-than-average interdependent projects were considered to be higher risk.

Interoperability with Allies. Project risk is increased when interoperability is required with either US or NATO allies, as ally systems or requirements could change during the life of the project.

Milestones Met Percentage. Milestone slippage is a strong indicator of the potential for delayed acquisition of a capability and increasing the project management costs. On average, projects were meeting their management milestones (project document approvals, etc.) 35.8 percent of the time. Those projects with a low percentage of milestones met were considered higher risk.

The assessment of milestones for 25 higher-risk projects found that only 36 percent of the milestones were being met on schedule.

Original Risk Assessment. The original risk assessment is found in the Project Profile and Risk Assessment, and includes both internal and external risk factors to the project. Most project risk assessments were in the low to medium category with the assumption that mitigation plans would be successful. Scoring for this criteria was proportional to the assessed project risk.

Contingency Percentage. A project could have too little contingency allocated to address unforeseen costs. Too much contingency could prevent funds being assigned to other projects. Project contingency funds were compared to the project risk assessment to ensure that the contingency funding level was appropriate. The average contingency funding was 9 percent of the total project value. High-risk projects with low contingency funds were scored accordingly.

Procurement Strategy. Developmental projects were considered to be the highest risk and were scored accordingly. Full MOTS is the least risky acquisition because it involves proven combat systems used by allies. Most projects involved either MOTS or COTS.

Date CID Last Updated. If the Monthly Progress Report had not been updated recently, this indicated poor project management. These projects were considered higher risk as the most recent project information is not available to enable sound decision making by senior management.

Sourcing. Sole-source acquisition can result in higher costs to the Crown, especially with amendments to the contract. Also, there is risk that another vendor may object to the awarding of the contract by sole source. Projects with competitively tendered contracts were considered lower risk.



ANNEX B

Step 3—Criteria Applied to 12 Projects

Original vs. Current Risk Assessment. An increase in the project's risk over the life of the project could translate into schedule, technical or cost issues that may be attributed to an overly optimistic original risk assessment. For the most part, the risk assessments remained the same in the sample of projects.

Briefing and Quantification of Risk at SRB. Projects should be providing accurate risk information for senior management decision making at annual SRBs. Projects that did not brief and quantify risk were considered higher risk.

PMO Staffing Level. Projects with less than 100 percent staffing level could have insufficient staff to provide appropriate oversight. The average PMPR staffing level was 90 percent. Contracted staff were excluded because PMOs were asked for PMPR staffing rates only. Projects with a high number of PMPR vacancies were considered higher risk.

Cost/Schedule Linkage to Scope Change. Cost increase or schedule delay should be a result of scope changes. A project cost increase with no associated scope increase indicates less value for money. Likewise, schedule slippage with no scope change indicates that the product may be delivered late. To accommodate this delay, the Department may have to take on additional costs for project management as well as incremental costs for an interim combat capability. Projects with increases in cost and schedule slippage with no scope change were considered higher risk.

For the 12 higher-risk projects, project cost (or forecast) increased by 9 percent on average and was behind schedule by 2.2 years with no associated scope change.

Definition Funding Linkage to Sourcing and Contracting Strategies. More staff effort is required in the definition phase of a project with open competition bid evaluation, especially for a developmental capability. If these types of projects have inadequate definition funding, there is an increased risk because of insufficient resources for bid evaluation. Developmental projects with competitive tendering were considered higher risk if the definition funding was lower than average.

Current Project Performance. Projects experiencing cost, schedule or technical issues were considered higher risk, as these concerns tend to materialize in future phases of the project as well.



APPENDIX 1 TO ANNEX B—STEP 1 RISK CRITERIA SCORING RESULTS (162 PROJECTS)

Criteria	Source of Data	Range	Score	No. of Projects
Percent of Project Spent	FMAS Expenditures	< 1% and > 55%	0	6
		46% to 55%	1	13
		31% to 45%	2	8
		16% to 30%	3	27
		1% to 15%	4	108
PMO Size, as a % of project cost	FMAS HR GLs	5% to 7%	0	81
		> = 3% and < 5% or > 7% and < = 9%	1	19
		> 9% and < = 11% or 1% or < 3% or 0	2	23
		> 11% and < 1%	3	39
Materiality and Project Type	DMG Compt active project list, and FMAS	< = \$30M & Strategic	1	11
		< = \$100M & Strategic or < = \$30M & Non-Strategic	2	8 and 56
		< = \$500M & Strategic or < = \$100M & Non-Strategic	3	15 and 35
		> \$500M & Strategic or < = \$500M & Non-Strategic	4	17 and 15
		> \$500M & Non-Strategic	5	5
High-Risk Financial Transactions	FMAS FY 2006 transaction download	Matched 1 category of transactions	1	50
		Matched 2 categories of transactions	2	61
		Matched 3 categories of transactions	3	30



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APPENDIX 2 TO ANNEX B—STEP 1 RESULTS (TOP 25 HIGHER-RISK CAPITAL PROJECTS)

Project No.	Project Title	Project Phase	Total Cost	Unspent	Total Score
.....	Definition	.....	.....	...
.....	Definition	.....	.....	...
.....	Implementation	.....	.....	...
.....	Implementation	.....	.....	...
.....	Definition	.....	.....	...
.....	Implementation	.....	.....	...
.....	Implementation	.....	.....	...
.....	Definition	.....	.....	...
.....	Definition	.....	.....	...
.....	Implementation	.....	.....	...
.....	Identification	.....	.....	...
.....	Implementation	.....	.....	...
.....	Definition	.....	.....	...
.....	Implementation	.....	.....	...
.....	Implementation	.....	.....	...
.....	Definition	.....	.....	...
.....	Implementation	.....	.....	...
.....	Identification	.....	.....	...
.....	Implementation	.....	.....	...
.....	Implementation	.....	.....	...
.....	Implementation	.....	.....	...
.....	Definition	.....	.....	...
.....	Definition	.....	.....	...
.....	Definition	.....	.....	...
.....	Definition	.....	.....	...

* 7 of the top 25 higher-risk projects were identified by DFPPC subject matter experts as projects that should be audited/reviewed.



APPENDIX 3 TO ANNEX B—STEP 2 RISK CRITERIA SCORING RESULTS (TOP 25 PROJECTS)

Criteria	Part of CID Researched	Range	Score	No. of Projects
Milestones met %	Progress Report	< 30.8%	3	13
		No information	2	3
		> = 40.8%	1	9
Original Risk Assessment (RA)	PPRA or SS(ID)	Medium-High or High	3	7
		Low-Medium or Medium	2	16
		Low	1	2
Contingency consistent with RA	SS(PPA) or (EPA)	Any other combination than below	3	8
		No information	2	1
		< 7% C & Low RA; 7 to 9.9% C & Med RA; > = 10% & High RA	1	16
Definition cost %	SS(PPA) or (EPA)	< 7%	3	10
		No information or > 11%	2	11
		7 to 11%	1	4
Interdependent projects	PPRA or Progress Report	> 8	3	6
		2 to 8, or no information	2	12
		< 2	1	7
Interoperability with allies	PPRA or Project Presentations	Yes	3	13
		No information	2	1
		No	1	11
Contracting strategy	Progress Report	Developmental (Dev) only	4	0
		MOTS & COTS & Dev or Other	3	6
		MOTS & COTS or no information	2	8
		MOTS or COTS only	1	11
Date CID last update	Opening Page	> 3	3	3
		1 to 3	2	6
		< 1	1	16
Sourcing	Progress Report	Sole source	3	2
		Competitive; Competitive & FMS, or no information	2	22
		FMS only	1	1



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APPENDIX 4 TO ANNEX B—STEP 2 RESULTS (TOP 12 HIGHER-RISK PROJECTS)

Project No.	Project Title	Current Phase	Total Cost	Unspent	Score
.....	Definition	.....	.....	...
.....	Definition	.....	.....	...
.....	Identification	.....	.....	...
.....	Definition	.....	.....	...
.....	Definition	.....	.....	...
.....	Definition	.....	.....	...
.....	Implementation	.....	.....	...
.....	Definition	.....	.....	...
.....	Definition	.....	.....	...
.....	Definition	.....	.....	...
.....	Implementation	.....	.....	...
.....	Definition	.....	.....	...
.....	Implementation	.....	.....	...
.....	Definition	.....	.....	...
.....	Definition	.....	.....	...
.....	Definition	.....	.....	...
.....	Definition	.....	.....	...
.....	Implementation	.....	.....	...
.....	Identification	.....	.....	...
.....	Implementation	.....	.....	...
.....	Implementation	.....	.....	...
.....	Definition	.....	.....	...
.....	Implementation	.....	.....	...
.....	Implementation	.....	.....	...
.....	Implementation	.....	.....	...
.....	Implementation	.....	.....	...
.....				

The highlighted projects are the 12 higher-risk projects resulting from the application of the Step 2 criteria.



APPENDIX 5 TO ANNEX B—STEP 3 RISK CRITERIA SCORING RESULTS (TOP 12 PROJECTS)

Criteria	Source of Data	Range	Score	Number of Projects
Current Risk Assessment (RA) Compared to Original	PPRA and SS(EPA) or SRB Briefings	Increase in risk	3	0
		Same	2	11
		Risk mitigated	1	1
Briefing and Quantification of Risk at SRBs	SRB Briefings in CID	Did not brief nor quantify risk	3	2
		Briefed, but did not quantify risk	2	10
		Briefed and quantified risk	1	0
PMO Staffing Level	DMG Compt and IM Gp Compt	< = 75%	3	4
		> 75% and < 90%	2	4
		> = 90%	1	4
Cost/Schedule (C/S) Linkage to Scope Change	PPRA SS(EPA) SRBs	C/S change w/ no scope change	3	5
		C/S no change w/ scope decrease	2	4
		C/S change w/ consistent scope	1	3
Definition Cost Linkage to Sourcing and Contracting Strategies	Progress Report or SS(EPA)	If Def % < range in (1) or (2)	3	1
		If Def% > range (1) or (2) or no information	2	2
		(1) Def'n % > 11% competitive, developmental	1	9
		(2) Def'n % > = 7% & < = 11% sole source, developmental		
Current Project Performance	Progress Report	Average of "Red"	3	1
		Average of "Yellow"	2	6
		Average of "Green"	1	5



Severed under
Section
21(1)(a)(b)
of the AIA
Advice, etc.

APPENDIX 6 TO ANNEX B—STEP 3 RESULTS (PROPOSED AUDITS)

Audit Priority	Project No.	Project Title	Current Phase	Total Cost	Unspent	Total Score
3	Definition	.....	.....	...
L1 Review	Implementation	.....	.....	...
L1 Review	Definition	.....	.....	...
2	Definition	.....	.....	...
4	Definition	.....	.....	...
1	Definition	.....	.....	...
L1 Review	Definition	.....	.....	...
L1 Review	Definition	.....	.....	...
1	Implementation	.....	.....	...
L1 Review	Identification	.....	.....	...
L1 Review	Definition	.....	.....	...
L1 Review	Definition	.....	.....	...

Project was not selected because of low dollar value; Project not selected because of postponement; Project was selected since it is part of same Omnibus as Project (which is in top 4). Project is to be rescoped.

Because of the cyclical nature of DND's procurement cycle, many of the projects making the final list of proposed audits (see highlighted projects) are in Definition Phase only, with little spending.

