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## Audit of Range and Training Area Management



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## **Acronyms and Abbreviations**

ADM(IE)	Assistant Deputy Minister (Infrastructure and Environment)
ADM(RS)	Assistant Deputy Minister (Review Services)
ARA	Authorities, Responsibilities and Accountabilities
CA	Canadian Army
CADTC	Canadian Army Doctrine and Training Centre
CAF	Canadian Armed Forces
DND	Department of National Defence
DGESM	Director General Environment and Sustainable Management
DGIEGPS	Director General Infrastructure and Environment Governance, Policy and Strategy
DG P Reqs	Director General Portfolio Requirements
MRPDP	Master Real Property Development Plan
OPI	Office of Primary Interest
RCAF	Royal Canadian Air Force
RCN	Royal Canadian Navy
RP Ops	Real Property Operations Group
RTA	Range and Training Area

## Results in Brief

Assistant Deputy Minister (Review Services) (ADM(RS)) conducted an audit of Range and Training Area (RTA) management. This audit was included in the departmental Risk-based Internal Audit Plan for fiscal years 2015/16 to 2017/18.

RTAs play a pivotal role in allowing the Canadian Armed Forces (CAF) to train and to be prepared to fulfill its mandate of protecting Canada, defending North America and contributing to international peace and security. As a result, there is a need to ensure that these assets are available to meet both current and future training requirements.

To do so, the CAF's RTA stewardship activities need to address both operational and environmental concerns. Day-to-day training and maintenance activities must be compliant with RTA operational safety, construction and maintenance standards. Weapons and manoeuvre training can also adversely impact the surrounding environment. This creates a special set of issues given training activities must also be compliant with all relevant federal environmental acts and legislation.

Assistant Deputy Minister (Infrastructure and Environment) (ADM(IE)) is responsible for the infrastructure and environmental services for over 1200 CAF RTAs. The responsibility for the operations of RTAs, however, rests with the location's owner (Canadian Army (CA), Royal Canadian Navy (RCN), Royal Canadian Air Force (RCAF), Military Personnel Command or Vice Chief of the Defence Staff). In the case of land-based ranges, the CA is the delegated functional authority, authorizing weapon usage, generating weapon and ammunition area safety templates and performing inspections.<sup>1</sup>

## Findings and Recommendations

### Range and Training Area Governance

With rare exceptions, RTAs have been available to meet existing training requirements. However, the Department of National Defence's (DND) transformation of real property and environmental management functions provides an opportunity to further enhance RTA governance so as to ensure that both current and long-term training needs will continue to be met.

Current RTA authorities, responsibilities and accountabilities (ARA) were well established during ADM(IE)'s transformation, but to date, have not been fully implemented nor fully understood at the base/wing level. This has resulted in communication issues between ADM(IE)

### Overall Assessment

Current RTA operating and management activities allow the CAF to meet present training needs. However, as the ADM(IE) transformation progresses and training requirements evolve, the DND/CAF will need to establish and clearly communicate roles, responsibilities and strategic direction in order to ensure the continued sustainability of RTA activities.

<sup>1</sup> The RCN and RCAF have land-based ranges used for weapons qualifications and have adopted CA range operating directives. The RCAF is the functional authority for air weapons ranges.

and base/wing level RTA stakeholders and delays in performing RTA maintenance and planning activities.

From an environmental perspective, similar concerns were noted. In this case, though, ARA were not established during the preliminary phases of the transformation, and thus the role of environmental officers requires clarification. ADM(IE) has recognized this issue and is in the process of addressing it.

It is recommended that, as the centralization of real property management continues to evolve, ADM(IE) review and update RTA governance to ensure that key elements related to ARA, policy and oversight are fully developed and communicated.

### **Range and Training Area Management**

RTA management strategies and approaches have not been fully developed to a point that ensures the ongoing use and long-term availability of RTAs. While RTA staff at the base/wing level often take it upon themselves to consider future RTA requirements, a standardized approach to communicating long-term range maintenance and environmental plans has not been developed. Furthermore, ADM(IE)'s new centralized project prioritization process may have unintended consequences as many RTA projects have not qualified for funding thus creating a challenge for local RTA managers.

Performance metrics and data are not collected to assist with RTA maintenance, usage and environmental planning. While some RTA information is collected and reported, it is not suited for strategic decision making. As a result, RTA maintenance is often more reactive than proactive, causing increased strain on aging infrastructure. On a positive note, environmental impacts from training are widely recognized as a sustainability risk, and environmental awareness and protection activities are now integrated into RTA operations. For instance, environmental matters, such as species at risk and protection of environmentally sensitive areas, are included in RTA user briefings and operating procedures.

Existing coordination efforts and land access agreements between RTA staff and the oil and gas industry have helped ensure that military training can occur as planned. However, if oil and gas infrastructure and development continues on bases and wings, there is a risk that RTA availability and the types of allowable RTA training will be negatively affected. In addition, oil and gas industry land access agreements must also be formalized to reduce potential safety and liability risks that may arise from industry's use of RTA areas.

To address these findings, it is recommended that ADM(IE), with input from the CA, define and implement an RTA strategic management process that ensures the continued availability of RTAs.

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**Note:** Please refer to [Annex A—Management Action Plan](#) for the management response to the ADM(RS) recommendations.

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## 1.0 Introduction

### 1.1 Background

The 2016/17 DND/CAF Report on Plans and Priorities and Canada's new defence policy, *Strong, Secure, Engaged*, released in June 2017, both identify priorities related to ensuring that Defence has a well-trained CAF, maintains sustainable infrastructure and practices responsible stewardship of the environment. The management of CAF RTAs aims to incorporate practices consistent with these priorities. RTAs provide CAF members with the opportunities and facilities needed to learn and master individual skills and to conduct joint group military training that is representative of scenarios and operating conditions that may be encountered during deployed operations.

Military training activities can have a detrimental impact on the environment. Thus, when performing military training activities, the DND/CAF must comply with federal legislation<sup>2</sup> regarding the environment. ADM(IE) has developed a Defence Environmental Strategy<sup>3</sup> that aims to ensure environmental aspects of current Defence Team actions, such as RTA activities, are managed in a manner that ensures RTAs are available to meet both current and future military training requirements, while still complying with applicable acts and legislation.

**Range and Training Areas.** To support the CAF, DND administers the largest real property holdings in the federal government. Holdings include the following:<sup>4</sup>

- 21,000 buildings (including 12,000 military housing units)
- 2.25 million hectares of land
- 5,500 kilometres of roads
- 3,000 kilometres of water, storm and sewer pipes
- 16,100 municipal works (jetties, airfields, RTAs, utility plants, etc.)

The majority of CAF bases/wings were built in the 1940s and 50s, with over 48 percent of the buildings being over 50 years old. From an environmental perspective, CAF land holdings encompass the habitat for over 150 species at risk.

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<sup>2</sup> Examples include the *Fisheries Act*, the *Species at Risk Act* and the *Canadian Environmental Protection Act*.

<sup>3</sup> The Defence Environmental Strategy is refreshed periodically and has evolved through four iterations of the Sustainable Defence Strategy. It includes targets set out in the 2016-2019 Federal Sustainable Development Strategy.

<sup>4</sup> DND Portfolio Planning for the 2014 Real Property Institute of Canada – National Workshop Presentation, November 2014.

Within these real property holdings, there are over 1,200 RTAs<sup>5</sup> that are primarily used for military manoeuver instruction, weapons training and the practice of other military tactics. Available RTAs include the following:

- Air Weapons Ranges – Terrain that is designated as an impact area for the delivery of air to ground ordnances.
- Demolition Ranges – Terrain that is designated as a demolition area that is suitable for the conduct of explosives training and may include explosive ordnance disposal and/or the destruction by explosive means of other munitions.
- Small Arms Ranges – Facilities constructed for the express purpose of small arms qualification live fire at known distances on a fixed axis using a permanent danger area template.
- Training Areas – Terrain that is suitable for the conduct of general military training, both individual and collective.
- Training Facilities – Training structures or apparatus (e.g., rappel towers, obstacle courses and urban operations sites).

**Organizational Structure.** In 2013, ADM(IE) was delegated the full authority, responsibility and accountability for the centralized management of DND's real property portfolio and began a transformation process to consolidate the number of real property custodians from nine<sup>6</sup> to a single ADM(IE) custodian model. This change took effect on April 1, 2016.

Prior to the centralized management model, real property and environmental management, including RTA management, was the responsibility of the three Environments and other DND functional organizations. Budgets were provided to each organization through the traditional funding allocation processes and were managed based on their own individual priorities. This ultimately resulted in inconsistencies and redundancies in business practices, support systems and contracting processes.

While ADM(IE) is now the RTA land owner and is represented at the base/wing level by Real Property Operations Group (RP Ops) staff, responsibility for the operation of these areas remains with the respective Environment or functional authority where the area is located. In the case of land-based RTAs, including those on RCAF wings, RCN bases, Vice Chief of the Defence Staff and Military Personnel Command locations, the Commander of the CA, through the Canadian Army Doctrine and Training Centre (CADTC),<sup>7</sup> is the delegated functional authority. It is CADTC staff who authorize the use of weapons, munitions and activities on land RTAs and who are responsible for the respective danger area templates.<sup>8</sup> CADTC is also responsible for the

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<sup>5</sup> Based on an analysis of 2015 Canadian Forces Range Information System data, there are 32 air weapons ranges, 5 cadet ranges, 32 demolition areas, 133 restricted areas, 195 small arms ranges, 431 training areas and 407 training facilities.

<sup>6</sup> ADM(IE), RCAF, CA, RCN, Military Personnel Command, Vice Chief of the Defence Staff, Assistant Deputy Minister (Science and Technology), Canadian Special Operations Forces Command, and Assistant Deputy Minister (Materiel).

<sup>7</sup> Located in Kingston.

<sup>8</sup> Ground and airspace safety templates provide safety zones associated with the lateral and vertical containment of projectiles, fragments, debris and components resulting from the firing or detonation of weapons.

analysis and review of RTA inspection reports and for ensuring local-level adherence to safe training standards outlined in DND's Range Construction and Maintenance and Training Safety manuals.

## 1.2 Rationale

The Audit of RTA Management was included in the ADM(RS) Risk-based Internal Audit Plan for fiscal years 2015/16 to 2017/18 as a result of concerns related to RTA sustainability identified in the July 2014 ADM(RS) Evaluation of Environmental Protection and Stewardship.<sup>9</sup> These concerns had also been raised in a 2003 Auditor General of Canada Report on Environmental Stewardship of Military Training and Test Areas.<sup>10</sup>

Furthermore, strategic planning documents, including the DND/CAF 2016-17 Report on Plans and Priorities and the CA's future concept document, Waypoint 2018, highlight the Canadian public's expectation that soldiers will not be placed in harm's way without the necessary equipment, training and leadership.<sup>11</sup> These documents also stress the importance of the CAF being sustainable by exercising proper stewardship of its strategic institutional assets (i.e., infrastructure, equipment and training establishments). Thus, an RTA management program that meets both current and future needs requires balancing capability readiness with compliance to environmental legislation, policy and sustainability.

## 1.3 Objective

The audit objective was to determine if governance, risk management and control processes are in place to manage RTAs in order to ensure their continued availability for military training.

## 1.4 Scope

- The audit focused on land-based RTAs<sup>12</sup> and the Cold Lake Air Weapons Range.
- The audit team looked at the RTA management policies and processes that were in place before, during and after ADM(IE)'s transformation process (2013-2016).
- The audit excluded ocean-based training areas,<sup>13</sup> as well as training and weapons testing performed by Defence Research and Development Canada.

## 1.5 Methodology

The audit results are based on the following:

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<sup>9</sup> <http://www.forces.gc.ca/en/about-reports-pubs-audit-eval/223p1012.page>. Last consulted on June 14, 2017.

<sup>10</sup> <http://www.oag-bvg.gc.ca/internet/docs/20030407ce.pdf>. Last consulted on June 14, 2017.

<sup>11</sup> [http://www.army.forces.gc.ca/assets/ARMY\\_Internet/docs/en/waypoint-2018.pdf](http://www.army.forces.gc.ca/assets/ARMY_Internet/docs/en/waypoint-2018.pdf). Last consulted on June 14, 2017.

<sup>12</sup> RTAs are primarily used by the CA and RCAF for live-fire and munitions training. The RCN uses land-based RTAs mainly for small arms training and land-based exercises as it conducts the majority of its weapon testing in ocean waters off the Atlantic and Pacific Coasts.

<sup>13</sup> Maritime experimental and test ranges, such as the Canadian Forces Maritime Experiential and Test Range, have a joint funding agreement between Canada and the United States where such items as sonobuoys, sonar systems and torpedoes are tested.



- Analysis of fiscal year 2014/15 Canadian Forces Range Information System data;
- Interviews with staff members within ADM(IE), Director Land Environment, CA, RCN, RCAF, CADTC and Divisional RTA Management Officers;
- Review of key DND and base/wing-level policies and procedures, Treasury Board policy and federal legislation; and
- Visits to the following six base/wing RTAs where Range Control Officers, environmental and local-level ADM(IE) staff were interviewed:
  - Vice Chief of Defence Staff: Connaught Range
  - Military Personnel Command: Canadian Forces Base Borden
  - CA: Canadian Forces Base Suffield and Canadian Forces Base Gagetown
  - RCN: Canadian Forces Base Esquimalt
  - RCAF: Canadian Forces Base Cold Lake

## **1.6 Audit Criteria**

The audit criteria can be found at [Annex B](#).

## **1.7 Statement of Conformance**

The audit findings and conclusions contained in this report are based on sufficient and appropriate audit evidence gathered in accordance with procedures that meet the Institute of Internal Auditors' *International Standards for the Professional Practice of Internal Auditing*. The audit thus conforms to the Institute of Internal Auditors' *International Standards for the Professional Practice of Internal Auditing* as supported by the results of the quality assurance and improvement program. The opinions expressed in this report are based on conditions as they existed at the time of the audit and apply only to the entity examined.

## 2.0 Findings and Recommendations

### 2.1 Range and Training Area Governance

The governance structure for RTAs, particularly with respect to environmental stewardship issues, needs to be improved.

#### 2.1.1 Infrastructure

The transition from a decentralized custodianship model to a centralized model has altered traditional ARA and work processes related to RTA operational and maintenance processes. ARA related to infrastructure management are clearly outlined in numerous DND/CAF policy and guidance documents. In addition, agreements between ADM(IE) and each of the three Environments and other DND/CAF functional organizations outline ARA, as do service-level agreements between ADM(IE) and individual bases/wings.

Base/wing RTA staff are still in the process of adapting to a centralized model. RTA staff indicated that the combination of becoming more familiar with ADM(IE)'s new ARA and having increased coordination between units and bases/wings regarding RTA activities will assist them in their ability to maintain RTAs and consequently meet the majority of requested military training activities.

Despite these efforts, many of the RTA staff interviewed at the base/wing level indicated that there is a lack of clarity regarding the application of the new ARA in the performance of day-to-day RTA infrastructure maintenance and project management. RTA projects and maintenance requests, which in the past would have been prioritized and performed by the base/wing Range Control staff or the local-level construction engineering group, are now performed by ADM(IE) organizations.<sup>14</sup>

The lack of clarity related to ARA has led to some RTA tasks and projects taking longer to complete than in the past. For example, at some of the sites visited, service requests related to the construction and servicing of small arms target ranges and training facilities, such as rappel towers and obstacle courses, have experienced delays. Questions surrounding who was responsible for performing the work, staff from RTA, RP Ops or Base Transport were often cited as the cause for delays. These delays have resulted in requesting units incurring extra time and cost due to the need to travel to other training locations or to reschedule training. However, only in rare instances have these delays resulted in RTA facilities and areas being shut down or impacted the ability of CAF members to receive training.

Establishing effective communication channels between base/wing staff and ADM(IE) has also been a challenge. RTA staff expressed concerns that project and service update requests submitted to local-level RP Ops staff are not being addressed. In turn, RP Ops staff have encountered difficulties in establishing a centralized headquarters point of contact from whom to obtain guidance or receive updates regarding project proposals and submissions. The lack of

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<sup>14</sup> Through ADM(IE)'s base/wing RP Ops or centralized ADM(IE) organizations/processes.

information and communication is creating a strain on client service relationships at the base/wing level.

### **2.1.2 Environment**

Weaknesses in policy and communication pertaining to environmental governance since the transformation has been recognized as a concern by both ADM(IE) headquarters staff and base/wing environmental officers. Concerns range from challenges with the organizational structure of the environment group at the base/wing level to guidance on when to perform environmental assessments. These concerns extend to environmental officer requirements to manage RTA environmental issues, such as species at risk, vegetation management and performance of weapon and training environmental impact assessments—activities that are essential to ensuring a sustainable RTA function.

Environmental officers have identified the need for a centralized overarching environmental policy framework that provides further guidance regarding their ARA under the transformed ADM(IE). Included in this policy framework would be more details and examples relating to environmental officers' responsibilities pertaining to RTA management activities, such as range usage, monitoring, reporting and project assistance.

Currently, there is no standard local-level environmental management organizational structure. In some cases, environmental management falls fully under the base/wing command, while in other cases, environmental management is split, with some staff reporting to ADM(IE)/RP Ops and others to the base/wing commander. This has impacted communication and oversight of environmental issues.

Many of the environment officers interviewed were concerned that they are sometimes left out of local-level activities that they should be involved in, or conversely that they are not receiving communications from ADM(IE). At the time of the audit, the primary means of staying informed of changes to environmental regulations was through professional networks and associations as opposed to having information flow through ADM(IE) or the environmental chains of command.

To help establish a governance model and ARA for the RTA environment group, ADM(IE) developed a concept of operations and an ARA Matrix in June 2016.<sup>15</sup> However, the matrix did not provide clear definitions of environmental ARA at the base/wing level, nor did it provide enough useful examples. This has led to differing interpretations of responsibilities and an unclear division of labor. ADM(IE) staff and environmental officers are aware that the ADM(IE) transformation initiative is a long-term plan, and that current weaknesses in environmental ARA have been identified and should be addressed as the ADM(IE) transformation progresses.

### **2.1.3 Range and Training Area Policy and Oversight**

RTA policy and guidance related to construction and maintenance standards, safety and operating procedures are well documented, communicated and understood by RTA staff and

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<sup>15</sup> ADM(IE) released a DND Real Property Environmental Management matrix (Annex A) on June 1, 2016.

users. Each of the locations visited maintained copies of RTA guidance documentation and constantly referenced them during onsite interviews.

Local Range Standing Orders<sup>16</sup> were found to be closely aligned with federal and DND/CAF policies.<sup>17</sup> In many cases, they had been broadened in order to address issues specific to the respective location. In addition, communication tools, such as safety briefings, information sessions, training courses and regular communication with stakeholders, occurred on a routine basis.

Committee structures at the national level have been established, and committees meet regularly to ensure that RTA governance and operational concerns and challenges are communicated. While numerous base/wing-level RTA committees have been established, committee structures and meeting frequencies vary, and in many cases they are informal, with no minutes or records of decision maintained.

#### **2.1.4 Summary**

As a result of the ongoing organizational transformation, ADM(IE) is now the RTA property custodian and environmental manager while base/wing RTA Range Control staff retain responsibility for local-level RTA operations.

RTA infrastructure management ARA are defined as a result of the transformed ADM(IE) organization but are not fully implemented or understood throughout the organization. As a result, there have been delays in RTA activities such as infrastructure repair and maintenance.

ARA associated with environmental management have been slower to be defined and promulgated. The same can be said for the development of environmental policy and guidance documents. ADM(IE) has begun to address this concern with the issuance of new environmental management guidance.

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<sup>16</sup> Range Standing Orders provide the safety regulations, training restrictions and procedures to be followed by all personnel using base/wing RTAs (e.g., authorized training activities, authorized ammunition use and environmental regulations/considerations). The RCAF follows specific documentation for training areas as its activities are more unique (e.g., air weapons documentation for air space training – PBC – C-07-010-011-TP-000 Canadian Forces Air Weapons Ranges).

<sup>17</sup> For example, the *Environmental Protection Act*, the *Fisheries Act* and DND B-GL-381-001/FP-001 – Range and Training Safety Manual.

## ADM(RS) Recommendation

1. It is recommended that ADM(IE) review and update the RTA governance as the centralization of real property continues to evolve.

The update is to include the following:

- Finalize and implement a policy framework that establishes ARA for environmental management of RTAs.
- Clarify the application of the new ARA for RTA infrastructure management at the base/wing, division and national levels.
- Establish communication channels that ensure the exchange of information between base/wing staff and ADM(IE) headquarters staff on issues related to RTA management for both infrastructure and environmental issues.

**OPI:** ADM(IE)

## 2.2 Range and Training Area Management

RTAs are generally well managed and meet present needs, but current management strategies may impact the ability of RTAs to meet future requirements.

### 2.2.1 Strategic/Long-term Planning

RTA stakeholders at both the base/wing and headquarters levels indicated that the CAF, with few exceptions, is able to meet current training needs. Concerns were expressed, however, that RTAs were not being managed in the most efficient and effective manner so as to ensure their continued availability.

A sustainable RTA function requires the DND/CAF to balance the impacts of providing training environments and facilities that replicate real-world operating conditions, while being compliant with environmental acts and legislation. ADM(IE) has tried to balance these conditions by requiring RTA staff to develop Sustainable RTA Management Plans.<sup>18</sup> However, this process was not fully implemented or understood at the base/wing level. At some locations visited, the Sustainable RTA Management Plan had not been amended or approved for some time. Environmental officers, in particular, expressed a desire for a better explanation of RTA sustainability objectives so that they could properly administer the environmental compliance aspects of RTA activities.

Inconsistencies were observed in how individual RTAs performed strategic/long-term planning. In the absence of clear direction, some locations considered the base/wing Master Real Property

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<sup>18</sup> Standard 1606-4000.1-S01-024 – Sustainable Range and Training Area Management Standard, endorsed by the Infrastructure and Environment Policy Committee in October 2010. A Sustainable RTA Management Plan is a detailed plan for the long-term management of RTAs in a sustainable manner.

Development Plans (MRPDP)<sup>19</sup> to be their long-term RTA plan. The MRPDP is a high-level document that outlines major development activities for assets over a 30-year planning horizon rather than an in-depth project plan. In contrast, at other locations, RTA staff developed more detailed long-term sustainability plans containing full business case proposals and justifications to support their future operational requirements. In these cases, RTA staff addressed many of the changing Defence needs, uses, users and ongoing environmental challenges facing their respective RTA, including preparing for new weapons system technologies and military asset capabilities.

### **2.2.2 Range and Training Area Resource Allocation / Project Prioritization**

As part of the real property transformation, ADM(IE) has developed and released a Project Prioritization Matrix. This tool is used to select and fund CAF/DND infrastructure projects, including RTA maintenance and capital projects through a ranking system based on set criteria including elements such as mission relevance and project urgency. The goal of this tool is to provide ADM(IE) with a means to more effectively manage and deliver the DND/CAF's infrastructure programs and services and to help align real property management with government and DND/CAF strategies.

Bases/wings complete a template for each project that exceeds the prescribed local approval amount.<sup>20</sup> Based on the criteria, an individual score is given to each project. Projects are then submitted to the national level. Based on funding availability, projects that meet a minimum score threshold are selected. Projects that do not meet the minimum score threshold are rolled over to the following year to be assessed against any new projects.

While smaller-scale RTA projects may not seem as vital when compared to larger national-level strategic projects, they are important to the individual bases. In certain instances, their being passed over for funding has resulted in training being stopped for periods of time. For example, 4 out of 40 RTAs on one of the bases visited had been shut down due to unfunded maintenance projects. Given the aging infrastructure of the over 1200 RTAs, there is a real risk that the frequency and severity of these situations may increase in the future, adversely impacting training schedules.

The RTA Working Group,<sup>21</sup> along with other RTA staff interviewed, were concerned that, under the new national process, RTA projects do not typically score high enough to receive funding. It is their view that the scoring criteria or funding mechanism should be reconsidered because RTA maintenance projects, which, although vital to the CAF, are not considered as valuable an asset

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<sup>19</sup> MRPDPs are required ADM(IE) products that bases must use to request approval and funding for long-term development projects. Base/wing project MRPDPs are vetted at the divisional/wing level and then included on the respective Environment's MRPDP.

<sup>20</sup> New construction costing more than \$1 million, and maintenance and repair costing more than \$500,000. Projects under these amounts are funded at the base/wing level and are prioritized based on a "critical" (safety), "necessary" (maintain normalcy) or "desirable" ranking.

<sup>21</sup> Participants in the CA RTA Working Group include the Canadian Division RTA Management Officers and representatives from CADTC, ADM(IE) and Director of Land Infrastructure.

as large-scale acquisition or construction projects, such as runway or jetty construction, and thus lose out on funding opportunities.

### **2.2.3 Performance Metrics and Data Management**

The strategic vision for both the ADM(IE) transformation and the CA stresses the importance of establishing and using performance measures to monitor performance, highlight opportunities and demonstrate efficiencies.

To date, data collection at RTAs has been limited to reporting requirements related to the number of inspections completed, the number of ammunition rounds fired and information required to produce mandatory environmental monitoring reports.<sup>22</sup> This type of information is not being used, or does not provide relevant data, to assist ADM(IE) or RTA staff in determining preventative maintenance plans, monitoring usage and environmental risks or requesting additional financial and human resources.

In an effort to obtain accurate performance measurement information, staff at one RTA have initiated a global positioning tracking system to generate data related to vehicle and land usage. This will allow RTA staff to better understand which areas of the RTA are being overused and to monitor RTA bridge/road usage. RTA staff will then use this type of information to develop baseline usage data to assist in predicting land rehabilitation and maintenance needs and to provide input for environmental management strategies. This is a locally initiated pilot program, which, if successful, may be adopted by the CA for all RTAs.

### **2.2.4 Range and Training Area Maintenance**

ADM(IE)'s 2015-2016 Functional Planning Guidance document states that real property operations are to demonstrate that they have a preventative maintenance plan in place to manage the mandated preventative maintenance tasks. Custodians are also required to ensure that the ratio of preventative maintenance to reactive maintenance and repair improves within two years. The need for preventative maintenance is also stressed in guidance documents, such as the Range Construction and Maintenance, and Range Training Safety manuals. These documents also emphasize the importance of safety inspections and of undertaking required corrective actions.

Much of the RTA infrastructure was constructed in the 1940s and 1950s, thus requiring maintenance and replacement strategies to be proactively managed in order to ensure their continued availability. RTA maintenance, however, is more reactive than proactive due to a lack of capacity and funding. At the sites visited, the maturity level of preventative maintenance programs varied by location, ranging from having no program at all to having set times booked in the Canadian Forces Range Information System to reserve an RTA for maintenance.

The 2014/15 CA divisional inspections reported unsafe and unsatisfactory conditions at 25 RTAs throughout the CAF, with one base having 11 RTAs<sup>23</sup> listed as unsafe or unsatisfactory. While

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<sup>22</sup> For example, contaminated sites, species at risk and waterway monitoring reports.

<sup>23</sup> Out of over 1200 RTAs. All sites that were reported as unsafe or unsatisfactory at the locations visited were shut down and were not available to be used for current training activities.

base RTA staff were aware of the deficiencies, actions to remedy them depended on a wide range of variables, including project prioritization, funding and resource availability and RTA availability.

An increase in visiting CA unit training and joint CA/RCN/RCAF training at some bases/wings is creating a corresponding increase in wear and tear to RTA infrastructure and to the environment. Currently, there is no means to attribute rehabilitation costs associated with this increased RTA usage to a specific training unit. As a result, costs are being covered by the local RTA, but the local budget is not being augmented to reflect the increase in RTA usage by visiting CAF units.

The environmental impact of RTA operations has been widely recognized by the CAF for some time. RTA training activities have the potential to produce significant damaging effects on surrounding terrain and ecosystems. Many of the observations presented in past reports<sup>24</sup> have led to an increased focus on environmental concerns at the operational level. Environmental awareness and compliance activities are now embedded in RTA management and operational processes. For example, RTA bookings consider species at risk nesting seasons when scheduling training, utilize signage to prevent activities from occurring in sensitive habitat areas and implement best practices for tanks crossing streams to reduce erosion and sediment generation in fish habitat by restricting the tank crossings to installed hardened crossings.

Nevertheless, there are still RTA activities and locations that generate and face considerable environmental protection challenges related to RTA sustainability. In these instances, there is some progress being made to address the situation.<sup>25</sup> Given the inherent destructive nature associated with military training, however, the risk is still high that instances of non-compliance may occur. If this were to happen, there could be not only a detrimental effect to the infrastructure and the environment, but it could also restrict training activities or force the closure of the RTA.

### **2.2.5 Other Users**

Other users of RTAs typically fall into one of the following groups: those that use the RTAs for its intended purpose, such as police forces and shooting clubs; the oil and gas industry; Indigenous groups; and other users, such as hunters, farmers and hobbyists. Usage agreements are generally negotiated at the local level for local police forces and hunting groups or at the departmental level for more involved negotiations related to oil and gas access or Indigenous land rights.<sup>26</sup>

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<sup>24</sup> The 2003 Auditor General of Canada Report on Environmental Stewardship of Military Training and Test Areas, and the July 2014 ADM(RS) Evaluation of Environmental Protection and Stewardship.

<sup>25</sup> For example, the \$13 million Gagetown Sedimentation and Erosion Control Program.

<sup>26</sup> DND has a Provision of Service Policy that is used by bases and wings to administer regulations related to third-party usage (B-GS-055-000/AG-001 Provision of Services).



Non-oil and gas third-party use, as described previously, has had very minimal impact on RTA availability and training. Oil and gas development,<sup>27</sup> on the other hand, limits RTA land and space usage as a result of prescribed safety zones associated with oil and gas exploration and infrastructure. Oil and gas exploration and infrastructure can restrict new RTA construction area availability and impose limits on where weapons and manoeuvre training can occur. At one location over \$4 billion of oil and gas infrastructure has been installed within the RTA.

Planning and coordination by RTA staff has ensured required training continues despite the diminishing size of the training area. However, ensuring safe access to the RTA for oil and gas personnel requires a considerable amount of coordination between base/wing staff and the oil and gas companies, which in turn, puts a strain on limited local budgets. There are also potential environmental impacts inherent to oil and gas activity and safety risks due to its proximity to military training.

Base/wing RTA staff interviewed felt that oil and gas industry encroachment is at a manageable level given the current oil and gas economic environment. In addition, the use of different oil and gas exploration and transportation techniques, such as underground pipelines, has resulted in diminished operational impact on RTAs. As a result, staff at locations with oil and gas interests indicated that exploration and development activity has not had a detrimental impact on training requirements. However, RTA staff are concerned that, as oil prices begin to increase, encroachment may become more of an issue.

In some situations, the oil and gas industry provides assistance to the RTAs. At one location, RTA staff indicated that an informal arrangement existed where the oil and gas companies assisted with RTA target construction. RTA staff estimated that the agreement provided between \$250,000 to \$300,000 worth of assistance related to the transport and construction of RTA targets. If not for this agreement, the RTA would have to find other sources of funding for these activities, which in turn could constrain other environmental or maintenance activities at the RTA.

A formal agreement related to the provision of this service, however, was not provided to the audit team. The absence of contractual documentation stating the obligations and responsibilities of both parties related to RTA activities may expose the DND/CAF to potential liabilities related to injury or safety concerns that result from RTA events.<sup>28</sup>

## 2.2.6 Summary

RTAs play an important role in allowing the CAF to meet its objectives. To ensure continued environmental compliance and the use and availability of these assets, prudent management

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<sup>27</sup> The Government of Canada and the Government of Alberta entered into an agreement whereby Canada transferred to Alberta the right to access portions or areas of the base as may be required to carry on a program of drilling, production, collection and transmission of natural gas (1975) and oil (1977) beneath Canadian Forces Base Suffield. Canadian Forces Base Cold Lake is on leased Alberta and Saskatchewan land, with significant oil and gas industry presence on the Alberta portion of the RTA.

<sup>28</sup> ADM(IE) was briefed on this case and has requested staff to ensure that all RTA oil and gas industry agreements are formally documented.

strategies and approaches, including a means to assess performance, must be developed and applied. Weaknesses in long-term planning and prioritization of maintenance and infrastructure projects increase the risk that RTAs may not meet the evolving operational and environmental needs of the CAF.

Potential effects of third parties such as the oil and gas industry must also be considered when planning for continued RTA availability. Oil and gas industry encroachment is currently manageable, but there is a risk that its footprint may grow to the point where it will negatively impact military training. RTA staff have recognized this concern and have begun to develop plans to address this issue.

### **ADM(RS) Recommendation**

2. It is recommended that ADM(IE), with input from the CA, establish and implement an RTA strategic management process that ensures the continued availability of RTAs.

This process is to include the following:

- Establish long-term sustainable RTA plans and performance metrics that address both operational readiness and environmental compliance.
- Review the prioritization process to ensure that due consideration is given to the importance of RTA maintenance and infrastructure projects to sustain the operational readiness of the CAF.
- Collaborate with base/wing staff to document all third-party agreements and ensure that they are in line with RTA goals.

**OPI:** ADM(IE)/CA

### **3.0 General Conclusion**

To date, existing RTA governance, risk management and control processes have functioned to the point where the CAF has been able to meet the majority of its training requirements. Nevertheless, to support the long-term operational and environmental sustainability of RTAs, the ADM(IE) transformation initiative must continue to improve the governance and strategic management of these important assets. Environmental management requires particular attention.

There is also still work to be done to ensure that ARA are clearly understood at all levels. Processes must be further developed to shift the current focus from reactive to preventative maintenance and to improve information flow between ADM(IE) headquarters and the base/wing level.

## Annex A—Management Action Plan

ADM(RS) uses recommendation significance criteria as follows:

**Very High**—Controls are not in place. Important issues have been identified and will have a significant negative impact on operations.

**High**—Controls are inadequate. Important issues are identified that could negatively impact the achievement of program/operational objectives.

**Moderate**—Controls are in place but are not being sufficiently complied with. Issues are identified that could negatively impact the efficiency and effectiveness of operations.

**Low**—Controls are in place but the level of compliance varies.

**Very Low**—Controls are in place with no level of variance.

### Range and Training Area Governance

The governance structure for RTAs, particularly with respect to environmental stewardship issues, needs to be improved.

#### ADM(RS) Recommendation (Moderate Significance)

1. It is recommended that ADM(IE) review and update the RTA governance as the centralization of real property continues to evolve.

The update is to include the following:

- Finalize and implement a policy framework that establishes ARA for environmental management of RTAs.
- Clarify the application of the new ARA for RTA infrastructure management at the base/wing, division and national levels.
- Establish communication channels that ensure the exchange of information between base/wing staff and ADM(IE) headquarters staff on issues related to RTA management for both infrastructure and environmental issues.

### Management Action

Agreed. ADM(IE) will create a policy framework governing environmental management of RTAs, clarify roles and responsibilities and enhance communication channels to facilitate the exchange of information for RTA management. Specifically, ADM(IE), together with its colleagues, will do the following:

Recommendation	Action(s)	OPI	Target Date
Finalize and implement a policy framework that establishes ARA for environmental management of RTAs.	<ul style="list-style-type: none"> <li>• Develop and promulgate a Contaminated Sites Management Standard.</li> <li>• Review and update Annex A of the Concept of Operations – Environmental Support to DND Real Property Management.</li> <li>• Develop and promulgate a Range and Training Area Sustainability Standard, building on the existing draft Sustainable Range and Training Area Management Standard.</li> </ul>	Director General Infrastructure and Environment Governance, Policy and Strategy (DGIEGPS) (with Director General Environment and Sustainable Management (DGESM))	December 31, 2017  March 31, 2018  March 31, 2019
Clarify the application of the ARA for RTA infrastructure management at the base/wing, division and national levels.	<ul style="list-style-type: none"> <li>• Review and update Canadian Army Order 21-20 – Land Ranges and Training Areas, including the RTA governance structure.</li> </ul>	RP Ops and CA	March 31, 2018
Establish communication channels that ensure the exchange of information between base/wing staff and ADM(IE) headquarters staff on issues related to RTA management for both infrastructure and environmental issues.	<ul style="list-style-type: none"> <li>• In addition to the existing RTA working group structure (base – division – national) in the CA, establish an RTA Management Working Group to bring together infrastructure, CAF and environmental representatives.</li> </ul>	Director General Portfolio Requirements (DG P Reqts) (with RP Ops, DGIEGPS and DGESM)	March 31, 2018

**Table A-1. Management Action Plan for ADM(RS) Recommendation 1.** This table lists the actions that management plans to take in order to comply with ADM(RS) Recommendation 1.

**OPI:** ADM(IE) – DGIEGPS

**Target Date:** March 2019

## **Range and Training Area Management**

RTAs are generally well managed and continue to meet present needs, but current management strategies may impact the ability of RTAs to meet future RTA requirements.

### **ADM(RS) Recommendation (Moderate Significance)**

2. It is recommended that ADM(IE), with input from the CA, establish and implement an RTA strategic management process that ensures the continued availability of RTAs.

This process is to include the following:

- Establish long-term sustainable RTA plans and performance metrics that address both operational readiness and environmental compliance.
- Review the prioritization process to ensure that due consideration is given to the importance of RTA maintenance and infrastructure projects to sustain the operational readiness of the CAF.
- Collaborate with base/wing staff to document all third-party agreements, and ensure that they are in line with RTA goals.

### **Management Action**

Agreed. ADM(IE) will establish a management process that ensures the continued availability of RTAs. Specifically, ADM(IE) will do the following:

Recommendation	Action(s)	OPI	Target Date
Establish long-term sustainable RTA plans and performance metrics that address both operational readiness and environmental compliance.	<ul style="list-style-type: none"> <li>• Initiate the development of a Strategic Asset Study and produce associated Asset Management Plans.</li> <li>• Implement a systematic process to identify, monitor and report on site-specific indicators of sustainability.</li> </ul>	DG P Reqts (with DGIEPGPS and DGESM)	June 30, 2019  October 31, 2019
Review the prioritization process to ensure that due consideration is given to the importance of RTA maintenance and infrastructure projects to sustain the operational readiness of the CAF.	<ul style="list-style-type: none"> <li>• Conduct a full review of the existing requirements prioritization process.</li> </ul>	DG P Reqts	March 31, 2020
Collaborate with base/wing staff to document all third-party agreements and ensure that they are in line with RTA goals.	<ul style="list-style-type: none"> <li>• Review and update the Real Property Delegation of Authority, centralizing the authority to enter into third-party agreements in order to facilitate oversight.</li> <li>• Conduct a preliminary scan for existing third-party RTA agreements.</li> <li>• Document all existing third-party RTA agreements, noting expiry dates and discrepancies to be corrected at renewal.</li> </ul>	DGIEPGPS (with RP Ops)	December 31, 2017  September 1, 2018  March 31, 2020

**Table A-2. Management Action Plan for ADM(RS) Recommendation 2.** This table lists the actions that management plans to take in order to comply with ADM(RS) Recommendation 2.

**OPI:** ADM(IE) – DGIEGPS

**Target Date:** March 2020

## Annex B—Audit Criteria

### Criteria Assessment

The audit criteria were assessed using the following levels:

#### Assessment Level and Description

**Level 1**—Satisfactory

**Level 2**—Needs Minor Improvement

**Level 3**—Needs Moderate Improvement

**Level 4**—Needs Significant Improvement

**Level 5**—Unsatisfactory

### Governance

1. Governance has been established and implemented to ensure the continued availability of RTAs.

**Assessment Level 3** – For the most part, current military training requirements are being satisfied under the present RTA governance structure established under the transformed ADM(IE) organization. Further development in determining and developing accountabilities, roles, responsibilities and policies/procedures, along with improved communication and oversight, are required to ensure a governance function that will continue to be able to meet training needs.

### Risk Management and Controls

2. Risk management and control processes have been established and implemented to ensure the continued availability of RTAs.

**Assessment Level 3** – Current risk management and control processes have allowed the majority of RTAs to meet present military training needs. RTA strategic management related to long-term planning, resource allocation, maintenance, performance management and third-party usage are not fully developed to ensure that RTAs will be able to meet future training and environmental requirements.

### Source of Criteria

Treasury Board Secretariat. Audit Criteria related to the Management Accountability Framework: A Tool for Internal Auditors, March 2011.