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PROJECT TO PROGRAM – BRIDGING THE KNOWLEDGE GAP IN THE WORLD OF ASSET MANAGEMENT

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PROJECT TO PROGRAM – BRIDGING THE KNOWLEDGE GAP IN THE WORLD OF ASSET MANAGEMENT

AIM

1. The aim of the service paper is to advocate for asset management training at the base and regional levels within the Assistant Deputy Minister (Infrastructure Environment) (ADM (IE)) organization. This training will give key staff the knowledge required to make more effective and sustainable decisions and bridge the gap between the current success at the tactical level and the new strategic initiatives within ADM (IE). With firm national leadership and standardization, this training can be implemented regionally and will provide better accountability, financial efficiency, risk management, and levels of service. With consistent training throughout all levels of the organization, the agility and credibility of ADM (IE) will greatly improve.

INTRODUCTION

2. ADM (IE) centralization took bold steps to rectify many shortcomings and implement the recommendations identified in the Office of the Auditor General (OAG) Report in 2012.¹ Bringing all assets under a central custodian was the first critical step toward achieving sustainable infrastructure to support the Department of National Defence (DND). With a portfolio of over \$26B, it is essential to standardize asset management practices at all layers of

¹ Michael Ferguson, *Report of the Auditor General of Canada to the House of Commons: Matters of special importance* (Ottawa: Office of the Auditor General of Canada, 2012), 16-18.

the organization.² The management of infrastructure at the 32 bases and additional satellite locations rest within seven regions under the command of the Real Property Operations Group (RPOG). This is a very linear organization with an extensive span of control.³ Combined with the geographic dispersion and varied and specialized nature of the facilities, it is difficult to ensure standardization and proper prioritization of resources.⁴

3. There is an adage in organizations that the person closest to the problem should solve the problem. They have the most motivation to get it done right and have the best visibility of the problem and any second and third order effects. They are in a position to take further action, if required, to ensure long-term success. But to solve the problem, the person needs to be properly trained, empowered, and resourced. In the example of real property, the person that is closest to the problem is typically the core staff at the base and regional levels. The one major omission from the considerable strategic and operational direction resulting from ADM (IE) transformation was the training of these key positions to solve problems. The training that was provided was focused on two data management tools: Infrastructure Environment Business Modernization (IEBM) and VFA.⁵ These were implemented in a coherent and well-planned manner and the training was adequate to allow bases and regions to input and retrieve data. Now is the ideal time to implement asset management training and make use of these tools to solve

² Department of National Defence, *Strong, Secure, Engaged: Canada's Defence Policy* (Ottawa: 2017), 76.

³ RPOG organizational chart available on Defence Wide Area Network at <http://intranet.mil.ca/assets/DefenceTeam/docs/en/Infrastructure-environment/About%20IE/adm-ie-organization-chart.pdf>

⁴ Assistant Deputy Minister (Infrastructure Environment), *Defence Portfolio 2030: Towards a Sustainable Real Property Footprint*. (Ottawa: 2016), 4.

⁵ VFA is a trademark name of a cloud-based software with analytic tools being used to capture facility condition assessments to assist in asset management functions.

problems. Simply referring to the tenets of asset management including sustainable asset management, strategic asset management planning, life-cycle costing, and business intelligence will not set the conditions for them to occur. There exists a systemic knowledge gap amongst those charged with these functions, and they are the ones closest to the problem.

DISCUSSION

4. Asset management is not a new concept. It is exercised by millions of organizations around the world every day. In their book *Switch*, Chip and Dan Heath explore the concept of finding the bright spots.⁶ Essentially, they advocate locating what is working in an organization or similar organizations rather than focussing on what is wrong with an organization. Given the fundamental shift in moving the DND real property portfolio from nine custodians to a single authority in ADM (IE), it is necessary to look to other organizations to draw inspiration. The natural comparison would seem to be allied militaries. However, the differences in sheer scale, military industrial complex, geographic differences, and national and political differences outweigh the similarities and fail to offer meaningful insights.⁷ Comparisons with Canadian corporations engaged in asset management would also seem to provide lessons that we can draw on. But, the profit-driven culture of the private sector does not always reflect tenets of long-term sustainability and environmental stewardship; nor are corporations limited by extensive government bureaucracy in the areas of finance and human resourcing.

⁶ Chip and Dan Heath, *Switch: How to Change Things When Change is Hard* (New York: Random House, 2010), 47.

⁷ Two simple examples: Size - The US portfolio has a plant replacement cost of over \$827B (USD) as of 2012. <https://www.acq.osd.mil/eie/Downloads/FIM/DoD%20Facility%20Inspection%20Policy.pdf>. Reliance on industry and political differences - The UK spends over £3B annually to purchase infrastructure services. <https://www.gov.uk/government/news/dio-sets-out-vision-for-future-working-with-industry>

5. The area that we can find a number of bright spots is within municipalities. With similar asset classes, rotating leadership, and fiscal restraints, these long-term stewards of infrastructure operate similarly to satisfy demanding customers within a governmental framework. Variations in overall size and composition, population, state of infrastructure, and political concerns echo the diversity of the DND portfolio and give many examples of which to extract bright spots to emulate.

6. What are municipal governments getting right? In the last two decades, Canadian municipalities have begun to align practices with international standards. The British Standards Institute first released Publicly Available Specification (PAS) 55 in 2004 and launched the International Organization for Standardisation (ISO) 55000 series in 2014.⁸ These standards are the benchmark in international asset management. The International Infrastructure Management Manual (IIMM), currently in its fifth edition, published by the Institute of Public Works Engineering Australasia (IPWEA) in collaborations with experts from the United Kingdom, Canada, New Zealand, South Africa, and the United States provides the tools and resources to apply the standards effectively.⁹ Based upon this foundation, the Canadian Network of Asset Managers (CNAM) has built a strong network of Canadian municipalities and other asset managers that share lessons learned, discuss advancements in technology, and forges relationships within the field. Canadian municipalities have leveraged this organization and the international standards to improve their asset management practices.

⁸ International Organization for Standardization (2014), *Asset Management – Overview Principles and Terminology* (ISO 55000). <https://www.iso.org/obp/ui/#iso:std:iso:55000:ed-1:v2:en>.

⁹ Institute of Public Works Engineering Australasia (IPWEA), *International Infrastructure Management Manual, Version 5*, (n.p. The SOS Print + Media Group, 2015), v.

7. General George S. Patton's WWII maxim of "Never tell people *how* to do things. Tell them *what* to do and they will surprise you with their ingenuity"¹⁰ holds true only when there is a competency in the basic skills. Giving the direction to destroy the enemy may be enough once the soldiers under your command are experts at employing their weapon systems and well rehearsed at conducting combined arms attacks. However, simply giving the direction to destroy the enemy to a group that lacks training on how to fire a weapon is setting the conditions for failure. Similar conditions exist within the RPOG. Officers Commanding and their subordinates are being directed to take action with significant operational and financial consequences without the basic skill sets. The current training system focuses on an individual's ability to feed the machine. The Advanced Construction Engineer Course (ACEO), the pinnacle of real property training, teaches in detail the different envelopes (or silos) of money available. Lists are generated based on infrastructure failure and bright ideas which then become projects. Then critical thought is expended trying to fit these projects into one of the funding envelopes where they are evaluated against other infrastructure failures and bright ideas and a funding line is drawn.

8. Once the projects are approved, they are well executed.¹¹ But are bases applying appropriate thought and consideration to the development and prioritization of projects, in a manner consistent with industry best practices or simply running through the motions to expend the balance of the annual financial allocation? The state of infrastructure and compliance records

¹⁰ George S. Patton, Paul D. Harkins, and Beatrice Banning Ayer Patton, *War as I Knew It* (Boston: Houghton Mifflin Company, 1947), 357.

¹¹ This refers to small projects executed at the base level. Capital Infrastructure Projects that are centrally managed have mixed results.

would indicate that something is wrong with the current business practices. The OAG report focuses on finance and managerial framework, and they certainly play a role. But, the decision making at the base and regional level has large operational and often multi-million dollar implications. The Assistant Deputy Minister (Review Services) report in 2016 called for ADM (IE) to “improve the portfolio planning process to ensure that life cycle requirements for municipal works are identified and addressed through asset management plans.”¹² In a linear organization with over 32 locations, all of which required detailed asset management plans, the expertise simply doesn’t exist at the base and regional levels. Each plan requires customization and constant updates and improvements; therefore, ownership of these plans must lie at the local detachments.¹³ ADM (IE)’s own plan for the defence portfolio calls for the completion of local asset management plans but fails to lay out a plan for key individuals to acquire those skills.¹⁴ Training is required.

9. With the boom of asset management that has occurred across Canada in recent years, the quality and quantity of organizations able to provide instruction in the private sector have risen dramatically, and the available methods for training have become both convenient and affordable. In 2016, Real Property Operations Unit (West) (RPOU(W)) conducted a trial training program.¹⁵ This utilized experts in the field of asset management to instruct key individuals at the base and regional levels on the fundamentals of asset management, risk assessments and mitigation, life-cycle costing, and financial analysis. This training was very

¹² Assistant Deputy Minister (Review Services), *Audit of Municipal Works*, (Ottawa: 2016), 15.

¹³ Education Program Innovations Center, “Asset Management Plans,” *Infrastructure Asset Management: A Strategic Approach toward Sustainability*, (Mississauga: n.p. 2015), 37.

¹⁴ Assistant Deputy Minister (Infrastructure Environment), *Defence Portfolio 2030: Towards a Sustainable Real Property Footprint*, (Ottawa: 2016), 7.

¹⁵ Jason Berry. “A Modest Infrastructure Proposal,” *IE Focus*, Summer 2016, 10.

well received and could form a baseline for training across Canada. Additionally, ADM (IE) should encourage and subsidize members to complete their professional certification in asset management planning. This is a distance learning program offered by the National Asset Management Strategy Canada (NAMS Canada).¹⁶ This 8-week long course features 12 hours of online training and 50 hours of additional course work. The Federation of Canadian Municipalities endorses this training and it is subsidized by the Government of Canada.¹⁷ Also, the CNAM hosts an annual conference where municipalities share best practices and present on a wide array of infrastructure-related topics. The location of this conference rotates between major cities across the country and provides an excellent learning tool for local bases and regions to understand current and future trends. It also allows key personnel to develop a network of asset management professionals and increase their asset management capabilities. This training and exposure to the emerging industry of asset management are required to complement the strategic initiatives and increase the value DND gains from its infrastructure.

10. Once changes to the training occur there will be opportunities to improve the project approval system. Currently, it is set up to take the critical thought out of the decision-making process. Given the current level of training, this is not a bad thing. But, to become an efficient organization that maximizes the resources entrusted to it, a higher level of thought needs to be applied, and more decision making delegated to the trained individuals closest to the problem. Although improvements are underway, the project approval process is long and arduous.

¹⁶ Federation of Canadian Municipalities, “Municipal Asset Management Program,” Last accessed 1 February 2018, <https://fcm.ca/home/programs/municipal-asset-management-program/asset-management-certificate-course.htm>.

¹⁷ The Government is funding 90% of the costs through the Municipal Asset Management Program for Canadian Municipal staff and elected officials.

Typically, end users submit projects that are scored using a predetermined and strict guideline by real property operations detachments and weighed against all other projects then depending on that year's funding either funded or not funded. This process essentially eliminates long-term planning, necessary sequencing of projects, and fails to adequately consider criticality of infrastructure and life-cycle costs associated with operations, maintenance, and divestment. It also encourages detachments to score projects to achieve the desired result. Much like the, initially well-conceived but now defunct, Personal Evaluation Report (PER) system, where to maintain competitiveness supervisors will inflate their subordinates score to indicate mastery of skills instead of a realistic assessment. This practice is a direct contradiction to the intent of the system.

11. To maximize the effects of the project approval processes, IEEM, VFA and future advancements in policy and technology, training needs to focus not only on how to input data but on how to extract relevant information and form it into knowledge to truly understand our infrastructure. Only then will our decisions reflect the intentions that the ADM (IE) transformation intended.

12. Large decisions at the base and regional levels lack a clear understanding of the long-term financial impacts. Portions of bases are being parcelled off to facility maintenance contracts without a proper analysis. This process secures additional, protected, non-discretionary funding, without downward adjustments to the base's Salary, Wage Envelope (SWE) or operating budgets, essentially doubling the base's capability. Although advantageous for the

particular base, these actions are unsustainable at the program and portfolio levels as more bases use this as a method to increase overall funding that in turn reduces the amount of money available to support other struggling bases. It contradicts ADM (IE)'s stated goal of optimizing facility management contracts to eliminate duplication of effort.¹⁸ Proper training would allow bases to achieve efficiencies through an optimized decision-making process without essentially doubling their costs and would allow regions to see the impact of these decisions on their program.¹⁹

13. Current measurements of success do not give an accurate picture of how the DND portfolio is doing. In recent years the most significant measures of success at the base level have simply been whether or not the base was able to expend all allocated money within a variance of 0.5%. Submitting reports and returns in a timely fashion and being on target with financial predictions were the criteria for success. Achieving (or even identifying) levels of service was not a factor.²⁰ Even compliance with mandatory regulation was not a significant measure of success.²¹ Enhanced training will help establish a climate of performance and accountability. It will highlight the areas essential for proper stewardship of real property resources and help generate meaningful solutions for long-term sustainability.

¹⁸ Assistant Deputy Minister (Infrastructure Environment), *Defence Real Property Strategy: Efficiently Enabling Defence Capability*, (Ottawa: 2012), 8.

¹⁹ New Zealand Asset Management Support (NAMS), *Optimised Decision Making Guidelines: A Sustainable Approach to Managing Infrastructure* (Wellington, N.Z.: NAMS, 2004), 1-6.

²⁰ Levels of Service are fundamental to asset management. New Zealand Asset Management Support (NAMS), *Developing Levels of Service and Performance Measures: Creating Customer Value from Community Assets* (Wellington, N.Z.: NAMS, 2007), ix.

²¹ Although several key issues are tracked and assessed at the national level, from 2014-2017, environmental legislative compliance namely halocarbons and fuel storage were the only ones that were closely enforced and carried severe repercussions for non-compliance.

CONCLUSION

14. With any significant change comes significant challenges. By seeing the bright spots in asset management and aligning to international standards that have been proven effective in a Canadian governmental context, ADM (IE) can drastically improve decision making at the base and regional levels. Formal education in asset management will better align ADM (IE) with these standards and make the most of the new asset management tools. With a firm understanding of asset related risk, asset life cycles, levels of service and key performance indicators at the base and regional levels, clearer and more confident decisions will enhance the condition, suitability, and safety of the real property portfolio.²² Additionally, it will allow further delegation of authorities and the streamlining of the project approval processes, which will save both time and money. ADM (IE) will be in a better position to track the improvements and carry forward the momentum of positive change. A standardized understanding across the bases and regions will increase the synergy of the organization allowing all levels to understand how to work toward the common vision. The agility and overall efficiency of each detachment will increase dramatically leading to an increase in the levels of service, more accountability, and reduced costs.

RECOMMENDATION

15. It is strongly recommended that ADM (IE), and specifically RPOG, implement a nationally standardized and regionally delivered training package to key staff at the base and regional levels. This training must align with ISO 55000 standards and consist of asset

²² CH2M, *Infrastructure Asset Management Training Course Manual* (n.p. 2016). 53.

management policy, strategy, and planning. By leveraging currently available industry leaders, this training can be implemented with minimal cost and disruption to day-to-day activities and significantly enhance the efficiency in which ADM (IE) meets the infrastructure needs of DND.

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