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## SUSTAINMENT TO SOVEREIGNTY: A JIMP SUSTAINMENT APPROACH IN THE ARCTIC

Major J.J. Parker

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**SUSTAINMENT TO SOVEREIGNTY:**

**A JIMP SUSTAINMENT APPROACH IN THE ARCTIC**

By Major J.J. Parker  
par le major J.J. Parker

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## ABSTRACT

Climate change has sparked a great deal of interest in the Arctic from neighbouring nations who are looking to benefit from the bountiful resources that have yet to be exploited. This interest causes some concern for Canada in terms of its sovereignty. Canada has a vested interest in protecting its national borders as it owns the longest portion of the Arctic coast line. As yet, Canada does not have a permanent presence in the high North to monitor its border. A number of challenges are inherent in establishing a permanent presence in such an austere environment. This paper discusses what the existing presence is in the Arctic and how it is sustained through a Joint, Inter-agency, Multi-national, Public (JIMP) approach. Given existing sustainment concepts are resource strained, the JIMP approach provides an operating concept that connects the lines of sustainment through expansion thereby giving the potential to project higher in the Canadian Arctic. Current networks are not linked thereby compromising the efficiency of sustainable development in the Arctic. A future outlook for a sustainable Arctic that achieves a permanent security presence by the military addresses the sovereignty issue, while also envisioning communities more developed as a result of synchronized lines of sustainment. Sustainment in the Arctic is achievable through a JIMP approach which will benefit the economic growth with increased population and sustainable development.

## INTRODUCTION

*To develop the North we must know the North. To protect the North, we must control the North. And to accomplish all our goals for the North, we must be in the North.*<sup>1</sup>

The Government of Canada (GoC) has identified protection of sovereignty in Canada's north as a key priority. Over the past half century, many initiatives have been implemented to assert that Canada exists in the north; however, it can be argued that Canada has only done the bare minimum to ensure protection of the Arctic. Canada's aspirations for complete sovereignty will not be realized unless the nation begins to take control of its land. A permanent presence in the Canadian Arctic provides opportunities for economic development, increased tourism, and overall unity for Canada.

The north has tremendous resources sought by other countries; oil and gas at the top of the list. As mentioned by Coates in 'Arctic Front', the Arctic has many tiny islands dispersed along the Northwest Passage that have become discussion points in international politics.<sup>2</sup> In tangible terms, Canada has not embraced the North beyond symbolism and mythology; if Canada does not take the issue of sovereignty seriously, this neglect will have a negative impact on the nation's interests in the high Arctic and the north in general.<sup>3</sup> Other countries, notably the US, will continue to leverage their

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<sup>1</sup> House of Commons Standing Committee on Foreign Affairs and International Trade (HCSCFAIT), *Canada and the Circumpolar World: Meeting the challenges of Cooperation into the Twenty-First Century* (Ottawa 1997P, ix), 100.

<sup>2</sup> Ken S. Coates, Whitney P. Lackenbauer, William R. Morrison and Greg Poelzer, *Arctic Front: Defending Canada in the Far North*. (Toronto: Thomas Allen Publishers, 2008), 6.

<sup>3</sup> *Ibid.*, 7.

power with a view to gaining access to plentiful natural resources. Canada's economic development has the potential to flourish through the exploitation of natural resources, but it needs to demonstrate ownership of land for this development to be realized to its full capacity. Canada cannot rely solely on maritime patrol of coastal borders and air surveillance as a deterrent to other nations encroaching on Canadian territory. Recent decades have seen evidence of other nations attempting to assert a greater presence in the Arctic. The voyage of the USS Manhattan is one example, which saw the first attempt by a foreign nation to cross the Northwest Passage. Additionally, Russia placed their nation flag at the North Pole, which according to existing boundaries, is Canadian territory. This issue is and still under dispute. The threat to Canadian Arctic sovereignty by foreign stakeholders remains real.

The most recent *Canadian Forces Defence Strategy* (CFDS) places a renewed focus on Arctic Sovereignty. In reference to the defence of Canada, the CFDS specifies that the Canadian Armed Forces (CAF) will work closely with federal government partners to ensure constant monitoring of Canada's territory, including the Arctic, as a means to detect threats to Canadian security.<sup>4</sup> The government needs to expand not only the Arctic population but have an added military presence in the Arctic that will be the permanent presence needed to assert sovereignty. Government, private industry, and the military must come together and collectively venture farther north. However, none of this can be achieved without a sustainment concept in place to support this projection. The

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<sup>4</sup> Canada. Department of National Defence. "Canada First Defence Strategy." (Ottawa: Minister of National Defence, 2008), 7.

diamond and oil industries for a large part already established self-sustaining installations in small pockets in the high north.

Sustainment in the north is conducted primarily through air and maritime assets, both military and civilian. Potential to expand sustainment through improved road network systems will increase the lines of sustainment and open more opportunities for economic and population growth. The challenge of working in a harsh environment, as is the Arctic, and with limited infrastructure is a deterrent for any further advancement. The current road systems do not extend much beyond the 60<sup>th</sup> degree latitude line. This limitation prevents extension of the lines of sustainment thereby inhibiting the ability to sustain as far north as possible. Road travel is challenging regardless of the season, due to limited road networks in the summer and also conditions on ice roads in the winter. That does not preclude the option of sustainment through road networks, but arguably this option has not been explored thoroughly. For there to be a complete sustainable Arctic, the sea, air, and road networks need to be connected. Once achieved, the full potential of sustainability in the Arctic can be enhanced.

Major Tony Balasecvicius who worked in the CAF as part of the Arctic integrating concept stated, “the CAF will need access to better infrastructure positioned in key locations, and a combination of strategic air and sealift to maintain forces capable of deploying into the region and remaining there for a period of time.”<sup>5</sup> This concept is fundamental to expansion of the North by increasing the military’s ability to conduct

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<sup>5</sup> Tony Balasevicius, “Towards a Canadian Forces Arctic Operating Concept.” *Canadian Military Journal* (Vol. 11, No. 2 Spring 2011), 7.



operations thereby providing further opportunities for increased industrial and economic growth, and achieving the overall effect of defending Canada's northern borders while providing a permanent presence.

According to the *GoC's Integrated Capstone Concept*, "sustainment comprises the provisioning of all support services required to maintain routine and contingency operations, domestic, continental, and expeditionary and includes prolonged deployed operations."<sup>6</sup> Sustainment in the Arctic is already being achieved by independent organizations. If all organizations combined their resources, and increased infrastructure existed along the northern borders, the sustainment options would be enhanced. There are several credible academics and Arctic activists who support the idea of an increased presence in the Arctic. Through their areas of research they all come to the general consensus that the Arctic is a region that Canada needs to protect.

Dr. Rob Huebert, PhD is a professor at the University of Calgary in the Department of Political Science. His area of interest spans Canadian foreign and defence policies; Circumpolar relations; Foreign policy studies; International Relations; Naval studies and Ocean Politics; and Strategic Studies. His research in the Arctic has focused primarily on the strategic perspective. His contribution to the *Foreign Policy for Canada's Tomorrow Journal*, his article titled, "*Canadian Arctic Sovereignty and Security in a Transforming Circumpolar World* - brings forward the key strategic benchmarks surrounding sovereignty and security through the discussion of climate

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<sup>6</sup> Canada. Government of Canada. *Integrated Capstone Concept (ICC)*, (DFSA, 20 October 2009)., 42.

change, resource development, geopolitical change and other strategic developments that support the initiative for Canada to take action in its North to protect its vital interests. These interests will only be protected if the government puts a concerted effort towards long-term sustainment. He is an advocate of developing the Arctic, but argues the importance of the environment and the protection of the resources as part of the long-term development plans must be taken into account.

Historian P. Whitney Lackenbauer is a leading scholar in the study of the Arctic. He has been spearheading the sovereignty and security charge in Canada for more than a decade as an active voice to educate Canadians about the importance of sovereignty through warnings of the Americans traversing in the Northwest Passage, the Russians attempting to claim the North Pole by the simple placement of a flag, and most recently suggesting China is showing increased interest in the region and wanting to be a member of the Arctic council.<sup>7</sup> He has published books and journal articles on Canadian Arctic policy, Arctic sovereignty and security issues, international relations, circumpolar relations, and Aboriginal-military relations. Lackenbauer is well versed in terms of the military capabilities in the Arctic which is the permanent presence required to affirm Canadian sovereignty. With the effect of climate change, the issue of sovereign borders will continue to be unresolved. Thus, the warming climate will enable the military to project higher in the Arctic to conduct training and more frequent patrols. With his broad range of interest in the region, his research provides an informed perspective of

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<sup>7</sup> P. Whitney Lackenbauer. The Military as a Nation Builder: The Case of the Canadian North. *Journal of Military and Strategic Studies*. (Vol 15, Issue 1, 2013), 1.

government policy to the populace that supports the concept of sustainable development in the Arctic as being the way of the future for the region.

Oran R. Young is a renowned Arctic expert and a world leader in the fields of international governance and environmental institutions.<sup>8</sup> His studies have explored the issues pertaining to international environmental governance and the Arctic as an international region. Director of the Institute for Arctic studies at the Bren School, Dr. Young brings a worldly approach to this discussion. *The Future of the Arctic: Cauldron of Conflict or Zone of Peace* highlights the importance of the Arctic as both an economic and a political challenge that could cause conflict in the region. He argues that there is still much more research to be conducted to have an informed understanding of the over-arching solution of “innovative governance capable of ensuring the future of the Arctic is a zone of peace.”<sup>9</sup>

Charles Emmerson, a native of Australia, brings an international perspective in his research of the Arctic. He is a researcher for the International Crisis group working on international security issues and is currently a Senior Research Fellow at Chatham House working on resource security issues, foreign policy, and global geopolitics.<sup>10</sup> He authored *The Future History of the Arctic* in 2010 that aims to discuss the twentieth century in the north. It provides an understanding of how the northern region is changing as a result of

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<sup>8</sup> [http://www.bren.ucsb.edu/people/Faculty/oran\\_young.html](http://www.bren.ucsb.edu/people/Faculty/oran_young.html), last accessed 24 February 2014.

<sup>9</sup> Oran R. Young., “The future of the Arctic: cauldron of conflict or zone of peace?” *International Affairs* 87.1 (Jan 2011), 193.

<sup>10</sup> <http://www.charlesemerson.com/about.html>, last accessed 24 February 2014.

climate change, resource stress and geopolitical shifts.<sup>11</sup> His research provides a solid understanding about how multi-national stakeholders play a large role in determining the future economic and sovereignty development in the region. Through historical trends, his arguments support the rationale that Canada needs to assert its position in the Arctic.

Michael Byers is a lawyer and professor in Global Politics and International Law at the University of British Columbia. His scope of research and education focuses on issues of Arctic sovereignty, diplomacy, the law of the sea, and Canada-United States relations.<sup>12</sup> Byers' offers a strong viewpoint supporting the fact that Canada needs to assert a strong voice in terms of its sovereign boundaries. His projection of the future Arctic sees a collaborative approach whereby all stakeholders work together for a common goal which is the long-term development of the region for the benefit of all.

Finally, Roger Howard is an author specializing in defence and energy-related issues. His book *The Arctic Gold Rush* summarizes the development of the Arctic region starting from the discovery from the early explorers and progresses through the years portraying the step-by-step advancement in the region. He provides an excellent projection of the evolution of the Arctic. His views present arguments that support the long-term military presence, incorporating industry, improving the economy, and overall achieving sustainable development.

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<sup>11</sup><http://www.charlesemerson.com/about.html>, last accessed 24 February 2014.

<sup>12</sup>Michael Byers, "Biography." <http://www.arcticnet.ulaval.ca/aboutus/profile.php?id=504>, last accessed 24 February 2014.

Each of these specialists addresses the multiple challenges in the Arctic. However, there remains a gap in the research of sustainment. The term is mentioned frequently, but there has not been significant discussion on how to achieve sustainment in the Arctic. This research paper analyses possible sustainment options. A future sustainable Arctic requires a permanent presence and is achievable as long as a robust sustainment plan is established first. In support to the GoC priorities, this permanent presence should be based on the CAF.

Sustainment in the Arctic is a core capability for any projection of a permanent presence in the north. As the Arctic is a complex region, survival in the north requires established lines of sustainment. Sustainment must be a collaborative effort in a JIMP construct. Employing sustainment using a JIMP approach can not only unite all the contributing stakeholders, but it will establish Canada as an economic competitor while reinforcing sovereignty.

Sustainment is feasible in the Arctic and is reinforced through the years of research and development in the region. Sustainment can be projected farther north incorporating a JIMP approach that will see the cohesion with the CAF and industry, Other Government Departments (OGDs) and the population; it shall increase the economic growth of Canada and maintaining a permanent presence in the Arctic that overall supports sovereignty. Existing presence in the Arctic and how sustainment is already being achieved are the foundation for the future development opportunities. The

future Arctic entails the capability of joint sustainment, fostering sustainable development and sees a nation completely connected through lines of sustainment.

## **CHAPTER 1 – INDEPENDENT ORGANIZATIONS WORKING TOWARDS A COMMON GOAL**

The Arctic region is of growing interest in the global community due to its vast amount of natural resources. As a result, sovereignty and positive control of Canada's north has been the focus of much attention at the federal government level. The question of sovereignty has been discussed and debated over the last century and arguments over whether the Arctic regions including the Archipelago constitute Canadian territory have engaged policy-makers. These policies, the most popular being the United Nations Convention on the Law of the Sea (UNCLOS), have been revisited on numerous occasions and have assisted in establishing claims of the Arctic region including the Northwest Passage as Canadian territory. Since the Arctic is a challenging environment in which to live, there has been genuine apprehension about other nations encroaching into Canada's territory. In the last 50 years, increased interest in traversing the Northwest Passage as a means of increasing shipping from other nations has heightened concern about establishing boundaries for territorial waters and resource rights. To that end, with increased climate change and technological advancement, what was once considered an inhabitable region, is now becoming an area of interest for some nations in establishing a permanent presence in the Arctic.

Canada must be more assertive in its posture in the Arctic in establishing its own permanent presence alongside the other interested countries. Canada owns the largest Arctic coastal borders which extend 162,000 square kilometres and includes an additional

200 nautical mile economic exclusion zone.<sup>13</sup> Canada also owns a significant portion of land that extends up towards the North Pole. With an area this vast to protect, Canada will require a significant presence to enforce security to assert sovereignty. An Arctic Sovereignty policy review was conducted in April 2011 and produced a report reinforcing that Canada's two guiding principles for Arctic sovereignty are "the exercise of its military responsibilities in the area, and stewardship."<sup>14</sup> Both of these principles require that Canada maintain a stronghold over its rightful territory to protect this valuable investment by adopting a permanent military presence.

A permanent presence, military or general population, can only be achieved if it is sustainable as that is key to surviving in the Arctic. Sustainment lines of communication from which the organizations or communities in the Arctic obtain the necessities to survive must be economically feasible. The present system is much too long to be efficient. In order to sustain life and operations in the Arctic, everything must be transported by air over long distances and anything that needs to travel by road is over undeveloped terrain. Consequentially, costs for shipping and transportation are heightened, and development in the region has not been significant to this point. Development opportunities in the Arctic must come with a robust sustainment plan to compensate for lack of infrastructure and infrequent replenishment. Broader sustainment, in terms of the duration of time in which forces/organizations can continuously operate in

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<sup>13</sup>The Canadian Encyclopedia. <http://www.thecanadianencyclopedia.ca/en/article/arctic-sovereignty/>., last accessed 29 April 2014.

<sup>14</sup> Anneta Lytvynenko., "Arctic Sovereignty Policy Review."(Committee of Deputy Ministers for the Arctic. 5 April 2011),. 3.



challenging Arctic conditions is the preliminary requirement for long-term sustainable development. The long-term goal sees the Arctic growing to be self-sustaining.

### **Joint Inter-Agency Multinational Public (JIMP)**

Apart from defining each enabling component that incorporates JIMP, a formal definition as yet does not exist. However, JIMP in simple terms can be described as the interaction and integration of the enablers of the JIMP community that combined achieve shared objectives. These enablers are military, other government departments, US and other country counterparts and the public component is the overall Arctic populace.

The Arctic is a region that has great potential for increased development as a result of climate change. Precious natural resources, once exploited, will be very prosperous for economic development. However, to be able to exploit this development, all stakeholders must work in collaboration to establish a permanent presence that is sustainable from the perspective of survivability, economic and demographic growth. Sustainment can be projected further north with a cohesive JIMP approach. In doing so, the government sovereignty priority and supporting economic development in the Arctic stands to benefit. Sustainment is feasible in the Arctic, but the capabilities that are necessary in terms of JIMP remain to be seen.

Currently all organizations that are incorporated in JIMP, work independently with their unique capabilities. Although functional for short-term operations, they are

limited by the equipment and resources that do not have the capability to sustain long-term operations nor to extend farther in the Arctic on their own.

Canada needs to develop its northern territories to be more competitive with other regions.<sup>15</sup> However, given remoteness and underdevelopment in the region, the government must determine just how much it wants to invest, understanding that if it does not capitalize now the likelihood that the influence of other nations, such as Russia and the US, will extend control throughout the region. So how does Canada intend to project farther in the north? A strong defence posture with cooperation of the Royal Canadian Navy (RCN), Royal Canadian Air Force (RCAF) and Army aside private industries as a permanent presence is one of the means in which to assert its position. The GoC uses its strategic leverage to work with other nations and conclude agreements so that all regions benefit from economic growth. Finally, the public is paramount because the population benefits from the development of larger communities attracting employment opportunities and promoting infrastructure development. All this together comprises a JIMP vision. In as much as there is a common vision from all stakeholders, the JIMP concept is only achieved if it is sustainable.

*Canada's Northern Strategy*, recognizes that the population is a major enabler to sustain the Arctic. As suggested in *A Northern Vision: A Stronger North and a Better Canada*, "The North needs sustainable communities that provide opportunities for

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<sup>15</sup> P. Whitney Lackenbauer., *From Polar Race to Polar Saga: An Integrated Strategy for Canada and the Circumpolar World*. (Toronto: Canadian International Council, 2009)., 149.

employment, education and training.”<sup>16</sup> In addition, there is tremendous potential for development which is essential to improved sustainability in the North.<sup>17</sup> The financial aspect of development in the north is extremely expensive justifying the argument that a JIMP construct in the Arctic is fundamental to success. To project sustainment in the North, improved infrastructure is required. Development will be difficult due to lack of infrastructure, such as year round roads, accommodations, communications, and the availability of basic supplies including fuel, food and equipment.<sup>18</sup> There needs to be a concerted effort from the communities, industry, the territories and the federal government. Once better aligned, all organizations involved shall reap the benefits of a sustainable Arctic. Once lines of sustainment are established, the permanent presence can then be implemented, reinforcing Canada’s claim to its sovereignty. Currently, the contributing JIMP organizations do not necessarily embody the WoG approach. There remains a significant amount of independent achievements that is proving to be limiting to overall advancement in the Arctic.

## **Joint**

Balasevicius, an Infantry officer, has taken a keen interest in the sustainment of the Arctic from a military perspective, stating that, as a result of underdeveloped road networks to isolated communities from Canada’s southern population centres, routine sustainment is largely conducted by air with the secondary means through marine

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<sup>16</sup> Canada. Government of Yukon. “A Northern Vision: A Stronger North and a Better Canada,” Northwest Territories: 2007., 5.

<sup>17</sup> Canada. Government of Yukon. “A Northern Vision: A Stronger North and a Better Canada,” Northwest Territories: 2007., 5.

<sup>18</sup> Tony Balasevicius, “Towards a Canadian Forces Arctic Operating Concept.” *Canadian Military Journal* (Vol. 11, No. 2 Spring 2011), 3.

shipping.<sup>19</sup> In terms of having a military permanent presence established, air and marine shipping is not enough as the inland communities remain isolated without road networks and remain disconnected.

Sustainment for the military is the means in which the provision of all support services are required to provide routine support for domestic, continental and expeditionary operations, including prolonged deployed operations.<sup>20</sup> The challenge to the current structure of the CAF is the limited capabilities it has to support all facets of operations. A joint concept for sustainment in the military is paramount to achieving mission success.

The joint military force incorporates the RCN, RCAF, and the Army, each with sustainment inherent in their unique capabilities. From a military viewpoint, an operating concept in the Arctic is that the CAF will require access to better infrastructure positioned in key locations, enabling strategic air and sealift, in order to maintain forces capable of deploying into the region and remaining there for a period of time. There will be a requirement for forward supply installations equipped with necessary equipment for prolonged operations.<sup>21</sup> Canada's 2009 Arctic policy outlines an increased emphasis in procurement of new equipment, expansion of specialized Arctic forces and increased

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<sup>19</sup> Tony Balasevicius, "Towards a Canadian Forces Arctic Operating Concept." *Canadian Military Journal* (Vol. 11, No. 2 Spring 2011), 2.

<sup>20</sup> *Ibid.*, 7.

<sup>21</sup> Tony Balasevicius, "Towards a Canadian Forces Arctic Operating Concept." *Canadian Military Journal* (Vol. 11, No. 2 Spring 2011), 7.

training in the Arctic.<sup>22</sup> The RCN and the RCAF have been operating in the Arctic for decades with patrols along the Northwest Passage and conducting surveillance operations in the Arctic airspace. The RCN is normally self-sustaining and capable of remaining at sea for significant periods of time before needing to come into port. However, it is the location of the ports that dictate the course of how the RCN operates because that is their key node for re-supply. The RCN also has limited ability to operate in the Arctic environment. Canada's conventional submarines have sufficient range to operate in the Arctic Ocean, but are unable to remain under ice for long periods of time. Its fifteen frigates are large enough; however, the RCN currently has no ice-strengthened warships. Halifax, Nova Scotia, in the far south-east of Canada, and Esquimalt, British Columbia on the west coast are the naval bases expeditionary operations with the capability to project into the Arctic.<sup>23</sup> Canada's two navy bases have the capability to project forces into the Arctic but the response time is limited given the extreme distance. This example demonstrates the limitations of having lines of sustainment that are too long. Additionally, for the communities they are only self-supporting and do not yet have the capacity to provide for others.<sup>24</sup>

The RCAF is even more limited for conducting operations in the Arctic. Its primary role is to provide a surveillance capability, but not on a permanent basis. As noted by, James Fergusson, the RCAF is a "southern," overseas Air Force that goes north

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<sup>22</sup> Siemont T. Wezeman., "Military Capabilities in the Arctic" *Sipri Background Paper*, (March 2012). <http://books.sipri.org/files/misc/SIPRIBP1203.pdf>, 1.

<sup>23</sup> *Ibid.*, 5.

<sup>24</sup> *Ibid.*

only when necessary.<sup>25</sup> Sustainable infrastructure is limited in the Arctic for the RCAF to conduct Arctic operations effectively. Only four Twin Otter aircraft are permanently stationed in the North, co-located in Yellowknife, with Joint Task Force North Headquarters (JTFN). They undertake a variety of missions, including transport and Search and Rescue (SAR).<sup>26</sup> As part of the North American Aerospace Defence Command (NORAD), the GoC established Forward Operating Locations (FOLs) in the 1980s to shorten the response time for the fighter aircraft (CF-18) by prepositioning them at these strategic staging bases during times of increased threat in Canadian airspace. At present, the FOLs located in Iqaluit, Rankin Inlet, Yellowknife, and Inuvik have adequate infrastructure consisting of sleeping accommodations and hangars to house CF-18s. FOLs have a caretaker in the community that looks after the facilities when the forces are not there, with the FOL in Yellowknife being the only one manned on a permanent basis by Area Support Unit (North). If the other FOLs were manned, they could be the start of the permanent presence necessary to further meet the priority of the government.

Fergusson supports this idea adding that in order to meet this demand, existing FOLs could also become permanent bases for SAR and surveillance aircraft. This suggestion foresees the expanded use of unmanned aerial vehicles (UAVs) prepositioned at the bases, closing the gap in time and space to broaden the scope for monitoring activity over this vast territory. He also posits that UAVs could be controlled using

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<sup>25</sup> James Fergusson, "Up in the air, North of 60," *National Post*, February 6, 2013.

<sup>26</sup> *Ibid.*

satellite links from bases in the South, but would still need to be maintained at bases in the North.<sup>27</sup>



**Figure 1 - FOL Locations**

Source: Huebert, R., *Domestic Ops in the Arctic*<sup>28</sup>

This initiative is easily accomplished with modest investment from the government to realize its full potential, but in terms of long-term sustainment it is absolutely achievable.

The RCAF provides some significant presence in the Arctic region, but these capabilities are impermanent and are on-call from other parts of the country. The RCAF operates 18 Aurora (CP-140) anti-submarine warfare (ASW) aircraft that have the range to patrol the Arctic region from bases on the east and west coasts of Canada. The aircraft

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<sup>27</sup> James Fergusson, "Up in the air, North of 60," *National Post*, February 6, 2013.

<sup>28</sup> Rob Huebert., "Canadian Arctic Sovereignty and Security in a Transforming Circumpolar World." *Foreign Policy for Canada's Tomorrow* No. 4. Canadian International Council., 2.

have been modernized and according to the Canada First strategy, are slated to be replaced by 10–12 new aircraft by 2030.<sup>29</sup> Canada also has 77 CF-18 stationed in south-east and central Canada that are regularly deployed in the Arctic region, occasionally to intercept Russian bomber and reconnaissance aircraft close to Canada's air space. They can operate from the four FOLs. The CF-18s are supported by seven air-to-air refueling aircraft. Additionally, helicopters and transport aircraft operate regularly in the Arctic region, including from small and improvised airfields on snow or ice.<sup>30</sup> The helicopters and transport aircraft provide a secondary capability, but arguably the most significant as they conduct the function of sustainment to remote communities. These capabilities provide long-range and relatively fast projection of Canadian sovereignty, but do not provide the permanence that a land component is capable of. However, without the air assets, much of the Arctic would be unreachable.

The land component is where the largest gap exists to having a permanent military presence in the Arctic. The Army in response to the government's vision for the Arctic has a renewed emphasis in the region with priorities established by the government. The Army has since redirected its effort from the focus of operations in Afghanistan to conducting operations north of 60 degrees latitude. Since the end of the Cold War, the land forces' focus has been on expeditionary operations with numerous overseas deployments, resulting in the Arctic region not having sustainable forces. The Canadian Rangers have filled in the gap and are the primary land force in the region.

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<sup>29</sup> Canada. Department of National Defence. "Canada First Defence Strategy." Ottawa: Minister of National Defence, 2008., 17.

<sup>30</sup> T. Siemont T. Wezeman., "Military Capabilities in the Arctic" *Sipri Background Paper*, (March 2012). <http://books.sipri.org/files/misc/SIPRIBP1203.pdf>, 3.



Formally established in 1947, the intent of the Rangers has been to provide a military presence in those sparsely settled northern, coastal and isolated areas of Canada that were not accessible conveniently or economically by other elements of the CAF.<sup>31</sup> Comprised of indigenous peoples operating and living off the land in their own home regions, the Rangers do not require the same level of sustainment as a regular army or reserve unit, and are able to survive in the harsh climate. The Canadian Rangers, approximately 4,000 strong, are lightly armed paramilitary forces with a patrol and reconnaissance role in northern Canada and they are trained and equipped for year-round Arctic operations.<sup>32</sup>

The Army has existing capabilities and initiatives to sustain in the Arctic. These capabilities include an immediate reaction unit that is kept available for emergency deployments and additional resources are on call such as the NBCD Company. A reserve infantry battalion is also based in Yellowknife.<sup>33</sup> Is there adequate presence from the Army to establish a long-term presence? With so much terrain to patrol, the Rangers, employed on a part-time basis, do not provide enough surveillance to establish a permanent presence. Even astride the RCN and RCAF conducting patrols and surveillance, there remains the requirement for a long-term land component larger than the Rangers to patrol the Arctic region that would provide the permanent presence required.

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<sup>31</sup> P. Whitney Lackenbauer., "The Canadian Rangers: A "Postmodern" Militia that Works." *Canadian Army Journal* (Vol 6., No. 4)., 2.

<sup>32</sup> Siemont T. Wezeman., "Military Capabilities in the Arctic" *Sipri Background Paper*, (March 2012). <http://books.sipri.org/files/misc/SIPRIBP1203.pdf>., 4.

<sup>33</sup> Peter Gizewski and Godefroy, "Force Requirements (Land)." in *Defence Requirements for Canada's Arctic*, . ed. Brian MacDonald. (Ottawa: Conference of Defence Associations Institute, 2007), 101.

In terms of permanent infrastructure, the threats posed during the Cold War period saw the establishment of Canadian Forces Station (CFS) Alert at the northern tip of Ellesmere Island. This base collects signal intelligence and provides High Frequency and Direction Finding (HFDF) facilities to support search and rescue. There are 55 military and civilian personnel stationed in Alert on a rotating basis that provides 24/7 operational capability.<sup>34</sup> In terms of sustainment, the base is resupplied by air twice a year.<sup>35</sup> CFS Alert continues to be sustained since its inception seeing a rotation of military forces capable of surviving at the farthest point north in Canada.

Most recently, the GoC opened the Arctic Training Base in Resolute Bay. This location was chosen as a mechanism to improve Arctic training.<sup>36</sup> The Arctic Training Base is a training establishment that will focus on winter survival in Arctic operations and provides another staging point in the event of a domestic crisis. It was built on already established infrastructure used by Natural Resources Canada for the Polar Continental Shelf Program. The expansion of this facility now affords the opportunity to accommodate up to 140 personnel and offers lodging, training facilities, and storage for equipment and vehicles.<sup>37</sup> It has been disputed that this facility is still not a major commitment to creating specialized Arctic Land Forces, but it does provide an increased presence in the form of territorial defence battalions combined with the additional

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<sup>34</sup> Ernie Regehr., “Circumpolar Military Facilities of the Arctic Five”, *The Simons Foundation*. (April 2013), 4.

<sup>35</sup> Ibid.

<sup>36</sup> Siemont T. Wezeman., “Military Capabilities in the Arctic” *Sipri Background Paper*, (March 2012). <http://books.sipri.org/files/misc/SIPRIBP1203.pdf>, pg., 4.

<sup>37</sup> New Arctic Training Centre boosts Army’s presence in the North. <http://www.army-armee.forces.gc.ca/en/news-publications/national-news-details-no-menu.page?doc=new-arctic-training-centre-boosts-army-s-presence-in-the-north/hkdontpd>. Last accessed., 4 Feb 14.

facilities for training for Arctic operations.<sup>38</sup> This minimal investment meets the government priorities in the short term, but there is arguably more than one base needed to have a full operational capacity with a sustainable military capability in the Arctic.

In line with GoC priorities, the CAF has steadily expanded its scope of training by conducting Arctic exercises over the past decade. Large accomplishments in military joint capacity are the five Arctic operations conducted annually as part of the CFDS. Op NUNALIVUT in the high Arctic; focuses on the inter-operability of the OGDs in the Arctic. Op NUNAKPUT in the western Arctic is conducted annually in April. Op NEVUS is the annual deployment of a technical team to CFS Alert to conduct routine maintenance on the communications system and the Eureka weather station. Op QIMMIQ is a joint military operation that conducts routine surveillance patrols at sea, in the air and on land. Op NANOOK is the largest of five sovereignty operations conducted in the central-east region of Canada's North.

Op NANOOK is a military-led operation that employs the JIMP concept that benefits from the collective efforts of all organizations. From a sustainment perspective, this collective effort represents the future for survivability in the Arctic. The objectives of Op NANOOK are to assert Canada's sovereignty over its northernmost territories, enhance the CAF's ability to operate in Arctic conditions, improve coordination in WoG operations, and maintain interoperability with mission partners for maximum

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<sup>38</sup> Peter Gizewski and Andrew Godefroy, "Force Requirements (Land)." in *Defence Requirements for Canada's Arctic*, ed. Brian MacDonald. (Ottawa: Conference of Defence Associations Institute, 2007), 101.

effectiveness in response to safety and security issues in the North.<sup>39</sup> All these exercises have embodied the true vision of 'joint' as they have incorporated all of the CAF elements together maximizing on resources.

The exercise is not just a military endeavour, but incorporates numerous federal, territorial, and municipal stakeholders working together for a common goal.<sup>40</sup> This sovereignty operation has proven that a large sustainable footprint can be maintained on a short-term basis employing a JIMP approach. One could argue, however, this training is conducted in optimal conditions, annually in August, when all the sustainment lines of communication are operational and environmental conditions are at their most hospitable. It stands to reason that it is completely sustainable. To prove fully the efficacy, this operation would be better suited to be conducted during the winter months to prove its legitimacy to test the limitations of the platforms and equipment of all inter-agency capabilities and response to any given situation in the region.<sup>41</sup> For the nation to ascertain where there are gaps, the ability to conduct training of this magnitude in extreme conditions would further demonstrate the complexities of sustaining in the Arctic. It is prudent that the limits be tested to better understand where improvements are required.

Additionally, other land units have also ventured to the Arctic for training exercises. Of specific note, 1 Canadian Mechanized Brigade Group deployed north of 60 degree latitude in 2012 in the largest commitment of soldiers of all elements, it was the

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<sup>39</sup>Op NANOOK., <http://www.forces.gc.ca/en/operations-canada-north-america-recurring/op-nanook.page>, last accessed 28 January 2014.

<sup>40</sup> Ibid.

<sup>41</sup> Ibid.

most complex Army-led exercise ever undertaken in the Canadian Arctic. It allowed the soldiers to reacquire winter soldier skills and improve Canadian Army Arctic capabilities. This exercise had a robust sustainment plan that was able to project forward with the land forces. It proved that Canada's land forces can operate in the Arctic over an extended period of time. In the case of this exercise, the Combat Service Support Company conducted sustainment operations for up to eight weeks and could easily have sustained for a longer duration as the lines of sustainment were established early and maintained.

These exercises combined demonstrate the ability for the CAF to conduct and sustain operations in the Arctic for extended periods of time. Unfortunately, these exercises do not provide the permanent presence that is necessary for the protection of sovereignty. The next step should be the establishment of forces in the communities to augment the Rangers and the OGDs in the conduct of the routine operations all-year round.

### **Inter-Agency**

Alongside the military, numerous OGDs have worked in the Arctic for decades. These organizations include the Department of Foreign Affairs and Trade Development (DFATD), the Canadian Coast Guard (CCG), the Royal Canadian Mounted Police (RCMP), the Transportation Safety Board (TSB), the Department of Fisheries and Oceans (DFO), Natural Resources Canada (NRCAN). There has also been a growing interest from the private sector as large companies from the oil, petroleum and diamond

industries have expanded exploration in the region and established permanent infrastructure. The overall vision of the OGDs supports sovereignty, security, and stewardship and how to balance the interests of the Arctic states, northern peoples, non-arctic states and organizations, development and transportation companies, and other groups with interest in the region.<sup>42</sup> OGDs provide unique capabilities and exposure to external agencies and perspectives that, in conjunction with the military, are crucial to the long-term sustainability in the Arctic.

The CCG, under the DFO, are among the most experienced departments that operate continuously in the region. They work in concert with the RCN, often taking on patrol missions that the current capabilities of the RCN are unable to accomplish. Such operations, like patrolling the Arctic, are mainly done by the CCG, which has five large and medium-sized unarmed icebreakers and six small icebreakers. However, most of these ships can only operate in the Arctic in the summer.<sup>43</sup> Lackenbauer observes that the coast guard is Canada's icebreaking service and is the most visible federal marine presence in the Arctic.<sup>44</sup> He further suggests that although the coast guard does not have an enforcement mandate, its vessels conduct security surveillance and carry customs, immigration, RCMP, fisheries, and transport officers on possible interdiction missions.<sup>45</sup> Although these organizations have done well to be self-sustained and support the remotes

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<sup>42</sup> Griffiths, Franklyn, Rob Huebert and P. Whitney Lackenbauer. *Canada and the Changing Arctic: Sovereignty, Security and Stewardship*. (Waterloo: Wilfred Laurier University Press, 2011)., 245.

<sup>43</sup> Siemont T. Wezeman., "Military Capabilities in the Arctic" *Sipri Background Paper*, (March 2012). <http://books.sipri.org/files/misc/SIPRIBP1203.pdf>, pg., 5.

<sup>44</sup> P. Whitney Lackenbauer., *From Polar Race to Polar Saga: An Integrated Strategy for Canada and the Circumpolar World*. (Toronto: Canadian International Council, 2009)., 110.

<sup>45</sup> *Ibid.*

communities, they are unable to expand much beyond their current areas due to limited infrastructure and transportation networks. The CCG, with other enablers, provides the visual presence in the Arctic that at least demonstrates a security presence exists, but it is of limited capability without the infrastructure to sustain operations. The ability to conduct long-term patrolling operations would require additional support either from the military or leveraging capabilities from industry. In terms of sustainment, private industry has done extremely well in the ability to project forward at a distance on a commercial basis. Many companies are contracted to provide services in the north affirming that sustainment through industry is achievable.

NUNA Logistics is but one company based out of Edmonton, Alberta that has a robust sustainment component. NUNA views itself as the premier northern provider of value-added mining and construction services while fostering sustainable Inuit and Aboriginal opportunities. NUNA's workforce at various times exceeds 600 people working on various projects in Canada's Remote North.<sup>46</sup> Another key organization is the Tli Cho Landtran Transport Ltd. This company, which constructs Canada's winter ice roads, represents the last frontier of trucking in Canada's North. In addition to building winter roads, Tli Cho Landtran Transport Ltd transports highly needed supplies to Northern diamond mines and offers regularly scheduled year-round transportation services between points in North America and the Northwest Territories. Based in Yellowknife, Northwest Territories, Tli Cho Landtran is a pioneer of ice road travel, and was one of the first Aboriginal Partnership companies to use the ice roads commercially

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<sup>46</sup>NUNA Logistics. [http://nunalogistics.com/nuna\\_group.html](http://nunalogistics.com/nuna_group.html), last accessed, 28 January 2014.

more than nine years ago. As both an ice road constructor and transporter, they bring unique and valuable perspectives to transportation in Canada's North. These two organizations alone demonstrate the incredible advancement of what industry is capable of achieving to sustain long-term operations in the north. The fact that money is less an issue enables industry to achieve what is required for success. Industry, however, also takes advantage of existing infrastructure to further advance investment. Industry is reliant on a hub and spoke effect for shipping, if road networks are important, the ports and airfields are equally important providing the flexibility required for conducting sustainment operations efficiently.

### **Multi-National**

With increased interest in the economic value of the Arctic, neighbouring countries covet a fair and equitable portion of the Arctic region. When the GoC published *Canada's Northern Strategy* in 2009, the focus was a multi-lateral approach. Countries such as Russia, Denmark, Greenland and the US are extending farther into the north and improving capabilities hoping to take advantage of economic opportunities. Each country, though some more than others, is actively putting in place, the necessary support to protect their national interests. Even China, who has recently claimed to be an Arctic nation, has built several ice-breakers and is increasing interest in the area.

Lackenbauer alludes to discussions between senior military officers that emphasize the need for international cooperation to develop the Arctic.<sup>47</sup> *Canada's*

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*Northern Strategy* explicitly states that the US is an exceptionally valuable partner in the Arctic. For this strategy to be successful through a multi-lateral approach US support is required.<sup>48</sup> Opportunities might also exist for cooperation with Russia.<sup>49</sup> An internationally collaborative approach to the Arctic suggests intent for establishing a more permanent posture in the Arctic across all countries. With multiple nations investing in the region, the opportunities for establishing a permanent presence is more viable through collaboration.

To facilitate multi-national efforts in the Arctic, a formalized committee, the Arctic Council, was established as a high level inter-governmental forum to provide a means for promoting cooperation, coordination, and interaction among the Arctic states. The council provides a governing structure where states come together to discuss common sovereign issues, sustainable development, and environmental protection.<sup>50</sup> Currently, the Arctic Council has eight member states: Canada, Denmark (including Greenland and the Faroe Islands), Finland, Iceland, Norway, Russian Federation, Sweden, and the US.<sup>51</sup> Each of these nations has a common concern regarding the sustainability in the Arctic.

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<sup>47</sup> P. Whitney Lackenbauer., *From Polar Race to Polar Saga: An Integrated Strategy for Canada and the Circumpolar World*. (Toronto: Canadian International Council, 2009)., 230.

<sup>48</sup> Jean-Francois Belanger, *Canada and the Arctic: The Case for Deeper Cooperation with Washington*., *Canadian Naval Review* (Vol, No. date)., 4.

<sup>49</sup> Griffiths, Franklyn, Rob Huebert and P. Whitney Lackenbauer. *Canada and the Changing Arctic: Sovereignty, Security and Stewardship*. (Waterloo: Wilfred Laurier University Press, 2011)., 228.

<sup>50</sup> Arctic Council., <http://www.arctic-council.org/index.php/en/about-us/arctic-council/about-arctic-council>., last accessed 17 Feb 14.

<sup>51</sup> Ibid.

In many ways, Canada has the potential to be a leading nation in Arctic sustainment. As previously mentioned Canada relies for the most part upon air and marine shipping for sustainment to remote regions and is developing inland road networks to reach more remote communities. Air and sea are often still the only choices; however, given the increasing desire to project farther north, improved road systems, including ice roads, supported primarily by industry could leverage Canada's ability to provide Arctic services. Similar to Canada, the US has operated very little in the Arctic since the end of the Cold War, contributing to a gap in the knowledge, experience, and intelligence within the US regarding Arctic operations. However, like Canada, the US acknowledges the potential benefits of the Arctic and has begun focusing some effort in the region.<sup>52</sup> The US has also worked closely with Canada to defend the Arctic through NORAD. NORAD's mission is to conduct aerospace warning, aerospace control and maritime warning in the defence of North America.<sup>53</sup> The Canadian NORAD Region specifically covers the defence of Canada in the support of defence for North America as a whole. NORAD is a bi-national, integrated command, with a collaborative command structure between the US and Canada. There are NORAD detachments strategically placed throughout Canada and the US to respond to any air sovereignty threat in a matter of minutes.<sup>54</sup> Construction of the Distant Early Warning (DEW) line is also a demonstration of high level cooperation between Canada and the US on the Arctic and on security matters.<sup>55</sup> The DEW line initiated the concept of long-term sustainment. A 1955

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<sup>52</sup> LCdr Anthony Koss, "Sustaining Military Operations in the Arctic: The US cannot do it alone."(master's thesis, Naval War College, 2012), 12.

<sup>53</sup> NORAD., <http://www.norad.mil/AboutNORAD/Vision.aspx>, last accessed 4 February 2014.

<sup>54</sup> Ibid.

<sup>55</sup> Jean-Francois Belanger., "Canada and the Arctic: The Case for Deeper Cooperation with Washington." *Naval Review (Vol 8, No. 4 Winter 2003)*, 6.

report comments that “the logistics associated with the DEW line was unprecedented in the Arctic, and proved a tremendous boost to northern transportation and development.”<sup>56</sup> Again, not only the infrastructure in place, but the multi-national effort extended in the Arctic demonstrates the incredible amount of potential for growth in the region. The legacy of cleaning up the site at decommissioned radar and surveillance networks is also a way that the government can benefit from established infrastructure. These joint efforts between the US and Canada have shown the feasibility of sustaining long-term initiatives proving that a JIMP sustainable concept is achievable in the future, and asserting Canada’s position as the lead nation in the region.

## **Public**

The public is directly involved with the development and sustainment of the Arctic. Through military, inter-agency, and multi-national involvement, the indigenous population is very much an active participant in each aspect. The government is very aware of the importance of public perceptions in the Arctic and has taken steps to include consultation with government organizations. The public is a voice in keystone organizations and are noted influence in policy documents. *Canada’s Arctic Policy* stresses increased involvement with the Arctic Council, deference to UNCLOS, and joint military exercises in the Arctic.<sup>57</sup> These organizations are significantly involved in promoting the Arctic, thereby affirming that government initiatives are being taken

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<sup>56</sup> P. Whitney Lackenbauer., “The Military as a Nation Builder: The Case of the Canadian North.” *Journal of Military and Strategic Studies*. (Vol 15, Issue 1, 2013)., 14.

<sup>57</sup> Jean-Francois Belanger., “Canada and the Arctic: The Case for Deeper Cooperation with Washington.” *Naval Review* (Vol 8, No. 4 Winter 2003).,6.

seriously with the involvement of the public. Even with a tremendous amount of effort towards building a permanent presence in the Arctic, there continue to be gaps inhibiting projection higher in the Arctic. Much of the issue resides at the strategic level where it is stipulated in the *Foreign Policy for Canada's Tomorrow* that although Canada acknowledges a need to put greater focus on the Arctic for security and overall sovereignty, they have done little towards this goal. Speculations as to the reasoning for initiatives not being achieved over the last couple of decades were two-fold. No significant threat in the Arctic is present, so the government has provided only the bare essentials in maintaining a presence. Periodic air surveillance, maritime, and Ranger patrols are not enough to ensure a presence. Additionally, much of the government's focus after 9/11 was on supporting US efforts nationally in securing US/Canada borders and perimeter security and internationally overseas deterring any future potential threats from affecting North America. There was also a perception that as the Canadian government reviewed its multiple agenda items, many of which were focused on international, there was an unwillingness to allocate the financial resources necessary to acquire and maintain assets that would bolster Canada's sovereignty and security in the region.<sup>58</sup> Regardless of what the government does or does not do, the public wants to be included in the decision making process, and have a vested interest in the sustainable development for their communities in such a vast region. For these communities to survive, the public needs to be supported with employment opportunities driven by increased industry. Additionally, having a security presence in place will help ensure continued sustainment.

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<sup>58</sup> Rob Huebert., "Canadian Arctic Sovereignty and Security in a Transforming Circumpolar World." *Foreign Policy for Canada's Tomorrow* No. 4. Canadian International Council., 2

## Government Vision

The GoC acknowledges domestic and international agendas will set the conditions for sustainable development in what is becoming a contested region.<sup>59</sup> The political angle influences all aspects of the Arctic. According to the *Foreign Policy for Canada's Tomorrow*, new economic development in the Arctic is going to increase, but there is no prediction as to what this economic activity will actually look like.<sup>60</sup> With a JIMP sustainment concept as the means for sustainable development in the Arctic, the government will need to keep in mind that they cannot depend on the military alone to be able to establish a presence and protect sovereignty in the North. Lackenbauer clearly remarks that Canadians will be well served if the government delivers on the Arctic-oriented promises that have been made thus far.<sup>61</sup> As with any implementation of change, time is an important factor. Lackenbauer has definite opinions about the government's fickle commitment, which is justified in the current financial climate of the Harper government. Military equipment projects are in question with some projects delayed or cancelled due to current financial constraints. Defence alone will not achieve greater security unless those resources are embedded in a "whole of government" strategy that situates the CF responsibilities in the appropriate context.<sup>62</sup>

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<sup>59</sup> Griffiths, Franklyn, Rob Huebert and P. Whitney Lackenbauer. *Canada and the Changing Arctic: Sovereignty, Security and Stewardship*. (Waterloo: Wilfred Laurier University Press, 2011)., 246.

<sup>60</sup> Canada. Government of Canada., *Statement on Canada's Arctic Foreign Policy*. (Ottawa: Her Majesty the Queen in Right of Canada, 2010)., 28.

<sup>61</sup>P. Whitney Lackenbauer., *From Polar Race to Polar Saga: An Integrated Strategy for Canada and the Circumpolar World*. (Toronto: Canadian International Council, 2009)., 106.

<sup>62</sup> Ibid.

The current posture of the CAF performs a supporting role to OGDs in the region. In domestic operations, the military is not the lead agency and does not have a standing mandate to enforce Canadian laws. However, in conjunction with the OGDs, the military provides additional security support. The government must realize that the Arctic is a challenging operational environment. Any investment in the region needs to account for lack of existing infrastructure; efforts to improve both surveillance and enforcement capabilities recognize that sustainment in the Arctic will be very expensive.<sup>63</sup> It is important then, for the future of the Arctic that a JIMP approach to sustainment prevail.

The diverse capabilities that can be harnessed through a JIMP approach are essential to leveraging a prominent presence in the Arctic that requires sustainable development. This approach progressively benefits the GoC's sovereignty priority and supports economic development in the Arctic. Governments at all levels realize the need to take a more active role in the Arctic to protect borders and resources that will increase economic development. As stated in the *Foreign Policy for Canada's Tomorrow*, Canada must control what is happening in its Arctic. With substantial developments occurring outside of its borders, Canada must assert its control of this treasured region.<sup>64</sup> There are many organizations involved in the Arctic, with similar aims that work independently of each other for a common goal. It has been contested that continued inter-agency cooperation with a recognized lead agency is necessary for effective operational planning

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<sup>63</sup>Canada. Government of Canada., *Statement on Canada's Arctic Foreign Policy*. (Ottawa: Her Majesty the Queen in Right of Canada, 2010)., 28.

<sup>64</sup> *Ibid.*, 34.

and success in the Arctic.<sup>65</sup> The CAF has already displayed its ability to be a lead agency and providing supporting role to other Arctic stakeholders. What the CAF now needs to improve upon is centralizing all its resources required for the Arctic to determine where the capability gaps are. It is hoped that these gaps can then be filled either by OGDs, other countries, or in some aspects from the established communities. It is in this aspect that a JIMP approach is achieved.

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<sup>65</sup> Peter Gizewski and Andrew B. Godefroy, "Force Requirements (Land)." in *Defence Requirements for Canada's Arctic*, ed. Brian MacDonald. (Ottawa: Conference of Defence Associations Institute, 2007), 101.

## **CHAPTER 2 - ACHIEVING A SUSTAINABLE ARCTIC**

With global warming now opening up the opportunity for economic gains in the region, interest in the Arctic is increasing. Canadian industry has been able to increase its ability to project further into the north year-round through the increased use of ice roads and increased marine shipping routes. Technology and better transportation infrastructure have opened up the North, but the issue of sustainment remains unresolved. While this development proves that sustainment is achievable in the Arctic, it continues to face obstacles and is limited and expensive, which is a deterrent to industry expansion. A key factor to addressing the sustainment challenge will be to increase the road networks throughout the Arctic region for movement into more remote areas alleviating the reliance on air transportation.

### **Sustainment in the Arctic**

Sustainment is the driving factor for establishing a long-term WoG presence in the Arctic region. The challenges of sustainment in the Arctic are based primarily on weather. Extreme winter conditions and 24-hour darkness prevail from October until April, leaving only five months of the year to maximize all means of transportation. Replenishment of essential commodities such as fuel, construction material, food, and other indispensable commodities are needed to survive year-round, but current re-supply consists of a semi-annual sustainment flight to remote regions. Historically, as the permanent population has been extremely low and southern interest in the Arctic was



minimal. It makes this rotation of sustainment functional. Sustaining the Arctic was not even considered feasible until 1942 when the US in conjunction with Canada, established the Alaska Highway as part of a wartime project.<sup>66</sup> Created out of concern that Japan might cut the link between Alaska and the remaining states, or consider using Alaska as a convenient land route for invasion, the highway resulted in one of the greatest construction projects that linked airfields along the Northwest staging routes.<sup>67</sup> This linkage was imperative in the initiative to project lines of sustainment to the North. Additional Canadian war-time projects saw creation of an airbase at Frobisher Bay (now Iqaluit) on Baffin Island and major airfields at Southampton Island, Churchill, The Pas, and Goose Bay.<sup>68</sup> During the Cold War, modest infrastructure at these strategic locations as well as Inuvik, Rankin Inlet, and northern radar sites served specific purposes. The Arctic was still a relatively obscure region to the global community and Canada was content with its achievements. It did not place any further investment into the areas, leaving them intact, not to be further developed. One could imagine that if further investment had continued, long-term sustainability may not have been as large of an issue. The Arctic is a region that will take years to transition and the government must take advantage of the opportunity to invest in a long-term sustainable development plan sooner than later.

The GoC and other Arctic stakeholders have publicly acknowledged that sustainable development and resource management are integral to future growth in the

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<sup>66</sup> Ken S. Coates, Whitney P. Lackenbauer, William R. Morrison and Greg Poelzer, *Arctic Front: Defending Canada in the Far North*. (Toronto: Thomas Allen Publishers, 2008),57.

<sup>67</sup> Ibid.

<sup>68</sup> Ibid., 61.

region.<sup>69</sup> To accomplish this growth, a comprehensive sustainment plan is needed. Sustainment in this case may be viewed from several perspectives. Sustainment of the existing remote communities with essential resources entails a means of getting supplies to outlying regions. It also involves growing the economic and social benefits over generations without adversely impacting the environment. The *Integrated Capstone Concept*, although inspired by the military, encapsulates the concept of a joint sustainment viewpoint by recognizing that comprehensive sustainment is the ability to build partnerships harnessing the capabilities and best practices from organizations world-wide. In bringing together all these facets at all levels of government ensures an efficient and transparent sustainment plan.<sup>70</sup> In broad terms, a transparent sustainment plan appears to be easy to achieve, but what is not conveyed is that to have an effective sustainment plan, the lines of sustainment must not be stretched too far and most important, they must be connected.

### **Lines of Sustainment**

The *Statement of Canada's Arctic Foreign Policy*, outlines clearly, “improvements in air and sea transportation links to create enhanced access across the polar region encouraging Arctic trade and investment opportunities.”<sup>71</sup> Air and sea routes

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<sup>69</sup> P. Whitney Lackenbauer., *From Polar Race to Polar Saga: An Integrated Strategy for Canada and the Circumpolar World*. (Toronto: Canadian International Council, 2009)., 149.

<sup>70</sup> Canada. Department of National Defence., *Integrated Capstone Concept (ICC)*, (DFSA, 20 October 2009 42.

<sup>71</sup> Canada. Government of Canada., *Statement on Canada's Arctic Foreign Policy*. (Ottawa: Her Majesty the Queen in Right of Canada, 2010)., 15.

have proven viable options but could be more efficient if linked with road networks to provide more re-supply options.

## **Road Networks**

Road networks are equally essential to advancement of trade and investment, but have not been considered a viable option in the Arctic region due to lack of existing road infrastructure as a result of the expansive terrain, lack of population density, and the challenge of constructing roads on permafrost; the amount of time and money it will take to develop new routes is also a factor. As is the case in the rest of Canada, road networks provide not only a means of transporting goods from ports or airfields but also provide the populace with essential links between communities and will ultimately make the Arctic region accessible. Road networks provide a mechanism to afford the public with the opportunity to extend beyond their isolated communities.

The road systems currently established in the Northwest Territories are captured in Figures 2, 3 and 4. They, including the Alaska Highway and ice roads, connect the Arctic to the rest of Canada and the US. Nine highway networks are serviceable year-round throughout the entire Arctic region. During the winter months, a series of ice roads augment existing road networks but are used primarily for industrial purposes. The Mackenzie Highway, connecting Grimshaw, Alberta with Wrigley, NWT, was built at the same time as the Alaskan Highway in the 1940s and opened after WWII. Designated as Highway 1, the Mackenzie Highway is the longest in the NWT, stretching 690

kilometres from the Alberta/NWT border north to the community of Wrigley.<sup>72</sup> Initially constructed to transport supplies to gold fields, the highway crosses Great Slave Lake at Yellowknife and was extended to Wrigley in 1976.<sup>73</sup>



**Figure 2 - Alaska Highway Road Network**

Source: <http://geography.howstuffworks.com/canada/the-alaska-highway.htm>

The Hay River Highway, Yellowknife Highway, Ingraham Trail, Fort Smith Highway and Fort Resolution Highway are highways linked to the Mackenzie Highway and extend outward to outlying mining communities. The Liard Highway connects the community of Fort Liard, British Columbia. The Dempster Highway is an East/West transit that borders on Yukon and stretches from the North Klondike Highway near Dawson City Yukon to Inuvik totaling 736 kilometres.<sup>74</sup> Canada's first all-weather road to cross the Arctic Circle was officially opened on August 18th, 1979, at Flat Creek, Yukon. It was a two-lane, gravel-surfaced, all-weather highway that ran 671 kilometres

<sup>72</sup> Northwest Territories Highway, Ferry and Ice Crossing Information., <http://www.dot.gov.nt.ca/live/pages/wpPages/roadConditions.aspx>. Last accessed 26 April 2014.

<sup>73</sup> <http://www.thecanadianencyclopedia.ca/en/article/mackenzie-highway/>., last accessed 18 February 2014.

<sup>74</sup> Northwest Territories Highway, Ferry and Ice Crossing Information., <http://www.dot.gov.nt.ca/live/pages/wpPages/roadConditions.aspx>. Last accessed 26 April 2014.

from the Klondike Highway near Dawson City to Fort McPherson and Arctic Red River in the Northwest Territories. It also linked with the Mackenzie Highway at a point 67 kilometres south of Inuvik.<sup>75</sup> This highway includes two bridges that were constructed by 1 Combat Engineer Regiment providing a clear example of the military in a supporting role in the north facilitating access to the remote region. The Arctic until recently has been considered quite remote and thus separated from the rest of Canada. With ongoing developments of inter-connecting transportation routes, more frequent re-supply and sustainable development for the communities can be achieved.

Northern highways are completely operational from May through to October with a ferry system used for the routes that intersect with waterways. Between December to March, ice roads are constructed which allows transportation access almost year-round. These routes provide inland sustenance to the communities throughout the Arctic region. Extending the routes is primarily based upon industry requirements as most communities are mining centres in which a population was formed. As seen in the maps, the current road systems lead to remote communities, but there remains more land that can advance these road networks to ports and airfields that are even further north. The success to achieving a sustainable Arctic will be achieved when the transportation hubs, road, rail, air and sea are connected. With the synchronization of all modes, it will foster the development of the region, opening the gateways for increased population and economic growth.

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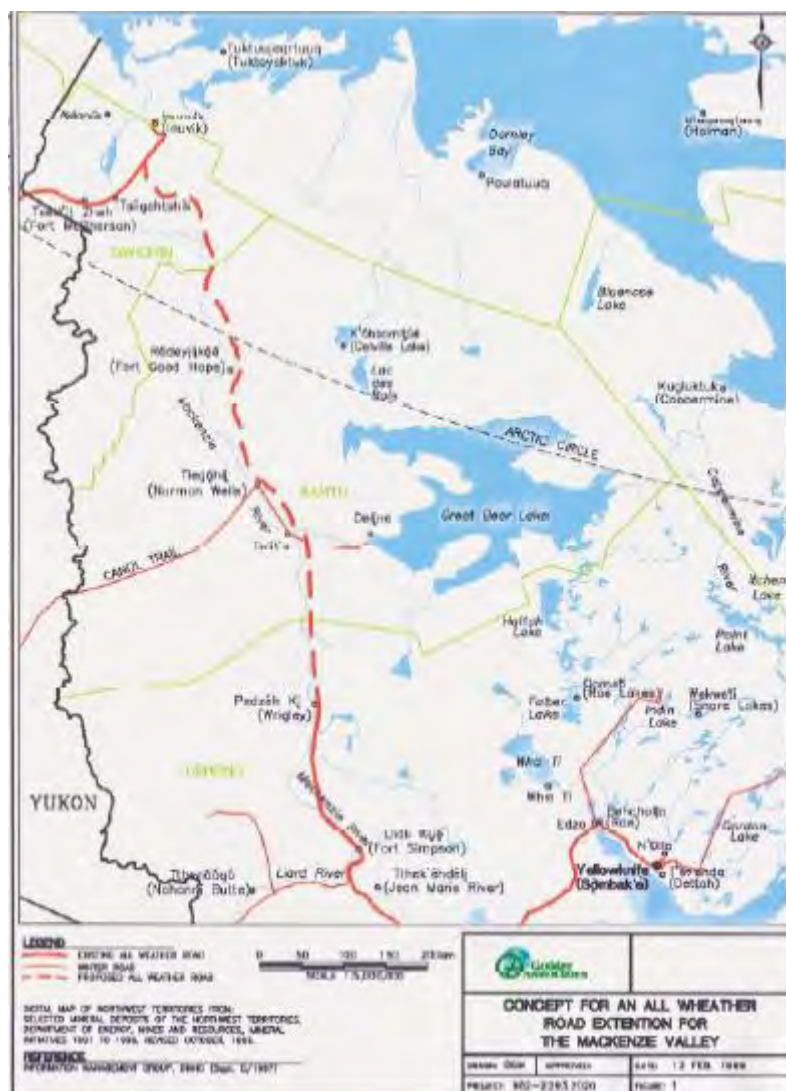
<sup>75</sup>Dempster highway., <http://www.yukoninfo.com/region/dempster-highway/>. Last accessed, 20 March 2014.



Figure 3 - NWT Road Networks

Source: [http://www.dot.gov.nt.ca/\\_live/pages/wpPages/travelinfo\\_brochures.aspx](http://www.dot.gov.nt.ca/_live/pages/wpPages/travelinfo_brochures.aspx)<sup>76</sup>

<sup>76</sup> [http://www.dot.gov.nt.ca/\\_live/pages/wpPages/travelinfo\\_brochures.aspx](http://www.dot.gov.nt.ca/_live/pages/wpPages/travelinfo_brochures.aspx)



**Figure 4 - MacKenzie Highway Extension Plan**

Source: Mackenzie Highway Extension – Geo-North Limited and Golder Associates<sup>77</sup>

Recently, the Government of the Northwest Territories announced plans to complete the Mackenzie Valley Highway to the Arctic Coast, shown in Figure 4. This extension will link all of Canada from coast to coast. Not surprisingly, the idea to complete this project was based on significant development opportunities foreseen with

<sup>77</sup> <http://www.dot.gov.nt.ca/live/documents/content/Mackenzie%20Highway%20Extension%20-%20Scoping%20Report.pdf>, last accessed 24 April 2014.

new oil and gas discoveries in the Mackenzie Valley and Beaufort Delta.<sup>78</sup> In southern Canada a main highway links the Atlantic to the Pacific Ocean. The Mackenzie Highway once complete, will complete unification by linking the Arctic Ocean to the remainder of Canada. Lackenbauer suggests that Canada should acknowledge the third ocean in the national motto to read, *A mari ad mare ad mare*, “from sea to sea to sea”.<sup>79</sup> From the national perspective, this project would send a resounding message to all Canadians that the future of the nation includes the Arctic. It would also entice the remaining population to explore a part of the country that was not previously exposed. In terms of sustainable development, the Mackenzie Highway will be a major boom to the shipping industry and promoting a sustainable solution.

### **Air Transportation**

For Arctic communities, transportation links have historically been predominantly by air. The primary issue for the RCAF is that the majority of the major air bases are in the southern part of Canada with one in each province. To shorten the response time to react to any security threat, SAR or Major Air Disaster (MAJAD) the RCAF would benefit in establishing a permanent capability in the North. In 2010, the vision of the Chief of Air Staff was “a more relevant, responsive, and effective Arctic capable

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<sup>78</sup>Canada. Northwest Territories., *Connecting Canada Coast to Coast to Coast: “A Proposal to Complete the Mackenzie Valley Highway to the Arctic Coast”*., 3. <http://www.dot.gov.nt.ca/live/documents/content/Connecting%20Canada.pdf>., last accessed 18 February 2014.

<sup>79</sup> Whitney P. Lackenbauer., *From Polar Race to Polar Saga: An Integrated Strategy for Canada and the Circumpolar World*. (Toronto: Canadian International Council, 2009)., 162.



aerospace power.”<sup>80</sup> Anticipating the future requirements, the RCAF have reviewed some options that allow them to project farther into the north, but will come with significant costs.



**Figure 5 - NWT Airfields**

Source: <http://www.thearcticinstitute.org/2012/10/the-future-of-arctic-shipping.html>

The number of airfields in the region makes sustainment by air the most efficient means of projecting sustainment in the Arctic as displayed in Figure 5. The Arctic region has forty-four major and minor community-based airports, many of which are managed and operated by private industry to transport employees and supplies in and out of communities. Even though a multitude of airfields exist in the region, many remote areas remain inaccessible. An option being considered, but still in the development stage, is the

<sup>80</sup> David Pugliese., “Royal Canadian Air Force considering major Arctic base expansion in Nunavut.” *National Post*. 26 December 2011., last accessed 25 March 2014.

concept of using cargo airships to move large quantities of supplies more efficiently. Cargo airships could fill gaps in the existing transportation networks.<sup>81</sup> This new capability could close the transportation gap making sustaining the Arctic more feasible.

### **Marine Transportation**

Expansion of marine transportation in the Arctic provides greater opportunities for development. The main artery of marine transportation is the Northwest Passage. The government has established deep water ports along the Arctic coastline which are an asset to industry and the sustainment of the Arctic. Currently, two deep-water seaports in Canada's north, are at the Port of Churchill, Manitoba and Nanisivik, Nunavut; (still under construction), both of which are key to sustainment in the region. The ports are strategically located along the Northwest Passage which supports sustained development for the marine vessels and communities<sup>82</sup> while enforcing Canada's strategic requirement for defense and sovereignty.<sup>83</sup>

The primary port is the Port of Churchill, on Churchill Bay. Established in the 1930s, this port is used primarily for exporting grain and other commodities from Western Canada, import of industrial goods to the Northern Hemisphere, northern industrial and community development, and for resupply of goods. The Port of Nanisivik

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<sup>81</sup>Prentice, Barry E. and Stuart Russell. "Competing Technologies and Economic Opportunities for Northern Logistics: The Airship Solution," Last accessed 11 January 2014. <http://www.isopolar.com/competing-technologies-and-economic-opportunities-for-northern-logistics-the-airship-solution/>, 2.

<sup>82</sup> <http://www.casr.ca/id-arctic-empires-2.htm>, last accessed 31 January 2014.

<sup>83</sup> <http://www.portofchurchill.ca/about/history>, last accessed 18 February 2014.

will be operational as early as 2015. This port will be multi-functional as it is co-located with an existing air field. Additionally, the current facilities at Nanisivik provide the ability to refuel and infrastructure to preposition the intended Arctic Offshore Patrol Ships (AOPS) fleet that will reside at the base.<sup>84</sup> The Nanisivik port has several operational advantages. Primarily, the port is a key location not only to support industry and the RCN, but also OGD vessels operating in eastern Arctic waters and the Northwest Passage. The port once operational will take advantage of existing infrastructure and fuel storage which supporting sustainable development in that area. The Port of Nanisivik will be a major step towards projecting lines of sustainment in the Canadian Arctic, and is a key staging area that will enable resupply, refueling, embarkation of equipment and supplies, and transfer personnel throughout the navigation season.<sup>85</sup> Delivery of supplies to this port remains a challenge with only air and marine options available. Industry is extremely successful in using multiple sustainment options. Their inter-connecting lines of sustainment demonstrate the efficacy of a synchronized sustainment plan. Industry continually reviews their sustainment options to increase efficiency in the shipping industry. The key advantage of the port is its location, in close proximity to many large economic markets providing a competitive transportation solution.

The added challenge remains that for remote communities, there is yet to be any further road networks that would provide another option for re-supply. For example, Nanisivik is inaccessible by road. To increase sustainment to that area would mean

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<sup>84</sup> <http://www.casr.ca/id-arctic-empires-2.htm>, last accessed 31 January 2014.

<sup>85</sup> Whitney P. Lackenbauer., *From Polar Race to Polar Saga: An Integrated Strategy for Canada and the Circumpolar World*. (Toronto: Canadian International Council, 2009),103.

increased airlift. Until recently, the major GoC initiative in Nanisivik was the construction of port facilities. There are inadequate docking facilities to receive cargo transported by sea, requiring vessels to anchor at sea and use barges to bring materials and supplies ashore. To be able to project sustainment via a marine capacity, increased marine infrastructure is necessary but will be time consuming and costly.<sup>86</sup> Undoubtedly, industry will seek other natural resource hubs to tap into and once discovered an economic boom will occur in that area. It will have a positive impact on the development of the community with an established sustainment plan in place that would be more than two times per year.

There will always be competing priorities of what cargo goes by ship or plane. The end result regardless of what mode of transportation is used is to be able to provide and maintain continuous sustainment, synchronizing the provisions of required supplies and services throughout.

It is critical for the Arctic to have several alternative modes of transportation in providing sustainment. The linkage of transportation hubs increases the options for lines of sustainment. One of the tenets of sustainment is that shorter lines of sustainment generate a more agile and efficient system of replenishment. When dealing with a region that is challenging to travel through, an abundance of alternatives allows for increased flexibility.

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<sup>86</sup> Parliament of Canada, *The Arctic: Transportation, Infrastructure and Communication* (Ottawa: Industry, Infrastructure and Resources Division, 2008), 1.

## Economy

Ultimately, the economy requires extraction of a resource or an industrial hub to grow. However, the economy is only as good as the shipping network that supports exporting and importing goods. Transportation networks are an essential facet of sustainable development and natural resource industries. Billions of dollars are currently being invested by the private sector in mineral, gem, as well as oil and gas exploration and development.<sup>87</sup> However, economic development happens neither in a vacuum, nor without necessary investment in infrastructure, placing the government under intense pressure to keep pace with private development. Roads, small craft harbours, and improved airports act to connect economic projects to communities.<sup>88</sup> A community can only survive if there is an economy upon which to draw from and vice versa, an economy can only thrive in a growing community. The relationship between community and economy is complicated. By improving air and sea transportation links to create enhanced access across the Arctic region, the GoC will ultimately encourage Arctic trade and investment opportunities which will help to sustain the communities they provide access to. The Port of Churchill provides a good example of a community is that developing alongside recent investments such as upgrades to the Port which is facilitating increased export options and the flow of two-way trade with other Northern ports. The upgrade of ports and considerations for additional ports will not only foster increased economic growth, but will also provide much needed sustainment hubs to allow ships to

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<sup>87</sup> Parliament of Canada, *The Arctic: Transportation, Infrastructure and Communication* (Ottawa: Industry, Infrastructure and Resources Division, 2008), 1.

<sup>88</sup> Ibid.

endure longer stays at sea, given awareness that the lines of sustainment in the north are shorter. Ships would have the capacity to transit across the entire North granted the ports are strategically placed with that benefit in mind.

The vision for northern development offers significant possibilities to Canada as a nation, but has accompanying challenges as well. The plan to connect the Mackenzie Highway to the Arctic coast is critical to the projection of sustainable development, as economic development in Northern Canada is generally constrained by the cost of transportation and logistics.<sup>89</sup> While operating in the north is expensive, it should not be the sole excuse for the GoC to not pursue its proposed initiatives.

The logistics organizations that support the oil and mining industries in the North take necessary measures to not only ensure that they are providing a service to the industry supported, but additionally, their efforts also support the indigenous population. The majority of the corporations operating in the Arctic employ the indigenous population thus contributing to supporting a community and the overall economic growth. This pro-active approach is paramount to long-term sustainable development from which the Arctic can benefit. Additionally, industry is advancing sustainable infrastructure. In the mineral-rich Kitikmeot region of western Nunavut, six mining companies including giants Rio Tinto and De Beers have joined together in support of the Bathurst Inlet Port and Road Project. The proposed port would be able to accommodate

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<sup>89</sup> Prentice, Barry E. and Stuart Russell. "Competing Technologies and Economic Opportunities for Northern Logistics: The Airship Solution," Last accessed 11 January 2014. <http://www.isopolar.com/competing-technologies-and-economic-opportunities-for-northern-logistics-the-airship-solution.>, 1.

ships as large as 25,000 tons. Linked by a 211 kilometres all-weather road, it would enable the companies to bring heavy equipment in to mines and ship extracted ore out to market.<sup>90</sup> This one initiative demonstrates that private industry acknowledges the importance of the lines of sustainment and are actively developing areas that otherwise would not have been suitable for such use.

Marine transport is an important component of Canada's foreign trade and economic prosperity.<sup>91</sup> Industries working in the Arctic region have been successful in shipping throughout Canada, and it remains the least expensive form of transportation available to Arctic communities, however, it is limited to seasonal use only.<sup>92</sup> Northern Transportation Company Limited (NTCL), one-hundred percent Inuit-owned is the largest tug and barge transportation provider in the Canadian Arctic and is heavily involved with cargo transport for the oil, gas, and mining industries.<sup>93</sup> The success of NTCL has enabled them to expand, and they are now transporting across Canada, with specific focus in Eastern Canada with offshore coastal vessel solutions.<sup>94</sup> Industry has the ability to expand capability where the government has yet to complete the project of the AOPs for the RCN. The expansion of industry with the collaboration of public and OGDs

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<sup>90</sup> Michael Byers., *Who Owns the Arctic? Understanding Sovereignty Disputes in the North*. (Vancouver: Douglas & MacIntyre, 2009)., 41.

<sup>91</sup> K. Joseph Spears. "Canada: An Arctic Nation," *Canadian Sailings*, (October 2013)., 24

<sup>92</sup> Prentice, Barry E. and Stuart Russell. "Competing Technologies and Economic Opportunities for Northern Logistics: The Airship Solution," Last accessed 11 January 2014. <http://www.isopolar.com/competing-technologies-and-economic-opportunities-for-northern-logistics-the-airship-solution>., 2.

<sup>93</sup> <http://www.theogm.com/2013/06/04/spotlight-on-northern-transportation-company-limited>., last accessed 17 February 2014.

<sup>94</sup> Ibid.

demonstrates the importance of employing JIMP sustainment to be able to benefit from industrial development and multi-national advancements for a national benefit.

The Northwest Passage is currently being explored internationally for use as a primary shipping route. Currently, the Panama Canal is the route used to ship across the globe which is currently being upgraded and widened due to the amount of shipping that passes through. The Northwest Passage provides a less congested route between Europe and Asia. It is 7,000 kilometres shorter than the Panama Canal route.<sup>95</sup> With the Northwest Passage becoming less challenging due to climate change, many nations are exploring this option as it is cheaper and shorter in distance. As the predictions of the Northwest Passage becomes ice-free, Canada can make the case that the Northwest Passage is an internal waterway, with all ships travelling this route required to pay transit fees similar to those paid for passage through the Panama and Suez Canals ranging from \$2-4 billion a year.<sup>96</sup> According to Transport Canada scientists, even with the melting ice, ice conditions in the Northwest Passage are still too unpredictable for regular commercial shipping. Thus, it would be difficult for shipping companies to guarantee reliable transit times, which are essential to the economic viability of the shipping industry.<sup>97</sup> Sustainment in the arctic is challenging simply due to the sparse traffic density, few back-haul opportunities and, seasonal shutdowns which, when factored into economic growth to be successful in sustaining the arctic, requires time and is expensive.

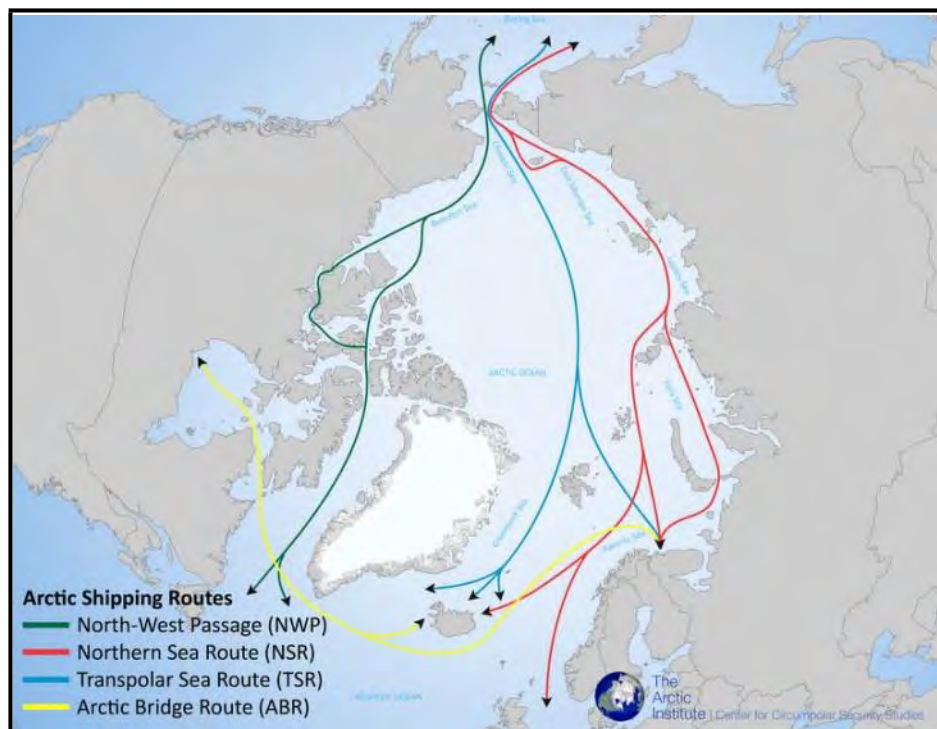
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<sup>95</sup> Parliament of Canada, *The Arctic: Transportation, Infrastructure and Communication* (Ottawa: Industry, Infrastructure and Resources Division, 2008), 1.

<sup>96</sup> <http://www.casr.ca/id-arctic-empires-2.htm>, last accessed 31 January 2014.

<sup>97</sup> Parliament of Canada, *The Arctic: Transportation, Infrastructure and Communication* (Ottawa: Industry, Infrastructure and Resources Division, 2008), 1.





**Figure 6 - Arctic Shipping Routes**

Source: The Arctic Institute, [www.thearcticinstitute.org](http://www.thearcticinstitute.org)<sup>98</sup>

Shipping routes are extensive in the Arctic. Figure 6 displays several shipping routes that currently exist, bearing in mind these routes are still subjected to seasonal travel.

For success in the Arctic, international bodies, governments at all levels, industry and the public need to work in concert with each other. Increased transportation networks and increased infrastructure may expand the economy and therefore achieve a sustainable arctic region. Fully embracing the concept of JIMP sustainment adds flexibility and

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<sup>98</sup> The Arctic Institute, [www.thearcticinstitute.org](http://www.thearcticinstitute.org)

cooperation among all stakeholders aligned interests in which all players achieve their end goals, and all stakeholders working together to protect the GoC's interests.

### **Achieving JIMP Sustainment**

To achieve JIMP sustainment a unified effort will foster the increase of economic and sustainable development. Each JIMP contributor has unique sustainment capabilities that will benefit other organizations. Resource linkages already exist and the contributors will further benefit from becoming more integrated. Already the RCN and the CCG work together by sharing assets. The RCAF in collaboration with contracted air transport has also unified their capabilities. This collaboration sees a unification of like assets. To fully appreciate a complete JIMP sustainable Arctic, all JIMP contributors will need to have an appreciation of what other entities can provide in terms of sustainment. Once the understanding is broadened and transportation networks extended, then the lines of sustainment will be more efficient, benefiting economic and sustainable development overall and contributing to the achievement of a prominent permanent presence.

The CFDS makes clear the intent to expand its capabilities and military forces further into the Arctic. The document directs the CAF to demonstrate visible presence in the region, to have the capacity to defend Arctic territory, and assist other government departments when called upon.<sup>99</sup> The military presence is just that, an established security presence that is prepared to defend the sovereignty of the nation and will exercise its

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<sup>99</sup> Griffiths, Franklyn, Rob Huebert and P. Whitney Lackenbauer. *Canada and the Changing Arctic: Sovereignty, Security and Stewardship*. (Waterloo: Wilfred Laurier University Press, 2011)., 229.

capabilities in the event of a threat. This presence is expanding with excellent initiatives from all three elements of the CAF. To that end there has been an extensive amount of collaboration with NORAD and US Northern Command (USNORTHCOM) which is a relationship that continues to flourish. The CFDS makes specific note that Canadian Joint Operations Command (CJOC) will continue to work with USNORTHCOM in support of shared objectives. The respective national commands are dedicated to enhancing military-to-military cooperation to provide assistance to civilian emergence response agencies in the event of an engagement.<sup>100</sup> However, the current posture of the CAF has neither manpower nor resources to be able to sustain a permanent presence year-round. Once forces are on the ground, the sustainment plan must be operational as it is the foundation to survivability.

The RCN has been the primary focus in terms of providing a presence in the north. The requirement for sustainability is more geared towards acquisition of new resources and infrastructure. Collaboration with the CCG plans to equip the CCG vessels with arms to augment the RCN overall increasing Canada's enforcement capability.<sup>101</sup> This in turn provides a stronger presence in the North along Canadian coastal borders.

Arguably, the RCAF is the best established among the CAF elements in the Arctic, but does require updated resources and infrastructure to project in the north. The

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<sup>100</sup> Canada. Department of National Defence. "Canada First Defence Strategy." (Ottawa: Minister of National Defence, 2008), 8.

<sup>101</sup> Ibid.

RCAF has been very successful in fostering interoperability with other government departments, and at the strategic level collaborating with NORAD and USNORTHCOM. The RCAF's understanding of its critical role is also promising. The Chief of Air Staff's planning directive published in February 2010 commits that "the RCAF will become a more relevant, responsive, and effective Arctic capable aerospace power."<sup>102</sup> This vision is very impressive and to be able to achieve this robust view, upgrading of air assets will undoubtedly be required. However, given the current fiscal constraints as well as political and procurement challenges, a variety of projects such as Next Generation Fighter, Maritime helicopter and Fixed-Wing Search and Rescue have been subject to lengthy delays.

With increased resource exploitation and shipping activity in the North, there is anticipation that the RCAF will need to monitor Canada's Arctic on a daily basis.<sup>103</sup> This prediction enforces the requirement to expand RCAF capabilities and infrastructure in the North. However, given the current positioning of air assets largely in the south of Canada, the option to conduct surveillance on a daily basis is not viable except by UAVs. The existing FOLs could become permanent bases for forward deployed surveillance and reconnaissance and SAR aircraft.<sup>104</sup> This concept is a viable option that is sustainable and meets the mandate of the Canadian Government.

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<sup>102</sup> Canada. Department of National Defence. "Canada First Defence Strategy." (Ottawa: Minister of National Defence, 2008), 8.

<sup>103</sup> James Fergusson, "Up in the air, North of 60," *National Post*, February 6, 2013. <http://fullcomment.nationalpost.com/2013/02/06/james-fergusson-up-in-the-air-north-of-60/>, last accessed

26 January 2014.

<sup>104</sup> Ibid.

Both the RCN and the RCAF have proven that they can sustain in the Arctic, in no small part to the fact that their major platforms have the flexibility to operate in a variety of weather conditions. There remains still much to improve upon with the advancement of technology and increased infrastructure for ports and airfields. The Army, however, continues to have a requirement for increased presence in the Arctic. Without support from the RCN or RCAF, the Army is limited to how far it can project north as a result of limited road networks. Nevertheless, with the Northwest Territories Government's vision of expanding road infrastructure, it is only a matter of time before this challenge is overcome and land forces will project to more remote areas of the Arctic years to come that will see all lines of sustainment synchronized between sea, air and land.

The primary purpose of military presence in the North is for national defence, and not economic gain. Economic interests should not lead to militarization of the North.<sup>105</sup> In the context of domestic support, the military is a supporting mechanism for OGDs whose only mandate is aid to civil power. An increased military presence will provide economic support and provide economies of scale, making it more feasible for infrastructure and social service improvements. Although not a direct application of military power, this second order effect will benefit development in northern communities through economic stimulation.

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<sup>105</sup> Franklyn Griffiths, Rob Huebert and P. Whitney Lackenbauer. *Canada and the Changing Arctic: Sovereignty, Security and Stewardship*. (Waterloo: Wilfred Laurier University Press, 2011)., 230.

## The Arctic Council

A comprehensive JIMP sustainable approach has been embraced by the Arctic Council which incorporates points of view from agencies across the JIMP spectrum. Inter-agency and multi-national facets of JIMP are strongly linked together by the Council. From the multi-national perspective, the Arctic Council remains the governing agency providing nation states with a common vision for the Arctic. The Arctic Council is the fundamental intergovernmental forum for regional cooperation in addressing environmental and sustainable development challenges in the Circumpolar North and plays a vital role in conveying Arctic perspectives to other international and global organizations.<sup>106</sup> From the public facet of JIMP, the Council not only joins the nations in the Arctic region, but also incorporates the public with indigenous members as part of the council. Canada was instrumental in fostering the human dimension of the Arctic Council creating a Sustainable Development Working Group that works in favour of Northerners wishes.<sup>107</sup> This initiative represents a step forward in the multi-national environment, providing the Arctic Council with a global viewpoint from all contributing nations. If Canada really wants to incorporate the voice of the people, it would be wise to implement a domestic Arctic Council. The objective of this council would be to improve the cooperation and coordination between the federal government, OGDs, and the indigenous communities. Lackenbauer highlights that a meeting in November 2008 of the Inuit Circumpolar Council in Kuujuaq reaffirmed that the Inuit want to be included as equal

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<sup>106</sup> P. Whitney Lackenbauer., *From Polar Race to Polar Saga: An Integrated Strategy for Canada and the Circumpolar World*. (Toronto: Canadian International Council, 2009)., 137.

<sup>107</sup> Ibid., 138.

partners in any future talks pertaining to the Arctic and more importantly they want to be part of the decision making process.<sup>108</sup> The inclusion of the public in matters of the Arctic is fundamental to long-term development. Additionally, Canada needs to consider its allies to determine what capabilities the neighbouring countries can provide that will be mutually beneficial.

For Canada, sustainability in the Arctic will require financial commitment. As noted by Jean-Francois Belanger, a robust policy in the Arctic would cost Canada more money than it is currently willing to spend.<sup>109</sup> For this reason, the relationship with the US provides an opportunity to achieve some of its goals with lesser investment. Belanger further notes economic and military bi-lateral agreements such as NAFTA and NORAD provide economic and defence benefits to Canada, but come at the price of compromise in the Northwest Passage.<sup>110</sup> With Canada as the current chair of the Arctic Council, the opportunity to influence agreements pertaining to the Northwest Passage with international stakeholders would be in the country's best interest to resolve.

### **Benefit to Public**

From the viewpoint of the public, the indigenous population will be the main beneficiaries of a successful JIMP approach. Arctic residents are not uniformly adverse

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<sup>108</sup>P. Whitney Lackenbauer., *From Polar Race to Polar Saga: An Integrated Strategy for Canada and the Circumpolar World*. (Toronto: Canadian International Council, 2009)., 140.

<sup>109</sup> Jean-Francois Belanger., "Canada and the Arctic: The Case for Deeper Cooperation with Washington." *Naval Review (Vol 8, No. 4 Winter 2003)*., 6.

<sup>110</sup> Ibid.

to economic development in the region as “they are mindful of the high cost of living in the Arctic, and they have a strong interest in creation of good jobs.”<sup>111</sup> With increased economic growth and sustained communities, the populace will benefit from a lower cost of living and increased employment. However, Arctic cultures are highly vulnerable to inroads arising from economic development and the expansion of southern societal norms into the North, and it is generally acknowledged that impacts of environmental disasters in the Arctic could be catastrophic. Arctic scholar Oran Young posits: “the challenge of making economic development compatible with maintenance of local cultures and protection of the region's ecosystems is an overarching concern in the Arctic today.”<sup>112</sup> What the population and local governments need to appreciate is that sustainable development in the Arctic involves working closely with territorial governments and Northerners and through key international institutions like the Arctic Council to build self-sufficient, vibrant, and healthy communities.<sup>113</sup> The unifying factor for the public would be sustainable communities with expanded transportation networks which would drive economic advancement.

For Canada to be a competitive partner amongst its neighbouring nations, action must be taken now to ‘own’ its resources and land. As noted by Rob Huebert, very real and very substantial developments are occurring outside of Canada’s borders and beyond Canada’s control that will affect the Canadian North and the Canadian population at

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<sup>111</sup> Oran Young., “The future of the Arctic: cauldron of conflict or zone of peace?” *International Affairs* 87.1 (Jan 2011), 191.

<sup>112</sup> Ibid.

<sup>113</sup> Canada. Government of Canada. “Statement on Canada's Arctic Foreign Policy” Ottawa: 2009., 13.



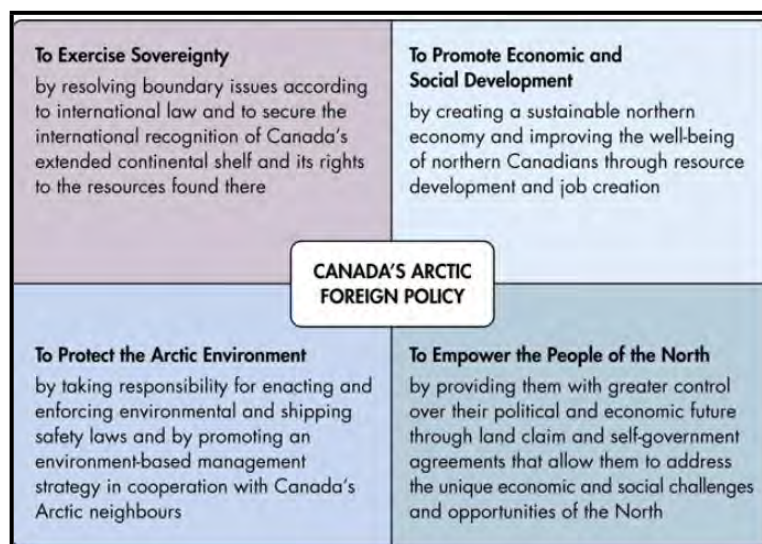
large.<sup>114</sup> More developed communities and established infrastructure to secure the footprint in the far North is required. Projection in the far north can be achieved and is sustainable. Industry is projecting farther into the depths of the North in a quest for more resources. Industries have transportation networks, have the ability to work with other government agencies, and are successful in contributing to the public livelihood thereby benefitting the economy. Although expensive, sustainment can be projected farther north. Increasing the economic growth of Canada requires the focus of a unified effort to succeed.

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<sup>114</sup> Rob Huebert. "Canadian Arctic Sovereignty and Security in a Transforming Circumpolar World." *Foreign Policy for Canada's Tomorrow* No. 4. Canadian International Council. 59.

### CHAPTER 3 – FUTURE ARCTIC PROSPERITY

The future of the Canadian Arctic in the next thirty years is projected to be prosperous. Canada is in a position now that could see itself being a major power on the international stage in the region by the year 2040. Canada's Northern Strategy maps out the vision for the Arctic of the future based on four pillars: sovereignty and security; environmental protection, sustainable development, and stronger northern governance.<sup>115</sup> The GoC's 2010 foreign policy statement exclusively dealt with the Arctic. It amplified the four pillars pictorially shown in Figure 7.



**Figure 7 - Four Pillars of Arctic Foreign Policy**

Source: <http://spotlight.emp.ca/promotion.html><sup>116</sup>

<sup>115</sup> P. Whitney Lackenbauer. The Military as a Nation Builder: The Case of the Canadian North. *Journal of Military and Strategic Studies*. (Vol 15, Issue 1, 2013), 30.

<sup>116</sup> Four Pillars of Arctic Foreign Policy. <http://spotlight.emp.ca/promotion.html>. Last accessed 29 April 2014.

The importance of sustainment for the future of the Canadian Arctic is the underlying method to achieve strategic success. Complete lines of sustainment that are multi-modal will see increased population, overall economic growth, and a permanent military presence established.

*Canada's Northern Strategy* speaks to vital factors that affect the development of the north, namely, the speed at which environmental, political, and economic conditions are changing demands that require Canada to act quickly and decisively to capitalize on opportunities while mitigating potential threats. As with the other interested nations, notably the US, Russia, and Denmark; Canada is competing for power and influence in the region. The future of the Canadian Arctic rests in the hands of the government to develop the region in a sustainable fashion for the long-term. The strategic challenge that the GoC must contend with on the international stage is not just protecting its resources, but the supporting concept as to how the government will protect these resources. The future of the Arctic will benefit from enforcing JIMP sustainment that will encompass these challenges through the unification of all contributors to achieve a common goal. Although the future cannot be predicted, there have been numerous studies and significant foresight that provide a scope of the full potential of Canada's North. To realize the full potential of the Arctic, JIMP stakeholders will have no choice but to unite their efforts and resources to become more efficient. Given a future projection to 2040 and reviewing the vital factors of climate, future industry and economic growth, future military capabilities, sustainable development, and governance the region will have the

capability of enduring long-term joint sustainment thereby increasing population and reinforcing Canadian sovereignty.

## **Climate**

Climate will have an overall positive effect on the concept of sustainment in the Arctic, provided that environmental laws are enforced. A region that has historically been considered nearly impossible to access has since opened up. The access will not be limited to sea and air, as the future will see more modes of transportation used to access remote areas. It is highly probable that road networks will extend farther north of the 60<sup>th</sup> degree latitude as a result of increased resource discovery thereby affecting community development. According to Arctic activist Joseph Spear, scientific research has shown that ice thickness in the Northwest Passage has diminished significantly. Once a barrier to commercial shipping in the Arctic Ocean, predictions note that this significant body of water may be completely free of sea ice by 2030.<sup>117</sup> However, there is speculation that the 2030 projection could be advanced as much as a decade if the rate at which the ice is melting accelerates. In terms of land-based transportation, substantial progress to the development of road networks has begun. Changes to the climate are enabling new ground to be covered; however, the terrain is remains very rugged making road conditions challenging for long-haul carriers. Construction of roads is difficult due to the permafrost. With changes in temperature, roads require consistent repair, adding to the cost of development and maintenance. Overall, as these developments improve, existing

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<sup>117</sup> K. Joseph Spears. "Canada: An Arctic Nation," *Canadian Sailings*, (October 2013)., 24.

communities will benefit, gaining the capability of sustainment through land-based sources, providing more flexibility than relying solely on when the air or sea sustainment shipments arrive.

When the Northwest Passage becomes a viable shipping option, the unpredictability of ice melting and icebergs will still present significant navigational challenges for the shipping industry. Industry relies on guaranteed transit times as a fundamental feature of economic viability of the shipping industry.<sup>118</sup> Navigating the passage, although shorter in distance, takes additional time due to navigational challenges listed above which pose safety hazards. Private industry is not yet using this option to its full potential.

### **Future Industry – Economy**

The Arctic economy is predicted to be very prosperous, with abundance of natural resources. The natural resources industry will advance economic growth. Much of the natural resource industry is based heavily on the mining. There are clear indications that an industrial boom in mine development will see potentially four new mines opening by 2015 and another mine by 2017 in the Arctic region for a total of nine mines by the year 2020.<sup>119/120</sup> This expansion will increase the value of mining output from the current

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<sup>118</sup> Parliament of Canada, *The Arctic: Transportation, Infrastructure and Communication* (Ottawa: Industry, Infrastructure and Resources Division, 2008), 1.

<sup>119</sup> John Ibbitson, "Ottawa Ready to Cede new powers to Northwest Territories." *Globe and Mail*, 30 Jan 2013.

<sup>120</sup> Josh Wingrove., "NWT celebrates 'day of dreams' with deal for province-like powers." *Globe and Mail*, 11 March 2013.

\$732 billion to \$1.3 billion by 2020.<sup>121</sup> With this financial forecast in the region, sustainable development will undoubtedly decrease the unemployment rate in the region. Conversely, two significant mines, Ekati and Diavik diamond mines have exhausted the resource base and indications show they are expected to close by 2019 and 2023 respectively.<sup>122</sup> Although these closures will see a large impact on local communities, there is no doubt that other mines scheduled to open will offset any potential losses and provide opportunities for nearby communities.

### **Permanent Military Presence**

If economic growth through private industry is the primary stimulus to the future of the Arctic, the permanent military presence in the region will provide secondary effects in support of developing the communities. The military presence is driven by the government mandate and is not bound by supply and demand as is seen with the industry. Therefore, a permanent military presence supports nation-building in the north and once established in a community it facilitates the lines of sustainment to be operational as long as the forces reside in that region. This trend existed since 1950 at CFS Alert. So, regardless if the industry moves in search of more resources, the forces in place could remain, continuing to contribute to the sustainable development of the community.

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<sup>121</sup> John Ibbitson, "Ottawa Ready to Cede new powers to Northwest Territories." *Globe and Mail*, 30 Jan 2013.

<sup>122</sup> Josh Wingrove., "NWT celebrates 'day of dreams' with deal for province-like powers." *Globe and Mail*, 11 March 2013.

When established, a permanent military presence should be dispersed throughout the Arctic and equipped to meet the government's requirements, which focuses on five critical capabilities. The military must provide situational awareness, the ability to deploy rapidly, be sustainable, have the ability to force generate, and the ability to work with other government departments.<sup>123</sup> Additionally, this permanent presence will need to be sustained. With better infrastructure positioned in key locations and using a combination of strategic airlift and sealift, the CAF will be able to develop the ability to project and sustain forces over a longer period of time.<sup>124</sup> Investment in the forces shall enable the CAF to advance farther into the region than it is currently capable of doing and for extended periods of time longer than the historical short-term CAF exercises.

Another capability that a strong, long-term military presence provides is the potential to form strong connections and relationships with communities and indigenous people. The ongoing issue with remote communities is the ability to sustain those communities. The military will play a key supporting role in enabling civilian public and private sectors in facilitating sustainable development.<sup>125</sup> Having a permanent military presence in the remote areas provides the substantiation to increase re-supply through already established sustainment channels and also opens opportunities for increased lines of sustainment. There remains the issue of lack of infrastructure in isolated communities that either needs to be developed or renovated to achieve this long-term goal.

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<sup>123</sup> Tony Balasevicius, "Towards a Canadian Forces Arctic Operating Concept." *Canadian Military Journal* (Vol. 11, No. 2 Spring 2011), 6.

<sup>124</sup> *Ibid.*, 7.

<sup>125</sup> P. Whitney Lackenbauer. The Military as a Nation Builder: The Case of the Canadian North. *Journal of Military and Strategic Studies*. (Vol 15, Issue 1, 2013), 30.

Capability and infrastructure initiatives have already transpired to establish a permanent military presence in the Arctic. Defence-related activities have contributed to Northern development for more than a century, both directly and indirectly. There is every indication that this will continue in modest form. The co-location of the Canadian Forces Arctic Training Centre with Natural Resource Canada's Polar Continental Shelf Program in Resolute Bay NU, illustrates how defence investments can be leveraged for civilian benefit.<sup>126</sup> This inter-agency approach enables government departments with different mandates to take advantage of shared infrastructure and sustainment by providing more efficient and effective use of tax dollars for the region.

The Navy is a prominent element with the increased accessibility of the Northwest Passage and the importance it has on the sovereignty of Canada. In the last decade the Navy began to refocus its attention on the Arctic by conducting operations in northern waters. Op NARWHAL, a two-month exercise in July and August 2002 involved sailings by Canadian warships in eastern Arctic waters to provide visibility and project Canadian sovereignty in a rarely patrolled location of the North. This exercise is a JIMP effort as it includes the CAF, the RCMP, CCG and CBSA, and indigenous groups and strategically displays a strong union supporting the sovereignty of Canada. Since its inception in 2002, the exercise has grown with increased involvement from all agencies thereby supporting the JIMP concept.<sup>127</sup> In terms of sustainment, the principal concern

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<sup>126</sup> P. Whitney Lackenbauer. The Military as a Nation Builder: The Case of the Canadian North. *Journal of Military and Strategic Studies*. (Vol 15, Issue 1, 2013)., 31.



was the resupply of fuel, which was problematic as the type of fuel used in the Arctic was different than that routinely used by the CAF.<sup>128</sup> The fuel in the Arctic is winterized with the additives that prevent ‘gelling’. It is very costly to purge tankers of the standard fuel to have it supplied with the ‘Arctic’ standard fuel. Sustainment of key commodities will continue to be a challenge as there is not yet enough infrastructure to support a long-term presence in this capacity.

The other key advancement for the Navy in the future operations of the Arctic will be the procurement of up to eight AOPS. Announced by the GoC, these ships will have the capability to conduct armed sea-borne surveillance in Canada’s Exclusive Economic Zone and will be operational by 2017. The existing minesweepers are limited by their capabilities to conduct patrols in the Arctic. The AOPs program supports the Canada’s Northern Strategy and the CFDS as it provides the capability to exercise control over and defend Canada’s sovereignty in the Arctic, demonstrates a visible Canadian presence in the region and supports OGDs to respond to a wide range of security challenges that may arise in the Arctic.<sup>129</sup> For this initiative to be a success, infrastructure is required. The only Canadian supporting infrastructure north of Newfoundland would be in Nanisivik.

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<sup>127</sup> Rob Huebert. “Canadian Arctic Maritime Security: The Return to Canada’s Third Ocean” *Canadian Military Journal* (Vol 8, No. 2, Spring 2007),5.

<sup>128</sup> Ibid.

<sup>129</sup> Cdr C.D. Soule., “AOPS Evolution of the Operational Requirement and the Associated Design Challenges”, *Dalhousie University Centre for Foreign Policy Studies*, October 2011., 5.

The GoC is also researching options to invest money into Resolute Bay, Nunavut to transform the airfield into an operational air base for Arctic operations. Considered to be a strategic location for prepositioning air assets, Resolute Bay offers the ability to deliver a logistics site for SAR operations and a vital hub for refueling aircraft.<sup>130</sup> The aforementioned FOLs, provide key nodes for other RCAF and joint CAF operations. With more activity in the Arctic, and the potential for an increased need for SAR, the FOLs are being considered as permanent bases for forward deployed surveillance and reconnaissance and SAR aircraft. In terms of establishing a presence, these FOLs are key locations with existing infrastructure, sustainable and linked to communities.

Additionally, ongoing discussions in the RCAF propose expansion of the current facilities in Eureka, Nunavut, establishing a forward operating base on central Ellesmere Island.<sup>131</sup> In planning this expansion, sustainment was taken into account and it was determined that Eureka would be easier to sustain as it could be resupplied by sea, while CFS Alert would continue to be resupplied by air. These initiatives by the RCAF are viable options as they will help establish permanent, sustainable presence in the Arctic.

Although the Army has seen recent training conducted by central and western brigades, projecting beyond the 60 degree latitude a gap in land-force presence exists. The Army's keystone document, *Designing Canada's Army of Tomorrow*, highlights the fundamental requirements for the Arctic region in line with the CFDS. The Army's first

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<sup>130</sup> David Pugliese., "Royal Canadian Air Force considering major Arctic base expansion in Nunavut," *National Post*. 26 December 2011.

<sup>131</sup> Ibid.

line of operation (LoO 1) is the ability to “conduct daily domestic and continental operations, including in the Arctic and through NORAD.”<sup>132</sup> The Army acknowledges that the security environment in the Arctic is changing due to climate change, resulting in increased traffic in the region. With increased access to the North, increased threats of intrusions on Canadian territory and sovereignty, and the possibility of illegal activity by those intending to exploit the valuable natural resources might emerge.<sup>133</sup> Therefore, the Army recognizes that notwithstanding the Rangers, and other legal authorities, such as the RCMP present in remote areas, it will need to expand its presence and be ready to conduct operations on a more permanent basis with the changing security environment. In the past, the issue was less important because the Arctic was largely inaccessible; however, the future requires land forces to be present in the region.

The Army faces significant challenges operating in the North. In line with both the RCN and the RCAF, the Army too will need infrastructure and support hubs to be able to self-sustain and survive in the future Arctic. The Army of the future needs to establish itself in remote communities to allow it to launch from and return to as necessary for replenishment. Establishment of land forces in these communities provides a military presence on land, draws on resources and sustainment concepts to those regions which in turn will develop the communities. Using a hub and spoke effect, the lines of sustainment will become shorter and more efficient.

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<sup>132</sup> Canada. Government of Canada. “Designing Canada’s Army of Tomorrow” Directorate of Land Concepts and Designs. Kingston: 2011., 42.

<sup>133</sup> Ibid. 17.

Employment of the Rangers has been the GOC's most efficient demonstration of sovereignty and commitment on land. This specialized group of soldiers is deemed as the eyes and ears of the Government in the Arctic region. With such an immense area to cover, the question of whether or not the Rangers constitute enough of a permanent presence in the Arctic is debatable. Although they do not undergo the same standard of training as the Regular force soldiers or the reserves, the Rangers are a specialized force that provides invaluable expertise in Arctic survival and navigation to full-time military colleagues. The GoC anticipates increasing the personnel establishment of the Rangers to 5,000 serving members, an increase from the current strength of 4,100 soldiers serving throughout the Arctic. It has substantiated this increase on four objectives: additional Ranger patrols to augment existing patrols for a broader scope of the Arctic, establishment of a command and control system necessary to manage the expanded force, the development of a formalized business plan, and the provision of upgraded equipment to carry-out duties.<sup>134</sup> As much as the Rangers are an invaluable asset to the north, the ability to increase their strength is limited to the fact that the population in the Arctic is stable. Therefore, increased presence by the Army Reserves and the Regular Force would be required to close the gap. The idea of using reserves and regular force personnel could be considered as an operational 'domestic' deployment. Given the austerity of the region, it could even be considered as a hardship posting, situated at targeted areas where resource exploitation could occur. The tour could be established as a two-year contract/posting and could provide the permanent presence needed in the north. With this

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<sup>134</sup> P. Whitney Lackenbauer., "If it Ain't Broke, don't Break It: Expanding and Enhancing the Canadian Rangers." *Working Papers on Arctic Security No. 6.* (March 2013)., 5.

permanent military presence established, and the potential for employment more people might be encouraged to consider moving to the Arctic.

With the understanding that a permanent military presence is required in the Arctic, it must be clear that it would be a joint effort combining personnel and resources of all CAF elements which would need to be managed so to not over extend the capabilities. It may appear simple with the Navy conducting operations in the maritime environment, the RCAF covering the Airspace, the Army covering the terrain, and satellites covering the entire region. However, the relative strengths of how each element could be best exploited by a joint approach. There needs to be crossover of responsibilities, as shown in the map in Figure 8, which identifies the three tiers of the Arctic. The high Arctic, covering the area within the Arctic Circle would be under RCN control, with the RCAF conducting periodic air surveillance. The Isotherm, where increased marine traffic is anticipated, needs the RCN to conduct operations and will see an increased presence of the RCAF for surveillance. Additionally, with the warming climate, there is the potential that land forces could project their patrols onto the islands for broader situational awareness. The third area, known as the tree line, will be the primary responsibility of the land forces. This overlapping of responsibility is important to ensure there are no breaches in the security gaps. In addition, with the proposed initiatives of sustainment infrastructure, the ability to provide long-term situational awareness is achievable.



increased land force presence, it is sustainable and easily achievable to meet the priorities of the GoC. *Designing Canada's Army of Tomorrow*, makes it clear that dispersed forces will demand a highly integrated, adaptive, and flexible sustainment system.<sup>136</sup> This integrated sustainment, particularly in the Arctic will be a collaborative effort of land to air to sea. To achieve success in the Arctic, this approach must be implemented and reinforced by the GoC.

### **Future Sustainment - Sustainable Development**

The overarching objective for the future Arctic is to be able to sustain life and operations. To achieve this end, everything must be transported from outside the region. Advancement in the region has not been significant as transportation for re-supply is costly. Opportunities in the Arctic must come with a robust sustainment plan. The term sustainment concerns the supply chain and the way in which the Arctic obtains supplies through the sustainment lines of communication. This perspective leads to the broader view of sustainment in terms of time in which forces/organizations can continuously operate in challenging Arctic conditions. Once the lines of sustainment are reinforced, they foster the growth of sustainable development for the region. Notwithstanding the challenges that need to be overcome in these communities, including isolation, high unemployment and susceptibility to climate change, the importance of established lines of sustainment become more apparent.<sup>137</sup> Sustainment for the Arctic is based on the

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<sup>136</sup> Canada. Government of Canada. "Designing Canada's Army of Tomorrow" Directorate of Land Concepts and Designs. Kingston: 2011., 62.

principal of transportation and trade. Only by considering these issues in a comprehensive approach will Canada's Arctic enjoy a prosperous future. Imminent decisions regarding polar shipping routes, new trade linkages, and transportation infrastructure investment sets the stage for the Arctic's growing role in Canada's economy. Development of the communities, activities and prospects in the Arctic set the conditions for decades to come.<sup>138</sup> This progress not only positively reflects on Canada as a country, but solidifies that the future Arctic can be sustained which enables the capability of a permanent military presence thereby increasing population and economic growth.

Recent developments are already having positive impacts as the GoC strengthens its 'Arctic Gateway' policies and commercial frameworks. Using the Arctic waterways as a means to link central Canada with the rest of the world, the Arctic Gateway concept is intended to encourage trade and economic development in all of Canada, providing another purpose for increasing Arctic infrastructure and transportation networks. From a strategic perspective, using the North as a link between US and international markets strengthens Canada's trade ties with its neighbours.<sup>139</sup> The view throughout is to build up the Arctic region. Retired Navy Captain, Peter Avis, believes the GoC understands the necessity of moving ahead with the gateway concept, placing Canada as a competitor on the international stage and securing transportation advantage. This concept will positively

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<sup>137</sup> Steven Timothy Newton, Helen Fast, and Thomas Henley. "Sustainable Development for Canada's Arctic and Subarctic Communities" *Arctic*, Vol 55, No. 3, September 2002., 281.

<sup>138</sup> Canada. Public Policy Management. *Canada's Arctic Gateway*. (Ottawa: September 2010),. 8.

<sup>139</sup> Peter Avis., "Gateways and Corridors in Canada: Evolving national Security." *Canadian Military Journal* (Vol. 10., No. 3 Summer 2010),.61.



impact the northern communities through increased infrastructure, investments, and increased attention in the region.<sup>140</sup> More formally, the government intends to establish an Arctic Gateway Council, a federal agency that would determine the transportation priorities and coordinate efforts for the development of infrastructure pursuing the Arctic's full potential.<sup>141</sup> This council will not solely focus on marine gateways, but will review the existing and future road gateways.

The provinces have already begun initiatives supporting the Arctic Gateway concept, investing in infrastructure that will open the corridor linking both Alberta and British Columbia to the Northwest Territories. Advancement of the Mackenzie Highway and the recent completion of the Deh Cho Bridge at Fort Providence, Alberta, a project that took four years, are significant developments providing Arctic travelers and commerce with a reliable year-round transit-way.<sup>142</sup> This development further demonstrates that transportation links to the Arctic are achievable. In Manitoba, planning is underway to expand the Port of Churchill, and to establish an all-weather road into Nunavut through Manitoba, connecting to Churchill rail and Trans-Canada highway systems. This connection will have a tremendous impact on the future of the Arctic and on sustainable development across the North.<sup>143</sup> As seen with the De Cho Bridge project in Alberta, these connections into the North on several corridors increase the access to the region. Ontario and Quebec are considering similar initiatives. Ontario has implemented

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<sup>140</sup> Peter Avis., "Gateways and Corridors in Canada: Evolving national Security." *Canadian Military Journal* (Vol. 10., No. 3 Summer 2010), 60.

<sup>141</sup> Parliament of Canada, *The Arctic: Transportation, Infrastructure and Communication* (Ottawa: Industry, Infrastructure and Resources Division, 2008), 2.

<sup>142</sup> Deh Cho Bridge. <http://www.dehchobridge.info>. Last accessed. 25 April 2014.

<sup>143</sup> Canada. Public Policy Management. *Canada's Arctic Gateway*. (Ottawa: September 2010), 9.

a “Growth Plan for Northern Ontario”, covering as much if not more in terms of northern development than the GoC’s Arctic Policy. In Ontario “Growth Plan”, sustainment will be the projection of transportation routes into remote regions. Figure 9 highlights where the projected networks are to be established.



**Figure 9 - Northern Ontario Transportation Network Growth Plan**

Source: Growth Plan for Northern Ontario, 2011<sup>144</sup>

Quebec’s ‘Plan Nord’ shares a similar concept as Ontario’s ‘Growth Plan’ over the next 25 years. Among the goals of ‘Plan Nord’ is the development of an integrated transportation network. The advantage for Plan Nord is the future prospect to have the

<sup>144</sup> Growth Plan for Northern Ontario. [https://www.placestogrow.ca/index.php?option=com\\_content&task=view&id=368&Itemid=65](https://www.placestogrow.ca/index.php?option=com_content&task=view&id=368&Itemid=65). Last accessed, 25 April 2014.

combined transportation networks with economic interests synchronized advantageously positioned on the maritime route for increased economic gain.<sup>145</sup> These future developments from the provinces are increasing the accessibility to the Arctic, resulting in economic growth for provinces, territories, and the federal government. The provinces linking into the north is not only increasing the ability to travel more freely in the country, but is finally uniting the North with the rest of Canada. The expansion of road networks, waterways and existing airfields, the future sustainment lines of communication in the Arctic will be improved substantially. The Northwest Territory government in their 2014 budget announced that growth prospects are positive with increased resource exploration activity, the pre-construction of a new diamond mine, and construction of the Inuvik to Tuktoyaktuk highway and the Mackenzie Valley Fibre Link.”<sup>146</sup> Just these recent developments show a strengthening economic base and prosperous Arctic future. The flow of sustainment is likely to increase with community development from industry in the region with exploitation of resources.

### **Governance: Is Canada The Future Arctic Super Power?**

From the government perspective, protecting Canada’s northern borders to assert economic and political influence is the long-term intent. In order to do so, the sustainment foundation must be realized. Prime Minister Harper has made his intent clear in keystone documents such as, *CFDS*, *Canadian Northern Strategy*, and *Canada’s*

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<sup>145</sup>Plan Nord., <http://www.nord.gouv.qc.ca/english/transportation/network.asp>. Last accessed 21 February 2014.

<sup>146</sup>“Budget Address 2014 – 2015, Northwest Territories.” <http://www.fin.gov.nt.ca/address>. Last accessed 25 April 2014.

*Arctic Foreign Policy* that the Arctic constitutes one of Canada's top priorities. Although some initiatives prescribed in these documents have come to fruition, the future outlook requires updates to these strategies. Critics suggest that after releasing its strategy, the GoC found itself in a predicament where promises were made about the Arctic without economic backing, resources, and political will to carry them out.<sup>147</sup> Subsequently, in the throne speech, delivered to the government on October 16<sup>th</sup> 2013, these strategies were mentioned, but without further acknowledgement or guidance of how to implement them. In contrast, other countries such as, Russia, the US, and Denmark have been far more efficient and aggressive in staking claims and have invested substantially in their northern development and military technology.<sup>148</sup> The GoC needs to re-establish its priorities, and take action. The north possesses incredible economic opportunities and the government is not investing wisely. While Canada takes its time to develop a region that has so much to offer, other countries have been more progressive in staking their claims.<sup>149</sup> The challenge for the future will be to determine who will take ownership of the Arctic. On June 25 2013, the GoC and the Government of the Northwest Territories (GNWT) signed a devolution agreement that devolved federal responsibilities to the GNWT which gives the territories province-like status that enables them to self-govern. The agreement is a tremendous advancement to the sustainable development of the Canadian Arctic<sup>150</sup>. As with the rest of Canadian provinces, an expanded military presence would provide security and a credible force of last resort in times of crisis. The presence of the CAF also

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<sup>147</sup> Robert Murray., "Harper is not Putting Canada (or Canadian Arctic) First." Canadian International Council. <http://opencanada.org/features/the-think-tank/comments/harper>., last accessed 24 February 2014.

<sup>148</sup> Ibid.

<sup>149</sup> Ibid.

<sup>150</sup> Canada. Government of Northwest Territories. "Northwest Territories Devolution Act (S.C. 2014 c.2)":Ministry of Justice, June 25 2013., 2.

has added benefit of providing the GoC with increased situational awareness. With the security issue in hand, and the military is part of the broader federal presence, “The Act” also gives the GNWT control over its resources and changes the way it reviews resource development.<sup>151</sup> The government has also taken into account that to be able to protect not only the future resource development, which is a federal responsibility, the gateways also require a security presence, further substantiating a need to have a military presence in the Arctic.

The government has already postured forces in Nanisivik which is considered strategically sound as it is located at the eastern entrance of the Northwest Passage. Having a strong military presence there is meant to deter unwelcome visitors to the region and block entry into the territorial waters.<sup>152</sup> This presence also enforces Canada’s sovereign position in taking ownership of its territory sending a strong message to other nations.

Joseph Spears calls Canada an Arctic nation, which has to look at the Arctic from a global perspective: “Canada will be able to seize political, international, and commercial opportunities in the region going forward into the 21<sup>st</sup> century.”<sup>153</sup> Other academics contend that the government is being pro-active with increased government awareness and focus in the Arctic, demonstrating that the government understands that the first principle of Arctic sovereignty as coined by Prime Minister Stephen Harper is

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<sup>152</sup> Roger Howard., *The Arctic Gold Rush: The New Race for Tomorrow’s Natural Resources*. (New York: Continuum US, 2009)., 183.

<sup>153</sup> K. Joseph Spears. “Canada: An Arctic Nation,” *Canadian Sailings*, (October 2013)., 24.

use it or lose it, and the government intends to use it.<sup>154</sup> To influence the future however, Canada needs to take action towards its initiatives

Recently assuming the position of Chair for the Arctic council in August 2013, Canada now has the opportunity to influence significantly development of international policies over the next two years to advance their initiatives. Kristofer Bergh notes that Canada followed by the US will chair the Arctic Council consecutively over the next four years. In terms of the future Arctic, this succession is very advantageous for both countries by affording them opportunity to strengthen their positions in Arctic cooperation.<sup>155</sup> The key to advancement will be for Canada to not only state what it intends to do, but to actually take action towards implementing these initiatives. Only then will the country affirm its position in the Arctic. The government's vision of the future Arctic will need to be cognizant of environmental challenges.

The environmental fragility of the Arctic will continue to be an ongoing issue. A region that is not kinetically threatened still needs to be protected, but it is challenging to convince the national population of this notion. The government will need to message economic advancement and long-term investment in the nation's North. The rest of the Canadian population needs to understand what the Arctic has to offer. Only by promoting the Arctic will there be the opportunity to sustain the region over the long-term. The southern population of Canada will benefit with a developed North as it offers more

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<sup>154</sup> Roger Howard, *The Arctic Gold Rush: The New Race for Tomorrow's Natural Resources*. (New York: Continuum US, 2009), 184.

<sup>155</sup> Kristofer Bergh., *The Arctic Policies of Canada and the United States: Domestic Motives and International Context.*, 19.

opportunities for industry thus improving overall economy. The GoC needs to communicate to the rest of Canada that expansion in the Arctic will benefit the country as a whole.

From a GoC perspective, development of sustainment capabilities will be heavily reliant on industry, the provinces, and territories. The dissolving of responsibility to the territories is a positive step forward. Having the territories assuming provincial status will allow them to be self-governing, bringing increased autonomy and self-determination as well as increased control over resources. With provincial powers, they will be able to develop the Arctic region with industry and economic activity that will be the backbone to sustainable development. It is unlikely that the federal government will give complete control given its level of interest in the emerging oil and mineral industries from which they hope to benefit. Despite the devolution of federal powers, in the end the most important aspect to remember for the Arctic of the future is the establishment of Canada as an economic competitor and reinforcing sovereignty through a permanent military presence.

## CONCLUSION

The Arctic is a vast region that is of growing economic interest internationally due to the natural resources that have yet to be exploited are being actively sought after globally. As Canada owns much of the Arctic with its vast coastal line, it is imperative that Canada enforces a permanent military presence in the Arctic. However, this presence cannot be achieved unless a JIMP sustainment plan is in place that extends beyond the 60<sup>th</sup> degree latitude.

The current presence in the region is of limited capability and not a cohesive approach. All the JIMP enablers rely on their own capabilities. The opportunity for development is heavily reliant upon the government making a long-term investment in the Arctic. The permanent presence resides heavily below the 60<sup>th</sup> degree latitude line centred in the vicinity of Yellowknife. As a result of new resource discovery, industry has been able to extend farther into the remote regions. This advancement demonstrates that sustainment is achievable if invested upon.

The JIMP approach comprised of joint military, inter-agency, multi-national assistance and the public are essential to seeing the government's vision in the development of the Arctic come to reality. The challenge remains that although these organizations have the capacity to sustain operations for a short period of time, they are independent of themselves. The future of the Arctic entails the capability of joint sustainment which will see the unity of effort with a JIMP sustainable vision. Many



people think that the primary enabler for the Arctic is a military presence. A sustainable Arctic must be a collaborative effort from all JIMP stakeholders in the North that once realized will see all agencies involved as the impetus that will result in economic viability as a result of sustainable development.

The federal government relies heavily on a military presence in the Arctic for security presence reasons. Although a military presence is paramount, a militarized Arctic is not the way of the future. The military in the Arctic will be a supporting agency providing the presence required, enabling other organizations to conduct their roles to achieving a sustainable Arctic.

The OGDs work astride the military and are an essential component to the sustainment of the Arctic. With a permanent military presence in the Arctic, the OGDs will be supported and better equipped to conduct their tasks. As seen with the series of Arctic operations, the OGDs are key players to the operations with the military support. The past decade of training has proven valuable to achieving the interoperability of joint and inter-agency organizations.

From a multi-national perspective the GoC made clear in its *Northern Strategy* that for success to be achieved in the Arctic it must be a multi-lateral approach. The Arctic Council is the critical governing agency that aligns the common interests of participating countries in the council. As the current chair of the Arctic Council, Canada is in the position to execute its priorities in affirming its sovereign boundaries. By

implementing a permanent presence that is sustainable to the high Arctic will be the underlying caveat to achieving the GoC vision.

The populace will ultimately see the effects and benefits of a sustainable Arctic. In a JIMP approach it is the public who need to be directly involved in the future development and sustainment in the Arctic. The public is already employed in varying capacities through the JIMP organizations, whether it is a part-time reserve soldier in the Rangers, or a member of the numerous government agencies, or as a voice at the Arctic Council. In the end, it will be the public astride the CAF that will institute the long-term sustainment plan.

It has been proven in the past that sustainment in the Arctic is achievable. However, that does not negate the fact that sustainment is challenging in an austere environment, but the fact is it can be accomplished. The current lines of sustainment are limited based on the current transportation networks that need to be extended. For a completely effective sustainment system, all future transportation construction efforts need to be synchronized. The lines of sustainment must be able to reach remote communities not just by sea and air, but through road networks as well. In the broader spectrum, the synchronization of the transportation networks will enable a completely unified Canada linking from sea-to-sea-to-sea.

The long-term vision for the Arctic is to have an established permanent military presence that affirms Canada's Arctic sovereignty. Since the GoC has placed the Arctic

as a key priority, then it needs to assert its position in the region, demonstrating that it has ownership of its land and the permanent presence in place to protect it. The CAF is the obvious enabler to achieve this priority. The military is a direct representation of the GoC and is the best suited uniformed and unified presence. The CAF's presence will be advantageous to the long-term development of the region as the CAF will not only defend the north, but it will also inhabit the north; essential to the sustainable development of the Arctic.

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