Marine Transportation and Pilotage: A Solid Partnership for a Safe and Competitive Sector

Submission to
The Honourable Marc Garneau, P.C., M.P.,
Minister of Transport

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Executive Summary

There is no more efficient and systematic way to mitigate navigational risks than by making sure that those who conduct vessels in high-risk areas have expert, independently verified, local knowledge.

Canada has an excellent pilotage system. The rate of incident-free pilotage assignments for the 49,874 assignments performed in 2015 exceeded 99.94%, a performance that is consistently achieved, year after year. The pilotage service also has an on-time performance record that is as impressive as its safety record. For example, in the pilotage region with the most assignments, the Laurentian Region, on-time service was 99.96% in 2015. Similar rates of on-time service are consistently reported in the three other pilotage regions.

This performance also comes at a comparatively low cost: Canadian pilotage tariffs are competitive with those in virtually every other jurisdiction in the world. In particular, Canadian tariffs compare favourably where it matters most, with Canada’s largest trading partner and its main competitor for port business, the U.S.A.

Canadian pilotage is innovative and flexible. Pilots themselves have continuously sought new ways to apply technology to their profession. New pilotage practices means that the life of aging and otherwise-obsolete port and waterway infrastructure is extended, the timing for new capital investment deferred, and the return on investments made is increased. Innovative practices also mean that tidal windows for transits are maximized, the volume of cargo loaded is optimized, and waiting times at berth are diminished. Pilotage requirements are regularly reviewed and, when appropriate, they are changed.

Competitive advantage is not just about cost and time. It is also closely connected to a country’s reputation in terms of norms and values. Increasingly, environmental stewardship is a critical dimension of a country’s reputation as a worthy trading partner. Effective environmental stewardship is also important to ensure support by Canadians themselves for the transportation of certain cargo that can pose significant risk. In these cases, the due diligence and extra level of safety that comes with highly skilled and well-delivered pilotage can make the difference between something that is acceptable or not.

The recommendations offered in this submission aim at building on this excellent performance, and at ensuring that consideration is given to critical factors that will help sustain it over the next 30 years.

Recommendation 1 – Trade Corridors

- The CMPA strongly supports the position of the Canadian Chamber of Commerce in respect of trade infrastructure investment and, in particular, the recommendation of the Chamber’s Transportation and Infrastructure Policy Committee to make trade enabling infrastructure a national priority and to develop an integrated strategy for such investments that covers all modes, and benefits from partnership with other levels of government and the private sector.
Recommendation 2 – Marine Infrastructure Investment

- Recognizing the important return on investment for both safety and improved operations, the Government of Canada should strengthen the Canadian Coast Guard delivery model and, in particular, undertake the capital projects necessary to ensure adequate and reliable ice-breaking, and optimally-functioning buoys on Canada’s waterways.

Recommendation 3 – The North

- A government-appointed working group, established to examine the opportunity of putting in place an Arctic pilotage service, could be a sensible step to collect the views and wisdom of the various interested parties. The working group could address the question of the most appropriate administrative structure to deliver safe, efficient and cost-effective pilotage within the Arctic region.

Recommendation 4 – National Strategy on “Smart” Inshore Weather Buoy Networks

- A national strategy for the deployment and operation of “smart” inshore weather buoy networks, providing real-time and more accurate information on conditions affecting major Canadian shipping corridors, would make a significant contribution not only to the safety and efficiency of maritime transportation, but to its “green” character.
Introduction

Transport Minister Marc Garneau has asked Canadians interested in the future of the transportation system to participate in a discussion on how best to improve a system that helps keep the country competitive, prosperous and safe. Minister Garneau’s call for input is well timed, in that it can expand upon the December 2015 Report of the Canada Transportation Act Review Panel.

The Canadian Marine Pilots’ Association (CMPA) welcomes this invitation to share its perspective and offer suggestions concerning the transportation system. The CMPA, which celebrates its 50th anniversary in 2016, is the national organization representing Canada’s marine pilots on matters of public policy, professional standards, and legislative affairs.

I – Pilotage in Canada: Principles and Performance

The 400 licensed marine pilots in Canada provide service through a delivery model set by the Pilotage Act. The Act establishes four regional pilotage authorities that designate compulsory pilotage areas and exclusively provide pilotage within those areas. Each authority is a public service, not-for-profit crown corporation.

Pilots board vessels in compulsory pilotage areas on the Atlantic and Pacific coasts, in the waters of the Port of Churchill, and on the St. Lawrence-Great Lakes waterway.

Principles

The four organizing principles of pilotage in Canada are:

1. **Protection of the public interest**
   The Act specifically invokes the need to protect the public interest as its paramount objective. The pilotage service’s independence from commercial and other possibly competing interests is essential to ensure safety as the first priority.

2. **Rigorous standards**
   In order to be licensed, marine pilots must have extensive seafaring experience, must undergo a rigorous training regimen, and must demonstrate their competence to an independent board of examiners. The competence required includes an in-depth knowledge of local waters. Once licensed, pilots must remain medically fit; they must maintain proficiency in using the latest pilotage techniques and navigational aids through ongoing training (e.g., simulation, manned models) and assessment; and their performance must meet the highest professional standards.

3. **Recognition of regional differences**
   Pilotage is organized and administered along regional lines to take account of the important differences that exist between its various maritime regions. The climatic conditions, navigational challenges, type of marine traffic, and the available infrastructure vary significantly from the Atlantic ports, to the St. Lawrence River, to the Great Lakes, to the Pacific coast.
4. Responsiveness
The framework governing pilotage has proven very resilient, responding to great marine transportation changes in technology, communications, vessel size, infrastructure, and shipping patterns. Areas designated for compulsory pilotage, pilotage requirements and operational practices are all regularly reviewed in light of evolving circumstances, and subject to change.

System Performance
1. Safety
The pilotage service has contributed to a marine transportation system that is very safe. The rate of incident-free pilotage assignments for the 49,874 assignments performed in 2015 exceeded 99.94%. This impressive performance has been consistently achieved year after year.

2. Efficiency
The pilotage service has an on-time performance record that is as impressive as its safety record. For example, in the pilotage region with the most assignments, the Laurentian Region, on-time service was 99.96% in 2015. Similar rates of on-time service are consistently reported in the three other pilotage regions. As important as this timeliness is to the efficiency of maritime transportation, however, it is far from the only significant contribution that pilotage is making to Canada’s competitiveness.

Innovative pilotage practices means that the useful life of aging and otherwise-obsolete port and waterway infrastructure has often been extended, the timing for new capital investment deferred, and the return on investments made increased. Innovative practices also mean that tidal windows for transits are maximized, the volume of cargo loaded is optimized, and waiting times at berth are diminished.

Canada’s flexible pilotage regime is also one of the main reasons why ever-larger vessels, and thus greater volumes of cargo, safely move through often-congested waterways, year round. Pilots are highly trained in conducting and handling ships in the specific pilotage district for which they are licensed and their expertise provides for smooth and flawless execution that optimizes the capacity of ports and waterways.

Ultimately, however, nothing can be more important for ensuring an efficient system than to keep the traffic moving accident-free. The safety record cited above demonstrates how the pilotage service is an almost-invisible but absolutely crucial factor in the country’s efficient marine transportation system.
3. Tariffs

Canadian pilotage tariffs are competitive with those in virtually every other jurisdiction in the world. In particular, Canadian tariffs compare favourably where it matters most, with Canada’s largest trading partner and its main competitor for port business, the U.S.A.

The tables below show that pilotage costs at Canadian locations are generally lower than those at other locations around the world, as measured by cost per nautical mile¹.

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¹ Tariffs in Atlantic Canada include the pilot boat charge, which is not standard practice.
Canadian pilotage tariffs are not only lower than those charged by most competing jurisdictions, but they represent, in absolute terms, only a small fraction of the overall operating costs for shipping lines. It follows that the cost of pilotage in Canada has no negative impact on modal preference, choice of shipping route or rates charged to shippers.

In any event, if Canadian shipowners were to find the cost of pilotage too high, or if they had other operational reasons for wanting to be relieved from the obligation to use pilots, the law provides for a certification option. This option allows the masters and other officers of Canadian vessels to obtain a pilotage certificate, thereby exempting the vessel from having to board a pilot.

**CTA Review**

In February 2016, the Minister of Transport tabled in Parliament the Report of the CTA Review Panel. The Report included a discussion that affirmed the essential quality of pilotage and its value as an important contributor to safe navigation. The Review Panel’s endorsement of Canada’s pilotage system is nicely captured in the following two excerpts from the Report:

*There is no question of the need for pilotage in bad weather, in and around ports, through locks, other challenging navigational channels, and for extra safety with respect to guiding specialized vessels such as tankers, as well as foreign vessels and crews new to Canadian waterways. (Vol.I, p. 232)*

*Canada’s Pilotage Authorities are internationally respected for operating, maintaining, and administering a safe pilotage service within their respective geographic regions. (Vol.1, p. 223)*

Among its many recommendations, only two dealt with pilotage. The first recommended the integration of the four regional pilotage authorities within one national pilotage board. The second called for regular reviews (every three to five years) of “pilotage areas, circumstances and processes”.

In general, the Report was preoccupied with the idea that all components of Canada’s transportation system be high performers in respect of competitiveness, flexibility, innovation and governance. In addition to comments on the two pilotage-specific recommendations, how the pilotage system measures up to this high-performance goal is discussed below.
II – Competitiveness

Canada’s position as a major trading nation depends on our ability to be competitive. High performance marine pilotage helps make sure Canada’s maritime transportation system has a competitive edge in the global marketplace.

Pilotage helps move cargo in ever-larger volumes, safely, quickly and, as seen above, at a comparatively low cost. It also helps optimize capital investment in maritime transportation infrastructure through innovative transit and berthing practices. These practices can help extend the useful life of existing infrastructure, allowing industry to continue to operate and grow, while gaining the time necessary to plan for infrastructure developments and to secure funding.

An excellent example is the work done by Pacific Region Pilots in partnership with Port Metro Vancouver when the size of container ships suddenly and dramatically increased, resulting in 10,000 TEU vessels using terminals designed for 6,000 TEU vessels. Pilots responded to this threat to Port Metro’s competitive position by working with the Port on risk assessments that led to the implementation of enhanced docking procedures that effectively mitigate risks, thereby gaining time for port infrastructure to catch-up with global shipping trends.

Competitive advantage is not just about cost, time and infrastructure. It is also closely connected to a country’s reputation in terms of norms and values. Increasingly, environmental stewardship is a critical dimension of a country’s reputation as a worthy trading partner. Effective environmental stewardship is also important to ensure support by Canadians themselves for the transportation of certain cargo that can pose significant risk. In these cases, the due diligence and extra level of safety that comes with highly skilled and well-delivered pilotage can make the difference between something that is acceptable or not. In effect, pilotage contributes to the “social license” to undertake activities that might otherwise be deemed too risky.

III – Innovation

The concept of continuous improvement has been fully embraced by pilotage in Canada. Technological advances have been integrated in pilotage practices, and in some cases, even customized by pilots to maximize their relevance and benefit for pilotage. The independent expertise of pilots is also regularly sought by third parties in respect of safety and operational matters related to the development of new marine infrastructure. Examples of value-adding, innovative developments in which pilots have played an essential role include:

**e-Navigation**

Canadian pilots are at the forefront of e-Navigation. They participate in the International Maritime Organization’s e-Nav initiative and in other international forums including the International Association of Aids to Navigation and Lighthouse Authorities. In Canada, pilots are key members of the Canadian Coast Guard’s national and regional e-Navigation committees.
Portable Pilot Units

The Portable Pilot Units (PPUs) initiative is often cited as one of the earliest applications of e-Navigation, and remains a compelling example of pilots’ innovative approach.

PPUs are not part of a vessel’s standard equipment, but instead are brought onboard by pilots. A PPU is essentially a computer that receives digital information from the ship, other ships, the shore, cellular transmissions, and satellite. It is used by pilots to provide the specific information in real-time (speed, course over ground, water levels, under keel clearance and weather) that is most valuable to assist with navigation. PPUs are customized for each pilotage district and, in some cases, by individual pilots.

The Mid. St. Lawrence district provides two outstanding examples of how PPUs have contributed to more efficient navigation. PPUs have been instrumental in allowing for incident-free winter night-time navigation on the St. Lawrence between Quebec City and Montreal, and for making possible the transits of post-Panamax vessels to Montreal, two developments that have been important to maintain and enhance the Port of Montreal’s competitive position. PPUs are used to a similar end in many other places such as the Great Lakes Region, the Fraser River and the Pacific Coast.

Under Keel Clearance Management

Recent advances in the management of under keel clearance integrate real-time measurement of sea conditions (tides, waves and currents) with vessel characteristics to maximize vessel drafts and sailing windows in waterways and harbours. This is done by modeling the maximum safe draft for vessels and predicting windows of opportunity for safe sailing through shallow water.

A compelling example is in the Lower St. Lawrence, below Quebec City, where tankers of 160,000 deadweight tons and drafts of 15.5 meters transit a trench-type channel that is, in places, only 17 meters at high tide – with the tide typically ranging from four to six meters. By deploying real-time tide gauge levels strategically positioned along the waterway, which transmit information over the AIS, displayed on PPUs, state-of-the-art management of under keel clearance allows pilots to adjust speeds and maximize operations during tidal windows. As a result of these innovations, the percentage of tides that can be used for the transit of deep-draft tankers has gone from 73% to 94%, and pilots can more easily coordinate transits traveling in opposite directions.

Another example is in Halifax where pilots play a key role in a study commissioned by the Atlantic Pilotage Authority and the Halifax Port Authority to determine the loss of underkeel clearance in sea state within exposed port approaches. This study is important to formalize operational procedures to accommodate container ships in excess of 8,700 TEU, a crucial component of the Port’s strategy to maintain and enhance its competitive position in a rapidly changing global industry.
Optimization of Tug Escort Requirements

The conduct of vessels by pilots includes the coordination of whatever escort tug activity may be required. Innovative changes in how escort tugs are used can result in safer and more efficient operations. For example, in Vancouver, in collaboration with industry stakeholders, pilots identified new escort tug requirements for tankers, allowing for heavier and more frequent tanker traffic transiting the Second Narrows. In particular, through both live tests and simulations, pilots were able to establish the size and type of escort tugs required, along with other related operational procedures such as night-time restrictions. This effort resulted in deeper-draft tankers being allowed to proceed through the Narrows.

IV – Flexibility

Canada’s pilotage system is flexible. The current statutory framework by which pilotage is delivered has been in place for nearly 45 years, with only minor amendments having been required. The reason the legislation continues to support such a robust and relevant system is precisely because of its flexibility. In virtually every important area, the Pilotage Act provides for the introduction of new rules, procedures and practices, in response to changing circumstances.

Compulsory Pilotage Areas

Pilotage authorities regularly monitor and assess compulsory pilotage areas. If there is any question as to whether or not an area warrants its designation, a risk assessment is undertaken; this process follows a methodology developed by Transport Canada specifically for pilotage, known as the Pilotage Risk Management Methodology (PRMM). The same methodology is used to determine whether or not pilotage should be applied to new areas. In all cases, changes in vessel type and volume, technology and physical circumstances are taken into account to make sure requirements are relevant and respond to need.

Vessels Subject to Pilotage

Pilotage authorities also make recommendations for changes to regulations regarding the types of vessels subject to compulsory pilotage. Again, the PRMM is used to determine if a regulatory change is needed and what that change should be.

Qualifications for Pilotage

In the case of pilots themselves, regulations set out the qualifications and examination process required for obtaining a pilotage license. These requirements can be changed so as to be as responsive as necessary to labour market conditions, requirements for technological proficiency and linguistic skills, as well as fitness.

One of the most flexible characteristics of Canadian pilotage is the opportunity for domestic shipping companies to avoid engaging pilots by taking advantage of regulatory provisions whereby Canadian masters and other officers can receive a certificate which removes
the requirement to board pilots in compulsory areas. A ship’s officer can receive a pilotage certificate by demonstrating “skill and local knowledge of the waters of the compulsory pilotage area equivalent to that required” of a pilot.

The dynamic nature of the certification process is attested to by the fact that it has recently been changed in the Great Lakes Region as a result of a consensus reached by users, pilots, and the pilotage authority. Another example is in the Laurentian Region where changes related to the certification examination process were made following consultations with stakeholders and so as to accommodate industry.

**Tariff-setting**

The tariff for vessels using pilotage services is intended only to recover the costs associated with providing those services. Tariffs are set by regulation, after extensive consultations with users. Once the tariff is set, any interested party may object to the CTA. The Agency undertakes an investigation to determine if the tariff is in the public interest; this investigation can include public hearings and the Agency’s findings are binding.

**Continuous Review**

As demonstrated above, the flexibility of the pilotage system results from a continuous review of pilotage practices, coupled with the ability to easily make changes where need is demonstrated. Two of the key components of this flexible system are regulation-setting and risk assessment. Continuous review is such an essential part of how the pilotage regime stays current that over 44 PRMMs and other reviews have been conducted in the past 20 years (see Annex 1).

**V – Governance**

The two main characteristics of governance as it applies to pilotage are public accountability and recognition of significant regional differences.

Public accountability ensures the independence of the pilotage service from commercial interest and addresses the need to maintain, above all, the public interest. This is achieved through the very nature of the pilotage authorities as public service crown corporations, subject to the provisions of the *Financial Administration Act*, with oversight by Parliament. There is a broad consensus that this approach to governance works well.

That it works well is convincingly demonstrated by the fact that the system is virtually accident-free, with extraordinarily high on-time performance, low tariffs, and financial self-sufficiency. The performance of the Laurentian Pilotage Authority, for example, as reported in its 2015 Annual Report, is close to perfection: 99.93% of incident-free assignments, and no major accidents; 99.96%, of assignments without pilot-related service delays; and sound annual surpluses ensuring financial self-sufficiency. The performance of the three other pilotage authorities is of the same nature.
As with any system of governance and management, challenges have been identified, particularly in respect of a lengthy decision-making process. These specific concerns could be mitigated by closer collaboration between pilotage authority management and their government interlocutors, with a view to streamlining procedures and clarifying roles.

Because of the important role that the Board of Directors plays in any corporation, and the unique nature of pilotage operations, more stringent qualifications of candidates might be desirable, as might be the delivery of specific introductory training concerning the duties of Board members and the intricacies of pilotage itself.

The current framework recognizes the importance of regional differences and local knowledge. The CTA Review Report recommends that the four regional authorities be integrated into a single entity so as to enable a “strategic and holistic approach to pilotage”. Certainly, any proposal to improve the efficiency and financial performance of the pilotage service is worth considering, but only once a proposal has passed the litmus test of regional sensitivity and local knowledge. In the case of the Review’s recommendation, there is no discussion as to how the elimination of regional authorities and their replacement by a single, central agency would maintain the ability that exists within the current governance structure to effectively address regional differences, and to accord the highest priority to local knowledge. In light of the system’s excellent record, any change must demonstrate that it cannot only generate added benefit, but will not compromise performance.

Ministerial Vision

The Minister of Transport undertook his responsibilities in November 2015 on the basis of a Mandate Letter from the Prime Minister. According to the letter, Minister Garneau is to ensure that Canada’s transportation system supports economic growth and job creation, while providing Canadians with a system that is safe and reliable.

The Minister regards the Report of the CTA Review Panel as an important input for his development of a long-term vision for transportation in Canada. The Minister has also asked for input from interested Canadians, and has organized roundtables, workshops, meetings and online forums to collect views. The Minister’s Vision Statement will be developed around five themes: Trade Corridors; Green and Innovative Transportation; the Traveller; Waterways, Coasts and the North; and, Safety.

VI – Trade Corridors

Pilotage contributes significantly to the effectiveness of Canada’s three principal gateways and trade corridors. The key component of the Asia–Pacific Gateway and Corridor is the country’s west coast, the entirety of which is a designated compulsory pilotage area. In respect of the Ontario-Quebec Continental Gateway, pilots are active along the entire length of the St. Lawrence-Great Lakes waterway, extending westward from Les Escoumins. Pilots also provide service in the waters of the 17 ports that handle virtually all of the waterborne traffic for the Atlantic Gateway and Trade Corridor.
As an active member of the Canadian Chamber of Commerce, the CMPA strongly supports the position of the Chamber in respect of trade infrastructure investment and, in particular, the recommendation of the Chamber’s Transportation and Infrastructure Policy Committee to make trade enabling infrastructure a national priority and to develop an integrated strategy for such investments that covers all modes and benefits from partnership with other levels of government and the private sector.

VII – Coasts, Waterways and the North

As mentioned in the previous section, pilotage is an essential element for safe and efficient transportation along the east and west coasts, and the St. Lawrence-Great Lakes waterway.

To ensure that pilotage continues to make the maximum contribution to the transportation system, thereby optimizing competitiveness and growing the Canadian economy, the following considerations are of the utmost importance.

Universal and Consistent Application of the Pilotage Act

Only pilotage as delivered in accordance with the Pilotage Act ensures a service that is without compromise to safety and the public interest.

In areas not designated as compulsory pilotage areas in accordance with the Act, interests other than pilotage authorities may, on their own motion, hire individuals to act as “unlicensed pilots” within the waters of a port. In such cases, a decision to have pilotage or, conversely, not to have pilotage, is arbitrary. Those providing the service do not operate in a context where they are able to freely exercise their best professional judgment as they are not be employed by an expert and independent agency – a pilotage authority – and are therefore subject to commercial or operational conflict. Moreover, the quality of pilotage is not to a universally accepted public standard, as is the case with pilotage under the Act.

The situation at Sept-Iles, Baie-Comeau and Port-Cartier on the north shore of the Lower St. Lawrence provides an illustration of the lack of enforcement of the principle of universal and consistent application of the Pilotage Act. The practice of private and unregulated pilotage at these ports is troubling, particularly in light of the ever-growing size of vessels calling at these locations, and we welcome the decision that was finally taken by the Laurentian Pilotage Authority to review through a PRMM process whether the provision of pilotage in accordance with the Pilotage Act is warranted.

Use of Technology

Over the years, technology has played a major role in helping pilots meet their daily challenges. The contribution that technology has made to pilotage has been multiplied by the fact that pilots themselves have continuously sought new ways to apply technology to their profession.
An excellent example of this is the use of simulation technology for training, allowing pilots to practice complex manoeuvres and observe how ships perform in various circumstances, using customized vessel models and geographical databases that mirror real-life conditions. Pilots themselves have established a training centre in Quebec City that caters specifically to the needs and priorities of pilot training. Pilots have also used the centre to review port practices and procedures, and to evaluate proposed terminal designs. For instance, Saint John pilots used it to establish berthing criteria and weather limitations for Canaport LNG, the only operational LNG handling facility at this time in Canada.

Technology has also allowed for tremendous gains in navigation. PPUs, for example, help pilots conduct ever-larger vessels through restricted channels with great efficiency, even in difficult conditions. Emerging technologies that measure vessel responsiveness to sea state and dynamic underkeel clearance are also tools that pilots regularly use to help set criteria that provide for the safe passage of ever-larger vessels through existing waterways.

But, for all the benefits that it brings to navigating vessels, it is important to appreciate that technology has limitations and cannot replace the professional, expert judgements that pilots and bridge teams make under constantly changing circumstances, where the most subtle nuances can make the difference between a successful voyage and an incident.

Any suggestion that vessels can be conducted from the shore, or that AIS can be used as a collision avoidance technology, could only jeopardize the safety of marine transportation. This point was clearly made in the *Technological Assessment on the Possibility of Shore Based Pilotage in Danish Waters*, as referenced in the Report of the CTA Review Panel.

**Marine Infrastructure Investment**

In and of itself, the infrastructure supporting marine navigation makes an important contribution to safe and efficient transportation. It also plays a crucial role in assisting pilots make their own contribution, not only to safety but to the efficiency of the system.

While, as mentioned above, innovative pilotage practices means that the life of aging and otherwise-obsolete port and waterway infrastructure has often been extended, maintaining adequate levels of investment in marine infrastructure remains a vital consideration for the marine transportation sector. Unfortunately, such investment has lagged behind requirements in some critical areas.

Ice-breaking, particularly on the St. Lawrence-Great Lakes waterway, not only increases the system’s capacity but also makes for safer and more efficient passages. The ice-breaking service, provided by the Canadian Coast Guard with some contribution to cost by users, does not meet demand, with the result that vessels are delayed and, in some cases, their transit is more perilous than need be. A clear plan, and commensurate funding, for the renewal and expansion of the Coast Guard’s fleet, especially in respect of ice-breakers, is essential.

Similarly, the installation and maintenance of buoys as aids to navigation is not at the level it should be to maximize their potential contribution to safety and efficiency. Investing in new, four-season buoys would be an effective way of responding to this challenge and of delivering a service that consistently meets a high standard.
Recognizing the important return on investment for both safety and improved operations, the Government of Canada should strengthen the Canadian Coast Guard delivery model and, in particular, undertake the capital projects necessary to ensure adequate and reliable ice-breaking, and optimally-functioning buoys on Canada’s waterways.

Maintaining a Robust Pilot Candidate Pool

The average age of Canadian pilots is sometimes overstated; for example, the Report of the CTA Review Panel stated that it was 58. In fact, it is 52. More relevant, however, is whether the system has the capacity to bring in new pilots at a rate that matches departures.

As in so many other aspects of the pilotage system, flexibility is at play in regard to pilot succession planning. If seafarers at certain levels of qualifications are not available in a region, the entrance requirements for pilotage candidates can be changed, along with a consequent commensurate change in training.

Since pilot candidates are drawn from an existing pool of qualified Canadian seafarers, however, it follows that if there ever were to be a shortage of such seafarers, the pilot candidate pool would be threatened.

The North

As economic activity in the north increases, a consequent increase in shipping is inevitable, making the provision of pilotage an important consideration. While the first preoccupation in this regard must, of course, be for safe navigation, it is worth noting that the implementation of pilotage in northern waters would also contribute to the assertion of Canadian sovereignty.

Putting an arctic pilotage service in place would require a concerted effort on the part of government and stakeholders. Questions related to how pilotage should be administered in the North must be addressed, as should matters related to the recruitment and qualification of pilots, and the ongoing provision of service by them.

A government-appointed working group, established to examine the opportunity of putting in place an Arctic pilotage service, could be a sensible step to collect the views and wisdom of the various interested parties. The working group could address the question of the most appropriate administrative structure to deliver safe, efficient and cost-effective pilotage within the Arctic region.

VIII – Green and Innovative Transportation

The most important contribution pilots make to the environment is a preventative one. Since the enactment of the Pilotage Act in 1972, pilots have played the key role in ensuring that there have been no ship source environment disasters in Canadian waters. An accomplishment of this nature, which is by definition to make sure that something does not happen, is often not
noticed although its significance should never be underestimated. The viability of marine ecosystems, the supply of drinking water, a sustainable fishing industry, and a vibrant tourist sector are all at stake, and have been well-protected.

Pilotage also contributes to green transportation in other ways. By ensuring the most expeditious and efficient vessel transits possible, pilotage helps keep fuel consumption and air emissions low. Recently pilots have identified another initiative that contributes to green transportation. Through the groundbreaking work of Atlantic pilots, and with the support of federal, provincial and private funding, Canada has begun to deploy a “smart”, state-of-the-art, inshore network of weather buoys in the key Atlantic Gateway ports of Saint John and Halifax. Such buoys are also operating around the coast of Newfoundland and, in particular, in Placentia Bay, one of the busiest pilotage districts in Canada in terms of the volume of petroleum products shipped. These buoys are critical infrastructure not only for the safe navigation of tankers and large containerships, but for all vessels as they provide highly accurate real-time information on fast-changing weather and sea state conditions affecting key shipping corridors.

This information helps the marine community manage port and shipping operations more strategically, with better operational planning that facilitates the ordering of tugs, the assignment of pilots, as well as the utilization of port facilities and labour. All of this means fewer delays for vessels, and more efficient, safer transits.

The information provided is also particularly useful in emergency situations as exemplified in Halifax by port of refuge requests in two separate incidents involving Aframax tankers fully loaded with Hibernia crude – the Australian Spirit, loaded with 775,000 barrels of crude oil as well as 3,000 m³ of bunker fuel that lost its rudder 40 nautical miles off the coast of Nova Scotia in a gale in December 2014, and the British Merlin, in January 2016, loaded to a draft of 13.6m with 845,000 barrels of crude plus bunker fuel that suffered a mechanical failure reducing its maximum speed to only three knots. Using the data provided by the weather buoy, pilots were able to determine the safe operating windows during which the vessels could be effectively controlled with escorting tugs and safely brought into the harbour.

A national strategy for the deployment and operation of “smart” inshore weather buoy networks, providing real-time and more accurate information on conditions affecting major Canadian shipping lanes, would make a significant contribution not only to the safety and efficiency of maritime transportation, but to its “green” character.

Conclusion

The CMPA offers the outstanding performance of the Canadian pilotage regime as evidence that the system is effective in protecting the public interest. Canadian pilotage ensures a level of safety that is second to none and it delivers great value to industry. Because of this, it makes an important contribution to the competitive edge of Canada’s maritime transportation system in the global marketplace.

The future depends on remaining faithful to values that, by any measure, are extremely effective in safeguarding the public interest by delivering safe and efficient navigation in Canada’s most challenging waters, while continuing to embrace innovation.
Annex 1 – Continuous Review

National processes (6)
- Consultations on Proposed Amendments to the Pilotage Act (2007)
- Review of Canada’s Ship-Source Oil Spill Preparedness and Response Regime (2012)

Pilotage Risk Management Methodology (PRMM) Processes (21)

Atlantic (8)
- Review of the threshold at which Canadian vessels are subject to pilotage in Atlantic Canada (2001-2005)
- Review of the status of the waters of the Miramichi River (2002-2005)
- Review of the status of the approaches to Voisey’s Bay (2004)
- Review of the status of the approaches to the St. Croix River, and from the St. Croix River to the Port of Bayside, NB (2005)
- Review of the status of the waters of the Port of Belledune (2012-)
- Review of the status of Newfoundland non-compulsory areas and, in particular, of the waters of Long Pond, Conception Bay, and the Port of Argentia (2013)
- Review of the location of the pilot boarding station in Placentia Bay (2014-2015)

Laurentian (5)
- Review of the threshold at which Canadian vessels are subject to pilotage (2001-2002)
- Review of the circumstances in which double pilotage is required and of the role of the second pilot (2003-2004)
- Review of whether Post-Panamax vessels can safely transit between Québec City and Montréal, and of the measures required for such vessels to safely transit (2008-2010)
- Review of the safe length of single pilotage assignments in District 1 (2013-2015)
- Review of the status of the waters of the Lower North Shore Ports (2015-)

Great Lakes (2)
- Review of the exemption from pilotage of Canadian vessels (2001-2012)
- Review of the minimum qualifications required of pilotage license holders (2009)

Pacific (6)
- Review of the requirement for double-pilotage for transits exceeding 8 hours or 105 miles (2001)
- Review of compulsory pilotage between the Victoria pilot boarding station and United States waters (2005)
- Review of Pine Island winter pilot boarding option (2008)
- Review of Cape Beale pilot boarding station (2014)
- Review of Liquid Bulk vessels in product less than 40,000 SDWT (2015)

Review of pilotage requirements and practices in Termpol Processes (17)

Atlantic (3)
- Cape Breton pilots: Bear Head LNG Project (2015-)

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- Saint John pilots: Energy East Project (2015-)
- Halifax and Cape Breton pilots: Goldboro LNG Project (2015-)

Laurentian (1)
- Rabaska LNG Project (2005)

Pacific (13)
- Stewart World Port (Stewart)
- Pacific Northwest LNG (Prince Rupert)
- Prince Rupert LNG (Prince Rupert)
- Aurora LNG (Prince Rupert)
- WCC LNG (Prince Rupert)
- Enbridge Northern Gateway (Kitimat)
- Kinder Morgan LNG (Kitimat)
- LNG Canada (Kitimat)
- Kitimat LNG (Kitimat)
- Kinder Morgan Trans Mountain (Vancouver)
- Woodfibre LNG (Vancouver)
- Kitsault Energy (Kitsault) - pending
- Altgas LPG (Prince Rupert) - pending

Other

Atlantic
- Halifax: Berth reconfiguration for the seawall to accommodate two “Anthem Class” cruise ships at the same time (2015-)
- Saint John: Canaport LNG Terminal (2008)
- Saint John: Marco Polo Cruise Ship Terminal (on-going)
- Cape Breton pilots: Sydney Harbour dredging project - channel design and recommendations for navigational aids (2012)
- St. John’s: Feasibility study to determine if a Regal Princess cruise ship could safely navigate the Narrows (2014/15)

Pacific (Fraser River)
- Review of practices for large container ships, (2012)
- Risk assessment regarding the jet fuel dock for Vancouver International Airport
- Risk assessment for the proposed Fortis BC LNG export terminal