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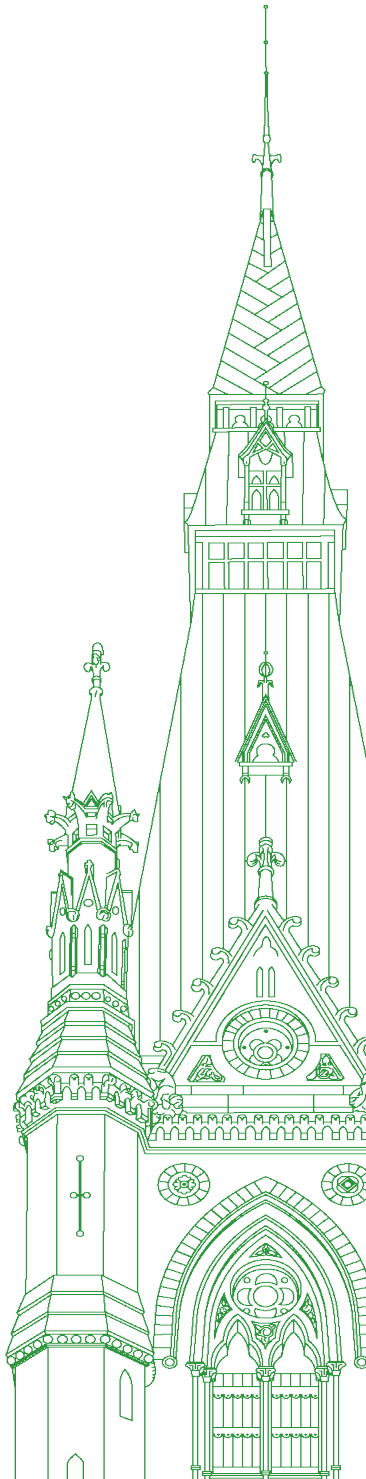

Chair: Mr. Peter Schiefke

Standing Committee on Transport, Infrastructure and Communities

Wednesday, November 16, 2022

● (1630)

[*Translation*]

The Chair (Mr. Peter Schiefke (Vaudreuil—Soulanges, Lib.)): I call this meeting to order.

Welcome to meeting number 39 of the House of Commons Standing Committee on Transport, Infrastructure and Communities.

Pursuant to Standing Order 108(2) and the motion adopted by the committee on Thursday, February 3, 2022, the committee is meeting to study the impact of commercial shipping on shoreline erosion.

Today's meeting is taking place in a hybrid format, pursuant to the House Order of November 25, 2021. Members are attending in person in the room and remotely using the Zoom application.

[*English*]

Members of the committee, appearing before us today we have, from the Essex Region Conservation Authority, Mr. James Bryant, director of watershed management services.

[*Translation*]

We also have with us Mr. André Villeneuve, mayor of the municipalité de Lanoraie.

[*English*]

From the St. Lawrence River Institute of Environmental Sciences, we have Mr. Jeff Ridal, executive director.

Finally, appearing here in person, we have Mr. Colin Rennie, professor at the University of Ottawa.

Before we begin, I would like to take this opportunity to inform members that all of today's video conference witness participants have completed the necessary audiovisual checks. I'm just going to take a quick moment to look at each of our individual translators to get a thumbs-up to make sure everything is good to go.

Perfect.

We will now begin the opening remarks with Mr. Bryant. Unfortunately, Mr. Jacques Grenier couldn't be here.

Mr. Bryant, the floor is yours. You have five minutes.

Mr. James Bryant (Director of Watershed Management Services, Essex Region Conservation Authority): Thank you, Mr. Chair.

Thank you, members of the committee and, specifically, MP Chris Lewis of the Essex riding, for allowing me to speak with you on the subject of erosion in our area, both from a shipping perspective and from a natural process perspective.

As an agency responsible for the protection of life and property on behalf of local municipalities and the Province of Ontario, our team is constantly faced with the challenges of both flooding and erosion, as our area is bounded by Lake St. Clair, the Detroit River and the western basin of Lake Erie.

Specific to the topic of shipping and the impacts on shoreline erosion, the impacts differ as a result of the location of the shipping passageway. With the canal being situated in more of a central location within the western basin of Lake Erie, wake-driven erosion is of little consequence to the mainland because of the distance between the vessels and the shoreline itself. Impacts would be more pronounced in the Detroit River, which is much narrower, with the proximity of the canal much closer to the shoreline and the islands in the area. However, even in this situation, the wakes caused by the large shipping vessels are generally less of a concern than those caused by the smaller pleasure craft that operate much closer to the shoreline and are higher in number.

Notwithstanding that, the impacts that occur from larger shipping vessels are rare, but they have consequences, such as impacts to personal property, specifically docks and breakwalls. In these rare occurrences, the impacts are a bit more dramatic, typically because of the state of the infrastructure at the time of the occurrence. Oftentimes, it's because the infrastructure is in a state of disrepair. Therefore, the energy required to initiate full failure is much less than for structures that are properly maintained.

Regardless of this, the effects of any such vessel pale in comparison to the impacts caused by natural processes such as wind-driven waves, which have been causing significant impacts on the safety of local communities and public infrastructure like roads, sewers and water mains. Strong winds across large open bodies of water affect the wave climate and cause erosion along the islands and mainland shoreline. In some cases, the damage caused is irreparable. Chatham-Kent experienced erosive forces so severe that they caused road closures and permanent road relocations, which affected emergency first response capabilities and the lives of those living in the nearby communities.

Further west, the Hillman Marsh barrier beach in Leamington is now gone, due to high lake levels and strong winds, leaving the interior diking system in this area exposed to potential wave impacts it's not designed for. These dikes protect large inland farming operations and properties from being inundated by Lake Erie. Without them, prime agricultural land would be lost, leaving a large area a permanent piece of Lake Erie.

Further west into the Essex region, I have personally coordinated with engineering and public works departments to quickly install shoreline protection to protect various segments of both upper-tier and lower-tier municipal roadways in such areas as Leamington, Kingsville and Amherstburg. These were all reactive measures to combat, again, the forces of nature.

There's a need to evaluate these effects further to understand any mitigating approaches. We have learned that standardized approaches, such as breakwall structures, may only temporarily slow down erosion, but the continued lake-bed erosion and downcutting in the areas lakeward from these structures are deepening and increasing the likelihood of failure.

In essence, the very structures required to protect homeowners from the loss of their land are inadvertently exacerbating the issue, leaving homeowners at risk of the substantial costs of ongoing costly maintenance and repairs.

In some areas, landward migration of the lake can be as high as four feet per year on average. As we deal with many unknowns about our climate and the associated variabilities, such as record high lake levels and reduced ice cover on the western basin of Lake Erie, the winter season has become a significant factor in annual erosion rates. With reduced ice cover and prolonged elevated lake levels from 2015 to the present time, some areas have experienced erosion rates double those from historic studies, which can date as far back as 1976 in our area and are limited by the available information and technology of the time.

We're challenged with understanding and predicting these impacts. To do so, there's a need for sufficient studies and funding to come up with a plan for mitigating measures. The federal government took a great step forward with the recent budget, having allocated nearly $64 million toward flood-related studies, much of which has been funnelled through the current flood hazard identification and mapping program.

As evidenced through these examples, our region is facing flood risks that can be a direct result of shoreline erosion. Therefore, flooding and erosion are not, in our case, mutually exclusive. I would urge consideration of funds toward these issues, coupled with the well-intentioned flood hazard identification and mapping program that is specific to flood-related undertakings. These combined effects need to be better understood to ensure that communities are safe from these threats.

With that, I'd like to thank the committee for allowing me to speak. I'd be happy to answer any questions the committee members might have to the best of my ability.

● (1635)

Thank you.

The Chair: Thank you very much, Mr. Bryant, for your opening remarks.

[*Translation*]

Mr. Villeneuve, you have the floor for five minutes.

Mr. André Villeneuve (Mayor, Municipalité de Lanoraie): Mr. Chair, members of Parliament, distinguished guests, committee staff, good afternoon.

My name is André Villeneuve, and I have had the privilege and honour of serving as mayor of the magnificent municipality of Lanoraie since November 7, 2021. As my allotted speaking time is short, I will get straight to the point.

During the last municipal election campaign, an important issue was raised, namely the erosion of the riverbanks, and for good reason: for years, people have been signing petitions and questioning the federal government on this subject, but nothing is done. They feel like they are fighting their own government, when they should be able to count on it instead.

As soon as I took office, I sent a letter to the owners of the 368 properties along the river to gauge the extent of the problem. The response from the riverside residents was not long in coming. Nearly 100 properties are currently affected, to varying degrees, by erosion. You have photos of one of these properties. I will be distributing the originals of these photos later on, and if there are any questions, I will be happy to answer them. They say a picture is worth 1,000 words, and you have three.

In this letter I sent to the owners, I wrote: “As the municipality is, by definition, a local government, it is only natural to offer you support in your possible steps if this proves necessary.” Well, yes, it is necessary. Whatever level of government we are in as elected representatives, our duty is to listen to our fellow citizens and ensure that justice is done. When we see properties, land and homes threatened with disappearance, people at risk of losing their life's work and their safety compromised, yes, it is necessary.

That is why I am here today before you, to bring their voices inside these walls and to appeal to you not only on behalf of the citizens of Lanoraie, but on behalf of all citizens who are being hit hard as the victims of this phenomenon.

In my opinion, the only way for you, members of the committee, to resolve this situation is to answer a fundamental question: does the federal government have a responsibility for this phenomenon of shoreline erosion or not? To ask the question is to answer it. Yes, the federal government has a responsibility. It is high time it admitted it and shouldered its responsibility.

In this regard, the scientific literature is unequivocal: the erosion of the banks of the freshwater portion of the St. Lawrence is a natural phenomenon accentuated by human action, according to the St. Lawrence Action Plan. According to the same source, the wake produced by ships is often considered to be the cause of shoreline erosion. In addition, the main factors causing shoreline erosion are variations in water levels caused by water control structures, such as dams, dikes and canals. Another erosion factor is the effect of waves produced by passing ships, again according to the St. Lawrence Action Plan.

Why all these interventions? In reality, they are aimed at allowing the circulation of larger and larger ships, with increasingly heavy loads, and more numerous. These are countless interventions in the river that have been authorized by the federal government for over 100 years.

During the 19th century, between Montreal and Quebec City, the St. Lawrence River was adapted to the ever-increasing needs of commercial navigation, according to Technical Report RT-141. Today, this continues, from dredging to dredging, from dam to dam, through the installation of the reversoirs on the Sorel islands and the booms at Lanoraie and elsewhere, not to mention the opening of the St. Lawrence Seaway year-round. The list of human interventions is still very long.

Ladies and gentlemen members of the Standing Committee on Transport, Infrastructure and Communities, the case is made, in my opinion: the responsibility lies with the federal government. Now we must act to allow the citizens affected by this man-made scourge to continue to live safely along the majestic St. Lawrence River. First of all, we must ensure that the federal government finally takes on its responsibilities, that is by re-establishing a support program against shoreline erosion, a program that will take into account all stages, from diagnosis to the execution of the work, including authorizations, design and, of course, funding.

These measures are necessary. Citizens cannot do it alone. The federal government has a duty to act. Citizens expect no less from their government and its leaders.

Ladies and gentlemen, thank you for your attention. I am available to answer your questions, if any.

● (1640)

The Chair: Thank you, Mr. Villeneuve.

[*English*]

Next we have, from the St. Lawrence River Institute of Environmental Sciences, Mr. Jeff Ridal.

Mr. Ridal, the floor is yours. You have five minutes.

Dr. Jeff Ridal (Executive Director, St. Lawrence River Institute of Environmental Sciences): Thank you, Mr. Chair.

As mentioned, I am Jeff Ridal, the executive director of the St. Lawrence River Institute of Environmental Sciences, or the River Institute. We're based in Cornwall, Ontario.

Thank you for providing me the opportunity to address the standing committee on the topic of the impact of commercial shipping on shoreline erosion in the river.

I would like to begin by respectfully acknowledging that the River Institute is located on the traditional territory of the Haudenosaunee. We offer our gratitude to the Mohawks of Akwesasne for their care for, and teachings about, our earth and our relations.

The River Institute is a non-governmental organization incorporated in 1994 to address environmental concerns on the St. Lawrence River, with a special emphasis on the upper section of the river from Kingston at the outflow of Lake Ontario to Lake St. Francis, a lake-like section of the river located between the Moses-Saunders dam at Cornwall, to just below Montreal.

In 2022 the River Institute and its partners embarked on a two-year DFO-funded study to investigate the ecological impacts of waves and shoreline erosion on nearshore habitats in the upper St. Lawrence River, or the “international section”, and I think you'll also hear it being referred to that way.

This project arose from efforts by volunteers and representatives of the Great River Network, an environmental hub made up of more than 50 river-focused organizations that raised concerns about noticeable shoreline erosion and the possible degradation of downstream aquatic habitat in the areas where large waves are generated by ships transiting the seaway.

A 2010 St. Lawrence action plan report estimated that approximately 25% of the 1,600 kilometres of shoreline from Cornwall to just below Quebec City is affected by shoreline erosion. The section immediately upstream of Cornwall, to Brockville, Ontario, has similar clay-based soils and is subject to seasonal water fluctuations of up to two metres and is therefore also prone to shoreline erosion.

To address these concerns, the Great River Network, in consultation with the St. Lawrence Seaway Management Corporation, proposed voluntary speed reduction zones for commercial vessels to protect areas along the international section of the river, those sections with heightened vulnerability for erosion due to soil conditions and other environmental factors. These zones are about three- to eight-kilometre stretches of the river located near Cornwall, Morrisburg and Brockville.

To reinforce and underpin the speed reduction zone measures, wave engineering data and ecological assessments are needed to characterize the causes and impacts of shoreline erosion in those sections of the river, and to form a basis for future shoreline stabilization work. The Great River Network and the River Institute partnered with researchers from the University of Ottawa, South Nation Conservation and the Raisin Region Conservation Authority to develop a research study that addresses this topic. I should say that the Mohawk Council of Akwesasne supported the project and is assisting in its implementation.

The project aims to determine the impacts of large ship waves on shoreline erosion and potential loss of aquatic habitat, focusing on sites in the western Lake St. Francis region of the St. Lawrence River along the Mohawk territory of Akwesasne and also on the upstream sites near Morrisburg, Ontario. These sites are impacted by shoreline erosion and are located within the voluntary speed reduction zones developed by the St. Lawrence Seaway Management Corporation.

The University of Ottawa team is monitoring waves impacting the study sites from wind, ship and pleasure boats, as well as other environmental factors, to differentiate the forces contributing to bank erosion. Dr. Rennie, who is also presenting to the committee today, will provide details on the technical aspects of this work.

Our River Institute team is applying its ecological expertise and extensive database on St. Lawrence River nearshore fish communities to assess whether shoreline erosion is having detrimental impacts on downstream fish communities, species abundance, diversity and habitat quality. Aerial drone technology is being used to provide high-resolution maps of habitat features such as macrophyte beds that are important for fish habitat, as well as for anchoring sediments.

This project constitutes a unique collaboration partnership including academia, environmental NGOs, native communities, conservation authorities, industry and community volunteers to generate innovative science in a format that responds to a relatable and pressing problem.

It is our expectation that the project's results will be relevant and scalable to other areas of the river that are impacted by shoreline erosion and will provide tangible results for the St. Lawrence Seaway Management Corporation.

● (1645)

It will also support the development of a St. Lawrence River shoreline management plan proposed by the local conservation authorities to stabilize the impacted shorelines and restore aquatic habitat using native plants and vegetation.

Thank you.

The Chair: Thank you very much, Mr. Ridal.

Finally for today, we have Professor Colin Rennie. Professor Rennie, the floor is yours. You have five minutes.

Dr. Colin Rennie (Professor, University of Ottawa, As an Individual): Thank you, Mr. Chair.

As you said, my name is Colin Rennie. I'm a professor at the University of Ottawa in the Department of Civil Engineering, with particular expertise in river engineering.

Thank you for this opportunity to make a presentation to the committee.

At the outset, I wish to pay respect to the Algonquin people, who have a long-standing relationship with this territory, which remains unceded. Furthermore, I also wish to state my appreciation for the collaboration of the Mohawks of Akwesasne in the work I will be presenting.

I will begin by presenting an overview of the influence of ship wake on shoreline erosion and then I will briefly discuss details of the ongoing research project we have undertaken.

Ship wake has been demonstrated in several previous studies to contribute to shoreline erosion. Ship waves can suspend nearshore and bank sediments. If these sediments are then transported offshore or downstream by currents or waves, it can lead to bank recession.

The likelihood of a ship wake contributing to bank erosion depends on the power of the waves, the water surface elevation with respect to the bank and bank characteristics that dictate the bank stability, such as bank angle, sediment grain size, consolidation, pore pressure and vegetation.

The waves produced by a large ship in a narrow waterway such as a river depend on many factors, including the size and draft of the ship, the speed of the ship, the river width and depth, the channel's form and how near the ship passes to the shoreline. In general, bigger, faster ships in narrower, shallower channels make bigger waves.

In addition to a train of smaller short-period waves, large ships in narrow rivers produce a succession of long-period waves—very long waves—beginning with a deep drawdown followed by a subsequent surge back up. The drawdown occurs because the ship draws water toward itself due to the buildup of water on the bow of the ship, as well as because flow accelerates on the side of the ship. The drawdown and surge can be the dominant source of erosive wave energy produced by ships.

Also, though, river currents, wind waves, ice scour, water level fluctuations and tidal flows can cause erosion. The importance of these sources at a particular site depends on many factors, such as climate and river discharge, as well as the size, morphology, slope, orientation and proximity to the ocean of that river channel. Each of these sources is a complicated process, and the sources can occur simultaneously; thus, it is difficult to tease apart the mechanisms.

Also, shoreline recession is often relatively slow and incremental compared with, let's say, an individual wave action. That's an added complication to identifying the source. Nonetheless, ship-induced waves can be the dominant source of shoreline erosion at some locations in sufficiently narrow lowland rivers with low currents, limited wind waves and high ship traffic.

For example, Gaskin et al., in 2003, suggested the drawdown and surge wave heights of 0.5 to 1 metre generated by passing ships in the St. Lawrence Seaway downstream of Montreal at the Îles de Verchères can play a dominant role in clay bank shoreline erosion. Similarly, in a more recent study, there are locations on the Meuse River in the Netherlands where bank erosion due to ship waves at low flows has exceeded bank erosion due to river currents at high flows.

As introduced by Dr. Ridal, this year we have initiated a study to understand the relative importance of ship-induced waves on shoreline erosion in the upper St. Lawrence. As a first step, data have been collected at two shoreline locations: at Mariatown near Morrisburg, upstream of Cornwall, and at Jacobs Island in Akwesasne territory near Summerstown, downstream of Cornwall.

At the Mariatown location, satellite image analysis between 1995 and 2020 suggests shoreline recession rates of about 0.3 metres per year. Each location has three sampling sites with different exposures to help differentiate ship wake from wind waves. At each sampling site, synchronous time series of nearshore water level fluctuations as well as turbidity are being collected. Further, the river flow field has been surveyed at each location to map water velocities and depths.

Data collection will continue next year, and then numerical models will be developed to assess the relative influences of ship wake, wind waves and river currents on shoreline erosion.

● (1650)

The water level and turbidity data collected this year are currently being analyzed. Initial results suggest that the ship-induced primary wave heights associated with drawdown and subsequent surge have a range of about 20 to 30 centimetres, and that these events do resuspend nearshore sediments. However, at this stage of research, it is premature to draw conclusions regarding the relative influence of ship wake on shoreline erosion.

Thank you. I'll take questions as you wish.

The Chair: Thank you very much, Professor Rennie.

Thank you to all our witnesses for their opening remarks.

We will begin our round of questioning today with Mr. Lewis.

Mr. Lewis, the floor is yours. You have five minutes...or six minutes, rather. Excuse me.

Mr. Chris Lewis (Essex, CPC): Thank you, Mr. Chair, and thank you for the extra minute as well. I appreciate that.

To all the witnesses, thanks very much for your testimony this afternoon/evening. It really hits home for a riding like Essex. I like to call ourselves an island, so to speak. I know we're not, but we're awfully close to one when we have Lake St. Clair, a relatively small body of water compared with the Great Lakes, and the Detroit River, which is very narrow and not very deep, and then Lake Erie, a much larger lake and of course one of the Great Lakes.

In the shipping channels of Lake Erie, the ships are quite a distance from shore. I know this because I like to go out there and fish for walleye near the shipping channels. However, we also have the Detroit River. Along that same river line, so many needed goods are brought in and taken away, right down to Oreo cookies, which are manufactured in the United States from our grain from southwestern Ontario.

All of that is to say to the committee that our shipping industry is absolutely vital. Whatever we can do to ensure that the shipping industry is helped out along the way to continue to move commerce will be darn important. This study is a very important study.

I want to say thank you to Mr. Bryant and through him to Mr. Byrne, CAO of the Essex Region Conservation Authority, or ERCA. He has worked with the authority for as long as I can remember and has done some amazing work on so many various functions of ERCA.

Mr. Bryant, you spoke about flood mapping program funding. I believe it to be true that the last time an erosion study was done in the region of Essex, which of course is much larger than Essex—it includes Windsor West, Windsor-Tecumseh, and Chatham, and probably all the way up to Sarnia—was 1975. It was commissioned in 1975 and completed in 1976. Ironically, that was the year I was born. I'm really dating myself now.

Is it fair to say, Mr. Bryant, that this was the last time the erosion portion of the study was completed?

● (1655)

Mr. James Bryant: Through you, Mr. Chair, to respond to the member's question, yes, in terms of a full comprehensive study for erosion along the shorelines, it was comprehensive to evaluate the natural effects going on out there in the Great Lakes system and comprehensive being around Lake St. Clair, the Detroit River and through Lake Erie.

Yes, it was commissioned around 1975, with data collected then and published with annualized erosion rates in 1976, with some smaller evaluations that were coupled with one-off studies in more localized areas. We've had particular challenges in re-evaluating those areas due to some funding and timing constraints, which I think I spoke to earlier.

Mr. Chris Lewis: Thank you, Mr. Bryant.

It was interesting to see those pictures that were sent around earlier about the erosion. I think about the other side of Point Pelee, which is certainly not in my riding but is not very far, where they're literally moving roads, because the roads are being washed into Lake Erie due to erosion.

Mr. Bryant, under this funding program of $67 million or $76 million, I think you said, is there a portion of that specifically with regard to erosion mapping, or is erosion out of that funding?

Mr. James Bryant: Currently there are no eligible expenses to the flood hazard identification and mapping program being administered through NRCan and funnelled through the local provinces. No portion of that is eligible towards erosion hazards.

Mr. Chris Lewis: Thank you, Mr. Bryant.

I realize that the IJC, the International Joint Commission, basically just studies the water levels. Is there any funding? Is there any conversation between the countries with regard to opportunities to get funding to do something that's...? Quite frankly, this is not just Canada's problem; it's the United States' problem as well.

Are you aware of any funding of that? How helpful would that be for the planning for ERCA, the Essex Region Conservation Authority, going forward?

Mr. James Bryant: I don't have any awareness of available funding out there to specifically address that. I guess—in part to my earlier remarks—we're hoping to see something become available because we have a combined effect that we're dealing with here in terms of the flood hazards. As I mentioned before, the program that was initiated is very important. It was a great step forward, but there's a dual impact in some of the large flooding impacts because of the flat topography and the nature of the flood control structures that could be exposed to some of that wave action and energy. There's an erosive force that can drive and initiate that catastrophic flooding consequence.

We'd be open to seeing any other sources of funding that would be out there that we could hopefully couple with some of the other flood-related programs out there.

● (1700)

Mr. Chris Lewis: Thank you.

Mr. Chair, how much time do I have left, please?

The Chair: Actually, your timing is perfect, Mr. Lewis. You have no time left. Thank you very much.

Next we will go to Mr. Badawey.

Mr. Badawey, the floor is yours. You have six minutes.

Mr. Vance Badawey (Niagara Centre, Lib.): Thank you, Mr. Chairman.

I guess I'll start off with some questions and then make some comments later on. Hopefully I will have some time from my colleagues to allow me to pass on some further comments.

First off, I want to thank you folks for being here today, because this is an important issue. This issue is near and dear to my heart with the Great Lakes and the St. Lawrence and everything that's attached to it. I mean not only the benefits but also the challenges that we experience with shoreline erosion and many other things, some of which we experience, some of us, on a daily basis.

I want to start off with looking at the St. Lawrence River. I'm going to start with Jeff Ridal with respect to his comments and with regard to the 2017 and 2019 flooding of Lake Ontario.

Do you have any idea what the cost was—either financial or environmental—of those extreme weather events to the shorelines of the St. Lawrence at those times?

Dr. Jeff Ridal: I think that the IJC has done some work to look at that. I don't have that number in front of me. I know that a very extensive study was done by the Great Lakes-St. Lawrence River adaptive management committee of the IJC to look at those flooding events and shorelines. There are also surveys that were done on both sides of Lake Ontario and the St. Lawrence River to find out from shoreline owners the level to which they experienced erosional problems. Obviously, those high water events did result in significant erosion, particularly in certain areas, but I don't have the exact numbers in front of me in terms of the costs.

Mr. Vance Badawey: Thank you, Mr. Ridal.

If you could forward those to me if you can get your hands on them, that would be great—

Dr. Jeff Ridal: Sure.

Mr. Vance Badawey: —because it could give us a good idea of what the returns on our investments will be if, in fact, we made that comparison.

With respect to the work that Quebec's doing right now, I've heard that the Government of Quebec is using some of the federal disaster relief funding from the 2019 flood to turn once hard shorelines into soft shorelines that can better adapt to changing water levels and reduce erosion.

Have you seen any examples of shorelines' being successfully rebuilt after flooding or erosion? That's my first question. My second question is this: Would soft shorelines designed to reduce flood damage address the issues caused by, for example, boat erosion and other methods of erosion, and how?

Dr. Jeff Ridal: I understand, Mr. Chair, that this question was addressed to me, and I can give it a start. There might others who can speak to it as well.

My experience is mostly in this section below Montreal, so that's where I would have seen some examples of some shoreline work that's been done through conservation authorities and some other programs, particularly with emphasis on those soft techniques.

We've had discussions, particularly with our partners, the Mohawks of Akwesasne, who have had some issues and have had some engineering done on shoreline restoration, using those soft techniques. This is more or less recounting back what was passed on to me.

There was a moderate success rate. The issue with the shoreline work that they've seen is that the overgrowth and the soft structures haven't, in several cases, lasted the length of time that they had anticipated. While it did mitigate and slow down the erosion, the long-term effect was still a continuance of erosion.

In particular, this work was done on—

[*Translation*]

Mr. Xavier Barsalou-Duval (Pierre-Boucher—Les Patriotes—Verchères, BQ): I have a point of order, Mr. Chair.

The interpreter is having trouble because too many mikes are unmuted. It's causing interference.

Are you able to check on that?

The Chair: All right.

Thank you, Mr. Barsalou-Duval.

I'll look into it.

[*English*]

It looks like the issue has been resolved.

Mr. Ridal, if you could just start speaking again to make sure that there are no issues, I'll look at the translators to make sure and get the thumbs-up from them that we're good to go.

I'll turn it over to you, Mr. Ridal.

● (1705)

Dr. Jeff Ridal: Thank you, Mr. Chair.

I might ask the member to repeat the second part of his question for me, please.

The Chair: I just want to look over at our interpreters to make sure that they're good.

They are. That's wonderful.

Mr. Badawey, I'm not going to let that interrupt your time, so you have two minutes and 15 seconds left. I'll ask you to ask the question to Mr. Ridal again, and we'll allow Mr. Ridal to respond.

Mr. Vance Badawey: Thank you.

Essentially, we were speaking about rebuilding. What I'm trying to do is get to the how and the what. We understand the what, so how can we resolve this? I was talking about the shorelines and some of the work that they're doing in the Quebec region with respect to soft shorelines versus hard shorelines. Mr. Ridal was explaining some of his experiences with that work.

Dr. Jeff Ridal: My expertise is not in shoreline erosion and shoreline restoration; that's usually the purview of conservation authorities. I have, through anecdotal evidence, seen some positive examples of the soft shoreline techniques, but I've also heard that they, in some cases, have not lasted the length of time that was expected.

I might defer to our colleague at the conservation authority who's present with us and might have some very hands-on experience with that.

Mr. Vance Badawey: Thank you, Mr. Ridal.

I am going to go to Mr. Bryant now of the Essex Region Conservation Authority, and he can finish off that answer.

I also want to touch on the neighbouring community of Chatham-Kent that was in the news for having buildings once 50 metres from the shoreline that ended up in Lake Erie after storms eroded more land in a few weeks than have been eroded in the past 100 years and having septic tanks, for example, popping out of the ground as the water table rose after severe weather events.

Extending from the question that I just asked Mr. Ridal, I have a few other questions. I'm trying, again, to get that contrast of cost in terms of the returns on investment the government and all of us can recognize with respect to those investments.

What is the cost to your municipal government from erosion caused by severe water events, erosion caused by high water levels and erosion caused by shipping and/or boating?

Mr. James Bryant: I'll say that the question is a challenging one to unpack wholly, because when we start to consider the full financial impacts of something like that occurring, we're looking at the immediate financial impact to the municipal landowners themselves. It is very costly to undertake repairs on something like that.

There are costly road repairs. You're looking at overtime for cleanup crews repairing these roadways during a flood event and finance departments maintaining all the records and that sort of stuff. I don't have any experience personally on providing the cost of that, but some of the other flooding events out there have been pretty substantial. I think there's documented evidence on how costly they are, whether in Ontario or across the country.

If I may speak to the soft shoreline techniques in our area, generally, through our personal experience in our area, they're not heavily promoted because they just can't withstand the wave energy that's out there from the natural forces, so when we take that into consideration, we have to ensure that a new development that would be going in would be protected for a minimum number of years. Some of the soft shore techniques that are out there may not meet that minimum standard that has to be met—

The Chair: Thank you very much, Mr. Bryant.

Unfortunately, time is up for that round.

[*Translation*]

Over to you, Mr. Barsalou-Duval. You have six minutes.

Mr. Xavier Barsalou-Duval: Thank you, Mr. Chair.

I'm going to start with the mayor of Lanoraie, Mr. Villeneuve.

Mr. Villeneuve, I know Yves Perron, the member for Berthier—Maskinongé. He presented a petition in the House of Commons on shoreline erosion. Among the things he was calling for were a speed limit for vessels and the reinstatement of the federal shoreline protection program.

I'm familiar with these efforts because I went through something similar a few years prior with the constituents on my side of the river.

What response did you get?

As I understand it, one of the things you were told was that a voluntary speed limit was already in place.

Do you think that's enough?

Do you have more to say on the subject?

● (1710)

Mr. André Villeneuve: Given what we've observed, as you saw in the photo I showed you earlier, it's obvious that everything done so far is not cutting it in terms of fixing the problem.

According to the scientific literature, a low water level means little erosion, and a high water level means more erosion. It goes without saying.

It only makes sense since we know that the five reservoirs on the islands of Sorel were set up by the federal government. The scientific literature tells us that the reservoirs cause the water level to be higher. The only thing the experts don't agree on is how much those reservoirs caused the water level of the river to rise.

The short answer to your question is that I'm not an expert, but one thing is for sure. In light of what we're seeing when it comes to the eroding shoreline, something needs to be done now.

I don't think the current voluntary measures, as you mentioned, are producing the desired results. We can't say everything is fine now. It's not.

Mr. Xavier Barsalou-Duval: Thank you for your answer.

That brings me to my next question.

You're here in your capacity as the mayor of Lanoraie. Earlier this week, we heard from the mayor of Contrecœur. Many municipalities are affected by this.

Are you in contact with neighbouring municipalities? Do you know whether other municipalities are experiencing the same thing?

You said that hundreds of your residents had properties along the river.

What's happening in the municipalities next to yours?

Is it a widespread phenomenon, or is the problem limited to a specific area?

Mr. André Villeneuve: It's not limited. It's a widespread phenomenon.

A group of municipalities are joining forces: Lanoraie, Berthierville, La Visitation-de-l'Île-Dupas, Saint-Ignace-de-Loyola and Saint-Bathélemy. The municipality of Sainte-Geneviève-de-Berthier is also expected to join our group.

Residents are mobilizing as they prepare to call on you, their members of Parliament, to do something.

I was a member of the National Assembly of Quebec for 10 years, and one thing I know is that big things can be accomplished when the political will is there. Just this past Monday night, people were meeting on this very issue. To some extent, it is their message I am delivering here, in Parliament, today.

You have the ability to make things happen, and you need to use it soon because things aren't getting better. They're getting worse.

Mr. Xavier Barsalou-Duval: Thank you for your answer.

You mentioned towns on the north shore of the river. I assume that's because you live on the north shore, but let's not forget about the places on the south shore, where I'm from. They include Varennes, Verchères, Contrecœur, Sorel, Sainte-Anne-de-Sorel and Sainte-Victoire-de-Sorel.

That brings me to a question on a different topic.

Some of my fellow members are wondering how much of the responsibility for the political will you mentioned falls on the federal government or members of Parliament. I'm talking about the political will to introduce shoreline protection programs or fund projects. The committee heard from witnesses who said that repairing the damage done to a property could cost hundreds of thousands of dollars.

How much responsibility does the federal government bear in terms of the funding needed to restore private properties?

Mr. André Villeneuve: In my view, all of it.

As you know, vessels have been using the St. Lawrence River to transport goods since the 1800s and even before. Human manipulation of the river goes back to 1850 or 1860, and includes dredging, as I mentioned. Clearly, that may not be as serious of a problem. The experts will tell you that.

Dams, reservoirs and booms were built and are still there. Because of the many things humans have done to the river, shoreline erosion is much worse today than in the past.

Here's something I've wondered about, and I'll put the question to you. If, as a community, we've benefited from using the river to transport goods, wouldn't it be appropriate—necessary, even—to consider compensating the people who today are experiencing the negative consequences of that use?

If we can't do that, as a society, we aren't worth our salt.

● (1715)

Mr. Xavier Barsalou-Duval: Thank you, Mr. Villeneuve.

Mr. Chair, how much time do I have left?

The Chair: You have 45 seconds left, Mr. Barsalou-Duval.

Mr. Xavier Barsalou-Duval: Okay.

Mr. Villeneuve, do you have an idea of how many people have rallied together on the issue of shoreline erosion in your area.

Do you have an idea of how many properties were affected?

Mr. André Villeneuve: For all the municipalities together, I don't know.

Where I'm from, as I was saying earlier, there were at least 100 properties. We haven't finished counting yet, but the committee is organizing and we're going to work very hard to put together an inventory of all the properties that might be affected by shoreline erosion.

People are motivated and ready to take action. It's essential for us to find a solution.

Mr. Xavier Barsalou-Duval: So it's only about 100 properties in your municipality, not including properties in other municipalities.

Is that right?

Mr. André Villeneuve: Yes, exactly.

Mr. Xavier Barsalou-Duval: Thank you.

The Chair: Thank you very much, Mr. Barsalou-Duval.

[*English*]

Next we have Mr. Bachrach.

Mr. Bachrach, the floor is yours for six minutes.

Mr. Taylor Bachrach (Skeena—Bulkley Valley, NDP): Thank you very much, Mr. Chair.

Thanks to all of our witnesses.

I will continue with some questions for Mr. Villeneuve before moving on to Mr. Ridal.

Mr. Villeneuve, I was very interested in what you said about going around and assessing how many properties have been affected so far by the erosion.

My question is about your municipality's relationship with the federal government on this topic. Have you reached out to the transport minister and advocated that the department take action on shoreline erosion? If so, could you describe those efforts to advocate with other orders of government?

[*Translation*]

Mr. André Villeneuve: We haven't yet approached the federal government. The movement is brand new. Well, relatively new. In 2018-2019, before I was elected mayor, people had got together, circulated petitions, and a movement took shape. When the pandemic hit, things came to a halt.

However, I have taken note of your proposal and we will certainly approach the federal government. It's a very good suggestion. Whatever we do would, I imagine, be added to action taken by all the other municipalities that have been experiencing serious impacts because of shoreline erosion.

[*English*]

Mr. Taylor Bachrach: Following up on that, we've heard at this committee about how vital the St. Lawrence is to Canada's economy and to the supply chain.

I wonder if the federal government consults municipalities when there are significant increases in shipping traffic related to economic growth or the opening of different shipping routes.

Have you been consulted on that at the municipal level? Have you had any interactions with the federal government on that?

[*Translation*]

Mr. André Villeneuve: The municipality has not been consulted a tall, at least not to my knowledge. No, there were no consultation requests.

I was the mayor for nine years and never heard about any consultation requests from the federal government with respect to marine transport on the St. Lawrence River. It's a good idea. I'm in agreement with it. Why not?

[*English*]

Mr. Taylor Bachrach: Maybe we can work together, then.

[*Translation*]

Mr. André Villeneuve: That's entirely possible. So let's talk. We need to speak to one another if we're going to get anything done.

[*English*]

Mr. Taylor Bachrach: I will turn to Mr. Ridal for a couple of questions.

I was interested in what you said about your research study being supported by the Mohawks. It would be nice to have them here as a witness to share their perspective on this issue.

In your conversations with them, have they conveyed concern about this issue? Could you share with the committee any information on the indigenous context?

Dr. Jeff Ridal: That is a really interesting aspect of this question in the context, geographically, of where we live.

As we move through Lake St. Francis between the Moses-Saunders dam and Montreal at Beauharnois, the islands in there are all part of the territory of the Mohawk of Akwesasne. They're quite exposed to the shipping traffic as it moves through that section of the river. There are a number of different islands that are particularly vulnerable. One that I mentioned already is Yellow Island. There's sort of a layer of sand that forms part of the basis of that island and, as you can imagine, it is very prone to erosion. The concerns are quite high with respect to erosion on the properties in the islands along that portion.

In terms of the support that's provided, one of the members of our study group is Mohawk and has provided access through to one of our sites, which is an island. Dr. Rennie can speak to it directly in terms of the work being done there. We're quite interested in that impact.

They are also quite interested in the potential impact where there is active erosion and the downstream transport of sediments may be fouling, for the lack of a better word, the habitat downstream. The native fish population might be then impacted in terms of spawning grounds or habitat. These are all concerns that we've had with our partners at Akwesasne.

● (1720)

Mr. Taylor Bachrach: I'll turn to Mr. Rennie to ask a few questions about te research. I have quite a few of them here.

I'm keen to know whether there's any indication that biological factors are exacerbating the problem of shoreline erosion. Is that something that's within the scope of your research? Do you have any comments on that?

Dr. Colin Rennie: When you say “biological factors”, do you mean shoreline vegetation?

Mr. Taylor Bachrach: Yes. That's one that comes to mind, or animals and wildlife that use the shoreline. Is this a factor?

Dr. Colin Rennie: In general, in my opinion, shoreline vegetation does actually inhibit erosion. It's generally good to have shoreline vegetation. Rooted vegetation, in particular, can help hold the soil together.

There have been quite a few studies elsewhere of animals burrowing into the banks—birds, muskrats or whatever. There was one study on crayfish. They showed that can actually change the erodibility of the soil. I'm not studying that here, but it is a factor in some places.

Certainly shoreline vegetation is very important.

The Chair: Thank you very much, Mr. Bachrach.

Next we have Mr. Strahl.

Mr. Strahl, the floor is yours. You have five minutes.

Mr. Mark Strahl (Chilliwack—Hope, CPC): Thank you very much.

It's good to hear from you all.

I bring greetings to Mr. Ridal and Mr. Rennie from Eric Duncan, who wishes he could have been here today. He asked if I could ask a couple of questions.

It's clear you have worked together on some of this research. I believe there was some federal funding and that Fisheries and Oceans had contributed some money.

When those grants for research funding were given, was there also an indication at that time that the government would be following up on those recommendations, or is it simply information that they will receive and do with what they will? Did you get a commitment that there would be a government response and an action plan that would come out of the research that you presented to them?

Dr. Colin Rennie: Perhaps Jeff should take that one.

Dr. Jeff Ridal: I was going to get started anyway.

Through you, Mr. Chair, there's no action plan or guarantee that the results of our study will be implemented.

However—and I would say that we were actually kind of surprised initially by this—we were actually contacted by the unit at DFO that is responsible for assessing shoreline habitat. At that time, it was just to express their great interest in our study with respect to some of their decision-making processes with respect to assessing those impacts. It was to recognize that in their view—at least in the way that I recall the conversation—there was a lack of information with respect to the effects of erosion where that is happening and the effects of it downstream.

There's no promise of a program to institute the recommendations, but definitely I think the Department of Fisheries and Oceans is considered to be interested in the results.

Mr. Mark Strahl: Thank you.

Mr. Bryant, I was interested to hear you indicate in your testimony that there are numerous factors that impact erosion in the areas that you are looking out for.

I haven't heard anyone talk about wanting to eliminate shipping in these areas. Obviously, we're the transport committee, so we're looking primarily at the impacts of commercial shipping on erosion. In your opinion, what more can be done? If speed restrictions are already in place, are we talking about further speed reductions? Are we talking about eliminating shipping from some of these areas where speed reduction doesn't have a significant impact?

I'm trying to, from a transport perspective, understand what your recommendation would be regarding shipping in order to have an impact on reducing erosion. Do there need to be further speed reductions or do we need to see investments in shoreline protection that will reduce shoreline erosion by numerous factors, including water levels, wind-driven waves and all of that?

Is it the speed of the vessels, or do we need to look at this more comprehensively in terms of protecting the shoreline from all factors that contribute to erosion?

● (1725)

Mr. James Bryant: Through you, Mr. Chair, to the member's question, my expertise does not lie in shipping. However, as I mentioned, we have different circumstances within our area, depending on where that shipping and that vessel is, whether it's through Lake Erie or through a narrower portion of the Detroit River.

With that, I think it's important and extremely beneficial that we look at all of the factors associated with this, and as a result of that comment, I think it's prudent that we conduct a proper study to understand the full impacts of these types of situations in our specific area—at least at a minimum.

Mr. Mark Strahl: Maybe I would, with my limited time left, ask Mr. Rennie or Mr. Ridal that same question. Obviously we addressed this in your testimony, but as we look to recommendations here, are we looking to protecting the shoreline or are we looking more to eliminating or changing the heights of wakes? Do we need to just address wakes, or do we need to focus our primary attention on general shoreline protection?

Dr. Colin Rennie: Perhaps I'll start.

As I said, it's a bit premature, because we're only in year one of this particular study, but I think it has to be a combination of both. As I said, the size of the wave depends on the speed and size of the ship, and also the distance from shore, along with all the other factors.

If ships can be regulated or encourage to move at certain speeds and distances that reduce the wave height, that makes sense to me, but I think also shorelines along rivers in general need some kind of stabilization if they're already eroding. Ideally it would be in a way that allows some naturalization so that natural river processes of sediment transport can continue—

The Chair: Thank you very much, Professor—

Dr. Colin Rennie: I know it's hard for academics to do it in 30 seconds.

The Chair: Next we have Mr. Iacono.

Mr. Iacono, the floor is yours. You have five minutes.

[*Translation*]

Mr. Angelo Iacono (Alfred-Pellan, Lib.): Good evening to all the witnesses.

Thank you for being with us this evening.

My first question is for Professor Rennie.

Mr. Rennie, are you aware of any initiatives, whether in Canada or abroad that have succeeded in reducing shoreline erosion.

If so, can you tell us more about it?

[*English*]

Dr. Colin Rennie: I'm more familiar with the studies that have tried to assess whether ships are inducing erosion. I have to admit I'm a little less familiar with all the regulatory aspects, so I think I will have to defer on that one, but I will say it's a topic of great interest in Germany, the Netherlands and the United States. There are studies on the Savannah River in Georgia. The national research institute in Germany has set up its own lab to study this issue. Certainly it's a topic of concern all over the world.

● (1730)

[*Translation*]

Mr. Angelo Iacono: Mr. Villeneuve, apart from shoreline erosion, how is climate change affecting levels in Canada's navigable waterways and how might this affect shipping in years to come?

Mr. André Villeneuve: I'd like to be able to answer your question, but unfortunately, I'm not an expert in that area.

One thing is clear, however. The forecasts for water levels in oceans and waterways in general are not promising.

Apart from that, I'll leave it to the experts to answer your question.

Mr. Angelo Iacono: Although you don't consider yourself an expert in that field, Mr. Villeneuve, I can say that you're certainly well-informed about it.

Mr. André Villeneuve: Is that a comment or a question?

Mr. Angelo Iacono: It's a comment, or rather a compliment.

Thank you, Mr. Mayor.

Mr. Rennie, what recommendations should the committee make to the Government of Canada on these issues?

[*English*]

Dr. Colin Rennie: That's a very broad question. I think I've already answered that it makes some sense to me that there be at least some assessment of the speeds ships can travel to have reasonable-sized wakes in particular locations. It's very site-specific. I think speed limits at different locations need to be understood.

I'm not sure I'm the right person to give the answer as to who should be paying for all of this. That's probably for the committee members to answer.

[*Translation*]

Mr. Angelo Iacono: Thank you, Mr. Rennie.

[*English*]

Mr. Ridal, Quebec has a marine strategy that sees increased shipping, cruise ships and ferry service moving more people and goods around the province and the world. Are there any recommendations for the Quebec government's marine strategy to address the impacts of increased boat wakes on the shoreline?

Dr. Jeff Ridal: Mr. Chair, if I understand the question, it's in terms of just the general recommendations with this increased traffic.

My response would be along the lines of what has been discussed in terms of understanding that this is a complex problem that requires multiple angles to address. Yes, perhaps partnerships as suggested with municipalities and other tiers of government are needed to work together to identify possible solutions, including shoreline stabilization. My thought is that the federal government can show leadership in this issue.

Mr. Angelo Iacono: Mr. Ridal, as we move to reduce the amount of carbon in our transportation network in shipping goods, etc., what recommendations could you make to protect our shoreline from damage while using low-carbon transport such as shipping?

Dr. Jeff Ridal: The way I interpret it is that it's still the question of how to best manage the existing seaway, even with the commercial ships that are at hand. There are multiple approaches to the solution, including engaging the shipping industry with respect to the design and the operation of those ships to reduce the waves, as well as having the communication strategy.

[*Translation*]

Mr. Angelo Iacono: Thank you, Mr. Ridal.

Mr. Villeneuve, I have a final question to ask you.

The Chair: Unfortunately, Mr. Iacono, your speaking time is up.

Thank you, gentlemen.

Mr. Barsalou-Duval, you have the floor for two and a half minutes.

Mr. Xavier Barsalou-Duval: Thank you, Mr. Chair.

My next questions will be for either Mr. Rennie or Mr. Ridal, by which I mean whichever is in the best position to answer based on their scientific expertise.

My first question is really more of a comment.

Several people, including you, I believe, have emphasized that it can sometimes be difficult to quantify the potential impact of shipping, owing to a variety of factors. For example, there is the nature of the soil, the width and depth of the waterways, the distance between ship and shore, and so on. That's why it's difficult to quantify the impacts of commercial shipping.

On the one hand, I'd like to know current scientific opinion about the status of things.

On the other, have comparative studies been conducted on natural shorelines or shorelines close to navigable commercial waterways compared to other shoreline sections that do not have navigable shipping lanes? That would enable us to have comparable data.

Have such studies been conducted in the past to compare locations where there is a navigable waterway to others where there is not?

This kind of data would show whether there are significant long-term impacts.

● (1735)

[*English*]

Dr. Colin Rennie: I'll start and Dr. Ridal can follow.

I can reference one study for the Savannah River in Georgia. There's an island, and the ship channel is on one side of the island. They set up a study to see what the wave height was on the other side of the island as well as on the exposed side. Interestingly, due to this wave drawdown and surge phenomenon, it was actually observed on the other side of the island as well. It was not to the same magnitude. The point is that in a given situation such as downstream Montreal, there's one side exposed, but there could be effects even on the other side of the island from the shipping.

Now, again, I am not ready to say that in my study shipping is the cause of erosion—it's premature for me to say that in this particular study—but I think it has been observed in other places.

[*Translation*]

Mr. Xavier Barsalou-Duval: Thank you.

Have there been studies to quantify or measure the strength of a wave produced by a commercial ship compared to pleasure craft?

I know that there have been studies on waves created by pleasure craft. They found that a wave could be up to 300 metres wide and four metres deep before subsiding.

What about commercial ships?

[*English*]

Dr. Colin Rennie: Yes, you're absolutely right that some pleasure craft—wakeboard boats, actually—create quite large waves. It's because they displace quite a lot of water. It's done on purpose to make a wave for surfing.

The difference is this drawdown and long-period surge wave that large container ships create. Pleasure craft don't have the same displacement to draw water to themselves in the same way.

Yes, pleasure craft can cause erosive waves, absolutely, but they don't have that drawdown and surge wave.

The Chair: Thank you very much, Professor Rennie.

Next we have Mr. Bachrach. The floor is yours. You have two and a half minutes.

Mr. Taylor Bachrach: Thank you, Mr. Chair.

Dr. Rennie, has your work included any assessment on the efficacy of the voluntary speed limit reductions?

Dr. Colin Rennie: No, not directly. We'd have to get to the numerical modelling part to be able to do that, because we're only studying what's happening right now.

Mr. Taylor Bachrach: Through your research, have you come into contact with any agencies or parties that are monitoring compliance with the voluntary speed limit reductions? We've heard from other witnesses that they feel that the ships aren't obeying the voluntary reductions at night.

Dr. Colin Rennie: I know that Dr. Ridal has been communicating about this, so I'll ask him to answer this question.

Mr. Taylor Bachrach: Fabulous.

Dr. Jeff Ridal: Thank you.

Through you, Mr. Chair, that was a question in preparation for this meeting that I posed to our partners at the St. Lawrence Seaway Management Corporation. They know at all times what the speeds are of ships transiting the seaway. In fact, they measure compliance with respect to the speed reduction zones. I believe the compliance is considered to be pretty high.

However, one thing I found interesting is that measuring compliance is not like how we would measure compliance in a car going from 100 kilometres an hour down to 80 kilometres an hour. There are many different factors involved, and they're fairly sophisticated, including knowledge of the type of ship, the vessel, the design, the characteristics of the ship, the load and the environmental factors at play.

The other side of the coin is that the ship has a minimum speed at which it must transport in order to be safe. My understanding is that this is communication that is best decided by the captain of the vessel, but there is active communication—that is the way I understand it—between the seaway corporation and the captain with respect to these speed reduction zones.

It sounds to me that there is a commitment to ensure that these speed reductions are occurring in the reduction zones. I would like to have more information, because it sounds quite complex.

● (1740)

The Chair: Thank you very much, Mr. Ridal.

Thank you very much, Mr. Bachrach.

Next we have Dr. Lewis. The floor is yours. You have five minutes.

Ms. Leslyn Lewis (Haldimand—Norfolk, CPC): Thank you, Chair.

I'd like to thank all the witnesses. This is a very important topic. I live on a shoreline, and this past summer we had to fortify our banks, so I know how important this issue is to homeowners especially.

My first question is for Mr. Villeneuve. I'd like to know the composition of private versus business versus government ownership along the shorelines.

[*Translation*]

Mr. André Villeneuve: They are mainly residents along the coast. Approximately 98% of the 368 properties are owned by residents.

In passing, in order to do something about a coastline, it's a real battle to acquire all the authorizations and related funds. How did things turn out for you in terms of fortifying the banks.

[*English*]

Ms. Leslyn Lewis: Yes, but I was not on a cliff. That's the difference. In the pictures you showed me, many of the homes were on a cliff, and I know that has a completely different expense level and requirement.

Could you give us an average of what the average cost...? I know that it would depend on the size, the width and also the depth of the cliff. For the average cost that you're hearing from the residents, what would that be?

[*Translation*]

Mr. André Villeneuve: Each case is different, at you're right to point out that there's a cliff.

At that location, the sand depth is approximately eight metres. Depending on the water level, it can be as deep as 10 metres.

The soil along the coast is not the same everywhere. To the east, the soil is less sandy and more like clay. To the centre and west of the village, the coast is indeed much more sandy, and hence very friable.

I know that some people obtained information about how much the work would cost, and it was extremely expensive. Talking about cost is one thing, but having to obtain all the required authorizations before beginning the work is an issue that needs attention.

[*English*]

Ms. Leslyn Lewis: It's not just putting rocks there to fortify it. You would probably have to put in some sort of cement type of bank in order to protect from the erosion. Is that what you're looking at for those high cliff properties?

[*Translation*]

Mr. André Villeneuve: I'm not an expert, but I know that before 1997, the program in force at the time allowed people to cut a key into the base of the cliff before introducing enormous rocks into the opening. After that they would pile up stones under a particular angle. As you can see in the photographs I showed earlier, it was done with concrete walls at the time. In one of the photographs, the wall dates back to the late 1950s.

Expertise is essential. Every case is different and the solution or approach may also be different. Sound expertise is therefore required in this area if something is to be built to last for the long term, but perhaps not necessarily permanently.

[*English*]

Ms. Leslyn Lewis: The Minister of Fisheries said that it's not the responsibility of the government, but I notice that there was a St. Lawrence Seaway program from 1959 until 1997. Do you have any information about why this program stopped and why all of a sudden it is no longer the government's responsibility?

● (1745)

[*Translation*]

Mr. André Villeneuve: That a program had been established at the time is a bit of a tacit admission.

As the committee members will see, experts are more or less unanimous that there is currently significant shoreline erosion. The fact that the water level was increased and maintained artificially will definitely lead to erosion. What we need to know is how much shoreline erosion there will be as a result.

I think the program was terminated when budgetary belt-tightening was required. I believe that Mr. Chrétien was the prime minister at the time.

I think people are just putting things off. Eventually, something will have to be done. It's going to be extremely expensive, because damage caused by shoreline erosion is even worse today.

The Chair: Thank you very much, Mr. Villeneuve.

[*English*]

Thank you very much, Dr. Lewis.

Next we have Mr. Badawey. Mr. Badawey, the floor is yours. You have five minutes.

Mr. Vance Badawey: Thank you, Mr. Chair.

I'll start off by saying this. All the testimony that you folks give goes to those analysts over there, and that is the basis of the report we're going to be entertaining and the response that the minister is going to be considering, so it's very important that you don't hold back on anything you have. If there is any additional information that you folks may have to send in to us, by all means, I encourage you to do that, because, once again, it gets added into the testimony and the response we're expecting from the minister.

With that, I want to concentrate on Mr. Villeneuve, because I was once the mayor of a city on a lake and experienced some of the same challenges that you're experiencing. That's the reason I got involved in the Great Lakes cities initiative. I'm not sure if you're involved in that initiative, but I know some of your neighbours are, especially to the north in Trois-Rivières. I can sympathize with what you're going through, because you're in a narrow part of the river. Being in a narrow part of the river, Mr. Mayor, can pose some challenges, especially with respect to the wakes that are coming off the ships that are travelling in transit in that area.

I guess, as a first comment, that you may want to get involved with the Great Lakes cities initiative. They're tackling some of these issues with us, the federal government.

What are some of those strategies that we're putting in place—not just the federal government, by the way, but the provincial level of government and municipalities, as well on the American side with their federal level of government, their states and their municipalities?

We can look at, for example, a report that I brought forward to our team here on this side of the table with respect to the Great Lakes restoration initiative. That's something that the U.S. is currently doing that we want to embark on. It's an initiative that I'm trying to get off the ground with our cabinet. It also dovetails or aligns with the Great Lakes St. Lawrence action plan 2020-2030 that identifies a lot of recommendations about shoreline erosion and other issues having to do with the Great Lakes.

With that as well, we have embarked on many other initiatives through the doubling of the gas tax. Of course, it's now called the Canada community-building fund, the investing in Canada plan, the green infrastructure fund and others that the Federation of Canadian Municipalities is somewhat the steward of. Municipalities can apply for them to take on some of these strategies that we're working on.

Frankly, the myth that the federal government isn't doing anything is wrong. We are moving the ball down the field. I guess it would be subjective as to how fast that ball is getting down the field, but we are trying. We're working with our partners, as I just mentioned.

I guess my question is this, and I'm going to open it right up to all of you, including you, Mr. Mayor, because you're the one who has the rubber on the pavement. You're the one who's feeling the hit on this from your residents, and I respect that: How can we ensure that municipal governments can direct more funding towards shorelines and erosion projects?

I know that's a loaded question, because you're dealing with so much at this time of the year when you're entering into your budget process on both the operating and capital sides. I get that, but I want to open up that question. What can we do with you in terms of strategy and financing to help you supplement what you may already be doing?

A second question is this: What support and resources may be available, for example, from the provinces, Quebec, and of course other levels of government such as your own level that may be available to you that we can also work with to try to help you?

[*Translation*]

Mr. André Villeneuve: It's true that the federal government hasn't been entirely idle. However, the question is whether it can do more. The answer will depend on what is said here in this room. Yes, it can do more, and in my view, it has to do more.

But the solution is not a simple one. The municipality of Lanoraie and all the municipalities along the St. Lawrence River are affected to some degree. Upstream from the Sorel Islands all the way to Montreal—and probably even farther, but I'll restrict myself myself to this section because I know it somewhat better—it's really urgent to act right now.

It would have to begin with a description of each property, the way it's done when road have to be widened. A technical record is prepared on each property, to determine the location of the cottage, the house, the post, the tree and so on. On the basis of the information gathered, an accurate picture of the situation for each property is obtained.

Then, of course, an assessment of the work required to stabilize the soil is needed. Allow me to repeat that I'm not an expert here, but I know that there is a lengthy process to follow and that it needs to start soon.

The federal government had established a program prior to 1997. I would say to federal government MPs that a program like this needs to be introduced quickly. The best approach would be to immediately, together, agree on what measures should be taken.

What I'm telling you then, is simply that something has to be done soon.

● (1750)

[*English*]

Mr. Vance Badawey: Thank you, Mr. Mayor, and I am going to pass on some information to you after the meeting—if I may, Mr. Chair—to get you involved in this process so that we can do exactly what you actually expect us to do and you can get involved with some of the strategies we're moving forward with.

Thank you, Mr. Chairman.

The Chair: Thank you very much, Mr. Badawey.

Next we have Mr. Maguire. Mr. Maguire, it's good to see you joining us today. The floor is yours. You have five minutes.

Mr. Larry Maguire (Brandon—Souris, CPC): Thank you, Mr. Chair.

It is a pleasure to hear the witnesses in regard to this issue.

I have some questions for Mr. Bryant and also for Mr. Rennie.

Mr. Rennie, I come from an area of Manitoba that's basically at the confluence of the Assiniboine and Red Rivers in Winnipeg, at The Forks. There hasn't been any navigable freight on the Assiniboine River since the steamships in the early 1900s, but there has been erosion of the riverbanks, and mainly it comes from flooding, from higher and lower levels. There are no real wakes or waves in that regard.

I'm wondering about this. Obviously, the narrowness of a river makes a difference. In the wider area up by Gaspé, and on this sort of thing on the St. Lawrence particularly, it probably isn't as big a problem in regard to the types of erosion we're looking at. Could I just get you to comment on that? You mentioned that you weren't sure, from the studies that have been done, that this was causing the erosion.

Dr. Colin Rennie: With our particular study, we just haven't collected or analyzed all the data yet. Only after we've been able to finish the study will I hopefully be able to distinguish the erosion due to regular river currents versus ship wake versus wind waves.

I agree. Rivers erode naturally. I define a river as something that moves water and sediment, so it is part of the natural function of the river to move sediment. The question in this case is whether ship wake is increasing the rate of that erosion.

Mr. Larry Maguire: It doesn't matter whether it's the St. Lawrence, the Assiniboine or the Red. From my understanding, that volume of water moving through a narrower channel in the river is more susceptible to causing that erosion.

Dr. Colin Rennie: That's right. That's why we tend to get more erosion during floods in spring.

Mr. Larry Maguire: Yes, for sure. Thank you.

Mr. Bryant, on your involvement with a conservation authority, I had some work with that in my days as conservation critic back in Manitoba.

My former colleague, Robert Sopuck, was instrumental in setting up a recreational fisheries conservation partnerships program. That program wasn't continued in 2015 when the government changed, but the program was a success in terms of using small funding grants for local projects. A lot of them were highlighted by the fact that the organization could fund part of that project with in-kind donations, so they were very involved in it. Also, because they were local, they knew more about what needed to be done—such as Mr. Villeneuve today, with his local responses and his needs as well.

Do you think the federal government could restart that program to establish something similar for organizations to be able to access funds for these projects to prevent some of the erosion? Would that be a benefit?

● (1755)

Mr. James Bryant: Thank you for the question.

I can't comment on the past study. I'm not familiar with that from 2015. It does predate my days at the conservation authority.

I would say just in general that our conservation authority, in partnership with the municipalities, always tries in partnership to reach out and grab as much funding as possible, whether it's through in-kind services or cash in hand, to do any types of these studies, whether it's erosion or flooding. If there is something available, we're certainly going to be reaching out, and if we're eligible, that's fantastic.

To that point, I know that locally there have been significant investments in projects related to flooding. Local investment probably totals up to $500,000 in matching funds, specifically related just to flooding. It's tough to get those matching cash values locally, so the more cash that's out there from the federal government or other grants, the better. It helps the municipalities with this issue.

Mr. Larry Maguire: Yes. I think a lot of the smaller organizations don't have the capacity to apply for these large grants, but because of their proximity to the knowledge locally, these watershed management services, recreational fishing organizations, agricultural groups and even municipalities have some of the best ideas and solutions for the soil erosion. If the federal government can ensure funding is available for these smaller erosion projects that local groups can tap into, I'm just wondering if you think that would be a benefit.

Mr. James Bryant: I apologize; I missed the start of that question. There was a slight audio cut-off.

If the question is whether we could take advantage of accessing funds and grants, then yes, we would love to be able to take advantage of that.

Mr. Larry Maguire: I'm not suggesting that—

The Chair: Thank you, Mr. Maguire. Unfortunately, there's no time left.

Thank you very much, Mr. Bryant.

Next we have Mr. Chahal. Mr. Chahal, the floor is yours. You have five minutes.

Mr. George Chahal (Calgary Skyview, Lib.): Thank you, Chair.

Thank you to all the witnesses for joining us today.

I'll start off with Mayor Villeneuve.

I think my colleague, Mr. Badawey, had gone down the line of questioning that I'll start on, but before I do that, I would like to know something.

You've spoken a bit about the properties that are impacted. Have you done, in your municipality, a full review of the properties and the areas that are impacted and assessments of them, and also public consultations of the areas that are impacted and what the thoughts of your residents are on what they would like done? I'd like to know what public consultations you've done on this issue.

[*Translation*]

Mr. André Villeneuve: My first step was to personally send a letter to the owners of the 368 properties. It contained a series of questions designed to better understand what these people were experiencing. My first question was whether they thought there was erosion on their property.

As I said earlier, I was elected last year. The process is in place now. A committee has just been created, and I think it is entitled to autonomy. It's probably going to move in that direction, in other words, do a characterization of each property.

However, how much value does a characterization of a property done by its owner have? The necessary investments will need to be made to get expert advice and ensure that the process is more objective and credible. Let's get this right. That's more or less what I was telling my constituents as recently as Monday night. In short, we have just started the process.

It's important to remember that the program was cut in 1997. I was mayor from 1999 to 2008 and, during those years, people were asking us about shoreline erosion. I must point out that the situation wasn't what it is today. People are now seeing that the danger is at their door, or at their shoreline.

[*English*]

Mr. George Chahal: You haven't at this point explored assessment firms to do further analysis specifically on some of those properties to understand the possible extent of further erosion or damage that could occur or remediation that may be required.

● (1800)

[*Translation*]

Mr. André Villeneuve: As I said earlier, a picture is worth a thousand words. You saw the one I showed you earlier. When I saw that, honestly, I was enormously concerned. I could show you others. This isn't the only photo that shows that the situation has deteriorated, even though work has been done naturally. I wouldn't sit in a chair between the house and the shoreline. I don't advise anyone to do that. There's a real danger. I've been concerned about this situation, which I think is very serious.

Now there's work to be done, and it must be done properly. To do that, though, people need support, and that obviously involves experts who will go into the field to characterize all of this. This work will be done but, as I said, there are emergencies that need to be addressed quickly.

[*English*]

Mr. George Chahal: Thank you for that.

As you were previously an MNA and a mayor previously and now again, what role does the province have specifically in your jurisdiction in intervening and supporting your municipality? I think that's an important part of the relationship, as is the federal relationship. Where I'm from, the city of Calgary, we had a major flood. We've had extensive work done, but it's been a partnership with three levels of government because of jurisdiction.

What role does the province have and what engagement have you had with the provincial governments?

[*Translation*]

Mr. André Villeneuve: It's very clear that all three levels of government need to work together. Earlier, someone said they wanted to talk to me later, after the meeting. We could very well imagine a tripartite partnership or collaboration between the municipalities, the federal government and the Quebec government because there is a question of who is responsible and who should pay for it.

I'd like to come back to the premise from earlier. If, collectively, we've been able to develop our economy in a good way because of the seaway and a percentage of the damage or harm to citizens is due to marine shipping, we must intervene, as a community, to help these people stabilize the shoreline.

That said, I agree that representatives of the three levels of government should sit down together, as long as it's done quickly.

[*English*]

The Chair: Thank you very much, Mr. Chahal.

[*Translation*]

Thank you very much again, Mr. Mayor.

Mr. Barsalou-Duval, you now have the floor for two and a half minutes.

Mr. Xavier Barsalou-Duval: Thank you, Mr. Chair.

I'm going to come back to something I discussed earlier with Mr. Rennie.

I had asked whether, for example, comparative studies had been done on areas frequented by ships and others that aren't, to see what the impact of shipping is.

I did a field experiment, and I want to make it clear that it wasn't a scientific study. I sent a letter to everyone in my riding living along the St. Lawrence River, from Boucherville to Varennes, Verchères and in the parish of Saint-Laurent-du-Fleuve, located in Contrecoeur. I asked them if they should protect their land from erosion. The answers I received from them showed that erosion was mainly present in areas where shipping was allowed. In cases where there was an island between the residence and where the boats pass, there was sometimes erosion, but the number of cases wasn't comparable. Where there was navigation, the erosion problem was widespread.

Mr. Rennie, when will you have data on this?

Do you have any idea when you'll have scientific data on the situation on the ground?

[*English*]

Dr. Colin Rennie: Thank you for the question.

I know you are speaking downstream of Montreal in your case. We're upstream. Again, it is a site-specific phenomenon. It makes sense to look at all the sources. Certainly it has been observed downstream of Montreal that the very large drawdown and surge are significant sources. What you are saying doesn't surprise me, to be honest.

Upstream of Montreal, again, the ship wake is enough to mobilize sediments, so it is reasonable to suppose that it contributes. The question is to what degree.

[*Translation*]

Mr. Xavier Barsalou-Duval: Mr. Villeneuve mentioned earlier that he wouldn't suggest that anyone sit by the shoreline because it's dangerous.

Some residents are afraid to walk on their property because of the formation of holes. They think that they've already walked where there are now holes and that doing so now could kill them.

Mr. Rennie, since you have an engineer background, I'd like to ask you the following question. Waves often dig into the bottom of cliffs, and we don't necessarily see the damage that's done. However, this damage eventually leads to subsidence of the ground.

What kind of protective structure could be used to fight the waves produced by commercial vessels? Some people wonder whether planting trees, for instance, would be enough.

What kind of protective structure do you think we would need?

● (1805)

[*English*]

Dr. Colin Rennie: Thank you for the question.

I know there has been a lot of research in rivers since the nineties and more recently in coastal engineering to try to incorporate natural solutions. The historic method is to basically put in a lot of rock and, in very high-wave environments, to put in interlocking armour stone that will not move. The intent is that it will move as little as possible. There is a recognition that if it moves, it's going to fail.

Second, in some cases, like a vertical wall, it may not have as good a habitat, so there is a movement to try to incorporate more mobile revetments. We have a research project right now on what's called a dynamic revetment of rock that moves to a stable position, but still protects the bank. We'll also possibly incorporate vegetation to stabilize the top of the bank.

The Chair: Thank you very much, Mr. Rennie.

[*Translation*]

Thank you very much, Mr. Barsalou-Duval.

[*English*]

Next we have Mr. Bachrach. The floor is yours. You have two and a half minutes.

Mr. Taylor Bachrach: Thank you, Mr. Chair.

I would like to try to get at this question of who should be leading these solutions when it comes to mitigating bank erosion. It seems like Mr. Rennie's work on ship wakes is going to produce some information that can help mitigate that part of the issue. There's still the stabilization of the bank, both against natural erosion and ship-caused erosion.

At a previous meeting, we heard from witnesses who spoke about the historic engineered structures that were put in place in the sixties and seventies. I understand that this work was funded through a federal program. I'm interested to know if any of our witnesses recall whether that was a federally initiated program or whether it was a municipally initiated program that was funded by the federal government.

Speaking a bit to Mr. Badawey's question earlier about what the federal government can do to support municipalities, maybe the question is more about the information municipalities need to provide the federal government so that they can take responsibility for the riverbank.

Mr. Villeneuve, do you have any comments on that? Is this something you want to see the federal government leading? Have they led in the past?

[*Translation*]

Mr. André Villeneuve: I couldn't give you a specific answer to your question about who started the program and who came up with the idea for a program before 1997. Certainly, there are people who have taken advantage of it and, in some places, the results are good. So that's a good thing.

As for what the municipality can do, I'd say that we are getting organized. That's what we're doing now, with the resources available to us, of course.

Drones were mentioned earlier. At the very least, we could think about using drones to collect images. You could even use data captured every year using LiDAR technology to make comparisons.

All of this requires people who are familiar with the systems. It takes experts in the field.

We're going to start using this technology, but we have to be careful because we're talking about homes that are on the waterfront. This isn't a municipality-wide problem. We have to see how much money the municipality can invest to support these homeowners in terms of doing the characterization of each property.

We want to get things moving a little bit anyway, but we'll definitely need more support than what we have currently.

The Chair: Thank you very much, Mr. Mayor.

[*English*]

Thank you very much, Mr. Bachrach.

Next we have Mr. Lewis. You have five minutes. The floor is yours.

Mr. Chris Lewis: Thank you very much, Mr. Chair.

Again, thanks to all the witnesses. I certainly appreciate your testimony this evening.

Mr. Chair, I had mentioned about Essex being somewhat of an island. I don't retract that statement, because we basically are, but there are also a lot of islands that surround us. We have Pelee Island out in the middle of Lake Erie very close to Sandusky, Ohio. We have what we call Boblo Island. It used to be a great amusement park. We have Grosse Ile in the United States. We have Crystal Island, Fighting Island, Belle Isle, Peche Island, Turkey Island and the list goes on and on.

Something that hasn't come up in this testimony yet is Line 5. Because of transport, I think it's important to bring up the impact that more freight would bring to the shoreline. For those who aren't aware of Line 5, of course it brings our natural resources under the Mackinac Bridge to Sarnia. It delivers really important oil to the rest of Canada as well as to the United States.

My question, through you, Mr. Chair, is for Mr. Bryant.

I don't expect you to be an expert on Line 5, of course, but would it not make sense that both the Canadian government and the U.S. government—the governor of Michigan and our premier of Ontario—should come to a resolution on Line 5 sooner than later to stop erosion on our rivers so that it's not barges bringing our oil in but Line 5, which is completely encapsulated in concrete so there can be no leaks? Does that not make sense?

I would imagine that every time a freighter goes up and down the Detroit River or through Lake St. Clair, it's another pound of erosion from our seashore.

Does that make sense, sir?

● (1810)

Mr. James Bryant: Thank you for the question.

Again, I'm not an expert in the shipping components, but I think it's safe to say that there is certainly an impact when a ship goes through, the extent of which depends on a number of factors. A lot of those factors were discussed by a lot of the different witnesses here today. There could be an impact. There likely is an impact, but various factors affect the extent of it.

Mr. Chris Lewis: Thank you, Mr. Bryant.

Mr. Rennie, I really am intrigued by your study. I'm going to dive into it more because I would really love to understand what your study entails.

Do you work with the likes of ERCA and Mr. Bryant? Do you work with the likes of IJC on your study? If you have or you haven't, could you comment on that please, sir?

Dr. Colin Rennie: Thank you for the question.

Yes, in fact, two conservation authorities are part of the study. Their involvement is basically an interest in understanding the wave energy effect on the shoreline so that they can come up with proposed methods of shoreline stabilization.

Mr. Chris Lewis: Thank you.

I'll go back, through you, Mr. Chair, to Mr. Rennie.

Have you worked with the IJC on this? Has it been a critical partner?

Dr. Colin Rennie: On this particular study, no, but maybe Dr. Ridal now has a bit more information on his interactions with IJC with respect to the St. Lawrence.

Dr. Jeff Ridal: Yes, we partner with the IJC quite a bit through a variety of different projects, particularly on water level regulation and with respect to the ecological impacts on water level fluctuations. There is a tie-in among these water level fluctuations, obviously, with the issue of erosion and potentially the interaction between water levels and commercial ships' waves, among other factors. These interactions are, I think, some of the subtle and interesting results that hopefully we can tease out, so—

Mr. Chris Lewis: Thank you. I'm sorry, Mr. Ridal—good job.

I have 20 seconds left.

Do you work with the U.S. Army Corps of Engineers as well?

Dr. Jeff Ridal: Not directly, but we have had conversations with them.

Mr. Chris Lewis: Thank you, Mr. Chair. I appreciate it.

The Chair: Thank you very much, Mr. Lewis.

Finally, for today, we have Mr. Rogers.

Mr. Rogers, the floor is yours. You have five minutes.

Mr. Churence Rogers (Bonavista—Burin—Trinity, Lib.): Thank you, Chair.

I want to say welcome to our guests. It's very interesting, actually, listening to all the testimony about the issues you're facing. I can appreciate the challenge you have of trying to mitigate the shoreline erosion.

Mr. Rennie, you mentioned site-specific areas. I've heard witnesses talk about many kilometres of coastline. Given the entire coastline that we're talking about here, how much coastline are we talking about? How much of it needs to be mitigated to prevent future erosion?

● (1815)

Dr. Colin Rennie: I think I would have to do a little bit more research to answer that question. I know my colleagues at Laval have been looking at the river using GIS analysis and geomorphology and have assessed that aspect to some extent.

Dr. Ridal and I have also been talking about this question. I think it's many kilometres, but I won't give a number right now.

Mr. Churence Rogers: To follow up on that, you just mentioned a couple of things that are being done in terms of studies. I was wondering how many technical studies have been done in a great amount of detail to suggest what might be the best solutions. Are you aware of studies other than what's happening at Laval, for example?

Dr. Colin Rennie: Again, thank you.

I know the National Research Council currently has a very big initiative to study nature-based solutions for coastal protection. I don't know if it relates to the fact that this committee was struck. It's possible. I have colleagues, and I'm in fact involved in some projects related to that. It's a very strong research initiative in Canada through the NRC—and, in fact, throughout the world right now—to look at nature-based solutions for shoreline protection.

Mr. Churence Rogers: Given the role that technology plays in our society today in almost every sector, are there technology upgrades being reviewed that might help mitigate the impact of commercial vehicles on the shoreline erosion? Have you talked to anybody with expertise in that field?

Dr. Colin Rennie: I think Mayor Villeneuve already mentioned LiDAR surveys. It's now possible to measure shoreline dimensions at very high resolution through very large domains. That wasn't possible when the seaway was built. I think there's a chance for using those technologies to look at bank recession rates. It can actually even be done through green LiDAR to look at the bathymetry as well. I think we can have a better understanding of shoreline erosion, given these new technologies.

Mr. Churence Rogers: It's obvious that a lot of this work has been talked about for many years. There are a lot of people with expertise reviewing this work.

I have a question for Mr. Mayor. To your knowledge, what kind of coordination is taking place among different levels of government to address shoreline erosion? What about between governments and industry? Is there anything happening among these different levels and different players?

[*Translation*]

Mr. André Villeneuve: As far as I know, there's no real coordination right now. In fact, I think your committee could help to put in place better coordination.

I don't have any contact with the industry, and I haven't heard from any residents about contact with the industry, but there may have been contact with non-profit organizations that work in the area. Among other things, shoreline stabilization work has been done on one property, but the results aren't conclusive, unfortunately.

There isn't any coordination. The proof is that we're wondering who is doing what. The problem must be addressed. Should we do it in a tripartite way, in coordination? I think that would be a good way to go.

The message I want to send today is that there is danger at our doorstep. We agree that there should be collaboration, but we need to move quickly.

[*English*]

The Chair: Thank you very much, Mr. Rogers. Time is up, good sir.

[*Translation*]

Thank you very much, Mr. Villeneuve.

[*English*]

I'll turn it over to Mr. Badawey.

Before we conclude today, he would like to make one quick comment.

Mr. Vance Badawey: Thank you, Mr. Chairman, for allowing me to do that.

Is this the last meeting for this study?

The Chair: It is indeed.

Mr. Vance Badawey: I want to thank Mr. Barsalou-Duval for bringing this forward, because it's such an important issue. I think Xavier brought it forward, didn't he?

The Chair: Yes.

Mr. Vance Badawey: That was a job well done.

To all the witnesses, some of whom may still be following the proceedings, and to you folks, this is something that we take very seriously. It was one of the reasons we brought forward the Canada water agency and, with that, the freshwater action plan and the blue economy strategy. We're working with the Conservatives as well as the Bloc and the NDP across the floor, because it's a very important issue as it relates to all fresh water, all the Great Lakes, etc., and the St. Lawrence.

Mr. Villeneuve, I emailed you some information with respect the Great Lakes cities initiative and some of the reports that we together have produced and provided to other stakeholders. I encourage you to get involved and I encourage all of you to send as much information to us as possible so that we can move that ball down the field closer to the end zone and hopefully get to a resolution on some of the challenges you're all facing.

Thank you, Mr. Chairman.

● (1820)

The Chair: Thank you, Mr. Badawey.

That concludes the line of questioning for today and for this study.

On behalf of all members of this committee, I want to thank our witnesses for sharing their expertise and their feedback.

With that, this meeting is adjourned.