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# **Standing Committee on Transport, Infrastructure and Communities**

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**EVIDENCE**

**Thursday, February 9, 2017**

—  
**Chair**

**The Honourable Judy A. Sgro**



## Standing Committee on Transport, Infrastructure and Communities

Thursday, February 9, 2017

• (1100)

[English]

**The Chair (Hon. Judy A. Sgro (Humber River—Black Creek, Lib.)):** I am calling to order this meeting of the Standing Committee on Transport, Infrastructure and Communities of the 42nd Parliament.

Our meeting today is to discuss the Canadian infrastructure bank. We're very pleased today that we have joining us, and will give 10 minutes of opening remarks, the Honourable Amarjeet Sohi, the Minister of Infrastructure and Communities.

We have been anxious for some time to get you on our agenda and our schedule, so we're very pleased to welcome you here today. Please be ready for a lot of questions from our members.

I'll turn the floor over to you, Minister Sohi.

**Hon. Amarjeet Sohi (Minister of Infrastructure and Communities):** Good morning, everyone. Thank you so much for inviting me to speak with you.

I have been asked to appear today to speak about the Canada infrastructure bank and the smart cities challenge. This is my second visit to the committee. I'm so honoured to be here.

I also want to talk about what my department is doing to deliver on our government's commitment to invest in Canadian communities.

I'm joined by my DM, Mr. Tremblay; Jeff Moore, ADM for policy and communications; and my parliamentary secretary, Marc Miller, who recently joined the team. Also with me is Glenn Campbell, the executive director for the Canada infrastructure bank transition office.

As you know, in budget 2016 we launched the first phase of our infrastructure plan, and we wasted no time in rolling it out. We signed bilateral agreements with all the provinces and territories and approved over 1,000 projects under the new plan. Based on the information provided to us by our provincial and municipal partners, 60% of those projects are already under way.

That is just the first step. On November 1, the Government of Canada laid out the fiscal framework for our long-term infrastructure plan through the fall economic statement. The plan will invest more than \$180 billion in federal funding, doubling over the next 12 years. These investments will create long-term economic growth; build inclusive, sustainable communities; and support a low-carbon, green economy.

Our plan is focused on five key areas: public transit, green infrastructure, social infrastructure, trade and transportation, and rural and northern communities.

To maximize the benefits of our infrastructure investments, our government is committed to finding new and innovative ways to fund infrastructure and mobilize private capital. As part of our fall economic statement, we announced the creation of the Canada infrastructure bank.

Canada has a very mature market when it comes to infrastructure projects and partnerships with the public and private sectors. Many key pieces of infrastructure, like Edmonton's light rail transit system and the Iqaluit international airport improvement project, were financed in part by the private sector.

We believe there is an opportunity for the federal government to crowd in private sector investment in infrastructure through loans, loan guarantees, and equity participation. The bank will do just that and create more options and opportunities for provinces, territories, and municipalities across the country to undertake large, transformative infrastructure projects.

The bank will invest \$35 billion in new projects across Canada, projects like major public transit systems in larger cities, energy transmission corridors, bridges and ports, and more. Of the \$35 billion planned to capitalize the bank, \$15 billion will be sourced from the announced funding for public transit, green infrastructure, and trade and transportation infrastructure. This \$15 billion is less than 8% of the total infrastructure funds announced in the fall economic statement. An additional \$20 billion in capital will be available to the Canada infrastructure bank for investments, which will result in the bank holding assets in the form of equity or debt. This \$20 billion will therefore not result in a fiscal impact for the government.

The bank will serve as a single federal government point of contact for the private sector and will employ private sector experts to enable the government to invest efficiently with private capital. The bank's funds are over and above the commitment we made to doubling infrastructure funding. More importantly, it offers our funding partners a new way to help meet their pressing infrastructure needs.

•(1105)

By using private capital to build these new projects, public money will be freed to build more public infrastructure. The bank will be a centre of excellence in infrastructure investment by the private sector, providing advice to allow for better planning and procurement decisions.

To be clear, many infrastructure projects will have no need for the bank and we will not impose it on any of our partners, but we will work with willing partners who think this can offer them additional value. The vast majority of the infrastructure funding will still be delivered through the traditional financial contributions to municipalities, through our bilateral agreements or national programs, but the bank is another tool that our partners can use to invest in the infrastructure they need.

As I said, the use of the Canada infrastructure bank is entirely at the discretion of communities. We hope to see engagement and participation from cities from across Canada through the smart cities challenge, which we also announced in the fall economic statement. The challenge is modelled on similar competitions around the world and aims to accelerate the planning and adoption of innovative infrastructure. It will be an opportunity for our communities to innovate, take risks, and think outside the box.

We will invite Canadian communities to develop integrated, innovative, evidence-based solutions to improve the quality of life for residents, ultimately supporting long-term transformative change across Canada. We have seen smart cities challenges launched by countries across the globe, from the U.S. Department of Transportation's smart city challenge to the Nordic Council of Ministers' Nordic built cities challenge.

These smart cities' initiatives illustrate the changing nature of our world and cities, and the opportunity that information technology and innovation can afford us moving forward. Canadian cities face the same mobility, environmental, and social challenges and we must respond with innovative ideas.

As laid out in the fall economic statement, we will be launching this challenge this year but we strongly believe that our cities must be at their absolute best to compete globally, and initiatives like the smart cities challenge will help drive innovation and foster positive change in our communities. Canada's cities are growing at such a rapid rate when it comes to infrastructure investment that the status quo is no longer acceptable. Now is the time to make smart infrastructure investments that will prepare communities for the challenges ahead and allow them to prosper for generations to come.

Our government is making more infrastructure investment than ever before, but more importantly, we are making strategic, targeted, and transformative investments. We are investing in Canadians and in Canada's future.

Thank you so much for having me here.

•(1110)

**The Chair:** Thank you very much, Minister Sohi. That was eight and a half minutes, which gives us a minute and a half more on this side of the table.

We will start immediately with Ms. Watts, for six minutes.

**Ms. Dianne L. Watts (South Surrey—White Rock, CPC):** Great. Thank you very much. I know I'm limited for time so I hope I can keep this concise.

Have you received the list of priorities from the provinces and can you share with this committee the list you've received for phase one and phase two?

**Hon. Amarjeet Sohi:** When we signed the bilateral—

**Ms. Dianne L. Watts:** Yes or no.

I'm tight for time. Can you share that information with the committee?

**Hon. Amarjeet Sohi:** When we signed the bilateral agreements with the provinces and territories, we asked them to provide us with a list of projects they would like us to fund. So for waste water infrastructure—

**Ms. Dianne L. Watts:** Do you have the list, though?

**Hon. Amarjeet Sohi:** Yes, we have received the list from provinces—

**Ms. Dianne L. Watts:** Okay, can you share phases one and two with the committee?

**Hon. Amarjeet Sohi:** Phase two is...if you allow me to explain it to you—

**The Chair:** If you ask a question, the minister must be able to respond.

**Hon. Amarjeet Sohi:** We launched our infrastructure plan in two phases. Phase one was introduced in—

**Ms. Dianne L. Watts:** Yes, I know that.

**Hon. Amarjeet Sohi:** —budget 2016, and phase two is what we are preparing as we plan our long-term plan. For phase one, yes, we have received almost 70% of the list from all provinces and territories for transit—

**Ms. Dianne L. Watts:** I just want to know if you can share it with the committee.

**Hon. Amarjeet Sohi:** I don't have the list with me.

**Ms. Dianne L. Watts:** No, not today—whenever. If you can give it to the committee is all I'm asking.

**Hon. Amarjeet Sohi:** Yes, we will be able to.

**Ms. Dianne L. Watts:** Perfect.

You talked about smart cities and the transportation component of it that you have listed in the budget. It speaks to monies that will be allocated based on ridership. In that context there are a lot of communities that will be left out because they don't have the infrastructure and they won't get the funding allocated, because, of course, it's based on ridership.

I want to talk about Smart21, which has been up and running since 2006. We've had winners of Ottawa, Edmonton, New Westminster, and Montreal in the top seven global cities. I'm proud to say that Surrey was a winner in 2014, 2015, and 2016.

This comes back to my point in terms of smaller cities accessing those dollars for transportation. Will you remove that component out of the budget, that the allocation is based on ridership only?

**Hon. Amarjeet Sohi:** First of all, I'm proud to say that under phase one more communities have received transit funding than ever before under the previous government because we based our allocation on ridership. All the mid-sized communities, smaller communities that have transit systems have received dedicated funding.

**Ms. Dianne L. Watts:** Yes, that have a transit system....

**Hon. Amarjeet Sohi:** There are more than a hundred communities that have transit systems and have all received funding from the federal government, which they have not received in the past, for example, Grande Prairie as well as Fort McMurray. They have received funding from us.

**Ms. Dianne L. Watts:** Okay, so the answer is no. You won't remove that stipulation from the budget.

My next question is this. You talked about the bank and you talked about it being independent from government. If the federal government is actually going to sign off on the debt and cover the loans, will that be included in the budget?

• (1115)

**Mr. Glenn Campbell (Executive Director, Canada Infrastructure Bank Transition Office, Office of Infrastructure of Canada):** Thank you for the question.

The \$15 billion to which the minister referred earlier will be consolidated with the Government of Canada's account. Any liabilities incurred by this arm's length institution will be recorded in the books of the Government of Canada.

**Ms. Dianne L. Watts:** Okay, so all of the loans that they are covering, from the \$35 billion that's being put in there, to any other private.... Anything that the federal government covers in loans is going to be included in the federal budget.

**Mr. Glenn Campbell:** It will be in the federal fiscal framework.

**Ms. Dianne L. Watts:** Okay.

**Mr. Glenn Campbell:** The institution, the entity, will have a \$35-billion balance sheet.

**Ms. Dianne L. Watts:** Yes.

**Mr. Glenn Campbell:** As the minister said, it will have 20 billion dollars' worth of room to do liability asset matching, which will have no impact on the government's fiscal framework. But any loan or any pricing or change in the value of any of its instruments will be recorded in that \$15 billion, and reflected in the Government of Canada accounts.

**Ms. Dianne L. Watts:** Okay. You're only talking about the \$15 billion.

**Mr. Glenn Campbell:** The total amount.

**Ms. Dianne L. Watts:** Okay. Will whatever the amount of the loan that the federal government is covering, regardless of what that figure is, be included in the fiscal framework?

**Mr. Glenn Campbell:** The net position will be included in the fiscal framework. Traditionally, for any investment that the Government of Canada makes, there will be an accounting determination as to the extent to which that is a complete liability asset match or whether there's some form of support that can be priced, and that will be a liability or an obligation on the Government of Canada's books.

**Ms. Dianne L. Watts:** Okay. Perfect. My last question....

**The Chair:** You have 20 seconds, Ms. Watts.

**Ms. Dianne L. Watts:** He's not going to answer in 20 seconds.

**The Chair:** Mr. Iacono.

[Translation]

**Mr. Angelo Iacono (Alfred-Pellan, Lib.):** Thank you, Madam Chair.

Please note that I will be sharing my time with my colleague Ken Hardie.

Good morning, Mr. Minister. Thank you for being with us this morning to answer our questions.

As the member for the riding of Alfred-Pellan, which is part of the City of Laval, in Quebec, and the greater Montreal area, I would be remiss if I did not take the opportunity of your appearance here to stress that Montreal is the ideal city to welcome the Canada Infrastructure Bank.

Because of its high level of expertise, its universities and the presence of the Caisse de dépôt et placement du Québec, which has recently established its CDPQ Infra subsidiary, Montreal has all the assets it needs to become the national centre of excellence in infrastructure and to get the bank up and running in no time.

Could you tell me where you're at with the decision-making process in determining which city will host the Canada Infrastructure Bank?

[English]

**Hon. Amarjeet Sohi:** We are pleased that the infrastructure bank has created interest in various communities and that they want this institute to be located in their cities. We are pleased to see that. We are doing a very objective analysis on what the bank would require and what criteria we should have in making that decision. We are in the process of doing that currently. At this time, we have not made any decision on where the bank is going to be located.

[Translation]

**Mr. Angelo Iacono:** When do you expect to make the decision?

[English]

**Hon. Amarjeet Sohi:** I don't have the timelines, but as you may recall from the fall economic statement, the legislation will be introduced as part of budget 2017, and once we do that, we will be looking at a location for the bank.

[Translation]

**Mr. Angelo Iacono:** Thank you, Mr. Minister.

[English]

**Mr. Ken Hardie (Fleetwood—Port Kells, Lib.):** Thank you.

I will also put a pitch in for a very innovative and bright city called Surrey.

**Ms. Dianne L. Watts:** That we share.

• (1120)

**Mr. Ken Hardie:** There we go.

Minister Sohi, in the past we've seen situations where big programs have been announced with large dollars attached and then something happens and nothing happens. We get lapsed funding returning quietly to the federal treasury, which, in the past, has been used to claim balanced budgets.

Will the infrastructure bank actually prove to be a way to redirect named funding so that the funding actually stays in the stream for which it was intended, thus reducing or redirecting lapsed funding?

**Hon. Amarjeet Sohi:** The \$15 billion allocated from the \$180-billion plan will remain in the bank as we look at projects. Every project is going to look different. For the other funding streams, when we took office, there was close to \$900 million tied to projects for a number of years and this was sitting idle in the federal coffers. We worked very closely with the provinces, and I'm proud to tell you that the vast majority of that funding has been reassigned to different projects and that only \$30 million was transferred to municipalities through the gas tax fund.

As you can appreciate, the infrastructure investments are long term. They take a number of years for the planning to happen, the design work to happen, and then for the construction to start on new projects. Money allocated in year one may not be spent in year one. It's kind of rolled over to year two and year three. That's how the plan works, but we are committed to those projects and the commitments we made will be honoured.

**Mr. Ken Hardie:** It's been said that the money that's been allocated so far has been very slow in rolling out. I'm going to make an observation. You can simply confirm it's true or not. That is, normally the federal government's allocation is spent toward the end of the project's term, not necessarily at the beginning. If somebody is looking at the money that hasn't gone out but has been allocated, this is simply a function of how we actually end up making that contribution to the project.

**Hon. Amarjeet Sohi:** One change we have made is that we do not announce projects until we have approved the projects. This is different from the past practice. In the past, the projects would be announced, then we would receive the applications, then we would review them, and finally we would approve them. We have reversed that process.

You're absolutely right, though. Each province gives us their invoices at different times and each municipality follows a different schedule when they give us the invoices. Sometimes we wouldn't receive the invoices until the project was completed; sometimes we would receive them in the middle of the construction period. The money is there. The money is allocated and committed to that project. It's just a matter of when we actually transfer that money over to our project partners.

I don't know if the DM would want to elaborate on that.

**The Chair:** Thank you very much. The time is up.

Maybe you can try to get some of those answers in with other people's questions.

Mr. Aubin.

[Translation]

**Mr. Robert Aubin (Trois-Rivières, NDP):** Thank you, Madam Chair.

My thanks to the minister for being here with us today.

Since six minutes pass by quickly, I will start right away.

My first question came to me after reading the parliamentary budget officer's latest report. In the report, there's a graph showing the distribution of investments in infrastructure. Since we're dealing with investments in infrastructure, it is not unreasonable to imagine that there should be a relationship between infrastructure and the percentage or density of the population in each of the provinces and territories. However, when I look at the numbers, Quebec, which has more than 8 million people, receives 12% of the investments, that is 1% more than Alberta, which has 4 million people, and 5% less than British Columbia, which has about 5 million people. Those are rounded numbers.

How do you explain those disparities?

[English]

**Hon. Amarjeet Sohi:** When you look at the phase one overall infrastructure investment allocation, even though different funding streams have different ways of allocating, overall it is matched to the population so that each province has received its fair share.

They might have received a little less in transit or a little more in transit, or a little more in waste water infrastructure or a little bit less in waste water infrastructure, but if you merge all those projects together, it evens out, based on the population of the province, with maybe a bit of discrepancy.

• (1125)

[Translation]

**Mr. Robert Aubin:** Thank you.

My second question deals directly with the Infrastructure Bank.

I would like to understand the relevance of one aspect. My understanding is that \$15 billion that was already earmarked for infrastructure is being taken away and placed in a bank to serve as leverage and to attract private funding.

If the interest rates were at 24%, I would have understood the desire to bring together the largest players around a table to try to negotiate the best possible rates. However, under the current circumstances, infrastructure projects will be financed with private funding that requires a 7% to 9% return, as Mr. Sabia said, when the government could very well finance the same project at a lesser cost.

Where is the real benefit for taxpayers?

[English]

**Hon. Amarjeet Sohi:** We have committed to doubling of infrastructure investments over the 12 years. That's more than \$180 billion. Despite doubling those investments, there remains a large gap in what communities need and how much infrastructure we need to build and how much infrastructure we need to maintain. The role of the bank will be to build more infrastructure on top of what we would traditionally build through funding that is available through these funding streams.

[Translation]

**Mr. Robert Aubin:** Mr. Minister, allow me to say that the projects funded by the Infrastructure Bank will be very rarely—I don't want to say “never”—projects supported by municipalities like mine and many others in Quebec and across the country because they do not have projects of that magnitude.

Will the Infrastructure Bank put a brake on the VIA Rail high-speed train project, for instance?

[English]

**Hon. Amarjeet Sohi:** One thing that I want to make absolutely clear is that whether municipalities or provinces want to use the bank to build infrastructure is optional, and they will still continue to receive their fair share of the funding under the traditional programs where there's a national program or opportunity.

[Translation]

**Mr. Jean-François Tremblay (Deputy Minister, Office of Infrastructure of Canada):** Let me make a clarification.

The money going to the bank is additional money. It does not come from the funding earmarked for the provinces. The provinces can still use the current and future programs. By establishing the Infrastructure Bank, the government is adding a tool that does not exist right now in order to review projects that require a different type of funding. However, that will not eliminate the traditional programs already in place.

**Mr. Robert Aubin:** I understand, but based on what I have seen, the projects that will be studied by the bank and ultimately funded by it, must have a minimum—

**Mr. Jean-François Tremblay:** For the time being, we cannot speculate on the types of projects, but those introduced by governments will have to be approved by the governments in question.

**Mr. Robert Aubin:** So there's no floor or ceiling for investments?

Could any project qualify for the bank?

**Mr. Jean-François Tremblay:** What matters to us is that the projects are able to attract outside investment. That is the primary criterion.

**Mr. Robert Aubin:** Thank you.

[English]

**The Chair:** Thank you very much.

Mr. Sikand.

**Mr. Gagan Sikand (Mississauga—Streetsville, Lib.):** Thank you, Minister, for being here today.

Having been here nearly two years, it's apparent to me that the government needs vast revenue streams coming in. I also wholeheartedly reject anyone who espouses the position that it's only through taxation that we get that money.

Now having said that, I was very pleased to see that the mandate here states that investments will be made in revenue-generating infrastructure projects and plans that contribute to long-term sustainability. Could you elaborate a little on this?

• (1130)

**Hon. Amarjeet Sohi:** As I said in my remarks, there is a vast majority of infrastructure that will have no need for the bank because there's no revenue attached to it.

We see the role of the bank in cases where there's a potential revenue or existing revenue that can be generated by the building of that infrastructure. Transmission infrastructure, for example, has revenue attached to it, so why would we not look at the bank to build that kind of infrastructure that is necessary? It also frees up the government resources that we can use to build more infrastructure where there's no revenue attached. That is one example.

**Mr. Gagan Sikand:** What happens if one of the approved projects goes bankrupt?

**Hon. Amarjeet Sohi:** The role of the bank is to enable investment in infrastructure projects that are traditionally not possible for the private sector or for the public sector. With regard to whether we take an equity stake in it or whether we provide loan guarantees, extensive analysis will be done prior to the approval of the projects. This will also be done by the other stakeholders and partners because the majority of the infrastructure that we fund is either owned by the municipalities or the provinces.

There are three levels of due diligence done on a project. It is done not only by us, but also by the municipality and by the province.

**Mr. Glenn Campbell:** Any infrastructure project, whether it's a public procurement, a PPP, or something that will be engineered by the bank, will have appropriate legal covenants and agreements that address the fairly routine occurrence, sometimes, of incidents of default. This not uncommon. It's quite routine. Even in the largest complex deals that the bank would be involved in, it is expected to follow common practices in that circumstance.

**Mr. Gagan Sikand:** I just have a real-world example, and I know I asked you this last time. The missing link project in Mississauga, would that be the type of project that could access the bank?

**Hon. Amarjeet Sohi:** To know whether the project you're referencing can be funded through the bank, we would have to see the proposal. Projects that are not able to be funded through the bank will still be funded through other infrastructure projects. We will not say to municipalities that if they don't use the bank, they won't qualify for other funding. It's all optional and it's all discretionary on the part of our partners.

**Mr. Gagan Sikand:** Thank you, Minister.

I'd like to give the balance of my time to Mr. Tootoo.

**The Chair:** Mr. Tootoo.

**Hon. Hunter Tootoo (Nunavut, Ind.):** Thank you, Madam Chair.

Thank you, Mr. Sikand.

Welcome, Minister. It's good to see you. I was very pleased to hear you say in your opening comments that when it comes to infrastructure investment, "the status quo is no longer acceptable".

I can't think of a jurisdiction where that's truer than in my riding of Nunavut, where a dollar down here is 33 cents up there, where the highest cost of doing anything up there is three times as much, and where we have only one out of 25 communities that is tax based.

I think there's a need to look at a base-plus funding model to be able to address those needs. It's no secret that we have a huge infrastructure deficit in Nunavut as a result of the ongoing traditional way of doling out investment on a per capita basis. We have the largest land mass, a small population, and high costs, with hardly any infrastructure.

One thing I've always said in terms of any investment in the north is that one important thing to remember is that for us everything we need for infrastructure comes from the south, so it is an investment in the north but it's also a significant investment in the southern economy as well.

When it comes to the infrastructure bank, I know that the northern premiers have said there should be a northern infrastructure bank. I guess I'm just wondering if there will be a portion of this that will be dedicated to northern infrastructure, and if they will be looking at a different way of making that investment, aside from the per capita basis.

• (1135)

**Hon. Amarjeet Sohi:** We listen very carefully to our partners at the provincial, territorial, and municipal levels. We've designed our plan to be flexible, and we will continue to do that. We will not have the cookie cutter approach that was applied in the past.

For the northern communities, we've heard very clearly that the needs are different and that we need to have different criteria in supporting those communities. In the territories, their needs are different. That's why we created the \$2-billion northern and remote communities fund. We will be looking at a different cost-sharing for that program, because we know that costs are much higher in northern communities than in other communities.

We are also working with the premiers in the territories and looking at the utilization of the bank to build some of the infrastructure they need. Those discussions are progressing.

**The Chair:** Thank you very much, Minister.

Mr. Fraser.

**Mr. Sean Fraser (Central Nova, Lib.):** Thank you very much.

I'll be sharing my time with one of my colleagues, Mr. Badawey.

I want to touch on some of the issues you raised in your introductory remarks and perhaps follow up on the line of questioning Ms. Watts launched into with respect to the impact of infrastructure funding on smaller communities.

I'm an Atlantic Canadian. My riding consists largely of small towns and rural communities. I was hoping that you could give us some background on how the infrastructure bank might apply to

smaller communities or, more generally, on how the use of the infrastructure bank in the bigger cities would free up resources that could then apply to smaller communities like mine on needs like water, waste water, public transit, and recreational or social infrastructure and the like.

**Hon. Amarjeet Sohi:** First of all, I want to share with you that since November 2015, almost 15% of the projects we approved were in smaller communities.

As far as the bank is concerned, the projects that could potentially be funded by the bank will have benefits not only in the community where the project is located but in the surrounding communities. For example, transmission infrastructure benefits everyone.

You are absolutely right, though, in that if we don't look at innovative ways of financing infrastructure, then we tie up resources that could be freed up for smaller communities. That's why we were able to create the \$2-billion small communities fund. That's why we have transit money available for smaller and mid-sized communities and for water and waste-water infrastructure.

You are absolutely right. The more we can do with the private sector on revenue-generating infrastructure, the more it will free up resources of public dollars that we can use to build infrastructure where there's no revenue attached to it.

**Mr. Sean Fraser:** I'll jump in there. With the expected increase in infrastructure spending in smaller communities that don't necessarily have the asset management expertise that Canada's biggest cities do, what kind of assistance is going to be available to ensure there's a plan in place for these smaller municipalities to deal with the increased volume in infrastructure spending?

**Hon. Amarjeet Sohi:** That's a very good point. We have created a fund, in partnership with the Federation of Canadian Municipalities, that was announced last week. The purpose of that fund is to build the capacity of municipalities to better manage the assets they own so that they know what conditions there are and also to build the capacity of the municipalities to apply for funding.

Another thing we are doing, as I mentioned earlier, is that the \$2-billion fund will be dedicated for smaller communities so they don't have to compete for funding for their smaller projects. They will still be eligible for funding under other infrastructure plans, but this plan will be dedicated.

We are also looking at engaging with smaller centres to learn more about the capacity challenges they are facing and how the federal government can play a role, in partnership with the provinces, to build the capacity of those smaller centres.

**Mr. Sean Fraser:** Thank you very much.

**The Chair:** Mr. Badawey.

**Mr. Vance Badawey (Niagara Centre, Lib.):** Thank you, Madam Chair.

I want to express my appreciation, Mr. Minister, for your recognizing the importance of working with municipalities, aligning the strategies, helping to finance those strategies, and becoming an enabler to bring forward new smart city initiatives.



With that, we are aware that we have a lot of new ways of doing business with respect to the self-aware infrastructure, assets that direct their own consistent assistance, and most importantly, a disciplined budgeting process.

With that, Minister, are you going to be looking in the future at allowing bundled applications to come in? Then, municipalities, when they put an application in for infrastructure funding, they can bundle an application based on a community improvement growth plan instead of just applying for one project.

• (1140)

**Hon. Amarjeet Sohi:** We are open to new ideas. One thing we want to do when we sign bilateral agreements with the provinces is to encourage regional planning, or regional considerations, or how land use planning, transportation, and community infrastructure integrate with each other. We will be open to all those ideas when we negotiate the long-term plan.

One thing we heard from our municipal partners, whether they are smaller centres, mid-size cities, or large urban centres, is that the past, ad hoc approach to federal support is not something they want. They want long-term planning, they want long-term sustainable funding, and they want certainty in their funding. That's exactly what my role is for the long-term plan as we roll it out, to give them that certainty.

**Mr. Vance Badawey:** That's great news. What I'm getting to, Minister, is the fact of having the municipalities, through their processes and their strategic initiatives, put in a long-term plan three, five, or 10 years down the road. Some call them community improvement growth plans. Of course, the expectation is to finance a very large budget, because they are and can be very large budgets, and to have the ability to then have sustainable funding over a three-, or five-, or 10-year period to actually satisfy those recommendations.

**Hon. Amarjeet Sohi:** The goal is to give them a 10-year plan.

**Mr. Vance Badawey:** That's great.

Thank you, Madam Chair.

**The Chair:** Thank you very much.

Mr. Rayes.

[*Translation*]

**Mr. Alain Rayes (Richmond—Arthabaska, CPC):** Thank you, Madam Chair.

Mr. Minister, my thanks to you and your colleagues, who support you in this work, for being here with us today. Since my questions are about the Infrastructure Bank only, I would like your answers to follow suit.

Can you confirm whether \$15 billion of \$35 billion earmarked for the Infrastructure Bank comes from the budget previously announced in 2016?

Is that really the case?

[*English*]

**Hon. Amarjeet Sohi:** This is on top of what we announced in budget 2016. In budget 2016 we announced \$120 billion of a new plan—

[*Translation*]

**Mr. Alain Rayes:** Very well. You answered my question.

Yes or no, will the additional \$20 billion come from the sale of government assets?

**Mr. Jean-François Tremblay:** No.

[*English*]

**Hon. Amarjeet Sohi:** The \$15 billion for the bank is on top of what we announced in budget 2016.

[*Translation*]

**Mr. Alain Rayes:** Okay. Thank you.

During the discussions, it was mentioned that, for the projects authorized by the bank to be profitable for investors, the projects must be over \$100 million. There was even talk of projects of more than \$500 million in the various discussions that took place. Just now, in response to Mr. Aubin's question, I heard Mr. Tremblay say that the projects that will dictate decisions will be those able to attract investors.

At the same time, let's look at the document produced on the middle class in the fall, the economic statement.

Mr. Minister, in your presentation, you said that the projects you will want to handle with the \$15 million are green infrastructure projects, social infrastructure projects in various communities, transit projects and projects in rural and northern communities. Is that correct?

Could you tell me how a small municipality in a region—say, for instance, Daveluyville in my riding, which has 2,000 residents—could have access to a grant, a loan or any financial assistance from the Canada Infrastructure Bank, for a water filtration plant project, which is essential for the development of its small economic park and of the community? That would allow investors to have their piece of the pie.

Let me point out that, before being elected as an MP a year and a half ago, I was the mayor of a municipality with 45,000 people, which is in the centre of my riding. I can tell you that never in my life have I seen any projects that could generate profit for investors in those sorts of municipalities. They are in large centres such as Montreal, Toronto or Vancouver.

Can you answer my question?

Mr. Tremblay could confirm what I'm saying. Based on what he said, attractive projects are needed for investors. What will happen in the small municipalities?

• (1145)

[*English*]

**Hon. Amarjeet Sohi:** Thank you so much for—

[*Translation*]

**Mr. Alain Rayes:** Just give me one example of a project that could be profitable for investors in small municipalities. Just one example, that's all.

Your colleagues can help you find one.

**Voices:** Oh, oh!

[*English*]

**Hon. Amarjeet Sohi:** First, let me be absolutely clear that any waste-water project that a community needs will be eligible for funding under the many other streams that are available to your community. The bank is not—

[*Translation*]

**Mr. Alain Rayes:** Mr. Minister, I'll have to interrupt you.

[*English*]

**Hon. Amarjeet Sohi:** The bank is not—

[*Translation*]

**Mr. Alain Rayes:** Mr. Minister, my priority is to ask questions.

I know that he's the minister and that he gets priority in the House of Commons.

[*English*]

**The Chair:** In a respectful way—

[*Translation*]

**Mr. Alain Rayes:** Thank you.

I would like you to tell me about a project that might be appealing to private investors and that could be carried out in a small or medium-sized community anywhere in Canada. Just name one.

You can turn to your officials who are here to support you, because I can imagine that, with all the work that you have, you did not have time to study the various projects in the communities. Please give me one example, not 10 or five, just one. You are saying that billions of dollars are invested in Canada's communities.

[*English*]

**Hon. Amarjeet Sohi:** You can look at the trade and transportation infrastructure that touches on many communities—large, small, and medium-sized—that is not located in one city. It is located interprovincially, so those kinds of projects will qualify for possible infrastructure bank funding. You can look at the transmission infrastructure. That touches on many municipalities in many provinces. There are various ways that we can support projects that benefit entire provinces, including smaller communities.

[*Translation*]

**Mr. Alain Rayes:** Thank you.

Unfortunately, I am not satisfied with the answer that you gave me.

I have another question for you.

Who will be responsible for authorizing those projects through the Canada Infrastructure Bank? Is it the priority of the government or the priority of the board of directors and the managers of the fund? Who will be choosing the projects that the Canada Infrastructure Bank will be funding?

Mr. Campbell, would you like to answer the question?

[*English*]

**Mr. Glenn Campbell:** I'd be happy to.

Many of the details pertaining to the governance structure of this entity are yet to be announced. They will be in due course, but I can assure, similar to the question earlier about the financial balance sheet, the entity will adhere to good governance practices and will remain accountable to Parliament. The Government of Canada will be in a position to provide policy direction to the entity. Ultimately, it will be the proponent coming forward, say it's a municipality or a province, that will be the steward of the decision-making about their own asset and how that's treated.

As the minister said earlier, it's an option whether or not to use the services of the bank.

[*Translation*]

**Mr. Alain Rayes:** Mr. Campbell—

[*English*]

**The Chair:** Thank you very much. I'm sorry, Mr. Rayes, your time is up.

Mr. Badawey.

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

Just taking it to the next step with respect to what I asked before, Mr. Minister, what are some of the methods or the mechanisms, the enablers, that you can actually provide for P3s, for private involvement?

Mr. Rayes has mentioned, through his question, what opportunities exist. I know about rail spurs, short lines, marine when it comes to docks, and intermodal facilities when it comes to air, airports, especially regional airports and the possibility of applying for capital work in those airports by the smaller municipalities. What other methods do you find that can actually involve the private sectors to get that fourth level of funding? Right now, we have federal, provincial, and local, but how can you then expand that to the private sector to be involved and to get that fourth level of funding for economically strategic initiatives?

**Hon. Amarjeet Sohi:** PPP Canada has managed many projects that have successfully engaged the private sector. One thing that we are unable to do under the PPP Canada arrangement is to take an equity stake in projects. That's why the creation of the bank is necessary, to take it to the next stage where more private sector capital can be mobilized to build more infrastructure that cannot be built in traditional ways or that ties up money from the government that can be used for building more housing, for example, or that could be used for building more shelters for women fleeing domestic violence or building more public transit that is necessary in our communities.

At the end of the day, our government is focused on people. We want to enable people to succeed. We want people to have a quality of life that they can enjoy and they can feel that they are part of the community. Building all types of infrastructure that enables people to succeed both economically and socially is the goal. Whether we do that through private capital or a traditional way of funding projects, we believe that the bank will take us to the next stage and build on the success of P3s.

•(1150)

**Mr. Vance Badawey:** This is my last question before I split my time with Mr. Fraser.

Mr. Minister, do you find as well that not only is it an enabler of an economic strategy to create jobs, of sustainability for the municipal sector in terms of catching up on their infrastructure deficit and also getting into smart city infrastructure, but it alleviates the burden on the taxpayer, the property taxpayer, whereby they do not now have to take on a debt for 10 to 20 to 30 years and then pay for it through their property taxes? They do not now have to pay the operating end or capital costs of a project that might run into the millions of dollars and saddle a municipality with debt for many years, and they can actually get the project done.

Do you figure this becomes that enabler?

**Hon. Amarjeet Sohi:** It does free up the capacity of all orders of government—municipal, provincial, and federal—where public dollars can be put toward infrastructure that is critical and that may not be built through private sector involvement.

**The Chair:** Mr. Fraser.

**Mr. Sean Fraser:** Thank you very much.

Following up on Mr. Rayes' examples, as I mentioned, I come from a small community as well. My understanding of the infrastructure bank is that it could apply to revenue-generating projects. One of the big issues right now for me at home is the construction of tolled highways or the construction of private-public partnerships for broadband infrastructure, transmission lines, and affordable housing where there's revenue through the form of rent. Is this not the kind of thing that could potentially apply to the infrastructure bank?

**Hon. Amarjeet Sohi:** Broadband infrastructure is one example where we can look at private sector participation that helps rural communities, that helps isolated communities, but assessments will be done on a project-to-project basis.

**Mr. Sean Fraser:** I'll ask this just quickly, because I have only about a minute left.

On the smart cities challenge, when the U.S. did a similar exercise, the real benefit in my mind wasn't the fact that Columbus got a \$50-million or \$60-million bonus at the end, but that 77 cities took part. We have a limited number of big cities in Canada. Will there be a mechanism to help encourage small or medium-sized towns and cities to participate in the challenge in Canada?

**Hon. Amarjeet Sohi:** Yes. There will not be any limit on participation. Any community can participate. Our goal is to enable communities to use technology and to find innovative ways of maintaining the existing infrastructure and building new infrastructure, and also to not limit the use of smart technologies or a smart way of doing things just to physical infrastructure. We are also interested in social innovation and building strong, inclusive, welcoming communities. The smart cities challenge is going to be much broader than just physical infrastructure.

**Mr. Sean Fraser:** Thank you very much. I believe I'm out of time.

**The Chair:** Thank you very much, Mr. Fraser.

Ms. Watts.

**Ms. Dianne L. Watts:** Thank you, and I'll be sharing my time with Mr. Rayes.

Just for the minister to note, i-Canada has been doing that for many years, and they're really good at it.

I just have one comment and then I'm going to get into something else. You mentioned, Minister—and I'm going to just talk and I don't mean to be critical here, but we're tight for time—equity stakes from P3 Canada projects. You said that all the projects from P3 Canada have equity stakes, and I wonder if you could provide this committee with a list of those assets.

**Hon. Amarjeet Sohi:** No.

**Ms. Dianne L. Watts:** Secondly—

**Hon. Amarjeet Sohi:** What I said is that P3 Canada cannot take equity stakes in projects.

**Ms. Dianne L. Watts:** Oh, I thought you said there were equity stakes.

**Hon. Amarjeet Sohi:** No.

**Ms. Dianne L. Watts:** That was my understanding, so thank you.

I just want to get to the independent parliamentary budget officer's report here. I know that, from the money that was allocated in the budget.... There was always \$186.7 billion there, and then you guys added the \$82.8 billion, but there's a concern here that there's no performance measurement framework to evaluate the performance. There's only limited visibility on tracking how the money's actually been spent. None of the departments have published a list of funded projects, and there's still a gap between what has been announced and the value of the projects currently identified by the departments. There still remains a significant gap because the data shows that \$13.6 billion has been announced, and they've only identified 4.6 billion dollars' worth of projects, so there is that significant gap.

We know that the budget's coming, and we know that there's going to be a deficit, and the government has to decrease that. Is that part of the holdback in terms of flowing those dollars out?

•(1155)

**Hon. Amarjeet Sohi:** We have approved more projects in the last year than the previous government—

**Ms. Dianne L. Watts:** That wasn't my question. Will these issues be identified and rectified by you, your team, or your department as the parliamentary budget officer has identified?

**Hon. Amarjeet Sohi:** As you can appreciate from your experience as a mayor of a large urban centre, the projects take multiple years to complete—

**Ms. Dianne L. Watts:** For sure.

**Hon. Amarjeet Sohi:** —and there's planning work and design work, and we're supporting those. The money doesn't always follow in the same year that the money is allocated, and that's why you see the lapsing.

Do you wish to add?

**Mr. Jean-François Tremblay:** The best we can do is make the money available for provinces and municipalities to spend. When we approve those projects, we agree with them on the projects and we agree that the money is there. The way it works is that it's not a transfer like health. The money doesn't—

**Ms. Dianne L. Watts:** I understand that. I was a mayor for a decade, so I went through the process and I know exactly the process.

**Mr. Jean-François Tremblay:** Those projects are going on, and when they claim, we pay. That's our objective, to get the claims.

**Ms. Dianne L. Watts:** Yes, but within the context of the framework and the tracking of the project, you would allocate the money and then, each of the two years that it's allocated, you would have that money in there. There's no framework here and no tracking, as what the parliamentary budget officer—

**Mr. Jean-François Tremblay:** We are developing a framework with provinces. I have calls with them every two weeks, for example, and we have agreements in which we develop performance and also reporting. So, yes, there is reporting in place with provinces. Over the last few months, of course, they have been busier identifying projects with us, which, as the Minister said, was a lot of projects.

**Ms. Dianne L. Watts:** I don't mean to interrupt, but I'm short on time. I guess the overall piece around this was the reason there was such a big deficit was that the money was getting out the door, the stimulus funding to create jobs. I think clearly it's problematic in terms of how that process has unrolled. I think that's the issue because the whole point was to create jobs and make sure to stimulate the economy, and it states clearly that the targets aren't going to be met here. I guess what I'm saying is that we need to shift that and look at how we do that differently to make sure that the goals are attained.

**Mr. Jean-François Tremblay:** We didn't use the word “stimulus”. The objective was to make money available—

**Ms. Dianne L. Watts:** You may not have, but that was—

**The Chair:** Okay, Ms. Watts. I'm sorry, you're time is up.

**Ms. Dianne L. Watts:** Okay. Mr. Rayes. I was splitting my time.

**The Chair:** You only had five minutes, so your five minutes are gone.

I'm going to turn it over to Mr. Aubin.

[*Translation*]

**Mr. Robert Aubin:** Thank you, Madam Chair.

Mr. Minister, I would like to go back to the Canada Infrastructure Bank and ask you what you think about its creation.

Let us remember that the Advisory Council on Economic Growth advised the Minister of Finance to create the bank. Let me give you the names of three people who advised the minister to establish the bank: Dominic Barton, from McKinsey & Company, who over the past five years, made his living by promoting fundraising of private capital through public investment; Michael Sabia, from the Caisse de dépôt et placement du Québec—which I mentioned earlier; and Mark Wiseman—a rather appropriate name—director of the Black-Rock management, the largest investment firm in the world that manages about \$5 trillion.

Isn't there an appearance of conflict of interest when those advising the minister to set up a bank are the same ones who will make a profit from it? Can taxpayers believe that the bank will make it possible to obtain the best value for the construction or update of the anticipated infrastructure?

• (1200)

[*English*]

**Hon. Amarjeet Sohi:** For any project considered under the infrastructure bank, a lot of due diligence will be done to make sure we're getting the best deal possible on behalf of taxpayers. Our goal is to build more infrastructure. A lot of money in the private sector can be mobilized to build the infrastructure that our communities need to grow our economy and to create jobs for the middle class and those who are working so hard to be part of the middle class.

The private sector creates jobs. It creates jobs in many other ways. If we can mobilize that capital to build the necessary infrastructure as well as grow our economy, we don't see a downside to that.

[*Translation*]

**Mr. Robert Aubin:** I have finished, Madam Chair.

Thank you.

[*English*]

**The Chair:** Thank you very much, Mr. Aubin.

Minister Sohi, thank you and your officials very much for spending this hour with us.

We want to invite you back, I'm sure, in the upcoming months as we move forward on these subjects.

**Hon. Amarjeet Sohi:** Thank you so much for having me.

**The Chair:** We will suspend momentarily while we excuse the witnesses.

[*Proceedings continue in camera*]

• (1200)

(Pause)

• (1230)

[*Public proceedings resume*]

**The Chair:** We are starting our meeting again on the study of infrastructure and smart communities.

We have with us today, from QNX Software Systems Limited, Grant Courville, director of product management.

Thank you very much for coming. We weren't able to give you much notice, so we really appreciated your fast response. I will turn it over to you for five minutes of opening remarks, followed by questions from the committee.

We also have Marc Miller, Parliamentary Secretary to the Minister of Infrastructure and Communities; and Karen McCrimmon, Parliamentary Secretary to the Minister of Transport. Both of them, by the way, are available to the committee members if they have any questions they would like to have clarified at any given time, during or after the meetings.

Mr. Courville, please, the floor is yours.

**Mr. Grant Courville (Director of Product Management, QNX Software Systems Limited):** Thank you for inviting me. I very much appreciate it.

What I thought I would do in the five minutes that I have is to give you a little bit of an overview of our company, what we've been doing, and how we can work together on some of the initiatives, going forward.

Firstly, as mentioned, I'm with QNX Software. I started with QNX in 1987. QNX is an Ottawa-based company—with over 400 people based in Ottawa—and it has been since its inception. We provide core software that you will find in everything from wind turbines, gas turbines, traffic lights in Ottawa, MRI machines, and laser eye surgery equipment. Atomic Energy of Canada uses our software for nuclear reactor monitoring, and General Electric uses it to monitor the energy grid. We're at the heart of Cisco routers for communication, the largest routers in the world. We really are at the heart of a lot of the infrastructure that we all interact with every day.

We don't get a lot of publicity, but we've started to involve ourselves much more publicly, I'll say, in some of our activities. Thanks to government efforts, we've been able to advertise those and bring about a lot more awareness on a global basis, quite frankly.

Our primary market today is the automotive market, and specifically the automotive market. We're in over 60 million vehicles. We're at the heart of every OnStar system that ships. We have number one market share in infotainment, so if you have a display screen in the middle of your vehicle, chances are it's running QNX software.

I should mention that QNX was acquired by BlackBerry in 2010, so we're a wholly owned subsidiary of BlackBerry.

As far as vehicles are concerned, there are telematics; digital instrument clusters, because they're moving from analog to digital; infotainment systems; and now safety systems in cars. There is tremendous disruption in the automotive market today. The architecture and nature of vehicles is changing tremendously, and that is manifesting itself in the form of announcements and initiatives such as at General Motors and what they announced in terms of what they're doing in Oshawa. There are a lot of initiatives at a provincial level and in private industry. You're seeing investments from Ford, for instance, and from GM into Lyft, into ride sharing and into shared mobility. The automotive industry, and to an extent, transportation, is undergoing incredible disruption.

There is a tremendous opportunity to collaborate among the private industry, academia, and government, to take advantage of this disruption and truly be a world leader. We can do this, not just here in Ottawa but in Ontario and in Canada. We have the technology and we have the innovation. The heart of it is security and communications, for which we're very well known. If you think

of BlackBerry, they're second to none in terms of security. If you think of communications and the expertise that we have there....

When I was thinking of infrastructure, one of the things I wanted to put forward was that the definition of infrastructure should, perhaps, be broader than the way most people think of infrastructure. It should involve technologies and communications—and not necessarily roads and bridges and whatnot that probably most people think of today—because transportation in the future is going to change. There are a number of reports that will say that there will be more vehicles or that there will be fewer vehicles. At the end of the day, our job—we offer foundation software—will be making vehicles much safer.

If you think of vehicles today, there are 1.5 billion vehicles on the road today. In Canada, there are roughly 2,000 people who die because of traffic accidents. We can make vehicles safer. We can make vehicles more secure. We can have vehicles talk to each other. We can enable first responders to get more information more quickly. There are so many advantages from an environmental perspective, and we can enable greater mobility for all ages.

There really is a tremendous opportunity from a QNX-BlackBerry perspective. We're working with all the major automakers and all the major suppliers to automakers. We're right at the heart of these next-generation vehicles that, essentially, are going to be a point or a sensor that you can actually gather information from.

We can make the roads a lot more efficient, and we can make transportation much more available. We can do it through technology and through technology that can be developed and commercialized here in Canada, understanding that automotive and transportation are definitely global industries. Obviously, we need tremendous collaboration between the U.S. and Canada, which I think we have and have had.

I can talk a little bit about some of the initiatives there. They have a vehicle-to-vehicle communication guideline that they've put forward for something called DSRC, or vehicle-to-vehicle communications. They're going to mandate that the equipment be in cars starting in 2021, and all vehicles will need to be equipped with that technology for 2023.

●(1235)

Essentially, vehicles will have to broadcast where they are, how fast they're going, what direction they're going in, and what position they're in. Think of, say, a simple scenario where maybe you have a blind intersection. If you have vehicles talking to each other, all of a sudden they can become aware of each other, and then you can get into warning the driver of an unsafe situation. As we look at technology going forward, if the driver doesn't take action, the vehicle can take action, in other words apply the brakes, for instance.

This could be a very long topic and I'm absolutely thrilled to have this kind of discussion. The message I want to leave you with is that transportation and automotive is going through a disruption, and we have a real opportunity.

One of the things we did recently—and I'd like to thank Prime Minister Trudeau again—was that at QNX, we actually opened and launched an autonomous vehicle innovation centre, putting autonomous vehicles, connected vehicles, and safe vehicles on the map right here in Ottawa, Canada. That was a thrill.

**The Chair:** Thank you very much, Mr. Courville.

I'll move on to our speakers' list. Mr. Rayes.

[Translation]

**Mr. Alain Rayes:** Thank you, Madam Chair.

My thanks to the witnesses for being here with us today. I think everyone's excited about this topic, although we haven't been discussing it very long.

Mr. Courville, I'm not sure I have fully grasped something you said earlier in your remarks.

In your view, how does Canada fare compared to the other countries in the world in terms of the development of smart cities?

• (1240)

[English]

**Mr. Grant Courville:** That's a very interesting question. The notion of a smart city, to be honest, is still being defined. Things like the smart cities challenge, for instance, are going to help evolve the definition of a smart city and help push technology and some of those use cases to help us understand what's really important.

On a global scale, we have cities that are connected. We'd have to talk a bit about the definition of a smart city. If you take a look at Stratford, Ontario, for instance, they have installed a wireless network throughout their city, and they're looking at testing autonomous vehicles there and leveraging that connectivity to extend into smart city scenarios.

As another example, if you take a look at the city of Ottawa, all of the traffic lights are connected. I've had meetings with the City of Ottawa to see how we can extend that to enable smarter scenarios, where we can have traffic lights talk to emergency vehicles and potentially to private vehicles and pedestrians.

In terms of ranking, I don't think I have a good answer for you, because there are a number of initiatives that are going on. Some are publicly funded; some are not publicly funded. I would say that we have tremendous potential in Canada, and I think this is where we need some collaboration and some focus on specific goals pertaining to smart city to rally academia, private industry, and government around some specific deliverables.

[Translation]

**Mr. Alain Rayes:** At our last meeting, witnesses said that Canada was dead last when it came to developing smart cities.

Is that what you think?

[English]

**Mr. Grant Courville:** I would say we're not leading. When someone asks me for a ranking, I wouldn't, say, put a specific rank on Canada. Are we leading? No, there are countries in Europe that are leading in those areas. You have companies like Google or Alphabet, for instance, that have invested specifically to enable smart city scenarios.

Because of those initiatives, we're seeing some smart cities, but I wouldn't necessarily—in North America anyway—look at it on a country basis. It's more on a city-by-city basis. In Europe, where the countries maybe are smaller, where they can react and launch initiatives more quickly, yes, they are ahead of us for sure. Again, I think we have a real opportunity.

[Translation]

**Mr. Alain Rayes:** What advice would you give to the government for implementing a program to support the development of smart cities?

[English]

**Mr. Grant Courville:** First, I would recommend collaboration.

Second, many of the programs that are under discussion today are research initiatives, which also obviously pull in funding and so on. I would recommend that the initiatives we put together have specific goals with a view to commercialization and to the benefits that they will bring to the table. Research will fall out of that, if you can define what you're trying to deliver at the end of the day. Whether it's smarter traffic lights or reduced congestion, with some specific things to measure, from a government perspective, those are things we can rally behind. The initiatives have to be very well defined.

If I'm to talk about automotive specifically, if the government could align with the U.S., for instance, in terms of vehicle-to-vehicle communications, I think that would be great. Right now, there are no widely adopted standards for vehicles to talk to infrastructure or for vehicles to talk to vehicles. That's one initiative that we can really get behind.

[Translation]

**Mr. Alain Rayes:** I would like to hear what you have to say on the role of the private sector in the development of smart cities, electric vehicles and so on.

In Quebec, there was quite a war between the private sector and the government over the Uber system. There really seems to be a divide between governments and new technology. Instead of the two working in partnership, it seems that these people are seen as enemies of the system in place.

Do you also feel that the private sector is not considered to be a real partner in development projects as it should be?

[English]

**Mr. Grant Courville:** That's a very good point. I would agree with you 100% that some companies are going to advance their agendas, be it in transportation or elsewhere, independent of government activities.

Our approach, just as the nature of our business is in terms of what we do in working with the automotive and infrastructure companies, by definition it has to be collaborative to achieve success. I think you might see some companies that will be more aggressive. However, from a QNX perspective, from a BlackBerry perspective, what we're doing is so foundational that collaboration is extremely important. Government has to absolutely be a part of that. We need standardization.

To your point, Uber is an example of a company and an application and a mode of transportation that was introduced in a number of cities without any co-operation, quite frankly, and it was adopted by the public. In a sense, we were lagging. They were leading, if you like, purely from a technology and a business perspective.

From an infrastructure perspective, from an automotive perspective, there are no standards widely adopted right now. The opportunity today exists to collaborate, because the industry is going through a disruption. Things aren't defined yet. It has to be collaborative. We need the standardization. We need it beyond municipal, provincial. We need it at the federal level. We need it in collaboration with the G7 countries, quite frankly.

• (1245)

**The Chair:** Thank you very much.

Mr. Sikand.

**Mr. Gagan Sikand:** I don't remember what the percentage is and I apologize for that, but I remember a previous witness had given us percentages on how much technology is in a current vehicle and how that's going to drastically change in the future. It sounds like you're poised to change with that disruptive shift.

My question is on security. What if there's a malfunction in all these vehicles, or in the infrastructure that's communicating? Worse yet, what if there's a security threat and this infrastructure becomes crippled? What are companies like yours doing to mitigate this?

**Mr. Grant Courville:** That's a very good question. At the heart of everything we do and have done for three decades now, if you think of how we're integrated in the infrastructure, safety and security are absolutely core to what we do. If you tie that to BlackBerry, this is where BlackBerry has a real opportunity. It's a Canadian company. If you think of the BlackBerry handsets, they're absolutely the most secure handsets on the planet. There's no argument about that. In all of my travels, in all of my meetings on a global basis, there's absolutely no question and this never gets questioned.

What we're doing at BlackBerry, for instance, is that we're taking that expertise and that technology and we're introducing it into the automotive industry and into all of the infrastructure—and I'll say devices—that QNX is in, because, to your point, within the automotive industry there have been some well-publicized security breaches. It was really a wake-up call for the industry. Security has always been important in all of the devices we have in the automotive industry, because of the vehicle changes. If you affect the security of a vehicle, you will compromise the safety of a vehicle. They go absolutely hand-in-hand.

**Mr. Gagan Sikand:** Breaches will happen but there are safeguards in place.

**Mr. Grant Courville:** We have work to do in that area.

**Mr. Gagan Sikand:** Okay.

**Mr. Grant Courville:** Traditionally, vehicles were mostly mechanical and unconnected. Then they moved to some drive-by-wire functionality, where it's not mechanical. Today when you apply the brakes, for instance, it's not something mechanical being applied from the brake pedal to the actual brakes. It actually goes through electronics.

What happened in the automotive industry is that, when the vehicle became connected, all of a sudden if you breached any kind of security you could potentially affect the safety of the vehicle. Our products are safety certified in the automotive industry. We have to go to third-party safety certification authorities to make sure we adhere to those standards. There is work to do.

**Mr. Gagan Sikand:** Thank you.

You mentioned export. Canadian companies like yours have this platform, and if we invest enough can we actually export this technology?

**Mr. Grant Courville:** Yes. In fact, we export most of our technology today. If you think about the technology, there are no automotive car manufacturers, if you like, in Canada. Most of our technology is exported.

**Mr. Gagan Sikand:** Just so I understand, other countries are ahead perhaps in their testing of autonomous vehicles, but when it comes to the actual software and technology, we're doing okay.

**Mr. Grant Courville:** Absolutely, on the foundation, the core software, yes, exactly. Again, a tangible example is the market share that we have.

**Mr. Gagan Sikand:** It's good news. Thank you.

**The Chair:** Mr. Fraser.

**Mr. Sean Fraser:** Thanks very much.

You mentioned just in passing remarks that the technology could help improve the mobility of people of all ages. Specific to our senior population, I'm curious as to how the technology would help them get about the communities they live in.

**Mr. Grant Courville:** The nature of vehicle ownership is changing and the importance that society puts on vehicle ownership is changing. It's a demographic shift. To your point, you're going to see vehicles that are on average used about one hour per day today. If you do the math, it's about one hour a day. These are incredible inefficiencies.

In the investments you see from the automakers, they're investing in ride-hailing companies like Uber and Lyft. They're investing in ride-sharing companies. Ford made an investment, for instance, in Chariot, which is essentially a van shuttle.

We're working with some cities and other organizations where they're looking at putting together essentially mobility on demand, a term you might hear. If I can get access to mobility, if I can get access to a vehicle that I don't necessarily have to own, and it's convenient, then from an elderly person's perspective, I'll have many options potentially available to me. It could be ride-sharing, for instance. I could hail a vehicle, a taxi. There are other mechanisms as well, and public transportation.

The thing we have to think about is this. To get from point A—whatever that is, my home, etc.—to point B, what you might see and what we should try to enable is connected, intelligent, safe and secure, multimodal mobility. In other words, it might be part public transportation, part private transportation. You're seeing e-bikes. I used the word “disruption”. Again, this isn't all established and I think there is a real opportunity.

• (1250)

**Mr. Sean Fraser:** Sure.

I only have about a minute or two, maybe a little less. You mentioned that cars can talk to each other. Where I see the real benefit, I assume, is where the cars are talking to the system, so to speak.

**Mr. Grant Courville:** Absolutely.

**Mr. Sean Fraser:** I assume your technology can do that. For example, they could talk to a central server or something that would then relay the information to the GPS units or the traffic lights to make traffic move more smoothly and get messages out to first responders.

Have you done any kind of estimate on the time savings on the road that this could lead to?

**Mr. Grant Courville:** We haven't specifically, but I can point you to some studies that have taken a look at that. For instance, for efficiencies, there was a program in Chicago where they predicted a 20% efficiency gain.

**Mr. Sean Fraser:** If you could get that evidence on the record through the clerk, I think that would be really helpful, to be honest.

**Mr. Grant Courville:** Okay, I'd be happy to do that.

**Mr. Sean Fraser:** Thank you.

**The Chair:** Monsieur Aubin.

[*Translation*]

**Mr. Robert Aubin:** Thank you, Mr. Chair.

Mr. Courville, thank you for being with us today. Welcome.

Just now, I heard you talk at length and passionately about vehicles. It may not be a passion that we share, but we certainly share the passion for technology.

What I was particularly intrigued about in your opening remarks was the fact that you would like to see the very definition of infrastructure expanded. I have to say that I agree with you. When we talk about infrastructure, the first images that come to mind are bridges, roads, railway stations and airports.

How would you like the definition of infrastructure to be expanded?

[*English*]

**Mr. Grant Courville:** As I said, I'm passionate about the definition of infrastructure and the potential of infrastructure.

In terms of how I would view it, again it's a lot about connectivity. At its basic level it's about connectivity. Can we have traffic lights talk to vehicles? Can we have first responder vehicles talk to an infrastructure? I'm just using the words “talk to” because I'm not going to get into cellular technologies and all that. It's not important at this level. It's really about whether I can get reliable and smart communication.

The opportunity there is to sponsor and get involved in joint initiatives within Canada, obviously, but also in collaboration with other countries, to enable standardization from a communications perspective. If we can define a standard for vehicles to talk to vehicles or for vehicles to talk to infrastructure, if you can enable that fundamental technology, then all of a sudden we can apply artificial intelligence. We can apply better use of the infrastructure that we have and the vehicles that we have on the road, and the benefits you are going to see are going to follow.

From my perspective, at this stage of where we're at in the disruption, it is very much communications and standards as it pertain to communications, because the automakers are collaborating. Automakers used to be pretty much in silos and not talking to each other. Because the nature of the car is completely changing, you see this collaboration. They are also open to it, which is great.

[*Translation*]

**Mr. Robert Aubin:** If I understand correctly, with my new connected vehicle—I'm talking about the next one, not the one I have right now—for example, if I were alone on the road at two o'clock in the morning, I might not have to wait at the red traffic light. The traffic light could detect that I am alone and turn green. However, is there not a notion in the definition of infrastructure, even the connected infrastructure we are talking about, that should be linked to the community? In my mind, when we talk about infrastructure, we are not talking about personal benefits, but about collective benefits.

In terms of those cars, that's probably the most compelling example you've given me so far. However, since you started talking about it, I couldn't help remembering when I came to Ottawa two weeks ago and I narrowly avoided a pile-up because of the so-called “black ice”. All the vehicles were going at full speed and everything was fine, until the first car, which I had never seen, triggered the pile-up. The best drivers, either the luckiest or who had the best braking systems, were able to avoid it.

However, in such a situation, can vehicles exchange information, analyze road conditions and determine possible ways to avoid problems? On that day, all the cars were waltzing from one side to the other.



• (1255)

[English]

**Mr. Grant Courville:** Yes. The short answer is yes, absolutely, vehicles are going to have so many sensors. At one of the talks that I did recently where I was invited to speak, I used the example of potholes. Vehicles hit potholes. What if we could gather that information and send it back to a smart infrastructure? It would know which potholes are being hit, how severe they are, and how often they're being hit, and all of a sudden it would direct those resources to those areas that need attention.

To your point, yes, if there's black ice and if there are adverse weather conditions, the vehicle should be able to communicate back to the infrastructure and, again, warn other vehicles. You might get a warning in your car, for instance, as well as a warning throughout the community that there's black ice on such-and-such a road at such-and-such a location. Potentially, the vehicle would warn you and ask you if you'd like to take an alternate route.

It's the same thing when we look at first responder scenarios. I'm glad there wasn't an accident that you were involved in, but imagine if there were a situation and the vehicles were connected and you had cameras in the vehicles, which you will see and you're starting to see today. Imagine if in that first responder situation there were vehicles in the area and you could securely and safely tie into the cameras in the vehicles, so that you could have "eyes on scene" from the vehicles. When I say vehicles, I mean buses, cars, and any mode of transportation where all of a sudden they could get earlier access to information, which again would enable them to provide better service in an emergency situation. There are all these scenarios that come into play.

[Translation]

**Mr. Robert Aubin:** Thank you.

You really talk about it as if it's science fiction technology that will be accessible in a few years, as I understand it.

Here's my question. In order to have those additional tools, some of which may be an advantage in emergencies, whereas others may not—I'm thinking of the example of potholes again—are we not equipping ourselves with infrastructure that will cost so much that its benefits will not measure up to the investment? In short, in your opinion, is the investment worth it?

[English]

**Mr. Grant Courville:** For me, the ultimate benefit is safety. There are a number of benefits that come along with that from a community perspective. As I mentioned, in Canada, I think roughly 2,000 people have died in traffic accidents. Fatalities in the U.S. are at about 33,000. Globally, it's over a million.

Ninety per cent of those accidents are caused by human error. That's 90%, and imagine from an infrastructure perspective and a transportation perspective that we can make vehicles safer and make transportation safer. I know we can bring that number down. Think of ABS brakes, for instance, as a very simple example. Connectivity will enable that. Smart vehicles will enable that.

**The Chair:** Thank you very much, Mr. Courville.

Mr. Badawey.

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

I think this is a very exciting conversation. Parking the politics, parking all that, we have a huge opportunity here as a committee to really be visionary and, although we are not in the business like you, to have you included with us to try to bring that agenda forward. I appreciate the comments you're making and the passion you're bringing to the conversation.

It sort of stems from the conversation we were having earlier—and I'll use a layered effect—about municipalities, areas of the country planning strategically for the future. Within those, they have community improvement and growth plans that they have put in place, and that obviously attaches itself to infrastructure—roads, water, bridges, and stuff like that, which are traditional—but it's becoming a new norm. That new norm is now demanding municipalities to take on new infrastructure: fibre, more transit, more integrated transportation, and the list goes on, including what you're talking about.

What I'm going to get at is, what's next? This is ultimately going to be my question, just to give you a heads-up. How do we ultimately move this agenda forward? We have a national transportation strategy that was just announced by the minister in October. We have an infrastructure strategy and a smart cities strategy that we're launching now. We have infrastructure investments being made, and the last thing we want to do is spend millions, if not billions of dollars on infrastructure that we're going to have to go back to five or 10 years down the road to replace, update, or change. It's like paving a road and finding out five months later that you have to redo the water and sewer line underneath it.

How do we eliminate doing that? How do we ultimately put a strategy in place that really drives the other strategies and keeps everything up to date and moving forward with smart cities, integrating the ideas that you're coming forward with at the table with everything else that's happening around us?

• (1300)

**Mr. Grant Courville:** That's a great question and a huge topic. It's not an easy answer. I'll come back a bit to what I was saying earlier. If we can define some specific goals—for instance, in terms of smart cities, even defining the elements of a smart city... I'd like to share with the group that the way we and other companies are approaching this is very evolutionary, for a lot of commercial as well as public reasons.

If we think of autonomous cars, we can't rush into this. When people ask me when we are going to see the first fully autonomous car, I say at least 15 years from now, because if we don't do it right, we will risk people's lives and lose public confidence. It just won't be the system that we need, and it will delay it even further.

To your point, I think if we can get very crisp on the definitions of what we're trying to accomplish, and work collaboratively with other countries.... I think there are some standards that are starting to be agreed to—I mentioned DSRC earlier. A lot of it is about standardization, to standardize the communications and define the use cases. I think the key there is to take a look at the companies that can help, because it's going to take collaboration and partnership. Look at the companies that can help, understanding that each company has its own commercial agenda. I think it's really about thinking differently, which I think is what you're saying, and looking further out.

As I said, I'm comforted by the fact that we are approaching it in a very evolutionary fashion, so I welcome the opportunity to take a

look at some of the projects that are under way, and maybe what we can do is refine them and direct some of those investments to some of the things that we're talking about today and that you'll be looking forward to.

**The Chair:** Thank you very much, Mr. Courville. If you can, stay around for a few more minutes. Our time is up, but you can see that the committee has lots of interest.

**Mr. Grant Courville:** So do I, and I apologize if I rambled on.

**The Chair:** That's okay. We're all very excited about the future.

Thank you. The meeting is adjourned.

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