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Standing Committee on Public Accounts

Chairperson
Mr. Matt Wiebe
Constituency of Concordia

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Forty-First Legislature

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LEGISLATIVE ASSEMBLY OF MANITOBA

THE STANDING COMMITTEE ON PUBLIC ACCOUNTS

Thursday, September 15, 2016

TIME – 2 p.m.

LOCATION – Winnipeg, Manitoba

CHAIRPERSON – Mr. Matt Wiebe (Concordia)

VICE-CHAIRPERSON – Mr. Reg Helwer (Brandon West)

ATTENDANCE – 11 QUORUM – 6

Members of the Committee present:

Messrs. Bindle, Helwer, Johnston, Ms. Klassen, Messrs. Maloway, Marcelino, Mrs. Mayer, Mr. Michaleski, Ms. Morley-Lecomte, Messrs. Wiebe, Yakimoski

APPEARING:

Mr. James Allum, MLA for Fort Garry Riverview

Mr. Norm Ricard, Auditor General

WITNESSES:

Hon. Blaine Pedersen, Minister of Infrastructure

Mr. Lance Vigfusson, Deputy Minister of Infrastructure

Mr. Doug McMahon, Assistant Deputy Minister of Infrastructure (by leave)

Ms. Ruth Eden, Executive Director of Structures, Infrastructure (by leave)

MATTERS UNDER CONSIDERATION:

Auditor General's Report – Management of Provincial Bridges, dated July 2016

* * *

Mr. Chairperson: Good afternoon. Will the Standing Committee on Public Accounts please come to order.

This meeting has been called to consider the auditor's report, Management of Provincial Bridges, dated July 2016.

Before we get started, are there any suggestions from the committee as to how long we should sit this afternoon?

Mr. Jim Maloway (Elmwood): Mr. Chairman, I suggest we sit 'til 4 and reassess at that time.

Mr. Chairperson: Okay, is it agreed we'll sit 'til 4 p.m. and reassess at that time? *[Agreed]*

For the information of the members today, you may have noticed we'll be doing some filming for footage for our video series, Inside the Legislative Assembly of Manitoba. This is a film that's produced to–as an educational purposes. So for those that are wondering what the camera in particular is doing there, that's the purpose of that.

This time I'd like to invite the minister and deputy minister to come to the table to join the committee at the table.

And at this time I'll ask the minister to introduce his staff to the committee.

Hon. Blaine Pedersen (Minister of Infrastructure): With me is Lance Vigfusson, the Deputy Minister of Infrastructure. And joining us at the table will also be Assistant Deputy Minister Doug McMahon and Ruth Eden, executive director.

Mr. Chairperson: Thank you very much.

We will now move to the Auditor General.

And does the Auditor General wish to make an opening statement?

Mr. Norm Ricard (Auditor General): Yes, I do, Mr. Chair.

First, I would like to introduce the staff members that are here with me today.

To my right is Sandra Cohen, who is the assistant auditor general responsible for the audit. And behind me is Dallas Muir, who was a principal on the audit. Also with us is Tyson Shtykalo, who is Deputy Auditor General.

Mr. Chair, the Department of Infrastructure is responsible for about 3,000 bridges and large bridge-sized culverts on the provincial road and water control networks. Inadequate management of these structures, many more than 50 years old, can undermine economic development and adversely affect public safety.

Given this risk, we undertook this audit to assess how well the department was managing its bridge inventory. More specifically, we examined the

department's processes for inspecting bridges and large culverts and implementing maintenance recommendations for bridge inventory planning and performance reporting and for ensuring quality assurance in bridge construction.

Mr. Chair, we found several gaps in the department's bridge inspection processes, which was concerning because these inspections are the first line of defence in ensuring bridge safety. In particular, we found that the department's inspection policy was not current, comprehensive or sufficiently risk based. We also found some provincial structures were not inspected as often as required. More importantly, we found several that were not inspected at all. This included 616 structures that were the department's direct responsibility, plus another 288 considered the responsibility of other government departments or conservation districts.

***** (14:10)

There were problems with the consistency and quality of inspectors' bridge element ratings and inspection documentation, as well as with the appropriateness, pricing and time frames of inspectors' maintenance recommendations.

We also found that there were gaps in processes to ensure that both internal and external inspectors were properly trained and qualified, that there were no processes to ensure inspection reports were received promptly and that management monitoring of inspector–of internal inspectors' fieldwork and inspection-report quality were limited.

Mr. Chair, we also noted problems with the implementation of inspectors' recommendations. We found that the staff members who scheduled bridge maintenance work often waived recommended work because they deemed it unnecessary or lengthened recommended time frames for doing the work because they viewed it as less urgent. Despite the potential safety risk, senior management did not review these actions to ensure they were appropriate.

Further, senior management did not monitor the total dollar value of necessary work deferred or whether all work deemed necessary was eventually scheduled.

Mr. Chair, we also found weak bridge planning and performance management. The department's capital planning for bridges relied on conversations with staff, senior management recall of inspection recommendations and undocumented professional judgment when considering various risk factors. As a result, the department could not clearly show that those structures most in need of work were being prioritized and, as such, that it was making the best use of limited funding.

In addition, although several other jurisdictions use a bridge condition index or other similar index to help them assess the condition of their bridges and set capital planning priorities, at the time of our audit the department had no similar tool, although it was in the process of developing one.

We also found limited bridge management performance measures. The department was not annually measuring and monitoring the percentage of required level 1 and level 2 inspections it completed, and without a bridge condition index, the department had no way of measuring if the overall condition of its bridge inventory was stable, improving or declining.

Finally, Mr. Chair, we found that selected quality assurance processes for bridge construction needed improvement. Specifically, we found several required construction contractor submittals, which are things like material samples, girder transportation plans and stressing calculations that contractors are supposed to submit to the department's engineers for review and approval, were missing or late and often lacked evidence of engineers' review and final approval. And while the department had various inspection checklists for different stages of bridge construction, its construction inspectors were not using them, leaving the department with no assurance that all required on-site inspection activities were being performed.

Mr. Chair, the department can do more to ensure the province's bridge infrastructure is being properly managed. Improved bridge inspection processes, better management oversight of inspections and the disposition of inspectors' recommendations, strengthened bridge capital planning and performance management and enhanced quality assurance processes will help to achieve this.

To this end, I am pleased that the department has accepted our 20 recommendations. We will be following up on the status of these recommendations as at September 30th, 2017.

Thank you, Mr. Chair.

Mr. Chairperson: Thank you, Mr. Ricard.

Does the deputy minister wish to make an opening statement?

Mr. Lance Vigfusson (Deputy Minister of Infrastructure): I'd like to again acknowledge by–that I'm joined today with Doug McMahon to my right and Ruth Eden to my far right, and I'm pleased to be presenting this opening statement on behalf of Manitoba Infrastructure.

Manitoba Infrastructure would like to thank the Office of the Auditor General for its review of the processes related to the management of provincial bridges. This department strives to ensure safe and reliable infrastructure that supports economic growth and development throughout the province.

As a department, we recognize the importance of proper stewardship of infrastructure and agree in principle with all of the OAG's recommendations. Public confidence in the safety of our bridge network is important, and we welcome the recommendations as an opportunity to improve the management of this key infrastructure.

Work has begun on implementing many of the recommendations, including improved performance reporting that will lead to better public understanding, transparency and access to information. As it relates to those recommendations, we've begun to implement many of–many solutions, and I'm pleased to say that we'll get into it in more detail. We expect to have about half of the recommendations fully implemented within the first year.

Of significance, the department is currently working to review and update the bridge inspection policy. We're reviewing internal processes used for developing and monitoring the maintenance program, developing a tracking mechanism for schedule inspection dates and reviewing the internal processes used to monitor inspections performed by our external engineering service providers. For those of you who don't know what that is, that's consultants.

The department is working toward the implementation of a fully functional bridge inventory system, or BIS, and bridge management system, or BMS. Both of these systems will provide the department with the substantial efficiencies needed in how our information is collected, analyzed and shared.

Once the BIS and BMS are fully functional, the department will be in a position to implement further recommendations, such as documented risk consideration and network-wide bridge condition index information, the ability to provide treasury board with information on asset classes, deferred maintenance and trends on the condition of the bridge inventory, the ability to set a measurable target for the condition of the bridge inventory, which first starts with measuring the overall condition of each of the individual bridges. We'll also measure progress in meeting funding commitments related to bridges as well.

To 'enstir'–ensure strong management and stewardship of bridge assets, Manitoba Infrastructure is focused on being a knowledgeable owner in all activities we undertake and oversee. As a knowledgeable owner through partnership and collaboration with research entities and national organizations we are able to assess and implement new and innovative technologies and materials that can address gaps or improve efficiencies to assist in managing this challenging and technically complex asset class.

In closing, I'd like to again acknowledge the office of the Auditor General's continued professional and collaborative relationship with Manitoba Infrastructure. Thank you very much.

Mr. Chairperson: Thank you to the deputy minister.

Before we proceed further, I'd like to inform those who are new to this committee of the process that is undertaken with regards to outstanding questions. At the end of every meeting, the research officer reviews Hansard for any outstanding questions that the witness commits to provide an answer, and will draft a questions-pending-response document to be sent to the deputy minister. Upon receipt of the answers to those questions the research officer then forwards the responses to every Public Accounts member and to every other member recording as attending that meeting. Therefore, I'm pleased to table those responses provided by the associate deputy minister of Finance to all the questions pending responses from the August 17th, 2016, morning meeting. These responses were previously forwarded to all the members of this committee by the research officer.

Before we get to questions, I'd like to remind members that questions of an administrative nature are to be placed to the deputy minister and that policy questions will not be entertained and are better left for another forum. However, if there is a question that borders on policy and the minister would like to answer that question or the deputy

wants to defer to the minister to respond to, that is something that we could consider.

The floor is now open for questions.

Mr. Maloway: Thank you, Mr. Chair–

Mr. Chairperson: Oh, Mr. Vigfusson, did you have further to your opening statement?

Mr. Vigfusson: If I may, I'd like to ask for leave to be able to–I know typically it's the responsibility of myself to answer and we can certainly do that. But Ruth Eden is a bridge expert; that's her job in construction design maintenance. Doug McMahon's also got experience in that end, as well as with our water control side and, of course, my responsibility is for the whole department. And if I may, I would offer that if the three of us could confer in who best should be providing the answer, if I could be leave to have that, and I think that'll be a lot easier than coming through me and then trying to spit it out and maybe missing something in context.

Mr. Chairperson: I appreciate that, Mr. Vigfusson. I understand the committee has shown some leniency in terms of allowing others at the table to answer that. The only caveat I'd put to that is that if the question is directed to you, as deputy minister, specifically or if the question once question with a, you know, a request that you answer it, if you feel comfortable that you would also put some words on the record.

Is there leave of the committee to allow the others at the table in the department to answer? *[Agreed]*

Thank you very much for the clarification.

Mr. Maloway: My first question is to the Auditor General, and in our pre-meeting I'd asked a question about similar audits in the past, and the Auditor General pointed out there was an audit back in 1996-97 and that–with similar findings, and no improvement had been made since then.

Just interested and curious to find out more information about the circumstances surrounding that audit and the recommendations that were made and why they hadn't been implemented in the 20 years since. Just interested and curious to find out

***** (14:20)

Mr. Ricard: So the member is really taxing my memory here; 1996, I believe, is when we issued a report on the planning of the Manitoba road network, I believe is where it is. And my comments, in terms of similar findings, linked to the need for better information on road conditions, as I recall. I'm a little uncomfortable speaking about that audit because it is 20 years ago. So if the member would find it useful, I could, for our next meeting, come up with a summary, but to go on the record now I would be very uncomfortable.

Mr. Maloway: I think that would be fine.

My next question would be to the minister or deputy minister, and that is since the department agrees with all of the recommendations of the audit, I'd like to get some details as to what steps have been taken in regards to each of the recommendations.

Mr. Vigfusson: Would the member like a breakdown on each one, like a summary of what we've done for each one of them to date?

Mr. Maloway: Mr. Chair, I think that would be helpful to the committee members here.

Mr. Vigfusson: We've received the report in mid-July. It's two months since. Since that time, what we've done is not only we've agreed with all those recommendations, we put together a action plan for each one of the recommendations. And they're currently under development for each one. We've got a team lead assigned, special–that's their task now, is to how to deal with this, and action plans are under development for each one of those 20 recommendations. And then what we'll do is we'll prioritize those action plans because obviously you can't do everything at once, so we'll do that, and then we'll go after completing the high-priority items first as well as the ones that are the low-hanging fruit, if you will, the ones that are more easier to implement.

As I said, our goal is, within the first year, to have about half of those recommendations fully implemented.

Mr. Maloway: Yes, that was my next question about the timelines here: When do you see the–all of the recommendations being implemented?

Mr. Vigfusson: The 20 recommendations obviously will take some time. The first–or roughly, not the first half–but about half will be completed in the first year, about three quarters will be finished within two years, and then the remaining ones will take a little bit longer than two years.

Those ones that are going to take longer than two years are tied to the need for more robust

technology such as a bridge information system and a bridge management system, which we're working on right now.

Mr. Maloway: I'd like you to detail the current bridge inspection policy in place at this time.

Mr. Vigfusson: I have it right in front of me; it's two pages long. Would the members like to listen? *[interjection]* Okay.

So we have it broken down. I'll read it verbatim, and if I may, as we go through, if there's some clarifying questions or so, Ruth Eden, who lives this stuff, will be able to help out.

To ensure an appropriate level of safety and convenience to the travelling public and to protect the investment and to facilitate management of the structures, that's the intent of our policy.

Our frequency of inspections–on an annual basis, we'll do a regional inspection. We call these our level 1s. What that means is that we have 66 maintenance yards across the province for our highway system. And we use those foremen and their staff to help. They're the eyes and ears. They look after all the roads. So we get them to go underneath the bridge and take a look at all the bridges in their area.

The inspections should be undertaken in the spring, May or June, of each year, as soon as possible after the water level in the streams and rivers has receded to its normal level. That'll give us an idea as–was there any rising water that's caused some problems with scour or if there's something wrong with the underside of the bridge.

On bridges and structures branch inspection, all major bridges–and major means to a bridge that's longer than six metres or 20 feet, they'll be instructed on, every two years, on our provincial trunk highways.

Major bridges on our provincial roads and our main market roads, those will be done every 48 months; minor bridges on our provincial roads and main market roads, because those are a lower priority for us, and service roads, every 72 months.

Culverts. Culverts are–they can be a combination of round culverts, box culverts, but something bigger than six feet in diameter. Is that correct? Six feet? On PTHs we'll do those every 48 months, and all others every 72 months.

We also inspect our overhead sign structures. Those you'll see on the Perimeter Highway, having the big sign that says, you know, Kenora next right, that kind of a thing. We do those every 48 months. And all other structures, we'll do them as required. And any new structure is to be inspected 24 months after construction.

Now, keep–it's important to keep in mind these intervals are guidelines that are to be to adhered to within reasonable limits. Shorter intervals may be required depending on various factors such as age, known deficiencies, increased traffic volumes, et cetera.

An example of the shorter intervals is the recent series of floods we've been going through: 2009, 2011, 2014. It's forced us to go back and look at some bridges of interest more frequently because of the recent flooding.

So in terms of level of inspection, our level 1s, that's the ones done by our regional folks, it's a general inspection of all structures in each region carried out by regional staff on an annual basis. The inspection requires completion of the regional–or pardon me–the region's structures report form, and it's forwarded to the bridges and structures branch.

A level 2, that's a much more detailed inspection. This is carried out by or under the direction of bridges and structures branch, which requires completion of a standard structures inspection report. The inspection is undertaken by trained bridge inspection personnel and may require the use of specialized tools, techniques and equipment, such as an under-bridge crane, so we can get underneath there to see what's under the bridge. This function could be assigned in part to private engineering consulting firms.

We also lay out qualifications for our inspectors. For those level 1 inspections, the inspector is qualified to–needs to be qualified to undertake general inspections of all types of structures. The minimum qualifications are a high school diploma, or equivalent combination of education and experience plus structure inspection training by a level 2 inspector.

Our level 2 inspectors are qualified to undertake detailed inspections of all type of structures, and their minimum qualifications are as follows: a civil engineering degree from an accredited university, plus two years of related experience, which must include completion of a certified bridge inspectors

training course or structure inspection training by a level 2 inspector; or a technical diploma in civil engineering technology, plus three years of related experience, which must include a completion of a certified bridge inspectors training course or a structure inspection training by a level 2 inspector. And a third way to do it is equivalent combination of education and experience for both the above two items.

And our policy is bridges, overpasses, culverts, overhead sign structures and other structures within the responsibility of the bridges and structures branch shall be inspected by qualified inspectors in accordance with the specified schedule.

Mr. Maloway: I'd like to get some information about the actual numbers of people involved here.

How many bridge inspectors would there be working for the Province versus, say, the City of Winnipeg?

***** (14:30)

Mr. Vigfusson: Okay, so with bridge inspection we have both maintenance inspectors, as well as the construction inspectors. Are you looking for both?

An Honourable Member: Yes.

Mr. Vigfusson: Okay. So, as it relates to our–just going to get this right–so for bridge inspections we have 13 staff members currently dedicated to bridge inspections. We have a senior engineering manager, an inspection engineer, supervising inspector and 10 inspectors ranging from junior to intermediate levels.

We've also identified the need for a senior inspection engineer that we're working on.

We also have access to the consulting industry. We have two contracts annually that we put out to supplement the resources to help us out on bridge inspections. As it relates to construction, we have 14 to 16 staff members currently dedicated to inspect structures under construction. They–that includes a senior engineering manager, two construction engineers, one to through–one to three engineers in training, depending on the volume of work, and 10 construction inspectors, again, ranging from junior to intermediate levels.

We're also looking—identify the need for a more senior construction engineer to supplement us in this regard.

As it relates to compared to the City of Winnipeg, I have no numbers to compare that to.

Mr. Maloway: I'd like to know a little more.

You've read the qualifications, but I'm wondering how many of these inspectors have engineering degrees.

Mr. Vigfusson: Could I get clarification on the number of engineers for inspections or construction inspection or both?

Mr. Maloway: For both.

Mr. Vigfusson: That would be seven to nine, counting our executive director.

Mr. Maloway: I'd like to know if the department could advise as to where the BIS and the BMS projects are, in terms of the IT priority lists.

Mr. Vigfusson: About the BIS and the BMS projects, have been identified as one of our highest priorities with Infrastructure.

In order for these IT systems to be fully functioning, both projects need to remain as a high priority for the Province overall, and we understand that is in their upper half, if you will, in terms of the list of projects that they're working on.

Mr. Maloway: So are you saying that neither system has been implemented at this *[inaudible]*

Mr. Vigfusson: Can I have leave for Ruth Eden to answer this question? She's working on it directly.

Mr. Chairperson: Yes, agreed.

Ms. Ruth Eden (Executive Director of Structures, Infrastructure): Good after–sorry, good afternoon. So just to explain maybe in a little bit more detail exactly where we are with having a fully functional BIS and BMS system, the bridge inventory inspection system, BIS, it's–just to explain a little–in more detail what it is, it's a system that has all of our information for a specific site. So things like location, the type of structure, the type of components, the year it was constructed, all of that information would be in BIS. In addition, we also have the historical record of all of our bridge inspections, and they identify the current condition of the different components of the structure.

Part of our bridge inspection, which also would be included in our BIS, would be all of the maintenance work activities that are recommended as part of the inspection process.

So the implementation of the first phase of BIS is expected to be complete by the end of this fiscal year, and we are looking at having continuing enhancements over the next estimated two to three to four years, depending on how long it takes to have the full functionality.

So, basically, we do have–right now we do have a means of capturing our inventory and our inspection data, but we are looking at automating it and improving the efficiency of it through the BIS system.

A BMS system, or a bridge management system, is a much more sophisticated asset management tool that takes information from the bridge inspection inventory system, and it is used to generate what we call a bridge condition index for a specific site, which is based on the current inspection information that we gather. Once we have this information, then the BMS can be used to analyze the specific structure and determine the most appropriate asset management strategy based on its current condition and its age.

Ultimately, we would then take the information for all of the structures across the network and look at optimizing the entire network as a whole and determining the optimal investment that we would then be using on the structure assets.

So, again, the implementation of the BMS would be through three phases. The first phase would be the calculation of the bridge condition index, and we're expecting to have that complete and functioning by the end of this fiscal year. The next phase would be the ability to analyze the bridge management strategies for a specific site and a specific bridge, and that we're hoping to have in place within the next two to three years. And, finally, the third phase, which would be the network-wide analysis and the optimization based on the current funding levels, would be expected to occur within the third to fourth year.

And, again, it's going to take some time once we do have the BMS working in terms of what we call ground-truthing the data. So once the information is put in, we need to go in and verify that what the system is spitting out or telling us actually makes sense.

So in order for both the BIS and the BMS systems to be fully functional, both projects need to remain as a high priority within a–within, sorry, MI and overall within the government, and both the next phases of implementation need to remain as a high priority with commitment to continuing these. And the automation of these activities will take time to implement and to get it right. We want to make sure that the data that is being generated is actually correct.

Mr. Maloway: So I understand you're implementing these two systems pretty much at the same time, so tell me what the legacy system was, then.

Ms. Eden: So, clarification: the legacy system for both BIS and BMS?

Mr. Maloway: Yes, that's right. As you're entering your information, are you bringing it from a legacy system or from paper?

***** (14:40)

Ms. Eden: The BIS system, the legacy that we have there is all of the information is captured on what we have is Excel spreadsheets right now, so we are and all of our reports are being kept in our system. So we do have access to it. It's just not an automated, efficient system at this point in time. So the data is there. It is being captured. We just want to improve the efficiency of it.

In terms of the bridge management system, unfortunately, we don't have anything right now; we use our engineering judgment to prioritize the projects that come forward.

Mr. Maloway: So now who is implementing this system? Is this being done by government employees, or is this being farmed out on a contract basis to private individuals?

Ms. Eden: So each of the systems right now are software packages systems that are purchased. The BIS system is one that the government is basically building. We're developing the tools that we want and how we want it to look, and we've hired a consultant, Avante, to do that for us. The BMS system is more of an off-the-shelf system; it's a Bentley system that comes from the United States. It's what all of the jurisdictions across the US use, and we're using that system and customizing it for Manitoba's application.

Mr. Maloway: Well, and that's was my–really my next question is: Did you check with any other provincial jurisdiction in Canada to see if we could simply, you know, get their–a copy of their system, if it would work here, you know, and save perhaps a lot of money doing that? Did you do that with the BIS system?

Ms. Eden: So I'll address the BIS system first, our bridge inventory system. Basically, we did–we have done jurisdictional scans across Canada to determine what is available and nobody has a system–an off-the-shelf system. We are members of the Transportation Association of Canada in touch with all of our Canadian counterparts. Most of the Canadian jurisdictions are choosing to go the way that we're doing with a customized system appropriate for every jurisdiction's needs.

With regards to BMS, we have done a number of jurisdictional scans to come up with what other jurisdictions are doing, and we also hired a consultant from the States to assist us with this in terms of what system would work the best for us. And, again, because we're members with the Transportation Association of Canada, we did converse with all of them. There really are only two bridge management systems throughout North America that are appropriate and fully sophisticated asset management tools that we were looking for.

Some of the jurisdictions have chosen the other one. We chose to use what we call the AASHTO system, the American system, because it ties in with a number of our other processes and philosophies as well. So there was a distinct tie there. That was the recommendation also from the consultant that we hired.

Mr. Maloway: Now, could you tell me what the system the City of Winnipeg uses?

Ms. Eden: We're not entirely sure which system the City of Winnipeg uses.

Mr. Maloway: I'd like to ask about the costs of the implementation or the purchase of the software and the cost to implement for both of these systems.

Mr. Vigfusson: So we're talking about the purchase and the implementation. So we would have to come back to this committee with that information. Obviously, we don't have that directly right in front of us, but we can do that for you.

Mr. Maloway: I'd like to know how this relates to OIT or whether this is just exclusively in your department and how it also relates to the SAP system, if at all.

Mr. Vigfusson: Could I get clarification on that question?

Mr. Maloway: OIT is responsible for government-wide systems, but infrastructure has its own section, I guess, dealing with IT issues. So I'm just wondering whether this, you know, how you–how the system works with OIT, what's the connection to OIT, and also does it have any application regarding SAP? So doesn't sound like it would, but.

Mr. Vigfusson: I'm thinking, OIT, the reference there is to business transformation technology, BTT. So our staff are working closely with BTT as we go to both purchase and implement the solution, and to our knowledge there is no linkages to SAP.

Mr. Blair Yakimoski (Transcona): It was mentioned earlier on that–had that–bridges were inspected in spring. Are they only inspected in the spring?

Ms. Eden: So the reference earlier was in regards to inspecting in the spring with what we call the annual regional inspection or the level 1 inspection. The intent of that is that to see if there's been any damage from a flood event. So that is specific to the level 1 inspection.

The level 2 inspection, which is done by the people out of the bridges and structures area and the much more detailed inspection, those inspections are done throughout the entire spring, summer, fall, as soon as conditions allow. So we're out there doing inspections six, seven, eight months, if we can, out of the year doing the level 2. And that is the 920 inspections at level 2 inspections we intend to do this year.

Mr. Yakimoski: In the report, I believe identified close to 600 inspections that hadn't occurred. Have those subsequently occurred?

***** (14:50)

Mr. Vigfusson: So the–I believe the member is referring to the 616 that the Auditor General identified. Of those 616, 31 structures were missing from our inventory that we now, thankfully, now we know that they're there. The other 585 are large culverts that we inherited when we took over the file from the former water stewardship group back in the late 2000s.

All those 600 are going to be prioritized on a risk-based assessment over the next three to four years and will be inspected.

And, in fact–going to share some other information–we typically would do 650 to 750 inspections a year. We're up over 900 this year to try to get caught up to these ones.

Mr. Kelly Bindle (Thompson): I have a couple of questions related to the inventory system and the qualifications of the inspectors.

One refers to Mr. Maloway's question regarding the purchase of the BCI and the BMS systems where you're hiring consultants. I'm just curious: Were those–was that a competitive tendering situation or was it single sourced?

Mr. Vigfusson: We heard a couple of different things, so I just wouldn't mind a little bit of clarification from the member.

Mr. Bindle: Well, and it also relates to the consulting firms, I guess. If you're going to hire a consulting firm to do your bridge inspections, do you request competitive tenders, like, for the system you're using and also from the firms when you're requesting inspection?

Mr. Vigfusson: Is the question did we go to competitive tender for the consultants that we hired for our bridge inspections?

Mr. Bindle: For your BCI and BMS systems development.

Mr. Vigfusson: So you're asking for: Did we go to competitive tender for the purchase of the systems for BCI and BMS? Okay, all right, just wanted to clarify that.

Mr. Doug McMahon (Assistant Deputy Minister of Infrastructure): So I think there's three components that you're asking if they were competitively tendered.

The bridge inspections by consultants are tendered every year. So that's for that component.

The bridge inventory enhancements, the bridge inventory system enhancements, there were–there was a competitive process for that. Avante, I believe, is the successful consultant.

The bridge management system–there were only two systems available. They were evaluated as systems, and price was considered a component in the evaluation. The AASHTO or Bentley system was selected based on price as one of the components but also that it was compatible with our AASHTO systems that we use internally for our bridge design and bridge rating systems.

Mr. Bindle: Okay, regarding the consulting firms, when you're consulting, when you're getting competitive tenders to do the bridge inspections–like, I'm a civil engineer, structural engineer, myself, and we've ran into situations where the owner has an engineering department itself, such as your department, and also they tender it out, and then the consultant–to a consulting firm, as you're a consulting firm, they tender that work out to, say, a construction firm, and hand off the responsibility of the engineering to the contractor. The contractor contracts out the engineering. The engineering gets done, handed back to the contractor, handed back to the consulting firm and reviewed, and handed that back to the owner's engineering firm and then reviewed.

And, so, I'm just curious, like, when you go to do this tendering, do you make it clear who has the engineering liability, because that was always a concern where the liability laid on the recommendations of a condition structure.

Mr. Vigfusson: This is a perfect example of why I've asked for leave to have these individuals speak because it's a very good question, and Ms. Eden has responsibility for that, can provide a very robust answer. I'll put you on the spot.

Ms. Eden: So, part of our qualification criteria that we have in our proposal call for the engineers to submit prices on includes the qualifications that they need to have to be able to do the inspections on our structures.

We also ensure that the team that is identified as part of the proposal call is qualified, has the qualifications and that that team is the team that actually does the work. They cannot do substitutions and change out any members of the team without our prior approval, and it's also identified that if there is a substitution, they need to have the same qualifications or better than the person that was identified originally as part of their proposal or their submission.

Mr. Bindle: And, obviously, if you have the inspection done internally, there would be a designated engineer within your department that takes responsibility for–the engineering structural responsibility for reviewing that report or recommendations on that inspection.

Is it the same with the consultant, or do you leave that responsibility with the consultant?

Ms. Eden: Our requirement is that we have what we call an oversight engineer or project managing engineer. They are responsible for reviewing all of the inspections that are completed by that engineering consultant and ensuring that the level of

quality in our requirements are met to our standards. So there is engineering oversight on all of our engineering consultant assignments and we have engineering oversight as well for our internal inspections.

Mr. Bindle: Completing that review of their submission, does your department take responsibility for the engineering, accepting the submission from the consultant?

Ms. Eden: So it would follow normal process. The professional liability would stay with the engineer who actually completed the report, but we would accept the report. We wouldn't approve the report, but we will accept the report, which means that that professional liability is not necessarily transferred to MI. It would remain with the consultants as the responsible party for doing that work.

Mr. Bindle: And one last question: Is that clearly stated in the tender package given to them?

Ms. Eden: So I just want to take the opportunity to clarify to the Public Accounts Committee that it is–MI places a lot of importance on having the engineering and the professional engineering oversight on this work. It is very important that from the ethical responsibility and the values of having the professional engineering oversight and having professional engineers responsible for it. We do take that very seriously and that is–that is a big portion of our requirements, both for internal and for external as well.

And I forget the other part of the question– *[interjection]* Oh, clearly identified–it's standard practice for all of our assignments. I need to go back–we will commit to going back and ensuring that that language is included in our contracting agreements, but it is our typical practice and full understanding with the engineering community and the industry that that is the requirement, but we will endeavour to find the language on that.

***** (15:00)

Mr. James Allum (Fort Garry-Riverview): I want to, of course, thank the Auditor General and the staff for their report and as well as the department for their work and the responses in the discussion that we're having here today.

I want to start first with the Auditor General. I know the report says July '16 when it was delivered. What years does the audit cover?

Mr. Ricard: So we–you know, if you look to–in the audit approach section of the report, we indicate that we primarily examine processes in place between January 2012 and July 2015.

Mr. Allum: Thank you for that. If that was in the report, I didn't quite see it, so I appreciate that clarification.

In the report you include a summary response from the department, and it identifies–and the deputy minister went into a few of these details in his opening remarks. But one of the elements of the summary response refer to the recent major flood events in 2009, 2011 and 2014. Can you point me to where in the report I would find that kind of context explained?

Mr. Ricard: I'm not entirely clear what you would expect in terms of an explanation of that context from our office. We–just to reiterate what we examined, we were looking at departmental processes. So the department is providing explanations for why they may not be doing all the things that we were expecting them to be doing and why they were behind and what challenges they were facing. But we were looking at–and I'll just repeat it here–that we examined the department's management of the bridges, including its processes for inspecting, for bridge inventory planning and performance management and for ensuring quality assurance. So we just picked a period of time and we looked at what they were doing in that period of time in relation to these objectives.

Mr. Allum: Well, I guess the context is helpful in understanding a department that's probably drawn in several different ways as it's trying to deal with emergency events and not just the normal course of action.

So I want to read into the record, Mr. Chair, on page 7, one of the things cited by the department, and it's the bottom paragraph, and it goes like this, quote: "Effects of recent major flood events: The department had to undertake emergency repairs and replacements resulting from damage caused by the 2009, 2011 and 2014 flood events. Over $150 million will be spent between 2009 and 2019 at approximately 175 damaged bridge sites throughout southern Manitoban as a direct result of these events." These–the internal resources required for emergency response, inspection, assessment, engineering design and construction oversight

necessitated reassignment from normal operations for a substantial portion of the past seven years.

So, again, my question is: Wouldn't that kind of context be relevant in assessing the work that was done by the department in terms of bridge inspections and repair as well as any other details associated with that?

Mr. Ricard: Maybe I'll just refer to page 32 very quickly because in section 221 we do talk about some risks identified in mitigation strategies developed by the department, and so we do acknowledge that the department had identified a number of challenges or risks that it was managing and areas that were, perhaps, the focus of their efforts and operations.

I would submit we were looking at the department's practices and inspections. Policy is policy, and compliance with policy should occur. I would argue, especially for the higher risk areas, regardless of the circumstances you're dealing with, at the very least, I would leave it up to the Public Accounts Committee to decide if the department's rationale meets with their satisfaction.

Mr. Allum: So, for the deputy minister, then, can you articulate for us the degree to which those flood events, major flood events, impacted routine procedures that the department would ordinarily undertake were it not for those emergency circumstances?

Mr. Vigfusson: The results of those floods certainly did impact our routine practices, there's no doubt about it; 2011 and 2014, we had about 70 to 80 bridges in each of those years that became of interest that we had to repair or significant repair or replacement.

Regardless of the extra taxation on us because of the floods, though, the work that the Auditor General has pointed out is critical for us. We want to ensure public safety of our bridges. Yes, we were taxed, but that still doesn't mean that we're not going to implement all these recommendations and make improvements. We want to have a robust system of both BIS and a BMS and we want to get to full asset management for it, so value for money and all those kinds of things.

Most importantly, we want to ensure that the integrity and the safety of our bridges are there for Manitobans.

Mr. Allum: Well, and I appreciate that, and I certainly know that that's what the Auditor General and the staff are after as well. That's absolutely essential.

But, Mr. Chair, a reason I raise this, because it's the second time in two Public Accounts Committees we've had where we've had to ask about context, because to divorce the practices of the department or the circumstances of internal departmental practices without relating them to the context in which the department, the government, Province, found themselves in, makes it hard to assess exactly what the–just how bad things actually are in relation to the report.

So I'm interested, and I'll continue to ask these questions about context going forward, and ask the Auditor General if there isn't some way to build in some kind of context to help us to really understand the circumstances which departments find themselves in. We don't live in a perfect world isolated from real events and, in particular, emergency events that had a huge impact.

And so I'd just make that as a suggestion going forward, and we'll see how that transpires.

Mr. Ricard: I would like to just comment. One of the things that we are working on in terms of enhancing our own internal operations is a greater focus on what we call a cause and consequence. So when we do find a problem we want to better understand why that happened. And that's where we would get into certain, you know, occurrences or certain events that the department would be now talking about.

It's not an easy thing to do, I'll have to admit, to be able to substantiate or narrow down a cause. And so in our reports we look at, just to be clear, we do look at process, expected processes. We look for ways to make it more efficient.

And I would just argue our recommendation to–our recommendation 1, when it gets down to the policy around inspections, you know, we say–we recommend that the department review and update its bridge inspection policy so that it is comprehensive, risk based and reflects intended departmental practice.

***** (15:10)

So the risk-based part, I think, is very critical because it's like, develop a system–we know that there are some risks currently considered in the

existing policy, but we–our findings are it should be more risk based–find ways to be focusing on the risks so you're using your resources as effectively as possible.

So I hear what you're saying about context. I would view it in terms of causal factors, understanding the causal factors and coming up with recommendations to help the department deal with causal factors. But things like funding, things like inadequate HR resources, they're difficult to pin down, and we–in order for us to support–yes, there aren't–there isn't enough money or there isn't enough staff resources to do the job, we'd have to do a workforce analysis. We'd have to take a look to see if the department staffing resources were used effectively overall and not just for the one program that we're looking at.

So it becomes very difficult and somewhat problematic from our, you know, from our side to do our audits in a cost-effective way and timely manner.

Mr. Allum: Thank you for that. I appreciate the discussion, and I take what you're saying.

Could you–again, to the auditor–identify how much would be the total cost of implementing the recommendations?

Mr. Ricard: Unfortunately, that's not something that we did. We did not cost–we typically don't cost out our recommendations. We fully acknowledge that most of our recommendations will cost government something rather than save them money, but I say that hesitantly because it would have to be–I would want to go recommendation by recommendation and program by program, but there's no doubt in this audit there are some cost implications.

Mr. Allum: Is it–to the auditor–is it standing operating procedure not to estimate the cost of the recommendations?

Mr. Ricard: I would argue it would be very difficult for us to do that with any degree of accuracy.

Mr. Allum: You wouldn't ask the department, then, for a sort of, could you give us a sense of how much all of what we're recommending is going to cost? You wouldn't have that conversation with the department?

Mr. Ricard: Not typically, no.

Mr. Allum: Well, it's–and I appreciate that that might be very difficult, and there's no doubt that there would be a substantial investment required in order to do all of these things. The IT systems alone strike me as being quite costly, but, of course, we make those investments, one hopes, to save money in the long run as well as to protect public safety as well.

I'm wondering if the deputy could just–or staff, if necessary–could just define the difference between the BCI and the BMS.

Ms. Eden: BCI stands for bridge condition index, so it's basically a calculation based on the condition of a structure. It would be a rating typically from 1 to 100 to give an indication of what the condition of that structure is.

BMS is a bridge management system that is used to–as one thing it would do, it would generate the BCI, but it does much more than that. It does the analysis and the optimization across the network level.

Mr. Allum: I heard the deputy say earlier that it was a reasonably high priority on the list of the IT folks in government, and I understand how that works. Do you have an estimated cost for what this would be for the two?

Mr. Vigfusson: I think I'll have to go back to that same answer as I had before–or what that Mr. Maloway had in terms of the purchase and installation cost. We're in process right now with the BIS itself. So, if I can, I'll bring–come back to PAC with that information.

Mr. Allum: Okay. Thank you. I appreciate that. It’s not easy to pull those numbers out so easily as all that.

If I could just ask the minister: Is this a priority for him, and will the government be investing in both of these particular programs?

Mr. Pedersen: As our government, we are fully focused on safety of Manitobans and the implementations. We take the recommendations of the Auditor General very seriously, and we're working to implement them and, of course, we want the public to have confidence in our infrastructure all across Manitoba.

Mr. Chairperson: Is this a question for the deputy minister or for the minister?

Mr. Allum: I'm sorry, Mr. Chair, I'm just curious on this, because it does go from the policy and the procedures part of the department into the political, and I just think Manitobans need to know. I suppose

the minister's said public safety, and I think that that's–absolutely everyone around this table would agree with that. So I'm just trying to get a sense of how big a priority this is for him, as the minister, in order to protect Manitobans. And so I'm just asking–and whether or not he uses the phrase value for money all the time, whether this constitutes value for money in his estimation.

Mr. Pedersen: Mr. Chairman, without getting into the really political discussion, as PAC is not here to do a political discussion to do a review of the Auditor General's report, I'll just answer the member's question by–you know, we're all for strategic return on investment in infrastructure. We feel that investing in the BIS-BMS systems will help us to do the strategic return on investment–infrastructure investments, because you'll be able to–with this system, you'll be able to look at individual bridges and be able to optimize where–first of all in safety. Safety's always paramount in all these structures but also in optimizing our investment in which bridges need to be repaired, which bridges can perhaps wait in–with other higher priorities, with other bridges, and that's why the department is looking at investing in this BIS and BMS system, using it as a tool to help us to determine where we need to invest money in infrastructure.

***** (15:20)

Mrs. Colleen Mayer (St. Vital): Could you explain to me–this is going to go back, just so that I can understand the process. Can you talk a little about or walk me through what a level 1 inspection looks like? So spring comes; staff is ready. What's the first step and how does that proceed?

Ms. Eden: So because I'm the person at this end of the table who's actually done bridge inspections, the level 1 inspection is a very high-level inspection of is there any significant damage, is there something that there's a concern there. Can you see that the flooding has damaged a pile under the bridge? Or is the beam across, have there been debris that have hit it and damaged a beam? Is the railing–a portion of the railing missing?

So it's a very high-level inspection of the bridge to see if there's any obvious damage or concerns with the bridge. At that point, if there is something that is noted, there would be a phone call to our office, to the Bridges & Structures office, for one of our staff to then go out and have a much more detailed look and assess if it is a concern or not.

Mrs. Mayer: So let's use you, for example. You go out, you do the inspection. Is it paperwork you're filling out? Is it a visual inspection? Talk a little bit about that process and then what happens after you do that analysis.

Ms. Eden: A level 1 inspection includes a written report. It's very–it's a very simplified report which basically would look at the larger components of the structure of a bridge or a culvert and identify if it looks good or if there's a problem. If there is a perceived problem or not, there's pictures taken. So there would be a written report that would then be forwarded to the–to Bridges & Structures, to our office, for review, and that information would be filed in the file for that specific site. So there would be a record. It would be entered on our spreadsheets that the inspection was done, and it would be filed for record purposes in our system.

We would review–we do an audit of those. So our internal staff, over that year after they've come in, we would do an audit of a certain percentage of those reports. And if there is anything major, like I said, again, there would be immediate contact to our office.

Mrs. Mayer: So if you're not the same person that went out last time, do you take last–the last report with you? Do you review it before you go out? What does that look like?

Ms. Eden: Yes, definitely there is a review of the previous report for whoever is going out–would look at the last report to determine what was identified and what has been done. Usually, on a level 1, we prefer if it's the same person all of the time that would be doing it, but regardless, we train–we have a training program every year where our staff, the Bridges & Structures staff, would go out and offer training to all of the regional staff undertaking the inspections to ensure that they are familiar with, you know, what they're looking for, how to do it, how to fill out the reports, how to get the information to us. So there is consistency there in terms of–and oversight in terms of what they're doing and how that information is brought back to us.

Mrs. Mayer: Can you–on average, how long would an inspection take, from the time you go out to the time you do that? I understand there'll be some variations–depends on what you see–but on average.

Ms. Eden: So for the level 1 inspection, on average an inspection at a site would take–depending on the type of structure, whether it's a culvert or a large

bridge, it would take somewhere between an hour to an hour and a half. It could be less than an hour if it's a pretty straightforward bridge. That would include the time to, you know, fill out the form, and then when they would–the person would go back to the office, there would be some time to then gather all of that information together and send it to us.

If it's a larger bridge it would take–a level 1 on a larger structure, like something over the Red River, could take two, three hours, depending on how large it is.

Mr. Chairperson: Ms. Morley-Lecomte–oh, I'm sorry–Mrs. Mayer.

Mrs. Mayer: Thank you.

Now can we talk about level 2, a little more detail? Same type of questions that I'm asking, so maybe that makes it a little easier for you, but can you explain that process to me and what that looks like?

Ms. Eden: So I'm glad that you asked about level 2, because I did want to talk about level 2 as well.

The level 2 inspections are a much more detailed inspection by someone who understands the overall structural design of the bridge at a high level and the different components that the bridge could be made up of: concrete, steel or timber. They are also aware of all of the different deterioration methods and the problems that could occur with each of those different types of materials.

A level–when we do a level 2 inspection, and those are done either by Bridges and Structures staff or by the ESPs who have experience with their–with bridge, either through bridge engineering or bridge technology. They're very technical–more technical people. We inspect to OSIM, O-S-I-M. It's Ontario standard inspections manual–or Ontario Structure Inspection Manual. It basically outlines all of the different components that you can have for all of the different structures, also the different material types that each of those components could be, the different defects that can happen for each of those components for each of those material types, and how you would then determine what the level of deterioration is and how you would rate each of those components based on what you see. So it's a much more detailed, very proscriptive type of inspection.

An inspection of a level 1, there's forms to fill out; they're very detailed. They can be 10, 12, 18, 20 pages in length. You have to go through all of the different components and identify the condition of each of those.

There's a number of pictures we–for a bridge inspection. There's certain specific pictures that need to be taken of all of the different components. At the end of an inspection on a major bridge crossing the Red River, for example, we can have close to 100 pictures for that inspection. That information is then all captured and, again, goes into our files.

A level 2 inspection can take–for a simple structure it can take two, three hours. For a major structure over–I keep saying as an example, the Red River or the Assiniboine River, those structures can take a week–those inspections of those structures can take up to a week.

We usually go in with an underbridge piece of equipment where we have the guys in the buckets, and it has–they have to be able to be close enough to every component of the structure to touch it.

So that's the requirement for a level 2 detailed inspection.

Mrs. Mayer: And so when that information all comes back to bridges, the reports come back, all these assessments are done, who in the department does the final check and balances and the–at the end result, sign-off? Like, how many individuals does that crossover? Or is it one person specifically being the manager, or how does that work?

***** (15:30)

Ms. Eden: So, once the inspection is done, all of the different components are rated either excellent, good, fair or poor. That is used to assess the condition of the specific components, and then that is used to identify the overall condition of the structure as a whole.

When structures are–when there's a serious issue identified during an inspection, our inspection–our senior bridge inspection engineer is notified immediately that there is a problem. He would then talk to the staff, whether it's internal or to the consultant staff; there would be pictures exchanged; someone would go out to the site and, at that point, there is an assessment of what needs to be done. Do we need to restrict the bridge? Do we need to do an analysis? Do we need to close the structure?

So, if there is a problem identified, it is escalated very quickly through the system to determine what action needs to be taken. If it's a routine inspection, the bridge might be five years old, six years old, and

there's no change in any of the components from previous that–those reports would then go on to file and be saved in our records.

We also do an audit of 10 per cent of the inspections that are done over the year just to ensure that there's consistency and our standards are being met. We will actually send our staff to sites to just do an independent inspection and then review to make sure that there is consistency between what was done previously and what was undone.

It's important–you can see from all of this description it's important that this information is then used to go into our bridge management system to be able to generate the condition of this structure and prioritize which structures need to be worked on and what work needs to be done.

Ms. Janice Morley-Lecomte (Seine River): I have a couple of questions.

One, when we're talking about bridge safety possible closures, what mechanisms do you have in place to ensure the safe and efficient movement of freight continuing?

Mr. Vigfusson: I would just like to ask a little bit of clarification because when it comes to the safe and efficient movement of freight are you talking about actions we take when we see a problem on a bridge and we need to take some actions or are you talking about more what are we doing at the design phase to build in some redundancy and some additional capacity to handle future loading because they are two different things for us.

Ms. Morley-Lecomte: Continue to keep the freight moving so that the individuals at the other end are still able to receive what's been coming.

Ms. Eden: So Manitoba Infrastructure takes the–you know, the safety of the network at a–it's one of our highest priorities–or is our highest priority, and the safe and efficient movement, I'm afraid, is extremely important to us for the economic well-being of Manitoba.

We ensure this through a number of different means. During the design–the initial design of structures, we are very conservative with our design vehicles, so we're not actually designing our bridges to take the vehicles that are passing over them. It's a much heavier vehicle, so that our bridges are designed to be, as Lance said, to have a lot of redundancy to be conservative so that they can take those heavy loads.

There's a number of times where we are requested by industry for overload permit applications to haul heavier and heavier loads than legal loading, because we design our structures so conservatively it is–it's common practice to allow overload permits. We do a thorough review of all of that to ensure the structure is safe, but we do allow overloads on a fairly routine basis to ensure that freight can move very efficiently through the system.

When, during an inspection, we do notice that we have a potential problem, we have an engineering assessment done and it's done immediately. If it's deemed, through our bridge inspection engineer, that it has to be done immediately, it is done immediately. We have internal staff that are capable of doing that, and we have a number of options available to us to allow freight to continue to move, depending on what the condition of the structure is.

So we have options available such as one-lane closures so that those heavier loads can still continue, but that it's–they're not on both lanes at the same time. We can restrict a lane; we can allow one truck at a time. There's a number of different things–we restrict the speed that vehicles will move–large loads will move over our bridges.

If it gets to the point where we cannot allow a heavier load through, we will close the structure if we absolutely have to. We do not risk public safety. We will not put the safety–or the general public in an unsafe situation.

Part of having the bridge management tool or the bridge management system is being able to also stay ahead of that so that we aren't in a position where we do need to close or restrict bridges, that we have proper rehabilitation, proper replacement, proper repairs, and we're doing our best that we can now with what we have, but the bridge management system will definitely assist us with that.

Mr. Chairperson: Before I continue, I just wanted to bring attention to the committee the fact that we have a number of individuals who have indicated they do have questions. We are getting closer and closer to our 4 o'clock time. Of course, we can push that time, but just in terms of being aware of the time, if members can keep their comments as brief as they can, as I'm sure they always do, and concise. If you are on my list of speakers and you've maybe changed your mind, maybe indicate that to me informally as part of the committee so that I can keep an accurate speakers list and we can move through as quickly and efficiently as possible.

Ms. Morley-Lecomte: I have one more question. What portion of the bridges that we have in Manitoba are currently reaching the end of their design life? Are they going to need a lot of repair?

Mr. Chairperson: Just–from this end of the table, it's a little difficult to hear. If members of the committee could direct the questions through the Chair, speak up as much as possible, and it might help everybody hear the question.

Could you repeat the question, Ms. Lecomte?

Ms. Morley-Lecomte: I said what portion of the bridges are–

Mr. Chairperson: Ms. Morley-Lecomte.

Ms. Morley-Lecomte: Sorry. What portion of the bridges are currently reaching their design life? Reaching the end of their–

Floor Comment: Reaching their design-life structure.

Ms. Morley-Lecomte: Yes.

***** (15:40)

Mr. Vigfusson: I can answer that one. So on the OAG's report, on page 10 it gives a breakdown of the age of the structures. Forty per cent of our structures are greater than 50 years. And that's kind of instructive to get a sense in terms of that's the design life itself. Fifty years ago, when those bridges were first erected, that was the code at the time, 50 years. We design now for 75 years. But just because a bridge has reached its end of its design life does not mean that it's reached the end of its service life. And it's really critical to know that. It's–as long as there's proper maintenance and rehab as well as inspection processes to pick up weaknesses that we have in the bridges, we are able to go in and extend the service life of a bridge much beyond the design life itself. So it's just these are the bridges that are of really interest to us, though.

Mr. Maloway: I'd like to ask how many bridges or information on the number of bridges that are actually in the BIS and the BMS at the current day. And are you entering this with, like–are you filling out a report and then physically entering it yourself? Or are you doing it with little wireless devices? How are you doing that?

Mr. Vigfusson: So I got the first question was the number of bridges in the BIS and the BMS, but I didn't catch the second question.

Mr. Chairperson: Mr. Maloway.

Mr. Maloway: –the process upon how you entered it, were you doing this with paper and then transposing it onto the machines when you get back to the office? How is it going–getting on there?

Ms. Eden: So, as identified in the Auditor General's report, we have close to 3,100 structures that the Province is responsible for. During the implementation phase of BIS and BMS, which is what we're working on right now, we do have all of those 3,100 sites in our networks in BIS and BMS, but we need to verify that the information is accurate. We need to do a thorough review to make sure that all of the information has been pulled in properly from our database. So that's the exercise that we're going through right now.

In terms of how the data is actually physically entered, that's one of the efficiencies that I talked about with this automated system, is that the data–the form is electronic that the inspections are done on so that when that form is downloaded, the information off that form is automatically back into our database, which is then pulled into the BMS. So it's a very efficient automated system, and we don't have the issue with duplication and errors and all of those problems that can creep in when you start having to enter data manually.

Mr. Maloway: And the reason I ask about the cost and the cost breakdown between these two systems, the BIS and the BMS, and this break between the cost to buy the program or licence the program and the cost of implementing, right, to get a total price–my colleague asked for a total price of this system and how long it's going to take–the reason I'm asking all that is because the minister has talked about, you know, value for money and here we have City of Winnipeg, a huge component here of this infrastructure, and I don't see any evidence anywhere that anyone from the Province has gone over to the City and said, you know, before you start buying your own version of BIS or BMS, why don't we get together here and create some efficiencies.

And I say this because when we did SAP we tried to get the City involved and they said no. We're going to go spend our own ton of money on a competitor called Oracle, and I think that's what they're on right now.

Nova Scotia government, on the other hand, you know, sat down and, I think, did it right. They got the City of Halifax, they got the largest hospital in Halifax all on the SAP system, and it reduced their cost tremendously.

So I don't know why we'd want to reinvent the wheel here. I think the minister should pick up the phone, phone the mayor, get the City onside here because they've got a big portion of the bridges in this province, and, as far as we know, the minister has pointed out how important it is to have the BIS system and the BMS system. We see them across North America. We are finally starting to get them here in Manitoba, and where's the City? As far as we know the City doesn't have anything.

So could the minister respond to that question I have?

Mr. Pedersen: My staff has advised me that there has been discussion over the years with the City. Right now we are not aware of the City of Winnipeg even having a BMS system.

We maintain a good relationship with the City and we will continue to maintain that relationship.

So I'm not quite sure–perhaps the member needs to talk to his city councillor, and I'm sure he has a phone also and he can–if he wants to phone me, I'm quite–my phone is quite available.

Ms. Judy Klassen (Kewatinook): I noticed several times that the safety of Manitobans was talked about. I want to know about the safety of all Manitobans. I notice that there is, on page 3, 600 not inspected, another 288 were not yet being inspected. It's considered other government departments.

***** (15:50)

So I'm wondering, is this AANDC's department or INAC or the rebranding Indian and Northern Affairs Department? Does it fall under their purview? Who do I go to make sure all Manitobans are safe?

Mr. Vigfusson: This audit was only focused on provincial bridges. So, of the 616 that weren't inspected, those were the ones, the 31 or so, that we didn't have on our inventory. Then it was also those 585, the large culverts that we now know are in the inventory. So those are in the process of being inspected. Of the 288, I believe, there were 16 in the provincial departments that are outside the minister's authority for responsibility, and 272 are on the municipal system through the conservation districts.

Ms. Klassen: Thank you for that answer.

So may I get a list of the 16 that are not under the minister's responsibility? Since ESRA has folded, are there any bridges that are going to come into MI's purview?

Mr. Vigfusson: So, as it relates to the 16, I don't have the list here right now. I do know that now that they're made up of a combination of bridges and parks and bridges under the former Aboriginal and Northern Affairs' responsibility. So we can endeavour to get that list and return back to PAC. As it relates to the ESRA bridges, ESRA's been rolled into Manitoba Infrastructure. So we will become responsible for all of their assets.

Ms. Klassen: Can I get a list of that as well? Thank you.

The other question I had: Are you responsible, then, for the winter ice-roads bridges?

Mr. Vigfusson: So, if we're on the winter-road network, we'd be responsible for all the bridge structures that are on the provincial winter-road system.

Ms. Klassen: Thank you for that answer.

On March 31st, I believe was the date you advertised that the bridges were not going to be removed until 12 midnight that night; I believe that's the date. I can go back to my records. I had a number of constituents stranded on a winter ice road in that frigid temperature–or in that situation, dire situation, where they had no gas to make it back one way, only to go forward. And, on the other side, there was an equal amount of people trying to get back to the city side, because they had rented vehicles, they had kids that were going for medical appointments, stuck, and that bridge had been prematurely moved. I want to know that I can go back to my people and say if it says midnight that night, it will be midnight that night. We survive off of these roads.

Mr. Vigfusson: I would really appreciate having information on that specific bridge; that would be very helpful. We can look into the specific situation and, certainly, return either back to yourself or back to PAC.

Ms. Klassen: The other thing that I went through personally on the route from Gods–Garden Hill First Nation to Red Sucker Lake; there is a bridge there completely got destroyed. I was in a situation where the Ice Road Truckers, that film crew was there; they were trying to salvage the bridge. There was backed-up semis. They didn't want to go onto the bridge to destroy it for all the light traffic. So I was able to cross, but there was another vehicle that

tried after me and sustained such heavy damage to their vehicle, and, of course, you know, this person's completely out of a vehicle for the season, you know, and after, you know, these people live on very limited income.

And, again, an entire year of saving, trying to buy a vehicle just to bring–just to leave junk on the road as a result of that. And, you know, I have footage of this bridge I would be glad to share, because it's–these are our life roads, and I want to know why was it railroad ties. It looked like, well, it's probably timber, but railroad ties. Isn't there much better technology out there where it doesn't have to be something as, you know, easy to damage as that?

Mr. Vigfusson: I can appreciate the member's concern. I'm not sure how it relates to the OAG report. It sounds like a safety issue on managing of the winter road bridges, but without knowing where that was–for example, the said road authority had responsible for the winter road file on the southern portion, so I don't even know if it's on that piece or not. So I would have to know the specific location that the member's concerned on. If she can get that through to the minister's office, we can certainly investigate and then get back to you.

Ms. Klassen: My other question–I do have a list of questions. I know we're out of time. Can I table this for them to respond, or is that allowed? I thought we were ending at 4.

Mr. Chairperson: So, just for the information of the committee, we do have a few options in front of us. To answer your question directly, it's not generally the practice of this committee that we would table the questions. Usually, the questions are asked in the committee. We certainly have the ability to sit as long as we need to sit as a committee, you know, with the understanding that the questions that we're asking are related very much to the Auditor General's report, with, of course, the usual amount of leeway.

The other option, of course, open to us is that this report would not pass. So we have the option, at the end of this meeting, to pass or not pass this report, which gives us the opportunity to bring this report back. However, I will caution members that we do have a significant backlog of reports that we still need to consider, and, of course, the Auditor General is always working on new ones.

So we–you know, and there is an agreement consensus, I think, amongst members, that we move through reports as quickly and efficiently as possible. Again, the understanding that all reports do get a follow-up three times so that we do have an opportunity to bring that back to the committee as well.

And, just as reminded to me by the clerk, that we do have other opportunities to ask questions, certainly in the House in Estimates, in other forums as well, and even just off-line after the meeting, but maybe I'll open this up just for a little bit of back-and-forth debate before we make a decision we move forward.

Mr. Allum: Mr. Chair, I'd certainly be willing to put on the floor that we extend the session for as long as the member has to complete her questions so that she has the opportunity to engage with department officials while they're here.

Mr. Chairperson: Is there agreement that we extend the session? Maybe I'll put a cap on it saying that 4:30 and we can revisit that at that time, but giving us a little bit more time this afternoon to consider the questions. Is there agreement of the committee to extend the time? *[Agreed]*

Ms. Klassen–and again I just remind members to keep the questions as on topic as possible, but feel free to proceed with your questions.

Ms. Klassen: Thank you for the clarification on the process, so I'll remember that for next time.

So, in 2014, there were many bridges and large culverts that were severely damaged in the flood, so I'm wondering how many other bridges and large culverts around the province are in danger of being washed out with another significant flood event.

Is the department doing anything to decrease such large-scale damage to bridges and culverts that happen? Are there lessons learned from 2014?

Mr. Vigfusson: Just on a first point, I would like to ask leave for Doug McMahon to leave the session today. He's got another appointment that he has to be to at 4 o'clock.

***** (16:00)

Ms. Eden: That's a great question.

Mr. Chair, 2014, 2011 and even 2009 were extreme events for us. There was a lot of discussion about that earlier. It's important to note that the 2011 and the 2014 events were extreme events. I believe 2014 is a one-in-300-year event designated in some parts of it.

It's also important to note that they're–when they're events of that size, they're–the damage is predominantly focused on the larger streams, the Assiniboine River, the Red River, because that's the kind of the last order of–everything makes its way to the Assiniboine or to the Red River. So they get the brunt of the event.

A number of things that we did during both of those events to minimize the risk and also to incorporate it into our inspection processes throughout the province, we've beefed up our instrumentation, our equipment, from an inspection perspective, to be able to monitor for scour. Scour is what happens when we get the channel eroding and our foundations start to become susceptible to collapse or to failure. We have a lot of instrumentation and equipment now that we didn't have before to be able to monitor and pick up if we have a problem occurring.

In terms of moving forward from lessons learned and changing how we do business, we are looking at two main areas. One is to change or modify our foundation design requirements to construct structures or modify existing structures that are not as susceptible to scour. And we have gone in and done that to a number of structures throughout the province.

And also we're evaluating our hydraulic design standards to ensure that we're accounting for and designing for those larger extreme events moving forward.

Ms. Klassen: On page 18, it is mentioned that the department recently paid about 6 million to replace a timber railway bridge that had burned down. Department officials said that the railway owned the bridge, but a 1964 agreement between the department and the railway made the department responsible for replacing the bridge, if necessary, for any reason. Officials said that they had been unaware of the magnitude of this potential liability and that there could be other bridges in unknown conditions with similar agreements.

It is clearly of fundamental importance to know what your liabilities may or may not be.

Do you have an idea of any other bridges? Are you investigating this?

Mr. Vigfusson: As the report said, it was a surprise to us when we found that out. It shows you how strong the railways are and whoever negotiated that back 20, 30, 40, 50 years ago, whenever it was.

We have done a review of our liabilities there. I believe the number is somewhere around 15 to 20. We are going to be looking at dealing with the railway companies to see if we can renegotiate those deals. Good luck with that for us. Wish us luck. We'll do our good old college try if we can. But that's the extent of the liabilities that we understand.

Ms. Klassen: So about–thank you for the answer–approximately 15 years ago there was something with the U of M to develop and test electronic monitoring. I guess you're excited by that question–does it–so I guess I'll just let you take it from here.

Mr. Vigfusson: So I'll just start on that.

Ms. Klassen: Does it save or decrease on the need for physical inspections?

Mr. Vigfusson: Ruth is quite excited about this. As I said at the beginning that she is a–I consider her a bridge expert in very high demand in the industry. And she's been a big proponent of using technology and new materials to help us prolong the life of our bridges, as well as to get as much information as possible on the condition until they go through repair.

So, with that, I'll let her loose and she can talk about her experiences.

Ms. Eden: So this was actually one of the focuses of my master's research that I did through the University of Manitoba. And the university is very lucky to have a nationwide centre of excellence here on advance composites and structural health monitoring, and it's moved now to SIMTReC as well. So Manitoba is known as the hub of this across Canada and actually North America, and we're very proud of that.

Part of–a number of initiatives that we have done is over the past 15 to 20 years we actually have embedded sensors on a number of our structures. We are monitoring the behaviour of these bridges with those sensors. Will it actually change the physical inspection requirements? That is the hope. But at this point in time we still feel very strongly that we need to have an actual physical body looking at a structure to determine what the condition overall of this structure is.

When we embed sensors, they're very localized, and we're getting the information at that specific location. But we need to be looking at it from an overall perspective. So we still feel that we will need to continue to have the level 1 and the

level 2 inspections until the technology continues to develop to give us that sense that we're actually seeing the entire bridge.

Ms. Klassen: Thank you for that answer. It actually relates to a lot of–you've answered the other ones too regarding carbon fibre materials that I was going to ask, on the use of drones now that we're able to mount cameras every which way that we want to.

So the next question then. There was two bridges that were built at the same time in the Portage Diversion because the structure had badly deteriorated. The bridge on the west end continues to be in good use in good shape for some time to come; however, the other one on the-I believe it was the east–yes, the east side deteriorated more rapidly, it seemed. So it was weird that both bridges, you know, built at the same time but had totally different life spans.

Is there a study into this to see why one was good and the other one was not? And have you learned lessons from this if there was a study? Thank you.

Ms. Eden: I–just to clarify, is this in reference to the bridges over the Portage Diversion on the Trans-Canada Highway?

Ms. Klassen: Yes.

Ms. Eden: Those bridges were built fairly close together. One of the important items for us, and we talked about it previously, is the need for construction oversight and the need to have engineering and technologists on-site to ensure that the bridges are built in accordance with the requirements.

We suspect that there may have been issues with the material quality in one of those structures and that was–those were built a long time ago. So I'm not exactly sure. I wasn't here when they were done. But we suspect that that was the issue there.

We have had to go into the one, the westbound bridge; we were in there about 20 years ago. And the eastbound bridge is–we've identified that we need to go in now and do work on it.

***** (16:10)

Ms. Klassen: I just wanted to thank everybody.

Mr. Ted Marcelino (Tyndall Park): I was just wondering. After this report, do you have any list of bridges that are on life support?

Mr. Vigfusson: We don't use the terminology life support, but what we do have is there's a separate map from the highway map; it is a highway map, but it's for weights and dimensions. And on that map we list and we publish all bridges that have either restrictions, whether it be lane restrictions, weight restrictions or closures. So I can refer the member to that map.

Mr. Marcelino: Do you have a list of those that are in need of repair or replacement during the next six months?

Ms. Eden: We–for our capital programming process to–in order to be able to deliver, we need to have a program or a list of structures that we intend to work on over the next five years. To get a bridge from initially start of design through to construction, it takes three to five years. And that includes gaining environmental approvals.

So, for us to be working and to maintain and continue to repair and replace bridges, we need to know what we're doing three to five years out. So we do have a list of structures that we're–that we want to do work on within the next five years.

In addition to that, we have what we call a prioritized non-program list. This is a list of structures based on the inspection reports–all of the structures where we identify work needs to be done within the next five years. So that's years five to 10. And we have a number of structures on that list.

In addition to that, we also have a list that shows projections based on typical timelines for doing typical activities over the next 30 to 40 years of what we can–what we could reasonably expect we would do at all of our sites over that time. It's not necessarily what's going to happen; it's an indication of what the demand will be, what our peaks and what our valleys will be, and if there's an opportunity to smooth it out. So it's more of a planning document, a looking-ahead document.

So those are the three main lists that we have.

Mr. Marcelino: And, of those that are listed in your priorities of bridges that need to be fixed, how much money are we looking at over the next five years? Is it $9.2 billion?

Mr. Vigfusson: So, on that $9.2 billion that the member references–is that's the replacement value of all of our structures. So we're currently developing a list of projects for construction for next year, and we will be going to Treasury Board for approval for that.

So I don't have that number for next year. And, obviously, going forward that's up to future appropriations.

Mr. Marcelino: Yes. Just one last question–sorry, I'm still new here.

Of all the bridges that have been identified as needing immediate repairs, are they anywhere within the city of Winnipeg?

Mr. Vigfusson: The minister's responsible for, through the Highways and Transportation Act, for highways that are in definition under that act. None of the bridges in the city of Winnipeg are under that act.

Mr. Marcelino: From what I understand, from that answer, is that Arlington Bridge is not part of this jurisdiction.

Mr. Vigfusson: That's correct. There is no bridges in the city of Winnipeg that we have responsibility for construction and maintenance.

Mr. Marcelino: And so is the Louise Bridge. It's not part of–

Mr. Vigfusson: The Louise Bridge is the City of Winnipeg responsibility bridge.

Mr. Marcelino: Thank you. Thank you very much. Thank you for all the members.

Mr. Chairperson: Thank you, Mr. Marcelino.

Seeing no further questions, Auditor General's Report–Management of Provincial Bridges, dated July 2016–pass.

The hour being 4:17, what is the will of committee?

Some Honourable Members: Committee rise.

Mr. Chairperson: Committee rise.

COMMITTEE ROSE AT: *4:17 p.m.*