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ISSN 1180-4327

Legislative Assembly  
of Ontario  
Second Session, 39<sup>th</sup> Parliament

Assemblée législative  
de l'Ontario  
Deuxième session, 39<sup>e</sup> législature

## **Official Report of Debates (Hansard)**

**Wednesday 24 March 2010**

## **Journal des débats (Hansard)**

**Mercredi 24 mars 2010**

**Standing Committee on  
Public Accounts**

2009 Annual Report,  
Auditor General:  
Ministry of Transportation

**Comité permanent des  
comptes publics**

Rapport annuel 2009,  
Vérificateur général :  
Ministère des Transports

Chair: Norman W. Sterling  
Clerk: Katch Koch

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Telephone 416-325-7400; fax 416-325-7430  
Published by the Legislative Assembly of Ontario



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Publié par l'Assemblée législative de l'Ontario

LEGISLATIVE ASSEMBLY OF ONTARIO

ASSEMBLÉE LÉGISLATIVE DE L'ONTARIO

## STANDING COMMITTEE ON PUBLIC ACCOUNTS

## COMITÉ PERMANENT DES COMPTES PUBLICS

Wednesday 24 March 2010

Mercredi 24 mars 2010

*The committee met at 1229 in committee room 1, following a closed session.*

### 2009 ANNUAL REPORT, AUDITOR GENERAL

#### MINISTRY OF TRANSPORTATION

Consideration of section 3.02, bridge inspection and maintenance.

**The Vice-Chair (Mr. Peter Shurman):** Good afternoon, everybody. Welcome to the Standing Committee on Public Accounts, meeting today to consider section 3.02 of the Auditor General's report on bridge inspection and maintenance.

Welcome to our guests from the Ministry of Transportation. I'd ask you to begin by identifying yourselves for the record, and you have 20 minutes to make your presentation.

**Mr. Bruce McCuaig:** Good afternoon. My name is Bruce McCuaig. I'm the Deputy Minister of Transportation. To my left is Ray Mantha, executive director of asset management with the Ministry of Transportation; and to my right is Gerry Chaput, chief engineer and director of highway standards for the Ministry of Transportation.

Thank you very much for the time to appear before you this afternoon. I would like to review, in turn, each of the Auditor General's recommendations and the highlights of our action plan describing how we are addressing those recommendations.

Each of you has a copy of the action plan. I also have several illustrations to share with you. The illustrations will be shown on the easel to my right, but each of you also has a four-page handout of these illustrations.

Let me start on a note of thanks to the Auditor General and his staff. His research was thorough; his findings and recommendations thoughtful. Our staff found the consultation process to be highly open, collaborative and insightful.

The Ministry of Transportation sets a very high standard, one that is a model for other jurisdictions, and the Auditor General's findings and advice encourage us to set the bar even higher. Our action plan addresses all of his recommendations.

Our made-in-Ontario bridge inspection processes, which include the highly regarded Ontario Structure

Inspection Manual, have been adopted by the provinces of Saskatchewan, Manitoba, Nova Scotia, Prince Edward Island and, in 2008, Quebec.

MTO is, if nothing else, an engineering organization. Professional engineers abide by a code of ethics in which the duty to public welfare is paramount. In our engineering organization, our duty to public welfare is safety. Mr. Chair and members of the committee, the first priority of the Ministry of Transportation is the safety of the travelling public. I want to assure you at the outset of my remarks that our province's bridges are safe.

Year after year, Ontario's roads have been found to be the safest in North America. Our outstanding record in transportation safety is due to a combination of factors, including legislation, infrastructure, planning, design, education and enforcement. Our standards are considered the highest. Our engineers have always been thorough and meticulous in their work. But as the Auditor General has pointed out, we can do a better job on some aspects of that work. We are grateful for his suggestions to enhance our processes to better manage Ontario's 2,720 bridges on behalf of the province's taxpayers.

I'd like to begin by talking about recommendation number 1, which is on page 1 of our action plan. This recommendation refers to bridge repair and rehabilitation, and how we set priorities. To be clear: Public safety is the first priority. Bridge repairs to protect the safety of the travelling public do not get put on a schedule. We act immediately to address safety concerns—no question. This is our obligation and our public duty as an engineering organization.

We have responded to the Auditor General's suggestions to enhance our risk assessment processes by improving our processes for collecting data, record-keeping and planning rehabilitation and repair. Specifically: We clearly identify maintenance issues that require urgent attention.

When inspectors identify an item requiring immediate attention, they relay that information verbally. They record it at a local MTO office and they provide detailed documentation to our central database.

We now record all bridge maintenance work as soon as it is completed.

We are developing a business case to adopt new software over the next four years to enable us to better manage and integrate our data.

And we have in place a multi-year plan of bridge repair and rehabilitation. This plan is supported by

comprehensive inspection reports and the best expertise of our engineers.

I want to clarify the difference between inspecting a bridge for safety, and examining a bridge in order to schedule routine repairs and upkeep.

The first page in your handout is a sample of the inspection form that is a standard in the Ontario Structure Inspection Manual. There is an enlarged version on the easel to my right. As you can see, halfway down the inspection form there is a list of performance deficiencies that inspectors look for. Below that is a quite separate list of maintenance needs to assess. As you can see, inside the circled area is a place for inspectors to note anything they consider an urgent maintenance need. We always address urgent maintenance issues quickly. We have not always been consistent about documenting this, and we have standardized our documentation.

The second page in your handout, and on the easel, shows how we use the bridge condition index, or BCI, to schedule repairs and rehabilitation. BCI does not measure safety. It is a planning tool to help us strategically schedule non-emergency bridge maintenance so it is done at the optimal time.

As you can see in this simplified example, every component or element of a bridge is catalogued. The second column shows what it would cost to replace each element. The last column shows what the dollar value of each element is right now. In the bottom right-hand corner is the calculation, for this bridge, of the bridge condition index. As you can see, BCI is simply the dollar value of all the bridge elements—the entire structure—divided by the cost to completely reconstruct it. A rating of 70 to 100, as you see in this example, indicates work is not usually required within the next five years.

As you can see, BCI looks only at dollar values. As an asset management tool, its sole purpose is to schedule bridgework, routine maintenance and upkeep.

If you would turn to the third page in your handout, you will see at a glance our five-year work plan. This illustration is also on the easel to my right. As you can see, the majority of Ontario's bridges—2,067, shown in purple—require no maintenance or upkeep for the next five years. The remaining 614, shown in green and black, are either scheduled for maintenance and upkeep work, as part of our five-year plan, or, in the case of 39 bridges, shown in light blue, the work will take place at the same time as work we have already scheduled on the adjacent highway. This makes the most efficient use of MTO resources and taxpayer dollars.

Once again, let me emphasize that there are no safety concerns with any of these bridges. Our five-year work plan is about upkeep and maintenance only. We always address safety issues immediately, at the time they arise.

#### 1240

Continuing now to the second recommendation in the Auditor General's report, you may wish to turn to page 3 of our action plan.

There were several suggestions to improve the quality of bridge inspection data to better manage provincial

assets. We agree and we are already addressing the Auditor General's suggestions. We are expanding our record-keeping to document and explain why there were unexpected alterations in a bridge condition index. Documentation is a big part of both recommendation number 2, regarding bridge inventory, and recommendation number 4, regarding inspection oversight.

If I could ask you to skip forward to recommendation number 4 on page 5 of our action plan, I will talk about how we are improving our monitoring of inspectors' work.

First, in September, we issued a bridge inspection oversight policy confirming inspectors' accountabilities, including contracted engineering firms. We make clear what documentation is required from inspectors and we conduct spot-check audits.

Second, to clarify our requirements to engineering firms, we standardized contracts for bridge inspections. The lead inspector must have a minimum five years' inspection experience. The inspectors must provide photographs date- and time-stamped of their work, and we spell out how much time is required to thoroughly conduct each inspection.

Third, we are reinforcing these requirements in the training that MTO inspectors and engineering firms must take.

One of our enhanced requirements is in regard to gaining access to bridges for inspection. If you turn back to page 4 of our action plan, you will see recommendation number 3, regarding arranging the closure of a lane or shoulder.

Transportation infrastructure is crucial to Ontario's economy; we have some of the busiest highways in all of North America. This makes closures very challenging, especially when thousands of motorists are inconvenienced. Nevertheless, we scheduled and completed 50 closures last year in the greater Toronto area. We now spell out in all contracts which lanes and shoulders must be closed, and that closure is not optional, it is mandatory. Further, to ensure inspectors' complete understanding, we have provided written guidelines to all inspectors.

I would like to take a moment to describe the extent and frequency of our inspection program.

Every provincial bridge in Ontario is thoroughly inspected every second year. Ontario is the only province where this is a legislated requirement. Inspections are conducted or supervised by a qualified professional engineer. Every inspector takes three days' mandatory refresher training every two years. If an inspector does not participate in training, he or she cannot lead or supervise an inspection. And, as I mentioned earlier, the lead inspector of the team must have five years' experience.

Inspections are done according to the standards set out in the Ontario Structure Inspection Manual. Our inspection process is considered by other jurisdictions to be the gold standard for bridge inspection. The Auditor General, in his report, described our inspection process as "an effective means of identifying significant structural deficiencies in a bridge," and he described our inspection

manual as “comprehensive.” The manual is updated regularly; in the past decade, three times.

In addition to a thorough, up-close inspection every two years, every provincial bridge is visually inspected every six months. Bridges on our busiest highways are monitored daily by maintenance patrollers who look for any indication that the condition of a bridge has changed. If anything unusual appears, they investigate further, and, when appropriate, act immediately.

Next, I would like to talk about how we manage and maintain our provincial assets. The Auditor General’s recommendation, recommendation number 5, is on page 6 of our action plan.

Recommendation number 5 is that we develop a formal asset management plan in order to more effectively prioritize preventive maintenance. Keeping in mind that we always address safety issues immediately, we agree. Detailed data that we gather during inspections are being recorded in our bridge management system software to support decision-making. We are starting to implement multi-year regional investment plans that will more efficiently allocate capital investments over a 25-year time frame. The plans take into account factors such as the role of the bridge in the highway network, the overall condition of the structure, the volume of traffic, and the cost-effectiveness of timing the work to coincide with other highway work planned for the area.

If you would turn to the final page in the handout, you will see how the province is investing in bridge infrastructure. This illustration is also on the easel to my right.

As you can see, funding commitments have increased every year over the eight years between fiscal 2005-06 and 2012-13. This is an investment of \$1.65-billion over eight years on bridges alone. Between 2004 and 2008, we restored and repaired 418 bridges, and built 95 new ones.

Continuing now to recommendation number 6, you will find this recommendation on page 7 of our action plan.

Earlier I referred to our bridge management system. As an analysis tool, it enables us to estimate our needs and establish priorities for repair and capital works. We recognize the value of a centralized database, and we are acting on the Auditor General’s recommendation to centralize our data and upgrade our information technology. Our software is 10 years old and we are considering how to update it. We intend to bring forward a strong business case this fall. If the business case is approved and implemented—which would be in four years’ time—changes to the system will further address the Auditor General’s findings.

Recommendation number 7 is concerned with the contract selection process. You will find this recommendation on page 9 of our action plan.

We are strongly committed to an open, transparent and competitive process as a foundation for ensuring value for money. In fact, 97% of our contracts are procured through competition. The very few instances in which contracts were issued without tender were emergency situations in which we had to move quickly.

One of those, you may recall, was in September 2008. It involved a truck fire which damaged the Highway 401 westbound express ramp leading to Highway 404. This required immediate repair, as it posed a safety risk. There was neither the time nor the opportunity to acquire competitive bids.

In the past three years, we have had five such instances. These rarities were well-documented and in all cases, MTO fully complied with government procurement directives.

We have taken the Auditor General’s advice and enhanced the competitive process in a number of ways. For example, where it will attain efficiencies, we bundle design projects together into a single contract. This makes the contract sufficiently large enough to attract firms’ interest. We are introducing mandatory requests for proposals for inspection contracts. We are encouraging more bidding by more firms, by awarding some more routine projects, in design or construction, largely on the basis of price.

The eighth and last recommendation of the Auditor General concerns the safety and upkeep of municipal bridges. You may wish to turn to page 11 of our action plan.

As I mentioned earlier, the province is responsible for 2,720 bridges in Ontario. Most of the remaining 12,000 bridges are the responsibility of Ontario’s municipalities. They, too, are subject to the same high standards as provincial bridges.

That being said, municipalities are accountable and responsible for their assets. We have provided a framework for municipalities to conduct inspections and we assist them in meeting their obligations in a number of ways. We provide them with our bridge management system software and manuals and, when required, our technical expertise, all free of charge. We work closely with the Ontario Good Roads Association, which provides bridge inspection training to municipalities’ engineers and contract inspection firms. We have invested more than half a million dollars in the Ontario Good Roads Association database, known as Municipal DataWorks, so that smaller municipalities can inventory their assets. The ministry has entered into a one-year cost-sharing agreement with the Ontario Good Roads Association in which the province will contribute up to \$750,000 to assist municipalities to collect, process and input their asset management data into Municipal DataWorks. This data will support the development and management of future infrastructure funding programs.

Since 2005, the province has spent more than \$500 million to support improvements to municipal bridges and roads. This was accomplished through the Canada-Ontario municipal rural infrastructure fund, the Building Canada fund and the infrastructure stimulus programs.

#### **1250**

On a related note, the province is uploading a variety of municipal responsibilities, such as court services, the Ontario drug benefit plan and social services. This means that municipalities will be able to increase their capacity to spend money on their infrastructure.

Lastly, we know that the dialogue with municipalities on roles and responsibilities is an ongoing one. That is why a review of municipal roads and bridges is currently under way. The review will include an inventory of municipal assets and needs, and will look at asset management practices. Among the partners in the review are the Association of Municipalities of Ontario, the Ontario Good Roads Association, the city of Toronto and others. The partners are looking to provide options for roles and responsibilities in 2011.

To sum up, Mr. Chair and members of the committee, MTO takes very seriously our duty to ensure the safety of the travelling public, and we take very seriously the findings of the Auditor General on bridge safety and maintenance. We are taking action on every one of his eight recommendations, as you have seen in our action plan.

I want to conclude my comments by thanking my staff at the Ministry of Transportation for the tremendous job they have done, and continue to do, to ensure that Ontario's bridges are safe.

We welcome the Auditor General's observations and have seized the opportunity to raise the bar on our high standards even higher. It is important that the people of Ontario have confidence in the safety of their roads and bridges.

We would be pleased to address the committee's questions. Thank you for your attention.

**The Vice-Chair (Mr. Peter Shurman):** Thank you, Mr. McCuaig. We'll go in rotation, up to 20 minutes per party, and we'll begin with the Progressive Conservatives. Ms. Savoline.

**Mrs. Joyce Savoline:** Let me start by saying thank you to the engineers who do provide the risk management and safety of Ontarians. You do that quiet, invisible kind of work that nobody thinks about, but when an accident happens or something critical arises, it's the engineers who are called upon. So, for the value you provide to the quality of life in our province, thank you for everything you do, for all the work you do above the ground and under the ground.

I want to go to page 3 of the presentation, Mr. McCuaig. You talk about urgent maintenance need. Can you explain to me the criteria you use to distinguish immediate urgency? Let's start with that.

**Mr. Bruce McCuaig:** First of all, on behalf of the ministry's engineers, thank you very much for the comments. I agree that they take their jobs very seriously, and largely untold.

In terms of urgent need, the inspection manuals we have as a ministry, and that the inspectors have on-site as they're doing the inspection, give them guidance as to the kinds of items that represent urgent need.

For example, there could be a situation where there is concrete that is spalling or separating from the steel that's the structural support for the bridge. Depending on where that spalling occurs, if it's over an untravelled area, it's not an urgent issue. Obviously, if it is something that an inspector or patroller notices over a shoulder or live traffic lane, it becomes an urgent issue.

The role of the inspector would be to then call in that situation to the ministry, and we would dispatch a crew to take the necessary action, which in the case of spalling would likely be to close the lane or shoulder underneath and chip away some of that concrete so that there's no danger of it falling on to traffic below.

That's the kind of guidance we give to our inspectors and the role we expect them to take on in the field as they're doing their inspections.

Gerry Chaput, our chief engineer, might have a few comments, just to expand on that.

**Mr. Gerry Chaput:** Yes. Basically, "urgent" is any work that's required with a potential safety issue, and we take that very seriously. Our inspectors are advised that if there is any issue, they take immediate action, and that's even closing a highway, if necessary. They're empowered to do that, they understand their responsibilities and they take those very seriously.

What we do in our inspection, of course, is that it's documented as an urgent need, and they respond to that immediately with phone calls and emails. We're working on a process to ensure that work is completed and followed up in our system. It is done now, but we want to record it better.

**Mrs. Joyce Savoline:** Say an inspector does his inspection and an urgent need is identified; however, in your project list, your plan for projects, it's identified further in time and is also identified with roadwork that needs to be at the same time, so that when we disrupt the flow of traffic we do it all at the same time. Would that whole project be brought forward, or would you just deal with the urgency of the repair?

**Mr. Bruce McCuaig:** I would say that, first and foremost, safety or the urgency that is identified would have to be addressed. That would be the first priority. It may be that the response is for a further inspection to understand in more detail what is happening with that particular element, but there would have to be some immediate response.

We would not defer an urgent need to a later date when other programmed work is scheduled to occur. It's not usually possible to bring forward a major piece of work in the time frame you would need to deal with an urgent matter. In that situation, I would expect, and would expect that the engineers would be suggesting, that the urgent piece be dealt with immediately.

If it's possible to package different pieces of work together from an asset management perspective, then certainly that's something we try to do. But we don't want to compromise safety by that kind of scheduled process.

**Mrs. Joyce Savoline:** But in each instance, you would look at the coordination, so that if it could happen, it would happen?

**Mr. Bruce McCuaig:** Absolutely. In one of the figures I referred to earlier, the pie graph, you would have seen the 39 bridges that were shaded light blue. When we went back and took a look at those bridges to find out why they were not on the program, since they

had a bridge condition index of less than 60, we determined that what we were doing with those is trying to coincide that work with other work we have to do on the highway corridor already, so that we get better value for money.

We also make sure, before we make those decisions, that there are no safety issues that we're pushing off. If there are safety issues, we should, and are obligated to, deal with those issues immediately.

**Mrs. Joyce Savoline:** Okay. Are the provincial inspectors—the bridge inspectors—now documenting differences between those incidents that pose a risk versus those that indicate a loss in value? Is it clearly documented?

**Mr. Bruce McCuaig:** I'll start the response to this question, and then I'll ask Mr. Chaput to follow up.

One of the areas that the Auditor General commented on was to improve some of our classification between routine maintenance and work that's more urgent. One of the items that we're doing is trying to adjust some of the forms I showed you earlier, to make it clearer and distinguish between routine maintenance and urgent work, as well as making sure that we're adjusting our training for our inspectors so they understand more precisely what our expectations are in those different areas. So we're trying to make sure that it's as clear as possible to the inspectors. Some of the ways in which we try to follow up to determine if the training is working—the system is working—is that we'll go back and do spot audits of some of those inspections to make sure that the inspectors are picking up the kinds of factors they should be picking up.

Mr. Chaput, would you like to add anything?

**Mr. Gerry Chaput:** Sure. On the forms we use—we have the major manual that's in the office, of course, but we also have this little inspection guide that inspectors can take out with them. As well as this, we also have computerized tablets, where the inspector can actually tick off or do their calculations there.

On the form—you'll see a copy of it here—there is a note where it says "Performance deficiencies" on the far right. If you look further down, there's coding underneath that talks about what would be considered a performance issue, and those are major issues: load-carrying capacities, a jammed expansion joint that would require work or cause premature deterioration, flooding or blockage of the channel, which could cause further erosion or wear. Those are the performance deficiencies that people need to act on. They write that, and they write their comments in there.

What we've been remiss in is either documenting some of the comments about that, or, when they make the phone call, that they don't bother putting it in the form. Those are the performance deficiencies that they really need to ensure they document better.

1300

**Mrs. Joyce Savoline:** So you could be expanding on that information?

**Mr. Gerry Chaput:** Yes. As well, for maintenance needs, you'll see "urgent," "one-year" and "two-year."

Again, that gets back to when they're out there, if they see something that's immediately required, such as chipping or loose concrete, that would be done as urgent. You can see that there's a breakdown of some of the priorities under maintenance needs as well. Some priorities, like bridge cleaning and general maintenance, don't need to be done urgently, but something like chipping, which I believe is on there, would be required immediately. That's how they document it in the form, through that process, and then that goes back into our bridge management system.

**Mrs. Joyce Savoline:** Okay. Is the Ministry of Transportation now approving lane closures in the greater Toronto area to get a close-up look at bridges? Could you explain how you're doing that? What have you learned from that experience? How are you going to apply that to future inspections to minimize—and the key is to minimize—traffic disruption?

**Mr. Bruce McCuaig:** Absolutely. We want to make sure the inspections are done properly, but we also want to minimize the impact on goods movement and the travelling public, since highways like the 401 are obviously critical to the economy and to the broader community.

In the past year, we have scheduled 50 lane and shoulder closures in the greater Toronto area, and this year, we'll be scheduling more. Basically, what we try to do is identify the optimal time to do those kinds of closures, so that we're impacting traffic as little as possible. So we may be looking out of the peak period into the shoulder areas in the evenings and the weekends. Those are the kinds of strategies that will be taking place.

What we've done is document in our contracts, which are signed by our inspectors, where they must do closures, so that there is no longer any discretion in those cases about when closures are and are not required. We're also providing more guidance on the different kinds of tools that could be used as an alternative to a closure if it's not possible for some reason; for example, the use of remote-controlled cameras and other kinds of technology like scissor lifts and bucket trucks, which can allow inspectors to get close up without necessarily having to close the lane.

We're trying to come up with a range of tools and approaches to make sure that the right kinds of inspections are taking place on the highway.

Mr. Chaput, is there anything else you would like to add?

**Mr. Gerry Chaput:** Bruce has done an excellent job in terms of understanding where we've been using them and what we've been doing. I think we've also implemented new accessibility guidelines, so that our inspectors or the people we hire to do inspections on our behalf now understand what to consider when they're looking at a bridge and where they should be looking close up with additional equipment.

I don't want you to go away with the understanding that we're closing every lane and shoulder for every bridge, because that's not necessary. A bridge is like a hospital patient: It shows symptoms, and like doctors,

who don't have to do open-heart surgery if you have pain in your left arm all the time, we are able to assess the symptoms to look at further investigations. In a lot of our inspections, if we go out and see a sign or symptom that there may be something else required or a more close-up inspection, another lane closure will be scheduled.

In addition, we mentioned that we had done 50 last year; we expect even more this year in the GTA because of the inspection cycle. We inspect every two years, and many of the bridges on the 401 through the GTA were not done last year. They'll be coming up this summer, and we expect significantly more lane or shoulder closures for those as well.

**Mrs. Joyce Savoline:** About 25% of our provincial bridges are rated as being "fair" or "in poor condition." What has happened in the last four years that might account for the infrequent use of the more comprehensive bridge survey? Why are we at such a high number?

**Mr. Bruce McCuaig:** The first point I'd like to make is that Ontario, like many other North American jurisdictions, has a similar population of bridges in its inventory. Many of these bridges were constructed in the 1950s, 1960s and 1970s and are now nearing the end of their life cycle. I don't think we're unusual, in terms of other provinces or states, in the kind of age we have in our bridges, and that obviously reflects in the bridge condition index, since the bridge condition index, as I tried to explain earlier, is a reflection of the ratio between their current value and their replacement value. So it's not unusual that we have this number. That's one point.

I think the second point I'd like to make is that the bridge condition survey is a tool we use to help us develop the rehabilitation program for a particular bridge. We actually use a bridge condition survey when we've decided it does need to be rehabilitated or restored and we need more information to understand the scope of the work that needs to be done. It helps us to design the project so we can do a better estimate of the cost of that project. That's the purpose of the bridge condition survey, and typically we only do those on bridges that are about to go into a rehabilitation program.

That doesn't mean we don't do other kinds of inspections on bridges, other than the regular biennial inspection. If the inspector identifies an issue with a bridge, there could be any number of inspections that are then requested and required: everything from an underwater survey to coating surveys to fatigue testing of steel elements. There is a variety of different kinds of testing that are done as a matter of course, but a bridge condition survey is really a survey that we use to help prepare to put a bridge reconstruction project out to tender to help us understand what the scope of the project is.

**Mrs. Joyce Savoline:** Okay. I'm going to go up north, Howard. Who is responsible for ensuring the safety on the, let's call them, alternative bridges: snowmobile trails where there are bridges, walking trails—some of these span the French River. Who is responsible for making sure that safety is upheld there?

**Mr. Bruce McCuaig:** Under provincial legislation, all bridge owners are required to do a biennial inspection

and to use the Ontario Structure Inspection Manual as the basis for that inspection. Whether it's a municipality or a railway or a private owner, they're all required to complete those biennial inspections. It's their obligation and responsibility under the legislation.

**Mrs. Joyce Savoline:** So would those be categorized as municipal?

**Mr. Bruce McCuaig:** It depends on who the owner is. It could be a snowmobile club, in some of the situations you identified, that is the owner. I'm sure we're all familiar with stopping at Webers for a hamburger on Highway 11.

**Mrs. Joyce Savoline:** You bet.

**Mr. Bruce McCuaig:** That pedestrian bridge across Highway 11 is owned by Webers, and they would be responsible for undertaking an inspection on it every two years.

**Mrs. Joyce Savoline:** Who is responsible for monitoring those reports? If I'm an owner and I file a report, what happens to it after it leaves my hands?

**Mr. Bruce McCuaig:** In the case of municipalities, since the vast majority of those bridges are under municipal ownership, those reports are part of the asset management regime of that particular municipality. It would be up to the municipal council to ensure that their obligations under the legislation are being met.

**Mrs. Joyce Savoline:** So the requirement is a provincial requirement but it's up to the municipality to make sure that that rule is upheld?

**Mr. Bruce McCuaig:** That's right, and there is a variety of other areas. For example, the province has regulations on minimum maintenance standards that you may have heard of as well, which speak, for example, to how frequently municipalities patrol their highways. So there is a variety of different kinds of regulations out there that are intended to give guidance and consistency across the province for how municipalities manage their assets.

**Mrs. Joyce Savoline:** Okay. There are also forestry companies that have built roads to move their product, and in a lot of cases they have a lot of bridges and certainly culverts on these roads. I understand that they are responsible while they're being used and the company owns the forest and does its work. But who is required to file those maintenance reports once the roads have stopped being used by those companies?

**Mr. Bruce McCuaig:** In the north, there is a variety of different kinds of governance arrangements that are established. In some cases there are local roads boards, and in other cases there are statute labour boards; there may be crown access or forest access roads that are under the jurisdiction, in some cases, of companies, and in some cases, the Ministry of Natural Resources; there are winter roads that are under the authority of the Ministry of Northern Development, Mines and Forestry. So there is a variety of different kinds of scenarios in the north, and the owner of the bridge is ultimately the accountable agent for those inspection processes.

1310

**Mrs. Joyce Savoline:** Is there any thought being given to coordinating that in a way so that the informa-



tion, I'm going to say, is more accessible and there's a better handle on what's happening? You can lose information when it's spread out over many different organizations?

**Mr. Bruce McCuaig:** For the bridges that are under provincial authority—so it might be a forest access road or a winter road—we certainly work very closely with the relevant ministry. In fact, in some cases, we actually provide services directly to them since we have the expertise as a road authority. There certainly has been discussion about how do we have an appropriate comprehensive inventory of bridge assets around the province. One of the purposes of working with the Ontario Good Roads Association on their Municipal DataWorks project is to come up with a tool that can be used for municipalities but perhaps by other agents as well in terms of understanding what are the assets that are out there, how are they being managed and what is the state or condition of those different assets. I think those are all great questions and items that I think we should be talking about with the Association of Municipalities and the Ontario Good Roads Association.

**Mrs. Joyce Savoline:** Good. In 2008, you prepared a business case that culminated in a request for an increase in staff. By doing that, it would lessen your dependency on consultants. Has that gone forward, first of all, and how many additional staff do you feel you need at the ministry to promote that good balance between external consultants and ministry staff?

**Mr. Bruce McCuaig:** Thanks for the question. Actually, it's an initiative that we're really quite excited about and believe strongly in. We want to be as a ministry, a knowledgeable owner, and we believe that one of the aspects of being a knowledgeable owner is that you actually do things yourself, so you're not completely reliant on third parties or contractors to provide a service. We have taken the steps of starting to move down the path of bringing some work back in-house. For example, construction oversight or design of bridges or small highway projects are being done by our own internal staff. In some cases, we're using them as training for young people who are coming into the organization, because after they come out of university, they're still looking for that first design experience, to design a project. So we've put together, over the last couple of years, a few dozen projects that we've actually done in-house, and we've used staff from around the province to deliver on those.

We did put together a proposal as part of our results-based plan to increase this, and we do have endorsement in principle to the concept. Right now we're searching for ways to find basically the full-time equivalents to invest in that area. But it's something that we're very interested and excited in doing.

**Mrs. Joyce Savoline:** There's not a number you can throw out today?

**Mr. Bruce McCuaig:** I don't have it off the top of my head. Mr. Mantha, could you add anything?

**Mr. Ray Mantha:** The only thing I would add—I don't have an answer with respect to the number, but I

can tell you that in order to recruit and retain young engineers and young staff to the organization, the last thing that they want to do is come to the ministry and sit behind a desk and administer a contract. They very much want to learn the business from the ground up. They very much want to participate in the design, the construction, the administration. I can tell you, our private sector service providers that we work with, engineering firms and contractors, primarily, are very interested in sitting across the table with knowledgeable people. It's called smart sourcing; that's the name of the initiative that we have on the table. It has received resounding endorsement from all parties, and so now, as the deputy pointed out, it's up to us to figure out how to see it go forward.

We plan on doing that by changing some of the methods of the business that we currently do, how we do business. It's about having a tool box of methodologies, contracting models, oversight models, deep and broad, so that we're able to select the specific model for the specific situation and make sure that we apply the appropriate resources and skill sets to do it.

In changing the way we do business, hopefully that will free up some of our resources so that we can dedicate that to remaining a knowledgeable owner, because it's absolutely paramount that the Ministry of Transportation retain that knowledge, going forward.

**The Vice-Chair (Mr. Peter Shurman):** Thank you—

**Mrs. Joyce Savoline:** My time's up?

**The Vice-Chair (Mr. Peter Shurman):** Go ahead and do the add, and we'll move on.

**Mr. Bruce McCuaig:** Okay. Just to add a specific point to respond to your question: In the inspection area, 70% of our inspections are done by contractors, and we've moved to have 30% of those inspections done by our own internal staff. So it gives you an example of one area.

**The Vice-Chair (Mr. Peter Shurman):** Thank you, Ms. Savoline. On to the NDP.

**Mrs. Joyce Savoline:** I'm done, so I can't ask how long the QEW will take to finish in Burlington?

**The Vice-Chair (Mr. Peter Shurman):** We're going to go around again and you can ask that too.

**Mrs. Joyce Savoline:** Okay.

**The Vice-Chair (Mr. Peter Shurman):** NDP: Mr. Hampton.

**Mr. Howard Hampton:** Thank you for the information you've provided so far. I want to ask some fairly specific questions.

One of the areas that the auditor took up in his report was the whole issue of what is happening in municipalities. It's my understanding that the Ministry of Transportation has no legal responsibility or obligation with respect to municipal bridges. But I take you at your word: When you started your presentation, you said this is about public safety.

The first question I want to ask is this: There was, in 1996-97, something that was called a municipal-provincial realignment. Some of us called it downloading. My understanding is, a large number of bridges that were

formerly the responsibility of the province were then passed on to municipalities. Do you know how many? If you don't have the number today, I'd be happy with getting it later, but do you have a ballpark figure about how many thousand bridges were handed over to the municipalities?

**Mr. Bruce McCuaig:** No, I don't have that number with me today, but we can get that for you, yes.

**Mr. Howard Hampton:** Okay, that would be good. The reason I ask this question is, in our discussion earlier today—in 1993, the Quebec government transferred responsibility for municipal roads and bridges to municipalities in that province. It was just “It's your responsibility now. We no longer have any responsibility for this.” Then, of course, you had the collapse of the Concorde overpass, and there was the commission of inquiry in Quebec, which recommended that the Quebec Ministry of Transportation regain ownership of all bridges from municipalities with a population of 100,000 or less. In other words, without going into the details, they simply found that the municipalities did not have the fiscal capacity or the technical expertise to look after these things.

I'm very concerned with what happens—what the condition is of those bridges that were transferred from the province to the municipalities. One community in my constituency, Kenora, population 15,000, I think took over more than 100 kilometres of what was formerly provincial highway. You don't have to know much about the geography of Kenora to know that there would be dozens and dozens of bridges. Every time I talk with the municipal officials, they're very blunt. They say, “We don't know how the hell we're going to look after this. We don't have the money.”

My question is this: In your mind, what's the condition? Do you have any idea what the condition is of those bridges that were transferred from the province to the municipalities? Do you have any idea what condition they're in?

**Mr. Bruce McCuaig:** We recognize that the municipal road system is a critical part of the transportation infrastructure. That's one of the reasons why we've been working with the Ontario Good Roads Association to develop the Municipal DataWorks system.

We have been concerned that some smaller municipalities, in particular in the north or in rural parts of the province, don't necessarily have the same capacity as some of the larger urban municipalities. Can we provide work with OGRA and with the municipal sector to come up with tools to help them in the management of their assets?

The first step is to actually have a strong inventory and a sense of the condition of municipal bridges. With the investment in Municipal DataWorks, we'll be starting to get that information and have that data.

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The second part that I think is really important is the work that we're doing with the Association of Municipalities of Ontario, OGRA and the city of Toronto to talk

about roles and responsibilities for municipal roads and bridges. There have been some concerns raised about fiscal capacity, about whether or not the right roads are with the right jurisdiction. In some cases, municipalities have told us that they believe that a facility is performing more of a provincial function, because it's carrying longer-distance traffic; in some cases, they look at our facilities and they would like to actually have more responsibility for our facilities because they're performing more of a local function.

One of the reasons why we set up this process with AMO and the city of Toronto is to try to work through what is the best arrangement for roles and responsibilities for the assets that are in the system right now. Over the next 12 to 18 months, we'll be working closely with the municipal sector to come forward with some options and some recommendations on how we should move forward.

**Mr. Howard Hampton:** It sounds vaguely like a process that was called Who Does What in 1995-96, which resulted in some of the provincial-municipal realignment.

A technical question: How do you distinguish between a culvert and a bridge?

**Mr. Bruce McCuaig:** A culvert is basically a conduit for drainage purposes. We treat culverts that are three metres or more in diameter as bridges, so they're subject to exactly the same kinds of inspection and other regimes that a normal bridge would be. For smaller culverts that are under driveways or carrying water underneath a highway, we have a maintenance inspection process where they are reviewed on an annual basis.

**Mr. Howard Hampton:** So for what a lot of us uneducated folks would call a big culvert, in fact, the classification is a bridge.

**Mr. Bruce McCuaig:** Yes. A three-metre or wider culvert we would treat as a bridge.

**Mr. Howard Hampton:** One of the things that the auditor identified in his report—I don't know this to be true, but I'd be willing to bet some money on it. They surveyed four municipalities, A, B, C and D. Municipality A jumps out: population 108,177—I think that's probably Thunder Bay; I could be wrong, but I'd bet some money—823 bridges. Overall condition of bridges: fair to poor. Maintenance backlog in dollars: \$117.5 million. Backlog in years: 19.5 years. Isn't that a little scary?

**Mr. Bruce McCuaig:** I think it's important, first, that we distinguish between bridge condition and safety issues. I don't think we have information to understand if we're talking here about safety issues or condition issues. I believe that we're talking about condition of the bridges, which is similar to our bridge condition index.

But again, one of the purposes of working with AMO, OGRA and the city of Toronto is to come up with more certainty about the right roles and responsibilities going forward for the management of these assets.

**Mr. Howard Hampton:** We have the benefit of a backgrounder prepared by some of our very capable research staff. One of the things they point out in going

through the auditor's report is—I think the auditor basically says that they're not certain of what's happening at the municipal level. A lot of municipalities didn't reply. A lot of municipalities do not use your classification framework; they have a private contractor or private contractors.

Let me ask you this. What happened in Quebec was interesting. I actually went back and dug into some of the news reports. After there was a collapse and people were hurt, there was a lot of, "Well, it's not our responsibility; it's their responsibility." I don't think the public cares if you're a municipal politician or a provincial politician; they want to know, how the hell could a bridge collapse and people be seriously hurt? Are you satisfied with what's happened? I'm sure it's a couple of thousand bridges that were transferred from provincial responsibility to municipal responsibility about 12 or 13 years ago. Are you satisfied that they are safe on an ongoing basis for the public to be using?

**Mr. Bruce McCuaig:** We're satisfied that we have been communicating consistently with the municipalities about their responsibilities and obligations under the legislation.

As an example, when the Laval Concorde bridge collapse occurred, one of our first steps was to look to see if Ontario had similar kinds of designs in our inventory or in municipal inventories, and one of the things we quickly discovered is that the bridge was a design that we do not use here in the province of Ontario. In fact, we have, from an engineering perspective, built more redundancy into the kinds of bridges that are constructed here than was apparent in that bridge. So the key issue that happened in that particular collapse is that an element failed and there was no other element to back it up. In our designs, there are other elements to back it up so that even if one fails you don't have a catastrophic collapse such as occurred in Laval.

One of the things that we do in those situations is look at our inventory, look at the municipal inventories, and, if we have similar designs, take immediate steps in inspecting those bridges to see if any action is warranted. We do take that opportunity to communicate to municipalities around the province about what occurred, what we know about what occurred, to remind them of their responsibilities to complete their inspections, and, if we're aware that they have bridges of similar designs, offer our assistance. So we do that on a regular basis.

There was another incident in Minneapolis a couple of years ago where a bridge collapsed, and again we did the same process of trying to understand what happened in that situation, apply it to our circumstance here in Ontario, and communicate with our municipal partners. So we try to take that responsibility seriously as a leader in road transportation here in the province.

**Mr. Howard Hampton:** I notice that there's been a lot of federal money over about the last four or five years that has gone into maintenance of municipal roads and bridges. In fact, I think there are actually three different federal programs: the infrastructure stimulus fund, the

Building Canada Fund and the Canada-Ontario rural infrastructure fund. Right? As I understand it, it's been hundreds of millions of dollars. Why would municipalities have to go to the federal government for hundreds of millions of dollars?

**Mr. Bruce McCuaig:** I'm not sure how to respond to the question, Mr. Hampton. The federal government developed the program to make investments in municipal infrastructure, and roads and bridges were one form of eligible infrastructure, so municipalities have taken advantage of that opportunity, whether it's here in the province of Ontario or in other provinces around the country.

**Mr. Howard Hampton:** Quebec recently decided that its ministry of transportation would assume responsibility for bridge maintenance for municipalities with a population of under 100,000. Does the Ontario Ministry of Transportation believe that it might be worthwhile for Ontario to consider Quebec's approach?

**Mr. Bruce McCuaig:** One of the items in the terms of reference for our work with AMO, OGRA and the city of Toronto is to look at other jurisdictions. Obviously, the Quebec situation is going to be one such circumstance that we're looking at, as well as other provinces and US states. There is a wide variety of different models for ownership, funding and maintenance of infrastructure around North America, so that will be one of the things that we'll be looking at with the municipal partners as we go through that process. So yes, we will be looking at how Quebec is approaching it to see what, if any, application it has to the Ontario situation.

**Mr. Howard Hampton:** Does MTO believe there should be a central database for all municipal bridges and their overall condition, as you already have for provincial bridges?

**Mr. Bruce McCuaig:** We've been investing upwards of half a million dollars to date in the Municipal DataWorks system to create a common database for municipalities, so I guess if money shows our commitment and our interest in such a central system, then the answer would be yes.

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**Mr. Ray Mantha:** May I add that, of 444 municipalities in the province, over 300 have now subscribed to Municipal DataWorks. Two thirds of that number are municipalities of less than 100,000. So municipalities are very interested in knowing, one, the inventory of their assets, and two, the condition of their assets in developing an asset management plan, no question.

**Mr. Howard Hampton:** Every small municipality I've talked to has said to me that they feel they are in over their heads. They don't have the technical expertise. They have to hire outside technical expertise and they're not always sure that, with the outside technical expertise that they are hiring, they're getting good value for money. But the biggest problem is, they simply say, "We don't have the money." That's why—I'm sure it's the city of Thunder Bay that has been backlogged now for almost 20 years. And given what's happening to the

economy of Thunder Bay, I think they're probably in worse shape now than they were when the auditor looked at the scenario.

Just one other question: Has the joint provincial-municipal working group, which was established to identify responsibilities and a funding relationship for roads and bridges, reported yet on the results of its work? Where's it at? Have they published a draft report?

**Mr. Bruce McCuaig:** The work of that group—that is the group that I've been referring to in my comments, and it has met on a few occasions. It has not yet submitted a report. This year, the work plan calls for them to submit a report that speaks to the inventory of municipal roads and bridges around the province, and in 2011 to report on roles and responsibilities for infrastructure. So there is a work program that's been established and there will be some products this year from that process.

**Mr. Howard Hampton:** The Auditor General did this work. He refers to it as "municipality A," "municipality B," "municipality C," "municipality D." Has MTO thought of going to a couple of representative municipalities, doing a thorough inspection of their bridges and then looking at their fiscal and technical capacity vis-à-vis what needs to be done?

**Mr. Bruce McCuaig:** One of the areas of responsibility of the working group is to review the fiscal capacity and the infrastructure that's under the management of municipalities. We expect that the terms of reference, as they are completed by this group, will actually look at different kinds of municipalities—what are their local tax bases and revenue sources and what are their requirements for infrastructure now and in the future—and report back to the group on any recommendations they would have on responsibilities flowing from that information. So that, in some way, is one of the things that the working group has been asked to do.

**Mr. Howard Hampton:** Just one final question. In Ontario, the responsibility for inspection and rehabilitation of municipal bridges has been—you have no legislative authority. You can't require municipalities to inspect their bridges. You can't direct them. I don't think you can order them. But other jurisdictions can. As I understand, in the United States, each state must maintain an oversight role over the safety of bridges through the National Bridge Inspection Standards. Do you think MTO should have that oversight capacity with respect to municipalities, to be able to say to them either, "You're not up to speed on your inspections. You need to get up to speed," or, "You've got a safety hazard here and you must do something about it"? Do you think MTO ought to have that responsibility or that capacity?

**Mr. Bruce McCuaig:** Well, the principle that's established in the existing legislation speaks to municipalities as an order of government that has the capability and responsibility to manage its assets. I think one of the reasons why we have the working group with the municipal sector is to look into those kinds of questions themselves. I don't think we have enough information yet to know what is the right answer—and then, of course,

we'd need to bring that information through the legislative process. It is an area that's going to be looked at through the working group's deliberations over the next year.

**The Vice-Chair (Mr. Peter Shurman):** Thank you, Mr. Hampton—

**Mr. Howard Hampton:** I hope we don't have a Minneapolis within the next year.

**The Vice-Chair (Mr. Peter Shurman):** We all do. Thank you, Mr. Hampton.

Let's go to the government side, Ms. Sandals.

**Mrs. Liz Sandals:** Thank you, Deputy, for your presentation. I'm going to respond to the question, which was somewhat political, about funding. It seems to me, perhaps, a credit to ROMA, the Rural Ontario Municipal Association, and OGRA, the Ontario Good Roads Association, and the province all lobbying together that, in fact, we have engaged the federal government in funding infrastructure for local roads and bridges.

The municipality that used to be part of my riding, one of the rural areas, because I used to have some rural municipalities, actually did hire an engineer to go around and check out all their bridges, and they have a lot because there are a couple of tributaries of the Grand River that lace their way through the township. So they were a rural municipality which hired an engineer and over the course of three intakes of COMRIF, which is the municipal-federal-provincial infrastructure program, I think they're now up to about seven or eight bridges which have been replaced through two or three intakes of COMRIF; that's been by going out and getting the documentation from the engineer. They've been really successful in documenting their case and getting the funding to do the bridge replacement.

I want to go back to this whole business of the inspection form and the bridge condition index, because the inspection process seems to serve a whole bunch of different purposes. One is to capture how soon you need to replace something generally, what condition it's in, what urgent repairs may be needed, and if you're deciding to replace or do a major rehab, what components need to be looked at in a major rehab. The bridge condition index seems to be getting thrown around in a lot of the reporting and the discussion as if somehow it's about safety.

Could we talk about what the bridge condition index really represents, because my sense is that it really isn't a safety indicator, it's something else, so if you could expand on that.

**Mr. Bruce McCuaig:** The bridge condition index is not designed to be a safety indicator; it's designed to be an indicator of the asset value. It's designed as a tool to assist us in how we develop our asset management plan going forward, and when and how to make investments in the infrastructure. The purpose of it is to look at the various material components that are built into a bridge: the concrete, the steel, the sidewalks, the lighting, the whole gambit of it, and try to identify the elements that are still in a good state of repair and those elements that

are getting to the point where they're going to need some investment or some kind of work at some point in the future. It really comes up with a composite number to give us a sense of: Where does that bridge rest in the entire population from its overall state of repair or its overall condition? So it's not intended—

**Mrs. Liz Sandals:** When I look at the chart that's up here now, from somewhere somebody is translating the information that was on the first form into some sort of current element value. So without getting super-duper technical, can you explain to us how you got from form 1 to form 2?

**Mr. Bruce McCuaig:** I will do the simple version, and then Mr. Chaput can add in the detail. The simple version, from my perspective, is that an inspector will be using the first form to basically measure—if we take a curb, maybe 100 metres of curbing along a bridge, and there may be a certain portion that had chipping or delamination along it—measure that amount, and then that measurement gets translated into a percentage which goes into the second chart and starts to build a sense of what is the percentage of that element that needs to have some work done and then gets rolled up into other elements as well. Over to our chief engineer.

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**Mr. Gerry Chaput:** That's a very good example. The bridge is broken into specific elements. Some elements are more critical than others. The inspector goes out, as Bruce says, and actually physically measures the areas that they feel require work, which is translated into a percentage. The percentage is applied to the total value to replace that element. It's totalling all of those elements up. We've shown five or six here as an example of some of the elements, but there are many more. As I said, there are probably over 20 per bridge. It's coming up with basically a financial indicator of what the bridge has depreciated to today and what it would cost to replace it. When you divide those two numbers, the depreciated cost over the replacement cost, you come up with this ratio. In this case, it's 72.6.

If you look at this like your car, if I buy a new car that was \$10,000, and I drive it off the lot up to Thunder Bay and back—

*Interjection.*

**Mr. Gerry Chaput:** Over two days of long driving.

**Mrs. Liz Sandals:** Three maybe.

**Mr. Gerry Chaput:** Maybe three. I've put on a significant number of kilometres. I might have spilt my coffee along the way and stained the seat. I can't sell my car for \$10,000; it has depreciated. It has gone down to \$9,000.

If I use that simple example, the \$9,000 divided by \$10,000 is 90, and that's basically what we're doing with the bridge. We're measuring what we think needs to be repaired, and whether it's a bearing, a railing, a curb or a major girder in the bridge, those costs are then divided by what it costs to replace that. You come up with an index. The index is an indicator; it's not the safety value.

The safety comes in when you are doing the inspection to determine those values. Yes, I may be walking across the bridge to measure the area of rust or staining or concrete that seems to be bulging at this one point, which would mean it needs to be spalled on the barrier. However, I notice, while I'm doing that, that the expansion joint is jammed or that there's significant settlement in one corner. That's what the inspector is looking for in terms of safety.

That's what gives them the idea that, "Okay, I'm going to be doing my bridge condition index; that's fine. But this is an urgent need. This needs to be looked at immediately." Or if there was a significant crack that had staining that was proving that salt was infiltrating, if it looked like—and they're very well trained. They know what a shear crack is, which is different from just a normal crack. They're able to understand, through the training that we provide every two years to our inspectors, what the difference in those is. That's how they assess the safety.

Safety inspections aren't just limited to the two years. We have maintenance inspections that go on every six months because that helps us program our preventive work to extend the life of our bridges. That occurs in the spring and fall. On top of that, we have highway patrollers who are on the road every day. They, on our busiest highways, go over those bridges every single day and, in the winter, every single shift.

Again, they're driving over those bridges. If they sense a bump that was never there the last shift, if they sense a different noise, a thump-thump of the expansion joint that wasn't there, they understand that they've got to get out of their truck and look at it. These guys aren't driving around with cruise control on; they've got a yellow light for a reason. They have to stop, pull over on the shoulder, get out and look at these things in more detail. That's where the safety aspects come in. That's where, if they see a problem, they call the engineers in to look at the stuff immediately. If it requires a closure, they do it.

That's the difference between the BCI and the safety. BCI is strictly financial.

**Mrs. Liz Sandals:** So if we used your car analogy, the BCI might tell me, if this was a car, when it would be a good economic time to trade my car in. It's got nothing to do with whether or not my car is safe, if I've been maintaining the brakes properly and the wheel bearings and all the other stuff. It might make an economic argument that I should trade my car in and get a new one, but that's got nothing to do with whether or not I've maintained it properly and it's safe to drive.

**Mr. Gerry Chaput:** Yes.

**Mrs. Liz Sandals:** Thank you, because you explained in there that this isn't just every second year that there's a bridge inspection; that in fact you've got fall and spring checkups and then you've got the daily patrols that are ongoing, both for road conditions and bridge conditions.

It strikes me that part of the issue, when people look at bridges, is that what looks good and what is safe aren't

necessarily the same thing. People may look at a bridge and say, "That doesn't look very good." For example, you used the example of a sidewalk going over the bridge, and because of cracking and stuff, there are some chips out of the sidewalk and some concrete has flaked away out of the sidewalk. Presumably that has nothing to do with safety.

**Mr. Gerry Chaput:** Yes—

**Mrs. Liz Sandals:** But if somebody walks across the bridge, it doesn't look very good. Both of you have mentioned spalling on a number of occasions, where surface concrete has been actually deliberately chipped away by the maintenance people so that it doesn't fall down below on somebody going under the bridge. But that may expose some of the reinforcing, and people drive along and they see the reinforcing, the steel, showing. Is that a safety issue?

**Mr. Gerry Chaput:** No. Concrete is a very interesting material. It's made of sand, stone and a cement paste, with water. When it dries, it cures and it becomes a very strong material.

In compression, when you squeeze concrete, it is very strong. When it's weakest is when it's in tension, when you're pulling concrete. That's why there's steel within concrete, because the steel provides the strength in tension.

The fact that the steel is exposed does not reduce its ability to withstand that tension. The concrete around it provides a cover that protects the steel from rusting. At times, water will still infiltrate through the concrete.

In our older designs, the amount of cover over the steel was much less. Now our standard has improved so that it's three inches, or 75 millimetres. In the past it wasn't there. We've also got new materials other than steel, or different types of steel—stainless steel, for example, or epoxy-coated—as well as glass-reinforced polymers that we're using as well. These are some of the newer innovations.

In addition, we waterproof our decks so that the water cannot leak through the asphalt and through the concrete and into that steel and corrode it.

To answer your question: Yes, the steel may be exposed, and it may look awful—it will be rusty—but it hasn't taken away from the strength of that bridge.

What we are looking for is if the steel is still covered but the concrete is bulging, or popping. We call it popping—

**Mrs. Liz Sandals:** Because at that point, it has started to degrade.

**Mr. Gerry Chaput:** The safety risk is not of the girder collapsing, but of that small piece of concrete separating from either the girder or the steel. That's when we go in and chip that off, before it happens. We're well aware of when that happens. It usually happens in the spring thaw, when the water's flowing. When it's freezing at night and thawing during the day, it causes that expansion. We're well aware of the types of bridges it occurs to and the ages of those bridges that it occurs to. It's usually on the older bridges, where, as I mentioned,

they didn't have this cover, or they didn't have the different types of reinforcing steel.

It becomes a regular maintenance program. The maintenance crews and the bridge inspectors know that on this bridge, every year, we're going to go out and knock those pieces off, until we rehabilitate it.

But it's a holding strategy. The bridge remains safe; there are no issues that way. It's just a holding strategy to keep it functioning so that we can either get better value by combining it with other work, or perhaps it's a bridge that's going to be expanded wider, so we're waiting until that need is there before we take it down and rebuild it.

**Mr. Ray Mantha:** If I may add just one point: Gerry touched on the fact that some bridges require attention every year. The same would apply to the inspections. We have a flag in our bridge management system that flags those bridges that require annual inspections. We're well aware of the condition of the bridges and, where appropriate and where needed, we inspect more rigorously and more frequently.

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**Mrs. Liz Sandals:** So if you've got a bridge that's in a holding pattern, then you will make a point of inspecting it more regularly to make sure the maintenance keeps it in good condition on the holding.

**Mr. Ray Mantha:** We recognize that like your car, it requires more attention than a new car.

**Mrs. Liz Sandals:** When we're talking about bridge inspection, one of the areas that the auditor suggested might be a matter of concern was that the manual seems to require a two- or three-hour inspection and there seemed to be instances where people were signing off on 10 inspections a day. Can any of you comment on what's happening there? Is it a problem? What are you doing about it? What's going on there?

**Mr. Bruce McCuaig:** Thank you for the question. Yes, that was one of the findings of the Auditor General, that there were some instances where upwards of 10 bridges appear to have been inspected in a single day—I think he identified 36 instances of that occurring. All those bridges have been reinspected and we've determined that there are no safety issues associated with those bridges.

Some of those bridges had high bridge condition indexes and were in relatively close proximity to each other, so that will help explain to some extent why so many bridges may have been inspected in a relatively short period of time. There are also instances where some of the bridges were partially inspected on one day, and then they came back and completed the inspections on another day when, for example, there might have been better access to part of the bridge.

There is a variety of reasons why it may occur, but we want to come up with a process to make sure that a minimum amount of time is contractually set aside to ensure a thorough inspection in all cases. In September, we did issue a policy confirming the accountabilities for inspectors, whether they are our own staff or whether they're contractors. We've made it clear in our docu-

mentation and in our contracts how much time is expected to be spent on any particular inspection. We're also conducting spot audits to make sure that that work is being done. I mentioned earlier on about the photo time- and date-stamping as a means to ensure that the inspections are being taken as we require them to.

We think we have come up with some actions to address those issues, to make sure that the real and legitimate concerns that were raised by the Auditor General are addressed.

**Mrs. Liz Sandals:** I'm assuming that in that standard, there would still be some time variability so that if you've got a small new bridge, it won't take as much time as a big old bridge.

**Mr. Bruce McCuaig:** Yes, the time requirement will actually vary from bridge to bridge. So for a small new bridge versus a longer-span, more complex older bridge, there will be different kinds of requirements.

Gerry, do you want to add anything on that front?

**Mr. Gerry Chaput:** Sure. What we have done is categorize the bridges into categories, basically four, A, B, C and D, with the lowest being one and a half hours—and that would be for a smaller bridge that's relatively new—to five hours or greater. The five hours or greater could be several hours greater when you consider bridges like the Burlington Skyway or the Garden City Skyway, which are much longer, much larger and have different components that require inspection.

**Mrs. Liz Sandals:** I presume if you use those two skyways as an example, that's going to be a very long process, given—

**Mr. Gerry Chaput:** Yes. In addition, our bridge management system, the software that we use, is also being changed, so it also includes those A, B, C and D categories. Inspectors are required to submit a plan before they go out saying which bridges they're going to do that week. Obviously, we can add up those numbers. If they've got more than 10 bridges a day, then we know we have a problem.

**Mrs. Liz Sandals:** Thank you. I'm going to turn it over to Ms. Van Bommel now.

**Mrs. Maria Van Bommel:** In the auditor's report, he talks about outsourcing—that you outsource the majority of your work on projects. I think we all know that when you outsource, you lose a certain amount of control over what's being done. What kinds of checks and balances have you got in place to ensure that you're aware of the work that's being done, that you have control and that you can follow up to make sure that it is really being done the way you want it done?

**Mr. Bruce McCuaig:** MTO has a long history of partnering with our service providers. That includes the design process for highways and bridges. It can include construction, it can include the construction oversight and, obviously, the maintenance aspects as well.

Our approach has allowed us to keep high standards in the province, but we also believe that we're delivering very good value for taxpayers. Checks and balances are very important in those processes, and we extensively use

a variety of different manuals, guidelines, standards and policies that must be adhered to by our contractors. Those are supplemented by the contracting documents themselves, the legal agreements, and we use a variety of different performance evaluations, ratings, and quality of work. Those kinds of performance ratings are used to evaluate contractors after they've completed the work, so it actually impacts your ability to get work in the future.

We use penalties to impose on our contractors if they have an environmental, worker safety or some other kind of infraction. We do use penalties to influence their behaviour going forward. We use third parties to certify the work that has been done as well. We have a reputation with our contractors that we're tough but fair. I think the toughness comes from the fact that we have a strong regime of standards and other tools that we use to make sure that we get the value we're looking for. The fairness, I think, comes from the fact that we also have a fairly significant regime of dispute resolution and rating systems, that they feel that there is a process to have a conversation with the ministry to talk about issues when they arise.

**Mrs. Maria Van Bommel:** So has it ever happened that a contractor was so bad that you had to stop the work, basically?

**Mr. Bruce McCuaig:** What we typically try to do is work with the contractor as much as we possibly can to get the work completed. It's very rare, because our contractors typically have been working with us—there are about 150 of them—for, in some cases, decades, so they have a lot of experience in delivering on ministry work. Typically, what happens when there is an issue on a job site is penalties start to impact their ability to get future work from us. So their ability to bid on other work gets reduced, and in some cases, I guess, it could get to the point where they're actually not able to get work for a period of time. That has certainly occurred in some cases.

**The Vice-Chair (Mr. Peter Shurman):** Ms. Van Bommel, thank you. Time. I have a question or two before we go into rotation again. You'll get another shot.

I'd like to characterize, in my words, what I've heard so far and see what your reaction is to what I'm thinking. I'm thinking that I hear a good approach to the inspection process from a technical perspective, the way you've described it, with your charts, and so forth. I'm seeing a good response on the part of the ministry to the AG's report insofar as dealing with road closures for bridge inspection that weren't taking place, that have taken place in good number since the issuance of that report. I'm seeing—my word—a “disconnect” in how we deal with municipally managed bridges: not only municipally managed bridges, but bridges that are under, I guess, sponsorship of private organizations—snowmobiles and such.

On the one hand, you express the fact that you want to help: the database is open, and you encourage municipalities to do what they have to do. But as of now, there's no legal mandate that allows you to force any municipal-ity or private organization to participate or to do the work

that it undertakes to do, says it's going to do or wants to do but can't do. Is that a reasonable characterization, Mr. McCuaig?

**Mr. Bruce McCuaig:** I would say I do agree that we have a strong and comprehensive approach to our inspection process. I believe the ministry is committed to managing its inventory of assets professionally and takes its responsibility seriously. We also believe that the Auditor General has given us some very sound advice in terms of how we can enhance those systems even further. I believe that we've come up with a strong and comprehensive action plan to deal with the recommendations and suggestions from the Auditor General.

In terms of municipal bridges, I guess what I would say is that the province—the Legislature—has established a system that provides rules and responsibilities for the ministry, in terms of our own bridges, and said that municipalities have to do their inspections. They have to follow the manual, and it's their obligation as an order of government to do so.

1400

**The Vice-Chair (Mr. Peter Shurman):** So is that a disconnect?

**Mr. Bruce McCuaig:** I'm not sure I would characterize it as a disconnect. I would characterize that as the law of the land that has been established by the province of Ontario.

**The Vice-Chair (Mr. Peter Shurman):** But at the end of the day, regardless of what the law of the land as established by the province of Ontario says, there are municipal bridges—and I don't want to put words in your mouth so I want to be careful on this—that I see as likely not being in good shape at all because there's nobody there to enforce the mandate that those municipalities or private organizations have to do what they have to do.

**Mr. Bruce McCuaig:** I think there is a responsibility on those municipalities, as an order of government, to carry out their obligations and responsibilities. Whether it's a recreation centre or whether it's sewer and water facilities, or whether it's a road and bridge, I think municipalities have their responsibilities to manage their assets. I think that the way the systems have been established is that we've given accountability and responsibility to those municipalities and their councils to do that.

**The Vice-Chair (Mr. Peter Shurman):** You never considered running, did you? Forget it, it's a rhetorical question.

Ms. Savoline.

**Mrs. Joyce Savoline:** Where do you live, first of all?

I'm going to go to the question concerning funding for bridges and how you assess how you spend one-time dollars, as you did recently, to fund some municipal capital projects. The provision of these one-time funds was primarily based on demographics rather than needs. That somehow doesn't seem fair to me. Coming from the municipal world, I know how that works.

Also, what didn't work in that is that it was year-end money flowing out the door at the last minute, so it was time-sensitive and folks needed to have their projects

ready to move out the door, and yet in some municipalities where the needs were great, they couldn't ever have met the time frames that the province required to get those projects done. There needs to be a better way of dealing with things like that, especially with those one-time monies that, obviously, you need to spend before your year-end, and yet municipalities may not be quite at that place with their critical projects in order to be able to move forward in the province's time frame.

So is there any movement to setting a better asset management practice in that regard, providing more predictable, sustainable funding to municipalities so that they're not scrambling at the last minute and the wrong projects get done instead of the right ones? Because we are talking about maximizing safety, and bridges are all about that. I stood under a bridge that I didn't travel again after looking at it from the bottom, so I know what this speaks to. Is there any thought being given to how you deal with that and not all of a sudden say, "You have 30 days to reply with your finished project details, engineering, whatever, or you don't get the money," and somebody else who has a lesser need gets a cosmetic fix to a bridge rather than a critical safety issue fix?

**Mr. Bruce McCuaig:** Thank you for the question. I think it goes to one of the real roots of the interest by all parties to have an inventory like the Municipal DataWorks system so that we have an ability to distribute funds not simply on a demographic or a population basis, or on a lane kilometre basis or a number of bridges basis, but on the basis of condition and need, and capacity of the community. The work that we've been doing with the Ontario Good Roads Association and the work that we'll be doing with the working group, with the municipal sector more generally, is going to be helping us to move in the direction where we can be as strategic as we possibly can be in making those kinds of investments. I think that's a big part of why we're partnering with OGRA and that we're working with the municipal sector.

To the extent that municipalities don't have the ability to spend the money on road or bridge projects, there are very few programs that prevent them from spending the money on a project that they can't get going on until next year, for example, because it's too late in the construction season or something of that nature. Clearly, the stimulus funds that the federal government has established, and partners with the provincial government on, have time limitations on them. But by and large, the other programs should have enough time to allow municipalities to program work. It may go to some of the discussion about, "Do municipalities have projects that are already identified, which, if they have the opportunity to make an investment, are ready to go?" That may be something that we need to talk to municipalities about.

**Mrs. Joyce Savoline:** Okay. Given that I'm talking about safety of structures, and sometimes these one-time, quick announcements at provincial year-end are a surprise to municipalities and they can't get it all together—and I know that you're in the municipal-provincial working group discussing all these things. Given that, in



my opinion, there's a time sensitivity to the issue that I've described, can that not be moved out of that group and a decision made on it so that if this year, all of a sudden, you come up with a one-time announcement, once again, municipalities that have critical projects that they would like to get off the ground, but haven't quite dotted every "i" and crossed every "t" and can't move on your offer—it just doesn't seem fair. To me, it is not a workable solution to projects that might have safety issues for the public involved.

**Mr. Bruce McCuaig:** Thank you for the comment. I'll certainly go back and we'll have a conversation about how we structured some of those programs. Obviously, there are some time-limited programs, so they may have a three- to five-year life cycle, and a recipient of a grant needs to consume the funding within five years, for example. But by and large, those kinds of timelines are not going to constrain the kinds of projects we're talking about.

**Mrs. Joyce Savoline:** No, I'm talking about quick announcements.

**Mr. Bruce McCuaig:** In the gas tax funds for transit, for example, there are lots of cases where municipalities put the funds that have been transferred to them into a trust fund. They may not have a purpose for those funds this year, or they're working on a bigger project for the following year, so they put their allocation this year in this account, and then next year, they combine it with their next year's amount, and they can do a bigger project.

**Mrs. Joyce Savoline:** Ah. But Mr. McCuaig, those to me are predictable amounts of money. I'm talking about year-end announcements, where in March, you say, "Whoa, we've got X millions of dollars. Who's ready to go with something?" It's usually based not on need, but on some other criteria like demographics. Those are hard for smaller municipalities especially, that don't have the sophistication and staff, to move forward. And I've heard that as an issue, being a member of AMO and going to Good Roads and ROMA. That's why I'm raising it.

Is there some thought being given to move that out of the working group and come to some resolution, should the province make another one-time announcement with surplus year-end funds that you want municipalities to have?

**Mr. Bruce McCuaig:** Thank you for the comment. We'll look into that. My recollection is that—I'm just going by memory here, so I may be wrong on this point, but on projects like the Investing in Ontario legislation from 2008 and the road and bridge funding that was provided in 2007—I don't think there were time limits on those funds. So maybe they weren't planning to receive the funds, but I don't think that there was any constraint on their ability to put them in trust. Maybe they don't have a ready project at that moment, when those funds come in, to expend the funds on, but that doesn't mean they can't necessarily develop a project to utilize those funds.

But I'll certainly go back and look at those projects and refresh my memory on that. Thank you.

**Mrs. Joyce Savoline:** Incomplete maintenance and work tracking: The auditor observed, when he was doing his work, that regions tended to not complete many of their maintenance recommendations that resulted from those biannual bridge inspections. He reported that in two of the three regions visited, only about one third of the recommended maintenance work was actually completed. The third region didn't even track whether the recommended maintenance was done. Have you, at the ministry, in your regions taken any steps to improve this linkage between the biannual inspections and the actual work that's undertaken?

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**Ms. Bruce McCuaig:** First of all, I want to emphasize that safety is our first priority, so if there are items that come out of an inspection or a patrol or some other kind of review that points to a safety priority to do work, we do that right away.

We do accept, from the Auditor General's work, that our record-keeping and documentation needs to be improved. Mr. Chaput spoke earlier about building into our systems loopback mechanisms so that when an inspector identifies necessary work, whether it's urgent or whether it's maintenance work, there's a way to record that that has been reported, there's a way for the recipient of that work order to acknowledge that they got it, and there's a way for the work order to be shown to be completed and checked off. We built that into our processes going forward on a paper basis, and what we want to move towards as we update our computer systems is to make that as electronic as possible so that we have a documented paper and electronic trail that this piece of work was recommended, it was assigned, it was completed, and the inspector knows it has now been completed.

Gerry, do you want to add anything to that?

**Mr. Gerry Chaput:** I don't think I have much to add, other than the fact that on that form there was the comment for urgent work, and that's the preventive maintenance that's taken immediately. The cosmetic: Yes, there may be work that is on that form that is cosmetic, and that may not be done or may be postponed, but we would never postpone or delay urgent work that was required.

**Mrs. Joyce Savoline:** What you're saying, then, is that when the auditor says that in two of the three regions visited, only about one third of the recommended maintenance work was done, you would consider—you're telling me today that that was the urgent work that needed to be done, and the other two thirds was not urgent, that it was simply identified?

**Mr. Gerry Chaput:** I don't have those reports in front of me, but that's more than likely the case, yes.

**Mrs. Joyce Savoline:** Okay. What about the third region, which didn't even track what was recommended? What's happening there?

**Ms. Bruce McCuaig:** It goes back to my original comment about setting into place better documentation of work that has been identified and demonstrating that it has been completed. We're moving to implement

basically a central system that allows us, from St. Catharines, where Gerry is located, or other locations, to be able to track that kind of work.

**Mrs. Joyce Savoline:** When did you say that would be completed?

**Mr. Bruce McCuaig:** We're moving immediately to have the paper component of that done so that there's an ability on these forms to flow that information in, to document that the information has been received, and then to document, by the office doing the work, that they've done the work. That's being done immediately. Where we have to spend more time is in adjusting our electronic systems, because ultimately we'd like to be able to record that information electronically in our systems. That will probably take three to four years.

**Mrs. Joyce Savoline:** You have already started a paper file on things like that, and the electronic will follow. Okay.

**Mr. Gerry Chaput:** If I might add as well that the other thing we're doing is preparing guidelines to help inspectors, to make sure they understand the difference between urgent and maintenance needs and to help them prioritize some of those non-urgent needs so that we can address more of them. Those guidelines are also being prepared and will be part of our biannual training that we provide every two years.

**Mrs. Joyce Savoline:** Okay. You spoke earlier—I think it was Ms. Sandals who asked the question, and you answered by saying that you keep track of the parts of—I can't remember the word you used for it, the parts of bridges, the little bits that break off, usually in the springtime after the freeze and thaw. Let's say it has been identified and somebody goes out and does the repair work on it. Is there a system set up so that a week later or a couple of weeks later, somebody goes back to check to make sure that the repair held or that the same thing didn't happen in another part of the bridge, given that it was already showing some signs of it happening in one place?

**Mr. Bruce McCuaig:** I think there are two parts to that. One is quality assurance of any work that the ministry contracts out with its service providers. We do have systems in place to ensure quality assurance. Whether it's a culvert that we make sure is installed properly, or whether it's certification of materials by a laboratory that the concrete is sound, there are different mechanisms that we have in place for quality assurance.

The other part is, to an earlier question from Ms. Sandals, we talked about the patrolling. On our busiest highways, we have patrollers out there on a daily basis. If they see the same thing happening on another portion of the bridge, then they will get out of their vehicle, take a look at it and report that in.

Those kinds of daily, in many cases, driving up and down the highways, looking at the bridges, is occurring year-round. As Mr. Chaput indicated, in the winter it's at least three times a day that those kinds of patrols are occurring.

**Mrs. Joyce Savoline:** It's one thing to talk about the integrity of the structure and the fact that the bridge isn't

going to fall down because a piece chipped away, but where that piece lands is a huge safety issue to who is going under that bridge. That's why I'm asking.

**Mr. Bruce McCuaig:** Absolutely. Right.

**Mrs. Joyce Savoline:** If you've got one piece chipped, it's likely that other little bits will chip too.

**Mr. Bruce McCuaig:** The patroller will distinguish between chipping that's occurring in a place that vehicles do not travel under, versus chipping that's occurring over a travelled lane. Obviously, anything that's occurring over a travelled lane has to be dealt with immediately.

Mr. Chaput, you'd like to add something?

**Mr. Gerry Chaput:** In a little bit more explanation of the procedure that's used, it's not a simple one-hour job. They go over the whole bridge. It takes days, during the lane closures. They'll close a lane; they'll do that section; they'll do every girder. They don't just do sort of what they think might be, or the one square metre that was identified. They'll scan the whole bridge during this maintenance repair, and break off probably even more than just what's chipped. They'll go right until they hit solid concrete so it's not an issue. They do it against the whole bridge. They don't just focus on one lane or one centre. They'll go down the whole length of the girder until they hit that sound concrete.

**Mrs. Joyce Savoline:** Okay. Just to go back a little bit, to Mr. Hampton's question, and I think I alluded to it too: Do you see the value for a central database for all structures, culverts, bridges, regardless of whether they're provincially owned or not?

**Mr. Bruce McCuaig:** Yes, and we're investing in the DataWorks system, because we see the value of having that kind of inventory information across the province.

**Mrs. Joyce Savoline:** When do you think that will be ready?

**Mr. Bruce McCuaig:** The DataWorks system is functional now.

**Mrs. Joyce Savoline:** Okay.

**Mr. Bruce McCuaig:** As Mr. Mantha indicated earlier on, about 300 municipalities are starting to input data into the system. The \$750,000 that I indicated earlier—we're partnering with the Ontario Good Roads Association—is intended to do a bit of a speed-up of the input of information into the system so it can be as functional as it possibly can, as early as it can be.

**Mrs. Joyce Savoline:** Okay. In the case of a bridge that does not require lane closures—an inspector simply parks the car and inspects the bridge—how long would you see a normal bridge inspection taking place?

**Mr. Gerry Chaput:** Sorry, how long would—I didn't hear the—

**Mrs. Joyce Savoline:** In an average day, a bridge inspector arrives on the scene at 8 o'clock in the morning. How long would it take to inspect a bridge?

**Mr. Gerry Chaput:** It's a function of the bridge, its size and its age. As we categorize them, we feel it should take, for even a new bridge that's relatively small, a minimum of an hour and a half. For much larger bridges,

we've left it open; at least a minimum of five hours, but likely days.

The process is very repetitive. The inspector has to park his car. He has to walk out there. He walks across the deck, probably on both sides. If he can't cross the road safely, he gets in his car, turns around in the intersection, comes back, parks it on the other side and does it.

They go underneath the bridge. They walk down and if they can access the piers, they go out to the piers. If not, they drive on the highway and, again, pull off on the left, behind the guardrail, go out and access the piers, assess them. It takes a lot of time and a lot of it is back and forth, because they're writing down those quantities and the deficiencies that they see. They're calculating those areas as they go. They're documenting all of that, and all of that takes time. That's why we came up with those minimum inspection times and put them in the contracts, so contractors knew what they were bidding on, what we expected of them and what we're going to be holding them to.

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**Mrs. Joyce Savoline:** How do you monitor that that amount of time is actually being spent on the bridge? Because all they have to do is submit to you a form that says "bridge has been inspected"—right?—and tick off whatever areas need to be ticked off. How do you know that they spent a minimum of one and a half hours?

**Mr. Gerry Chaput:** We have ways of checking in terms of the report. First, we count on their professional integrity. These are professional engineers who are responsible for that. Obviously they have a duty to protect the public and the safety of the public is paramount, so I can't see them shirking on that responsibility. Having said that, we have oversight requirements in place. As I mentioned, they are required to provide us with an advance plan that tells us what they're going to do that week so we can at least assess whether we think that's possible or not, given the types of bridges and the categories therein.

We have patrollers who go out on the road, who might, in turn, say, "He was out here but he wasn't out here for an hour." We have those types of questions we can ask, and just general oversight—

**Mrs. Joyce Savoline:** So there is monitoring.

**Mr. Gerry Chaput:** Yes, there's monitoring, of course, of each assignment.

**Mrs. Joyce Savoline:** Thank you.

**The Vice-Chair (Mr. Peter Shurman):** Thank you, Ms. Savoline. Over to the NDP, Mr. Hampton.

**Mr. Howard Hampton:** I have a few more questions. I apologize if I haven't gotten the gist of this, but I want to be very clear. You do maintain certain data management lists in terms of bridge condition and so on.

**Mr. Bruce McCuaig:** For the province's bridges, yes.

**Mr. Howard Hampton:** So does MTO keep a list of bridges which fall under municipal jurisdiction that are most in need of, let's say, replacement or fundamental reconstruction? Do you have a list of municipal bridge infrastructure that ought to be worked on, upgraded, refurbished?

**Mr. Bruce McCuaig:** The ministry does not have an inventory of municipal assets. Again, one of the purposes of investing in the Municipal DataWorks system is to create that kind of an inventory.

**Mr. Howard Hampton:** Does any other ministry in the government have that kind of list, that you know of?

**Mr. Bruce McCuaig:** For bridges?

**Mr. Howard Hampton:** Yes.

**Mr. Bruce McCuaig:** Not that I'm aware of.

**Mr. Howard Hampton:** So I look at your remarks. Since 2005, the province has spent more than \$500 million to support improvements to municipal roads and bridges. This was accomplished through the Canada-Ontario-municipal infrastructure fund, the Building Canada fund, the infrastructure stimulus fund. If \$500 million was handed out, how were any decisions made about where that money was to go?

**Mr. Bruce McCuaig:** Many of those programs were application-based programs. Municipalities brought forward their proposals for how they would like to invest funds, and then those projects were evaluated by the federal and provincial governments. In the case of road or bridge projects, the responsible ministry—if it was the Canada-Ontario municipal rural infrastructure fund, it would be the Ministry of Agriculture, Food and Rural Affairs. They would come to the Ministry of Transportation for our technical advice on the quality of the application, the nature of the project, and we would provide our advice on that proposal. Then the governments would be evaluating all of those projects across different infrastructure categories and coming up with a decision on what projects will be funded at what levels.

**Mr. Howard Hampton:** But if MTO doesn't have a list of bridges that need the work the most, or which, according to the criteria you use for provincial bridges—if you don't have that information, how do you offer advice?

**Mr. Bruce McCuaig:** What we would have is the material that's submitted by the municipality, which would talk about the nature of the project, why the project is important to the community, and there would be technical information in there about the nature of the bridge and the roadwork that is being proposed. There would also, perhaps, be inspection reports that are included that talk about what has been found and what kind of deficiencies they are trying to address. They may even be at such a state of design that there actually is a tender package that's available, because it may be work that they had been planning to do at some point in the future and they had the project ready to go. So there would be a variety of information coming to the ministry, and we would be evaluating that information.

**Mr. Howard Hampton:** Which takes me back to the point Ms. Savoline made earlier, that sometimes the money goes to projects that are ready for tender, not necessarily projects that need the work.

**Mr. Bruce McCuaig:** I guess another way of putting that, though, would be that municipalities are preparing projects for tender because they are projects that need to be done. So I would expect that municipalities are bring-

ing forward, from their perspective, their most important projects.

**Mr. Howard Hampton:** Let me ask you this question. Do you think MTO should be charged with keeping such a list? Would it help ensure that infrastructure money is used most effectively if you had such a list?

**Mr. Bruce McCuaig:** I think the ministry would believe that it's important to have an inventory system like the DataWorks system that would allow us to move to different ways of evaluating bridge needs. We think that's a very important tool that would allow municipalities to make the case to federal and provincial governments about what infrastructure needs are out there. That's why I believe it would be important to municipalities, and I think it will be important to provinces and the federal government to help them make choices about investment levels and distribution of funds. So yes, it's important.

**Mr. Howard Hampton:** I'm not sure this a fair question for you, but I'll ask it anyway. You seem to be rather good at handling them. That's not a criticism, by the way.

**Mr. Shafiq Qaadri:** It's not praise, either.

**Mr. Howard Hampton:** Given that the federal government has said that things like the infrastructure stimulus fund and the Building Canada Fund are now going to come to an end, that they're in a different mindset now—the mindset now is balance the budget—and given that the municipal roads and bridges in Ontario have literally received hundreds of millions of dollars out of those funds over the last three or four years, where do you see the money coming from now to do that urgent—I look back at Thunder Bay, a 20-year backlog, a \$100-million backlog—where do you see the money coming from to tackle what I think are probably some pretty serious public safety issues?

**Mr. Bruce McCuaig:** I think it's a good question, and it's not just an Ontario question. I think we could probably ask the same question in any province or territory across the country, and—

**Mr. Howard Hampton:** But I'm elected in Ontario.

**Mr. Bruce McCuaig:** We are having conversations with our colleagues in other provinces and territories about where the infrastructure priorities are going forward, because we hear the same statements about the focus of the federal government in the future. There has been a lot of investment made by both levels of government over the past five to 10 years, and we had previously identified where some of our areas of most priority and need are.

Now that we've made many of those investments, we need to again sit down as a group and think about what our needs are going forward. Is it municipal infrastructure? Is it provincial infrastructure? Is it transportation or is it other forms? Is it transit? So I think those are conversations that we have across all provinces and territories with the federal government, and then we need to think of what our own interests and priorities are here in Ontario.

So yes, those are conversations that I would expect that not just MTO, but every provincial ministry would

be having as the infrastructure programs start to wind down from the federal government over the next year.

**Mr. Ray Mantha:** If I may add, Deputy, even more important, then, is the establishment of DataWorks, because DataWorks creates an inventory of not only bridges, but roads and water and sewer and light fixtures and pavement conditions—every aspect of the municipal infrastructure. So absolutely the first step is knowing what we have. You can't manage what you don't know, to put it simply.

**Mr. Howard Hampton:** I have no further questions.

**The Vice-Chair (Mr. Peter Shurman):** Thank you, Mr. Hampton. Over to the government, and I believe it's Dr. Qaadri.

1430

**Mr. Shafiq Qaadri:** I was intrigued by Mr. Chaput's medical analogy of the bridge with left shoulder pain. Of course, I'm aware of the various requirements for that sort of triage, but I wanted to ask: What special sort of training and qualifications do you actually need to be a bridge inspector in Ontario? Is there additional training beyond the certification or engineering licence or P.Eng.? As well, just as you have a redundancy of parts, do you have a redundancy of inspection and what is the requirement for ongoing certifications, which, of course, we find in other professional domains?

**Mr. Gerry Chaput:** Thank you for the question. In terms of the training, yes, we first require professional engineers under the legislation. We're the only province in Canada that has that legislation that they be inspected by professional engineers, but to do work for the Ministry of Transportation, we also require them to undergo training performed by the Ministry of Transportation. So if they have not received our training, they're not eligible to bid on those projects or to perform those bridge inspections on our behalf.

The training occurs every two years, and to continue with the inspections, they must continue to receive the training. The training takes place over three days and it requires both classroom and field inspection activities, so they not only learn new techniques but they find out what's new in technology, as well as inspection procedures, what to look for. They then go out in the field, do inspections and then they come back on the third day and review the results of those inspections to determine whether they were in line or whether they were out of line, and to determine what might have been seen as some problems or issues, or "Did you catch this component on that bridge?" It's an ongoing certification program. It's training that's provided every two years, and they must have that training to perform those inspections on our bridges.

In terms of the redundancy aspect, we do that training every two years, and on the off year, we actually perform an internal audit. We usually do approximately 50 bridges per year—10 bridges in five geographical areas of the province. Our inspectors will go out from head office, perform re-inspections on the very bridges that were inspected the year before and assess where there we issues, whether they were using actual measurements to

understand the deficiencies in the elements, whether they were catching the same deficiencies that the bridge inspectors were that went out on the audit, and any documentation issues as well.

They use this information; they go back to the region to obviously update them on their findings. It allows us to perform bridge investigations that are less variable, so we get more consistency, and it also provides us with information that we can use to set up training for the next year. For example, in the audit, if we notice that they were missing a certain type of deficiency or misinterpreting a part of the guide, we can change the guide, we can reference it in our training in the upcoming year and ensure that everybody's back on the same page as they proceed.

**Mr. Shafiq Qaadri:** Just one other question to sort of dilute and concentrate, at the same time, all this BCI and your various indices, and uphold the public interest: Are you telling me that we have a lot of ugly but safe bridges?

**Mr. Gerry Chaput:** I don't think they're all ugly; there are some that are very attractive. But if it's ugly, it is safe. I can say that with confidence, because of our inspection procedures, because of the fact that our manual has been adopted by several jurisdictions in Canada: Saskatchewan, Manitoba, Quebec, Ontario of course, Nova Scotia and PEI. Yes, I can say that with confidence: It may not look pretty but it's safe.

**Mr. Bruce McCuaig:** Just to add one point on it, I know that earlier on a reference was made to the Minneapolis catastrophe a couple of years ago and if it could happen in Ontario. I'd just like to make sure that everybody knows and is comforted by the fact that those kinds of circumstances would not occur in Ontario. One of the significant causes of that particular event was overloading of the bridge during reconstruction and they were storing construction materials on the bridge. We do not allow that to occur in Ontario, so that kind of an event could not occur in the province.

Again, whenever one of these events occurs in other jurisdictions, we very carefully take a look to see what the causal factors were, what can we learn from that, and if there are issues that we need to take steps on here in Ontario.

**Mr. Shafiq Qaadri:** Thank you.

**Mr. Yasir Naqvi:** Gentlemen, thank you very much for being here this afternoon and illuminating us about everything bridges. I've definitely learned a fair bit.

I represent the riding of Ottawa Centre, and we were talking about it earlier. Almost three years ago in my riding we had this new technique which was used to actually fix two bridges, or replace them, essentially. That was sort of the hydraulic mechanism and moving—can you talk about the benefits or disadvantages of that particular technology? Have you been using that in other parts of the province, and what has the success rate been? And if not, why are we not using that? Because it seems to be the least disruptive.

**Mr. Bruce McCuaig:** Very briefly—I'll ask Mr. Mantha to provide some detail—we're very proud of that

tool and technique. We've used it twice in the Ottawa area with great success. We are planning to apply that same technique here in the Toronto region this coming summer. You'll probably recall, in the Ottawa area we had upwards of 1,000 people staying overnight to watch the bridge being—

**Mr. Yasir Naqvi:** I was there. It was like watching paint dry. It was exciting.

*Interjection.*

**Mr. Yasir Naqvi:** Yes, but it was exciting

**Mr. Howard Hampton:** Only in Ottawa.

**Mr. Yasir Naqvi:** We're a bureaucratic town. What can I say?

**Mr. Bruce McCuaig:** It applies in certain cases. It doesn't work for all bridges. It has a certain application, but any time we can prefabricate a bridge off-site we have better quality control, in that controlled situation. We can obviously have a much more limited impact on traffic if we're just closing the highway for a single night as opposed to constricting lanes for a period of one or two years. That also reduces greenhouse gas emissions and improves safety. So there are lots of reasons why we want to use those kinds of techniques. It was the first time in Canada that technique had been used and we're doing it a third time very soon.

**Mr. Ray Mantha:** I don't know if there's much left to say other than the source of the information—we found that some of the US jurisdictions were doing it on some of their busier freeways. We are the lifeline of the economy of the province, so we recognized an opportunity, with the Ottawa Queensway/417, to replicate the technology that we discovered down in the US.

As the deputy pointed out, normally a bridge rehabilitation along a major thoroughfare where the heavy volume is actually on the bridge—it's not a bridge over the heavy thoroughfare; the bridge is the heavy thoroughfare. The disruption to the traffic is enormous. The costs associated both to the economy and the project are enormous.

What we found here was in fact that by closing the highway for 17 hours on a Saturday night and Sunday, we had very little disruption to traffic. There was plenty of advance notification to the users of the road that they would be disrupted for 17 hours and either they modified their trip plan or they didn't make the trip at all. So we didn't disrupt the flow and the economy of the province for a two-year period, and we saved money. We're very much looking for similar applications around the province.

As the deputy alluded to, on Highway 403 in the Hamilton area we'll be doing the very same procedure. It doesn't mean that that's a one-size-fits-all solution, but certainly there is applicability and much broader use. It's all about being faster, safer, cheaper and better. The less disruption, the quicker we can get it in and stay out. That's really what our focus and intent is in going forward.

**Mr. Yasir Naqvi:** And as I recall the details from the project in Ottawa at the Island Park and the other bridge in my riding, the agreements were time-sensitive.

**Mr. Ray Mantha:** Absolutely.

**Mr. Yasir Naqvi:** So there were very strict obligations on the contractor to perform the task within a set time, otherwise there were penalties involved. So there is a mechanism to not only save time but money for the province, as well, using those techniques.

**Mr. Ray Mantha:** Absolutely. We have significant penalty bonus clauses in our contracts like that. Before we even undertake the project, we do a significant risk analysis. What can go wrong here, and if it goes wrong, what are we going to do about it? You can bet, when you're closing the Queensway, that we turned our minds to undertaking a significant risk matrix to understand all of the potential problems that could occur and develop a plan for mitigation as we went forward.

So, through careful planning, building a contract where the contractor and ourselves knew our roles and responsibilities and obligations, and putting a significant penalty bonus clause into the contract, we saw success.

**Mr. Yasir Naqvi:** I don't know if you would have the knowledge among yourselves or your staff who are here about the history around Island Park Bridge. What steps were taken for you to get to the decision to replace that bridge through the techniques you used? How long was that process? What was the condition of the bridge for you to say, "The only remedy there is"—

**Mr. Ray Mantha:** To replace the bridge?

**Mr. Yasir Naqvi:** Yes.

**Mr. Ray Mantha:** You probably know that the Queensway was built in the late 1950s, early 1960s. It used to be Carling Avenue. I'm showing my age. The bridges were of that age. They were approaching 50 years of age.

We also had capacity issues along the Queensway. We were looking to increase and enhance the capacity opportunity along the Queensway, so it wasn't simply a matter of replacing in kind, but in fact adding capacity.

We took a look at the technologies that were available to us, the conventional technology of building a bridge half at a time. We took a look at what it would take to do this, to apply this technique. Whether it's Island Park or Clyde Avenue, which is the other one where we used it, essentially there had to be a piece of property in close proximity where we could build the bridge. We built the bridge on a stand and then we used the transporters, much the same technique that they use to move the space shuttle around. We had to be able to go in, take the existing bridge out, literally move it and set it on stands over on a piece of nearby land, which the NCC made available to us, and then take the bridge that we had constructed under ideal conditions—not during traffic; under ideal conditions, so that the quality of the product is enhanced as well—and move it and set it into place.

All of the necessary ingredients to carry out the recipe were perfect. It took a couple of years of planning, but we did it in 17 hours, saved some money, and had little inconvenience to the motorists along 417.

**Mr. Yasir Naqvi:** And gave plenty of amusement to a thousand people who came out. I remember you set up stands and everything. There were webcams and whatnot.

**Mr. Ray Mantha:** We set up stands.

**Mr. Yasir Naqvi:** Hardly anybody showed up for Clyde Avenue, because we were done; we moved on to some other sport.

**Mr. Ray Mantha:** Yes. We set up stands. You'll remember, Rogers Cable TV covered it live.

**Mr. Yasir Naqvi:** It was an exciting night; I remember.

I want to move on to another issue, which is highlighted on page 91 of the auditor's report, and that's dealing with "Bridge Condition Survey." In the report the auditor talks about how the ministry has conducted condition surveys on only about 5% of the province's bridges in the last four years. I was just wondering if you could sort of share with us the context of that comment so that we can better understand what the auditor is referring to. First of all, what is a bridge condition survey and what does that involve? How does that relate to your biannual bridge inspections and the ministry's plans to keep the bridges safe?

**Mr. Bruce McCuaig:** The purpose of a bridge condition survey is to help us design the project to do a major rehabilitation or reconstruction of the bridge. If, through our inspection process and through our other asset management processes, we have decided that we're going to do a reconstruction of a bridge, we would then use a bridge condition survey to go in and help us understand what components of the existing bridge are still available for reuse—for example, the abutments, or some of the piers—what needs to be replaced and try to scope out how large the project is. That helps us estimate the cost of the project. That helps us to design the project so that bidders have as much information as possible.

The whole purpose of a bridge condition survey is to help us to define the project for a reconstruction or a rehabilitation.

We do other inspections that are called for when, for example, we have a bridge over water and there may be piers in the water and we need to do an underwater survey of the piers, or it may be an exposed steel structure and we need to do a fatigue inspection of the steel elements.

There is a variety of other kinds of inspections that the ministry does, both invasive, in terms of actually drilling into the members and pulling out and inspecting the core sample, and non-invasive, using electronic equipment to try to understand what's happening with the bridge.

There is a variety of different kinds of inspections, but that's what we use a bridge condition survey for.

**Mr. Yasir Naqvi:** Thank you.

**The Vice-Chair (Mr. Peter Shurman):** Thank you, gentlemen, very much for your appearance here today. That concludes the public session.

We'd like to not only thank you but excuse everyone, because we will continue as a committee for about 10 minutes in closed session.

**Mr. Bruce McCuaig:** Thank you very much for your time.

*The committee continued in closed session at 1443.*



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