

# Ottawa Light Rail Commission

Richard Holder  
on Tuesday, April 26, 2022



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OTTAWA LIGHT RAIL COMMISSION  
CITY OF OTTAWA - RICHARD HOLDER  
APRIL 26, 2022

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--- Held via Zoom Videoconferencing, with all  
participants attending remotely, on the 26th day of  
April, 2022, 2:00 p.m. to 5:10 p.m.

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1 COMMISSION COUNSEL:

2

3 Kate McGrann, Co-Lead Counsel Member

4 Liz McLellan, Litigation Counsel Member

5

6

7 PARTICIPANTS:

8

9 Richard Holder, City of Ottawa

10

11 Peter Wardle and Jesse Gardner,

12 Singleton Urquhart Reynolds Vogel LLP

13

14

15 ALSO PRESENT:

16

17 Judith Caputo, Stenographer/Transcriptionist

18 Laila Butt, Virtual Technician

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23

24

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INDEX OF EXHIBITS

NUMBER/DESCRIPTION	PAGE NO.
1: Curriculum Vitae of Richard Holder.	6

\* \* The following is a list of documents undertaken  
to be produced or other items to be followed up \* \*

INDEX OF UNDERTAKINGS

The documents to be produced are noted by U/T and  
appear on the following pages: 41:10, 44:23, 70:7,  
111:12, 122:7

1 -- Upon commencing at 2:00 p.m.

2

3 RICHARD HOLDER: AFFIRMED.

4 KATE McGRANN: Good afternoon,

5 Mr. Holder. My name is Kate McGrann, I'm one of

6 the co-lead counsel for the Ottawa Light Rail

7 Transit Public Inquiry.

8 The purpose of today's interview is to

9 obtain your evidence under oath or solemn

10 declaration for use at the Commission's Public

11 Hearings.

12 This will be a collaborative interview,

13 such that my co-counsel, Liz McLellan, may

14 intervene to ask certain questions. If time

15 permits, your counsels may also ask follow-up

16 questions at the end of this interview.

17 This interview is being transcribed,

18 and the Commission intends to enter this transcript

19 into evidence at the Commission's Public Hearings,

20 either at the hearings or by way of procedural

21 order before the hearing is commenced.

22 The transcript will be posted to the

23 Commission's public website, along with any

24 corrections made to it after it is entered into

25 evidence.

1                   The transcript, along with any  
2 corrections later made to it, will be shared with  
3 the Commission's participants and their counsel on  
4 a confidential basis before being entered into  
5 evidence.

6                   You will be given the opportunity to  
7 review your transcript and correct any typos or  
8 other errors before the transcript is shared with  
9 the participants or entered into evidence. Any  
10 non-typographical corrections made will be appended  
11 to the transcript.

12                   Pursuant to Section 33 (6) of the  
13 Public Inquiries Act 2009: A witness at an inquiry  
14 shall be deemed to have objected to answer any  
15 question asked him or her upon the ground that his  
16 or her answer may tend to incriminate the witness,  
17 or may tend to establish his or her liability to  
18 civil proceedings at the instance of the Crown or  
19 of any person, and no answer given by a witness at  
20 an inquiry shall be used or be receivable in  
21 evidence against him or her in any trial or other  
22 proceedings against him or her and thereafter  
23 taking place, other than a prosecution for perjury,  
24 in giving such evidence.

25                   As required by Section 33 (7) of that

1 Act, you are hereby advised that you have the right  
2 to object to answer any question under Section 5 of  
3 the Canada Evidence Act.

4 If you need to take a break at any  
5 point during our interview, please let me know and  
6 we will pause the recording.

7 Mr. Holder, we've asked your counsel to  
8 provide a copy of your CV to us in advance of the  
9 interview.

10 I am showing you a copy of the document  
11 we received. It is a three-page document. I will  
12 scroll through it quickly just to show it to you.  
13 You can tell me to slow down at any time, but my  
14 question for you is going to be, do you recognize  
15 this document?

16 RICHARD HOLDER: I do.

17 KATE McGRANN: Sorry, did you say you  
18 do?

19 RICHARD HOLDER: I do, yes.

20 KATE McGRANN: Is this a copy of your  
21 CV?

22 RICHARD HOLDER: It is.

23 KATE McGRANN: So we will have that  
24 entered into as Exhibit 1.

25 EXHIBIT NO. 1: Curriculum Vitae of

1 Richard Holder.

2 KATE MC GRANN: I have a couple of  
3 questions for you about this document, and the  
4 first one is the on the left-hand side here it's  
5 been that you've collaborated with the OC Transport  
6 Safety and Operations Team since 2012.

7 And then you say, through the  
8 application of EN50126, you've provided systems  
9 assurance oversight through the system lifecycle  
10 from concept to operations and maintenance.

11 What is EN50126?

12 RICHARD HOLDER: It is a European  
13 standard that governs the overall approach to RAMS  
14 engineering on a transit project, a rail transit  
15 project.

16 So there are several other standards  
17 that could also be applicable, but EN50126 is  
18 specific to RAMS, which is reliability,  
19 availability, maintainability, and safety in  
20 association with the design and construction of  
21 light rail systems.

22 KATE McGRANN: And the use of this  
23 standard, was this a decision that you made or was  
24 this a decision that was made by the City with  
25 respect to Stage 1 of the light rail transit

1 project?

2 RICHARD HOLDER: As part of the Project  
3 Agreement, signed back in 2012, it was -- it was  
4 included as one of the standards to be followed by  
5 RTG. But it only received a couple of mentions.

6 I have provided that quotation on my  
7 resumé, because for the Stage 2 rail construction  
8 program, there is a much bigger emphasis on the  
9 design-builders following EN50126.

10 KATE McGRANN: When you say, "It only  
11 received a couple of mentions with respect to Stage  
12 1"; what do you mean by that?

13 RICHARD HOLDER: So it did not -- the  
14 Stage 1 PA, did not elaborate on the process to be  
15 adhered to by RTG in the application of EN50126.  
16 So it was not -- it was not treated wholistically  
17 within the Project Agreement. The Project  
18 Agreement specified lots of different standards  
19 that could be followed.

20 The relevance of this would be to the  
21 systems assurance approach and the safety and  
22 security certification approach followed by RTG in  
23 the delivery of their design and their  
24 construction.

25 KATE McGRANN:

1                   -- OFF THE RECORD DISCUSSION --

2                   KATE McGRANN: You have been explaining  
3 the application of EN50126 in Stage 1 of the Ottawa  
4 Light Rail Transit. You mentioned that that  
5 standard is not treated wholistically in the  
6 Project Agreement for Stage 1.

7                   Could you explain to me a little bit  
8 more what you mean by that?

9                   RICHARD HOLDER: Well, maybe as an  
10 example, the approach to safety and security  
11 certification can be handled in a couple of key  
12 distinct ways.

13                   One would be the application of the  
14 U.S. Mill Standard, which is followed by the  
15 Federal Transport Association in the U.S. And has  
16 been modelled in Canada on earlier projects.

17                   The other approach would be to follow  
18 EN50126, which is part of a suite of documents that  
19 is supported by a CENELEC approach.

20                   So CENELEC is C-E-N-E-L-E-C, and that  
21 is a European agreement on approach to providing  
22 safety and security and systems assurance in the  
23 design of transit systems.

24                   So in the Project Agreement, both the  
25 Mill Standard from the U.S. was referred to and

1 EN50126 was referred to. There is some overlap in  
2 the approach, but there are -- but EN50126 is a  
3 much more wholistic approach, and one of the key  
4 differences which I think I discussed before in a  
5 previous meeting was around requirements  
6 management.

7 So if we were to follow the Mill  
8 Standard there would not be the same kind of  
9 rigorous approach to tracking requirements,  
10 requirements management, whereas it is very much  
11 embedded into the process for EN50126 in the  
12 CENELEC approach.

13 KATE McGRANN: With respect to Stage 1,  
14 what approach was taken to the safety piece that  
15 you just spoke about?

16 RICHARD HOLDER: So in the beginning, I  
17 was not involved in, directly in the project from  
18 2019 [sic] I was working within the project, but I  
19 had key responsibility for the delivery of the  
20 highway expansion component, the Trillium Line  
21 expansion component, and the cash allowance works.

22 So I did not engage in the detailed  
23 design until 2015, when my position changed. And  
24 that was around the spring of 2015, and there was a  
25 restructuring within the Rail Implementation Office

1 and I was given the responsibility of managing the  
2 vehicle supply, the oversight of the systems, and  
3 operational integration, which included safety and  
4 security.

5 At that time, we hired a safety  
6 specialist from the U.S. who had experience at the  
7 transit agency level, the state level, and the  
8 federal level, so with a lot of experience and  
9 history of implementing the Mill Standard, he  
10 brought that experience to this project. Which, at  
11 the time, aligned with the approach that RTG was  
12 taking in terms of safety and security.

13 However, that approach changed once RTG  
14 hired a new systems engineer and that was in the  
15 summer of 2018, and that systems engineer  
16 implemented a new approach, which was very much in  
17 line with CENELEC, including the EN50126 standard.

18 So what started in the middle of 2018  
19 that was absent previously was the process of  
20 requirements management.

21 KATE McGRANN: The individual that was  
22 hired with all of the U.S. experience to look at  
23 safety and security by the City, who was that?

24 RICHARD HOLDER: It will come to me.  
25 If you give me a second, or I can report back on

1 that.

2 KATE McGRANN: Sure.

3 RICHARD HOLDER: David Morgan is his  
4 name.

5 KATE McGRANN: And do you recall if he  
6 was associated with a company in the work that he  
7 was doing?

8 RICHARD HOLDER: He was hired through  
9 CTP, Capital Transit Partners. They were the  
10 owners' engineer working for the City.

11 I think his specific company was  
12 S-T-E-D [sic] within the U.S., which was part of  
13 that consortium of the owners' engineer.

14 KATE McGRANN: The new systems engineer  
15 that RTG hired in 2018, do you recall who that was?

16 RICHARD HOLDER: I will, but it's not  
17 on the tip of my tongue right now.

18 KATE McGRANN: Okay. We have jumped  
19 right into some detail, and I do have some more  
20 follow up questions for you but I'll come back to  
21 them.

22 Let me back up and ask you one other  
23 question related to your CV, then we'll talk about  
24 how you became involved in Stage 1 of the Ottawa  
25 Light Rail Transit Project.

1                   If I scroll down to page 2, and I am  
2 looking at the entry for dates 2015 to 2019. And  
3 the question I have is regarding this statement,  
4 which says:

5                   "Developed CORA app for  
6 emergency responders and operators."

7                   What is the CORA app?

8                   RICHARD HOLDER: So CORA stands for  
9 "City of Ottawa Responders Application" and it is a  
10 GIS application that has -- is available on the  
11 cellphones or on iPads, or in responders' vehicles  
12 on their laptops.

13                   And it allows responders to have  
14 instant access to plans of the stations and of the  
15 whole corridor. It allows them access to all of  
16 the procedures that are in place, as standard  
17 operating procedures that they need to follow. It  
18 gives them access to the safety plans for each of  
19 the stations. It allows them to reference  
20 locations within the guideway, such that they can  
21 clearly communicate with the transit operations  
22 control centre.

23                   So they're the key functions of the  
24 CORA app. It was also used as part of the training  
25 for the emergency responders.

1                   The Confederation Line project, as it  
2 was coming into activation presented a big  
3 challenge for the emergency responders in terms of  
4 becoming prepared for dealing with incidents that  
5 occurred on or around the light rail system.

6                   The light rail system on Confederation  
7 Line is quite different to the existing system on  
8 Trillium line, key difference being the number of  
9 vehicles per minute on the line, plus the fact we  
10 have an overhead catenary system and the line is  
11 electrified.

12                   Plus we have a downtown tunnel with  
13 three underground stations.

14                   So in terms of the work that the Rail  
15 Implementation Office had to do with the emergency  
16 responders, it was a whole process of development  
17 of new standard operating procedures, of a training  
18 curriculum, training programs for literally  
19 thousands of emergency responders when you take  
20 into account the Ottawa paramedic services, the  
21 Ottawa fire services, the Ottawa police services.

22                   We had the parliamentary precinct  
23 police, who were involved in exercises. We had  
24 RCMP involved in exercises. We had the Ontario  
25 Provincial Police involved in exercises. All

1 assisted, ultimately, by the CORA app, where  
2 everybody was able to find the same information  
3 immediately.

4 KATE McGRANN: You mentioned that --  
5 you used an acronym at the beginning just to  
6 clarify you said it's a GIS system. What does that  
7 stand for?

8 RICHARD HOLDER: I think it's Global  
9 Information System [sic]. So it's a mapping -- it  
10 is a mapping application.

11 So when you go to it -- it's similar to  
12 Google Maps, if you want to make a comparison. So  
13 you open up the map of the light rail system, you  
14 can scroll into a station, you can expand the  
15 layout of the station to determine where the fire  
16 hydrant is, where are the emergency phones, where  
17 are the emergency exits, where is the control room  
18 for the tunnel ventilation system, for instance.

19 In addition to that, you can tap on  
20 sections of the layout to bring up further details  
21 such as the fire safety plan, which is specific to  
22 each station. And also pull up the standard  
23 operating procedures, which are different,  
24 depending on which emergency responder is looking  
25 for that information.

1                   KATE McGRANN: Was the development of  
2 the CORA app contemplated in the Project Agreement,  
3 or was this an additional initiative that was taken  
4 on?

5                   RICHARD HOLDER: It was an additional  
6 initiative and RTG was not very much involved in  
7 the creation of that application. It was very much  
8 a City-led initiative working with the emergency  
9 responders.

10                   And it was felt like the initiative  
11 would be extremely valuable for the emergency  
12 responders, and also for OC's operational staff so  
13 that they also have access to the application  
14 through their cellphones or iPads.

15                   And it was also felt that as a baseline  
16 tool, it would be very useful for the expansion of  
17 the system, which would now -- which is now in  
18 place with Stage 2.

19                   KATE McGRANN: Do RCM's (verbatim)  
20 staff and its subcontractors and maintenance staff  
21 also have access to the app?

22                   RICHARD HOLDER: I don't know. I would  
23 have to check that.

24                   KATE McGRANN: Okay. Stepping away  
25 from the CORA app for a moment, would you explain

1 to us what your involvement in Stage 1 of the OLRT  
2 looked like from its inception onwards?

3 RICHARD HOLDER: Can you repeat your  
4 question.

5 KATE McGRANN: Can you explain what  
6 your involvement in Stage 1 of the OLRT-C was from  
7 the beginning of the project onwards?

8 RICHARD HOLDER: So from the very  
9 beginning -- my engagement with the project started  
10 in the fall of 2012. And I was taken on as a  
11 program manager for the utilities. I think that  
12 was in October-November time.

13 In January-February, the Project  
14 Agreement went through commercial close and  
15 financial close. As a result of moving from  
16 procurement into design and construction, there was  
17 an organizational review within the Rail  
18 Implementation Office, and the director of the  
19 program at that time, John Jensen, offered me the  
20 position of manager of light rail projects.

21 So I started that position, I think  
22 February or March, 2013. And I worked as the  
23 manager of light rail projects until the spring of  
24 2015.

25 Most of those projects that I was

1 managing had been delivered at that time, and there  
2 was another restructuring that took place within  
3 the organization. It was a new director, Steven  
4 Cripps, and as a result of that restructuring I  
5 became the manager of light rail systems and  
6 operational integration.

7 And I held that position until the end  
8 of -- well, the project has not yet ended. So I  
9 held that position until probably the early part of  
10 2020, when my official position changed to rail  
11 infrastructure manager with the Stage 2 office.

12 So I still have engagement in the Stage  
13 1 project in the form of dealing with deficiencies  
14 and other outstanding items on the Stage 1 project.

15 KATE McGRANN: During the period  
16 between the late winter/early spring 2013 and  
17 spring 2015 when you're the manager of light rail  
18 projects, what aspects of the Stage 1 Light Rail  
19 Transit Project were you focused on.

20 RICHARD HOLDER: There was the highway  
21 expansion project, so this was a \$220 million  
22 project that was -- there was a collaboration  
23 between the Ministry of Transport of Ontario, and  
24 the City of Ottawa.

25 I worked on the Trillium line expansion

1 project, which was a City-led project that had the  
2 goal of increasing the capacity of the Trillium  
3 line to potentially provide additional capacity for  
4 commuters travelling in from the south who might be  
5 impacted by the construction of the LRT line.

6           There was another bundle of work which  
7 was called the Cash Allowance Project, which  
8 included 5 or 6 municipal type projects that were  
9 within the vicinity of the corridor. So it just  
10 made sense to have those bundled in with the  
11 overall construction.

12           KATE McGRANN: When you became the  
13 manager of light rail systems and operational  
14 integration, have I got that right --

15           RICHARD HOLDER: Correct.

16           KATE McGRANN: -- in the spring of  
17 2015, what did your areas of focus become then?

18           RICHARD HOLDER: So it was oversight  
19 for the vehicles. It was oversight for the  
20 systems. And the systems being many on the light  
21 rail system, the key split is the train control  
22 system that was being supplied by Thales, which is  
23 a CBTC system, which stands for communication based  
24 train control.

25           And then up to a dozen other

1 communication systems that provide safety and  
2 security around the station and around the  
3 alignment.

4 So I had the vehicle, I had the systems  
5 from an operational perspective, I had the  
6 responsibility for facilitating the training of new  
7 operators for the trains and controllers for the  
8 TOCC.

9 I had responsibility for the training  
10 of emergency responders. I had responsibility for  
11 --

12 PETER WARDLE: I think, Richard, you  
13 froze for a minute, I think. Either I froze or you  
14 froze.

15 RICHARD HOLDER: I think I had a long  
16 delay in my statement.

17 PETER WARDLE: Okay.

18 RICHARD HOLDER: So the last thing I  
19 had was the training of emergency responders, so  
20 that was the operational piece. And then from a  
21 systems integration piece, that was providing  
22 oversight to the testing and commissioning program,  
23 the trial running program, and oversight on the  
24 maintenance readiness of RTG.

25 And then the other piece of work under

1 my portfolio was the safety and security  
2 certification of the line. And a key component of  
3 that was providing oversight to the work of the  
4 independent safety auditor.

5 KATE McGRANN: You say the independent  
6 safety auditor?

7 RICHARD HOLDER: Yes.

8 KATE McGRANN: Can you help me  
9 understand how the systems assurance aspect of the  
10 standard that we started out discussing, EN50126,  
11 would play into your work with respect to the  
12 systems integration for Stage 1 of the OLRT?

13 RICHARD HOLDER: So the key area would  
14 be through the Safety and Security Certification  
15 Program.

16 So one of the key revenue service  
17 availability requirements was confirmation at that  
18 time that all the safety requirements had been met  
19 as confirmed by the independent safety auditor.

20 So in terms of developing and listing  
21 those safety requirements, that was one small  
22 component of an overall systems engineering  
23 approach.

24 And had RTG, you know, robustly  
25 followed a EN50126 standard, they, at the beginning

1 of the project, or certainly in the early months  
2 and years, they would have developed a whole list  
3 of requirements that their design teams would then  
4 need to meet through the process of providing  
5 designs.

6           Some of those design requirements would  
7 be purely functional, but many of them would be  
8 safety-related. What became apparent in 2018 with  
9 the hiring of the independent safety auditor was  
10 that those safety requirements had not been  
11 explicitly listed.

12           KATE McGRANN: When you say they hadn't  
13 been explicitly listed, explicitly listed where?

14           RICHARD HOLDER: Explicitly listed in  
15 documentation. So there was a lot of documentation  
16 on the project. There was a -- one of the sources  
17 of information that would provide the safety  
18 requirements was the integrated hazard log. That  
19 integrated hazard log defined hazards that were  
20 contemplated as part of the operations, identified  
21 mitigation candidates.

22           Some of those mitigation candidates  
23 could be through design, some of them could be  
24 through operational procedures.

25           That piece of work was -- had been

1 ongoing from, I believe, from around 2016. And  
2 that integrated hazard log provided some of the  
3 safety requirements.

4 But there was not a wholistic list of  
5 safety requirements that could have been derived  
6 from other sources.

7 So for instance, through a normal  
8 requirements management process, a systems engineer  
9 would look towards the Project Agreement and they  
10 would strip out all the various requirements from  
11 the Project Agreement. That would be the starting  
12 point.

13 They would also look to standards and  
14 specifications, matters of regulation or law; they  
15 would strip all those out of the various associated  
16 relevant documents, and that would go into the  
17 requirements management list.

18 There would also be some derived  
19 requirements, so by looking at, for instance,  
20 NFPA130, which is the standard associated with  
21 passenger transit through a tunnel, there would be  
22 a bunch of requirements from that document that  
23 should have been brought into a wholistic  
24 requirements management process. That work was  
25 missing.

1                   To the best of my knowledge, that work  
2 was not started in 2013, 2014 or 2015, or 2016.  
3 And it only really started in 2018, with the --  
4 coincidentally, with the hiring of the independent  
5 safety auditor. But that only started as a result  
6 of the hiring -- I've now remembered his name --  
7 Shawn Derry, who was the director in charge of  
8 systems engineering for RTG.

9                   KATE McGRANN: Was that Derry with a  
10 "B", or Derry with a "D"?

11                  RICHARD HOLDER: "D", for "delta".

12                  KATE McGRANN: He was somebody that RTG  
13 hired?

14                  RICHARD HOLDER: Correct.

15                  KATE McGRANN: And just to understand  
16 your answer a little bit better. You identified a  
17 number of requirements that you said should have  
18 been stripped out and then potentially followed  
19 along to identify incidental requirements.

20                         Was that a requirement under the  
21 Project Agreement? Would that be a requirement if  
22 the standard that we've been discussing, that  
23 EN50126 standard, had been followed? Is that a  
24 requirement under the U.S. requirement that we've  
25 discussed? I'm trying to understand why it should

1 have been there? What called for it to be there?

2 RICHARD HOLDER: Well, it was -- RTG's  
3 position was that it was not clearly required as  
4 part of the Project Agreement. And that's why they  
5 did not pursue that approach.

6 KATE McGRANN: Did they pursue a  
7 different approach -- sorry?

8 RICHARD HOLDER: So from a safety and  
9 security certification process perspective, they  
10 did follow a different approach.

11 But from a systems engineering  
12 perspective, it is not clear what approach they  
13 took.

14 KATE McGRANN: And this situation that  
15 you said became apparent in 2018, is that the first  
16 time that the City learned that all of the work  
17 that you described was not being done by RTG?

18 RICHARD HOLDER: No, we understood,  
19 probably earlier in 2017, that RTG was not planning  
20 to follow a requirements management approach. And  
21 so the City, I say the City, so myself with my  
22 team, we started our own requirements management  
23 approach as a way of ensuring that the Project  
24 Agreement requirements were clearly met by RTG.

25 So we started our own requirements

1 management, as part of our oversight of the  
2 contract.

3 KATE McGRANN: And was RTG aware that  
4 you were undertaking this work on the City side?

5 RICHARD HOLDER: They were aware, but  
6 it was immaterial to them.

7 KATE McGRANN: And why do you say that?

8 RICHARD HOLDER: Well, it didn't change  
9 their approach to how they were managing the  
10 project. We made that decision on the basis of  
11 looking ahead to substantial completion,  
12 understanding that the City as part of its  
13 oversight needed to be clear that the requirements  
14 of the Project Agreement had been met.

15 And the only way to do that was to  
16 start developing the requirements on a schedule by  
17 schedule basis.

18 KATE McGRANN: And is that the approach  
19 that's been required by the private partner in  
20 Stage 2 of the OLRT?

21 RICHARD HOLDER: Stage 2, the  
22 requirement for Project Co to follow EN50126 is  
23 much more clearly stated as a requirement. And  
24 both teams are following through with the  
25 requirements management process. And --

1 KATE McGRANN: Sorry, go ahead.

2 RICHARD HOLDER: Just to add. On Stage  
3 1, that is ultimately what RTG implemented; they  
4 just started very late. But I think they were --  
5 sorry, go ahead.

6 KATE McGRANN: No, you finish, please.

7 RICHARD HOLDER: From the perspective  
8 of Sean Derry, when he was looking at his role and  
9 being able to bring the project to a close, such  
10 that we could get to revenue service availability,  
11 he knew that he needed to demonstrate to the  
12 independent safety auditor that all the safety  
13 requirements had been addressed.

14 And the only way to do that was to  
15 start, as far as he was concerned, was to implement  
16 the CENELEC process.

17 KATE McGRANN: Were there any  
18 implications for the construction schedule or the  
19 testing and commissioning schedule flowing from  
20 RTG's late adoption of the CENELEC process?

21 RICHARD HOLDER: Not overtly. The fact  
22 that they were not following a clear systems  
23 engineering approach, we believe would have led to  
24 potential issues between various suppliers of  
25 different systems.

1                   And we believe it would have impacted  
2 the overall integration that occurred as part of  
3 testing and commissioning. And there are some  
4 examples of that, but it wasn't -- we believe it  
5 would have certainly helped the process and made --  
6 would have made testing and commissioning go much  
7 more smoothly.

8                   KATE McGRANN: Can you give me just a  
9 general explanation of why the use of the CENELEC  
10 system from the outset would have led potentially  
11 to a smoother testing and commissioning experience?

12                   RICHARD HOLDER: We believe that there  
13 would have been better integration between some of  
14 the key components of the system.

15                   So for instance, the integration  
16 between the Alstom vehicle and the Thales  
17 CBTC system, and the tunnel ventilation system.

18                   That would have been improved by a more  
19 robust approach from systems engineering. That  
20 would be the key area that has an impact on the  
21 operations of the system, in terms of the speed of  
22 the train, the time taken between station to  
23 station, the overall trip time.

24                   All those things are impacted by the  
25 integration of the parameters of the vehicle, and

1 the parameters of the CBTC system.

2 KATE McGRANN: With respect to your  
3 oversight of the maintenance readiness, can you  
4 describe to me what that work entailed for you?

5 RICHARD HOLDER: We hired a team from  
6 Parsons engineering to provide support to the light  
7 rail systems operational and integration branch, so  
8 we brought in a number of experts with experience  
9 with CBTC, with operations and also with  
10 maintenance activities.

11 So part of our oversight was ensuring  
12 there was regular review of what was occurring on  
13 site. And that the maintenance and storage  
14 facility, the oversight included review of  
15 documentation that was submitted as part of the  
16 Schedule 10 review process.

17 And our oversight included our own  
18 requirements management exercise, where we stripped  
19 out the maintenance requirements from the Project  
20 Agreement, and we tracked RTG's kind of adherence  
21 and compliance with those requirements as we  
22 approached revenue service availability.

23 KATE McGRANN: When did the oversight  
24 of the maintenance readiness begin?

25 RICHARD HOLDER: That would have, from

1 my perspective, that would have started in the  
2 spring of 2015. And with the hiring of the Parsons  
3 team, which I think occurred probably in the summer  
4 of 2015.

5 KATE McGRANN: Had anybody in the City  
6 had been doing any work on the maintenance  
7 readiness piece before you took on your role in the  
8 spring of 2015?

9 RICHARD HOLDER: I'm not aware.

10 KATE McGRANN: And then it sounds to me  
11 like this -- like the maintenance readiness review  
12 had two components. One, document review, and then  
13 two, the requirements management portion; is that  
14 fair?

15 RICHARD HOLDER: So that's from a  
16 review of evidence perspective, but then there were  
17 also on site visits. So as we got closer to  
18 revenue service availability, there were more  
19 meetings with RTM staff, understanding their  
20 organizational structure, organizing the procedures  
21 and processes that they had in place, reviews of  
22 the equipment that they were providing to undertake  
23 the maintenance. Reviewing their spare parts  
24 lists.

25 A key component was the integrated --

1 it's called IMIRS, I-M-I-R-S. I think that stands  
2 for Integrated Management Infrastructure Reporting  
3 system [sic].

4 So that is a software system that  
5 tracks maintenance requirements of the overall  
6 system, including scheduled maintenance, but also  
7 responsive maintenance based on calls being made  
8 from City operations team, the TOCC, to RTM to  
9 attend to systems that are not fully functioning.

10 KATE McGRANN: And just while we're on  
11 the IMIRS, help me understand how information is  
12 inputted into the system. So you said it includes  
13 both scheduled maintenance, so would someone be  
14 responsible for programming in scheduled  
15 maintenance requirements and then you're nodding  
16 yes, so yes?

17 RICHARD HOLDER: Yes.

18 KATE McGRANN: And what is the output  
19 to the people who are responsible for maintenance?  
20 Do they get a report letting them know what needs  
21 to be done, or how does that work?

22 RICHARD HOLDER: So they would have a  
23 -- I'm not sure that I have the right phrase, but  
24 the equivalent of a work order. So IMIRS would  
25 create a work order that would have to be completed

1 by a team, whether it was the maintenance of the  
2 switch, so that system would generate that work  
3 order.

4 And once that work was completed, the  
5 team would indicate within the system that that  
6 item, that work order was closed because the work  
7 had been completed.

8 KATE McGRANN: And with respect to the  
9 responsive maintenance, you mentioned that calls  
10 would be made from the City, TOCC to RTM. I  
11 apologize if I've already asked you this but what  
12 does TOCC stand for?

13 RICHARD HOLDER: TOCC is the Transit  
14 Operations Control Centre. So that's based in St.  
15 Laurent. And so they have a number of work  
16 stations and a number of controllers that are  
17 monitoring the train operations, but they are also  
18 receiving indications of issues related to the  
19 station systems.

20 So it could be a door that's not closed  
21 properly; it could be a light that's not working.  
22 It could be a ventilation system that's not  
23 working.

24 All of the systems supporting the  
25 transit operations were connected through SCADA, so

1 SCADA, there's lots of acronyms. SCADA being  
2 systems control and data -- I can't quite remember  
3 the acronym, I'll have to get back to you on that  
4 one.

5 KATE McGRANN: In terms of what SCADA  
6 does with respect to the IMIRS system, what does it  
7 do?

8 RICHARD HOLDER: SCADA receives  
9 information from the various systems out in the  
10 field and to make that real, it could be a  
11 CCTV camera. So if a CCTV camera knows that there  
12 is -- that it's not functioning properly, it will  
13 send a message through SCADA to the TOCC and say:  
14 I have a fault.

15 Then at the control centre they have  
16 some ability to do some troubleshooting and they  
17 can actually control that CCTV camera. So if it's  
18 jammed, if it's a mobile camera, they can maybe  
19 move it slightly and then maybe the picture comes  
20 back.

21 So it's, we consider it the brain of  
22 the TOCC. It receives information, but it can also  
23 provide a control function to the various systems.

24 PETER WARDLE: Just, SCADA is  
25 Supervisory Control and Data Acquisition.

1 RICHARD HOLDER: Thank you.

2 KATE McGRANN: Thank you.

3 As I understand it, a controller who is  
4 working at the TOCC may receive a message from  
5 SCADA that there's an issue. They can do some  
6 troubleshooting. If they're unable to resolve the  
7 issue through troubleshooting, do they then input  
8 it into the IMIRS system.

9 RICHARD HOLDER: If they have been  
10 unsuccessful in dealing with the situation, I  
11 believe that RTM as the maintainer, needs to go out  
12 and take some action. They will report that  
13 through the IMIRS process and then that becomes an  
14 input to the RTM workflow.

15 So the output from TOCC is: This a  
16 functional issue. The input from RTM is, we need  
17 to fix it.

18 KATE McGRANN: And how does the  
19 controller communicate this need to IMIRS? Do they  
20 enter it into a system, are they making a call to  
21 someone.

22 RICHARD HOLDER: They enter it in to --  
23 they have an input responsibility into the IMIRS  
24 system. So they would type that in, in the  
25 required format and then that would be received by

1 RTM.

2 KATE McGRANN: I think I've seen  
3 reference to a help desk with respect to IMIRS?  
4 Does that fit into this system at all or is that  
5 something else?

6 RICHARD HOLDER: Yeah, the help desk is  
7 if somebody -- well, if a controller within the  
8 TOCC is having problems inputting data or feels  
9 like there needs to be a greater priority attached  
10 to an element of work that hasn't been dealt with,  
11 there is a help desk function.

12 There is an IMIRS help line.

13 KATE McGRANN: Who mans the IMIRS help  
14 line?

15 RICHARD HOLDER: I believe it's RTM.

16 KATE McGRANN: And is there a way for  
17 issues requiring a response from RTM that would not  
18 be picked up by SCADA to be entered into this  
19 system?

20 For example I'm thinking like if a  
21 garbage can has tipped over and that needs to be  
22 cleaned up is that something you expect SCADA to  
23 pick up or is that something you would expect to  
24 have a more manual identification of?

25 RICHARD HOLDER: That's a good example.

1 That would, potentially, so a garbage can that's  
2 full or overturned, that could be detected in a  
3 number of ways. It wouldn't be from an actual  
4 physical device.

5 But it could be from either a  
6 controller, or the transit police detecting it  
7 through CCTV footage, so they're constantly  
8 scanning the stations for issues.

9 And so that the controller at the TOCC  
10 would be able to immediately input that into IMIRS.  
11 It could be that it's one of the OC's supervisors  
12 that's travelling around the system that would  
13 witness that in person.

14 And then they would be able, they could  
15 call that into the TOCC, and they have a number of  
16 means of calling that into the TOCC. They have a  
17 P25 radio, they have a cellphone, they maybe have  
18 an iPad to provide that information.

19 Or, there are telephones on the  
20 stations where they could call that into the TOCC.  
21 Or it could be a member of the public. And a  
22 member of the public could use one of the emergency  
23 telephones and they would be able to speak to  
24 somebody at the TOCC and pass that information  
25 along.

1 KATE McGRANN: Okay. Thank you for  
2 explaining that. I took us a little off track of  
3 what we had been speaking about before, which was  
4 the process by which you and those working with and  
5 for you monitored or oversaw RTM's maintenance  
6 readiness.

7 So I understand that this process  
8 started in the spring of 2015, the City retained  
9 Parsons in the summer of 2015. And you had  
10 identified the components of this oversight. I  
11 want to make sure that I've got them all.

12 So there's a document review; there's a  
13 requirements management or oversight exercise; and  
14 there's site visits. Any other components of the  
15 oversight as far as maintenance readiness goes?

16 RICHARD HOLDER: No, that would -- they  
17 are the key components.

18 KATE McGRANN: With respect to doc  
19 review, would that be the first component that was  
20 engaged in in the oversight?

21 RICHARD HOLDER: Yes.

22 KATE McGRANN: And what did that  
23 entail?

24 RICHARD HOLDER: So the documents that  
25 were produced by RTG's maintenance team would

1 follow the Schedule 10 review process, in a similar  
2 way that other design documents or drawings would  
3 also follow the design review process.

4 So a document would be provided to the  
5 City and the City would have -- it was usually ten  
6 days review time. That document would be provided  
7 to a number of City personnel, as well as external  
8 subject matter experts for comment.

9 Those comments would be provided on  
10 it's called a CRE sheet, which was basically an  
11 Excel sheet which listed the comments, both as a  
12 narrative, but also listing the PA requirements  
13 that it was believed was not being addressed by the  
14 document.

15 So any comment that was provided, it  
16 was -- it had to be backed up by relevance to the  
17 Project Agreement.

18 KATE McGRANN: Do you recall running  
19 into any material issues in the document review  
20 process either with respect to availability of  
21 documents that should have been there, or issues  
22 with comments that weren't being implemented,  
23 anything like that?

24 RICHARD HOLDER: Yes, absolutely.

25 KATE McGRANN: What did you run into?

1                   RICHARD HOLDER: Both. Both. So we  
2 had issues with the timely submission of documents,  
3 with the completion, the state of completion of the  
4 documents, with the accuracy of the content of the  
5 documents, with the applicability of the documents.

6                   But that was not exclusive to  
7 maintenance. That was -- it was almost part of the  
8 process was that information would be provided by  
9 RTG, and it was almost expected that there would be  
10 an iterative process before a document could be  
11 considered to be finalized by, either by RTG or by  
12 the City and ideally by both.

13                   Sorry, just in terms of, you know, the  
14 expectation from the City, and from RTG, that was  
15 the expectation. It was iterative, but that's also  
16 a design-build project, like the P3 model, is that  
17 the documents come through and the first iteration  
18 of the document, we'll call it the first draft,  
19 it's not called a draft, it's called the  
20 preliminary design document.

21                   So we go through a process of  
22 preliminary design, detail design, final design,  
23 and issue for construction documentation.

24                   And each time the level of accuracy and  
25 the level of detail matures. And that's a standard

1 and an iterative process with design-build.

2 And so it was the same with the  
3 maintenance documents.

4 KATE McGRANN: So within the context of  
5 the design-build iterative process, and what you  
6 would normally expect to see out of that process,  
7 as far as the maintenance review document went, was  
8 there anything out of expectation in terms of  
9 document availability, turn of comments, finalizing  
10 documents, any unusual issues that you ran into?

11 RICHARD HOLDER: The delivery of the  
12 maintenance and rehabilitation plan was quite late.  
13 So that was the key document for RTM to express to  
14 the City how they intended to undertake their  
15 maintenance and rehabilitation duties.

16 And the implementation of the IMIRS  
17 program was also very late in the process. And so  
18 not just in documentation submission, but also in  
19 implementation.

20 KATE McGRANN: With respect to the  
21 lateness of the maintenance and rehabilitation  
22 plan, when did you expect to receive that document?

23 RICHARD HOLDER: I would have to check  
24 the PA requirements. I think -- I'm pretty sure  
25 there was a requirement for it to be submitted a

1 number of months prior to trial running.

2 I'm just not sure whether it was 6 or 9  
3 or 12 months. Whichever it was, I'm pretty sure it  
4 was late.

5 KATE McGRANN: Do you remember when you  
6 received it? I'm just trying to understand how  
7 late --

8 RICHARD HOLDER: I'd have to check. I  
9 can check.

10 U/T KATE McGRANN: Yeah, that would be  
11 helpful if you would do that.

12 What were the implications of the late  
13 receipt of the maintenance and rehabilitation plan  
14 on other aspects of the project?

15 RICHARD HOLDER: From the maintenance  
16 readiness perspective, it became linked to some key  
17 deliverables. So not just documents, but the spare  
18 parts list, for example, which is not just a list,  
19 but actually those spare parts need to be available  
20 for maintenance and rehabilitation.

21 It was linked to the acquisition of  
22 equipment, both major track equipment, but also  
23 kind of more minor equipment. And also related to  
24 the hiring of personnel to meet the organizational  
25 structure of RTM.

1 KATE McGRANN: So when you say "hiring  
2 of personnel", it's RTM's hiring of personnel?

3 RICHARD HOLDER: Yes.

4 KATE McGRANN: And do you recall when  
5 the maintenance and rehabilitation plan was  
6 finalized?

7 RICHARD HOLDER: I don't recall.

8 KATE McGRANN: Was it finalized prior  
9 to trial running?

10 RICHARD HOLDER: Yes, yes.

11 KATE McGRANN: You also mentioned that  
12 the IMIRS program was late. Can you help me  
13 understand when it was expected and how late it  
14 was?

15 RICHARD HOLDER: I don't believe that  
16 there was a specific requirement in the Project  
17 Agreement for that the delivery of the IMIRS  
18 program on a specific date. I believe that a fully  
19 functioning IMIRS program was really only available  
20 in 2019, but I would have to check the date when  
21 that IMIRS program was fully functional.

22 KATE McGRANN: Is that a --

23 RICHARD HOLDER: It was an overall  
24 feeling that it was late given that the target date  
25 for revenue service availability was due in 2018.

1                   KATE McGRANN: When that target date  
2 changed, was there still a feeling that the IMIRS  
3 delivery was late with respect to the new  
4 anticipated date?

5                   RICHARD HOLDER: Correct. Yes, it was  
6 still considered to be late.

7                   KATE McGRANN: And what were the  
8 implications of the late delivery of the IMIRS  
9 system on the maintenance readiness and on the rest  
10 of the project?

11                  RICHARD HOLDER: It left a short time  
12 for staff to become accustomed to the operation,  
13 the functionality of that system.

14                  So that presented challenges on the  
15 controllers' side as they were inputting  
16 information, and once we -- I do not know for sure,  
17 but the expectation was that it created challenges  
18 on the maintenance side for their teams to be able  
19 to respond to the work orders that were generated  
20 through that system.

21                  KATE McGRANN: And at what point in  
22 time, in your view, had RTM and OC Transpo staff  
23 become fully accustomed and conversant with IMIRS,  
24 able to use it efficiently?

25                  RICHARD HOLDER: Through the testing

1 and commissioning program and through the training  
2 program. So IMIRS training was part of the  
3 training -- was part of the training curriculum in  
4 order for a controller to become certified such  
5 that they could work in the control room.

6 So that was one of the -- that was, you  
7 know, one of the key indicators that it was  
8 working. There was also, from a testing and  
9 commissioning perspective, there were various tests  
10 that were required of the IMIRS program, and so  
11 from a testing perspective that would have been a  
12 way that the functionality would have been  
13 validated.

14 KATE McGRANN: Okay. So the  
15 functionality is validated in testing and  
16 commissioning?

17 RICHARD HOLDER: (Witness nods.)

18 KATE McGRANN: In terms of staff's  
19 facility with the system, at what point in time did  
20 they get to start using it?

21 RICHARD HOLDER: I would have to check  
22 exactly when it was implemented.

23 U/T KATE McGRANN: Okay. We will ask you  
24 to do that and come back to us with that date.

25 Do you recall if the amount of time

1 available to staff to use IMIRS was compressed from  
2 what was originally envisioned as a result of the  
3 late delivery or otherwise?

4 RICHARD HOLDER: It is hard to be  
5 categoric as to whether the delay and  
6 implementation of the rest of the system was  
7 compounded by the delay in the IMIRS system. If  
8 everything else had been ready early, they would  
9 not have been able to start the system because  
10 IMIRS was not ready.

11 But conversely, IMIRS was late, but it  
12 was not IMIRS -- the fact that IMIRS was not  
13 complete, did not provide the lateness of the  
14 overall project.

15 KATE McGRANN: Getting back to the  
16 maintenance oversight work that the City was doing,  
17 the requirements management work, how was that  
18 oversight performed?

19 RICHARD HOLDER: So within my team, I  
20 had asked my various leads to create a requirements  
21 matrix for maintenance. The maintenance lead was  
22 Tom Fodor who worked for Parsons, and he developed  
23 a maintenance Excel sheet that listed all the  
24 requirements that were stripped from the Project  
25 Agreement.

1                   So that was done earlier on, so 2015,  
2                   2016 and 2017. However, when Sean Derry  
3                   implemented a more rigorous EN50126 approach to  
4                   requirements management, RTG themselves developed  
5                   the requirements for Schedule 15-2, which is the  
6                   maintenance schedule.

7                   KATE McGRANN: And was there a  
8                   comparison of Mr. Fodor's sheet and the RTM sheet  
9                   to see if they agreed, if there was any mismatching  
10                  or anything like that?

11                  RICHARD HOLDER: It was understood that  
12                  the requirements that were provided by RTG included  
13                  all those requirements that had been listed by Tom  
14                  Fodor and our own requirements management process.

15                  But there were additional requirements  
16                  in the RTG list. So the list that was created on  
17                  the City side was purely from the Project Agreement  
18                  as part of the City's oversight of the contract.

19                  The list that was prepared by RTG was,  
20                  included, for instance, maintenance requirements  
21                  that were linked to hazards from that integrated  
22                  hazard log. They also included requirements from  
23                  various system suppliers, so it was a more  
24                  wholistic, more complete list that was provided by  
25                  RTG.

1                   KATE McGRANN: I'm only asking because  
2 you said it was understood that the City's list of  
3 requirements were included in RTG's list.

4                   Did that ultimately prove to be true,  
5 or did you later run into any issues where by the  
6 City's requirements were not included in RTG's  
7 list?

8                   RICHARD HOLDER: No, no. So maybe to  
9 clarify. So we had an internal City process where  
10 we were tracking the requirements. We had regular  
11 meetings, we reviewed the list and we reviewed  
12 RTG's compliance.

13                   So that was occurring, but it was  
14 superseded by RTG hosting similar meetings where  
15 they went through their requirements management  
16 process, their new requirement management process  
17 which started in mid to late 2018 and our, the City  
18 staff including Tom Fodor on the maintenance side,  
19 sat in those meetings where they were able to  
20 corroborate RTG's assertion that certain  
21 requirements had been addressed as part of the  
22 delivery of the project.

23                   KATE McGRANN: And overall, in terms of  
24 the requirements and management oversight, did you  
25 or the City run into any issues that were

1 unexpected, delays, snags, obstacles, anything like  
2 that?

3 RICHARD HOLDER: There were some  
4 requirements that the City felt had not been  
5 addressed, even right up to revenue service  
6 availability. So that was part of the process of  
7 developing the minor deficiency list, which was  
8 contemplated as part of the Project Agreement.

9 So that's another story. I can move  
10 into that discussion about substantial completion  
11 and deficiencies if you wish, but it would be a  
12 detour.

13 KATE McGRANN: Fair enough. I think  
14 we're going to have to get there. So if it makes  
15 sense to dive it into it now, let's do it.

16 It follows naturally what we're talking  
17 about. Based on the requirements management  
18 oversight, as you're heading into substantial  
19 completion, what is your view on whether or not RTM  
20 is ready to perform its maintenance obligations?

21 So can you walk me through that?

22 RICHARD HOLDER: So there was a  
23 tracking process for requirements management. So  
24 in terms of the total number of requirements, I  
25 think we might have been at 7 to 8,000 requirements

1 that needed to be confirmed as being compliant at  
2 substantial completion.

3 And so these meetings occurred, I think  
4 they were on a weekly basis, and they went on for  
5 many, many, many months. And as a tracking  
6 mechanism, there were reports provided on how many  
7 requirements still, were still remaining to be  
8 addressed.

9 So that was the overall process, with  
10 the target being that we would ideally get to  
11 100 percent of the requirements being addressed at  
12 substantial completion.

13 But there was also a recognition in the  
14 Project Agreement that some of the requirements  
15 could be treated as deficiencies, provided that  
16 they were minor. And the definition of minor being  
17 that they would not impact on the operations of the  
18 system.

19 Or I think the more precise language is  
20 the full enjoyment, the full enjoyment of the City  
21 for the system.

22 So in terms of the deficiency list that  
23 was provided at substantial completion, that would  
24 be made up partly of some of those unmet  
25 requirements. But it would also be made up of

1 requirements that may have been addressed in the  
2 field, but for whatever reason were not working  
3 correctly.

4 So maybe a device was damaged, or was  
5 not functioning at the time of substantial  
6 completion. Provided it didn't impact the  
7 operations, then it would be considered minor.

8 So I'm trying to clarify between a  
9 requirement not being met and the deficiency list.  
10 The deficiency list should have contained all those  
11 requirements that were not met, but that wasn't the  
12 whole deficiency list; there were a lot of other  
13 deficiencies as well as those requirements, if  
14 that's clear.

15 KATE McGRANN: It is clear.

16 Who makes the determination as to  
17 whether a deficiency meets the definition of  
18 "minor", such that it can be listed on the minor  
19 deficiencies list.

20 RICHARD HOLDER: It was between RTG,  
21 the City and the independent certifier, to ideally  
22 reach consensus as to what was major and what was  
23 minor.

24 In the first submission by RTG of their  
25 Substantial Completion Notice, there were big

1 discrepancies between what RTG considered to be  
2 minor and the determination of the City and the  
3 independent certifier.

4           So specifically, there were many items  
5 that RTG indicated were minor, but the City and the  
6 independent certifier considered them to be major.  
7 Hence, the requirements of substantial completion  
8 were not met.

9           KATE McGRANN: I'm trying to understand  
10 how the independent certifier features in this  
11 determination of whether or not a deficiency is  
12 minor.

13           If the City and RTG agree that a  
14 deficiency is minor, does the independent certifier  
15 get involved in making a final determination? Or  
16 does the independent certifier just proceed based  
17 on the agreement as between the partners?

18           RICHARD HOLDER: They generally agreed  
19 with the determination. If it was, you know,  
20 collaborative between RTG and the City.

21           So I cannot think of an example where  
22 the independent certifier objected to a  
23 categorization of a deficiency. I'm not -- not to  
24 say it didn't happen -- I just can't recall that  
25 occurring.

1                   And in terms of the process for the  
2 City responding to the substantial completion  
3 notification, the first obligation was for the City  
4 to provide a response within five days and then the  
5 independent certifier had another five days to  
6 review the City's response and RTG's original  
7 submission before they made their determination.

8                   So the independent certifier's  
9 determination was very much based on information  
10 provided both by the City and by RTG.

11                   KATE McGRANN: If a deficiency that was  
12 placed on the minor deficiencies list proved to  
13 actually interfere with the City's enjoyment of the  
14 system, was there a process for removing it from  
15 the minor deficiencies list and you no longer  
16 qualify under the definition?

17                   RICHARD HOLDER: Well, in terms of the  
18 original substantial completion notification, and  
19 their documentation, it was incumbent on the City  
20 to provide all those reasons why we felt that they  
21 were not meeting that requirement.

22                   So it was the City's responsibility to  
23 provide a list of major deficiencies. RTG did not  
24 provide a list of major deficiencies to the City  
25 because that would have been contradictory to their

1 belief that they had reached substantial  
2 completion.

3 It was -- you know, the obligation was  
4 on the City to provide a list and to be ready to  
5 back that up with evidence that there were major  
6 deficiencies still outstanding.

7 KATE McGRANN: After substantial  
8 completion, does the nature or the importance of  
9 the minor deficiencies list change?

10 Like, does it have an impact on  
11 anything any more, other than a list of  
12 deficiencies that still need to be addressed?

13 RICHARD HOLDER: Yes, so some of the  
14 minor deficiencies would also appear in an  
15 operational restrictions document, of which there  
16 was one on this project. So if the operations were  
17 impacted in some way, requiring a mitigation, an  
18 operational mitigation, they were listed in the  
19 operational restrictions document.

20 Which, to my understanding, is normal  
21 industry practice with the start up of a rail  
22 transit system. Not everything is working  
23 perfectly.

24 There will be a number of issues that  
25 have been identified and a short work around, kind

1 of a colloquial term, but they described as work  
2 around would be put in place that may be there just  
3 for a few days, a few weeks, a few months. But the  
4 system could operate safely with full enjoyment of  
5 the operator, the City in this case.

6 But they were listed in the operational  
7 restrictions documents. And that was a key  
8 document that was reviewed by the independent  
9 safety auditor. Because they would want to be  
10 clear that there were no operating restrictions in  
11 place that in their determination could be  
12 considered to be unsafe.

13 KATE McGRANN: So the independent  
14 safety auditor is reviewing the operational  
15 restrictions document from a safety perspective?

16 RICHARD HOLDER: It's not fully  
17 answering your question, though.

18 So your question was, what is the  
19 implication of there being minor deficiencies of  
20 substantial completion? So one of the implications  
21 is some of those deficiencies are captured in the  
22 operating restrictions document. And that is very  
23 important to the operator to understand what those  
24 restrictions are. And they become a focus for the  
25 operations team and RTM's team to try and work

1 through those restrictions and remove those  
2 restrictions.

3 But the minor deficiency list then  
4 becomes part of the close out of the project. So,  
5 you know, the key milestones we have substantial  
6 completion, we had revenue service availability.

7 Once we've achieved revenue service  
8 availability, we then start to work on the minor  
9 deficiency list. And I say, we, the City provides  
10 oversight to RTG's attention to each of those  
11 deficiencies. And they do not -- RTG will not  
12 achieve final completion until the minor  
13 deficiencies are addressed.

14 KATE McGRANN: It's my understanding  
15 that there are still minor deficiencies  
16 outstanding? I think you mentioned something about  
17 that at the beginning of our conversation today; is  
18 that right?

19 RICHARD HOLDER: Correct, correct.

20 KATE McGRANN: Can items continue to be  
21 added to the minor deficiencies list after revenue  
22 service availability?

23 RICHARD HOLDER: They can.

24 KATE McGRANN: And is the distinction  
25 between minor deficiencies and major deficiencies

1 maintained post substantial completion?

2 RICHARD HOLDER: No.

3 KATE McGRANN: Okay. So after  
4 substantial completion, the minor deficiencies  
5 definition, I guess, is no longer -- is it that  
6 it's no longer used? Do all the deficiencies go on  
7 the minor deficiencies list after substantial  
8 completion?

9 RICHARD HOLDER: If there was an issue  
10 that was considered to be major, then the  
11 expectation is that that would be addressed as soon  
12 as possible by RTM. Because if it's major, it is  
13 impacting operations.

14 And it is not added to the minor  
15 deficiency list. It would be part of -- it would  
16 become part of IMIRS at that point, requiring, you  
17 know, attention as quickly as possible.

18 KATE McGRANN: I'm going to take you  
19 back to the system questions about readiness  
20 oversight that you were working on.

21 So you've talked about maintenance  
22 readiness -- bear with me for one second here.  
23 After Sean Derry joined, you said that RTM put  
24 together its own list of requirements, which was --  
25 which included the City's list but was more

1 wholistic and that it also started hosting meetings  
2 that the City was invited to attend, and that gave  
3 you insight into RTM's preparations, I take it; is  
4 that fair?

5 RICHARD HOLDER: That's fair.

6 KATE McGRANN: Did you have confidence  
7 in the accuracy of the information that was  
8 presented at those meetings?

9 RICHARD HOLDER: Yes.

10 KATE McGRANN: And what was your view  
11 of RTM's maintenance readiness, heading into  
12 substantial completion at the first submission?

13 RICHARD HOLDER: From a Project  
14 Agreement perspective, we believed that they were  
15 meeting the requirements of the contract in terms  
16 of having the right organizational structure, the  
17 right staffing in place, the right resources in  
18 place, the right procedures and plans in place, the  
19 right spare parts in place, and the right equipment  
20 in place.

21 So it was our determination at revenue  
22 service availability, that those were in place. At  
23 the time, and I think your question was different,  
24 it was the first submission of their substantial  
25 completion notification.

1                   And I suspect that we deemed that they  
2 were not ready, but I can't think of examples right  
3 now. But we would be able to go to our documents  
4 to bring out the City's position at that time. And  
5 I suspect that there are -- from a maintenance  
6 perspective where they were not ready.

7                   [Court Reporter intervenes for  
8 clarification].

9                   RICHARD HOLDER: If you want me to  
10 reiterate, I believe the question was, were there  
11 deficiencies associated with the maintenance  
12 readiness at the time of the original Substantial  
13 Completion Notice submission?

14                   And my response is, I believe, I think  
15 I said "I suspect", but I would change that to I  
16 believe there were deficiencies. There were minor  
17 deficiencies. I don't know how many major  
18 deficiencies and I can't recall, but I can get that  
19 information.

20                   KATE McGRANN: And I think you said  
21 that at the time of RSA from a Project Agreement  
22 perspective, your view is that RTM was ready for  
23 its maintenance obligations?

24                   RICHARD HOLDER: There were no major  
25 deficiencies associated with the maintenance. That

1 was our determination at that time.

2 KATE McGRANN: And stepping away from  
3 the material requirements, I'm speaking generally  
4 about RTM and its subcontractors' readiness to take  
5 on their obligations at revenue service; what was  
6 your view as to whether they were ready to do that?

7 RICHARD HOLDER: The experience through  
8 the trial running period was that they were  
9 struggling to deal with the IMIRS system. But it  
10 was more from a procedural perspective, rather than  
11 an ability to respond to specific maintenance  
12 issues.

13 They struggled at the beginning of the  
14 trial running period with determining priorities  
15 for action when it came to dealing with work orders  
16 and issues that had been identified.

17 So in the early days of trial running,  
18 they were overwhelmed by the number of work orders  
19 that were being submitted and requiring attention.

20 But that was, I think that was a  
21 reality on RTM's side. And we heard that as part  
22 of the meetings of the trial running team. But  
23 associated with RTM's challenges was the challenge  
24 from the controllers' perspective, who were issuing  
25 the work orders and inputting data into the IMIRS

1 system.

2           And there were in the early days of the  
3 trial running period, there was quite an aggressive  
4 approach to identifying some of the system elements  
5 that were not functioning properly. And to expand  
6 on that, I think I need to explain a little bit  
7 more about trial running and how information got to  
8 the TOCC.

9           KATE McGRANN: Do you mind if we go  
10 back to that, in the context of a broader  
11 discussion about trial running, just so that it is  
12 understandable for the reader of the transcript,  
13 and I think we will get there shortly.

14           RICHARD HOLDER: Okay.

15           KATE McGRANN: Let me put a pause on  
16 that concept and we'll come back to it.

17           With respect to operational  
18 maintenance, what was the City doing to oversee  
19 operational maintenance readiness?

20           RICHARD HOLDER: So we just need to  
21 clarify the term, I think. So there's maintenance,  
22 which is the responsibility of RTM. And then there  
23 is operational readiness.

24           KATE McGRANN: Thank you.

25           RICHARD HOLDER: So there's not

1 operational maintenance. Or I think maybe, I don't  
2 know, we're maybe getting confused. There's so  
3 many different terms.

4 So are you referring to operational  
5 readiness?

6 KATE McGRANN: That is what I intended  
7 to refer to, so I misspoke. Thank you.

8 RICHARD HOLDER: Okay. So operational  
9 readiness, so the oversight followed a similar  
10 pattern to the oversight to maintenance. There  
11 were submissions of documents following Schedule 10  
12 process.

13 A big part of the operational readiness  
14 piece was the regulatory environment, under which  
15 the system operates and that includes operating  
16 procedures. So that was a whole program in itself,  
17 developing the regulations for the line.

18 And there was the program to develop  
19 training material, training curriculums, pass-fail  
20 criteria, leading to certification of operators and  
21 controllers, and train the trainers, we need to  
22 include them as a group. As well as the emergency  
23 responders.

24 So that was part of the operational  
25 readiness piece. There were also some hardware

1 requirements as part of the operational readiness  
2 piece, items that were not included in the Project  
3 Agreement as an RTG deliverable, but were City  
4 deliverables.

5 So, for instance, there were emergency  
6 railway carts that the City procured that would be  
7 used to potentially evacuate an injured person from  
8 a broken down train, or to move heavy equipment  
9 around on the line.

10 There were the AED's, so the -- I will  
11 have to be reminded of that acronym, basically the  
12 emergency defibrillators were provided at the  
13 stations. And there were another other -- there  
14 were several other city-supplied operational  
15 requirements that came under that umbrella of  
16 operational readiness.

17 So the operational readiness piece was  
18 bigger than the oversight to the maintenance  
19 readiness piece. Because the City had certain  
20 obligations under the operational readiness piece.  
21 And so consequently, the City's focus was very  
22 keenly on operational readiness and also as part of  
23 -- as part of the Project Agreement that the  
24 operator is ready to start service.

25 And a key part of the systems

1 engineering and systems assurance approach and the  
2 safety case that was provided by RTG included an  
3 operator safety case, which was developed, authored  
4 by Parsons.

5 But was created, after a review of OC's  
6 readiness, in terms of the correct number of staff,  
7 correctly trained and certified, utilizing approved  
8 operational procedures and rules and regulations.

9 KATE McGRANN: And when you say OC, is  
10 that OC Transpo?

11 RICHARD HOLDER: OC Transpo, correct.

12 KATE McGRANN: I may have misunderstood  
13 you, but you said the operators' safety case was  
14 authored by Parsons?

15 RICHARD HOLDER: Correct.

16 KATE McGRANN: Did you also say it was  
17 an RTG deliverable?

18 RICHARD HOLDER: It was the City's  
19 obligation to demonstrate that the City was ready  
20 to start service. And so that obligation was met  
21 through the provisions of the operators' safety  
22 case. That is the document that provides all the  
23 evidence that indicates that the operator is ready  
24 with its staff, with its procedures.

25 And so that document was provided to

1 RTG, and RTG accepted that document prior to them  
2 saying, okay, we are now ready. In our  
3 determination, we believe that the system as a  
4 whole is ready for passenger service.

5 So in the kind of ultimate decision  
6 which is made at the end of the project in terms of  
7 revenue service availability, is RTG declaring that  
8 the system, as designed and constructed, meets all  
9 the requirements, and they are also satisfied that  
10 the City has met all its obligations in terms of  
11 being ready to operate the system.

12 RTG is asserting that they are  
13 satisfied that the City has met those obligations  
14 and all -- sorry, and all that is then confirmed by  
15 the independent safety auditor who looks at that  
16 wholistic document, that overall safety case and  
17 says, yes, the requirements have been met.

18 KATE McGRANN: Okay. So the City  
19 delivers the operator safety case to RTG. RTG has  
20 the opportunity to, I suppose, provide comments,  
21 reject, require further work; is that right?

22 RICHARD HOLDER: Correct.

23 KATE McGRANN: And once it is satisfied  
24 with the operators' safety case, it accepts the  
25 operators' safety case.

1 RICHARD HOLDER: Correct.

2 KATE McGRANN: Then RTG's acceptance of  
3 the sufficiency of that document is confirmed by  
4 the independent safety auditor?

5 RICHARD HOLDER: Correct.

6 KATE McGRANN: All of that takes place  
7 in advance of the revenue service availability  
8 determination by the independent commissioner?

9 RICHARD HOLDER: Correct.

10 KATE McGRANN: So with respect to the  
11 City's operational readiness work, the work that it  
12 has to do directly, its oversight. I understand  
13 that there were some changes to the schedule,  
14 changes to the substantial completion date.

15 Did that schedule change or those  
16 schedule changes have any impact on the City's  
17 operational readiness work?

18 RICHARD HOLDER: Yes, absolutely. Yes.

19 KATE McGRANN: And just because I  
20 recognize that that is a broad question, what I'm  
21 interested in, did it have any detrimental effects?  
22 Did it create any problems for the City with  
23 respect to its operational readiness work?

24 RICHARD HOLDER: It created many  
25 challenges for the City operations team. And I

1 would suggest that they're twofold.

2 One of them is in relation to  
3 OC Transpo meeting their obligations in support of  
4 operational readiness. So they needed to have the  
5 right people hired and trained and certified in  
6 accordance with the approved rules and regulations  
7 and procedures. And that was very much tied into  
8 the rail transit project.

9 The other key challenge for OC Transpo  
10 was the service switch that was occurring. So we  
11 were -- they were moving from a rapid bus transit  
12 system, carrying 12,000 passengers per hour in the  
13 peak period, to a rail transit system.

14 So that meant, that service switch in  
15 terms of what do they do with the buses? What do  
16 they do with the drivers? How do they change all  
17 the associated routes of buses? That was a huge  
18 undertaking for OC.

19 And as a, you know, it was a  
20 consequence of the project, but it wasn't -- it  
21 wasn't part of a requirement of the Project  
22 Agreement. If that makes sense.

23 So there's -- so the implication of the  
24 moving date for substantial completion was related  
25 to OC's obligations to meet the Project Agreement

1 in terms of the operators' safety case.

2 But consequently, they also had to keep  
3 changing the date when they didn't need the buses,  
4 and they didn't need the drivers, and they didn't  
5 need to make service changes. But that was outside  
6 the Project Agreement.

7 KATE McGRANN: So the Project Agreement  
8 -- sorry.

9 PETER WARDLE: Just to clarify. I  
10 think the witness is referring to the changes to  
11 revenue service availability, not substantial  
12 completion.

13 So I think there are -- I mean, there  
14 are two different dates. Substantial completion,  
15 you know, the consortium applies for substantial  
16 completion in May, isn't successful the first time.  
17 They then come back in July. It's the revenue  
18 service availability date that gets moved several  
19 times.

20 I just want to make sure Richard is on  
21 the same page with us to -- he may be talking about  
22 both or one, but I want to make sure we clarify  
23 that.

24 RICHARD HOLDER: You're right, Peter.  
25 The change in the revenue service availability date

1 is what really impacts or what -- that impacted OC,  
2 from those two perspectives.

3 But they are -- the substantial  
4 completion date and revenue service availability,  
5 were so connected.

6 PETER WARDLE: Correct, correct.

7 RICHARD HOLDER: The only items  
8 separating them is the trial running, and the  
9 confirmation from the independent safety auditor.

10 So my recollection of substantial  
11 completion is -- it's all the assets have been  
12 constructed and the testing commissioning program  
13 has demonstrated the satisfactory performance of  
14 the system.

15 So it was always anticipated that there  
16 was very little gap between substantial completion  
17 and revenue service availability.

18 KATE McGRANN: Did the changes to the  
19 schedule or the process of -- or the process of the  
20 construction have any impact on the training or  
21 practice time that was planned for OC Transpo's  
22 drivers and controllers?

23 RICHARD HOLDER: Yes, yes. So I'm glad  
24 you raised that, because that was part of my answer  
25 as well, that for the certification of the

1 operators and controllers, it was necessary to have  
2 the full system operating from terminus to terminus  
3 station.

4 With all the associated systems  
5 operating as well. So it was not enough to have  
6 operators certified on a train moving on a simple  
7 section of test track. We needed to understand  
8 that the operators and controllers were familiar  
9 with the full functioning of the system.

10 So as delays occurred to the  
11 installation and commissioning of the systems, then  
12 that impacted -- that delayed the process of  
13 training and ultimately certification.

14 So there were definitely -- the  
15 training component was definitely linked to system  
16 integration, testing and commissioning, and  
17 availability of the overall system.

18 KATE McGRANN: And when we talk about  
19 the full system, needed them to operate the full  
20 system, does that also include the total number of  
21 trains that are envisioned for regular service?

22 RICHARD HOLDER: Yes.

23 KATE McGRANN: Yes, okay.

24 RICHARD HOLDER: Yes, yeah.

25 KATE McGRANN: Do you recall when the

1 City first got access to the full operating system  
2 for certification purposes?

3 RICHARD HOLDER: I would have to check  
4 the precise date. I don't recall.

5 KATE McGRANN: Will you go and get that  
6 date for us?

7 U/T RICHARD HOLDER: I can do that.

8 KATE McGRANN: Leaving the question of  
9 certification aside for a minute, because I  
10 understand that the drivers and operators did  
11 achieve the certification that was required in  
12 advance of revenue service availability; is that  
13 right?

14 RICHARD HOLDER: Correct.

15 KATE McGRANN: In addition to the  
16 certification requirements, was there at any point  
17 a plan that the operators and controllers would  
18 have more of an opportunity to practice on the  
19 system before going to revenue service than they  
20 ultimately thought?

21 RICHARD HOLDER: The delay that  
22 occurred to revenue service availability actually  
23 increased the time that some of the operators and  
24 controllers had to gain on-the-job training. So  
25 that there had been concern back in late 2016-2017,

1 when the target date was June 2018, there was  
2 concern that there may not be sufficient time.

3 But as that revenue service  
4 availability date kept slipping, it provided more  
5 and more opportunity for the operators and  
6 controllers who were on staff, and who had gone  
7 through some training, it gave them more on-the-job  
8 training.

9 So it actually increased their general  
10 training requirements. It is true that there were  
11 some specific pieces of experience that they were  
12 only able to attain towards the very end of the  
13 project.

14 For instance, the tunnel ventilation  
15 system, which was very late to install. But in  
16 terms of experience with how the vehicle was  
17 operating and with how the CBTC system was  
18 operating, the operations team actually had a lot  
19 more time than was contemplated originally.

20 KATE McGRANN: Help me understand how  
21 that fits with the idea that there is a crunch to  
22 get the certification complete because of late  
23 access to the full system?

24 RICHARD HOLDER: The certification took  
25 place in steps. So the first area of test track

1 was created between the MSF and Blair station, I  
2 believe. And so we had a train that was not really  
3 navigating too many switches.

4 It was not necessarily under CBTC  
5 control, but a train was moving out onto the track  
6 and we were undertaking testing of vehicle system  
7 as part of the acceptance of the train.

8 So, as part of those movements, we  
9 would have a City operator on the train, and we  
10 would have a City controller in the TOCC that was  
11 assisting in the movement of that train and the  
12 controlling of that train.

13 They didn't have overall  
14 accountability. Overall accountability for the  
15 TOCC was always kept with RTG until revenue service  
16 availability. But the City had staff who were  
17 working under the oversight of an RTG controller.

18 So that first piece of test track,  
19 which was a simple operation, that was available, I  
20 believe in the fall of 2017. And it may have been  
21 the fall of 2016; I'd have to check that. I think  
22 it was 2017.

23 So that was the beginning of the  
24 vehicle movements. And then as the track was  
25 expanded, and the systems became more complete, the

1     sophistication of that operation also increased.  
2     So we started with a train operating under rules  
3     that were communicated through a radio.

4             And then a partial implementation of  
5     the Thales CBTC system occurred, and then the train  
6     was occurring under partial CBTC. And then that  
7     was for a limited section of the track. And as the  
8     project continued and evolved, that was expanded to  
9     the west.

10            So we had a step certification process.  
11     So the first certification would have been to allow  
12     an operator to drive a train without CBTC. Then  
13     the second level of certification would be for an  
14     operator to operate a train under CBTC control, but  
15     for a limited geographic extent of the system.

16            And there would be a final  
17     certification for full system awareness from the  
18     east end to the west end. So those, the first  
19     certification and the second certification, and the  
20     associated on-the-job training was more than was  
21     originally contemplated, because we thought we  
22     would be ready in June 2018.

23            As it was, it was, you know, the fall  
24     of 2019, so that was almost an extra year and a  
25     quarter for staff to get that on-the-job training

1 for the Stage 1 and Stage 2, but they did not get  
2 their final certification until the final systems  
3 were installed.

4 And so, as I mentioned, the key final  
5 system was a tunnel ventilation system downtown.  
6 And for the operators, I believe that there was a  
7 component of training for TVS, but it was more  
8 crucial for the controllers to have a full  
9 understanding of the tunnel ventilation system.

10 And so we had to wait until the full  
11 tunnel ventilation system had gone through full  
12 testing and commissioning, prior to the final piece  
13 of training and the final certification.

14 So does that help kind of explain the  
15 process?

16 KATE McGRANN: I think so. I'll say it  
17 back to you to make sure I understand it.

18 So there's more time in between the  
19 completion of various aspects of the system than  
20 was originally anticipated.

21 RICHARD HOLDER: (Witness nods.)

22 KATE McGRANN: You're nodding, but you  
23 have to say yes for the court reporter.

24 RICHARD HOLDER: Yes, sorry. Correct.

25 KATE McGRANN: As a result of that,

1 operators and controllers get to spend more time in  
2 the system as it exists, doing whatever it is  
3 available to them to do while they're waiting for  
4 the next aspect or components of the system to be  
5 released.

6 RICHARD HOLDER: Correct.

7 KATE McGRANN: So they get more time in  
8 those limited environments, but not very much time  
9 in the full system environment.

10 RICHARD HOLDER: That's correct. But  
11 in terms of the full system environment, I mean, I  
12 would have to check to determine exactly when the  
13 terminus guideway section was fully opened. But I  
14 believe that was several months prior to the tunnel  
15 ventilation system being fully functional.

16 So the key aspect for the controllers  
17 and for the operators is being able to drive from  
18 Blair to Tunney under the control of CBTC, and that  
19 was available for many, many months prior to the  
20 final piece of certification, which was the tunnel  
21 ventilation system.

22 KATE McGRANN: And just because I'm  
23 trying to picture this. They can drive end to end  
24 without the tunnel being certified?

25 RICHARD HOLDER: Correct. Sorry, just

1 to clarify.

2 PETER WARDLE: Yes.

3 RICHARD HOLDER: They can drive end to  
4 end with the certification that they had, but they  
5 needed to wait until the tunnel ventilation system  
6 was fully installed and commissioned to receive  
7 that last piece of training to get them final  
8 certification that was needed for revenue service  
9 availability.

10 KATE McGRANN: Okay. Thank you for  
11 clarifying.

12 I have some questions for you about  
13 testing and commissioning. First of all, whose  
14 obligation was it to draft the testing and  
15 commissioning plans?

16 RICHARD HOLDER: RTG's obligation.

17 KATE McGRANN: And did the City have  
18 the opportunity to review and comment on those  
19 plans before they were finalized?

20 RICHARD HOLDER: They did.

21 KATE McGRANN: And do you recall if  
22 there were any comments that were provided that  
23 weren't incorporated by RTG?

24 RICHARD HOLDER: I'm not sure. I would  
25 have to check the records.

1 KATE McGRANN: Okay. Nothing is  
2 jumping to you right now.

3 RICHARD HOLDER: Not in terms of the  
4 testing and commissioning plan.

5 KATE McGRANN: You're drawing a  
6 distinction between the testing and commissioning  
7 plan and something else, I think. What is it?

8 RICHARD HOLDER: So the testing and  
9 commissioning plan was an overarching document that  
10 described the overall approach that RTG would  
11 follow for testing and commissioning.

12 But that then -- you know, so I believe  
13 that there was -- that was submitted through a  
14 Schedule 10 review process, comments were provided;  
15 and ultimately it was accepted as a final document.

16 So that's strategic. From a tactical  
17 perspective, RTG had the responsibility for  
18 submitting individual test procedures for their  
19 various tests that they were undertaking.

20 And from the City's perspective, the  
21 key test that we were interested in was the systems  
22 acceptance test, and systems integration tests. So  
23 SATs and SITs.

24 KATE McGRANN: Okay. And we got into  
25 this discussion because I had asked you if there

1 were any changes that the City requested to the  
2 overarching plan and you said, not with respect to  
3 that plan.

4 Were there elements of the SATs or SITs  
5 tests that the City wanted changed that RTG would  
6 not change?

7 RICHARD HOLDER: Not that I recall.

8 KATE McGRANN: Did the City also have  
9 the opportunity to review and provide feedback on  
10 the test procedures, the individual test  
11 procedures?

12 RICHARD HOLDER: We did. They also  
13 followed a Schedule 10 review process.

14 KATE McGRANN: And what is the City's  
15 role in testing and commissioning?

16 RICHARD HOLDER: The City provided  
17 oversight to the testing and commissioning  
18 procedures that were submitted. We had oversight  
19 to the actual testing program that was being  
20 undertaken in the field.

21 And the City had oversight in terms of  
22 reviewing the results of those tests and confirming  
23 that the tests adequately demonstrated the  
24 functionality of the system being tested.

25 And that process whereby the City

1 confirmed the adequacy was tied into the overall  
2 requirements management process that I was talking  
3 about.

4           So as part of the requirements  
5 management process, a requirement would be pulled  
6 out of the Project Agreement or out of the  
7 standard, and there would be a design that would  
8 have to be generated to meet that requirement.

9           Then a piece of equipment would have to  
10 be actually manufactured and installed in place so  
11 that would be the as-constructed state.

12           And then after that, there would need  
13 to be a test to ensure that that actual piece of  
14 equipment was working adequately.

15           So in terms of the requirements  
16 management, there were a number of gates that the  
17 City was in the process, was involved in the  
18 process of confirming.

19           Have they generated a design to  
20 adequately meet that requirement? Have they  
21 adequately installed it in the system? And have  
22 they adequately tested to a test procedure that has  
23 passed to confirm that it functions properly? The  
24 City was involved in that whole process.

25           KATE McGRANN: And do you recall

1 whether any of those three stages, even generally,  
2 posed particular issues for this project?

3 RICHARD HOLDER: There was a big  
4 challenge with the number of tests that were  
5 occurring simultaneously. So there was a challenge  
6 on the RTG side and also on the City side to attend  
7 all the tests that were taking place.

8 So the City undertook a risk-based  
9 approach to those tests that the City felt we  
10 needed to witness. But there were -- the City did  
11 not attend or witness all the tests that were  
12 taking place.

13 So through that risk-based approach,  
14 there was agreement that we would attend all of the  
15 SAT tests and all of the system integration tests,  
16 but we would not necessarily witness all the PICO  
17 tests, the "Post Installation Checkout" tests.

18 KATE McGRANN: Was it always envisioned  
19 that the City would take a risk-based approach to  
20 selecting the test that it would witness?

21 RICHARD HOLDER: For as long as I was  
22 on the project, yes.

23 KATE McGRANN: And was there any  
24 requirement that the City adjust the number of  
25 tests or the type of tests it witnessed as you got

1 into the actual testing process?

2 RICHARD HOLDER: The City had to  
3 respond to the testing and commissioning program  
4 that was being implemented by RTG. So we were  
5 responsive to their schedule.

6 KATE McGRANN: And did that -- sorry,  
7 go ahead.

8 RICHARD HOLDER: Sorry. So the City  
9 had a plan for resourcing the witnessing of those  
10 tests, but that plan was useful from a perspective  
11 of understanding how many subject matter experts  
12 would be required, and when they would be required.

13 Some of the tests were very specific,  
14 for instance, the tunnel ventilation system, which  
15 is a key safety requirement with the underground  
16 stations. It was necessary to have advanced notice  
17 of that test and for us to book subject matter  
18 experts many weeks in advance so they could be in  
19 Ottawa for the several weeks that those tests took  
20 place.

21 So we had a plan that created this  
22 resourcing plan but it was very difficult to  
23 manage, and difficult to track against that plan,  
24 because the schedule from RTG kind of changed and  
25 evolved so rapidly.

1                   So the City was really quite  
2 responsive. We would get -- you know, we made  
3 certain that we were able to respond to requests  
4 from RTG with as little as a couple of weeks notice  
5 of a test taking place.

6                   KATE McGRANN: Okay. Did the City  
7 ultimately end up witnessing fewer tests than it  
8 had originally planned to as a result of the  
9 changes in the schedule or otherwise?

10                  RICHARD HOLDER: I don't know. I would  
11 have to check. I would have to go back to our plan  
12 and confirm that against the number that were  
13 witnessed.

14                  KATE McGRANN: And is that information  
15 readily available to you?

16                  RICHARD HOLDER: It's not readily  
17 available. But it would need some analysis in  
18 terms of reviewing all the tests that took place,  
19 and referring to the test results and the -- those  
20 members that had signed off as witnesses to those  
21 tests, then we'd have to go through a process of  
22 literally test by test, determining how many did we  
23 attend.

24                  In terms of the plan, the plan is  
25 readily available. You know, what we anticipated

1 to attend.

2 KATE McGRANN: So let's leave that for  
3 now. To be clear, I'm not asking you to go away  
4 and do that comparison to tell me, for now at  
5 least.

6 Why is the City witnessing the test  
7 important? What function does that serve?

8 RICHARD HOLDER: It's part of the City  
9 oversight to ensure that the system that we are  
10 paying for is the one that we are being provided.

11 So that is a key component of that  
12 oversight. From the operations perspective, it was  
13 key that the operations staff understood how the  
14 systems functioned. And so whilst there was this  
15 process of reviewing documents, maybe reviewing  
16 installations in the field, sometimes the  
17 functionality of the system wasn't really  
18 understood until the actual test was undertaken.

19 So some of the systems they're  
20 relatively straightforward, the CCTV cameras, the  
21 access card readers, they're relatively simple  
22 systems.

23 But for the tunnel ventilation system  
24 for the downtown area, where the three stations and  
25 operation of the tunnel ventilation system on the

1 three stations were all integrated, it was a very  
2 complex test procedure that went on for many, many  
3 weeks.

4 And it was crucial that controllers  
5 understood, because they would be called upon to  
6 control the system. But it was also crucial for  
7 Ottawa fire service as well to understand how that  
8 system operated.

9 So it was part of the -- it was part of  
10 the operational readiness for those key members of  
11 staff to take part and witness certain test  
12 procedures, so that they could understand how they  
13 would respond, in the example of the tunnel  
14 ventilation system, how would they respond in an  
15 emergency? How would they respond in a fire?

16 KATE McGRANN: Do you know what led to  
17 the changes of RTG's testing and commissioning  
18 plans, I guess as far as scheduling and things like  
19 that?

20 RICHARD HOLDER: So what I witnessed  
21 from the performance of RTG during testing and  
22 commissioning was that there were a number of  
23 activities taking place concurrently.

24 Ideally, there would have been a clear  
25 completion of construction and installation, and

1 then testing and commissioning would have started.

2 But that was not the case.

3           And so, for instance, we had trains  
4 operating on a track, undergoing testing and  
5 commissioning first of the train itself, the  
6 functions of the train, then testing of the  
7 CBTC system.

8           At the same time, that testing and  
9 commissioning of switch heaters were being  
10 undertaken, at the same time that there was  
11 construction activity at the station, at the same  
12 time that there may be other kind of installation  
13 work occurring within the line.

14           And so the challenge for RTG was  
15 managing many concurrent activities, construction,  
16 systems installation, testing and commissioning.  
17 And frequently they were contradictory activities.  
18 They could not occur simultaneously.

19           So it was necessary to provide  
20 separation of certain work areas, so the stations  
21 were separated from the guideway by the  
22 installation of pedestrian fencing; but sometimes  
23 it was necessary to separate by time.

24           And so, on a section of track, Alstom  
25 would be given a certain amount of time to test

1 their train. Then Thales would be given a certain  
2 amount of time to test their CBTC system, but there  
3 may have also been other suppliers.

4 For instance the supplier of the  
5 guideway intrusion detection system that was  
6 installed at the ends of the platforms; they would  
7 need to test their equipment.

8 And that may -- that could not occur at  
9 the same time that the Thales testing or the Alstom  
10 testing could take place. So there was a huge  
11 challenge from RTG's perspective in managing the  
12 various sub-suppliers, their requirements, the  
13 track access, their requirements for equipment,  
14 their requirements for resources, and it was very  
15 -- RTG struggled to plan that work without the need  
16 of having to change the plan almost daily.

17 And so, as an example, we're aware that  
18 Thales would set up a team. It costs a lot of  
19 money to bring in people from outside to undertake  
20 a particular test associated with their CBTC  
21 system.

22 In order to undertake that test, they  
23 need power on the line, they need a track that's  
24 fully functional, which is all the switches  
25 operating perfectly and they need a train, or maybe

1 two trains.

2 As soon as there's an issue, if the  
3 vehicle is not operating, if there's a problem with  
4 the track and power supply, if there's an issue  
5 with the switch, then there's a delay to that  
6 supplier.

7 So we know that occurred with Thales;  
8 we know it occurred with Alstom; I'm not sure to  
9 the extent that other suppliers were impacted, but  
10 it was certainly a challenge that RTG had in the  
11 final stages.

12 And the final stages being the last  
13 year and a half of working through system  
14 installation, testing and commissioning, and system  
15 integration activities.

16 KATE McGRANN: Turning back to the  
17 testing and commissioning and the scheduling  
18 challenges that you've just described. Other than  
19 creating scheduling challenges for RTG, these  
20 concurrent activities that you have described to  
21 us, did they have any implications for actually  
22 completing the testing and commissioning  
23 requirements that were planned?

24 And by that I mean was there less time  
25 available to deal with issues that arose during

1 testing and commissioning? Do you feel that it led  
2 to more potentially outstanding issues at the end  
3 of the testing and commissioning period?

4 RICHARD HOLDER: I would say that it's  
5 compounded the workflow for the work that was  
6 occurring out on site. So there was certainly a  
7 struggle to complete work in a logical fashion, and  
8 work was completed really on the basis of  
9 availability of a section of track or availability  
10 of the train, or availability of a system.

11 So it's certainly impacted their  
12 ability to plan the work. And then from the  
13 perspective of the test results being unequivocal,  
14 it also created challenges.

15 So we would -- so the City received  
16 test results that would indicate that a test had  
17 passed, that a particular function had been  
18 demonstrated, but there would be a number of  
19 deficiencies associated with a test. And the City  
20 did not agree in some circumstances to the  
21 deficiencies that were being put forward.

22 And it was the City's position that the  
23 test had in fact not passed, because the  
24 deficiencies were significant enough that there had  
25 not been a demonstration that the system was

1 functioning adequately.

2 KATE McGRANN: And where the City took  
3 that position, what happens next with respect to  
4 that test?

5 RICHARD HOLDER: We would request for a  
6 repeat test. In some cases it might be a repeat of  
7 the whole test, or it may just be a repeat of  
8 certain components of the test. But we would not  
9 consider that that test was -- that test result was  
10 acceptable until that process had taken place.

11 KATE McGRANN: Were the City's requests  
12 determinative in this situation? And by that I  
13 mean, if the City said, no, we don't accept that  
14 this test has been passed, is there a requirement  
15 that the test be re-run or aspects of the test be  
16 re-run?

17 RICHARD HOLDER: Yes, it was part of  
18 the process that the City needed to accept.

19 KATE McGRANN: You mentioned that the  
20 order of things that are being done during this  
21 time may not have been the most logical order; is  
22 that right?

23 RICHARD HOLDER: Correct.

24 KATE McGRANN: And you also mentioned  
25 that there may be challenges with the test results

1 being unequivocal.

2           Were there any instances that you can  
3 recall where a test delivered a passing result,  
4 however, by virtue of the other items that are  
5 outstanding, you don't have full confidence that  
6 that pass that's shown on that test is actually a  
7 pass within the context of the full system?

8           RICHARD HOLDER: Exactly. That would  
9 be one of the examples of the City saying that test  
10 has not fully demonstrated the functioning of that  
11 system. And again, we have examples of that.

12           KATE McGRANN: Okay. And were there  
13 any instances of those tests where it wasn't --  
14 where that issue was not subject to retesting? It  
15 just led to a number of deficiencies and moving on  
16 to the next test?

17           RICHARD HOLDER: Yes, there would be.

18           So there was the range of tests that  
19 were fully passed, no deficiencies. Tests that  
20 were considered to be passed with some deficiencies  
21 but they were minor, for no reasons, and then the  
22 City had no objections.

23           But then there were tests that were  
24 submitted that were considered to be passed from  
25 RTG's perspective, with deficiencies, and the City

1 objected to and requested retesting.

2 There was a whole, the whole range.

3 KATE McGRANN: And I was going to say,  
4 how is it determined that the testing and  
5 commissioning phase of this project is complete? I  
6 am guessing that it is when all of the tests  
7 required have been accepted by the City with  
8 deficiencies or otherwise?

9 RICHARD HOLDER: Correct. So that was  
10 in the months leading up to substantial completion.  
11 You know, a big part of the work that my team was  
12 involved in was reviewing those test procedures and  
13 keeping track of, you know, how many test  
14 procedures still needed to be either repeated or  
15 needed to be completed.

16 KATE McGRANN: Did the City have a  
17 sense, going into testing and commissioning, what  
18 it would be willing to tolerate in terms of test  
19 results and related deficiencies?

20 RICHARD HOLDER: Only to -- there was  
21 no -- I will rephrase it. We were working with the  
22 same definition of substantial completion, which  
23 is, does the City have full enjoyment of the  
24 functioning of that system.

25 So if there was, for instance, the

1 CCTV system, we have between 1200 and 1300 cameras  
2 on the overall system. So the system integration  
3 test would be seeking to ensure that every single  
4 camera works, and that at the transit operations  
5 control centre it is possible to instantly pull up  
6 any one of those views.

7           If as part of the test one of the views  
8 was obscured, because it's dirty or maybe it's just  
9 not working, then we would not -- that would be  
10 noted as a minor deficiency. Because it's expected  
11 that that's going to occur in operations. We're  
12 never going to have 1,300 cameras all working  
13 perfectly.

14           But if for instance, the integration  
15 test failed to demonstrate that when an emergency  
16 telephone button was pressed, that the nearest  
17 mobile camera provided an image of that emergency  
18 telephone, if that function was not working, then  
19 we would say that's a fail. Because they had not  
20 demonstrated that that safety and security function  
21 of being able to tell who's pressing that button,  
22 that was not demonstrated.

23           So it wasn't, as we went into testing  
24 and commissioning, we did not have like a  
25 predescribed list of what we will accept as a pass

1 or a fail. It was very much on the basis of each  
2 individual test was determined on its own merits.

3 And we had a City team that was  
4 involved throughout the testing and commissioning  
5 program, and then we also brought in subject matter  
6 experts from outside to deal with some of the  
7 specific tests and some of the more, you know,  
8 safety critical tests.

9 KATE McGRANN: At any point along the  
10 way, did anyone on behalf of the City take a look  
11 at the cumulative effect of the minor deficiencies  
12 that were resulting from this test to say, okay,  
13 each of you on your own don't cause a concern from  
14 the perspective of enjoying the system. But taken  
15 altogether, this picture looks quite different and  
16 we have concerns about the entire group, or how  
17 certain aspects of these deficiencies interact with  
18 each other?

19 RICHARD HOLDER: Yeah, so that would be  
20 captured in the system integration tests. So a  
21 systems acceptance test, using the same example I  
22 provided before, would have been, okay, we've  
23 tested the CCTV system, and when we're in the  
24 control centre, we can pull up pretty well all  
25 those images on request. So the systems acceptance

1 test for the CCTV system would say, "yeah, we've  
2 passed".

3 And then there would be a systems  
4 acceptance test for the emergency telephones. And  
5 the test would be, okay, we go around all the  
6 stations and press the emergency telephone; does  
7 that send a signal to the TOCC desk?

8 Does the TOCC response, that they are  
9 responding, does that get sent back to the  
10 emergency telephone indicating a little red light,  
11 so that the person who's activated knows that there  
12 will be a response; does that occur? Does that  
13 occur across the whole detail system? "Yes".  
14 Okay, so that's a pass for the systems acceptance  
15 test.

16 However, the systems integration test  
17 which would be, okay, when I press the e-tel, does  
18 the image of that e-tel from the nearest CCTV  
19 camera, does that come up on the TOCC overhead? If  
20 it does not, then that's a fail. That's a fail in  
21 the system integration test.

22 So the complexity -- the question you  
23 had about a cumulative effect of kind of minor  
24 deficiencies, that is captured through the process  
25 of testing the hierarchy from -- so I talked about

1 that there was a factory acceptance test,  
2 there's -- well, before that, there's a first  
3 article inspection; there's a factory acceptance  
4 test; there's a post-installation check out test;  
5 there's a systems acceptance test; and the systems  
6 integration test.

7 So all of those things kind of build on  
8 each other. Theoretically, it's in RTG's interest  
9 to ensure that all the previous tests have been  
10 passed satisfactory; otherwise, when it gets to the  
11 systems integration test, it's not going to pass.

12 KATE McGRANN: The expectation is that  
13 the systems integration test will capture any  
14 cumulative effects of the minor deficiencies coming  
15 out of the tests that preceded it, and so you can  
16 rely on the systems integration test to ensure that  
17 deficiencies that may have been identified as  
18 minor, do truly qualify that way --

19 RICHARD HOLDER: Correct.

20 KATE McGRANN: -- in full collaboration  
21 of the system?

22 RICHARD HOLDER: Correct.

23 KATE McGRANN: And was there any  
24 concern about the result of the system integration  
25 tests and whether they were truly fulfilling that

1 function as a result of the many different  
2 activities that are all taking place concurrently  
3 during the testing and commissioning procedure?

4 RICHARD HOLDER: Not for the systems --  
5 system integration testing. But those key tests  
6 could only really be undertaken when the system was  
7 pretty much fully functional. So yes, they had  
8 issues with their PICO test, their SAT tests.

9 But when it came to the system  
10 integration test, at that point stations were fully  
11 functional, end to end, OCS was in place,  
12 CBTC system was in place, we had vehicles, we had  
13 vehicles moving for a couple of years.

14 So the system was working but then it  
15 was, okay, we need to -- the final integration  
16 system was not so much impacted by the previous  
17 delays that have occurred.

18 KATE McGRANN: And in light of all of  
19 the challenges that you've identified and the  
20 different activities that are all taking place  
21 during testing and commissioning up to the point  
22 that you're doing the system integration tests, did  
23 anybody at any point raise concerns that there  
24 should be expanded system integration testing in  
25 light of all -- in light of the changes and

1 concurrent activities that took place during  
2 testing and commissioning?

3 RICHARD HOLDER: No, not that I recall.  
4 I think the number of tests that had been planned  
5 for was acknowledged as being about the right  
6 number of tests that were required. And even  
7 though there may have been many repeat tests, we  
8 didn't track the repeat tests. We only tracked the  
9 completed tests.

10 So the number of completed tests at  
11 revenue service availability was pretty much the  
12 same as what was anticipated, like, a year and a  
13 half two years before, when the testing  
14 commissioning plan was being created.

15 There was maybe a few changes, but not  
16 that many changes.

17 KATE McGRANN: And was that stage of  
18 completion, at revenue service availability, was  
19 that when it was originally planned to happen? Or  
20 was it originally planned to happen in advance of  
21 revenue service availability?

22 Like, were you supposed to be done  
23 sooner, relative to the other milestones?

24 RICHARD HOLDER: The completion of  
25 testing and commissioning, which would have been

1 all the tests being passed, yes, that was expected  
2 to occur in April, April of 2018. Tied in with the  
3 revenue service availability date of May-June 2018.

4 KATE McGRANN: Okay. I'm just trying  
5 to understand, where I think you said by the time  
6 you reached set revenue service availability the  
7 number of tests you had anticipated or had been  
8 planned for were run. Was that later than planned?  
9 Did that happen later than planned?

10 PETER WARDLE: No, I think what the  
11 witness has just indicated that it was later than  
12 planned because originally revenue service  
13 availability was to take place a year and a half  
14 earlier. So those tests would have taken place in  
15 2018, in April of 2018. They end up taking place  
16 in the summer of 2019. I think that's what the  
17 witness is trying to say. He's not saying that the  
18 tests weren't done. The same number of tests were  
19 done; he's made that very clear.

20 KATE McGRANN: Peter, I'm happy to have  
21 you let me know if you've got an objection to any  
22 question that I ask and I will deal with it as best  
23 I can. But I would prefer to get the witness's  
24 evidence from the witness.

25 I'm just trying to understand your

1 answer.

2 RICHARD HOLDER: Okay, sorry. So --

3 PETER WARDLE: I was just trying to  
4 assist. I don't think I said anything that hadn't  
5 been said by the witness already.

6 RICHARD HOLDER: Yeah, so could you  
7 rephrase the question, maybe and then maybe that  
8 will help.

9 KATE McGRANN: Relative to the revenue  
10 service availability date, whenever it ultimately  
11 ended up happening, was there an expectation that  
12 the testing and commissioning would be completed a  
13 certain amount of time before the revenue service  
14 availability date, for starters?

15 RICHARD HOLDER: Yes.

16 KATE McGRANN: And then did it  
17 ultimately -- did the testing and commissioning  
18 ultimately conclude later relative to the revenue  
19 service availability date than had been originally  
20 envisioned or planned?

21 RICHARD HOLDER: No.

22 KATE McGRANN: All right. Thank you.

23 RICHARD HOLDER: Would you like me to  
24 offer maybe further explanation?

25 KATE McGRANN: Sure, that would be

1 great.

2           RICHARD HOLDER: So in terms of moving  
3 towards a completion of the project, we had --  
4 there were the various milestones, the substantial  
5 completion included building stuff, the guideway,  
6 the track, the stations, the bridges, providing the  
7 trains. So it was all fixed assets and the rolling  
8 stock. So there's the stuff that we built.

9           But it also included the satisfactory  
10 performance of the testing and commissioning  
11 program. So they had to demonstrate to us that  
12 everything worked.

13           And to do that, they had to go through  
14 the whole testing and commissioning program.  
15 Including those key -- I think there were 200, 250  
16 system integration tests. That was part of them  
17 demonstrating to us that the system functioned  
18 properly.

19           Once they had done that, like we're  
20 almost there. It's built, it functions, it's been  
21 tested, everybody is satisfied the City is getting  
22 what we paid for. So it is always the expectation  
23 that once we achieve that milestone, we're just  
24 weeks away from starting the service. What's  
25 missing was the trial running period and ultimate

1 final certification, safety certification from the  
2 independent safety auditor.

3 So as the testing and commissioning --  
4 as the construction got delayed, system  
5 installation got delayed, commissioning got delayed  
6 by a year, a year. But it was always expected,  
7 once they finished that testing and commissioning  
8 piece, okay, we're almost there. We've just got  
9 weeks away.

10 KATE McGRANN: That's very helpful,  
11 thank you.

12 -- RECESS TAKEN AT 4:31 --

13 -- UPON RESUMING AT 4:36 --

14 KATE McGRANN: I have some questions  
15 for you about trial running. You were a member of  
16 what's called the trial running review team; is  
17 that right?

18 RICHARD HOLDER: That's correct.

19 KATE McGRANN: When was that team put  
20 together?

21 RICHARD HOLDER: I would have to check  
22 the exact date, but I believe it was several months  
23 prior to maybe the second revenue service  
24 availability date? I don't think we had created  
25 the trial running team in advance of the first

1 revenue service availability date.

2 KATE McGRANN: I'm going to show you a  
3 document. This is document COW442401. It's titled  
4 "Request for Information Initiated By Owner, Sent  
5 to Project Co, RFI-O-266. If I scroll down it says  
6 if the request box, initiated by you:

7 "Please indicate your  
8 acceptance to the 12-day trial  
9 running criteria that has been  
10 developed in consultation with  
11 OLRT-C, OTC and OCT."

12 If you scroll down, you can see a  
13 response from Roger Schmidt, OLRT, saying he  
14 accepts this criteria document. Are you familiar  
15 with this document?

16 RICHARD HOLDER: I am.

17 KATE McGRANN: One question, OCT, I  
18 believe, is OC Transpo, is that right?

19 RICHARD HOLDER: OCT is OC Transpo,  
20 correct.

21 KATE McGRANN: What is OTC?

22 RICHARD HOLDER: OTC is O-Train  
23 Construction.

24 KATE McGRANN: Is that the office that  
25 was formerly known as the Rail Implementation

1 Office?

2 RICHARD HOLDER: Correct.

3 KATE McGRANN: Okay, thank you. At the  
4 time that you sent this document over for  
5 acceptance by OLRT-C was it the intention to use  
6 the criteria set out in this document to evaluate  
7 whether or not the system passed the trial running  
8 procedures of the test?

9 RICHARD HOLDER: At that time that was  
10 the intention, yes. That was the purpose of the  
11 document.

12 KATE McGRANN: What changed? Why was a  
13 different approach taken?

14 RICHARD HOLDER: This trial running  
15 criteria was developed by a subject matter expert  
16 that was working with OC Transpo. A person who had  
17 been involved in numerous rail transit startups.

18 The person was called Joe North. He  
19 was the Director of the Rail Activation Management  
20 Program, the RAMP program. And he also had the  
21 responsibility for creating this 12-day trial  
22 running criteria document, in consultation with  
23 OLRT-C.

24 So at that time, I did not have  
25 experience with creating such a document, so we

1 relied on the expert advice from a delivery  
2 perspective. And Joe North created this document  
3 in consultation with Roger Schmidt at that time  
4 back in 2017.

5 Subsequent to that as we get to 2019,  
6 then OC Transpo had a different subject matter  
7 expert, who was assisting with operational  
8 readiness on OC's side. That person was called  
9 Russell Davies. And he was brought in to help the  
10 OC team with preparing for trial running.

11 He reviewed this document and he  
12 suggested changes to this document. That was  
13 discussed at the meetings with the trial running  
14 team, which included Matthew Slade, who was not  
15 part of the time from OLRT-C back in 2017; he was a  
16 new member of the team. So it was an agreement  
17 between the overall team, but really at the  
18 initiation of Russell Davis and Matt Slade.

19 So there was a change. There was a  
20 review to the criteria based on the input from the  
21 new people who were involved in the project, both  
22 from OC's perspective and also from RTG's  
23 perspective.

24 KATE McGRANN: And who at the City  
25 ultimately made the decision to change the criteria

1 and proceed with altered criteria?

2 RICHARD HOLDER: So there would have  
3 been a number of people who would have been  
4 accepting of that change, so one of them was  
5 myself; I was a member of the team. And Troy  
6 Charter who was also a member of the trial running  
7 team. He would have been accepting of that  
8 process.

9 We have Pat Scrimgeour, who was  
10 Director of Planning, he was involved in the team,  
11 he would have been accepting of that process.

12 So from a delivery perspective, I was  
13 taking that responsibility to accept that change,  
14 and from an operations perspective it would have  
15 been Troy and Pat.

16 KATE McGRANN: One question about this  
17 document for now. I'm going to take you to page 4.  
18 Under the heading "Checklist Prior to Entering Into  
19 Trial Running" it notes:

20 "The City and RTG have  
21 developed a list of activities from  
22 the PA -- Project Agreement -- that  
23 must be completed and documented  
24 prior to beginning the trial running  
25 period. These are defined in the

1 Integrated Close Out Chart."

2 Would those activities have formed part  
3 of the testing and commissioning process or is that  
4 referring to something different?

5 RICHARD HOLDER: It's referring to  
6 something different. And so the Integrated Close  
7 Out Chart was a method of the demonstration that  
8 the PA requirements had been met by RTG.

9 So that was the method that was -- that  
10 had been adopted at that time in 2017.

11 Subsequently, that process was dropped and we  
12 followed the new process of the systems  
13 engineering, systems assurance process, which led  
14 to the close out process for the project so the  
15 language here is aligned with an earlier discussion  
16 of EN50126, Mill Standard -- excuse me.

17 At this time OLRT-C had indicated they  
18 were not going to follow a requirements management  
19 process, that there was a different method that was  
20 going to be followed to demonstrate compliance and  
21 that was the Integrated Close Out Chart.

22 KATE McGRANN: I show you another  
23 document -- I'll hide my screen so you don't have  
24 to watch the process of my pulling it up.

25 So this is a document titled,

1 "Ottawa Light Rail Transit Project, Trial Running  
2 Test Procedure" doc ID OTT3177178.

3 I'm going to scroll down, it's signed  
4 by a number of people, and revision is "Final Rev  
5 02" of the date of July 31, 2019.

6 I've been advised this was the criteria  
7 that was applied at, I believe the outset of trial  
8 running; is that correct?

9 RICHARD HOLDER: I believe that's  
10 correct.

11 KATE McGRANN: A couple of questions  
12 about this document, starting on page 8, just bear  
13 with me while I get us there.

14 So at the top of page 8 there's a note  
15 that says:

16 "Some additional requirements  
17 are also stated in the PA -- Project  
18 Agreement -- but in order to make  
19 the maximum usage of the trial time,  
20 they will not be demonstrated as  
21 part of this trial, rather, they  
22 will be covered by pre-trial running  
23 or demonstrated as appropriate."

24 What is "pre-trial running"?

25 RICHARD HOLDER: So there was a period

1 of the operation of the system that occurred after  
2 the full testing and commissioning period was  
3 completed, where RTG satisfied themselves that the  
4 trial running would be successful.

5 So before entering into the trial  
6 running period, they wanted to run the trains at  
7 the headways and the travel times as laid out in  
8 the Project Agreement and satisfy themselves that  
9 everything was running in accordance with the  
10 Project Agreement and with the service plan prior  
11 to trial running.

12 KATE McGRANN: And is there a document  
13 that sets out which of the PA requirements were  
14 dealt with by way of pre-trial running?

15 RICHARD HOLDER: I don't believe there  
16 is a separate document. But what this is referring  
17 to is the demonstration by RTG that the system has  
18 been designed to accommodate various degraded modes  
19 of operation and incidents that may occur on the  
20 line.

21 So it was one of the concerns around  
22 the way that the Project Agreement had been  
23 written, and the requirement for trial running.  
24 The requirement for trial running included a  
25 demonstration that degraded modes had to be

1 demonstrated as part of trial running.

2           So what that meant was, that took time  
3 away from what we considered was already a minimal  
4 amount of time. If we were doing tests on what  
5 happens when a switch breaks down? What happens if  
6 the tunnel ventilation system is not working? What  
7 happens when we recover a vehicle? To undertake  
8 those tests within the 12 days, means that we were  
9 left with a shorter amount of time to determine  
10 could the system sustain normal operations over the  
11 12 days?

12           So it was determined quite early on,  
13 that those requirements of the PA -- so that's what  
14 that's referring to when it says "additional  
15 requirements" -- that we would do those either  
16 prior, or post trial running.

17           So as demonstrated as appropriate, at  
18 this time, so in July 2019, there was a new  
19 understanding of how the system would go into  
20 service as compared to 2017.

21           So the way that the Project Agreement  
22 is written, it's very clear that revenue service  
23 availability is immediately followed by passenger  
24 service. And so that was always the expectation.

25           However, in the lead up to the

1 July-August 2019 rail activation period, a decision  
2 was made by the general manager, that there would  
3 be a separation between revenue service  
4 availability and actual passenger service. And  
5 during that period, there was an opportunity to  
6 undertake a number of exercises that would allow  
7 familiarization of the whole system by all of  
8 OC staff.

9 So there was a change in the -- there  
10 was a change in the way that the system was to be  
11 starting up.

12 KATE McGRANN: And, sorry --

13 RICHARD HOLDER: Sorry, go ahead.

14 KATE McGRANN: I didn't mean to cut you  
15 off.

16 RICHARD HOLDER: Yeah, sorry.

17 So I was just going to finish off,  
18 reiterating that the 12-day trial running period,  
19 was felt to be quite short, and we wanted to make  
20 sure that we maximized those 12 days with regular  
21 operational running.

22 KATE McGRANN: I didn't catch the role  
23 of the person who made the decision that the  
24 approach to revenue service would be different than  
25 originally envisioned; who was that?

1 RICHARD HOLDER: That would be the  
2 general manager of OC Transpo, John Manconi.

3 KATE McGRANN: And do you know at what  
4 point in time he made that decision?

5 RICHARD HOLDER: I don't know  
6 precisely. That would be something we would have  
7 to check.

8 KATE McGRANN: And is that information  
9 that you would be able to find easily if you were  
10 looking for it?

11 RICHARD HOLDER: I think so.

12 U/T KATE McGRANN: And then I will ask you  
13 to go and take a look for that.

14 So the pre-trial running that's  
15 envisioned in this paragraph, was it scored? Was  
16 it evaluated?

17 RICHARD HOLDER: No. There was no  
18 criteria for pre-trial running.

19 KATE McGRANN: And the demonstrations,  
20 which I take it are different than pre-trial  
21 running; is that right?

22 RICHARD HOLDER: It's different to  
23 pre-trial running, correct.

24 KATE McGRANN: Were the demonstrations  
25 evaluated or scored? Was any assessment made of

1 whether they were successful?

2 RICHARD HOLDER: I believe they were.  
3 But I would have to check with OC Transpo, because  
4 they conducted those exercises.

5 KATE McGRANN: And is it that those  
6 exercises were conducted post trial running, but  
7 before the opening of revenue service?

8 RICHARD HOLDER: They were conducted  
9 post revenue service availability.

10 KATE McGRANN: Okay. Before revenue  
11 service started, though?

12 RICHARD HOLDER: Correct. Before  
13 passenger service. So we provide the separations,  
14 because there are so many different names and  
15 milestones.

16 So we separate revenue service  
17 availability, which was the contractual requirement  
18 of RTG. We separate that from the passenger  
19 service, which is a discretionary start date of  
20 OC and the City, as to when we actually open up the  
21 system passengers.

22 KATE McGRANN: Okay. At some point I  
23 believe elements of RFI-O-226 are introduced into  
24 their criteria for trial running; is that correct?

25 RICHARD HOLDER: That's correct.

1 KATE McGRANN: Why did that happen?

2 RICHARD HOLDER: I don't know exactly.

3 I can explain the process that the trial running  
4 team followed on a daily basis.

5 We received information from a working  
6 group that met prior to our meeting. They, the  
7 working group, reviewed the information coming back  
8 from IMIRS; they reviewed the information coming  
9 back from the vehicle mileage reporting system;  
10 they provided all the metrics to the trial running  
11 team, we made our adjudication of whether the  
12 various criteria had passed or failed. We made the  
13 determination of whether a day had passed, or  
14 required repeat, or required complete restart. But  
15 then we made that recommendation to senior  
16 management, so that was -- the daily report was  
17 sent on to John Manconi and to Michael Morgan, and  
18 then that senior management group made decisions  
19 about what would potentially occur for the next  
20 day.

21 And so during the trial running period,  
22 we were informed, the trial running team was  
23 informed that there would be a change to the  
24 criteria, and that we would be reverting to the  
25 criteria that was set back in 2017.

1 KATE McGRANN: Who informed you?

2 RICHARD HOLDER: I believe when the  
3 team met, there was corroboration from Troy Charter  
4 on the City side, and from Peter Lauch on RTG's  
5 side.

6 KATE McGRANN: Corroboration of what?

7 RICHARD HOLDER: Of that information.

8 KATE McGRANN: That the --

9 RICHARD HOLDER: Yea, so Troy Charter  
10 indicated he had been informed by John Manconi that  
11 there was a change. And Peter Lauch confirmed that  
12 he had agreed that change with John Manconi. So  
13 the two parties had made that agreement.

14 KATE McGRANN: Was there any input  
15 sought from any member of the trial running review  
16 team in advance of that change being agreed to that  
17 you are aware of?

18 RICHARD HOLDER: Not that I'm aware of.

19 KATE MC GRANN: Did you have any  
20 concerns about the change to the trial running  
21 criteria in terms of -- well, any concerns at all?

22 RICHARD HOLDER: My concern was that we  
23 adequately and accurately report in the daily  
24 record sheets that that change had been made. And  
25 that that change would be, you know, recorded once

1 the summary of trial running was provided at the  
2 end of trial running.

3 But in terms of concerns about the  
4 change in criteria, I didn't have -- I didn't have  
5 too many concerns. The criteria that was created  
6 in 2017, was already more onerous than was  
7 contemplated in the Project Agreement.

8 So the Project Agreement contemplated  
9 that during those 12 days, some of that time would  
10 be allocated to regular operations of the system,  
11 but some of that time would also be allocated to  
12 degraded modes of operation.

13 So there was a possibility, if we split  
14 that time half and half, that we could only -- we  
15 only maybe had six days of regular operations  
16 demonstrated. What we ended up with in the 2017  
17 criteria was 9 of the 12 days. So we're looking at  
18 12 days, but we're looking at a daily pass rate  
19 achieved for 9 of those days, and an average  
20 achieved over the 12 days of the 96 percent.

21 So that was the original criteria.  
22 That was originally set by, you know, somebody who  
23 had a lot of experience with rail startups. It had  
24 been agreed previously. It was felt that that  
25 was -- it was a reasonable interpretation of the

1 intent of the Project Agreement, because the  
2 Project Agreement is not specific, but it was  
3 considered to be more onerous than could  
4 potentially have been argued by RTG.

5           They could have potentially come back  
6 and said, "well, we don't need to meet those  
7 requirements that you're setting. We don't need to  
8 meet the 9 of the 12, and we don't need to meet the  
9 96 percent; where does it say that in the Project  
10 Agreement? It doesn't."

11           So we were quite satisfied with the  
12 2017. When we moved to the 2019 version, that is  
13 agreed between new members to the team, it's --  
14 there was a feeling that, "okay, well, they're  
15 really setting the bar extremely high now for the  
16 demonstration of this system".

17           And certainly, way higher than had  
18 previously been considered to be acceptable. But  
19 the City was not going to necessarily argue about  
20 that higher level of expectation that had been set  
21 by RTG.

22           So subsequently when they were -- when  
23 there was -- so I am not aware of the discussion  
24 that occurred between RTG. And so being specific,  
25 I am not aware of the nature of the discussion

1 between Peter Lauch and John Manconi and others at  
2 the senior management level. But the explanation  
3 that, you know, the City's expectation about the  
4 adequate demonstration of trial running, I felt  
5 that explanation was reasonable.

6 I think it's -- you know, as it has  
7 played out, or as it played out, the City -- the  
8 team, the team was very, always throughout many  
9 years of the delivery of the project, the team was  
10 very focused on meeting the requirements of the  
11 Project Agreement, which was being fair to the City  
12 and being fair to the contractor.

13 And the language of the Project  
14 Agreement sometimes was very clear, sometimes it  
15 was not so clear. And in those cases where the  
16 Project Agreement language was not so clear, it  
17 brought in the opportunity for one of the partners  
18 to maybe exploit the lack of clarity. And that  
19 could occur on RTG's side, but it could also occur  
20 on the City's side, where the City asking or maybe  
21 expecting more than really was allowed for in the  
22 Project Agreement.

23 At that time in the project, so in that  
24 period from the expected revenue service  
25 availability in the middle of 2018 to August 2019,

1 there were many challenges on both sides with the  
2 changing dates, with getting ready for revenue  
3 service availability. There were also commercial  
4 challenges.

5 So there were a number of disputes that  
6 were in place, the approach of RTG had become quite  
7 litigious over that time. And so in addition to  
8 managing the delivery of the project, the  
9 management team at O-Train Construction was also  
10 managing a number of disputes.

11 So we were very, very sensitive to a  
12 perception that the City was taking opportunity  
13 with unclear language and exploiting that at the  
14 expense of RTG.

15 So we didn't want to be in a position,  
16 for instance, delaying the passing of trial running  
17 with what could be considered, in hindsight,  
18 arbitrary criteria, delaying the opening of the  
19 system, and delaying payment to RTG of their -- of  
20 the payment that they were due at revenue service  
21 availability. So that was something that the  
22 management team was aware of and was considering  
23 throughout the process of trial running.

24 In addition to that consideration, of  
25 course, there was a consideration of, is the system

1 ready for service? You know, the overarching concern  
2 is, is the City going to get value for money? Is  
3 passenger service going to meet the expectations?

4 And that was the balance through the  
5 trial running period of not being overly  
6 restrictive with the criteria, nor being -- nor  
7 providing relief to RTG.

8 And so in terms of the question: Was I  
9 concerned about the change? Then I was not  
10 concerned about the change. As long as it was  
11 adequately reported.

12 And I think consequently, although we  
13 didn't know it at the time, although it was an  
14 expectation, that we would have a period of the  
15 City having full access to the system prior to  
16 passengers. That occurred, without major issue,  
17 and then we had several months where the system  
18 ran, meeting the requirements of the City of  
19 98 and a half percent availability.

20 And so I think that the decision was  
21 borne out, with the way that the system operated in  
22 the first few months that we went into passenger  
23 service, that it was ready.

24 We had trains running for several  
25 years, you know, the major systems had been

1 operating for a number of years. There were  
2 aspects of the system that were only available very  
3 late in the day, such as the tunnel ventilation  
4 system, but they had been proven to be functional.

5 So we did not -- you know, speaking  
6 from my perspective at that time, it was felt that  
7 the requirements of trial running were meeting the  
8 intent of the Project Agreement.

9 KATE McGRANN: The risk that you  
10 identified and RTG objecting to the new criteria  
11 that was used at the outset of trial running, was  
12 the City cognizant of that risk when it agreed to  
13 introduce the new criteria; do you know?

14 RICHARD HOLDER: I don't know.

15 KATE McGRANN: Do you remember when  
16 that risk was first identified?

17 RICHARD HOLDER: I don't know that it  
18 was identified, like on the risk registry, for  
19 instance. The City had a risk registry, I don't  
20 know that it was identified there.

21 This understanding of the contractual  
22 arrangement with RTG was understood throughout the  
23 whole project and surfaced at various stages in the  
24 project.

25 It surfaced during the Schedule 10

1 submission process, where RTG submitted designs and  
2 then the City would provide responses and sometimes  
3 the responses could be considered to be  
4 preferential, and we were asking for more than what  
5 was allowed for in the Project Agreement. And RTG  
6 would object, and we would back away.

7           So it was a -- it was always there as  
8 an issue -- and I can't say from the outset, I  
9 guess, because I only really started in 2015. But  
10 that kind of commercial struggle, the contractual  
11 struggle, I think was always there and could only  
12 be expected to be there until the very end, because  
13 that's the nature of the contract.

14           KATE McGRANN: The contractual struggle  
15 as you've identified it, specifically as it relates  
16 to the trial running test procedure; do you  
17 remember when that was first identified? And I  
18 don't mean put on a risk register.

19           I mean, identified and discussed on the  
20 City side. When did the City first realize that  
21 that risk had application to the trial running test  
22 procedure that had been used from the start of  
23 trial running?

24           RICHARD HOLDER: I don't know. I don't  
25 know that there was a specific day when that was --

1 or a specific time. I would have to review that.  
2 I would have to go back to documentation.

3 KATE McGRANN: And do you have a  
4 specific documentation in mind that you would go  
5 look at to figure that out?

6 RICHARD HOLDER: No, I don't.

7 U/T KATE McGRANN: Okay. To the extent  
8 that you're able to identify when that issue first  
9 surfaced with respect to trial running, I would  
10 appreciate it. And we can follow up with your  
11 Counsel in that respect.

12 I'm not done with my questions yet, but  
13 I see that we are ten minutes past time. Thank you  
14 for your patience in sitting past the scheduled  
15 time. If I need to schedule more time with you,  
16 then I will be in touch with Mr. Wardle and we will  
17 do it that way.

18 Before we shut down for today,  
19 Mr. Wardle, are there any follow-up questions that  
20 you wanted to ask in respect of what's been  
21 discussed today?

22 PETER WARDLE: I don't, thank you.

23 KATE McGRANN: Okay. Thanks very much.

24 We can go off the record.

25 -- Adjourned at 5:10 p.m.

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REPORTER'S CERTIFICATE

I, JUDITH M. CAPUTO, RPR, CSR, CRR,  
Certified Shorthand Reporter, certify;

That the foregoing proceedings were  
taken before me at the time and place therein set  
forth; at which time the interviewee was put under  
oath by me;

That the statements of the presenters  
and all comments made at the time of the meeting  
were recorded stenographically by me;

That the foregoing is a Certified  
Transcript of my shorthand notes so taken.

Dated this 27th day of April, 2022.



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NEESONS, A VERITEXT COMPANY

PER: JUDITH M. CAPUTO, RPR, CSR, CRR

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