

Ottawa Light Rail Commission

Richard Holder
on Thursday, May 19, 2022



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OTTAWA LIGHT RAIL COMMISSION
CITY OF OTTAWA - RICHARD HOLDER
MAY 19, 2022

--- Held via Zoom Videoconferencing, with all
participants attending remotely, on the 19th day of
May, 2022, 9:00 a.m. to 12:04 p.m.

1 COMMISSION COUNSEL:

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3 Kate McGrann, Co-Lead Counsel Member

4 Mark Coombes, Litigation Counsel Member

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6
7 PARTICIPANTS:

8
9 Richard Holder, City of Ottawa

10 Jesse Garner & Peter Wardle, Singleton Urquhart

11 Reynolds Vogel LLP

12
13
14 ALSO PRESENT:

15
16 Joanne Lawrence, Stenographer/Transcriptionist

17 Benjamin Bilgen, Virtual Technician

1 -- Upon commencing at 9:00 a.m.

2 KATE MCGRANN: When we left off,
3 Mr. Holder, we had been discussing the trial
4 running of the system, and in your evidence on the
5 last day, you had mentioned that in the early days
6 of trial running, there was an aggressive approach
7 to identifying some of the system elements that
8 weren't functioning. Do you recall mentioning
9 that?

10 RICHARD HOLDER: I recall the
11 conversation. I would like to -- I understand what
12 it was that I was trying to convey. The language
13 that you've just used is a little different to the
14 way I was trying to convey that situation, if I
15 might be allowed to explain.

16 KATE MCGRANN: Of course. I was going
17 to say when we had left off on that conversation,
18 you had said that you needed to explain a little
19 bit more about trial running and how information
20 got into the TOCC, so I wondered if we can pick up
21 that topic and start there.

22 RICHARD HOLDER: The -- at that time,
23 at the start of trial running, the City had
24 developed a team which was called the FOB team, the
25 field observation team -- so, sorry, FOT, and the

1 field observation team was made up of dozens of
2 engineers, project managers, and support staff,
3 both from the rail office and from OC Transpo, and
4 their role was to behave like a surrogate commuter
5 system.

6 So that team travelled on the trains
7 during trial running, boarded the trains, alighted
8 the trains, used the elevators and escalators. At
9 times they would press emergency telephone buttons,
10 they would use the call functions within the
11 elevators, and as much as possible interact with
12 the TOCC as if the system was operating under
13 passenger loading on a normal commuter day. So
14 that explains the role of the field observation
15 team.

16 We had several practice runs before
17 trial running. We had a well-developed system such
18 that we -- as I recall, we had two shifts of the
19 field observation team, one that started first
20 thing in the morning and worked until around noon
21 and then another shift that came in around noon and
22 worked until around 8 or 9:00 in the evening to
23 cover the full period of the trial running.

24 In the early days, the field
25 observation team that -- were quite aggressive

1 about the number of times that they activated
2 emergency telephones and the call function within
3 the elevators. I believe I had used the word
4 "aggressively" previously, and I think your initial
5 question -- or your recollection of my statement
6 previously was that they were aggressively
7 reporting failures or degraded modes or faults of
8 the system. If that's how I characterized things
9 in the past, I think that was a mistake. So when I
10 say that the team was aggressive, what I mean is
11 that they were -- they used the emergency
12 telephones and the call help functions several
13 times a day at several stations.

14 These calls were made to the TOCC and
15 were either responded to by the special constables
16 unit or by the controller within the TOCC. The
17 feedback that we received from the TOCC was that
18 they were feeling somewhat overwhelmed by the
19 number of calls that were coming in from each of
20 the stations, a number of calls that are coming in
21 during the day that were not necessarily
22 identifying any faults or identifying any degraded
23 modes. The calls that were coming in were calls
24 from our field observation team just to check that
25 the telephone itself was functional and that the

1 CCTV-integrated system was functioning properly.

2 After receiving the feedback from the
3 TOCC, we asked the field -- we asked the field
4 observation team if they could reduce the amount of
5 calls that they were making from the emergency
6 telephones and from the call function within the
7 elevators. This -- the decision to do that was
8 made also on the basis of a quick analysis of the
9 system that was in operation within the bus
10 service. The OC Transpo bus service has larger
11 transfer stations as well as smaller stations that
12 also offer emergency telephones, and when we
13 checked the number of times that those emergency
14 telephones were actually functioning in real life
15 by the passengers using the system, it was only one
16 or two times per week. We felt that the field
17 observation team activating these call buttons
18 multiple times each day was not a fair
19 representation of how the system was going to
20 function in real life, and so we asked the field
21 observation team to scale back their use of
22 those -- of those particular devices. And the
23 request was very specific to the emergency
24 telephone at the platforms and the call function
25 within the elevators.

1 There was also discussion with the
2 field observation team about the use of the call
3 function within each of the trains, and it was
4 decided early on in the trial running, as I recall,
5 that we would not be activating those call
6 functions within the train because it was
7 considered that that would significantly impact the
8 overall objectives of the trial running, as an
9 operator would be distracted by the call function,
10 correctly; they would have to respond to that call;
11 and this would inevitably impact the operations of
12 the system adversely.

13 KATE MCGRANN: The TOCC is operated by
14 OC Transpo; is that right?

15 RICHARD HOLDER: That's correct.

16 KATE MCGRANN: And were you getting
17 feedback in terms of the early days where the
18 numerous calls or the multiple calls are being made
19 from different stations in the same day and things
20 like that? You got feedback from TOCC. Were you
21 also receiving feedback from RTM through RTG?

22 RICHARD HOLDER: Yes.

23 KATE MCGRANN: Okay. And can you speak
24 a little bit about that.

25 RICHARD HOLDER: So the feedback was

1 received in a number of ways. There was a daily
2 meeting with the field observation team supervisor
3 that was running the logistics of the field
4 observation work. During those early meetings, we
5 understood that the teams in the field were
6 receiving feedback from the TOCC as part of their
7 call-ins.

8 We also had, during that period,
9 meetings with OC and RTM and RTG around other
10 issues, not necessarily the trial running but other
11 issues, and so during those meetings, you know,
12 informally we were hearing this feedback that the
13 field observation teams were creating additional
14 workload for the TOCC.

15 We also had the trial running review
16 meetings every day during trial running.
17 Frequently there would be discussions before the
18 official meeting and after the official meeting.
19 We had RTM, OC, OLRTC, and rail delivery
20 representatives at that meeting, and we would also
21 hear feedback around this same issue, that both
22 TOCC and subsequently RTM support and response
23 staff were feeling overwhelmed by the number of
24 calls coming in, particularly associated with the
25 call function and the emergency telephone.

1 KATE MCGRANN: And do you recall
2 approximately when the calling activity was scaled
3 back?

4 RICHARD HOLDER: It would have been in
5 the first few days. I can't remember exactly the
6 date.

7 KATE MCGRANN: And other than the
8 scaling back of the calling functions that you've
9 described, were any other changes made to the work
10 of the field observation team at any point during
11 trial running?

12 RICHARD HOLDER: Not that I can
13 remember in a significant way. There were
14 logistical arrangements that were changed, but in
15 terms of the reporting of their work, I believe
16 that the record -- there was no change to the
17 record sheets, and there was no change to the
18 summary information that was brought forward.

19 KATE MCGRANN: Other than simulating
20 passenger behaviour, what the system would -- the
21 pressures on the system in regular revenue service,
22 were the field observation teams keeping notes of
23 what they were experiencing? Was anything done to
24 collect their observations from the day and learn
25 anything from that?

1 RICHARD HOLDER: So they were keeping
2 records, and when there were observations around
3 defective items, defective devices, deficiencies
4 within the system, then they were recorded, and
5 they were brought forward, and that was used as a
6 means of validating information that was brought
7 forward during the trial running meetings. Part of
8 the trial running scorecards included an assessment
9 of the maintenance preparedness by RTM, and that
10 included a detailed review of a randomly selected
11 number of work orders. So we were able to use the
12 information from the field observation team as a
13 little bit of a crosscheck against what we were
14 hearing through the official reporting during the
15 trial running meetings.

16 KATE MCGRANN: And generally were
17 those -- what was the result of that crosschecking
18 activity? Were you finding that the reports that
19 you were receiving officially were corroborated by
20 what the field observation team was seeing?

21 RICHARD HOLDER: As much as could be
22 done at the meeting, then I would say that there
23 was corroboration.

24 KATE MCGRANN: Okay. And then to put
25 it differently, did you -- were there any concerns

1 formed based on what you were hearing from the
2 field observation team when it was held up against
3 the official reports that were being generated from
4 trial running?

5 RICHARD HOLDER: There were not
6 significant concerns that impacted the results of
7 the trial running. There were deficiencies that
8 were brought forward by the field observation team
9 that had not previously been identified during
10 testing and commissioning. These were -- a number
11 of deficiencies and anomalies were identified with
12 the functioning of the elevators, and specifically
13 the audible announcement that was provided on the
14 elevator as the elevator moved up and down, the
15 indicator lights on the outside of the elevator
16 shaft to indicate which direction the elevator
17 would move in, and the functioning of the air
18 conditioning units within the elevators. There
19 were issues that were brought forward related to
20 those items that had not previously been
21 identified, so those were brought forward and added
22 to the deficiency list and brought forward with RTM
23 and OLRTC for rectification.

24 KATE MCGRANN: Other than the new
25 issues identified with the elevators, any other

1 deficiencies or issued identified by the field
2 observation team during the trial running period
3 that hadn't previously been identified?

4 RICHARD HOLDER: There probably were
5 others, but what I can -- what I can recall is that
6 the deficiencies that caused the most response,
7 both from the delivery team and subsequently OLRTC
8 and RTM, were related to the elevators. I can
9 recall that there were issues around standing water
10 on some platforms, scuffed paint, somewhat cosmetic
11 deficiencies that we considered to be quite minor
12 in the overall scheme of the running of the system.

13 KATE MCGRANN: A couple of questions
14 about the evaluation of the maintenance component
15 of the system during trial running. So in order to
16 walk through those questions, I'm going to take you
17 back to OTT377178, which is the trial running test
18 procedure. And we're going to go over to page 6 of
19 this document. I'll see if I can make it bigger.

20 So I'm looking at Section 3.5 of this
21 document entitled "responsibility matrix," and in
22 the second box in this table, stakeholders, "RTM,
23 including Alstom maintenance," the question that I
24 have is can you explain to me what's included in
25 the operating the YCC bracket help desk slash work

1 orders?

2 RICHARD HOLDER: The YCC is the yard
3 control centre that was based at RTM's facility on
4 Belfast Road. There were a number of functions
5 that were run out of the YCC. The YCC also served
6 as a backup Transit Operations Control Centre
7 should there be any issues with the TOCC, therefore
8 the YCC had a very important role in the
9 functioning of the system.

10 One of the components was the
11 interaction with the IMIRS program which I had
12 talked about previously. The IMIRS program
13 included the requirement for RTM to have people on
14 a help desk that would respond to calls from the
15 TOCC.

16 So the way that the interaction
17 occurred between the TOCC and RTM was that if a
18 deficiency, if a problem, was viewed within the
19 system - a defective camera, a door that was not
20 working properly - then a control room operator
21 would use the help desk to call that deficiency
22 through to the help desk at RTM. The personnel --
23 the maintenance personnel working for RTM would
24 then create a work order based on that call for
25 assistance, and then it was RTM's responsibility to

1 follow the flow of that work order from reception,
2 from creating a request for maintenance teams to
3 respond in the field to receiving a response from
4 the field that work had been completed and
5 ultimately closing that work order. That was all
6 the function of the help desk as part of the IMIRS
7 system.

8 KATE MCGRANN: And then if we scroll
9 down to the next box, we've got OC Transpo, and
10 then what I wanted to ask you about here is the
11 entry "operate the help desk." So I think you
12 explained a little bit of that, but if you can just
13 help me understand how this help desk and the help
14 desk under the RTM responsibility worked together,
15 that would be useful.

16 RICHARD HOLDER: I would agree that the
17 language there is somewhat confusing. The help
18 desk is -- you could consider the help desk as an
19 interface, and on one side we had the client, OC
20 Transpo, that had an operator that was responsible
21 for making requests through the help desk. So in
22 terms of that particular line there, the definition
23 of "operate the help desk" would be to provide
24 staff that would make requests through the help
25 desk to RTM. On the other side of the interface of

1 the help desk was RTM that was responsible for
2 responding to the requests for maintenance or
3 rectification of a defect.

4 KATE MCGRANN: And at any point in time
5 during trial running or revenue service, was there
6 any change in who was responsible for the operation
7 of the help desk that you've just described?

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

9 KATE MCGRANN: The field observation
10 team that you've described to us and the work that
11 they were doing testing the various elements of the
12 system, following the public launch of revenue
13 service, did anybody continue on behalf of OC
14 Transpo or the City to test the elements of the
15 system when the system was open?

16 RICHARD HOLDER: From the delivery
17 office, from the rail office, then there were no
18 longer staff involved in the works of the field
19 observation team. And I would like to restate the
20 purpose of the field observation team: We were
21 careful when we selected the naming of that team to
22 make it clear that they were making observations in
23 the field and that they were not testing.

24 KATE MCGRANN: Okay.

25 RICHARD HOLDER: The testing -- the

1 testing of the devices, the testing and
2 commissioning period had finished at that time. We
3 had already provided confirmation that substantial
4 completion had been achieved and that the
5 performance of the testing and commissioning period
6 had been achieved. We were now in the final steps
7 before we moved into revenue service. The field
8 observation team was an entity that was not
9 included in the project agreement, but it was felt
10 that for the trial running to truly replicate not
11 just the functioning of the trains but also the
12 functioning of all the systems within all the
13 stations, then it would be necessary to have such a
14 team that would act as the passengers and commuters
15 making use of the various systems.

16 KATE MCGRANN: Okay. And when you say
17 it was felt that that was -- that activity was
18 necessary, who was it felt by? Who thought the
19 field observation team was necessary?

20 RICHARD HOLDER: Me, particularly. I
21 had not heard that such a team had been created on
22 other transit systems. There was lots of
23 discussions, obviously, between myself and other
24 members of our staff, and we developed the field
25 observation team very shortly before the trial

1 running began, maybe within the last couple of
2 months that that field observation team entity was
3 created.

4 KATE MCGRANN: Did RTG -- was RTG asked
5 about what their view was on the field observation
6 team before that team was implemented?

7 RICHARD HOLDER: My recollection was
8 that the City put it to RTG and RTM that this was
9 an exercise that the City wanted to put in place.
10 We explained how it would work. We explained that
11 it was not a continuation of the testing period,
12 that it was an observation team only. We -- I
13 don't believe we formally asked for input into the
14 documentation; however, RTM and RTG representatives
15 were invited to the various training sessions that
16 we set up for the dozens and dozens of field staff
17 that were required for the field observation team.

18 I recall that we had representation
19 from Tom Pate, who was working with RTM; from Peter
20 Lauch, who was the head of RTG. I believe Roger
21 Schmidt was present from OLRTC and a number of
22 members from the design build team were present as
23 we explained how that whole exercise would roll
24 out. And broadly speaking, they were supportive,
25 and they felt it was a good idea, but from my

1 perspective, their -- the assent of RTG was not
2 required for the City to undertake this exercise.
3 I felt strongly that this was going to be a very
4 useful function and of great benefit for the City
5 to understand how the system would really react and
6 respond with this surrogate passenger team.

7 KATE MCGRANN: Moving into revenue
8 service, so after the public launch, was there
9 anybody from the City who was moving through the
10 system and engaging with the system in order to
11 observe the maintenance response?

12 RICHARD HOLDER: I can talk from a
13 slightly remote position because, at that time, I
14 was not involved in managing any of the teams that
15 were involved in the oversight of the operations
16 and in the oversight of the maintenance. What I
17 know is that there were many members of staff from
18 OC who were present on the platforms in the first
19 several weeks of revenue service availability to
20 provide assistance to passengers who were -- who
21 were, you know, new to the system, and it was
22 expected that people would need help with the
23 ticket machines, navigating through the stations,
24 understanding which platform to get on trains.
25 Those staff were specifically passenger focussed.

1 I know that there was also a team that
2 were more back-of-house focussed, so "back of
3 house" being all those communications rooms and
4 equipment rooms, tunnel ventilation rooms that are
5 not open to the public. My understanding is that
6 there was a team from OC that was travelling
7 through the system and checking on the work that
8 RTM was undertaking at that time and also
9 familiarizing themselves with the system, but I
10 cannot speak to the number of people or the
11 frequency of their visits.

12 KATE MCGRANN: The observations that
13 the field observation team made during maintenance,
14 to the extent that they identified any
15 deficiencies, degraded conditions, other issues,
16 would those all have been captured by -- captured
17 in the deficiencies list?

18 RICHARD HOLDER: Observations related
19 to maintenance deficiencies would have been brought
20 forward onto the deficiency list, correct.

21 KATE MCGRANN: And if they observed any
22 other deficiencies with the system, where would
23 those observations have been captured?

24 RICHARD HOLDER: They would have been
25 captured through the help desk function.

1 KATE MCGRANN: And the idea is that --
2 go ahead.

3 RICHARD HOLDER: Can I -- I feel like I
4 need to expand on the work of the field observation
5 team or the results of the work of the field
6 observation team. The field observation team were
7 bringing forward items that they were seeing within
8 the field that they felt were inconsistencies or
9 deficiencies. They would be brought forward to the
10 Transit Operations Control Centre, and then the
11 Transit Operations Control Centre, through the help
12 desk, would make requests through the help desk to
13 RTM for attention to those -- those deficiencies or
14 defects or issues.

15 In that period of trial running, items
16 that were recorded that had previously been on a
17 deficiency list were maintained on the deficiency
18 list. New items that were observed sometimes --
19 well, sorry, always became a work order item. They
20 may or may not have been added to the deficiency
21 list, depending on the severity of the issue and
22 the speed with which that deficiency was addressed
23 in, was rectified by...

24 KATE MCGRANN: And can you speak to the
25 number and nature of retrofits outstanding for the

1 vehicles at the end of trial running?

2 RICHARD HOLDER: I was aware that there
3 were a number of retrofits that were still
4 outstanding on the vehicles. The delivery team and
5 OC Transpo had been tracking several key retrofits
6 for many, many months, possibly over 1 year, over
7 18 months, and so it was known that as we went into
8 revenue service, there were still retrofits that
9 were outstanding.

10 KATE MCGRANN: And how were the needs
11 for the retrofits accounted for in operations and
12 maintenance? And what I'm trying to get at is was
13 it the case that there were accommodations that
14 could be made in the approach to operations and
15 maintenance that would account for the retrofit
16 until it was implemented?

17 RICHARD HOLDER: The simple answer
18 would be to say yes, but of course it's very
19 complicated, and it would really be necessary to go
20 through each individual retrofit to be able to give
21 a more accurate picture. The summary position from
22 the City and from Alstom and from RTG and from RTM
23 and from the independent certifier was that
24 although retrofits existed, they did not detract
25 from the city's enjoyment, of the city, for the

1 full use of the system. And we had involved many
2 experts, many fleet experts with many, many decades
3 of experience of dealing with fleets all around
4 North America and around the world, and the general
5 position was that these kinds of programs of
6 retrofits were certainly not unusual for fleets of
7 this kind.

8 KATE MCGRANN: You mentioned the
9 independent certifier as a party that was weighing
10 in on this. Did you understand the independent
11 certifier's role to be -- to involve anything more
12 than certifying that whatever had been agreed to
13 between the City and RTG had been met or fulfilled?

14 RICHARD HOLDER: I believe the role of
15 the independent certifier was much broader than
16 that. There were -- there was very much a focus of
17 the independent certifier's engagement at the time
18 of substantial completion, at the time of the
19 completion of testing and commissioning, during the
20 acceptance of each of the vehicles, and during
21 trial running.

22 It is true that they were very much
23 involved and engaged and part of all the team
24 meetings at that time; however, their role was
25 bigger in that they were also there to deal with

1 disputes between the parties. They were there to
2 certify payments from the City to RTG on the basis
3 of the milestones, which were laid out in the
4 project agreement. They were on site regularly.
5 They participated in many of the meetings
6 throughout the whole project, but certainly within
7 the last few years of the project, as the need to
8 verify and validate documentation became more and
9 more important as part of the closeout of the
10 project, then the independent certifier's team --
11 their presence became more felt, especially around
12 the validation piece for requirements management,
13 where the independent certifier plus the City's
14 team were involved in validating documentation that
15 the design builder was putting forward as evidence
16 that requirements were being met.

17 KATE MCGRANN: So where there is no
18 dispute between the City and RTG as to requirement
19 has been met, what is the role of the independent
20 certifier there?

21 RICHARD HOLDER: To provide an opinion
22 on whether they agreed with the City or RTG on
23 whether that requirement had been met. So it could
24 be the case that RTG and the City agreed that
25 documentation that was put forward validated a

1 particular requirement, but the independent
2 certifier could have disagreed. I am not aware of
3 that ever occurring, in fact, but that was
4 considered to be their role, that the agreements
5 that were being reached as we moved forward through
6 the process of validating requirements that there
7 was three parties involved: It was the City, it
8 was RTG, and it was the independent certifier.

9 KATE MCGRANN: Was it your
10 understanding that part of the independent
11 certifier's role was to look at any agreements that
12 were made between the City and RTG as against the
13 project agreement and, if the agreement between the
14 City and RTG would alter what was being delivered
15 to the City, to intervene or interfere with that
16 agreement?

17 RICHARD HOLDER: I would agree with
18 that statement. I am trying to think of an example
19 of where that would have occurred. We had a whole
20 process that existed for managing changes to the
21 project agreement, and I can't recall if we've
22 already discussed the Change Control Board and the
23 process involved in making changes to the project
24 agreement, but the independent certifier was made
25 aware of the changes that occurred as part of that

1 variation process, so they were aware of all those
2 changes.

3 In terms of other agreements, I think
4 that the big agreement that was not stated in the
5 PA would have been the introduction of the field
6 observation team, and my recollection is that the
7 independent certifier certainly had no objections
8 to that process and agreed with the purpose and the
9 functioning of that team, but to your proposition
10 that that was one of their roles, I can't think of
11 an example right now.

12 KATE MCGRANN: With respect to the term
13 sheet that the City and RTG entered into around the
14 end of trial running as part of revenue service
15 availability achievement, what was your
16 understanding of the independent certifier's role
17 in evaluating or weighing in on the contents of
18 that term sheet?

19 RICHARD HOLDER: I don't recall
20 specifically how the independent certifier was
21 engaged in that term sheet. I certainly would have
22 expected that they would have seen that term sheet
23 and provided an opinion on the term sheet before it
24 was finally agreed. I am not sure if that
25 happened, though. That's not to say it didn't

1 happen.

2 KATE MCGRANN: The opinion that you
3 would expect them to provide on the term sheet,
4 what question would they be opining on?

5 RICHARD HOLDER: At that stage, at the
6 end of trial running, there were two remaining
7 steps, I recall, between the end of trial running
8 and moving into revenue service availability. So
9 the first step would be agreement between the
10 parties that the trial running objectives had been
11 met, so that would have been a milestone that the
12 independent certifier agreed to.

13 The other element -- the other step
14 that was required was the confirmation from the
15 safety auditor that at the time of revenue service
16 availability all the safety requirements had been
17 met. The independent certifier's role would have
18 been to have received that confirmation, but it was
19 not expected that the independent certifier would
20 have an objection to the position of the
21 independent safety auditor. It was expected that
22 the independent certifier needed to have that
23 confirmation as part of the penultimate step before
24 moving into revenue service availability.

25 I'm describing what I recall of the

1 project agreement steps between trial running and
2 revenue service availability, that the term sheet
3 was not a -- as best to my recollection, it was not
4 a document that was described in the project
5 agreement, but it was felt from the City's
6 side - and I believe that the City received legal
7 advice from its legal counsel at the time - that
8 the issues that were considered to be still
9 outstanding in terms of the delivery of the
10 contract should be confirmed in writing through the
11 mechanism of a term sheet, including potential
12 redress to financial issues. They needed to be
13 captured in a term sheet at the time of revenue
14 service availability.

15 KATE MCGRANN: Okay. And your
16 reference to the safety auditor, was that the
17 independent safety auditor, Sergio Mammoliti from
18 TÜV Rheinland?

19 RICHARD HOLDER: Yes.

20 KATE MCGRANN: And you said that you
21 would have expected the independent certifier to
22 provide an opinion or opine on the term sheet, and
23 my question was what question did you think their
24 opinion would be responding to? Like, what did you
25 expect them to opine on with respect to the term

1 sheet?

2 RICHARD HOLDER: I do not recall making
3 these considerations at the time. I can speak to
4 you now as to what I think they would have opined
5 on, and I believe what they would have opined on
6 was, was there any information in that term sheet
7 that nullified previous revenue service
8 availability requirements, of which there are
9 seven. If the independent certifier had seen
10 information in there that had nullified any of
11 those revenue service availability requirements,
12 then I would have expected them to have stated as
13 such.

14 KATE MCGRANN: When you say "if they
15 saw information that would have nullified revenue
16 service availability requirements," what -- can you
17 just help me understand what you mean by that.

18 RICHARD HOLDER: Revenue service
19 availability was a defined term in the project
20 agreement. One of the requirements of revenue
21 service availability was that seven other
22 requirements had been met, and those seven
23 requirements, if I can recall them, were the
24 completion of the civic works, the substantial
25 completion of the fixed assets, the substantial

1 completion of the rolling stock, the vehicles; it
2 was satisfactory performance of the testing and
3 commissioning period; there was the confirmation at
4 that time that the safety requirements had been
5 met; there was a successful performance of trial
6 running, and I'm assuming there was one other that
7 I can't recall.

8 Each one of those requirements was
9 validated in the months leading up to revenue
10 service availability, and when I say "nullified,"
11 it could have been the case that there was
12 information within the term sheet that had made one
13 of those previous statements about completion --
14 making that inaccurate.

15 So for instance, substantial
16 completion. So substantial completion meant that
17 the system was functioning and had full use and
18 enjoyment by the city. That was the broad
19 definition of substantial completion. There were
20 also more kind of analytical definitions in terms
21 of the Liens Act, 97 percent of the overall value
22 of the fixed assets, so there was a calculation
23 done on the value of the deficiencies that were
24 remaining. So as well as use and enjoyment, there
25 was also a calculation done to substantiate

1 substantial completion.

2 So for instance, if within the term
3 sheet there was work identified as not being
4 completed that exceeded the previous value of minor
5 deficiencies or significantly impaired the city's
6 enjoyment of the use of the system, then that would
7 have nullified the previous substantial completion
8 notice that had been provided, and to the best of
9 my knowledge, that had not occurred, but that would
10 have been something that the independent certifier
11 may have provided an opinion on at that time.

12 KATE MCGRANN: At the end of trial
13 running, what was your view of the readiness of the
14 maintenance team for revenue service?

15 RICHARD HOLDER: My opinion on the
16 readiness of the maintenance team had been formed
17 prior to the start of trial running in the work and
18 in the feedback that was given to me from the
19 subject matter expert who was reviewing the
20 preparedness of RTM.

21 So I had previously stated, I believe,
22 that Parsons had a team that were supporting the
23 City with operational and maintenance matters, and
24 the person who was responsible on the maintenance
25 side was Tom Fodor, who was reviewing documentation

1 provided by RTM and making regular field visits to
2 their maintenance facility and having interviews
3 with the maintenance staff. And Tom Fodor's
4 position was that the organizational structure of
5 the RTM team was sufficient, that their -- the
6 training and the procedures that were in place to
7 deal with maintenance were sufficient, that the
8 availability of spare parts on site, the
9 availability of specific maintenance equipment was
10 sufficient to provide the maintenance services
11 within the project agreement.

12 In terms of any change to that
13 perception, during the trial running period, there
14 was a recognition that there were many items of
15 small deficiencies that were requiring attention
16 from RTM that were additional to the -- what could
17 be considered as routine maintenance for the
18 vehicles, for the track, and for the various
19 systems in support of the light rail system.

20 At that time, there was a merging of
21 activities between the work of the constructor in
22 building the facility and the work of the
23 maintainer in conducting responsive and regular
24 maintenance for the system. Would you like me to
25 expand?

1 KATE MCGRANN: Yeah, could you explain
2 that in a little bit more detail, please.

3 RICHARD HOLDER: OLRTC was the entity
4 that was responsible for the construction, and
5 theoretically, RTM would -- in a perfect world
6 would have stepped in with all the construction
7 fully complete, with all the systems fully working,
8 and there would have been a clean handover from the
9 construction team to the maintenance team, and the
10 maintenance team would have focussed on providing
11 their maintenance tasks.

12 What occurred on the light rail system
13 on the Confederation Line project was that there
14 were deficiencies that were still remaining, as was
15 allowed for in the contract and as is common in
16 construction projects. There were deficiencies
17 that were remaining for somebody to fix, and
18 sometimes that was OLRTC staff, and sometimes it
19 was RTM staff.

20 What the City did not have visibility
21 on was whose resources were being provided for
22 rectifying those deficiencies. It was not
23 something that the City had control of under the
24 contract. There was an expectation that OLRTC
25 would maintain presence on site, maintain staff on

1 site to complete those deficiencies and that RTM
2 would focus on their role of being the maintainer
3 of the system.

4 During the trial running period, it was
5 apparent that some of the deficiencies which were
6 there from substantial completion were now being
7 managed, if not fully rectified, by RTM staff but
8 certainly managed by RTM staff. So there was an
9 additional workload for RTM supervisory staff in
10 coordinating between their own staff and OLRTC.

11 KATE MCGRANN: Based on what you've
12 just described there, did that at all impact your
13 view of the readiness of the maintenance side of
14 the operations for revenue service?

15 RICHARD HOLDER: It was felt that in
16 the first few weeks of operations, it would be
17 necessary for RTM and OLRTC to have extra resources
18 available to quickly deal with deficiencies that
19 had been outstanding since substantial completion
20 but also to deal with the maintenance, the
21 additional maintenance responsibilities that would
22 be required because now the system was in full
23 operations.

24 So there were requests that were made
25 by the City to RTM and to OLRTC to ensure that

1 their subcontractors, their major subcontractors
2 such as Alstom, such as Thales, such as Willowglen
3 that was a supplier for the SCADA system, such
4 as -- I mean, there were several other major
5 suppliers of system equipment. The City requested
6 that RTM and RTG have extra staff available.

7 KATE MCGRANN: And what was the
8 response to those requests?

9 RICHARD HOLDER: There was agreement
10 from RTG's representative, Peter Lauch, that it
11 made sense for those first -- the first few weeks
12 to have additional personnel on standby, and there
13 was also agreement from OLRTC and from Alstom that
14 it would be necessary to have extra staff on
15 standby.

16 KATE MCGRANN: And are you able to
17 speak to whether that was in fact what happened?

18 RICHARD HOLDER: I am aware that those
19 staff were available in the early days, those
20 additional resources, but as to how long that
21 additional level of resourcing was maintained, I
22 can't speak to that.

23 KATE MCGRANN: And turning back to
24 Mr. Fodor's opinion that the organizational
25 structure and the procedures were in place, the

1 spare parts were in place, the equipment was
2 sufficient for what was laid out in the project
3 agreement, was it the case that his opinion was
4 based on the system described in the project
5 agreement as perfectly compliant? I guess what I'm
6 really trying to ask you is, is what is laid out in
7 the project agreement and his opinion based on that
8 different than the reality of the system at the end
9 of trial running? There's deficiencies; there's
10 retrofits, et cetera. Do you know if his opinion
11 took the actual state of the system into account?

12 RICHARD HOLDER: I would say that his
13 opinion was based on the two circumstances as you
14 described them, the compliance with the project
15 agreement but the real-life readiness of a
16 maintenance team to take over maintenance.

17 KATE MCGRANN: And when did he deliver
18 his opinion on the readiness of the maintenance
19 side to take on the system as it existed to you?

20 RICHARD HOLDER: As I said previously,
21 the opinion about the readiness of the maintenance
22 team was provided, you know, in the weeks leading
23 up to revenue service availability, so it would
24 have been provided sequentially based on agreement
25 around certain documentation. So for instance, the

1 maintenance and rehabilitation plan, which I had
2 talked to previously, there were a number of
3 iterations of that document. We finally got to a
4 point where that document was considered to be
5 satisfactory, and I believe that that was in early
6 2019.

7 So that would be an example of, from a
8 documentation perspective, where Alstom is --
9 Alstom and RTM is indicating the contracts that
10 they have in place for maintenance, the frequency
11 and the level of maintenance activities that would
12 be taking place on the various systems, the
13 equipment that was available, the people that were
14 ready, that was all captured in that maintenance
15 and rehabilitation plan.

16 So that was one place where that kind
17 of opinion was provided, but also at substantial
18 completion, from a requirements management
19 perspective, there was the review of the project
20 agreement requirements in relation to maintenance
21 activities, and it would have been at that point
22 that the official opinion would have come through
23 that the maintenance requirements had been
24 addressed, the maintenance requirements of the
25 project agreement.

1 I would like to add for context that
2 the seven revenue service availability requirements
3 were clearly stated as being needed for revenue
4 service availability. There was not a specific
5 requirement -- there was not an eighth requirement
6 for full confirmation about the maintainer's
7 ability to maintain the system.

8 So in terms of the format of the
9 project agreement and the format of the overall P3
10 construct, there was an expectation that the
11 maintainer would be very much commercially
12 incentivized to provide the maintenance team along
13 with its equipment and other resources that would
14 be required to provide availability of the trains
15 such that they met the contractual obligations from
16 a day-to-day basis so that OC Transpo would make
17 their contractual payments.

18 There was an overall philosophy in the
19 construct of the project agreement that it was not
20 necessary to tell RTG exactly how to undertake the
21 maintenance because as a professional engineering
22 team and a professional maintenance team, they
23 would come up with the best team, the best
24 commercially viable way of providing those maintain
25 duties. It was very much based on the commercial

1 incentive. If RTM did not complete those
2 maintenance requirements, then that would result in
3 a consequent -- consequently in a reduction in
4 availability of the system, and they would not get
5 paid. And unfortunately, that's what has been
6 experienced.

7 KATE MCGRANN: So just so that I can
8 understand what Mr. Fodor opined on and the
9 boundaries of that opinion, he's opining on whether
10 the requirements of the project agreement, from a
11 maintenance perspective, have been met? Is that
12 right?

13 RICHARD HOLDER: Yes, correct.

14 KATE MCGRANN: Was he asked to look at
15 the reality of the system and the various pressures
16 on maintenance tasks that the maintenance team
17 would be required to achieve once the system opened
18 for launch and opine on whether he thought that
19 they realistically would be able to do that?

20 RICHARD HOLDER: He was -- he provided
21 an opinion on that question at the time of
22 substantial completion. His -- he did not bring
23 forward overall concerns about RTM's ability to
24 maintain the system. He was satisfied that from a
25 project agreement, the project agreement

1 requirements had been met for maintenance. In
2 addition to that, he did not see any -- he did not
3 have any objections that needed to be brought
4 forward around RTM's ability to undertake the
5 maintenance at revenue service availability.

6 KATE MCGRANN: Was it part of his job
7 to consider that?

8 RICHARD HOLDER: I would say that it
9 was part of his job. Whether it was clearly
10 expressed to him in such terms, I am not sure, but
11 in terms of his professional service as an engineer
12 providing information to the City, I would have
13 expected him to have provided that information.

14 KATE MCGRANN: Okay. And just so I
15 understand, he expresses an opinion at the time of
16 substantial completion.

17 RICHARD HOLDER: Correct.

18 KATE MCGRANN: And he was also required
19 to express an opinion at the end of trial running
20 or at revenue service availability?

21 RICHARD HOLDER: No, he was not
22 required to express an opinion at that time.

23 KATE MCGRANN: What was his role
24 following substantial completion, the achievement
25 of substantial completion?

1 RICHARD HOLDER: I would have to recall
2 exactly what engagement we had with Mr. Fodor
3 during that period. I think we may have reached
4 out for assistance in the resourcing of the team
5 around the field observation work. I would have --
6 but I would have to go back and check what his
7 engagement was during that period.

8 KATE MCGRANN: Other than Mr. Fodor,
9 was there anybody else on behalf of the City who
10 was looking at the question of whether the
11 maintenance side of operations would -- whether it
12 was realistic to expect that the maintenance side
13 of operations would be able to handle the various
14 demands that would be placed on that side of the
15 system when it opened to public service?

16 RICHARD HOLDER: There were a number of
17 people on the delivery side, and there were a
18 number of people from OC Transpo side. So on the
19 delivery team side, we continued to have members of
20 the independent assessment team take part in
21 reviews of the system, the passenger-facing side of
22 the system, the trains and the stations, but
23 people -- but members of the independent assessment
24 team were also involved in reviews of the MSF.

25 On the OC Transpo side, from the

1 operational side, they had a team that was taking
2 over the responsibility of contract oversight.
3 They had team members that were engaged on a daily
4 basis with RTM, both at OC's offices and at Belfast
5 Yard, understanding the maintenance activities that
6 RTM was involved in.

7 KATE MCGRANN: And that was the case
8 that both of those groups, the members of the IAT
9 and the members of the group at OC Transpo
10 responsible for contract oversight, that they
11 remained engaged with maintenance up until the
12 point of public launch?

13 RICHARD HOLDER: Up to and, in the case
14 of OC Transpo, beyond. So there was a -- the
15 handover of the operations, you know, occurred
16 several months before the official revenue service
17 availability date. As various systems were brought
18 online by RTG, then OC's staff started to become
19 engaged and started to become familiar with those
20 systems.

21 For instance, the Transit Operations
22 Controls Centre, which is staffed by OC staff, that
23 had been running for many, many months before
24 revenue service availability to -- both as a
25 training function, as support to the testing and

1 commissioning period, but also as a familiarization
2 for OC Transpo staff. Another example would be the
3 IMIRS help desk function, which was functioning
4 several months before revenue service availability,
5 IMIRS -- the IMIRS help desk being integral to both
6 the TOCC and the YCC.

7 KATE MCGRANN: Okay. And other than
8 what you've already described to us about the view
9 formed that additional resources would be needed in
10 the early days of the system that were expressed to
11 RTG, any other concerns being raised through trial
12 running or as the system heads towards revenue
13 service about whether the maintenance side is going
14 to be able to handle the demands of the system when
15 it opens?

16 RICHARD HOLDER: There was an
17 expectation that had been expressed to the City by
18 various subject matter experts that the system
19 would go through an evolution over the first 12 to
20 18 months of operations. There is a term that is
21 used called the bathtub curve which is used to
22 describe the reliability of the system - of a
23 typical system, including an LRT system - and the
24 bathtub refers to the shape of the reliability
25 curve for various systems from the day that they

1 become activated through the first 12 to 18 months
2 of their operations.

3 So at activation, straight out of the
4 box, with very little use, then systems function
5 very well. So we have a high level of reliability
6 at the very beginning of the use of an activated
7 system, but then over the first few months, then
8 issues start to crop up or -- there are breakdowns,
9 not necessarily in all the components of the system
10 but in one or two components of a system - and I'm
11 speaking generally about systems - but the
12 reliability of -- as a whole of that system starts
13 to reduce for a number of months. And then as an
14 operator and maintenance team replaces systems and
15 optimizes the use of those systems, eventually
16 there is an increase in reliability that occurs
17 over a number of months.

18 So the bathtub curve refers to the
19 shape of the graph which starts off with high
20 reliability, then drops off quite quickly to a
21 point where the reliability is reduced, and then
22 again picks up once certain elements of -- are
23 replaced within the system and the system becomes
24 optimized between both the hardware, the software,
25 and the teams that are responsible for operating

1 and maintaining.

2 So I'm providing that to the team as
3 context that that was -- there was an overall
4 understanding that that reliability curve was
5 likely to happen on this project, and so there
6 would be issues at the beginning. The -- there was
7 not an anticipation that we would have issues that
8 would result in the system being completely
9 nonfunctional, but it was expected that there would
10 be issues that would impact the reliability and
11 therefore impact the availability of the system,
12 and those would occur quite early.

13 KATE MCGRANN: So --

14 RICHARD HOLDER: So in terms of your
15 question of were there concerns, then there was a
16 general understanding that because this was a new
17 system, there would be issues in the first few
18 months that would need to be rectified.

19 KATE MCGRANN: So I just want to make
20 sure that I understand the information that you've
21 provided there. What I've taken down in my notes
22 is that right out of the box, there will be a high
23 level of reliability. Then issues will start to
24 crop up. Those issues will be resolved, and then
25 you're looking at a higher level of reliability

1 again. You said that the expectation expressed to
2 you by the various experts was that the system
3 would go through an evolution through the first 12
4 to 18 months. So when you say that you expected
5 issues to present themselves quite early, can you
6 help me understand when within the 12 to 18-month
7 time frame you're expecting this sort of -- these
8 issues to present themselves?

9 RICHARD HOLDER: That -- there was an
10 expectation that could have been within the first
11 few months.

12 KATE MCGRANN: And how does the first
13 few months fit within the 12 to 18-month evolution
14 period?

15 RICHARD HOLDER: In the first few
16 months, the system is now fully functional,
17 operating 18, 19 hours a day fully loaded with
18 passengers - that is, providing a service load to
19 the system that had not previously been provided -
20 so there was an expectation within those first few
21 months that some of the systems may well suffer
22 from some failures in equipment, failures in
23 software, failures in hardware, and there was a
24 potential that they would be compounded over a
25 period of a number of months.

1 It was not expected that availability
2 of the system, in terms of train availability, that
3 that would be impacted, but it was expected, for
4 instance, that there may be an escalator would have
5 to be shut down, an elevator would have to be shut
6 down, a -- you know, a number of cameras would have
7 to be replaced. And over a period of the first few
8 months, those issues would become apparent, and
9 they would be repaired, and with time, there would
10 be fewer and fewer new issues arising and the
11 reliability of the system would increase.

12 KATE MCGRANN: What was the basis for
13 the belief that while an elevator or an escalator
14 or cameras may have an issue, there wouldn't be
15 issues that would affect the availability of the
16 system?

17 RICHARD HOLDER: There is redundancy
18 built into the system. When I talk about
19 availability of a station, then a station can be
20 considered to be available even if one of the
21 elevators is nonfunctional. So there are two
22 elevators on either side of the platform, so should
23 somebody who is -- needs physical help, is using a
24 wheelchair, they have -- if one elevator is down,
25 then they can use another elevator. So there is --

1 that's an example of redundancy in terms of the
2 vertical movement of people at the stations.

3 There is, similarly, redundancy in many
4 of the other systems - the traction power
5 substations that provide the power to various
6 sections of the track, they are built with
7 redundancy. So if one traction power -- there are
8 11 traction power substations. If one of the
9 traction power substations becomes faulty for
10 whatever reason and is no longer able to provide
11 power to the system, then the adjacent traction
12 power substations fill in the gap, and they
13 continue to provide power. So whilst that specific
14 traction power substation is faulty, it does not
15 impact the availability of the whole system.

16 So when I talk about availability of
17 the system, there is already redundancy built in as
18 part of the design of the system that we can
19 accommodate certain breakdowns, certain
20 deficiencies, and in addition to the need to work
21 on a component or an element of the system because
22 there is a deficiency, there is also the need to
23 undertake maintenance activities, and in order to
24 undertake maintenance activities on a system, it is
25 necessary to -- sometimes necessary to shut it

1 down, and we want to be able to do that maintenance
2 without impacting the availability of the system.
3 So that redundancy is built in and therefore the
4 system can accommodate a certain amount of
5 deficiencies and a certain amount of rectifications
6 that are going to be required without impacting
7 availability.

8 A key question is related to the number
9 of trains that are available. The system was
10 designed to have 34 available trains at all times,
11 with -- which -- sorry. It was designed to have 30
12 trains available at all times, 30 trains combined
13 to make 15 two-car consists with two spares, two
14 hot spares. Two hot spares and two in for
15 maintenance, I believe that was the number. So 34
16 trains - 30 in use, 2 ready for -- as hot spares,
17 and 2 in maintenance. So there was debate and
18 discussion around that redundancy number: Is that
19 the right redundancy number to only have -- to
20 expect to have 32 of the 34 trains available for
21 operations at all times?

22 KATE MCGRANN: And what was the outcome
23 of those discussions?

24 RICHARD HOLDER: At the time, the
25 outcome was -- well, an outcome -- there were

1 concerns about the spare availability, but it was
2 felt that that was -- it was achievable at that
3 time.

4 KATE MCGRANN: And just so that the
5 terminology -- a hot spare is a train that's ready
6 to go upon demand? Is that fair?

7 RICHARD HOLDER: Correct.

8 KATE MCGRANN: The -- what was the
9 number of trains and hot spares available when the
10 system went into public service?

11 RICHARD HOLDER: I don't know exactly.
12 I would -- we have that number.

13 KATE MCGRANN: Was there any
14 consideration given prior to the launch of revenue
15 service of keeping the parallel bus service in
16 service for longer than the first 3 weeks in light
17 of concerns expressed, in light of this bathtub
18 curve and the unpredictability of what concerns may
19 arise as part of the bathtub curve that you've
20 described?

21 RICHARD HOLDER: I am only aware of
22 discussions that the parallel bus service would be
23 provided for the first few weeks. I wasn't aware
24 of any discussions where it would have been
25 considered that that parallel bus service would be

1 provided for a longer period. The expectation was
2 that it would not be required for a longer period,
3 and that's why we were providing the milestone of
4 revenue service availability for the transit
5 system.

6 KATE MCGRANN: Other than the parallel
7 bus service, were other -- were any other
8 precautions or accommodations or approaches
9 considered to account for the potential
10 implications of this first 12 to 18 months of the
11 bathtub curve that you've described?

12 RICHARD HOLDER: The project agreement
13 asked for 34 vehicles on the basis that in the peak
14 period, to carry the expected passenger load of
15 12,000 people per hour per direction, we needed to
16 have 15 vehicles running for those peak periods in
17 the morning and in the p.m. That was at the time
18 of the signing of the project agreement.

19 With the passing of time, the actual
20 volume of passengers that needed to be carried by
21 the Confederation Line system were very -- were
22 very accurately known because the Confederation
23 Line was replacing the bus service, and OC Transpo
24 and the planning unit knew exactly how many
25 passengers were being carried at the time of the

1 launch of the Confederation Line. So it was known
2 that we did not need to run 15 vehicles, 15 two-car
3 consists, during the peak periods. It was -- it
4 was possible to manage the capacity of the line and
5 have fewer light rail vehicles operating during
6 those peak periods.

7 There was certainly discussion around
8 reducing the number from 15 to 13, and that was
9 subsequently changed as part of one of the trial
10 running criteria during trial running. And I think
11 the number could even be less, but I would -- that
12 would be a question I would need to take away as to
13 exactly the number of vehicles that are required to
14 deal with the capacity.

15 So your question as to, you know, what
16 were some of the other factors that the City had
17 control over to help with this potential of the
18 bathtub curve of the early reliability issues, that
19 was one of the big ways that the City was able to
20 have control over the number of vehicles that were
21 available. So if there were issues with the
22 vehicles, then it was possible to reduce the number
23 of vehicles that were available.

24 KATE MCGRANN: Okay. And anything
25 else?

1 RICHARD HOLDER: From an equipment
2 perspective, not that I can think of. The other
3 issue, as I talked about before, was related to
4 resourcing. So one of the ways of addressing this
5 was ensuring that the maintainer and the
6 constructor had sufficient resources available to
7 deal with those issues whereby, you know, we would
8 expect reliability issues in the first few months.
9 So there was -- you know, that was also planned
10 for, that RTM would need extra resources at the
11 beginning of the project -- at the beginning of
12 service.

13 KATE MCGRANN: Mr. Coombes, do you have
14 any follow-up questions based on anything we've
15 discussed so far?

16 MARK COOMBES: I do not.

17 KATE MCGRANN: Okay. We'll take the
18 morning break now. It's just coming up on 10:30,
19 so we'll come back at 10:40, if that works for
20 everybody.

21 PETER WARDLE: Thank you.

22 -- RECESS AT 10:29 --

23 -- UPON RESUMING AT 10:40 --

24 KATE MCGRANN: So before we leave the
25 topics we were discussing before the break, I think

1 I was asking you what the number of vehicles and
2 the number of hot spares there were at the time of
3 public launch. And I'll ask through your counsel
4 that you go and come back to us with that
5 information, if you would.

6 PETER WARDLE: Yes, we will.

7 RICHARD HOLDER: Yes, I can do that.

8 KATE MCGRANN: Stepping back in time on
9 the project, I'd like to you speak to your
10 involvement in the creation of the safety
11 management system for Stage 1 of Ottawa's light
12 rail transit system.

13 RICHARD HOLDER: Sorry, I'm not clear
14 that that's a question.

15 KATE MCGRANN: Pardon me? Oh. Could
16 you speak to your role, like describe your role, in
17 the creation of the safety management system that
18 was to be put in place for Stage 1 of Ottawa's
19 light rail transit system when it went into
20 service.

21 RICHARD HOLDER: I took on the role of
22 manager of light rail systems and operational
23 integration in the early part of 2015, and part of
24 the role of that position was oversight to the
25 safety and security aspect of the project.

1 I reached out to a consultant who was
2 working with STV called David Morgan, and he helped
3 me to develop the terms of reference for the safety
4 and security certification review team as specified
5 and as required within the project agreement. So
6 my role at that time was to chair that safety and
7 security certificate review team meeting and to
8 provide oversight to any of the issues around
9 safety and security as it applied to the light rail
10 system.

11 KATE MCGRANN: And what was the team's
12 purpose or goal? What function did they fill?

13 RICHARD HOLDER: The team was made up
14 of representatives from the various parties, and
15 the overall goal was to ensure that all the safety
16 and security requirements of the project had been
17 addressed at both substantial completion and at
18 revenue service availability.

19 KATE MCGRANN: Who at the City was
20 responsible for developing the safety management
21 system that the City would apply to the system?

22 RICHARD HOLDER: That responsibility
23 was held by Jim Hopkins, the chief safety officer
24 at OC Transpo.

25 KATE MCGRANN: And did the safety and

1 security certification team review that safety
2 management system? Was that part of their purview?

3 RICHARD HOLDER: No, not that I recall.
4 The safety and security certificate review team was
5 aware of the progress that was being made in the
6 establishment of the safety management system. Jim
7 Hopkins, the chief safety officer, provided updates
8 to the team as to the progress, but there was not a
9 team or approval function for that safety
10 management system within the safety and security
11 review team.

12 KATE MCGRANN: And was there any review
13 and approval function at all for the safety
14 management system held by anybody, that you know?

15 RICHARD HOLDER: As I recall the
16 language in the project agreement, it was the
17 responsibility of RTG to support the development of
18 regulations and the development of the safety
19 management system. But the adoption and the
20 ownership of the safety management system was
21 always anticipated to be with OC Transpo.

22 As an example of the mechanics of how
23 that worked, the project agreement referred to a
24 regulatory timetable, which was a deliverable from
25 RTG. The regulatory timetable existed as a

1 spreadsheet that included all the standard
2 operating procedures that would apply to operating
3 the light rail system, including the engagement
4 with emergency responders. So the specific term in
5 the project agreement was regulatory timetable. In
6 fact, it was more like a list, although it did
7 include dates for when those deliverables would be
8 met. The documents that were included in the
9 regulatory timetable, the standard operating
10 procedures, became one of the key components to the
11 overall safety management system that was developed
12 by the chief safety officer.

13 KATE MCGRANN: Do you know if there was
14 any -- if anybody reviewed the adequacy of the
15 safety management system prior to the launch of
16 revenue service?

17 RICHARD HOLDER: I am not aware of what
18 review was undertaken on the safety management
19 system.

20 KATE MCGRANN: Are you familiar with a
21 document called the operational restrictions
22 document?

23 RICHARD HOLDER: I am.

24 KATE MCGRANN: Did you have any
25 involvement in the creation of that document?

1 RICHARD HOLDER: I was involved in
2 reviewing the document and ultimately the
3 acceptance of the contents of that document in
4 terms of determining whether any of those
5 restrictions amounted to a nullification of, as I
6 previously stated, either testing and commissioning
7 requirement, substantial completion requirement,
8 trial running requirement, or overall revenue
9 service availability requirement.

10 My recollection of the operating
11 restrictions document was that it was a document
12 that was created very late in the process, so
13 during the trial running period, and it listed
14 certain elements of the project that, from a safety
15 perspective, were not as designed and therefore
16 listed the mitigations that needed to be in place
17 until those various design functions were working
18 properly. But that was expected to be after
19 revenue service availability.

20 And so one key example of that was the
21 integration of the platform edge door cameras with
22 the operations of the system, the ability for the
23 screens within the cab of the train to receive
24 information from the platform edge cameras was not
25 functioning reliably, and so as a means of

1 mitigating the unreliability of that safety system,
2 Alstom agreed to have spotters on each of the
3 platforms to provide -- effectively to provide the
4 function of the cameras. The spotters were on the
5 platforms to ensure that the train doors were clear
6 of any potential entrapment of a person or an
7 object before the train departed, and that was a
8 mitigation that was put in place, was one of the
9 operational restrictions that was put in place to
10 deal with that part of the system that was not
11 functioning properly at revenue service
12 availability.

13 KATE MCGRANN: Did anybody ever raise
14 with you any particular maintenance needs set out
15 in the operational restrictions document or
16 otherwise arising from the nature of the rail
17 selected for the system and its appropriateness for
18 the light rail vehicle that would be running on it?

19 RICHARD HOLDER: Not that I'm aware.

20 KATE MCGRANN: Did anybody ever suggest
21 to you or to the City more generally, to your
22 knowledge, that the rail was not appropriate for
23 the vehicle that was running on it or that it would
24 require more or different maintenance than
25 originally envisioned as a result of the nature of

1 the rail and the nature of the vehicle?

2 RICHARD HOLDER: Not that I'm aware.
3 Not that I recollect.

4 KATE MCGRANN: What steps were taken to
5 ensure that the operational restrictions document
6 would be followed during revenue service?

7 RICHARD HOLDER: The document was part
8 of a suite of documents that was handed over to OC
9 Transpo, to the operator, with the expectation that
10 as part of their management and oversight of the
11 service availability contract that those issues
12 would be dealt with.

13 KATE MCGRANN: And do you know if
14 anyone in particular was given ownership of
15 ensuring that that document was complied with?
16 Other than handing it over, what was done to ensure
17 that it would be used in practice?

18 RICHARD HOLDER: In terms of the
19 ownership, the overall ownership of the document
20 and the actions that were required were -- within
21 that document would have been both with Troy
22 Charter as director of operations and with Jim
23 Hopkins, the chief safety officer at that time.

24 KATE MCGRANN: And do you have any
25 insight into the plans for how that document was to

1 be implemented and compliance with it was to be
2 overseen?

3 RICHARD HOLDER: I am not aware of the
4 process that was followed to track those items. I
5 am aware that there were regular meetings taking
6 place to deal with the various deficiencies that
7 existed. So there was a responsibility on the
8 delivery team side, so on my side, to continue to
9 work with RTG and OC Transpo on the rectification
10 of deficiencies. And that's -- that work is still
11 underway.

12 And so many of the items that are in
13 the operational restrictions document are also
14 included on the deficiency list. So that
15 accountability for delivering the system as
16 included within the project agreement, that's still
17 with the delivery team. However, there are -- some
18 of those operating restrictions that have an impact
19 on the day-to-day operations of the system, and so
20 the operations team has been kind of more engaged
21 on a day-to-day basis with trying to ensure that
22 that restriction is lifted.

23 So for instance, the ability to release
24 the spotters from the platforms, that has been
25 something that has very much required a lot of

1 coordination between RTM, RTG, and the operator in
2 terms of understanding, you know, at what point is
3 the system ready to be able to release those
4 spotters and to be able to release that
5 restriction.

6 KATE MCGRANN: Jumping back in time
7 again, was a concept of operations developed for
8 this system, to your knowledge?

9 RICHARD HOLDER: A document was
10 created, the concept of operations document.

11 KATE MCGRANN: And at what time in the
12 project was that created?

13 RICHARD HOLDER: It was created, I
14 believe, in 2017. I would have to -- that's
15 something we can take away, to find out exactly
16 when that document was finalized.

17 KATE MCGRANN: And to your knowledge,
18 was that -- what led to that document being
19 created? Let me ask you that.

20 RICHARD HOLDER: It was in the summer
21 of 2017, so roughly a year away from the first
22 scheduled date of revenue service availability,
23 when Sean Derry, a systems engineer, was brought in
24 by SNC-Lavalin to head up the systems engineering
25 safety assurance team within OLRTC as they started

1 to plan for the handover and completion of the
2 project.

3 As part of his engagement, he developed
4 a suite of documents that were very much in line
5 with the requirements of CENELEC in terms of
6 systems assurance, so there were literally hundreds
7 of documents that needed to be created to support
8 the safety case that was needed at substantial
9 completion and revenue service availability.

10 The majority of those documents were to
11 be created by OLRTC and RTM on the design build
12 side. There were a few documents, though, that
13 needed to be created by the City, and one of those
14 documents was the concept of operations. So once
15 that path towards the safety case was developed,
16 that's when the City started working on the concept
17 of operations document.

18 KATE MCGRANN: Was it the case that
19 before Sean Derry began his work, the City was
20 unaware that a concept of operations would be
21 required?

22 RICHARD HOLDER: That's correct.

23 KATE MCGRANN: And what's the purpose
24 of that document?

25 RICHARD HOLDER: The concept of

1 operations document describes in broad terms how
2 the system will operate. It starts with a
3 description of the actual system, the geography of
4 the system, the number of stations, the type of
5 vehicles that are going to be used, the overall
6 mechanism of operations and maintenance, but it
7 also describes the expectation of how, on a
8 day-to-day basis, the system will operate. The
9 launching of the vehicles from the yard into the
10 line, the launch sequence of the trains, the
11 placing of the trains on the track in time for
12 start of service, the broad approach to dealing
13 with degraded modes of operation, when a vehicle
14 breaks down, if there's a fire, if there's a
15 breakdown in a TPSS, it describes those degraded
16 modes, it describes how vehicles are brought back
17 to the yard, it talks about the overall concept for
18 operational performance in terms of the number of
19 operators, the training that's required, the same
20 for the controllers. So it's a document that, at a
21 high level, helps to explain from an operations
22 perspective how the system's going to operate.

23 KATE MCGRANN: With the benefit of
24 hindsight, would it have been beneficial to the
25 project overall if the concept of operations had

1 been developed earlier than it was?

2 RICHARD HOLDER: I could be persuaded
3 that it would have been beneficial, but I have not
4 seen examples brought forward where the lack of
5 that document caused issues with the development of
6 the design. So I agree that the concept of
7 operations document we now know is a document that
8 helps design -- helps guide the design process, but
9 the absence of the document does not necessarily
10 indicate an absence of guidance.

11 So the guidance, I believe, was
12 provided by the heavy engagement of the operational
13 staff from the beginning of the project; however, I
14 can't speak to the first 2 years of the design
15 because I was not engaged in that part of the
16 development of the LRT design. But as I -- you
17 know, as I became involved in the project, from
18 2015 onwards, I can't think of a time when somebody
19 said, I wish we had a concept of operations
20 document.

21 KATE MCGRANN: Okay. So it's one way
22 of guiding the design, but another approach was
23 taken prior to the development of the concept of
24 operations, and you don't see any repercussions
25 from the timing of the concept of operations

1 development?

2 RICHARD HOLDER: Not that I can think
3 of now.

4 KATE MCGRANN: Shifting focus to the
5 first application for substantial completion and
6 then the ultimate achievement of substantial
7 completion, can you speak to how RTG met the City's
8 objections to its first application? And I think
9 my real question here is were there any objections
10 made to the first application that existed -- still
11 existed when the second application was made?

12 RICHARD HOLDER: To be certain of my
13 response, I would need to look at the two versions.
14 I can say that at the time that the first
15 substantial completion certificate was presented,
16 there was a high degree of dissatisfaction from the
17 City's team upon receiving the certificate because
18 it was really widely felt that the system in no way
19 could be considered to be substantially complete
20 and was ready to move into trial running.

21 In terms of the project agreement, the
22 City has to provide an opinion, I believe, within
23 5 days of whether we agreed, and if we did not
24 agree, why didn't we agree, and so there was a huge
25 effort on the part of the City to document and list

1 all the reasons, all the valid reasons why, in the
2 City's opinion, RTG had not met the requirements of
3 substantial completion, and it was understood that
4 the information that we were providing had to be
5 extremely accurate because of the contractual
6 context of their submission of substantial
7 completion.

8 So the information that we provided
9 back to RTG then became similar to a work list -
10 call it a burn-down list - and RTG and OLRTC used
11 that list as their work program for the next few
12 months to eliminate each one of our objections or
13 each one of the items that we had recorded that
14 indicated they were not ready. So it was very much
15 used as a work programming tool by OLRTC, and
16 that's the impression and the opinion of myself and
17 the City team. I would say that I do not know that
18 for a fact because OLRTC was managing their work,
19 but that was certainly the impression that the City
20 team had.

21 KATE MCGRANN: I should have asked you
22 this before: What was your involvement in
23 assessing or analyzing the first certificate that
24 was provided in terms of whether it met the
25 requirements of the PA?

1 RICHARD HOLDER: At that time in the
2 project, there was the accountability for different
3 elements of the project were split between myself -
4 I was looking after vehicles and systems, safety
5 and security, and operational and maintenance
6 readiness - and then Gary Craig, the other manager,
7 was responsible for the track, for the guideway,
8 for structures, for facilities, and for the MSF
9 readiness. So each of us had the responsibility of
10 reviewing that document, breaking it into those two
11 components, and then we each independently reviewed
12 the assertion provided by RTG and then came up with
13 our own opinions, backed by documentation and
14 evidence, that refuted that position that
15 substantial completion had been achieved.

16 KATE MCGRANN: So RTG and OLRTC took
17 the list away, and to your recollection, were they
18 able to address all of the items that you were
19 responsible for? Had all of those been addressed
20 when the second application was made, the second
21 certificate was presented?

22 RICHARD HOLDER: That's what I would
23 have to check to be completely clear about my
24 answer. I believe that they were all addressed,
25 but I would have to check.

1 KATE MCGRANN: Okay. And --

2 RICHARD HOLDER: In other words --

3 KATE MCGRANN: Sorry, go ahead.

4 RICHARD HOLDER: There was -- it was
5 clear at that time that we had -- that there were
6 deficiencies, and it was necessary to split those
7 deficiencies into the minor deficiencies, which
8 were allowed under the project agreement -- and
9 there was no defined term for a major deficiency,
10 but it was all those other issues that were still
11 outstanding that meant that substantial completion
12 had not been achieved. We described them as major
13 issues, and it was all the major issues that were
14 listed in the document.

15 KATE MCGRANN: To your recollection,
16 were any issues that were originally identified as
17 not minor - therefore major - that were ultimately
18 accepted as minor when the second substantial
19 completion certificate was presented?

20 RICHARD HOLDER: I don't recall. I
21 would need to go and check that.

22 KATE MCGRANN: And when --

23 RICHARD HOLDER: It's -- I mean, as I
24 recall some of the issues, the issue that I
25 described before around the platform edge cameras,

1 that was considered to be a major issue, and to the
2 best of my recollection now, I don't think that was
3 addressed at substantial completion, but there was
4 a decision made, an agreement reached that a
5 mitigation could be put in place whilst that issue
6 was resolved. And I believe that was part of --
7 part of the purpose of the term sheet, to agree
8 those -- those issues that had not been fully
9 resolved that had originally been considered as a
10 major item but subsequently were considered --
11 well, they were still considered major but could be
12 mitigated in some form or other. But I would have
13 to refer to the various documents. The term sheet
14 would be one document, and the operational
15 restrictions document would also be another key
16 document.

17 PETER WARDLE: So, Ms. McGrann, the
18 witness has said a couple of times that he'd need
19 to check. Just because we've had this issue
20 before, I need to know if you want him to check or
21 not. If you do, we will do it.

22 KATE MCGRANN: Thank you, Peter, and
23 yes, please.

24 PETER WARDLE: Thank you. So he will
25 check about his answer about he believes that all

1 of the major issues were addressed before
2 substantial completion and also with respect to his
3 last answer about the term sheet. So we'll make
4 those inquiries.

5 KATE MCGRANN: Okay. And just so that
6 we know we're all talking about the same thing,
7 where major issues were addressed, could you please
8 identify how they were addressed, whether they were
9 fully resolved, addressed by way of the term sheet,
10 addressed by way of the operational restrictions
11 document, or in another way that I'm unaware of.

12 PETER WARDLE: That's fine. Thank you.

13 KATE MCGRANN: The Integrated
14 Management Infrastructure Reporting System, IMIRS,
15 was anybody asked to do a review of that system
16 prior to the opening of revenue service on behalf
17 of the City?

18 RICHARD HOLDER: I would have to check
19 with OC Transpo to understand if they brought in
20 any specialist staff to undertake a review of the
21 IMIRS system.

22 KATE MCGRANN: Okay. My understanding
23 is that Deloitte was asked to do a review of that
24 system. Do you have any awareness of that work?

25 RICHARD HOLDER: I am aware of the work

1 that Deloitte did. I'm just not sure of when that
2 review started.

3 KATE MCGRANN: Do you know what the
4 purpose of that review was?

5 RICHARD HOLDER: I was not involved in
6 the writing of the terms of reference for that
7 assignment. I understand that one of the roles of
8 Deloitte was to determine if the IMIRS program was
9 providing accurate information that was to be used
10 for the purpose of making payments to RTM by the
11 City.

12 KATE MCGRANN: Who would be the best
13 person at the City to talk to about the nature of
14 that review, its purpose, and the outcome?

15 RICHARD HOLDER: Troy Charter. He was
16 the director of operations at the time, and he may
17 not have been engaged on a day-to-day basis with
18 that Deloitte assignment, but he would recall who
19 it was who was project managing that Deloitte
20 assignment. There was -- there was a contracts
21 manager working with OC Transpo at the time called
22 Vivian Kaye who was certainly involved at that
23 time, but Troy Charter would have the information
24 about the overall drafting of the terms of
25 reference and the overall kind of management of

1 that assignment.

2 KATE MCGRANN: With respect to the use
3 of IMIRS and the help desk and all of those systems
4 through which OC Transpo and RTM would be
5 interacting during operations, were there any steps
6 taken to try to optimize how that system would be
7 used to place everybody in the best possible
8 position for when revenue service started?

9 RICHARD HOLDER: Yeah, I think the
10 teams, both teams, were working hard to try and
11 optimize that system. There was a challenge with
12 the lateness of the delivery of the overall IMIRS
13 system, and there was a limited amount of time for
14 the teams to undertake that optimization.

15 KATE MCGRANN: And what were the
16 implications of the limited amount of time that was
17 available for the optimization work that we're
18 talking about?

19 RICHARD HOLDER: I think there were --
20 there were two issues that occurred with the IMIRS
21 program. One issue was the -- just the initial
22 understanding of how the system would function.
23 There was -- and part of that was around the number
24 of assets that needed to be included as data points
25 within that system. In my recollection, the number

1 was in the 15 to 20,000 element range. So there
2 was a volume of data that created a challenge to
3 just the understanding of the normal functioning of
4 the system.

5 The additional challenge that presented
6 itself was in relation to the work orders that were
7 created as we went through trial running -- well,
8 prior to trial running, as we went through trial
9 running, and then in the early few weeks of
10 operations. So there were many, many work orders
11 that were generated that were related to defective
12 items, broken down cameras, some sort of
13 deficiency, some sort of maintenance activity that
14 needed to be undertaken. So as well as the -- so
15 there were these two issues that were compounded at
16 the time of revenue service availability and for
17 the first few weeks. So there was the overall
18 understanding and functioning of the base system in
19 addition to the compounding with additional flow of
20 data because of the number of deficiencies that
21 were present.

22 KATE MCGRANN: Okay. So can you help
23 me understand what the first challenge, the volume
24 of data and the number of items and things, how did
25 that look on the ground for the people who were

1 working with the system? How did that challenge
2 express itself?

3 RICHARD HOLDER: The challenge was for
4 the personnel to actually input the data, to build
5 up the IMIRS system from a base software system,
6 which maybe functions, but it's got no data in, and
7 it's only useful when you complete putting the data
8 in. So just the inputting of the base information
9 took many, many months, and then it was -- so the
10 fact that the system was really only functioning, I
11 believe, in the early parts of 2019, then there was
12 a challenge for the teams to get that information
13 into the IMIRS program. And then -- and once the
14 base -- the baseline had been established, there
15 was then a challenge for it to create reports that
16 could be used for the purpose of payment, of
17 managing the maintenance contract. So the number
18 of vehicle -- the number of kilometres driven by a
19 vehicle: A very simple statistic, but it took
20 quite some time, and I know that that was one of
21 the focusses of the Deloitte report was how many
22 revenue kilometres are achieved on a daily basis.
23 It's a -- which is a combination of a basic
24 geometry issue in terms of how long are the tracks,
25 but it's also an issue of, well, how many trains

1 are running and when are those trains carrying
2 passengers, because sometimes the trains are
3 running and they're not carrying passengers. So
4 all that compounded to one single kind of data
5 point, but it -- that in itself created a lot of
6 work just to create the baseline.

7 KATE MCGRANN: Okay. And was it the
8 case that that particular challenge was resolved by
9 the time the system went into revenue service?

10 RICHARD HOLDER: That particular
11 challenge was resolved during -- during trial
12 running. So there was some concern over the data
13 that was being used as part of the trial running
14 scorecard, and it's my recollection that Deloitte
15 were able to make a confirmation about that, the
16 planned number of kilometres that needed to be
17 achieved on a daily basis and the actual number of
18 kilometres that were achieved on a daily basis.
19 But that was resolved during trial running.

20 KATE MCGRANN: And then can you walk me
21 through in a bit more detail the work order
22 challenge.

23 RICHARD HOLDER: I think with the work
24 orders, the challenge was more related to the
25 volume of work orders that were in the system that

1 needed to be responded to by RTM. So that wasn't
2 necessarily creating the baseline. It was -- it
3 was, again, responding to the volume of work orders
4 on the part of RTM.

5 KATE MCGRANN: Were there any questions
6 or issues or concerns expressed about the manner in
7 which work orders were being generated in the
8 system?

9 RICHARD HOLDER: At the time of trial
10 running, there were concerns expressed in terms of
11 the accuracy of the information, and that was a
12 concern both on the way that information was
13 inputted into the database on the OC side and then
14 also how that information was further analyzed on
15 RTM's side.

16 KATE MCGRANN: Okay. So --

17 RICHARD HOLDER: And to focus on one of
18 the issues that was certainly raised during trial
19 running was the issue of the closure of work
20 orders. So there were certain questions from the
21 City's side as to what did closure of a work order
22 mean for RTM. RTM would indicate that a work order
23 was closed if they had asked one of their
24 maintenance teams to address that particular
25 deficiency. It was not necessarily based on that

1 team actually rectifying the defective piece of
2 equipment. And so there was -- there were those
3 kind of debates that were occurring during trial
4 running.

5 KATE MCGRANN: Okay. So it sounds like
6 these issues kind of have a natural progression:
7 There's the entry, there's the response, and then
8 the closing, and so I'm going to ask you to take me
9 through each step. So first of all, with respect
10 to the concerns expressed about the accuracy of the
11 information that's being input, who was expressing
12 that concern?

13 RICHARD HOLDER: Tom Pate from RTM.

14 KATE MCGRANN: And what was the nature
15 of the concern that was expressed? I understand
16 that it was the information was inaccurate, but
17 what are the implications of that?

18 RICHARD HOLDER: The implication was
19 that it was necessary for the help desk operators
20 on the RTM side to follow up with a phone call or
21 with a conversation to the help desk staff on the
22 OC side to gain clarity on what the entry that's on
23 the computer screen, what that actually meant. So
24 it was a communication issue, that there was --
25 information was provided in writing, but it was

1 sometimes necessary to have a verbal follow-up to
2 validate the understanding of that information. So
3 that just added extra time to the overall process.

4 KATE MCGRANN: And the addition of
5 extra time, to your knowledge, was that creating
6 concerns that the response time was longer than it
7 ought to be? The response time would have
8 repercussions for RTM? Was there -- what was the
9 follow-up from the additional communication
10 required?

11 RICHARD HOLDER: So the follow-up time
12 meant that not so many issues per day could be
13 dealt with as would normally be expected because of
14 these extra clarifications that were required.

15 KATE MCGRANN: And was this
16 communication issue -- what progress was made in
17 resolving it by the time of the launch of revenue
18 service?

19 RICHARD HOLDER: As people, both on the
20 OC side and on the RTM side, became more familiar
21 with the system, became more expert at using the
22 system and inputting the data and doing the
23 analysis, then there was overall improvement in the
24 flow of documentation and the ability to deal with
25 the work orders.

1 KATE MCGRANN: And was -- and in terms
2 of the extent that this issue was resolved by the
3 time public service was launched, was this
4 something that was in progress? Was it something
5 that had been completely resolved?

6 RICHARD HOLDER: I think it was
7 something that was still in progress.

8 KATE MCGRANN: And then I think that
9 you said that there was also -- there was also a
10 concern or a challenge in terms of how the
11 information is being received or interpreted on the
12 RTM side. Have I got that right?

13 RICHARD HOLDER: Yes.

14 KATE MCGRANN: Okay. Could you explain
15 what that looked like.

16 RICHARD HOLDER: So as reported to me,
17 the impact was a work order would be -- as I
18 mentioned, a work order would be considered to be
19 closed because a request had gone to a maintenance
20 team to undertake that maintenance work or that
21 repair work when in fact that did not necessarily
22 indicate that the issue itself had been rectified.

23 So there was a -- there became an issue
24 around the same device - as an example, a camera,
25 CCTV camera that wasn't working. It would be

1 reported one day, and it would go through the
2 system and then there would be an IMIRS indication
3 saying that that issue had been closed, and then
4 next day the camera's not working. So a new work
5 order would be created. And then that would be
6 indicated as closed, and then the third day the
7 same camera's not working, and this issue floating
8 around, going backwards and forwards in the IMIRS
9 system when, in fact, from the perspective of the
10 maintenance team, actually making it a priority, go
11 and fix that camera, that had not occurred on the
12 RTM side. So this was a challenge for the teams
13 managing the list of items that were outstanding to
14 be worked on because there was a lack of confidence
15 that the list was accurate.

16 KATE MCGRANN: And what steps were
17 taken to address that issue?

18 RICHARD HOLDER: Well, it was
19 eventually agreed that a work order would only
20 consider to be closed once the actual work itself
21 had been undertaken and could be confirmed to have
22 been undertaken and rectified.

23 KATE MCGRANN: What was the source of
24 the issue here? Was there uncertainty in the
25 requirements that were drafted? Differences of

1 interpretation of when a work order could be listed
2 as closed? Like, how did this challenge arise?

3 RICHARD HOLDER: I'm not sure of all
4 the reasons for why this challenge was in place. I
5 would say that the short familiarity period that
6 the teams had to work with the IMIRS system
7 presented challenges from an on-the-job training
8 perspective. So my understanding is that the
9 training of the operators on the RTM side took
10 place in around March or was completed by March
11 2019, which was just a few months before we got
12 into substantial completion. And so that left
13 little time, really, for those operators to get
14 fully conversant with the system.

15 KATE MCGRANN: Okay. And when was the
16 closing of the work order issue resolved by way of
17 agreement, as you described?

18 RICHARD HOLDER: I believe that was
19 sometime during the trial running period, but I
20 would have to check.

21 KATE MCGRANN: Okay. And --

22 RICHARD HOLDER: Do you want me to
23 check?

24 KATE MCGRANN: I was going to say let
25 me ask you this question to see if I can avoid

1 asking you to check, but if the answer is you have
2 to check, then I will ask you to do so. To your
3 knowledge, was it resolved prior to the launch of
4 revenue service?

5 RICHARD HOLDER: I would like to check
6 before I answer that.

7 KATE MCGRANN: Okay. Then please do
8 that, and thanks for that. Any other issues coming
9 out of the -- this is a place in which OC Transpo
10 and RTM are interacting regularly through revenue
11 service, so were there any other issues that you
12 were aware of on that interface that were -- that
13 presented themselves at any point prior to revenue
14 service?

15 RICHARD HOLDER: I recall there being
16 discussions around the readiness of vehicles that
17 were provided at the launch of service. The
18 interaction between RTM and OC was such that RTM's
19 responsibility was to have a vehicle prepared and
20 to bring that vehicle to a launch platform where it
21 would be handed over to OC Transpo, to an OC
22 Transpo operator. There would be a checklist on
23 the vehicle to indicate that a certain number of
24 minimum vehicle functionalities had been listed and
25 checked, and then at that point the operator would

1 take that vehicle and would move onto the line.

2 And I believe that, you know, up to
3 trial running and during trial running, there were
4 certain issues around the actual readiness of a
5 vehicle where the documentation may not have
6 accurately reflected the actual functioning of that
7 vehicle. So that was -- I mean, in terms of
8 questions as to other things that were coming up in
9 that interaction, then that would be one item that
10 I was aware of.

11 KATE MCGRANN: And can you think of any
12 others?

13 RICHARD HOLDER: Not that I can think
14 of right now.

15 KATE MCGRANN: Okay. In terms of the
16 issue that you did identify where, at the morning
17 handover, the documentation didn't actually reflect
18 the state of the vehicle or the status of the
19 vehicle, was it one particular disconnect between
20 what the document said and where the vehicles were
21 at that you were seeing repeatedly, or was it a
22 variety of disconnects?

23 RICHARD HOLDER: I don't know the
24 details of what particular checkmark was considered
25 to be inaccurate. It was more -- I was aware from

1 a process perspective that that handover was not
2 always -- was not always clean.

3 KATE MCGRANN: And were these handover
4 issues resolved by the end of trial running?

5 RICHARD HOLDER: That's something I
6 would have to check.

7 KATE MCGRANN: Okay. Would you please
8 check that as well.

9 RICHARD HOLDER: Okay.

10 KATE MCGRANN: In terms of the concept
11 that the system might open with -- open to public
12 service with less than full service as envisioned
13 in the project agreement - something that I will
14 use the shorthand of "soft start" to describe - can
15 you speak to me about what you know about whether
16 that was ever raised by anybody as something the
17 City ought to consider and what followed.

18 RICHARD HOLDER: I think there had been
19 discussions for several years around exactly how
20 many vehicles needed to be on the line on Day 1 of
21 revenue service availability. There had been
22 discussions around the possibility of having some
23 routes of buses dropping passengers at the terminus
24 stations but other buses bypassing the terminus
25 stations and just driving through the city centre.

1 That could have been considered a soft start, but
2 that was an example.

3 I'm sure that there were other examples
4 that were considered of soft starts. Most of them
5 were ruled out. The -- it was always known that
6 the system would be a high-capacity system from Day
7 1, and that made the launch of the Confederation
8 Line unique in comparison to the launch of other
9 systems around the world, and that was on the basis
10 that this was the first conversion of a bus rapid
11 transit system to a light rail system. We already
12 had the passengers, we already had the demand, and
13 we were replacing one mode of transport for another
14 mode of transport, but we were not replacing
15 passengers. So it was always the expectation that
16 on Day 1 we would be carrying 9 to 12,000
17 passengers.

18 In the end, you know, what actually
19 occurred was the -- we were able to launch with a
20 reduced number of vehicles than what was
21 anticipated in the project agreement, so that could
22 be considered almost like a soft launch. Instead
23 of making the demand from RTG that we need to have
24 the 15 vehicles available for peak running from Day
25 1, we were able to reduce that number. The fact

1 that we had parallel bus service for several weeks
2 could also be considered to be a soft launch
3 because we were at least able to quickly respond to
4 any issues that occurred because we had the backup
5 of a full parallel bus system. So that could be
6 considered as a somewhat soft launch, but there
7 were -- there were also discussions around opening
8 up part of the system.

9 So another -- for instance, the
10 Rideau -- Rideau Station was -- the completion of
11 the Rideau Station was on the critical path. As
12 well as being the largest and most complex and
13 deepest station within the system, it also has a
14 relatively sophisticated tunnel ventilation system
15 as well that was on the critical path. So there
16 was a discussion or a contemplation of, well,
17 maybe -- can we open the system without Rideau
18 Station? Do we just run the line -- we stop at all
19 the stations, but we don't stop at Rideau? But
20 that was ruled out on the basis that Rideau Station
21 is such a key transfer point, and just the friction
22 that it creates in the system to have just one of
23 the 12 stations not operating and the need then to
24 provide backup bus service to support those people
25 at Rideau Station, it was ruled out as an option,

1 but it was considered. So that would be an example
2 of not having the whole line open.

3 The other example would be just to have
4 the line open, say, to -- from Blair to Pimisi or
5 Blair to Bayview, but that was also felt to not
6 really have any advantage in the end. There was no
7 advantage to the City in terms of being able to
8 open the system earlier, as far as I can recall,
9 and only really just provided a degraded service.

10 So some of those options that were
11 contemplated were not brought forward as an option
12 to be considered for Day 1 service. So really the
13 two that were carried forward was the reduction in
14 the number of vehicles and the provision of a
15 parallel bus service.

16 KATE MCGRANN: At any point following
17 substantial completion, was there any consideration
18 given to creating additional time for a burn-in
19 period for the system beyond what was set out for
20 trial running?

21 RICHARD HOLDER: My recollection of a
22 discussion around burn-in was associated with the
23 Alstom vehicles. There was no project agreement
24 requirement for a specific burn-in agreement, but
25 in discussions with RTG and OLRTC and Alstom and

1 our subject matter vehicle experts on the City
2 side, it was agreed that a burn-in period -- and I
3 believe we settled on 4,000 kilometres, a burn-in
4 period of 4,000 kilometres would be reasonable for
5 a vehicle. Once it had completed all the required
6 serial testing and had a -- and had the
7 4,000-kilometre burn-in period, then that was a
8 vehicle that could be ready for revenue service
9 availability.

10 So the burn-in period -- a discussion
11 around burn-in period was associated with the
12 vehicles only, in my recollection. I don't recall
13 there being a discussion around a burn-in period
14 for the whole system, including, you know, all the
15 stations, all the communications systems. It was
16 purely around the vehicles.

17 KATE MCGRANN: And the number of
18 kilometres run, did -- was there any consideration
19 given to the need to run the kilometres over the
20 entire system, or would running the kilometres over
21 a portion of the system count as well?

22 RICHARD HOLDER: Kilometres that were
23 run over the partial system were considered to be
24 valid. It did not necessarily have to be a vehicle
25 running from one end of the system to the other end

1 of the system to accumulate the 4,000 kilometres.

2 KATE MCGRANN: I don't need the day,
3 but around what time was the agreement reached with
4 respect to the 4,000-kilometre burn-in period for
5 the vehicles?

6 RICHARD HOLDER: I would have to go and
7 check even the period. I would say that it was a
8 number of years prior to substantial completion.
9 We -- the City tracked the progress or the
10 progression of the readiness of the vehicles on a
11 vehicle-by-vehicle basis, so from the assembly,
12 from the serial testing, from the acceptance of the
13 vehicle, from the accumulation of the required
14 burn-in kilometres, they were tracked vehicle by
15 vehicle, and that was -- so that would -- I'm
16 anticipating that would have been from 2017, but I
17 would have to go and check some of our tracking
18 sheets to see when we actually started recording
19 those 4,000-kilometre kind of checkmarks.

20 KATE MCGRANN: Okay.

21 RICHARD HOLDER: Would you like me to
22 do that?

23 KATE MCGRANN: Yes, please.

24 RICHARD HOLDER: Okay.

25 KATE MCGRANN: To your recollection,

1 had all of the vehicles met that burn-in period by
2 the time substantial completion was achieved? Was
3 that part of the requirement to achieve substantial
4 completion?

5 RICHARD HOLDER: That was my
6 recollection, that they had all achieved that, yes.

7 KATE MCGRANN: At any point following
8 substantial completion, did anybody working for the
9 City, either a member of staff or an advisor, raise
10 the possibility of a further burn-in period for the
11 vehicles or for the system overall?

12 RICHARD HOLDER: After substantial
13 completion, I don't recall that that was raised in
14 the meetings that I attended.

15 KATE MCGRANN: Did you -- outside of
16 the meetings that you attended, did you ever learn
17 that a suggestion like that had been made to the
18 City?

19 RICHARD HOLDER: A suggestion to
20 increase the burn-in period? Not that I recall.

21 KATE MCGRANN: Okay. And during the
22 period of time between the project agreement
23 revenue service availability date and the time that
24 substantial completion is achieved, so stepping
25 back a chunk of time, during that time, do you

1 recall any discussions about a further burn-in
2 period for the vehicles or the system overall?

3 RICHARD HOLDER: Sorry. Can you
4 restate that period?

5 KATE MCGRANN: Yes. From the date that
6 the project agreement provided for revenue service
7 availability, so --

8 RICHARD HOLDER: Mid 2018.

9 KATE MCGRANN: -- May 2018, up until
10 when substantial completion is achieved, anybody
11 suggesting to the City that a further burn-in
12 period for the vehicles or for the system overall
13 should be contemplated?

14 RICHARD HOLDER: Not that I recall.

15 KATE MCGRANN: Okay. Mr. Coombes, any
16 follow-up questions on any of that?

17 MARK COOMBES: No, I don't have any
18 follow-up questions.

19 KATE MCGRANN: Can you explain how
20 you -- I'm not sure that you transitioned out of
21 your role, but can you explain how you left the
22 project and whether anybody stepped in to take your
23 place.

24 RICHARD HOLDER: Are you talking about
25 within the last couple of weeks?

1 KATE MCGRANN: I'm talking about -- so
2 how did your -- let me ask you it this way: Did
3 your role change at all once the system went into
4 revenue service?

5 RICHARD HOLDER: I continued to work
6 with the O-Train construction office on the
7 delivery of Stage 1 for several months at a
8 100 percent level, probably until the end of 2019.
9 I would have been engaged in the closing out of
10 minor deficiencies. I was engaged in supporting
11 the City's response to claims and disputes from
12 RTG. I would have provided support to OC Transpo
13 on dealing with some of the operating restrictions,
14 and then from -- starting in December and into
15 January, I started to transition over into the rail
16 construction program office that was involved in
17 the design and construction of Stage 2.

18 KATE MCGRANN: And as you started to --
19 sorry, go ahead.

20 RICHARD HOLDER: And I've -- my -- the
21 percentage of my time allocated to the two projects
22 has gone from being 90 percent Stage 1, 10 percent
23 Stage 2 in December 2019 to being 95 percent
24 Stage 2 and 5 percent Stage 1 as of -- you know, as
25 of last week.

1 KATE MCGRANN: Can you speak to the
2 progress of the closing out of the minor
3 deficiencies and any significant challenges
4 encountered after the start of revenue service.

5 RICHARD HOLDER: It has taken many,
6 many more months to address the minor deficiencies
7 than I think anybody would have contemplated at the
8 start of the -- at the start of the project or even
9 at revenue service availability. There have been
10 challenges dealing with some of the systems-related
11 deficiencies, particularly related to the train
12 control system, because any changes have an impact
13 on operations, potentially require shutdowns of the
14 system or can only occur during the evening and
15 weekend maintenance periods so that there have been
16 challenges on -- on OLRTC's side to deal with some
17 of the deficiencies because we now have a fully
18 functional transit system.

19 There are a number of systems that have
20 continued to prove to be unreliable. For example,
21 the guideway intrusion detection system has not
22 been reliable, and that has impacted operations,
23 both from an availability perspective but it has
24 also had implications on the reliability of the
25 trains because of the number of emergency brakes

1 that have been initiated by those guideway
2 intrusion detection systems. I would say that
3 there are -- there are several -- there are several
4 system issues that are still having an impact on
5 the reliability of the system that still need to be
6 addressed.

7 KATE MCGRANN: Other than the guideway
8 intrusion detection system, what are the other
9 system issues that are having an
10 availability/reliability effect?

11 RICHARD HOLDER: There are -- there
12 were issues with the traction power substation
13 grounding systems tripping out, and that was
14 related to the grounding of the rails. That has
15 been an issue that OLRTC has been -- well, was
16 working on. It -- there was a feeling that that's
17 been resolved at this point, but for the first
18 12 months of operations, that was a concern, so the
19 grounding and bonding of the system.

20 There were issues around the
21 reliability of the overhead catenary system, both
22 in its -- the system setup but also in the design
23 in relation to particular elements of the OCS
24 system, and what I'm referring to is the parafil
25 rods that provide part of the support mechanism.

1 They have proved to be unreliable and have impacted
2 reliability and availability of the system. And
3 then there are a number of issues with the vehicles
4 itself. So there's the systems generally and then
5 there are still reliability issues with the
6 vehicles.

7 KATE MCGRANN: The parafil rods, is
8 that an ongoing issue?

9 RICHARD HOLDER: It is -- there is
10 still concern around the reliability of the parafil
11 rods, yes.

12 KATE MCGRANN: And is the concern based
13 on recent issues that have been experienced or a
14 general concern from the beginning of the system's
15 operations?

16 RICHARD HOLDER: There was general
17 concern at the start of operations. There were a
18 number of failures of those rods that occurred I
19 think in the first winter. There was a
20 rectification program implemented by RTM, but there
21 have been more recent reliability issues with some
22 of those rods. So it's not an issue that is
23 closed.

24 KATE MCGRANN: Okay. And then the
25 issues with the vehicle itself that remain a

1 concern, that continue to present issues, what are
2 those?

3 RICHARD HOLDER: Would you like the
4 issues as of now or within the first 12 months of
5 operations?

6 KATE MCGRANN: Let's start with in the
7 first 12 months.

8 RICHARD HOLDER: There were issues with
9 the door closure mechanism. There were issues with
10 the heating system for the cab. There were issue
11 with the compressor unit on the top of the vehicle.
12 There's -- there is a systemwide issue related to
13 the calibration of the acceleration and braking
14 rates and the integration of that data between the
15 vehicles and the Thales system. There are -- there
16 is an issue with a number of rectifiers on the
17 vehicle.

18 KATE MCGRANN: And sorry, what is that?

19 RICHARD HOLDER: It's a piece of
20 equipment on the vehicle that converts the current
21 of an electrical -- it converts an electrical
22 current from supply to a piece of equipment. We
23 have the outstanding issues with the CCTV views
24 within the cab. And I believe there are more.

25 KATE MCGRANN: If, when you review your

1 transcript, you become aware or recall more issues,
2 if you could provide those to us when you think of
3 them, that would be useful.

4 RICHARD HOLDER: I can do that, yes.

5 KATE MCGRANN: Okay. And then in terms
6 of the issues that exist as of today or recently?

7 RICHARD HOLDER: I believe there is
8 still an issue related to compressors, and we still
9 have the camera issue which is not fully resolved.
10 And I expect that there are other issues. I would
11 have to go away and get that information, and I can
12 provide that in my transcript as an amendment to
13 the transcript.

14 KATE MCGRANN: If you could do that,
15 thank you.

16 Mr. Coombes, any final follow-up
17 questions before I ask what I think will be my last
18 two questions?

19 MARK COOMBES: None from me.

20 KATE MCGRANN: The Commission has been
21 asked to look at the technical and commercial
22 circumstances that led to the breakdowns and
23 derailments on Stage 1. Other than the topics and
24 areas that we've discussed over the 2 days of your
25 interview, are there any other areas that you would

1 suggest the Commission look at as part of its
2 investigation?

3 RICHARD HOLDER: I would like to -- I'm
4 not sure whether I'm answering your question, but I
5 would like to add that as a lessons learned, it is
6 useful to think about the form of the contract that
7 all parties entered into back in 2012, 2013, the P3
8 model. It's my understanding that the model that
9 was used was very much based on an Infrastructure
10 Ontario model that had been used successfully on
11 several other multimillion dollar projects, but
12 they were exclusively vertical projects - so
13 facilities, hospitals, buildings, that kind of
14 project. This was one of the first projects --
15 well, it was the first project to be used where
16 this model was used for a light rail system. I
17 believe that a P3 system had been used on a highway
18 project a few years earlier, but this was a first
19 for a light rail system.

20 There are a number of base assumptions
21 in the approach that has been applied through that
22 P3 model, certainly the assumption that there is
23 huge commercial pressure on the builder and on the
24 maintainer to follow all best industry practices in
25 order to achieve the best project over a 30-year

1 period. That feels like an assumption that has not
2 necessarily been borne out by the first couple of
3 years of operations of the system. The commercial
4 pressure that exists on the maintainer does not
5 seem to have been sufficient for them to reach best
6 industry practices in the maintenance of the
7 system.

8 The other consideration around the P3
9 model is that the agency that is providing
10 oversight for the design and the build and, to some
11 extent, the operations can take a somewhat
12 hands-off approach because the private sector is
13 commercially driven to follow all best industry
14 practices in the achievement of their work, and
15 there is not the need for the usual oversight of an
16 agency or an owner when managing that type of P3
17 contract.

18 So for instance, on a regular engineer
19 procure construct project, there would be a much
20 higher level of oversight for the work that is
21 being undertaken in the field. Because it was a P3
22 model, the number of resources within the light
23 rail office on the agency side was quite small in
24 comparison to what could have been expected on an
25 engineer procure construct project, and the

1 implications of that, I think, are that there was a
2 substantial amount of work in the field that had to
3 be redone by the contractor because issues were not
4 caught first time, not even caught second time,
5 whereas with a higher level of agency oversight,
6 there is more likelihood of work getting done the
7 right way the first time.

8 And I can think of numerous examples
9 that would support that and that would support the
10 position that the delays that occurred during
11 construction could potentially have been avoided by
12 a slightly different structuring of the
13 relationship and a restructuring of the oversight
14 on the City side. But that was a construct of
15 the -- that was a construct of the model that all
16 parties had signed off on.

17 KATE MCGRANN: And because of the time,
18 would you provide those examples to us by way of
19 undertaking? We're already -- just because we're
20 already 2 minutes past the end time and I don't
21 want to keep you here for longer. And it may be
22 that you have already answered my last question for
23 you, which is the Commissioner is also asked to
24 make recommendations to try to avoid these issues
25 happening in the future. Are there any specific

1 recommendations or areas of recommendations other
2 than what we have already discussed that you would
3 suggest be considered as part of that work?

4 RICHARD HOLDER: I would make a
5 recommendation that the maintenance preparedness of
6 a DB Co/Proj Co team be given more consideration
7 within the project agreement documentation, and I
8 would -- so that would include increased criteria
9 for demonstration of maintenance readiness at the
10 time of substantial completion but also an increase
11 in the language and the specificity within the
12 PSOS, the project-specific output specifications.

13 KATE MCGRANN: Anything else?

14 RICHARD HOLDER: That's all for now.

15 KATE MCGRANN: Okay. We can go off the
16 record.

17 -- Concluded at 12:04 p.m.

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1 REPORTER'S CERTIFICATE

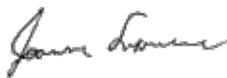
2
3 I, JOANNE A. LAWRENCE, Registered
4 Professional Reporter, certify;

5 That the foregoing proceedings were
6 taken before me at the time and place therein set
7 forth, at which time the witness was put under oath
8 by me;

9 That the testimony of the witness
10 and all objections made at the time of the
11 examination were recorded stenographically by me
12 and were thereafter transcribed;

13 That the foregoing is a true and
14 correct transcript of my shorthand notes so taken.

15
16 Dated this 19th day of May, 2022.

17
18 

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