

# Ottawa Light Rail Commission

Larry Gaul  
on Thursday, April 21, 2022



77 King Street West, Suite 2020  
Toronto, Ontario M5K 1A1

[neesonsreporting.com](http://neesonsreporting.com) | 416.413.7755

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

OTTAWA LIGHT RAIL COMMISSION

STV - LARRY GAUL

APRIL 21st, 2022

-----

--- Held via Zoom Videoconferencing, with all participants attending remotely, on the 21st day of APRIL, 2022, 9:00 a.m. to 12:28 p.m.

-----

1 COMMISSION COUNSEL:

2 Kate McGrann, Co-Lead Counsel Member

3 Liz McLellan, Litigation Counsel Member

4

5 PARTICIPANTS:

6 Larry Gaul: STV Inc.

7 James Doris and Michael O'Brien

8 and Theodore Milosevic: Tyr LLP

9

10

11 ALSO PRESENT:

12 Leila Heckert, Stenographer/Transcriptionist

13 Elizabeth Deasy, Virtual Technician

14 Talia Gillani, Shadowing Technician

15

16

17

18

19

20

21

22

23

24

25

INDEX OF EXHIBITS

1		
2	NO. / DESCRIPTION	PAGE
3	1 Curriculum vitae of Mr. Gaul.	7
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		

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

2 LARRY GAUL: AFFIRMED.

3 KATE MCGRANN: Good morning, Mr. Gaul.  
4 My name is Kate McGrann. I'm one of the co-lead  
5 counsel for the Ottawa Light Rail Transit Public  
6 Inquiry.

7 The purpose of today's interview is to  
8 obtain your evidence under oath or solemn  
9 declaration for use of the Commission's public  
10 hearings.

11 This will be a collaborative  
12 interview, such that my co-counsel,  
13 Ms. McLellan, may intervene to ask certain  
14 questions. If the time permits, your counsel  
15 may ask follow-up questions at the end of this  
16 interview.

17 This interview is being transcribed  
18 and the Commission intends to enter this  
19 transcript into evidence at the Commission's  
20 public hearings either at the hearings or by way  
21 of procedural order before the hearing is  
22 commenced.

23 The transcript will be posted to the  
24 Commission's public website along with any  
25 corrections made to it after it is entered into

1 evidence.

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

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

13           Pursuant to section 33(6) of the  
14 Public Inquiries Act 2009, a witness at an  
15 inquiry shall be deemed to have objected to  
16 answer any question asked him or her upon the  
17 ground that his or her answer may tend to  
18 incriminate the witness or may tend to establish  
19 his or her liability to civil proceedings at the  
20 instance of the Crown or of any person.

21           And no answer given by a witness at an  
22 inquiry shall be used or be receivable in  
23 evidence against him or her in any trial or  
24 other proceedings against him or her thereafter  
25 taking place, other than a prosecution for

1 perjury in giving such evidence.

2 As required by section 33(7) of that  
3 Act, you are hereby advised that you have the  
4 right to object to answer any question under  
5 section 5 of the Canada Evidence Act.

6 If at any point you need to take a  
7 break during our interview, please let me know.

8 Mr. Gaul, we asked your counsel to  
9 provide us with a copy of your CV in advance of  
10 the interview. So I'm just going to show you  
11 what we received. Are you able to see the  
12 document that I'm sharing my screen?

13 LARRY GAUL: Yes, ma'am.

14 KATE MCGRANN: And I'm just going to  
15 scroll through it. I just want to show you it  
16 from front to back. It's a two-page document.  
17 I'm happy to scroll back through at a speed that  
18 allows you to read if you like.

19 But my question for you is do you  
20 recognize this document?

21 LARRY GAUL: Yes, I do.

22 KATE MCGRANN: And is this your CV?

23 LARRY GAUL: Yes, ma'am.

24 KATE MCGRANN: Then we'll have that  
25 entered into Exhibit 1 to your exhibit [sic].

1 EXHIBIT NO. 1: Curriculum vitae of  
2 Mr. Gaul.

3 KATE MCGRANN: I will stop showing  
4 that to you now. Would you please provide us  
5 with a brief overview of your professional  
6 experience as it was relevant to the work that  
7 you did on Stage I of the Ottawa Light Rail  
8 Transit project?

9 LARRY GAUL: Sure. So my role on  
10 Stage I was to provide operational support to  
11 the OC Transpo's new rail department. So as per  
12 my experience leading up to that, my transit  
13 career in public transit spans 35 plus years.  
14 The large majority of that time was spent in the  
15 rail discipline from rail service planning and  
16 scheduling to rail operations.

17 I spent ten years with the Washington  
18 DC Metro system. The first couple of years, I  
19 was in charge of rail service planning for them.  
20 That's for their subway system. And then I  
21 moved over into the rail operating department  
22 where I ran a yard and storage facility similar  
23 to Belfast, and then I was transferred down to  
24 the control centre. So I served as an assistant  
25 superintendent in their control centre.



1           Then I went to Dallas to join their  
2 new light rail startup team, and I spent 20  
3 years in Dallas. All 20 years was in the rail  
4 group, or rail transportation group, where I  
5 initially was setting up and running their new  
6 train control centre.

7           And then I was promoted to assistant  
8 vice president where I was in charge of the  
9 entire rail operating department. And as part  
10 of that, I went there as part of the startup  
11 team, which was the original section was  
12 20 miles, and then over the next, I'm going to  
13 say, 15, 16 years, it grew to 85 miles, so I was  
14 involved in the design and construction  
15 activities and testing and commissioning for the  
16 starter systems as well as all the new segments.

17           KATE MCGRANN: And when did you begin  
18 working with STV?

19           LARRY GAUL: That would have been in  
20 2014. When I left Dallas, I joined STV. It was  
21 basically to make a move back to the East Coast  
22 where my wife and I are from. And there was a  
23 new light railway line under design in Baltimore  
24 and so I was hired to provide the same type of  
25 support to the Red Line project. Unfortunately,

1 about a year, year and half later a new governor  
2 was elected and he cancelled the project.

3 KATE MCGRANN: I understand that you  
4 began working on the Ottawa Light Railway  
5 Transit project in 2017. Is that right?

6 LARRY GAUL: The Stage I portion of  
7 the Ottawa Light Railway project. I originally  
8 started on Stage II providing the operational  
9 support into the design and redrafting of the  
10 PSOS for Stage II.

11 KATE MCGRANN: So you were part of the  
12 STV team that provided that, sort of, original  
13 support to Stage I --

14 LARRY GAUL: No. No, I was not.

15 KATE MCGRANN: And when did you start  
16 working on the Stage II aspect of the project?

17 LARRY GAUL: It was -- oh, Stage II?

18 KATE MCGRANN: Um-hmm.

19 LARRY GAUL: I think it was 2016.

20 KATE MCGRANN: And when you were  
21 brought in to assist on the Stage I aspect of  
22 the Ottawa Light Rail Transit, what were you  
23 brought in to do?

24 LARRY GAUL: It was to provide  
25 operational support for Troy Charter's new

1 department, sort of, the rail operating  
2 department. And my role was, when I say  
3 "operational support," it was to take, sort of,  
4 a high-level overview and watch what the group  
5 is doing, see where they are. Are they in line  
6 with what I believed would be needed in order  
7 for them to go into revenue service?

8           So a lot of my work stemmed from  
9 taking, revealing, you know, the roles and  
10 procedures that they had started working on,  
11 reviewing training plans, hiring staffing plans,  
12 did they make sense, working with -- at that  
13 time it was Joanna Vendetti who was, I think --  
14 she wasn't a director, but she was a program  
15 manager or something like that.

16           But she was in charge of the rail  
17 department at that time working under Troy, and  
18 so I was supporting her in various aspects, you  
19 know, her role to get started.

20           I did a lot of work, too. I worked  
21 closely with Pat Scrimgeour's planning and  
22 scheduling department. I did some work -- he  
23 also had at that time, I guess, the customer  
24 service and the special event planning, so I was  
25 helping his team in preparing, you know, various

1 plans and programs that would relate to the rail  
2 side.

3 KATE MCGRANN: And in the customer  
4 service and special event planning, were you  
5 looking at things like what the opening would  
6 look like, how you would educate users of the  
7 bus system about the light rail system and what  
8 their options are, things like that?

9 LARRY GAUL: Not so much on the  
10 customer side. It was more special events,  
11 opening -- opening day events was one of the big  
12 ones. But it was also for, you know, how will  
13 they handle the crowds on Canada Day, as an  
14 example.

15 KATE MCGRANN: You're looking into the  
16 future on days where you would expect the  
17 demands on the system to be abnormally high as a  
18 result of what's going on, and planning for how  
19 to account for that?

20 LARRY GAUL: Correct. Correct. And  
21 looking over their plans for when you have a  
22 rail service disruption and you need to  
23 substitute it with bus service. They had  
24 already drafted some plans and I took a look  
25 through that and made some comments on those

1 type plans, and provided some guidance from my  
2 past experience in my other properties.

3 KATE MCGRANN: When you joined in  
4 2017, were there already plans in place about  
5 what the opening of the system to revenue  
6 service would look like? And by that I mean had  
7 the City turned its mind to whether it would  
8 start with a limited open, and ramp its way up  
9 to full revenue service or whether it wanted to  
10 start with full revenue service on day one of  
11 opening of the system to the public. Where was  
12 the City at in decision-making on that question?

13 LARRY GAUL: From what I recall, the  
14 original plan was to always open the full system  
15 on the opening day. There was some discussion  
16 about -- the only discussion I remember about,  
17 sort of, a phased opening was will the buses be  
18 all rerouted on opening day, or will the buses  
19 continue a couple of weeks in order to, you  
20 know, break in the system, allow the customers  
21 to get, you know, used to the new rail system  
22 and things like that. That's the only type of  
23 phased opening I think I ever heard being  
24 discussed.

25 KATE MCGRANN: And the rationale for

1 running some, sort of, parallel bus service, as  
2 you understood it, was to help the customers?

3 LARRY GAUL: It was, yeah. I mean,  
4 that's not unusual in new rail system startups  
5 that you don't automatically reroute all the bus  
6 lines and feed into the subway or the new light  
7 rail line on day one.

8 You usually have a couple weeks period  
9 where there's parallel rail and bus service and  
10 the customers have a choice at that point.

11 KATE MCGRANN: And in your experience  
12 is it usual, as you put it, to open with full  
13 service from day one?

14 LARRY GAUL: No. It is not. I had  
15 never experienced that. I always, as a rail  
16 operator, I always liked the opportunity to have  
17 a couple more weeks of running without my full  
18 demand on the system yet.

19 KATE MCGRANN: And why is that?

20 LARRY GAUL: Well, in my case, it was  
21 for a lot of our extensions, we didn't get a lot  
22 of time from the end of construction or end of  
23 turn over to when the opening date that had been  
24 scheduled previously, we didn't always have a  
25 lot of time. Many times it was just a few days

1 to get all of our operators familiar with the  
2 new line section and trained properly. So that  
3 gave me -- that two-week period always gave me a  
4 little bit of extra flexibility.

5 KATE MCGRANN: The time crunch that  
6 you described in the extensions that you worked  
7 on, I mean, was it the case that you were -- you  
8 and the operators had to wait until construction  
9 was finished before they could get any time on  
10 the line, or did they have an opportunity during  
11 testing and commissioning of those extensions to  
12 familiarize themselves?

13 LARRY GAUL: No. We always had time  
14 during testing and commission. Fortunately, I  
15 had a very good testing and commissioning team.  
16 It didn't work for me, but they worked for DART  
17 and the person running that team was a former  
18 operator, you know, rail operator, a manager.

19 And he understood the need for  
20 operators to get trained on new line sections.  
21 So during the testing and commissioning, once he  
22 took over the railroad, once he had all the  
23 safety critical tests done, then he would allow  
24 us, at times, to get on the system, typically  
25 starting at nighttime, and then as his testing

1 progressed and we would -- he would give us more  
2 daytime hours as well. But we'd never -- we  
3 would never really get to run the full system  
4 until they had basically completed the testing  
5 and commissioning. We couldn't practice run our  
6 revenue service until that time.

7 KATE MCGRANN: On this project, and I  
8 will come back to this later during our time  
9 together this morning. But on this project we  
10 saw a trial running period.

11 Did you have a trial running period on  
12 the extensions of the Dallas system that you  
13 worked on?

14 LARRY GAUL: Yeah. We didn't call it  
15 trial running. But it was very similar to it.  
16 It was typically -- typical in the program  
17 schedule, there was always a minimum of two  
18 weeks of this practice running period that was  
19 allocated at the end of the project and before  
20 it was turned over to revenue service.

21 KATE MCGRANN: So if we speak about  
22 practice running in Dallas, that would be the  
23 equivalent to the trial running that we saw here  
24 in Ottawa?

25 LARRY GAUL: Yes, I'm sorry, yeah.



1 KATE MCGRANN: And what was the  
2 purpose of the practice running periods that you  
3 worked on in Dallas? What were they to  
4 accomplish?

5 LARRY GAUL: It was basically to  
6 operate the new schedule that incorporates the  
7 new line section. You know, continuation of the  
8 training for the operators, the supervisors, the  
9 maintenance staff. And it was, you know, it  
10 provided a less, you know, couple weeks'  
11 shakedown period, where, if there were problems,  
12 you know, the maintainers could go out and  
13 address the problems before we're in revenue  
14 service.

15 KATE MCGRANN: I've heard reference to  
16 something called the "burn in period." Does  
17 that phrase mean anything to you?

18 LARRY GAUL: Yeah.

19 KATE MCGRANN: What does it mean?

20 LARRY GAUL: Very similar to what I  
21 call a practice period or the trial running for  
22 the new system.

23 KATE MCGRANN: In your experience, if  
24 I've got this right, when you began working in  
25 Dallas, you were working with an entirely new

1 system.

2 LARRY GAUL: Yes.

3 KATE MCGRANN: And that was 20 miles,  
4 I think.

5 LARRY GAUL: Twenty miles, yes.

6 KATE MCGRANN: And then over the  
7 course of your time there, the system expanded  
8 several times and ultimately ends up being over  
9 80 miles. Is that right?

10 LARRY GAUL: Yes.

11 KATE MCGRANN: Did you use the same  
12 amount of burn in period when you were starting  
13 the system from scratch as you did for the  
14 expansion periods?

15 LARRY GAUL: No, I don't believe so.  
16 I believe we had three, potentially four weeks  
17 of time.

18 KATE MCGRANN: And how did you and the  
19 team that you were working with determine how  
20 long you would need for this burn in period each  
21 time you were confronted with a new opening?

22 LARRY GAUL: Well, for the original  
23 one, that had been established long before I got  
24 there. But it was based on, as I said, the head  
25 of our testing and commission program there was

1 a former operating manager who had started up  
2 numerous systems prior to that.

3 And he was the one who made sure that  
4 period was thrown in the original construction  
5 schedule. The two-week period, that was, sort  
6 of, the standard going forward from that initial  
7 opening through all the other phase openings, if  
8 you will.

9 KATE MCGRANN: So jumping from Dallas  
10 back to Ottawa. You mentioned that you were  
11 working with Troy Charter's group.

12 Would it be fair to say that you were  
13 in an oversight and advisory role?

14 LARRY GAUL: Yes. I think that's a  
15 good way of putting it.

16 KATE MCGRANN: And was anybody filling  
17 that role before you joined? Did you replace  
18 someone or step into somebody else's shoes?

19 LARRY GAUL: No. There's another  
20 individual that I, sort of, was doing very  
21 similar type activity. He was probably more at  
22 the higher level, you know. I was working  
23 initially with Joanna and directly with her team  
24 members. Where this other individual was  
25 probably working more with Troy and John.

1 KATE MCGRANN: And who was that?

2 LARRY GAUL: A gentleman named Joe  
3 North.

4 KATE MCGRANN: Is he also with STV?

5 LARRY GAUL: He was. He left STV a  
6 number of years ago.

7 KATE MCGRANN: And were the two of you  
8 working together, he at the level he was working  
9 at, you at the level you were working at?

10 LARRY GAUL: Yes.

11 KATE MCGRANN: And then you mentioned  
12 when you started, you were working with Joanne's  
13 team, did that change over time?

14 LARRY GAUL: Joanna left. And then  
15 when -- after she left, then I think it was  
16 Duane Duquette who was promoted into her job, so  
17 I started working with Duane at that point and  
18 probably a little more closely with Troy because  
19 I think at that time Troy had -- in order for  
20 Troy to focus on rail, I think he -- John  
21 reassigned some of his responsibilities so he  
22 could focus on rail. So I got to work with Troy  
23 quite closely after that as well.

24 KATE MCGRANN: And when you say that  
25 John reassigned someone of Troy

1 responsibilities, are you referring to John  
2 Manconi?

3 LARRY GAUL: Yes. I'm sorry.

4 KATE MCGRANN: Don't worry about that.  
5 And was it the case that -- so you begin working  
6 with Joanna, and Joanna is replaced by Duane,  
7 and then as Troy's role shifts, you begin to  
8 work more closely with Troy.

9 And did that remain the case for the  
10 rest of the time that you were working on  
11 Stage I?

12 LARRY GAUL: Yes, ma'am.

13 KATE MCGRANN: I've seen reference to  
14 a project management team. And it looked like  
15 it was housed in the same area that Troy was  
16 working.

17 Are you familiar with that name at  
18 all?

19 LARRY GAUL: The name rings a bell,  
20 but I can't tell you what it was.

21 KATE MCGRANN: Did you sit on any  
22 teams, committees, or working groups of the City  
23 during the course of your work on Stage I?

24 LARRY GAUL: Teams, committees, or  
25 working groups? Well, certainly plenty of

1 working groups. Those were already established  
2 working groups within OC Transpo. And some of  
3 them might have included RTM staff as well.

4 KATE MCGRANN: I understand that at  
5 some point, the City implemented an independent  
6 assessment team including members of  
7 representatives of STV.

8 Did you have any -- were you part of  
9 that team?

10 LARRY GAUL: I recall the team being  
11 brought in. But no, I was not part of that  
12 team. My --

13 KATE MCGRANN: What was -- sorry. Go  
14 ahead.

15 LARRY GAUL: I'm sorry. My experience  
16 is more on the operational side where this was  
17 more of a technical evaluation team.

18 KATE MCGRANN: I was going to ask you,  
19 what did you understand the independent  
20 assessment team to be doing. You said they're  
21 focusing on technical aspects of the system?

22 LARRY GAUL: As I recall, yes.

23 KATE MCGRANN: Could you be a bit more  
24 specific about what you mean by that?

25 LARRY GAUL: Well, now, I'm putting on

1 my thinking cap. I would participate in a line  
2 section for a walk-through early on, and there's  
3 a -- I can't tell you all the people who is on  
4 this. But there are a lot of, sort of, issues  
5 that were identified with the catenary  
6 foundations or the catenary poles, and things  
7 like that, maybe some track concerns as well.

8           And that -- I don't want to say it was  
9 a formal report, but there's some type of  
10 document that was developed, and it was shared  
11 with Troy, and I'm sure it was shared with John.  
12 And I think it just got -- I don't want to  
13 suggest, but somehow I think that, maybe, caught  
14 John's attention and he wanted to have -- he  
15 wanted to have some experts come in and take a  
16 look.

17           KATE MCGRANN: The document --

18           LARRY GAUL: I think it was about  
19 that, yeah.

20           KATE MCGRANN: The document that was  
21 developed, do you know who it was developed by?

22           LARRY GAUL: No. I think they -- no.  
23 I don't even want to guess. You know, there  
24 were members from OC -- from the rail group that  
25 were on it, there were members of the OLRTC

1 group the -- OC Transpo. But I think that group  
2 oversaw the construction. Is that correct? The  
3 OLRTC?

4 KATE MCGRANN: Yes. That's correct.

5 LARRY GAUL: I think there were people  
6 from that group.

7 KATE MCGRANN: When you first started  
8 working on Stage I of the OLRT, what was the  
9 status of the construction? And by that I mean  
10 was it on schedule?

11 LARRY GAUL: I think there was -- I'm  
12 not sure because I never saw the baseline  
13 project schedule. But I know that there was  
14 concerns within -- within the OC Transpo team  
15 about, you know, delays to the project.

16 KATE MCGRANN: And those are the  
17 delays associated with construction?

18 LARRY GAUL: Yes.

19 KATE MCGRANN: Were there any concerns  
20 about delays with respect to the City's  
21 readiness for revenue service or accepting  
22 handover of the system?

23 LARRY GAUL: Not that I ever heard  
24 being discussed. And in fact, it's -- no. I  
25 just can't recall any type of discussion on



1 that. I think the City -- to be honest, when I  
2 got there, ma'am, I was very impressed with how  
3 far along the OC Transpo rail ops team was in  
4 this program.

5 KATE MCGRANN: So I was going to ask  
6 you about that. What was the status of the  
7 areas that would fall under your oversight when  
8 you joined? Were they where you would expect  
9 them to be given the anticipated, I believe it  
10 was a May 2018 substantial completion date at  
11 that point in time?

12 LARRY GAUL: Again, I was impressed  
13 with how far along -- I was not expecting that  
14 when I was over there. They had hiring and  
15 staffing plans developed, they had their -- now,  
16 even though RTG was supposed to develop the  
17 operating rulebook, and the SOPs, and things  
18 like that, which they did.

19 I don't think it was -- I never saw  
20 the original versions, but according to the OC  
21 Transpo staff was that they didn't like it, and  
22 so they took it upon themselves to redo those  
23 SOPs and rules and things like that, the  
24 rulebook.

25 I'm just thinking. Even from the

1 service planning side, they had a lot of plans  
2 already in place, the bus substitution plan.  
3 They were just very far advanced from what I  
4 saw.

5 KATE MCGRANN: You said that wasn't  
6 what you -- you said they weren't where you  
7 expected them to be when you joined. Is that a  
8 fair, is that a fair paraphrase?

9 LARRY GAUL: Yeah.

10 KATE MCGRANN: And what were you  
11 expecting when you went over?

12 LARRY GAUL: I was expecting them to,  
13 you know, be at the beginning stages of  
14 developing a lot of these programs.

15 KATE MCGRANN: And why was that what  
16 you expected?

17 LARRY GAUL: I don't know. Maybe it  
18 was from my past experience that, you know, we  
19 were brought in -- in Dallas, we were brought  
20 in -- the senior people of the new rail startup  
21 team were brought in, like, a year and a half,  
22 maybe 16 months before the revenue service date,  
23 and we had nothing at that point in time.

24 And so we had to start from scratch,  
25 and so we didn't have our hiring plans and

1 staffing plans until probably a year before it.  
2 And then we had to go through the recruitment  
3 process. I think in OC Transpo, they had  
4 already gone through the recruitment for  
5 operators and other staff, or they had the  
6 program in place and they could do it just as  
7 soon as they needed to do it.

8 KATE MCGRANN: You mentioned that RTG  
9 had drafted an operating rulebook instead, or  
10 operating procedures in the City, did some work  
11 redrafting those.

12 To your knowledge were there any  
13 issues in terms of getting a final agreement  
14 from all the parties involved on the operating  
15 handbook or the standard operating procedures?

16 LARRY GAUL: No. Because a lot of the  
17 procedures and a lot of the rules and the  
18 rulebook would affect the maintenance team. So  
19 they had to get their buy-in, and so everything  
20 was run through -- was run through the RTM  
21 group.

22 KATE MCGRANN: Do you remember if  
23 there were any, I'll call them, sticky issues  
24 with respect to the work that the City did that  
25 took a bit more work to get buy-in from the RTM

1 group?

2 LARRY GAUL: I don't recall. I mean,  
3 that probably was, but I can't recall  
4 specifically.

5 KATE MCGRANN: Nothing is sticking out  
6 to you right now?

7 LARRY GAUL: No.

8 KATE MCGRANN: What aspects of  
9 operational readiness took up most of your time  
10 in 2017?

11 LARRY GAUL: That was mostly going  
12 through their different rules and procedures and  
13 other documents, you know, their training plan  
14 and their staffing plan, and things like that.  
15 That was the majority of my work early.

16 KATE MCGRANN: Any particular  
17 considerations required due to the fact that --  
18 let me start by saying this. My understanding  
19 is that the drivers and the other staff members  
20 who were sitting in the control room and things  
21 like that, were all new to light rail. Is that  
22 right?

23 LARRY GAUL: Can I start at, sort of,  
24 the higher level within a rail department?

25 KATE MCGRANN: Absolutely.

1                   LARRY GAUL: Starting at, sort of --  
2 now Joanne's gone, so it's Duane. Duane has,  
3 from what I recall, a lot of freight railroad  
4 experience. So he has rail experience. One of  
5 his senior, I guess, superintendents, had worked  
6 on the Trillium Line for a while before, so he  
7 had a general understanding of railroad  
8 operation.

9                   But then everybody else, I do not  
10 believe had any rail experience. Now, maybe  
11 some of the original operators came from the  
12 Trillium Line. I don't know. But that would  
13 seem logical.

14                  KATE MCGRANN: So what can you tell me  
15 about what the City did to account for the fact  
16 that most of the staff working on this project  
17 were going to be new to light rail when it  
18 opened for revenue service?

19                  LARRY GAUL: Well, I'm not sure there  
20 was much done for the rail operators because  
21 that's not uncommon. And any new startup is to  
22 bring over, typically, the bus operators from  
23 the agency and they turn into rail, and  
24 typically, they really don't have any rail  
25 experience. So I don't think there was much

1 done with the operators and maybe the  
2 supervisors, the field supervisors.

3 But on the controller side, I think  
4 they did a couple of things. One, I recall the  
5 controllers going to Toronto to visit -- I think  
6 they visited both the Toronto Transit  
7 Commission, their rail control centre, as well  
8 as there's a Sky Borough [sic] Light Rail  
9 system, or something, that uses a similar train  
10 control system as what's on the Confed Line.

11 And then, RTM, this was a contractual  
12 requirement from what I understand. They were  
13 responsible for training the controllers. And  
14 they hired -- from what I recall, they hired two  
15 former controllers from the Vancouver SkyTrain  
16 system who obviously had a lot of experience in  
17 a rail type environment, plus they had a lot of  
18 experience in the Thales CBTC train control  
19 system.

20 So at least they had some really good  
21 guidance initially from those two individuals.  
22 I think OC Transpo, they brought those two  
23 people over to OC Transpo side, after RTM was  
24 going to release them.

25 KATE MCGRANN: So you spent 2017

1 largely focused on reviewing documents that had  
2 already been prepared.

3 And was the purpose of that review to  
4 provide comments with the goals of finalizing  
5 those documents?

6 LARRY GAUL: That's correct. I helped  
7 them finalize those documents.

8 KATE MCGRANN: And about how long did  
9 that take.

10 LARRY GAUL: You know, on and off,  
11 probably, I don't know, six months or something.  
12 There was a pretty formal internal review  
13 process that they had to go through to -- a  
14 document control process to finalize these type  
15 documents. It had to get, you know, everybody  
16 sign off including system safety. And then it  
17 went through the document control process, so it  
18 was probably six months or so.

19 KATE MCGRANN: I don't think I  
20 actually have a sense of when in 2017 you  
21 started working on this. Do you recall  
22 approximately when in --

23 LARRY GAUL: It would have been made  
24 2017, June or July.

25 KATE MCGRANN: So then, the documents

1 that you were reviewing, if it takes about six  
2 months, they're finalized by the beginning of  
3 2018, in or about that time?

4 LARRY GAUL: Yeah. To the best of my  
5 knowledge, yes.

6 KATE MCGRANN: And then --

7 LARRY GAUL: There were probably  
8 revisions that were made afterwards when they  
9 got some experience. But, yes, the initial  
10 drafts, or the initial final documents, if you  
11 will.

12 KATE MCGRANN: And you stay on into  
13 2019.

14 So once those documents are finalized,  
15 what becomes your next area of focus?

16 LARRY GAUL: Once -- really, that's  
17 about the time they started testing, or dynamic  
18 testing of the system, where they are actually  
19 trains out there running. And at that point in  
20 time, my focus really focused to, Okay, the  
21 operator training program, how is that going?  
22 The controller training, how is that going?  
23 What's the status of the train -- of the TOCC,  
24 the train control equipment, and all their  
25 displays and the testing of that? And the



1 training of the controllers on -- oh, yeah, I  
2 forgot to mention. They had a simulator, too,  
3 that they used to train the controllers on.

4 KATE MCGRANN: What does TOCC stand  
5 for?

6 LARRY GAUL: I'm sorry. Transit  
7 Operations Control Centre.

8 KATE MCGRANN: This simulator, I can  
9 only picture a video game.

10 How many people can be trained on a  
11 simulator at one time?

12 LARRY GAUL: Well, there are two  
13 simulators from what I remember. One was a  
14 train simulator, where the operators could get a  
15 feel for operating a train without being on a  
16 real train. That was just one at a time.

17 And then the train control -- the  
18 Thales train control system had a simulator that  
19 the controllers could train on. They could set  
20 up different operating scenarios and teach the  
21 controllers how to, you know, manage the  
22 railroad.

23 KATE MCGRANN: As you become focused  
24 on operator and controller training programs at  
25 the start of the dynamic testing of the system,

1 were you provided with a schedule, like a  
2 testing and commissioning schedule that you  
3 could work with, to help you with what you were  
4 doing?

5 LARRY GAUL: I think there was a  
6 weekly schedule that was produced. And it  
7 really would have had to have been because when  
8 you are mixing, you know, operating trains in a  
9 railroad that's still owned by the testing and  
10 commissioning team, then there has to be some  
11 well-designed plans to make sure everybody is  
12 safe.

13 And I'm sure OC Transpo operating  
14 staff needed that -- needed that amount of time  
15 to schedule their new operators.

16 KATE MCGRANN: And as you get started  
17 on this in 2018, were things sticking to the  
18 testing and commissioning schedule that you were  
19 aware of?

20 LARRY GAUL: I can't say 100 percent  
21 if they were or not.

22 KATE MCGRANN: Do you recall a change  
23 to the originally planned substantial completion  
24 and revenue service availability dates?

25 LARRY GAUL: I'm sorry. Could you

1 repeat that?

2 KATE MCGRANN: Do you recall that  
3 there was a change to the originally planned  
4 substantial completion and revenue service  
5 availability dates?

6 LARRY GAUL: Yes, I do.

7 KATE MCGRANN: And in your view, did  
8 the testing and commissioning schedule have  
9 anything to do with that change in those  
10 originally planned dates?

11 LARRY GAUL: Oh, I'm sure it did.

12 KATE MCGRANN: Did you have any role  
13 in overseeing the testing and commissioning of  
14 the system?

15 LARRY GAUL: No. That was all under  
16 RTG, or whatever their group's name was.

17 KATE MCGRANN: The City must have been  
18 keeping an eye on the testing and commissioning  
19 that was being performed by RTG. Am I right?

20 LARRY GAUL: Oh, yes.

21 KATE MCGRANN: And who at the City was  
22 tasked with overseeing the testing and  
23 commissioning work that RTG was doing?

24 LARRY GAUL: I would imagine it was  
25 OLRTC.

1 KATE MCGRANN: OLRTC is the  
2 construction subcontractor for RTG.

3 LARRY GAUL: Oh, no. Then it's --  
4 gentleman's name, Richard Holder, his group.

5 KATE MCGRANN: And were you receiving  
6 updates from Mr. Holder's group or anybody at  
7 the City on the progress of testing and  
8 commissioning throughout 2018?

9 LARRY GAUL: Oh, I'm sure -- I'm sure  
10 we were kept abreast of what was going on and  
11 the status of it.

12 KATE MCGRANN: And do you remember  
13 whether the testing and commission schedule  
14 changed at all through 2018?

15 LARRY GAUL: Well, apparently if there  
16 is a delay in the revenue service availability  
17 date, the testing commissioning schedule would  
18 have had to have slipped.

19 KATE MCGRANN: Yes. But do you  
20 remember slippage, like specific areas of  
21 slippage as it affected the operator and  
22 controller training or otherwise?

23 LARRY GAUL: I want to say that there  
24 was a delay in the testing and commissioning,  
25 the installation testing and commissioning of

1 some of the train control system elements in the  
2 control centre, which is what would have been  
3 used for further operator -- or controller  
4 training.

5 On the operator's side, I mean, all  
6 that they want to do is get out there and  
7 operate trains. So it was frustrating I  
8 remember for them.

9 KATE MCGRANN: And what about it was  
10 frustrating?

11 LARRY GAUL: I guess, a lot of times  
12 where they were going to get the track and then  
13 at the last minute, they couldn't get the track  
14 because of work going on out in the field.

15 KATE MCGRANN: So just so I understand  
16 that. Was it the case that there were -- let me  
17 backup for a second because I think some context  
18 may help me here.

19 At this point in time in 2018, the  
20 system is still owned by RTG. Is that right?

21 LARRY GAUL: That's correct.

22 KATE MCGRANN: And so any  
23 opportunities for train operators, for example,  
24 from, OC Transpo to actually get into a train  
25 and operate it, would have to be scheduled

1 through RTG. Is that right?

2 LARRY GAUL: That is correct.

3 KATE MCGRANN: And you mentioned  
4 weekly schedules. Would the weekly schedules  
5 that you're referring to include or incorporate  
6 the planned operator training on the system?

7 LARRY GAUL: From what I recall,  
8 that's all that that schedule would include is  
9 these are the hours that you can have on the  
10 railroad, and whatever restrictions might be in  
11 place.

12 KATE MCGRANN: So what's an example of  
13 a restriction that might be in place?

14 LARRY GAUL: Well, initially, when  
15 they started running, they didn't have a tram  
16 control system. So they were operating out  
17 there under special, sort of -- we used to call  
18 them test role and procedures. So they had  
19 separate rules for operating trains when there  
20 was no signalling system. And, again, that's  
21 just make sure everything stayed safe out there.

22 Another operating restriction might  
23 be, instead of from, you know, St. Laurent to  
24 Blair, you can only have the yard to St. Laurent  
25 or something.

1 KATE MCGRANN: I want to take those  
2 one at a time to make sure I understand them.

3 LARRY GAUL: Sure.

4 KATE MCGRANN: If there's no train  
5 control system, that sounds to me like you have  
6 to manually operate the train. Is that right?

7 LARRY GAUL: That's correct, yes.

8 KATE MCGRANN: Are there any other  
9 indications for the operators when there's no  
10 train control system available to them?

11 LARRY GAUL: It was all done under --  
12 again, there's special operating rules for these  
13 type circumstances. And it was all done under a  
14 track occupancy permit which is issued to a  
15 train to operate in this specific area. And  
16 then they went out and they protected that area,  
17 they put flags up or something at the limits of  
18 that track area. And that section of track  
19 within those limits was for that train and that  
20 train only. No other train could be given  
21 authorization to go into that. I think  
22 typically switches are -- they are, sort of,  
23 locked in a position where it would not allow  
24 another train to go in there.

25 KATE MCGRANN: And then you had

1 mentioned another restriction that I did not  
2 write down. Do you remember what was? Oh, it  
3 was a limit of availability of the track, I  
4 believe.

5 LARRY GAUL: Right. Sort of, limited  
6 track limits.

7 KATE MCGRANN: I'm trying to  
8 understand the changes to the planned  
9 opportunities for the operators to get on a  
10 train and actually drive it around.

11 Is it the case that you start with a  
12 weekly schedule and then changes are made such  
13 that planned opportunities to get on the system  
14 are removed, or what changes were you seeing?

15 LARRY GAUL: Well, eventually, as the  
16 testing and commissioning program proceeds, you  
17 typically get more and more opportunity for  
18 track time. When I say "track time," that's  
19 time available for operators to go out there and  
20 operate the train and get familiar with the  
21 vehicle and the alignment.

22 So, you know, that slowly happened.  
23 Over time, they got more and more track time,  
24 and they had longer hours every -- instead of,  
25 maybe, being restricted to overnight hours; they



1 had, you know, some daytime hours as well.

2 KATE MCGRANN: And I'm just reacting  
3 to the fact that you said that the operators  
4 were frustrated.

5 Was it the case that the planned track  
6 time was changing such that they weren't getting  
7 as much as was originally envisioned?

8 LARRY GAUL: From what I recall, yes.

9 KATE MCGRANN: And do you remember  
10 over what period of time that was taking place?

11 LARRY GAUL: Well, I'm going to say,  
12 it extended for a pretty good length of time. I  
13 mean, I can't tell you how many months or  
14 something. But, I mean, when the schedule  
15 slipped, you know, that didn't necessarily mean  
16 that there's going to be more track time for the  
17 operators.

18 In fact, I think they were stuck on  
19 that, you know, overnight hours for a longer  
20 period of time, which was frustrating to them,  
21 too.

22 KATE MCGRANN: Yes. That's  
23 understandable. So when you say that this, sort  
24 of, changing to the schedule took place over a  
25 period of time, I understand that you can't tell

1 me exactly how long, but just to give me some  
2 context, are we talking weeks, are we talking  
3 months?

4 LARRY GAUL: I think it was months.

5 KATE MCGRANN: And I want to  
6 understand the adjustments that were made to  
7 what had been planned to -- we'll start with the  
8 operators, their opportunity to operate the  
9 train through the system. So the train control  
10 system is not available to them for a period of  
11 time.

12 Were steps taken to ensure that they  
13 got the originally planned number of hours with  
14 the train control system in place? Just kind of  
15 like tacked onto the end of the training  
16 schedule? How was that dealt with?

17 LARRY GAUL: Yeah. I recall that  
18 there were requirements in their training plan  
19 that said in order for an operator to be  
20 certified, they had to achieve X number of hours  
21 of train operation, and X number of hours of  
22 train operation under the full train control  
23 system or with the full train control system.

24 And so in my experience, opening up a  
25 new rail system, 12 days was not going to be

1 enough. I said we have to -- we have to allow  
2 time, some time before the official start of  
3 trial running in order for these operators to go  
4 out there and spend time being able to operate  
5 the full schedule -- this is outside of  
6 training, this is beyond training. Just for  
7 them to get comfortable operating the full  
8 system with the full service levels that they  
9 are going to be operating under revenue service  
10 before we go into trial running.

11 KATE MCGRANN: So was it the case when  
12 you arrived that the plan was for the operators  
13 to complete the required training in order to be  
14 certified as operators, and then move into trial  
15 running?

16 LARRY GAUL: I didn't see -- when I  
17 got there, I didn't see, sort of, this  
18 pre-revenue period, practice running period, if  
19 you will like we spoke about, the burn in period  
20 as you referred to. I didn't see that in the  
21 schedule. And I raised that point to, you know,  
22 the Troys and Joannas, and everything.

23 And I said somehow, you know, when we  
24 get to that point, we've got to give these folks  
25 some time to get familiar with what they are

1 going to be expected to do. The controllers as  
2 well. Same thing for the controllers as well.

3 KATE MCGRANN: And was that City  
4 receptive to that concept that in addition to  
5 the required training, before you get to trial  
6 running, there's got to be some practice time?

7 LARRY GAUL: Oh, yeah, yeah. The  
8 training only says that the individual knows how  
9 to operate a train and how to operate a train  
10 safely. It doesn't give him or her the exposure  
11 to operating a train, you know, with 14 other  
12 trains on the line, you know, and having  
13 scheduled times in and out of terminals and in  
14 and out of stations and opening and closing  
15 doors. So this is, sort of, an expanded  
16 training program after they become certified.

17 KATE MCGRANN: And so were you able to  
18 build that expanded training program into what  
19 was already planned?

20 LARRY GAUL: Yeah, eventually we got  
21 it. Yeah, we did.

22 KATE MCGRANN: Do you remember when  
23 that expanded training program started?

24 LARRY GAUL: I don't recall the exact  
25 date. But sometime in 2019, we --

1 KATE MCGRANN: And -- sorry. Go  
2 ahead.

3 LARRY GAUL: Sometime in early 2019,  
4 we basically had access to the full system. And  
5 we were running trains, you know. And we were  
6 -- we were trying to simulate full revenue  
7 service.

8 It was -- it was kind of difficult  
9 because we didn't always get anywhere near the  
10 15 trains that were required to go into revenue  
11 service, so they had to make do.

12 But that was also the time that we did  
13 a lot of the practising of drills and exercises,  
14 simulating vehicle problems, simulating other  
15 type problems that they were bound to run into  
16 once they get into revenue service.

17 KATE MCGRANN: You say that you got to  
18 do this - I've noted it down here as a practice  
19 period - post-certification practice period --

20 LARRY GAUL: Yeah.

21 KATE MCGRANN: -- in early 2019. I  
22 just want to understand whether that practice  
23 run period had to shift as a result of changes  
24 to other aspects of the schedule related with  
25 the program.

1                   Was it the case that that had to move?

2                   LARRY GAUL: Oh, yeah. That moved  
3 along with the construction and testing  
4 commissioning delays.

5                   KATE MCGRANN: Did you have a sense of  
6 what delays in particular forced the practice  
7 run period to move forward? Was it  
8 construction, was it testing and commission, was  
9 it a combination?

10                  LARRY GAUL: It was probably a  
11 combination.

12                  KATE MCGRANN: When you started the  
13 practice period in early 2019, looking just at  
14 access to the full system, did you reliably get  
15 the access that you were promised or that you  
16 thought you would get as you moved through the  
17 practice run period? Or did you continue to run  
18 into changes in the schedule that led to  
19 limitations?

20                  LARRY GAUL: I think, from what I  
21 recall sort of, once we got full access to the  
22 system that was pretty consistent that we had.  
23 There might have been an exception here or  
24 there, but...

25                  KATE MCGRANN: But in terms of time on

1 the rail with a fully functioning signalling  
2 system, you basically got what you had hoped for  
3 and what you had planned for?

4 LARRY GAUL: Yeah, I think so. I  
5 mean, at the time training was under the safety  
6 group, OC Transpo Safety Group, and I think they  
7 were -- they thought it was more than adequate.

8 KATE MCGRANN: I understand that they  
9 thought it was more than adequate.

10 Do you know if they got what they had  
11 hoped to do? You know, there's adequate and  
12 then there's what we plan.

13 LARRY GAUL: Well, you know, for their  
14 certification process, they got what they  
15 needed; every operator got however X number of  
16 hours of operating under, you know, full signal  
17 protection.

18 I don't think there was -- I helped  
19 draft a practice and capacity plan, which was --  
20 really spelling out what would take place in  
21 this, sort of, practice period. And it  
22 identified some of the requirements for, you  
23 know, the condition of the system, here is what  
24 OC Transpo will do during this practice period,  
25 and here is what RTM's, sort of,

1 responsibilities or expectations were during  
2 this period of time.

3           And it also identified the different  
4 types of exercises, and things that we would  
5 practice, activities that we can expect to occur  
6 in revenue service, and we would practice those,  
7 you know, randomly. And we'd do it enough --  
8 we'd do it often enough for all of those  
9 different activities, so we made sure we got all  
10 operators involved in some of them. We weren't  
11 going to be able to get all operators involved  
12 in all of the activities. So there was a pretty  
13 good plan spelled out for this.

14           KATE MCGRANN: But was it the case  
15 when you drafted the plan -- let me start by  
16 asking this question. The practice and -- oh,  
17 my gosh, my own writing.

18           LARRY GAUL: Practice and capacity.

19           KATE MCGRANN: Thank you. I can kinda  
20 see that that's what I wrote down.

21           The practice and capacity plan, when  
22 did you draft that?

23           LARRY GAUL: I don't know. I'd have  
24 to look at the document. It would have a date  
25 on it.



1 KATE MCGRANN: When you drafted the  
2 practice and capacity plan, was it known at that  
3 time that not everybody would get to engage in  
4 all of the activities that you had planned?

5 LARRY GAUL: I don't know if it's  
6 noted in the plan itself. The plan talks to how  
7 the process will be carried out.

8 KATE MCGRANN: Did you have to make  
9 any adjustments to what was contemplated in the  
10 practising capacity plan as a result of delays  
11 in the construction and testing and  
12 commissioning schedule?

13 LARRY GAUL: No, because that --  
14 again, that plan wouldn't have become effective  
15 until after we -- they had basically turned the  
16 railroad over to us.

17 KATE MCGRANN: Okay. So this practice  
18 and capacity plan would be put into action at  
19 one point before trial running, after trial  
20 running?

21 LARRY GAUL: No. Before trial  
22 running, that period before trial running -- you  
23 want to experience, you want your operators to  
24 have some level of experience before you go into  
25 this trial running period, or else you would

1 never be successful in trial run.

2 KATE MCGRANN: So when you say it was  
3 to be put in place after they turned the system  
4 over to us, what do you mean by that?

5 LARRY GAUL: Well, after they allowed  
6 us the full access to the system.

7 KATE MCGRANN: And I'm just trying to  
8 understand how -- so, for example, you mentioned  
9 that once you get into the practice running  
10 period, you didn't get or you didn't  
11 consistently get the full number of trains you  
12 were expecting to have access to. So just tell  
13 me about this. You're expecting to have access  
14 to 15 trains.

15 LARRY GAUL: Yeah. At the time, I  
16 think the peak period, the morning peak period  
17 requirement was 15 trains, 15 two-car trains.

18 KATE MCGRANN: And that was not  
19 regularly available to you?

20 LARRY GAUL: Not from the best of my  
21 recollection.

22 KATE MCGRANN: And then is that  
23 different from what you were expecting heading  
24 into the practice running period?

25 LARRY GAUL: Yeah, it was. I would

1 have expected that the full complement of trains  
2 would have been up and running and available for  
3 our use. That's what we expected in Dallas when  
4 I was down there. Those were my expectations.

5 KATE MCGRANN: And were those  
6 expectations met in Dallas?

7 LARRY GAUL: Yeah.

8 KATE MCGRANN: When those expectations  
9 weren't met in Ottawa, did you need to make  
10 adjustments to what you planned for the practice  
11 period in order to accommodate the fact that you  
12 don't have access to the full number of trains?

13 LARRY GAUL: Yeah, well, I mean, the  
14 practice period was really to simulate the full  
15 revenue service. So in the morning, trains  
16 would be expected to leave the yard at the time  
17 that's on the schedule that will be operated.  
18 And then they're to operate the schedule all day  
19 long with changes in the headways during the  
20 days and things like that. So that's what the  
21 expectation was.

22 Well, for the majority of the days, I  
23 would think, we didn't get the 15 trains, so the  
24 control centre had to make their adjustments,  
25 and they used their control centre, the train

1 control system to adjust the frequencies of  
2 service based on the number of trains they had  
3 available.

4 It was actually very good practice for  
5 both the operators and the controllers to go  
6 through this because at some point in the  
7 operating life of this system, there are going  
8 to deal with not enough trains, you know,  
9 available for morning pull out, and things like  
10 that.

11 KATE MCGRANN: And so the controllers  
12 have the opportunity to experience that during  
13 practice run. From an operator's perspective,  
14 it just seems like a basic math, sort of,  
15 situation, you expect 15 trains, 15 people are  
16 going to get to operate, you don't get 15.

17 So what impact did the train  
18 availability in actuality have on the operator's  
19 opportunity to practice before heading in?

20 LARRY GAUL: For every train that was  
21 scheduled to go out that didn't go out, there  
22 was an operator that was sitting around.

23 KATE MCGRANN: So did you lengthen the  
24 practice running time to account for the  
25 operator's lost time on the trains?

1                   LARRY GAUL: I think toward the end of  
2 it, of this practice running period, there was  
3 some level of a consistency. I don't recall how  
4 long that was, where we were getting 15 trains  
5 on a pretty consistent basis.

6                   KATE MCGRANN: But did you make any  
7 adjustments to the length of the plan, or  
8 otherwise, to account for the fact that you  
9 didn't get the trains you expected throughout  
10 practice running period?

11                   LARRY GAUL: I don't know. The  
12 practice running period was never established to  
13 be X number of weeks along. It was just to be:  
14 We need time, we need time to prepare. So I  
15 can't say that it was shortened, or if it was  
16 lengthened.

17                   KATE MCGRANN: In your view, did the  
18 practice running period ultimately accomplish  
19 everything you were hoping to accomplish with  
20 that phase?

21                   LARRY GAUL: I would have hoped to  
22 have had 15 trains for a longer period of time.

23                   KATE MCGRANN: And can you be more  
24 specific about how much longer you would have  
25 wanted to have 15 trains for?

1           LARRY GAUL: Again, I'm just going  
2 from my experience in Dallas was -- you know,  
3 for the initial system opening, we had four  
4 weeks of that practice running. So I would  
5 have, you know, the full four weeks of 15 trains  
6 would have been nice.

7           KATE MCGRANN: And do you remember  
8 approximately what you did get with full 15  
9 trains?

10          LARRY GAUL: I have to go back and  
11 look at calendars to find out.

12          KATE MCGRANN: If you don't remember,  
13 then you can just let me know, but can you give  
14 me any sense at all?

15          LARRY GAUL: I'm sorry. Repeat the  
16 question again.

17          KATE MCGRANN: I'm trying to  
18 understand, you had hoped for four weeks for 15  
19 trains, what did you actually get? I understand  
20 that you don't remember the exact numbers, but  
21 can you give me a general sense?

22          LARRY GAUL: I don't know. Maybe a  
23 week. But, again, there was more time than that  
24 in the practice period because the operators  
25 were still going out there. It just wasn't with

1 15 trains, with some smaller number of trains.

2 KATE MCGRANN: Were there any other  
3 aspects of this system that you expected to  
4 receive, expected to receive 15 trains, you  
5 didn't get them. Any other aspects of the  
6 system that you expected to receive in terms of  
7 performance, reliability, availability, et  
8 cetera, that you didn't get for this practice  
9 period that we've been talking about?

10 LARRY GAUL: I don't recall if they  
11 had any system-related issues during this  
12 practice period. Certainly, they had  
13 vehicle-related problems, that's why we weren't  
14 getting 15 trains.

15 Early on, they had some zone control  
16 problems. Zone controllers are -- they're part  
17 of the train control system, and I think there's  
18 seven zone controls out there. And each control  
19 zone had a controller. And let's just say it's  
20 the guts, it's the brains of that section of  
21 track for keeping the trains safe.

22 And they had some problems with zone  
23 controllers dropping off line, and they had to  
24 have maintainers go out there and replace a  
25 circuit board or something like that in order to

1 get it back up and running.

2 I'm sure we experienced some of those  
3 type problems during this practice period.

4 KATE MCGRANN: And would you expect to  
5 see those kinds of problems during the practice  
6 period as you are heading into it?

7 LARRY GAUL: Yeah, you kind of hope  
8 you do. You kind of hope you flush out some of  
9 these problems. On the vehicle side, I mean, a  
10 part of operating a railroad is dealing with  
11 vehicle-related problems. So it's good that we  
12 were seeing some of the vehicle problems. We  
13 were getting some experience in overcoming these  
14 problems when they happened. So there's a  
15 benefit for all of this.

16 KATE MCGRANN: And I come back to the  
17 vehicle piece in just a second, assuming I  
18 remember too. But with the zone controllers, so  
19 you did expect to see the kinds of problems that  
20 you ultimately experienced heading into the  
21 practice running period with the zone  
22 controllers?

23 LARRY GAUL: You know, I've never had  
24 any experience with the Thales CBTC train  
25 control system. So I never had any experience



1 with these type of zone controllers. So to say  
2 I was expecting to see a zone controller failure  
3 during this period would not be accurate. It  
4 would be -- I would expect there to be some  
5 problems associated with the various systems  
6 that would pop up, you know, during this period  
7 of time.

8 KATE MCGRANN: The zone controller  
9 problems that you experienced during the  
10 practice run period, were they resolved by the  
11 time you reached the end of that period?

12 LARRY GAUL: I think they were  
13 resolved before they went into trial running. I  
14 don't recall having any zone controller failures  
15 during trial running.

16 KATE MCGRANN: Can you help me situate  
17 this practice run period with respect to -- I  
18 know it happens before trial running. Does it  
19 happen before substantial completion is  
20 achieved?

21 LARRY GAUL: I don't recall when --  
22 when's substantial completion?

23 KATE MCGRANN: It was in May of 2018,  
24 I believe. No. I think was post-May of 2018.

25 LARRY GAUL: There were prerequisites

1 to reach substantial or achieve substantial  
2 completion. Am I correct?

3 KATE MCGRANN: Yes.

4 LARRY GAUL: Yeah. So I just don't  
5 recall when that was achieved.

6 KATE MCGRANN: I'm just trying to  
7 understand when it was happening in the grand  
8 scheme of things.

9 Did it happen -- do you remember if it  
10 concluded -- how far in advance of the start of  
11 trial running this practice period concluded?

12 LARRY GAUL: Practice running went  
13 right up to the start of trial running.

14 KATE MCGRANN: And did it take place  
15 over a month, or was it intermittently over  
16 longer than a month?

17 LARRY GAUL: I want to say it was, you  
18 know, it was a pretty consistent period of time.  
19 I don't think -- I mean, there might have been  
20 days within this period that, you know, we had  
21 to let them get out on the right of way to do  
22 something that interrupted our operations. But  
23 I think it was pretty consistent period once it  
24 started.

25 KATE MCGRANN: Okay. And I've got

1 down here that it was about a month. But is  
2 that right?

3 LARRY GAUL: I don't want to guess on  
4 this. I'd have to look at calendars.

5 KATE MCGRANN: If I was going to go  
6 and take a look for documents that would let me  
7 know how long the practice run period lasted,  
8 what documents should I look for?

9 LARRY GAUL: I do recall there was  
10 some calendar that was laid out in advance of  
11 trial running that, sort of, identified what --  
12 this wasn't an operating calendar. This was a  
13 calendar, I guess, for John's information  
14 about -- where all the things that are going on  
15 leading up to whenever this trial running date  
16 was set for.

17 And so there some calendar there that  
18 lists -- that listed all the different, sort of,  
19 drills and exercises that we had planned during  
20 this practice running period. That might be the  
21 only document I can think of that would give you  
22 some general sense on when it started and how  
23 long it went.

24 KATE MCGRANN: What about the practice  
25 and capacity plan that you drafted? Would I be

1 able to find -- does that exist as a single  
2 document or set of documents?

3 LARRY GAUL: Yes, it does.

4 KATE MCGRANN: And would it include  
5 the information about the duration of that  
6 period, though?

7 LARRY GAUL: I don't believe it  
8 includes -- there's any type of duration  
9 requirement in it. There might be. I'd have to  
10 go back and refresh my memory on it. But I  
11 don't think it has any type of duration. It  
12 certainly wouldn't have had a start date or an  
13 end date because I think that was produced in  
14 late 2018, and so we would not have known at  
15 that point in time at what point we were going  
16 to be given the railroad.

17 KATE MCGRANN: Just due to the  
18 uncertainty around the construction the testing  
19 and --

20 LARRY GAUL: Yes.

21 KATE MCGRANN: -- schedule?

22 LARRY GAUL: Correct.

23 KATE MCGRANN: Couple more questions  
24 about the practice run period before we move off  
25 of this topic. With respect to the availability

1 of the trains, you said that the full 15 was not  
2 available for a chunk of the time that you are  
3 doing trial running.

4           Were they not available because they  
5 weren't available to be used at the start of the  
6 day, or was it that they weren't available  
7 because there were taken out of service  
8 throughout the day due to issues that arose?

9           LARRY GAUL: I think it was a  
10 combination of both.

11           KATE MCGRANN: And we talked about  
12 your expectations about the availability of the  
13 number of trains. But with respect to the  
14 number and nature of issues that arose through  
15 the day, was that also in line with what you  
16 expected to see?

17           LARRY GAUL: Yeah, I think so. I  
18 mean, even in Dallas, with our brand-new fleet  
19 of vehicles, we had a lot of vehicle problems.  
20 It's not uncommon for a new system and a new  
21 fleet to experience problems. Again, that's one  
22 of the purposes of this practice period it's to  
23 shake down the equipment, shake down the system,  
24 shake down the operators and the controllers,  
25 and try and identify these problems before you

1 go into revenue service.

2 So I think it's not uncommon to  
3 experience the type of problems that -- or some  
4 of the problems that they were experiencing on  
5 these railcars.

6 KATE MCGRANN: And I understand that  
7 it's not uncommon to experience some of the  
8 problems that you were experiencing and the  
9 operators were experiencing in the practice run.  
10 The totality of the issues that you ran into  
11 during the practice run period, did you view  
12 that as a normal course and as expected?

13 LARRY GAUL: For a brand-new system, I  
14 would say, yes.

15 KATE MCGRANN: And was there enough  
16 time built-in to the practice run period and  
17 then trial running to address all the issues  
18 that were identified through that phase?

19 LARRY GAUL: No. I don't think they  
20 got all the issues corrected. There was still  
21 some issues that were out there, vehicle-related  
22 issues that what I know were still being worked  
23 on. Again, a lot of them required fleet  
24 modifications, and fleet modifications don't  
25 come quickly.

1 KATE MCGRANN: Fair enough.

2 LARRY GAUL: So no, they didn't  
3 address all of the problems. Really, I should  
4 defer to, you know, somebody that's got more  
5 experience in vehicle maintenance for this.

6 KATE MCGRANN: I mean, I'm interested  
7 in your view from an operations perspective and  
8 preparing for operations perspective.

9 Did you have any concerns at the end  
10 of the practice run period that if you proceeded  
11 according to schedule, there would be  
12 reliability issues once you hit operations?

13 LARRY GAUL: Yeah, I did. I think a  
14 lot of people were concerned about that.

15 KATE MCGRANN: And who did you share  
16 those concerns with?

17 LARRY GAUL: It was all through the  
18 rail operations group. Troy was -- I'm sure he  
19 was as concerned about it as I was based on what  
20 he was seeing. There was a lot of effort  
21 working with OC Trans -- I mean, with RTG to  
22 address these problems.

23 I know they brought in some people  
24 experienced, some railcar engineers. I know car  
25 maintenance people to, sort of, monitor what was

1 going on over at the Belfast maintenance  
2 facility, monitor RTG and RTM's performance to  
3 see what they were doing, and I guess to try and  
4 provide them some guidance on what they need to  
5 consider doing or something. But again, I would  
6 have to defer that to those individuals.

7 KATE MCGRANN: I'm going to jump  
8 around a little bit from topic to topic. But  
9 before I move on to a new topic, I just want to  
10 check with my colleague, Ms. McClellan.  
11 Ms. McClellan, do you have any follow-up  
12 questions that you wanted to ask about what  
13 we've discussed so far?

14 LIZ MCLELLAN: I don't, no.

15 LARRY GAUL: May I just ask for a  
16 five-minute break?

17 KATE MCGRANN: Absolutely. My clock  
18 is showing 10:20, so is 10:25 sufficient?

19 LARRY GAUL: That's fine.

20 KATE MCGRANN: Okay. Don't forget to  
21 turn off your microphone.

22 LARRY GAUL: Thank you.

23 -- RECESS TAKEN AT 10:19 A.M.

24 -- RESUME AT 10:25 A.M.

25 KATE MCGRANN: Turning from the



1 practice period that we've been discussing, in  
2 or around 2017, the City stepped in to guarantee  
3 RTG's debt to its long-term creditors in respect  
4 of the project.

5           Were you consulted at all about that  
6 decision?

7           LARRY GAUL: No, I was not.

8           KATE MCGRANN: Do you know if anybody  
9 at STV was consulted about that decision?

10           LARRY GAUL: I can't answer that  
11 question.

12           KATE MCGRANN: Were you aware that  
13 that was taking place during the time that you  
14 were working on the project?

15           LARRY GAUL: I didn't really get into  
16 any of the commercial areas of the project.

17           KATE MCGRANN: And I am wondering, for  
18 example, whether you saw a change in the kind of  
19 information that became available to you in the  
20 work that you were doing after that took place?

21           LARRY GAUL: Well, you said that  
22 happened in 2017?

23           KATE MCGRANN: I believe that's right.

24           LARRY GAUL: Well, I didn't even come  
25 over to Stage I until mid-2017, so I wouldn't

1 have any knowledge of what -- if it happened  
2 before that, there's no basis for comparison.

3 KATE MCGRANN: Okay. And so did you  
4 see any impact of the project of this City  
5 guaranteeing RTG's debt?

6 LARRY GAUL: I probably didn't even  
7 know that they had secured RTG's debt.

8 KATE MCGRANN: I believe that you were  
9 a member of the Trial Running Review Team. Is  
10 that right?

11 LARRY GAUL: I was.

12 KATE MCGRANN: Did you assist in  
13 developing the trial running requirements or the  
14 tests that were to be applied during that  
15 period?

16 LARRY GAUL: The testing, yes, to a  
17 degree. I think the trial running -- well, the  
18 trial running test plan was an RTG document. It  
19 was their responsibility to put that together.  
20 Russell -- a gentleman from -- who was, sort of,  
21 on loan to OC Transpo from Calgary Transit,  
22 Russell Davies, he came in to help out OC  
23 Transpo for about six months. And as I recall,  
24 he, sort of, took the lead in, sort of,  
25 rationalizing what are the trial running

1 requirements going to be based off of what was  
2 in the PSOS or the PA, whatever it was.

3 I recall having discussions with Pat  
4 Scrimgeour and Troy on, okay, we need to verify  
5 headway reliability somehow. And I, sort of,  
6 led a discussion with them on coming up with  
7 this, I think it's the headway availability or  
8 something, component of the scorecard of the  
9 trial running requirements. The practice and  
10 capacity plan -- let me step back a minute.

11 The requirements within the PSOS for  
12 trial running included a lot of things that were  
13 not included in the trial running plan. And  
14 when I say "a lot of things", I'm talking about  
15 the trial running PSOS from, what I recall,  
16 required that there be various drills and  
17 exercises conducted during that 12-day trial  
18 running period.

19 Well, to me, that never made sense  
20 because that trial running period should just be  
21 reflecting revenue service operation. So the  
22 practice and capacity plan that Russell and I  
23 drafted, I told you before, I drafted it,  
24 Russell had a hand in it as well. But when we  
25 drafted it, it was really meant to be a

1 supplement to the trial running plan.

2 So a lot of those things that were  
3 required in the PSOS that were to be -- occurred  
4 during that 12-day period, they were actually  
5 removed from the trial running period but  
6 conducted as part of that practice and capacity  
7 plan.

8 KATE MCGRANN: A couple of follow-up  
9 questions there. Starting with PSOS --

10 LARRY GAUL: I figured there would be.

11 KATE MCGRANN: PSOS is an acronym that  
12 you've used a couple of times. Am I right that  
13 that's the -- well, actually, what does it mean?  
14 Just tell me what it means.

15 LARRY GAUL: You know, I was thinking  
16 about that this morning. I just can't -- I  
17 can't remember what that acronym means. It's  
18 the technical provisions of the contract.

19 KATE MCGRANN: Is it performance  
20 specific output specification?

21 LARRY GAUL: That's it, yes.

22 KATE MCGRANN: So we are on the same  
23 page with what PSOS means. And then you  
24 mentioned that PSOS trial running provisions  
25 included drills and exercises that were instead

1 of accounting for them in the trial running  
2 period, you account for them in the practice and  
3 capacity plan. So that is the period that we  
4 were discussing before the break that ran right  
5 up to the edge of trial running. Is that right?

6 LARRY GAUL: That's correct, yes.

7 KATE MCGRANN: And what I have seen  
8 about the trial running period is that there's a  
9 daily evaluation of the performance of the  
10 system against a set of preset thresholds that  
11 are scored by a team. Have I got this right so  
12 far?

13 LARRY GAUL: Well, yes. Scored by the  
14 team, yes.

15 KATE MCGRANN: And then the team  
16 scoring is ultimately reviewed by the  
17 independent certifier who ultimately signs off  
18 on whether the scoring is accurate and what  
19 happens next.

20 LARRY GAUL: The independent certifier  
21 was involved in the scoring of the daily  
22 scorecards as well. They were in the room.

23 KATE MCGRANN: So was there a similar  
24 evaluation performed on the drills and exercises  
25 that were moved from trial running into the

1 practice and capacity planning?

2 LARRY GAUL: No. The drills and  
3 exercises is more to get the operators and the  
4 maintenance staff familiar with dealing with  
5 these type of -- with these type issues that  
6 will arise. So there's no scoring mechanism for  
7 those. It --

8 KATE MCGRANN: Go on.

9 LARRY GAUL: It was just for the  
10 benefit of the operators, the controllers, the  
11 maintenance people and sometimes some of the  
12 drills included the local emergency response  
13 agencies and things like that.

14 But there's nothing -- there's never  
15 anything that I can recall about scoring any of  
16 those drills and exercises.

17 The practice and capacity plan has  
18 examples of, sort of, pass-fail documents on  
19 what would constitute a pass for these type of  
20 exercises, and what would constitute a failure,  
21 and what would happen if there was a classified  
22 failure, you know. So that's all included in  
23 the plan.

24 KATE MCGRANN: Who was involved in  
25 scoring the practice and capacity phase of this,

1 the pass-fail piece?

2 LARRY GAUL: Most of this was under  
3 the rail operations superintendents. These were  
4 all field exercises that we are talking about.  
5 And so they would -- you know, there was a  
6 schedule for them, and if they worked it in,  
7 they worked it in.

8 But it was really under their regime.  
9 I think I witnessed one at the very onset of  
10 this, sort of, process. And there was, I  
11 believe -- at least I did a write-up on it on my  
12 observations on it. And I'm pretty sure that  
13 the rail operations team also kept records of  
14 every drill and exercise that they conducted.

15 KATE MCGRANN: Was there a threshold  
16 or a series of criteria set that would determine  
17 ultimately whether the objectives of the  
18 practice and capacity plan were achieved from  
19 the perspective of the trial running PSOS.

20 So for example, you said there was  
21 pass-fails, was there a requirement that you  
22 would achieve a certain number of passes in  
23 order to successfully complete the practice  
24 running period?

25 LARRY GAUL: No, I do not believe so.

1           KATE MCGRANN: What was the purpose of  
2 the pass-fail scoring?

3           LARRY GAUL: A lot of them would be,  
4 maybe, the operator or the controller needs  
5 retraining in something. And so it would -- or  
6 maybe it would be we want to rerun this plan  
7 because our procedure -- you know, a part of  
8 this process is verifying that all your  
9 operating procedures and your roles, you know,  
10 can handle -- adequately address these type  
11 issues that you are going to face.

12           And so maybe it was that now, you  
13 know, the procedures need to be changed to  
14 reflect how we will really respond based on our  
15 experience during that drill.

16           KATE MCGRANN: Was there any provision  
17 in the practice and capacity plan to restart  
18 aspects of the plan based on the performance  
19 that was being recorded or to lengthen the plan  
20 based on the results that were being seen?

21           LARRY GAUL: The schedule for these  
22 drills and exercises, it was designed such that  
23 the drills and exercises would be conducted  
24 multiple times, you know, over the course of  
25 this practice running period in, and they would



1 be conducted during all different shifts so you  
2 try and get as many operators exposed to these  
3 different type situations as you possibly can.

4 KATE MCGRANN: And was there a goal to  
5 hit a certain level of passes based on the  
6 number of times that you ran the drill?

7 LARRY GAUL: To -- no. I don't think  
8 there was ever a goal. To be honest, I never  
9 really saw the write-ups from the rail  
10 operations people. I would certainly -- I spent  
11 a lot of time in the control centre and I would  
12 certainly hear exercises, drills and exercises  
13 going on, you know, out there as I'm monitoring  
14 the controllers, you know, management of the  
15 railroad, so I would hear them, but I never  
16 looked at their documentation.

17 KATE MCGRANN: So just to make sure I  
18 understand. Regardless of the outcome from the  
19 pass-fail perspective, the practice running  
20 period, the practice and capacity plan, practice  
21 running period wasn't changed in response to  
22 what the results were?

23 LARRY GAUL: No. The practice running  
24 period was going to run up to the start of trial  
25 running.

1 KATE MCGRANN: Was the trial running  
2 team or the independent certifier involved in  
3 reviewing the results of the practice running  
4 period?

5 LARRY GAUL: No, I don't think any of  
6 that got up to the Trial Running Review Team.

7 KATE MCGRANN: And if I was going to  
8 go looking for the results of the evaluation of  
9 the practice running period, what documents  
10 should I look for?

11 LARRY GAUL: Well, certainly if you  
12 want results of exercises and drills, I would go  
13 to the rail operations team within OC Transpo,  
14 or maybe the training group. I'm not sure which  
15 one was running it.

16 KATE MCGRANN: And do you know the  
17 names of specific documents? Is there and an  
18 valuation spreadsheet I should be looking for or  
19 a scorecard?

20 LARRY GAUL: No. I mean, the name of  
21 -- I think my file name for the practice and  
22 capacity plan was CPP. No. PCP. So I think if  
23 you searched on that, you would find it.

24 KATE MCGRANN: Coming back to the  
25 trial running team, do you remember when this

1 team was formed?

2 LARRY GAUL: Well, it would have been  
3 -- let's see. When did we go -- we went into  
4 trial running sometime late July, if I recall,  
5 July of '19, or early August of '19, one of  
6 those two.

7 So I imagine this was formed -- I  
8 don't know. Maybe a month in advance of that.

9 KATE MCGRANN: And were you a member  
10 from the outset?

11 LARRY GAUL: I believe I was.

12 KATE MCGRANN: You mentioned that  
13 (inaudible) Davies was on loan to OC Transpo  
14 (inaudible) months was involved rationalizing  
15 the trial running --

16 (Reporter interjects due to audio  
17 issues.)

18 KATE MCGRANN: Russell Davies. Can  
19 everyone hear me, okay? I just want to make  
20 sure -- okay. So you had mentioned that Russell  
21 Davies was rationalizing trial running  
22 requirements from the PSOS. What does that  
23 mean?

24 LARRY GAUL: I guess the PSOS wasn't  
25 really clear. In my mind, it wasn't really

1 clear on what were the requirements. I don't  
2 think it was really clear in other people's  
3 minds either. So Russell was trying to go  
4 through and pull out, from what I recall,  
5 Russell was trying to go in and pull out all the  
6 different requirements, and then from those  
7 requirements, format it in a way that it made  
8 sense.

9 KATE MCGRANN: Would it be fair to say  
10 that he was trying to convert the PSOS into an  
11 actionable, evaluable, scorable set of  
12 criteria --

13 LARRY GAUL: Yes.

14 KATE MCGRANN: -- (inaudible) tell  
15 everyone when requirements had been passed?

16 LARRY GAUL: Yes. That's exactly what  
17 he was trying to do.

18 (Reporter interjects due to  
19 overtalking.)

20 LARRY GAUL: I can hear her fine.

21 LIZ MCLELLAN: Yes, I can hear Kate as  
22 well.

23 KATE MCGRANN: Can we go off the  
24 record while we're doing this?

25 -- OFF THE RECORD DISCUSSION AT 10:42 A.M.

1 -- RECESS TAKEN AT 10:42 A.M.

2 KATE MCGRANN: So we had been  
3 discussing that Mr. Davies is converting the  
4 (inaudible) to a set of criteria that everybody  
5 can understand that you can score and so that  
6 you will know what to do to accomplish to pass  
7 the trial running test. Is that fair?

8 LARRY GAUL: That's what I recall,  
9 yes.

10 KATE MCGRANN: And who was working  
11 with him on that?

12 LARRY GAUL: I can't answer that  
13 question. I know it would have had to have been  
14 coordinated with RTG because they were also  
15 members of the plan. So I don't know. He may  
16 have been working with Troy, but I can't go  
17 there because I just don't know.

18 KATE MCGRANN: Did the City have the  
19 opportunity to review and comment on what  
20 Mr. Davies put together?

21 LARRY GAUL: Oh, yeah. Most  
22 definitely.

23 KATE MCGRANN: Were you involved in  
24 that review and comment exercise?

25 LARRY GAUL: No, I do not believe I

1 was.

2 KATE MCGRANN: Do you know who from  
3 the City was involved in that?

4 LARRY GAUL: No. But they had to have  
5 been. There's no way that that wouldn't have  
6 gone through Troy's approval process.

7 KATE MCGRANN: What (inaudible) to  
8 prepare the trial readiness review team for  
9 (inaudible) the team would be doing throughout  
10 the trial running (inaudible?)

11 LARRY GAUL: I'm sorry. Now I'm  
12 hearing breakup.

13 KATE MCGRANN: Ms. Heckert, can we go  
14 off the record one more second?

15 -- OFF THE RECORD DISCUSSION AT 10:44 A.M.

16 -- RESUME AT 10:45 A.M.

17 KATE MCGRANN: Before that break, I  
18 had been asking you what was done to prepare the  
19 Trial Running Review Team for the evaluation  
20 work that you would be doing throughout the  
21 trial running period?

22 LARRY GAUL: Well, from what I recall,  
23 we met -- the Trial Running Review Team met a  
24 couple of times before the start of trial  
25 running to review, discuss, review the

1 scorecard, the process for the data collection  
2 that would be used for scoring the scorecard.  
3 And then the process, I just said, the process  
4 for collecting the data.

5           So we met a couple of times to go over  
6 that. The process for collecting the data was a  
7 little bit different, depending on what the  
8 criteria was, what the metric was that you are  
9 measuring. For example, for some of the  
10 maintenance and the IMIRS criteria, there was  
11 random reviews of work orders. There was random  
12 reviews of maintenance activities to make sure  
13 that the process was being followed. There were  
14 -- there was, like, the headway calculations,  
15 they used the ATS system, the Automatic Train  
16 Supervising system to collect -- to get the  
17 number and of the times that trains actually  
18 departed these specific stations during these  
19 hours.

20           But they also had people in the field  
21 at each one of the stations that were manually  
22 recording the times, too, as a backup. So how  
23 the data was collected was, it varied by  
24 depending on the criteria that we were  
25 measuring.

1 All that information was collected and  
2 was then given to the Trial Running Review Team.  
3 So we didn't collect data. All that we did was  
4 we looked at the data that had been collected by  
5 these field teams or whoever they might be, and  
6 then we assessed: Did it meet the criteria or  
7 did it not meet the criteria?

8 KATE MCGRANN: So the ATS, sorry, I  
9 think you said what the acronym stood for, but  
10 do you mind saying it again?

11 LARRY GAUL: I think the Automatic  
12 Train Supervision. I think that's what they  
13 call it on the Ottawa system.

14 KATE MCGRANN: And what is that?

15 LARRY GAUL: It's a system that  
16 monitors the entire operations of the railroad.  
17 So it automatically records things like train  
18 arrival, train departure times from stations.  
19 So it's an automatic way of collecting that one  
20 set of data.

21 KATE MCGRANN: And during the  
22 operation, is the ATS part of the operating  
23 system?

24 LARRY GAUL: Yes.

25 KATE MCGRANN: Was there any



1 particular reason why there were people also  
2 recording the information that you were looking  
3 to the ATS for as a backup?

4 LARRY GAUL: No, not that I recall. I  
5 think they just wanted another set of eyes.

6 KATE MCGRANN: Was there any concern  
7 that the ATS system may not function as expected  
8 throughout the trial running period that led to  
9 that?

10 LARRY GAUL: No. I don't think that  
11 we had experienced any trouble with that system.  
12 You know, if there was a glitch and the report  
13 generation feature doesn't work for some reason,  
14 then you had another set of data that could be  
15 used.

16 KATE MCGRANN: Do you remember if  
17 there was a resort to the manually collected  
18 data at any point in time?

19 LARRY GAUL: You know, we never saw  
20 that. All that we saw was the data.

21 KATE MCGRANN: If there was a glitch  
22 in the ATS, that's not something the trial  
23 running team was made aware of?

24 LARRY GAUL: I'm sure if there was a  
25 glitch in the ATS, I would have heard of that

1 through another means, not through the trial  
2 running team. But I wasn't worried about a  
3 glitch in the ATS. You know, if the report  
4 generation feature for some reason didn't run a  
5 report or something, that's -- I think that's  
6 the only reason that we would have the people  
7 out there on the platform.

8 KATE MCGRANN: So the functioning of  
9 the ATS was not something that was being tested  
10 during the trial running period?

11 LARRY GAUL: No. That had already  
12 been tested during testing and commissioning.

13 KATE MCGRANN: Just with reference to  
14 the testing and commissioning period, were you  
15 at all involved in assessing the results of  
16 testing and commissioning?

17 LARRY GAUL: No, I was not.

18 KATE MCGRANN: Were you given  
19 information about the results of the testing and  
20 commissioning?

21 LARRY GAUL: Not that I can recall.

22 KATE MCGRANN: Based on what you saw  
23 during the practice period heading into trial  
24 running, did you have a view that the system was  
25 facing any particular challenges in achieving

1 the trial running criteria?

2 LARRY GAUL: Well, I think in my mind,  
3 the biggest concern was the vehicle reliability  
4 because a big portion of the trial running  
5 requirements was that the total kilometres  
6 operated versus what's scheduled. To me, that  
7 was the biggest component of the whole trial  
8 running criteria.

9 KATE MCGRANN: And what were the  
10 concerns you had about vehicle reliability going  
11 into trial running?

12 LARRY GAUL: It was the same concerns  
13 we had when we were in that practice running  
14 period. You know, as I mentioned before, you  
15 know, for a long time, we weren't getting 15  
16 trains, so if they didn't give us 15 trains,  
17 they weren't going to meet the trial running  
18 requirements for the total kilometres operated.

19 KATE MCGRANN: You mentioned the 15  
20 train number was affected both by trains  
21 available at the beginning of each day and also  
22 incidents that occurred throughout the day.

23 Did you have concerns on both fronts  
24 as you're heading into trial running?

25 LARRY GAUL: I think there was some

1 concerns on how the yard -- during this whole  
2 time, I had some concerns on how the yard was  
3 operating. I got the sense that there wasn't a  
4 single person in charge of the yard.

5 So the processes that were being  
6 employed in the yard seemed to be a little  
7 convoluted. From what I recall, there was -- it  
8 was broken down into three areas. You had a  
9 yard controller, you had Alstom maintenance who  
10 was responsible for, sort of, the maintenance of  
11 the vehicles, and you had Alstom warranty who  
12 was, I hope I get this right, who was  
13 responsible for the maintenance of the vehicles  
14 prior to them being turned over or something  
15 like that.

16 And to me, there didn't seem to be a  
17 lot of coordination between the three groups.  
18 There didn't seem to be a single person in  
19 charge of the yard, which I believe led to their  
20 problems getting trains moved around in the yard  
21 into the shops so they could be worked on. You  
22 know, and coupled that with, in the yard, it was  
23 originally designed to be, the term is UTO,  
24 Unmanned Train Operation, so it was a fully  
25 automatic -- it was designed to be a fully

1 automatic yard.

2 Well, because of work that was going  
3 on as part of Stage II, was the expansion of the  
4 Belfast yard for future support at Stage II,  
5 then they had to add new tracks and new  
6 switches, and somehow that affected the train  
7 control system in the yard which meant that they  
8 could not have had this Unmanned Train Operation  
9 in effect.

10 So RTG had to hire what they called  
11 hustlers, which were people in the yard that  
12 were responsible for movement of trains to and  
13 from the handover platform, in and out of the  
14 shop, to make the moves -- the train moves  
15 within the yard. That was their responsibility.

16 And I'm not sure that they had enough  
17 of those hustlers. And, you know, I certainly  
18 would have had more if it had been my yard. So  
19 I just didn't think it was well-organized, it  
20 was running as a well-organized machine. It was  
21 certainly different than I had ever been used  
22 to.

23 KATE MCGRANN: Did others at the City  
24 share your view or your assessment of that?

25 LARRY GAUL: Yes, they did. Our views

1 were shared with RTG or RTM, whoever it was.

2 KATE MCGRANN: Heading into trial  
3 running, did you have any concerns about the  
4 safety of the system?

5 LARRY GAUL: No.

6 KATE MCGRANN: But with respect to the  
7 vehicle reliability, what kind of issues were  
8 you seeing at the end of the practice run period  
9 that you thought might continue into trial  
10 running, were there any?

11 LARRY GAUL: Yeah, there were -- well,  
12 I don't know when we saw the door problems. But  
13 there was an identified door problem. So  
14 there's four main systems on a vehicle: Your  
15 air system, your door system, your brake system  
16 and your propulsion systems.

17 There's not a vehicle out there that  
18 I'm aware of that doesn't have intermittent  
19 problems with those four systems to some degree,  
20 especially on a new fleet of vehicles. And sure  
21 enough, we were having -- sure enough, the  
22 majority of the vehicle problems were related to  
23 those four basic systems.

24 So, yeah. But that's not unusual. I  
25 think I mentioned that previously. That's not

1 unusual for a new system. So yeah, we expected  
2 those problems. And they're going to happen in  
3 revenue service, they were going to happen in  
4 trial running, I knew that. But, you know, I  
5 had worked -- but I thought -- that was my  
6 entire focus, you know, during the practice  
7 running period was to work with RTM and to  
8 establish what I refer to as formal  
9 troubleshooting, vehicle troubleshooting  
10 procedures.

11 And these procedures would be a guide  
12 for either the controller to walk an operator  
13 through the process for overcoming a vehicle  
14 problem.

15 KATE MCGRANN: Yes.

16 LARRY GAUL: Like, if it's a door  
17 problem, the door is stuck open, the operator  
18 could walk the operator through the process for  
19 cutting out that door, closing it and cutting it  
20 out. So my goal was, for a long time, even  
21 before practice running, was working with RTM to  
22 establish these procedures. There was some  
23 drawback at first. They weren't -- Alstom  
24 really didn't want the operators touching  
25 anything.

1           But they finally understood after they  
2 had to respond to all these problems that maybe  
3 there's some benefit in letting the operators  
4 overcome basic problems. So they finally,  
5 slowly accepted the idea up to a point. I  
6 didn't get everything I was looking for, but we  
7 got some.

8           So I think -- I thought that we were  
9 pretty prepared for the basic problems to deal  
10 with them when they came up, and they did come  
11 up in trial running. Occasionally, we had some  
12 problems and the operators or the maintenance  
13 people were able to resolve them relatively  
14 quickly.

15           KATE MCGRANN: So you identified four  
16 systems, you've got air, doors, brake and  
17 propulsion, right?

18           LARRY GAUL: (Non-verbal response.)

19           KATE MCGRANN: And you mentioned that  
20 you would expect at any train system for there  
21 to be intermittent issues with those systems  
22 along the way. Now, were there air-related  
23 issues that remained outstanding as you are  
24 heading into trial running?

25           LARRY GAUL: No. There were not. In



1 fact, the air system on these vehicles is minor  
2 compared to the other type vehicles where the  
3 air drives a number of other, you know,  
4 subsystems. On this vehicle, it's just -- I  
5 believe it's delegated to just the airbags for  
6 the suspension.

7 KATE MCGRANN: Okay. So this isn't  
8 air like HVAC, this is a different kind of air?

9 LARRY GAUL: That's correct.

10 KATE MCGRANN: With respect to the  
11 doors, was the system experiencing door issues  
12 heading into trial running?

13 LARRY GAUL: Yes. They were. I'm  
14 trying to remember when the door issue -- there  
15 was a pretty major door issue that came up. And  
16 it dealt with the sensitive edge of the door.  
17 So on the edge of the doors where they close  
18 together, there's a sensitive edge on each --  
19 it's one leaf or both leaf [sic], but anyway,  
20 there's a sensitive edge.

21 And its intent, its purpose is to --  
22 if it detects an obstruction, it's supposed to  
23 open up the door. Well, the vehicle, the doors  
24 were doing that. Their sensitive edge was  
25 detecting an obstruction and was reopening. But

1 there was a problem with reclosing the doors.

2 And I can't explain it in the full  
3 detail, but it had something to do with the  
4 operator was not able to turn the key that  
5 should've closed the door, or there was some  
6 cabling issue associated with that that was the  
7 real driver of this problem. And it took them a  
8 while to figure that out, but then the vehicles  
9 had to go through a retrofit.

10 And I imagine they've gotten them  
11 completed now. But I don't think they had them  
12 completed by the time I left the project in late  
13 2019.

14 KATE MCGRANN: Focusing on the time  
15 period heading into trial running, do you  
16 remember if the door issue had come up yet?

17 LARRY GAUL: If it had, I don't recall  
18 it. And only because -- the only way we found  
19 out about this was because of the sensitive  
20 edge, and there weren't a lot of people riding  
21 the train. There were some employees riding the  
22 trains between stations. So that people --  
23 there wasn't a lot of use -- I mean, doors were  
24 opening at every station. But there were no  
25 real obstructions. So I don't think that this

1 problem was identified until, maybe, we got into  
2 revenue service when customers were actually  
3 bumping the doors and trying to hold the doors.

4 KATE MCGRANN: Was there any  
5 simulation of passenger presence on the train  
6 during the practice and capacity -- practice run  
7 period?

8 LARRY GAUL: With any simulation of  
9 passengers?

10 KATE MCGRANN: Was anything done to,  
11 sort of, make the train -- expose the trains to  
12 what they would be exposed to once passengers  
13 started riding on them in revenue service?

14 LARRY GAUL: No. I think they had --  
15 I think there was an effort to verify that the  
16 vehicle could hold the number of people it was  
17 supposed to be designed to hold, so checking the  
18 capacity of the vehicle.

19 KATE MCGRANN: How is that done?

20 LARRY GAUL: As I recall, this was  
21 done in a simulated setting where they had  
22 enough people to fill -- they had enough  
23 volunteers to fill, like, one module of the  
24 train, and if they had enough people -- if that  
25 one module accommodated the required number of

1 people, then maybe they went to the next module,  
2 or maybe they just -- there was an assumption  
3 made that if the largest module could  
4 accommodate the largest number of people, then  
5 the other modules will be considered, you know,  
6 would be acceptable.

7 KATE MCGRANN: And when you say  
8 accommodate, is there enough space for everyone  
9 to fit on the train?

10 LARRY GAUL: Yeah. You are checking  
11 the capacity of the vehicle.

12 KATE MCGRANN: Like the volume  
13 capacity?

14 LARRY GAUL: Yeah, the volume  
15 capacity.

16 KATE MCGRANN: Were you checking  
17 anything else?

18 LARRY GAUL: No.

19 KATE MCGRANN: Do you know if at any  
20 point before going into revenue service,  
21 anything was done to try to replicate what the  
22 trains would go through once they were exposed  
23 to passenger service?

24 LARRY GAUL: In terms of?

25 KATE MCGRANN: Passenger behaviour,

1 the kinds of stresses and challenges that would  
2 be put on the train.

3 LARRY GAUL: No. You know, when the  
4 vehicle is accepted, and I was not part of the  
5 vehicle acceptance process. But typically when  
6 they are accepted, there will be somebody that  
7 would go through each vehicle and check like the  
8 sensitive edge on all doors to make sure that  
9 everything is functional, functioning when the  
10 vehicle is turned over to the owner.

11 So I'm quite confident that that would  
12 have been done. But besides other employees who  
13 were out there during the trial running, that  
14 were being trained, like, the station people and  
15 things like that, they were riding the trains a  
16 lot back and forth.

17 So besides that, I don't recall any  
18 other testing going on that would simulate a  
19 revenue service environment.

20 KATE MCGRANN: And would you normally  
21 expect to see that?

22 LARRY GAUL: Well, I've certainly  
23 never experienced that. I'll put it that way.

24 KATE MCGRANN: That's not something  
25 you did in Dallas?

1 LARRY GAUL: No.

2 KATE MCGRANN: Coming back to the --  
3 so the door issues -- you believe there were no  
4 door issues identified until the train went into  
5 revenue service?

6 LARRY GAUL: No. I'm sure we had  
7 identified some issues. But, you know, again, I  
8 think I need to defer those questions to the  
9 maintenance people because they were more  
10 closely aligned with it.

11 KATE MCGRANN: I just want to know  
12 what you remember seeing from your work in the  
13 practice period. And we've discussed that there  
14 were challenges with vehicle availability, I  
15 just want to know what you saw heading into  
16 trial running.

17 LARRY GAUL: Again, the doors weren't  
18 -- the doors were opening and closing at  
19 stations during the practice running period.  
20 And were there reports of a door getting stuck,  
21 I'm sure there were. But I don't recall  
22 specific incidents.

23 KATE MCGRANN: Maybe we can come at it  
24 this way. What did you understand the major  
25 challenge to vehicle availability to be during

1 the practice period?

2 LARRY GAUL: Well, you know, they had  
3 some propulsion-related problems. I can't  
4 provide the details, but there's a lot of --  
5 they had to go and replace some component of the  
6 propulsion package. So that was one.

7 I just can't -- I don't know. I  
8 didn't spend that much time with the maintenance  
9 people.

10 KATE MCGRANN: I'm going to ask you  
11 some questions about the trial running process  
12 and the approach to scoring trial running. So  
13 to do that, I'm going to try to share my screen  
14 with you again.

15 I am showing you, this is a 31-page  
16 document. Right now we are looking at the first  
17 page. For starters, can you read this document  
18 or do you need me to zoom in?

19 LARRY GAUL: Could you zoom in on it,  
20 please? I'm familiar with the document, but it  
21 would be nice if you zoomed in.

22 KATE MCGRANN: Tell me, is this  
23 sufficient or would you like me to zoom in some  
24 more?

25 LARRY GAUL: One more would be good.

1 That's good.

2 KATE MCGRANN: So the first page we're  
3 looking at here is a letter from the Altus  
4 Group. I'm going to scroll down and show you.  
5 It's signed by Monica Sechiari. It says here  
6 Director of IC Services from Altus Group  
7 Limited. That's the independent certifier. Am  
8 I right?

9 LARRY GAUL: I believe, yes.

10 KATE MCGRANN: So this is a letter  
11 from Altus to the City of Ottawa. And Rideau  
12 Transit Group Partnership who we've been  
13 referring to as RTG throughout this interview  
14 And the re: line is the "Confederation Line  
15 Project (Ottawa Light Rail Transit Project)  
16 Validation of Trial Running Acceptance." I'm  
17 going to scroll down so you can see the body of  
18 the letter. It's three paragraphs.

19 Did you see this letter during the  
20 time that you are working on the Ottawa Light  
21 Rail Transit project?

22 LARRY GAUL: This is the validation of  
23 trial running acceptance. So I imagine this  
24 would have been shared with the members of the  
25 trial running period, but I can't say that



1 specifically.

2 KATE MCGRANN: I want to ask you some  
3 questions about the information in this letter  
4 just use it as a reference point for now. If  
5 you look at the first paragraph, let me just see  
6 if I can highlight this to help. Of course I  
7 can't. This letter says that:

8 "Trial running was reviewed on a  
9 day-by-day basis by the Trial Running  
10 Review Team in accordance with the  
11 trial running test procedure  
12 (submitted as a final document on  
13 July 29, 2019)."

14 Is that an accurate description of the  
15 activities of the Trial Running Team as you  
16 recall?

17 LARRY GAUL: Yes, I believe so.

18 KATE MCGRANN: This letter goes on to  
19 say:

20 "The trial running results were  
21 reviewed by the Trial Running Review  
22 Team on a daily basis with the  
23 preparation of the trial running  
24 scorecard."

25 Is that correct?

1 LARRY GAUL: Yes, ma'am.

2 KATE MCGRANN: And then it goes on to  
3 say:

4 "And the results agreed and  
5 signed off by the members of the Trial  
6 Running Review Team."

7 And that's what happened?

8 LARRY GAUL: Yes, ma'am.

9 KATE MCGRANN: I'm going to take you  
10 down to the second page of this document. All  
11 right. Let's try the third page of this  
12 document. There we go. This was a document  
13 entitled TRRT, which I believe is the Trial  
14 Running Review Team. Is that right?

15 LARRY GAUL: That's correct.

16 KATE MCGRANN: "Conclusion of trial  
17 running statement." So I'm going to scroll down  
18 and let you take a read through this document.  
19 You let me know when you're ready for me to move  
20 the document down some more.

21 LARRY GAUL: No. I'm familiar with  
22 this document.

23 KATE MCGRANN: And for the purpose of  
24 the record that's being taken, this is document  
25 COW270758. So in the first paragraph, this

1 document says the trial running period was  
2 conducted from July 29th to August 22nd. So 25  
3 days. Is that right?

4 LARRY GAUL: That seems like the  
5 period of time, yes.

6 KATE MCGRANN: In the second  
7 paragraph, it states:

8 "As peak service performance was  
9 achieved over several days, the Trial  
10 Running Team agreed to reduce the peak  
11 service fleet size to 13 from 15  
12 trains to accommodate a revised  
13 service plan as agreed to by the  
14 Parties."

15 Do you know what it means when it says  
16 "as peak service performance was achieved over  
17 several days," do you know what that's referring  
18 to?

19 LARRY GAUL: Well, I think when trial  
20 running started that they had -- there was some  
21 problems up to the point where they - when I say  
22 "they", I'm talking about RTG - asked for the  
23 trial running to be paused. And then over -- I  
24 think it was paused for a couple of days. And  
25 then afterwards, a new service plan was

1 developed that reduced the train count from 15  
2 trains to 13 trains.

3 KATE MCGRANN: Do you remember what  
4 the problems were that caused RTG to ask for a  
5 pause?

6 LARRY GAUL: I think it was vehicle  
7 availability issues again.

8 KATE MCGRANN: Do you remember who  
9 introduced the new service plan for  
10 consideration?

11 LARRY GAUL: No. I can't say.

12 KATE MCGRANN: You can't say whether  
13 it was the City or RTG, for example?

14 LARRY GAUL: No. Without making an  
15 assumption, no, I can't say with 100 percent  
16 certainty.

17 KATE MCGRANN: Do you know if you knew  
18 at the time and you have since forgotten?

19 LARRY GAUL: I mean, maybe. Maybe. I  
20 remember discussions amongst the Trial Running  
21 Review Team about the reduction in the fleet  
22 size that's been approved. Whether I knew if  
23 this was a request from RTG, or a request from  
24 the City, I can't say with 100 percent  
25 certainty.

1           KATE MCGRANN: This document says the  
2 Trial Running Review Team agreed to reduce the  
3 service fleet size.

4           What do you recall about what the  
5 Trial Running Review Team discussed and how it  
6 came to this agreement?

7           LARRY GAUL: There was discussions  
8 about -- maybe I'm mixing up two different  
9 levels of discussions. If I recall properly,  
10 prior this, sometime well before, they had been  
11 -- no. That would be making an assumption  
12 again, and I can't recollect 100 percent. So  
13 no, I cannot really remember what those  
14 discussions were and how this decision was met.

15           KATE MCGRANN: But do you recall if  
16 there were discussions about this proposal  
17 internal to the City and its advisors?

18           LARRY GAUL: When you say "internal to  
19 the City and its advisors."

20           KATE MCGRANN: I mean people involved  
21 in the discussion were working on behalf of the  
22 City. Like, did the City discuss this amongst  
23 itself?

24           LARRY GAUL: Oh, I don't know what  
25 happened, you know, at levels above me.

1 KATE MCGRANN: Were you involved in  
2 providing any reviews or advice to the City on  
3 whether to accept this reduction in peak service  
4 size for the trial running period?

5 LARRY GAUL: Would I have accepted it?  
6 Was that your question?

7 KATE MCGRANN: Did you give the City  
8 any advice on whether it should agree to this  
9 reduction?

10 LARRY GAUL: Not that I recall.

11 KATE MCGRANN: What was the role of --  
12 what are the trial running team do with this  
13 proposal? Did it consider it as a group?

14 LARRY GAUL: Yeah, I'm sure there were  
15 discussions about this amongst the trial  
16 member -- or Trial Running Review Team. And  
17 obviously, according to this, there was a  
18 decision made that they would accept this, the  
19 lower number of trains.

20 KATE MCGRANN: Did you have a view as  
21 to whether this should be accepted and applied  
22 to the trial running period?

23 LARRY GAUL: I think my only thought  
24 on this, that I recall, is that: Does the 13  
25 trains provide the level of capacity that would

1 be needed to carry the projected demand?

2 KATE MCGRANN: And what did you  
3 conclude having asked yourself that question?

4 LARRY GAUL: I think I probably had a  
5 conversation with Pat Scrimgeour over this to  
6 just see would -- would the headways that would  
7 be allowed with 13 trains be enough to carry the  
8 capacity or carry the demand?

9 KATE MCGRANN: Did you have any  
10 concerns that the reduction in fleet size from  
11 15 down to 13 would have implications beyond the  
12 immediate ability to meet the headway  
13 requirements?

14 LARRY GAUL: As an example, could you  
15 share something with me?

16 KATE MCGRANN: Sure. So if you're  
17 running with 13 trains and a train runs into an  
18 issue, were you worried that agreeing to reduce  
19 the fleet size would have an impact on the  
20 response time, for example? The overall  
21 reliability of the system.

22 LARRY GAUL: No. I don't think so. I  
23 mean, the reliability of the system would mainly  
24 be affected by slightly -- slightly more crowded  
25 trains. But I think the underlying feature here

1 was that reducing the number of trains increased  
2 the spare factor, when I say "spare factor,"  
3 increased the number of trains that could be  
4 worked on at the same time.

5           So if RTG or RTM was having problems  
6 maintaining the equipment and making trains  
7 available for service, well, they would have  
8 four additional cars that they could potentially  
9 be working on during the peak periods, which, to  
10 me, in the long run would then, you know, help  
11 them address their ongoing vehicle-related  
12 problems probably sooner than what they would  
13 have if they were forced to put out 15 trains  
14 every day.

15           KATE MCGRANN: Did you have -- sorry.  
16 Did you ever see them up until this point be  
17 able to put out 15 trains a day in any, sort of,  
18 reliable way?

19           LARRY GAUL: I would think that the  
20 first couple of days of trial running they put  
21 out 15 trains. I'd have to see the scorecard.

22           KATE MCGRANN: And the scorecards are  
23 attached, they are part of this document. So we  
24 will go there.

25           LARRY GAUL: Yeah.



1           KATE MCGRANN: But just coming at this  
2 from a practical perspective, if the idea is at  
3 the beginning of trial running, you want to see  
4 you run 15 trains, and you can't run 15 trains,  
5 are the concerns about the reliability of the  
6 system?

7           LARRY GAUL: Well, again, there were  
8 concerns about the reliability of the equipment.  
9 It seems to me this reduction in trains was  
10 potentially an effort to help RTM and RTG meet  
11 their requirements because it was providing them  
12 additional trains that they can work on, on a  
13 daily basis.

14           The system had already been proven  
15 that -- like, the train control system had  
16 already been proven that it can support a  
17 15-train operation. That has been verified. So  
18 I wasn't concerned about the ability of the  
19 system to accommodate 15 trains. It was more  
20 the vehicles.

21           KATE MCGRANN: If the idea is to go  
22 from no cars in the maintenance service facility  
23 to four cars in the maintenance service  
24 facilities so RTM could work on them, is that  
25 the idea here?

1           LARRY GAUL: Well, the fleet size, if  
2 I recall correctly, was 34 cars. So under the  
3 service, the planned service-level, it required  
4 15 two-car trains. So that's 30 trains. I  
5 think there's also a requirement to have a  
6 two-car, sort of, spare train on standby, which,  
7 in theory would mean that RTM could work on two  
8 cars, that's all they would have available to  
9 work on during the peak periods, or at least  
10 during the a.m. peak period.

11           By reducing the vehicle requirements  
12 for mainline service, this potentially allowed  
13 them to have six cars available to them to work  
14 on. I believe this only applied to the a.m.  
15 rush because I think the p.m. rush only required  
16 something like 13 trains. The headways were a  
17 little bit longer in the p.m. rush than they  
18 were in the a.m. rush.

19           KATE MCGRANN: Okay. One more  
20 question about this piece I think, and then we  
21 can move on. If the idea is when you can  
22 provide 15 trains, you will have a 15 two-car  
23 setup.

24           LARRY GAUL: Yeah.

25           KATE MCGRANN: You will have one

1 two-car setup in spare.

2 Was there any concern that that one  
3 two-car spare would be insufficient if you need  
4 to be able to have three two-car setups in  
5 maintenance?

6 LARRY GAUL: Was I concerned about it?  
7 No. From an operating standpoint, I wasn't  
8 concerned about it.

9 KATE MCGRANN: Were you concerned  
10 about it from any standpoint?

11 LARRY GAUL: No. I don't believe so.  
12 As an operator, if my maintenance group could  
13 give me one spare train, I was happy.

14 KATE MCGRANN: Regardless of the  
15 performance of the vehicles?

16 LARRY GAUL: Yes. As long as I had  
17 one spare train available, I was happy. There's  
18 a lot of systems don't have spare trains on  
19 standby.

20 KATE MCGRANN: If you look at -- I'm  
21 going to move my cursor to help you to see what  
22 I'm looking at. We've got:

23 "It was agreed the Average  
24 Aggregate Vehicle Kilometre Ratio,  
25 (the AAVKR) would result in a pass

1 with the achievement of an AAVKR of  
2 96 percent or higher over 9 of 12  
3 days, and no three consecutive days  
4 below 94 percent."

5 Do you know what led to this  
6 adjustment?

7 LARRY GAUL: No. But the statement  
8 above, just from where you started reading, it  
9 refers back to some document, RFI 0266. I don't  
10 know what that document is. So I would really  
11 need to see that.

12 KATE MCGRANN: I'm just scrolling  
13 down. This shows you the --

14 LARRY GAUL: Yes.

15 KATE MCGRANN: -- name and the  
16 agreement. And it looks to me like this  
17 represents each member of the Trial Running  
18 Review Team agreeing to the adjustments that  
19 we've just walked through.

20 LARRY GAUL: I believe so, yeah.

21 KATE MCGRANN: What supported your  
22 agreement to these adjustments? Why did you  
23 agree to this?

24 LARRY GAUL: Well, I think I just went  
25 -- I just discussed it. I felt that there was a

1 benefit, a long-term benefit to providing some  
2 opportunities, more vehicle opportunities for  
3 RTM to work on.

4 And as I said, I confirmed that the  
5 13-car train schedule could meet the demand  
6 requirements.

7 KATE MCGRANN: Was there any  
8 consideration given the adjustments that  
9 everybody in the Trial Running Review Team was  
10 asked to agree to, to giving an RTM more time to  
11 get the vehicles ready to go before you go into  
12 trial running?

13 LARRY GAUL: I think going into trial  
14 running was the request of RTG. They said they  
15 were ready to go into trial running.

16 KATE MCGRANN: Okay. But was there  
17 any consideration given to whether an answer to  
18 the issues that are being seen was to either  
19 pause trial running for a longer period of time  
20 to allow for the provision of 15 trains in a way  
21 that they could all go through trial running?

22 LARRY GAUL: I'm sure there were  
23 discussions to that effect. But I can't be --  
24 you know, I can't pinpoint any specific ones.

25 KATE MCGRANN: Do you recall being

1 involved in any discussions to that effect?

2 LARRY GAUL: Not that I can recall.

3 KATE MCGRANN: Do you recall whether  
4 you ever suggested to anybody at the City that,  
5 perhaps, more time to get the trains ready to go  
6 would be advisable as opposed to adjusting the  
7 trial running criteria?

8 LARRY GAUL: Well, I think I shared my  
9 feelings, and I think I said this before that I  
10 was always concerned about the vehicle  
11 reliability issues and going into trial running.  
12 To be honest with you, I thought that, you know,  
13 the trial running was going to go on for a long  
14 period of time because, to be honest, I don't  
15 think I expected them to pass, you know, in a  
16 short -- to successfully achieve trial running  
17 in a success, if you will.

18 KATE MCGRANN: And were these  
19 adjustments that were agreed to consistent with  
20 your initial expectations that it would take  
21 them a long time to pass?

22 LARRY GAUL: Well, the fact that we  
23 had a pause after the first three or four days,  
24 if I recall properly, that, sort of,  
25 substantiated my concerns.

1           KATE MCGRANN: Do you remember if you  
2 had a view that as to whether the system would  
3 be able to pass if these adjustments were not  
4 made to the trial running criteria?

5           LARRY GAUL: I don't recall making a  
6 statement like that, that they would never be  
7 able to pass if they didn't do this.

8           KATE MCGRANN: So that's not what I  
9 asked you, though. Do you recall whether you  
10 had a view that -- let me put it this way. You  
11 had a view that it would take a very long time  
12 or a long time for the system to be able to pass  
13 if the criteria remained as they were when you  
14 started the trial running?

15           LARRY GAUL: I thought whenever the  
16 idea was floated about reducing it to 13 trains  
17 and after I got -- after I confirmed that the  
18 demand issue would still be satisfied, I  
19 probably said, This might be a good idea. I  
20 probably agreed with the others that this might  
21 be a good idea.

22           KATE MCGRANN: I'm going to take you  
23 to the scorecard, the trial running scorecard  
24 from the first day of trial running. So this is  
25 the trial running scorecard from Monday July

1 29th, 2019, and I just would like you to walk me  
2 through each of the main headings over here to  
3 help me understand what the purpose of having  
4 them on a scorecard is, and what you are looking  
5 to measure. So with respect to safety, do you  
6 recall how it was determined whether this was a  
7 pass or fail?

8 LARRY GAUL: As I recall, the Chief  
9 Safety Officer of OC Transpo would meet or talk  
10 to his counterpart in RTG and review the  
11 previous day's operations to see if there were  
12 any safety-related issues. And then they would  
13 tell us if they thought this was a pass day or a  
14 fail day.

15 KATE MCGRANN: And do you ever recall  
16 the Trial Running Review Team having any  
17 questions or concerns about whether the  
18 assessment of those individuals were sufficient  
19 or whether a pass could be granted?

20 LARRY GAUL: No. I don't think we  
21 ever questioned any recommendation that they  
22 gave us.

23 KATE MCGRANN: And the heading  
24 "Operational," we've got "Travel Time (ATO Mode)  
25 23 minutes." What does that mean?



1           LARRY GAUL: That would be end to end  
2 travel time, meaning how long does it take the  
3 train from departing one terminal to arriving at  
4 the opposite terminal.

5           KATE MCGRANN: And "ATO Mode" is  
6 automatic train operation mode?

7           LARRY GAUL: That's correct.

8           KATE MCGRANN: And what did it take to  
9 pass this criteria?

10          LARRY GAUL: Well, the requirement was  
11 the 20 -- was the maximum time it could take is  
12 23 minutes.

13          KATE MCGRANN: And did that apply to  
14 every training shift throughout the day?

15          LARRY GAUL: No. I believe that they  
16 took a random sample of five or six trips in  
17 each period of the day or -- it was a random  
18 sample. Maybe it was ten trips in each period  
19 of the day, and looked at the travel time, and  
20 averaged all those.

21          KATE MCGRANN: The weekday or weekend  
22 depends on the day that the score is being  
23 utilized. But for headway 2 out of 4 required  
24 for pass. First of all, can you explain what  
25 headway is?

1           LARRY GAUL: It's the time that's  
2 different -- it's the time between two trains  
3 travelling in the same direction measured at a  
4 single spot.

5           KATE MCGRANN: Okay. And 3 out of 4  
6 required for a pass, I see underneath this  
7 heading there's, sort of, four categories,  
8 morning westbound arrival at Lees; morning  
9 eastbound arrival at Pimisi; afternoon westbound  
10 arrivals at Rideau, and afternoon eastbound  
11 arrivals at Lyon. Are those the four that are  
12 required -- that are referred up here where it  
13 says "3 of 4 required for pass"?

14          LARRY GAUL: That's correct.

15          KATE MCGRANN: Then if we come over to  
16 the right, there's a table here with three  
17 columns. Column one is scheduled number of  
18 trains. Column two is actual number trains.  
19 And then the third column is a ratio. We've got  
20 a row that applies to each of those four  
21 categories we just looked at.

22                   How does this chart work?

23          LARRY GAUL: So the scheduled number  
24 of trains, and let's start with number 1 first  
25 as an example: Morning westbound arrival at

1 Lees. So according to the schedule, the  
2 operating schedule, during the time period from  
3 6:45 to 8:45 in the morning, there are 35 trains  
4 that are scheduled to arrive Lees station during  
5 that time period.

6 The same applies for all the other  
7 locations as well. So it's just taking the  
8 number of scheduled trains that are scheduled at  
9 those locations during the identified time  
10 periods and comparing it to the actual number of  
11 trains that arrived at those stations during  
12 that time period, and the ratio of the  
13 two obviously.

14 KATE MCGRANN: And we see on the  
15 left-hand side, these four categories, there is  
16 a pass ratio, that's set out for each of those  
17 four categories.

18 LARRY GAUL: Yep.

19 KATE MCGRANN: In order to determine  
20 whether one passes, you look at the actual ratio  
21 and see if it is the same or better than the  
22 required ratio?

23 LARRY GAUL: That is correct. Again,  
24 it wasn't 100 percent, like, in the top.  
25 There's 35 scheduled trains. It was determined

1 that 33 trains during that time period would be  
2 considered acceptable. And one of the reasons  
3 for that is that typically with the frequency of  
4 service in the morning rush hour, you might have  
5 the train that's scheduled to arrive Lees at  
6 6:45 on the dot, but maybe it got there at 6:44  
7 and 50 seconds, well, in theory, that would be  
8 considered outside that time limit.

9 KATE MCGRANN: Right. So it looks to  
10 me like the criteria for measure here is the  
11 ratio of actual trains to scheduled trains as  
12 opposed to the headway as between trains. Is  
13 that fair?

14 LARRY GAUL: The headway between  
15 trains is really what -- how you determine the  
16 number of scheduled trains.

17 KATE MCGRANN: But in reality, if the  
18 headway, which is supposed to be for -- three  
19 minutes and 25 seconds, if you've got, you know,  
20 3 minutes followed by -- if the headway moves  
21 around a little bit, that doesn't cause a  
22 problem in terms of pass-fail here as long as  
23 the ratio is at a higher of the requirement.

24 LARRY GAUL: That's correct.

25 KATE MCGRANN: Scrolling down to the

1 next section here under: "Maintenance  
2 delivery," there's two headings: "Maintenance  
3 practices" and "Demonstration of IMIRS process."  
4 With respect to maintenance practices, there's  
5 just one box for pass or fail here. So how did  
6 the Trial Running Review Team determine whether  
7 the maintenance practice was a pass or fail on  
8 any day?

9 LARRY GAUL: There were people that  
10 were responsible for -- I think it was looking  
11 at five random work orders each day and to  
12 verify if the maintenance work was performed.  
13 And then they would let the Trial Running Review  
14 Team know their findings.

15 KATE MCGRANN: And with respect to the  
16 demonstration of the IMIRS process. First of  
17 all, do you know what IMIRS stands for?

18 LARRY GAUL: The Integrated Management  
19 Information and Reporting System, I believe.

20 KATE MCGRANN: And what is that?

21 LARRY GAUL: It's the maintenance  
22 management system. It's the record-keeping  
23 system that tracks all maintenance activities  
24 that schedules all maintenance activities,  
25 tracks assets and replacement cycles of assets

1 and things like that.

2 KATE MCGRANN: With respect to inputs  
3 into that system, how is information entered  
4 into that system?

5 LARRY GAUL: Well, from a vehicle  
6 maintenance -- we'll speak to vehicle  
7 maintenance. Any maintenance work that has to  
8 be done -- well, first, let me start off at the  
9 higher level.

10 The vehicles have a regular  
11 maintenance requirement. I mean there's a  
12 schedule. So the schedule, the maintenance  
13 schedule, so for all the different components on  
14 the vehicle, would be inputted into the system.  
15 And then as -- some of them are based on  
16 mileage, and some are based on time.

17 So as it's time for maintenance of a  
18 certain component to be done -- to be completed,  
19 then it would automatically -- this system would  
20 notify the maintainers that maintenance is  
21 required on this certain vehicle.

22 And when a maintainer or technician  
23 does -- performs any maintenance, they would  
24 then record in the system the maintenance that  
25 was done, the time it was done, the cost, you

1 know, they capture all the information related  
2 to the maintenance of whatever work order they  
3 were doing. This system would also generate  
4 work orders for technicians, too.

5 KATE MCGRANN: And I think that what  
6 you've described is the regular programs or  
7 predictable maintenance activities.

8 LARRY GAUL: That's correct.

9 KATE MCGRANN: What about the kind of  
10 maintenance activities that are required, you  
11 know, from daily usage that can't be programmed  
12 because they can't be anticipated? You know  
13 they're going to come, but you don't know when.

14 LARRY GAUL: It's kind of like running  
15 repairs type. Yeah, well, any work that's  
16 performed like that, would be input into this  
17 system to capture it.

18 KATE MCGRANN: Would the need for any  
19 particular repair be communicated through this  
20 system as well? Like, if I'm working on the  
21 operations side and I see a problem, do I call  
22 it into the system? How do I get it in there?

23 LARRY GAUL: You know, I can't recall  
24 if -- well, certainly, on the maintenance side,  
25 if maintenance is due, it would generate at

1 least the systems I've been familiar with, the  
2 system would generate a work order, and then the  
3 supervisor or the maintenance shop, or whatever,  
4 he would then assign the work order to a  
5 technician or a mechanic.

6 I believe this system is more than  
7 just a maintenance management system. I think  
8 they also used it for tracking, you know, other  
9 issues like other open -- I'm trying to  
10 remember. Like, if the control centre was  
11 advised of a problem, I don't think they would  
12 input anything into IMIRS directly. I think  
13 they would call an RTG help desk or RTM help  
14 desk, and that help desk would then input the  
15 information into this system. So I don't think  
16 OC Transpo had any direct access to the system  
17 except for maybe report generation.

18 KATE MCGRANN: And with respect to the  
19 evaluation of the demonstration of the IMIRS  
20 process, do you remember what information is the  
21 Trial Running Review Team given to determine  
22 pass or fail on this criteria?

23 LARRY GAUL: As I recall, again, this  
24 was another process. It was a random base  
25 process where someone who was dedicated to this



1 during trial running would randomly select five  
2 work orders each day, and then would track the  
3 work orders through to make sure the work orders  
4 were completed, they were completed fully, they  
5 were completed properly. And then we would get  
6 a report on those five random work orders.

7 KATE MCGRANN: With respect to the  
8 next heading, "Vehicle availability," it says  
9 "Aggregate vehicle KM," that's kilometres,  
10 right?

11 LARRY GAUL: That's correct.

12 KATE MCGRANN: "Availability ratio,"  
13 and then it gives an acronym of AVKR. And then  
14 it looks like there's two measures here. "AVKR,  
15 minimum daily average." What does that mean?

16 LARRY GAUL: I think that the minimum  
17 requirement to pass in this area was that the  
18 total number of revenue service kilometres had  
19 to equal at least 90 percent of total scheduled  
20 revenue service kilometres.

21 KATE MCGRANN: So that's the total  
22 number of revenue service kilometres run by all  
23 the trains in the system on that day?

24 LARRY GAUL: That's correct.

25 KATE MCGRANN: And with respect to the

1 next heading "AVKR" in brackets "average over 12  
2 days," what is that?

3 LARRY GAUL: I think this was that  
4 over a 12-day period, that they had to achieve a  
5 minimum of 98 percent of the total scheduled  
6 kilometres.

7 KATE MCGRANN: Coming to the bottom  
8 here, but under the heading "Station", we've got  
9 the criteria of availability, what information  
10 was given to the Trial Running Review Team to  
11 allow you to assess that?

12 LARRY GAUL: I think this was all the  
13 station -- all the station entrances had to be  
14 opened and accessible for customers at -- I  
15 don't know if it was at the start of service  
16 time or if it was 15 minutes before the start of  
17 service. I just can't recall. But it has to do  
18 with station entrances.

19 KATE MCGRANN: And do you remember  
20 what kind of information was reported at the  
21 Trial Running Review Team on this?

22 LARRY GAUL: No. Somehow, all this  
23 information was captured automatically. And I  
24 don't recall how that was done. But there would  
25 -- I think there was a report that was provided

1 to us that told us what the total station  
2 availability was for each day.

3 KATE MCGRANN: Okay. And then I'm  
4 going to propose that we treat the next heading  
5 as a group. You can let me know if that doesn't  
6 work. So customer systems and other major  
7 systems, there's a series of systems listed  
8 underneath. What kind of information were you  
9 provided with to allow you to assess the  
10 performance of the systems?

11 LARRY GAUL: Basically, we were just  
12 given what the ratio was for the day. Somebody  
13 was responsible for reviewing, I believe, it was  
14 generated -- their data source was the alarms  
15 that come into the control centre. I believe  
16 that's how they identified problems with all of  
17 these customer systems and other major systems.  
18 So I think that was their data source. And then  
19 from that, they took the ratio of the  
20 availability of these systems.

21 KATE MCGRANN: I'm going to zoom in  
22 for one second here just so that you can see the  
23 entire page to help us with the explanation of  
24 this process. So there's all of the criteria  
25 that you just walked me through, and then at the

1 bottom, there's a table for names and  
2 signatures. What is this table capturing?

3 LARRY GAUL: The signature is just  
4 everyone on the Trial Running Review Team is in  
5 concurrence with the findings.

6 KATE MCGRANN: I'm curious about the  
7 fact that there's a representative of the  
8 independent certifier sitting on the Trial  
9 Running Review Team and scoring along with the  
10 other members. Is that right?

11 LARRY GAUL: I believe there were,  
12 yes.

13 KATE MCGRANN: Kyle Campbell from the  
14 Altus Group here.

15 LARRY GAUL: Yep.

16 KATE MCGRANN: And the independent  
17 certifier is also certifying the results  
18 overall.

19 LARRY GAUL: That's correct.

20 KATE MCGRANN: Have you seen that kind  
21 of a setup on other trial running experiences  
22 you had had?

23 LARRY GAUL: No. I've never had  
24 experience on another P3.

25 KATE MCGRANN: You've never had

1 experience on another P3 before?

2 LARRY GAUL: No. I've never gone  
3 through this trial running review process  
4 before.

5 KATE MCGRANN: And I take it, just to  
6 be clear, does that mean that you haven't dealt  
7 with an independent certifier on the other  
8 projects that you've worked on?

9 LARRY GAUL: No. I have not.

10 KATE MCGRANN: I'm going to jump ahead  
11 in the trial running scorecards here to take you  
12 to the trial running scorecard for August 3rd,  
13 2019. And I will zoom back in so we can all see  
14 what I'm talking about here. There we go. Are  
15 you able to read this document okay?

16 LARRY GAUL: Yes, I am.

17 KATE MCGRANN: So under the heading  
18 "Vehicle availability," we're looking at the  
19 AVKR, the aggregate vehicle kilometre  
20 availability ratio. Over on the table under  
21 "schedule kilometres," there's a number that  
22 typewritten in here of 10,802 kilometres. And  
23 then in black pen, it's scratched out and 10,000  
24 -- it looks like 10,411 is written in. Do you  
25 see that?

1 LARRY GAUL: Yes, ma'am.

2 KATE MCGRANN: And then, do you know  
3 why that happened?

4 LARRY GAUL: I think if you go down to  
5 the footnotes at the bottom of the page, if you  
6 look at footnote number 1, it says:

7 "Vehicle kilometres continued to  
8 be validated by Deloitte during trial  
9 running and may be subject to change  
10 as a result of the Deloitte review."

11 So Deloitte was doing some validation  
12 of the scheduled kilometres.

13 KATE MCGRANN: Okay. And when you say  
14 "Deloitte was doing evaluation of the scheduled  
15 kilometres," do you mean that Deloitte was --  
16 let me take a step back.

17 My understanding of scheduled  
18 kilometres and the AVKR chart is that it is the  
19 number of kilometres that the performance that  
20 day is measured against.

21 LARRY GAUL: That's correct.

22 KATE MCGRANN: And so when Deloitte is  
23 doing -- sorry. Bear with me. We say "vehicle  
24 kilometres continued to be validated during  
25 trial running and may be subject to a change,"

1 was it your understanding that Deloitte could  
2 change the requirements on an ongoing basis?

3 LARRY GAUL: Again, I don't recall the  
4 specifics. I don't exactly know the role of  
5 Deloitte in this. But I believe because the  
6 schedule -- this is scheduled revenue  
7 kilometres, okay. Trains pulling in and out of  
8 the yard, well, when they're pulling out of the  
9 yard to wherever they first go into service,  
10 that's not -- that should not be calculated in  
11 the scheduled kilometres because that's supposed  
12 to be revenue service only. So for every train  
13 they pull out of the yard, they go someplace on  
14 the system to begin their service day, if you  
15 will.

16 So the only thing I can think of is  
17 that they found some -- some times where, maybe,  
18 some of those miles where a train was not  
19 actually in revenue service was originally being  
20 calculated in the 10,802 number.

21 KATE MCGRANN: If the idea is that  
22 Deloitte is adjusting the numbers to ensure that  
23 all that's being counted is proper revenue  
24 service numbers. Is that right?

25 LARRY GAUL: That's what I believe,

1 yes.

2 KATE MCGRANN: Wouldn't you expect  
3 that change to appear in the actual kilometres  
4 reported?

5 LARRY GAUL: I don't know what the  
6 basis of this schedule, of the initial scheduled  
7 kilometres were. I don't know how that number  
8 was generated.

9 KATE MCGRANN: I mean, what I was  
10 wondering was whether when the trial running  
11 review team agreed to reduce the number of cars  
12 required from 15 to 13, whether that would have  
13 a related reduction in the number of scheduled  
14 kilometres required that day because you've got  
15 less cars running, so presumably the system, as  
16 a whole, you're running less kilometres.

17 LARRY GAUL: I think you will see that  
18 on dates after that pause, and I think you'll  
19 also see that in the section above where the  
20 headway section, I believe you'll also see where  
21 those are reduced from 35 to 33 or something.

22 KATE MCGRANN: Oh, I see it under  
23 "weekday headway under the scheduled number of  
24 trains"?

25 LARRY GAUL: Right. And I think you



1 will see that the scheduled -- and the scheduled  
2 kilometres are reduced as well.

3 KATE MCGRANN: And that's what I was  
4 asking, where we see the scheduled kilometres  
5 here being reduced from 10,802 to 10,411.

6 Do you know if that's a result of the  
7 agreement to take the trains required from 15 to  
8 13?

9 LARRY GAUL: No, because I don't think  
10 at this time, that requirement, that reduction  
11 in trains had occurred yet.

12 KATE MCGRANN: Bear with me while I  
13 move around in the document. Always a bit more  
14 annoying electronically than with paper. Going  
15 back to page 3 for a second.

16 Do you remember when the agreement to  
17 make the change to the fleet requirement was  
18 made?

19 LARRY GAUL: If you can go down to the  
20 very last page in this document.

21 KATE MCGRANN: Yes.

22 LARRY GAUL: So I think it was shortly  
23 after that restart, or it happened that day  
24 after that restart. But to confirm that, we  
25 would need to go back to that specific day

1 scorecard.

2 KATE MCGRANN: So I think it's the  
3 8th?

4 LARRY GAUL: Probably the 9th.

5 KATE MCGRANN: So this is the  
6 scorecard for Friday August 9th.

7 LARRY GAUL: Okay. So it still has 35  
8 trains scheduled. So it happened on that day.

9 KATE MCGRANN: Together, we can scroll  
10 through the rest of these dates. Here's August  
11 10th. We see 35 trains scheduled in the  
12 morning.

13 LARRY GAUL: That's the weekend.

14 KATE MCGRANN: There's no measure of  
15 actual number of trains here.

16 Do you know why that is?

17 LARRY GAUL: Because this metrics was  
18 for weekdays only. Peak periods, and this is a  
19 Saturday.

20 KATE MCGRANN: Sunday, we still see  
21 the 35 here. Sunday August 11th.

22 LARRY GAUL: Yep.

23 KATE MCGRANN: And just so while I'm  
24 scrolling, what I think we're looking for is a  
25 change from the scheduled number of trains from

1 35 --

2 LARRY GAUL: Yes.

3 KATE MCGRANN: So still 35 on Monday  
4 August 12th; still 35 on the 13th; 35 on the  
5 14th.

6 LARRY GAUL: Maybe it was later than I  
7 thought.

8 KATE MCGRANN: So we see a change to  
9 30 on Friday August 16th. So does that help you  
10 when the agreement was made to reduce the trains  
11 from 35 to 33 or 15 to 35 double cars.

12 LARRY GAUL: Certainly, it would have  
13 been somewhere -- the decision would have been  
14 made somewhere around 14th or 15th of August, I  
15 would imagine.

16 KATE MCGRANN: And do you know if when  
17 the agreement was made that criteria, the new  
18 criteria, was applied from that day forward, or  
19 whether it was applied across all of the days of  
20 testing that had taken place including those  
21 before the date the agreement was made?

22 LARRY GAUL: No. I believe it was  
23 only applied from that day forward.

24 KATE MCGRANN: Based on what you saw  
25 through the trial running period, were you of

1 the view that a longer burn in period was  
2 required to identify and work out any issues  
3 that were seen with the vehicles or the system?

4 LARRY GAUL: Yeah. And I think there  
5 was, sort of, a post-trial running burn in  
6 period. I don't think we went right into  
7 revenue service. I can't recall what date  
8 revenue service started, but it was in September  
9 sometime, I believe.

10 KATE MCGRANN: So I think your answer  
11 to that question was, yes. But am I right?

12 LARRY GAUL: Yes. Yes, that was a  
13 helpful time period.

14 KATE MCGRANN: And how was it  
15 determined -- how was it determined how long  
16 that burn in period should be?

17 LARRY GAUL: I can't answer that  
18 question. I know once the trial running, once  
19 we got through the successful or the completion  
20 of trial running, then there was a period of  
21 time it was going to take them for, you know,  
22 all the paperwork to get completed and for, I  
23 guess, is that call revenue service availability  
24 date to be awarded? But that revenue service  
25 availability date did not necessarily mean

1 that's the day that revenue service was going to  
2 start. That just means that the system is ready  
3 to go into revenue service. And there's  
4 probably some financial considerations tied to  
5 that date as well. But I don't know that for a  
6 fact.

7 KATE MCGRANN: Okay. In terms of a  
8 further burn in period following the completion  
9 of the trial running, you mentioned that there  
10 was a further burn in period. Am I right?

11 LARRY GAUL: Yeah. From wherever  
12 trial running ended to the start of revenue  
13 service, we were operating whatever the schedule  
14 was at the time every single day like it was  
15 normal revenue service.

16 KATE MCGRANN: And was there any  
17 continued evaluation of the performance of the  
18 vehicles on the system through that burn in  
19 period?

20 LARRY GAUL: I imagine we experienced  
21 some similar problems. I can't say for certain  
22 what those problems were, but it just makes  
23 sense -- they were still working on some of the  
24 fleet mods, modifications at the time to address  
25 some of these problems. So, yeah, it's just --

1 I'm sure we experienced some vehicle problems.

2 KATE MCGRANN: And was there an  
3 ongoing evaluation of the problems to help the  
4 City in particular understand, this is what the  
5 reliability of the vehicles looked like, to help  
6 it determine whether to open to public service  
7 or not?

8 LARRY GAUL: Oh, yes, there were. And  
9 John Manconi had daily afternoon meetings with  
10 his team, and many meetings with RTG and RTM on  
11 all the different vehicle type problems. There  
12 was constant discussions between both groups on  
13 where they stood in overcoming these reliability  
14 issues. This was a big thing, and John pressed  
15 and pressed and pressed RTM on, and RTG, I'm  
16 sorry, on getting these vehicles fixed.

17 KATE MCGRANN: This situation, the  
18 need for -- the issues with the vehicles, the  
19 need to get them fixed, the daily meetings on  
20 these topics, is this normal in your experience  
21 right before opening to public service?

22 LARRY GAUL: Yeah. As I said before,  
23 that all new fleets that I've -- the systems  
24 that I've been at as well as other systems I'm  
25 familiar with, new fleets have vehicle problems.

1                   And many of those vehicle problems  
2 are, like, fleet-wide problems. And so if there  
3 is a corrective measure found for a fleet-wide  
4 problem, it's typically installed in one or two  
5 trains and then tested to verify that it  
6 addresses the problem. And once it's verified,  
7 it would then be applied across the entire  
8 fleet.

9                   Now, depending on the size of the  
10 fleet, that can be a time-consuming process. So  
11 most of the discussions I recall from my other  
12 property would be -- there would be daily  
13 meetings between the maintenance team and the  
14 vehicle supplier on where they stood on the  
15 vehicle modifications, and working with them on  
16 the schedule on -- first of all, they're going  
17 to need a vehicle taken out of service in order  
18 to perform the fleet or the vehicle  
19 modification.

20                   So then it will be have to be  
21 scheduled with the maintenance managers and  
22 things like that. So there's always constant  
23 communication between the two groups.

24                   KATE MCGRANN: With respect to the  
25 number of issues that were present through this

1 post-trial running burn in period, was the  
2 number of issues what you would expect for a  
3 system like this that's about to go into revenue  
4 service?

5 LARRY GAUL: Yeah. I mean, I thought  
6 the number of problems that we were experiencing  
7 seemed to be high. But I have nothing to base  
8 that on. I don't -- I don't know what the  
9 problems -- I don't know all the problems and  
10 the extent of all the problems down in Dallas.  
11 Some of them didn't even affect revenue service.  
12 But there were still modifications that needed  
13 to be done.

14 So, you know, things like -- I don't  
15 think I should go there because I'd be making an  
16 assumption here. But they seemed a little high  
17 in my mind.

18 KATE MCGRANN: And then with respect  
19 to the progress that had been made in fixing  
20 those issues, was the progress towards  
21 resolution where you would expect it to be for a  
22 system that's about to head into revenue  
23 service?

24 LARRY GAUL: I can't answer that  
25 question because I didn't spend any time at the



1 maintenance facility, you know, talking to the  
2 maintenance people.

3 KATE MCGRANN: What was your area of  
4 focus during this burn in period in between the  
5 completion of trial running and the opening of  
6 revenue service?

7 LARRY GAUL: Even before trial running  
8 started from practice running, sort of, on, my  
9 focus was in the control centre. I was in the  
10 control centre every day for something like two  
11 and half months watching the operation of the  
12 system, watching the controllers, and dealing --  
13 during that time, dealing with RTM on developing  
14 and refining these troubleshooting guidelines  
15 that I mentioned earlier.

16 KATE MCGRANN: And was part of your  
17 role during this time assessing operational and  
18 maintenance readiness for revenue service?

19 LARRY GAUL: Certainly, the  
20 operational readiness for service. The only  
21 thing on the maintenance side that I did was  
22 occasionally I would go and I would observe  
23 trains, I'd observe their preparedness to  
24 release trains in the morning for revenue  
25 service. And look at -- watch them how they

1 move trains around and things like that. But  
2 that was the extent of my involvement on the  
3 maintenance side.

4 KATE MCGRANN: As you near the end of  
5 the burn in period, what was your view on the  
6 operational readiness of the vehicles and the  
7 system?

8 LARRY GAUL: Operational readiness of  
9 the vehicles and the systems?

10 KATE MCGRANN: Let me put it this way.  
11 What was your view on whether passengers were  
12 going to experience reliable service when the  
13 system opened up for revenue service?

14 LARRY GAUL: Well, I still knew that  
15 we were going to experience vehicle problems.  
16 My focus at that time was, again, refining these  
17 troubleshooting guidelines so we were able to  
18 minimize the impact of these problems.

19 KATE MCGRANN: Were there any other  
20 options considered to account for the vehicle  
21 problems that you saw coming? And by that I  
22 mean a staged opening that gradually ramps up to  
23 passenger service, anything like that?

24 LARRY GAUL: Not that I recall. But I  
25 wasn't involved in -- I was, sort of, stuck in

1 my own little world in the control centre during  
2 this period. So I was not nearly involved in  
3 all the other decisions and the discussions  
4 going on --

5 KATE MCGRANN: Were you --

6 LARRY GAUL: -- as it relates to  
7 vehicle reliability.

8 KATE MCGRANN: I'm so sorry. Could  
9 you said that again?

10 LARRY GAUL: Yeah. I said I was not  
11 involved in nearly all these discussions,  
12 especially as they relate to vehicle reliability  
13 type issues.

14 KATE MCGRANN: I mean, did you share  
15 your views on what, if any, obstacles to  
16 reliable service remained as the City was  
17 considering when to open to revenue service?

18 LARRY GAUL: I don't know at what  
19 point in this program I did, but one of my  
20 biggest -- or one of my concerns was, you know,  
21 all this practice running and everything else  
22 was in relatively warm weather, summer, early  
23 fall weather. The previous winter, there was a  
24 lot of problems during the testing and  
25 commissioning, a lot of snow-related, inclement

1 weather-related problems on the railroad that I  
2 know RTM or RTG, I'm sorry, they developed --  
3 from those problems, they developed a winter  
4 weather action plan, I think it was called, and  
5 it identified all the problems they experienced  
6 and what their proposed solution was.

7 But we were going to go into revenue  
8 service without fully having tested those  
9 actions to overcome some of the problems that we  
10 had experienced the prior year. So that was a  
11 concern of mine. What's going to happen when  
12 winter weather sets in?

13 KATE MCGRANN: So you had concerns  
14 that the winter -- is it that the winter weather  
15 action plan had not been tested?

16 LARRY GAUL: It hadn't been tested,  
17 no.

18 KATE MCGRANN: So there were problems  
19 that had been identified, but the solutions  
20 hadn't been proven to be successful yet.

21 LARRY GAUL: That's correct. I think  
22 a lot of the solutions had been implemented. As  
23 you said, it hadn't been tested.

24 KATE MCGRANN: And what, if anything,  
25 was done to account for that?

1           LARRY GAUL: I mean, there was a  
2 couple of presentations that the RTG group made  
3 to -- at one of John's daily meetings, senior  
4 staff meetings. And it walked through all the  
5 new equipment that they had purchased or was on  
6 order, snow removal equipment, and all the other  
7 improvements they made to their snow response  
8 capabilities.

9           So I know there's ongoing  
10 presentations made to the City so the City could  
11 track the progress.

12           KATE MCGRANN: Was there any plan to  
13 implement a testing of the new winter weather  
14 action plan once winter weather actually hit?  
15 Was there any plan to test that plan outside of  
16 revenue service when the opportunity arose?

17           LARRY GAUL: A full-scale plan, I  
18 can't say that there was. I know one of the  
19 things they had to do was replace the heaters,  
20 the switch heaters. And I believe they had  
21 replaced a couple by the time we went into  
22 revenue service or shortly thereafter.

23           And they were testing those  
24 periodically to make sure they were going on. I  
25 don't recall any other type of test --

1 full-scale tests that was discussed.

2 KATE MCGRANN: I'm going to stop  
3 showing you this 31-page document that we have  
4 been through. But before I do that, I think  
5 that you told me that you recognize these  
6 scorecards. I'm scrolling back up to the top.

7 Do you recognize this document? Have  
8 you seen it before?

9 LARRY GAUL: I can't say if I have or  
10 not.

11 KATE MCGRANN: And that's with respect  
12 to the first page. Is that right?

13 LARRY GAUL: That's correct.

14 KATE MCGRANN: But the trial running  
15 conclusion of the trial running statement on  
16 page 2, that is your signature on that page?

17 LARRY GAUL: Yes, ma'am.

18 KATE MCGRANN: We'll just leave it as  
19 a reference document that we looked at, I  
20 suppose. I'm going to stop sharing my screen  
21 here.

22 Once going into revenue service, there  
23 are a number of issues that take place with  
24 respect to, there are breakdowns of the vehicles  
25 and things like that.

1           Are you aware -- you're generally  
2 aware of that?

3           LARRY GAUL: Yes.

4           KATE MCGRANN: And were you involved  
5 in -- did you remain involved in working on  
6 Stage I after the system went into revenue  
7 service?

8           LARRY GAUL: I was there until early  
9 December, I think. So we went into revenue  
10 service mid-September, I believe. So I was  
11 there for, like, three months or two and a half  
12 months, something like that.

13           KATE MCGRANN: And you said that you  
14 expected to see issues with the system when you  
15 went into revenue service.

16           Were the issues that actually  
17 materialized on the system within what you  
18 expected to see?

19           LARRY GAUL: I think the biggest  
20 surprise after that was the extent of the door  
21 problems because that's when passengers were  
22 being carried, and the sensitive edges were  
23 being tested in a real revenue service  
24 environment. So that caught me by surprise.

25           KATE MCGRANN: And what about what it

1 took to identify the cause of these problems?  
2 Was that...

3 LARRY GAUL: If I recall properly, it  
4 took a few weeks to identify exactly what the  
5 cause was and identify potential fixes. This is  
6 another area that John really -- John Manconi,  
7 I'm sorry, he kept track of these -- of this  
8 type -- of this problem. And he had numerous  
9 meetings, or RTG folks were called in to a  
10 number of his daily meetings to give updates on  
11 where they stood on these type problems.

12 KATE MCGRANN: I think you said that  
13 the extent of the door problems caught you by  
14 surprise. And you said that it's because, I  
15 think, it's the introduction of passengers into  
16 the system that really led to the identification  
17 of that issue?

18 LARRY GAUL: It was. We saw, using,  
19 from the control centre, using the CCTV cameras  
20 at stations, we saw many, many people try and  
21 grab the doors as it was closing to try and  
22 reopen the doors so they could get on. And that  
23 seemed to be what was causing the big problems,  
24 and then as I said before, the operator couldn't  
25 -- could go back to try and close the door, but



1 the door close button or switch wasn't working  
2 properly.

3 KATE MCGRANN: The time that it took  
4 to identify and begin to address that problem,  
5 was that -- what was your view of that in terms  
6 of what you would have expected?

7 LARRY GAUL: I think -- I recall that  
8 we had to share a couple of videos from -- we  
9 had to show them some CCTV videos of people who  
10 were, you know, just normally, you know, getting  
11 hit by the doors, it's closing, and this door  
12 problem coming up, which is a normal activity.  
13 And then we had to show them that there's other  
14 people who were trying to grab hold and open the  
15 doors that caused this problem as well. So it  
16 took a little while to convince them that there  
17 really was a door problem.

18 KATE MCGRANN: Oh, really? What was  
19 the initial reaction to -- like, explain to me  
20 what that looked like.

21 LARRY GAUL: Well, I think the  
22 original -- if I recall, that they were saying  
23 this is the way the doors are designed to  
24 function. And that's contrary to my experience  
25 and other systems, you know, that I've been

1 involved in or aware of. It's not -- that isn't  
2 how door systems are typically designed.

3 KATE MCGRANN: Earlier in our  
4 discussion, you identified for me four systems  
5 that you expect to see issues with. With  
6 respect to the brakes, was there any brake  
7 issues that were observable while you were still  
8 working on the system when it was in revenue  
9 service?

10 LARRY GAUL: They were intermittent  
11 type brake problems, which is not out of the  
12 norm. Those are very -- those a very usual type  
13 problems.

14 KATE MCGRANN: Were you involved in  
15 any discussions with the City in looking at  
16 whether to reduce any aspect of the speed  
17 requirements for the trains along the line  
18 related to the brake issues?

19 LARRY GAUL: No. The vehicles protect  
20 themselves. When they sense a problem with,  
21 like, the propulsion or the braking problem,  
22 it's going to put it into a restricted mode.  
23 It's going to stop the train, and an operator  
24 has to -- an operator or a technician has to do  
25 something in order to get the train back

1 operating.

2 KATE MCGRANN: To your knowledge, is  
3 that the emergency brake that would be doing  
4 that?

5 LARRY GAUL: No, not necessarily.  
6 Usually, the brake problems occur at a station.  
7 For some reason, the operator gets a brake fault  
8 on his console and --

9 KATE MCGRANN: That's what was  
10 happening on Stage I of the LRT that you saw?

11 LARRY GAUL: Yeah. And same thing  
12 with the propulsion side; they get propulsion  
13 faults, and some action had to be taken. And it  
14 all depends on what type of fault was being  
15 displayed that dictated the actions that needed  
16 to take to overcome it.

17 KATE MCGRANN: I'm mindful of the  
18 time. We've got nine minutes left.

19 LARRY GAUL: Time flies.

20 KATE MCGRANN: It certainly does. The  
21 Commission has been asked to look into the  
22 commercial and technical circumstances that led  
23 to the breakdowns and derailments on Stage I.

24 Are there any areas that, based on  
25 your experience with the system, the Commission

1 should be looking into that we didn't discuss  
2 this morning?

3 LARRY GAUL: I was not involved in any  
4 commercial aspect discussions of this project.  
5 I was solely focused on the operational aspects.

6 KATE MCGRANN: How would you describe  
7 the relationship between the City and RTG as  
8 partners heading into revenue service?

9 LARRY GAUL: I thought it was pretty  
10 good. John had no problem with voicing his  
11 discontent, his concerns, his -- sometimes his  
12 anger at RTG and RTM. But at the same time, I  
13 think John gave them a lot of assistance. He  
14 offered a lot to help them along. And I thought  
15 it was pretty good from my viewpoint.

16 KATE MCGRANN: To your knowledge, was  
17 there any assistance that they asked for that  
18 the City did not give?

19 LARRY GAUL: I don't think I can  
20 answer that right now. I'd have to go back  
21 through documents or notes.

22 KATE MCGRANN: Part of the  
23 Commissioner's mandate is to make  
24 recommendations to try to prevent issues like  
25 this from happening in the future.

1           Are there any specific recommendations  
2 or areas for recommendation that you would  
3 suggest be considered?

4           LARRY GAUL: When I'm thinking about  
5 Stage II, most of the problems that we had were  
6 vehicle reliability problems. The Stage II  
7 fleet is going to be delivered long before --  
8 the additional cars required for Stage II are  
9 going to be delivered long before you go into  
10 revenue service on Stage II.

11           By that point in time, I trust that a  
12 large majority of the vehicle-related issues  
13 will have been solved and any modifications  
14 would be included on this new fleet.

15           So I don't think that you're going to  
16 have the same type vehicle reliability issues  
17 when you open up Stage II as you did on Stage I.

18           KATE MCGRANN: Because you will have  
19 had the benefit of running those vehicles for an  
20 extended period of time to identify all of the  
21 issues?

22           LARRY GAUL: Well, yeah. Two things.  
23 One, I think any fleet modification made to the  
24 Stage I fleet, will be -- will automatically be  
25 applied to the Stage II. So you've had your

1 learning curve, and now you make sure it's  
2 applied across the entire expanded fleet. What  
3 was the other part of this? Oh, and then  
4 they're being delivered so far in advance, I  
5 would think that the new Stage II vehicles will  
6 be rotated into the service cycle, so you'll  
7 have a lot of -- they'll have a lot of operating  
8 hours on before you go into Stage II.

9 KATE MCGRANN: Is that part of the  
10 burn in process? You run the vehicles and see  
11 what happens?

12 LARRY GAUL: Typically, when you get  
13 new vehicles, you typically run them. The  
14 vehicles are delivered, they go through the  
15 basic performance tests. And then you run them  
16 for 500 kilometres, 1000 kilometres as a burn  
17 in, as a vehicle burn in period. And you try  
18 and shake down any obvious problems that the  
19 vehicle might encounter. But before then, it  
20 goes into revenue service.

21 KATE MCGRANN: I think that,  
22 particularly given the time, those are my  
23 questions for you today. Mr. Doris, did you  
24 have any follow-up questions you wanted to ask?

25 JAMES DORIS: I have no follow-up

1 questions. Thank you.

2 KATE MCGRANN: Thank you all for your  
3 time. That brings our interview today to a  
4 close.

5 Concluded at 12:28 P.M.

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1 REPORTER'S CERTIFICATE

2  
3 I, LEILA HECKERT, CVR, Certified  
4 Verbatim Reporter, certify;

5  
6 That the foregoing proceedings were  
7 taken before me at the time and date therein set  
8 forth;

9 That the statements of the presenters  
10 and all comments made at the time of the meeting  
11 were recorded digitally by me;

12 That the foregoing is a certified  
13 transcript of my shorthand notes so taken.

14  
15 Dated this 22nd day of APRIL, 2022.

16  
17 

18  
19 \_\_\_\_\_  
20 PER: LEILA HECKERT  
21 CERTIFIED VERBATIM REPORTER  
22  
23  
24  
25



**WORD INDEX**

**< 0 >**

**0266** 107:9

**< 1 >**

**1** 3:3 6:25 7:1  
 113:24 125:6  
**10,000** 124:23  
**10,411** 124:24  
 128:5  
**10,802** 124:22  
 126:20 128:5  
**10:19** 63:23  
**10:20** 63:18  
**10:25** 63:18, 24  
**10:42** 75:25  
 76:1  
**10:44** 77:15  
**10:45** 77:16  
**100** 33:20  
 99:15, 24  
 100:12 114:24  
**1000** 149:16  
**10th** 129:11  
**11th** 129:21  
**12** 41:25 107:2  
 121:1  
**12:28** 1:16  
 150:5  
**12-day** 66:17  
 67:4 121:4  
**12th** 130:4  
**13** 98:11 99:2  
 101:24 102:7,  
 11, 17 105:16  
 110:16 127:12  
 128:8  
**13-car** 108:5  
**13th** 130:4  
**14** 43:11  
**14th** 130:5, 14  
**15** 8:13 44:10  
 49:14, 17 50:23  
 51:15, 16 52:4,  
 22, 25 53:5, 8,  
 18 54:1, 4, 14  
 60:1 82:15, 16,  
 19 98:11 99:1  
 102:11 103:13,  
 17, 21 104:4, 19  
 105:4, 22  
 108:20 121:16  
 127:12 128:7

130:11  
**15th** 130:14  
**15-train** 104:17  
**16** 8:13 25:22  
**16th** 130:9  
**19** 74:5  
  
**< 2 >**  
**2** 112:23 141:16  
**20** 8:2, 3, 12  
 17:3 112:11  
**2009** 5:14  
**2014** 8:20  
**2016** 9:19  
**2017** 9:5 12:4  
 27:10 29:25  
 30:20, 24 64:2,  
 22  
**2018** 24:10  
 31:3 33:17  
 35:8, 14 36:19  
 56:23, 24 59:14  
**2019** 31:13  
 43:25 44:3, 21  
 45:13 89:13  
 96:13 111:1  
 124:13  
**2022** 1:8, 16  
 151:15  
**21st** 1:8, 15  
**22nd** 98:2  
 151:15  
**23** 111:25  
 112:12  
**25** 98:2 115:19  
**29** 96:13  
**29th** 98:2 111:1  
  
**< 3 >**  
**3** 113:5, 13  
 115:20 128:15  
**30** 105:4 130:9  
**31-page** 94:15  
 141:3  
**33** 115:1  
 127:21 130:11  
**33(6)** 5:13  
**33(7)** 6:2  
**34** 105:2  
**35** 7:13 114:3,  
 25 127:21  
 129:7, 11, 21  
 130:1, 3, 4, 11  
**3rd** 124:12

**< 4 >**  
**4** 112:23 113:5,  
 13  
  
**< 5 >**  
**5** 6:5  
**50** 115:7  
**500** 149:16  
  
**< 6 >**  
**6:44** 115:6  
**6:45** 114:3  
 115:6  
  
**< 7 >**  
**7** 3:3  
  
**< 8 >**  
**8:45** 114:3  
**80** 17:9  
**85** 8:13  
**8th** 129:3  
  
**< 9 >**  
**9** 107:2  
**9:00** 1:16 4:1  
**90** 120:19  
**94** 107:4  
**96** 107:2  
**98** 121:5  
**9th** 129:4, 6  
  
**< A >**  
**a.m** 1:16 4:1  
 63:23, 24 75:25  
 76:1 77:15, 16  
 105:10, 14, 18  
**AAVKR** 106:25  
 107:1  
**ability** 102:12  
 104:18  
**abnormally**  
 11:17  
**abreast** 35:10  
**Absolutely**  
 27:25 63:17  
**accept** 101:3, 18  
**acceptable** 91:6  
 115:2  
**acceptance**  
 92:5 95:16, 23  
**accepted** 87:5  
 92:4, 6 101:5, 21  
**accepting** 23:21

**access** 44:4  
 45:14, 15, 21  
 49:6, 12, 13  
 50:12 119:16  
**accessible**  
 121:14  
**accommodate**  
 50:11 91:4, 8  
 98:12 104:19  
**accommodated**  
 90:25  
**accomplish**  
 16:4 52:18, 19  
 76:6  
**account** 11:19  
 28:15 51:24  
 52:8 68:2  
 137:20 139:25  
**accounting** 68:1  
**accurate** 56:3  
 68:18 96:14  
**achieve** 41:20  
 57:1 70:22  
 109:16 121:4  
**achieved** 56:20  
 57:5 70:18  
 98:9, 16  
**achievement**  
 107:1  
**achieving** 81:25  
**acronym** 67:11,  
 17 79:9 120:13  
**Act** 5:14 6:3, 5  
**action** 48:18  
 139:4, 15  
 140:14 146:13  
**actionable** 75:11  
**actions** 139:9  
 146:15  
**activities** 8:15  
 47:5, 9, 12 48:4  
 78:12 96:15  
 116:23, 24  
 118:7, 10  
**activity** 18:21  
 144:12  
**actual** 113:18  
 114:10, 20  
 115:11 127:3  
 129:15  
**actuality** 51:18  
**add** 84:5  
**addition** 43:4  
**additional** 103:8  
 104:12 148:8

**address** 16:13  
 61:17 62:3, 22  
 71:10 103:11  
 132:24 144:4  
**addresses** 134:6  
**adequate** 46:7,  
 9, 11  
**adequately**  
 71:10  
**adjust** 51:1  
**adjusting** 109:6  
 126:22  
**adjustment**  
 107:6  
**adjustments**  
 41:6 48:9  
 50:10, 24 52:7  
 107:18, 22  
 108:8 109:19  
 110:3  
**advance** 6:9  
 57:10 58:10  
 74:8 149:4  
**advanced** 25:3  
**advice** 101:2, 8  
**advisable** 109:6  
**advised** 6:3  
 119:11  
**advisors** 100:17,  
 19  
**advisory** 18:13  
**affect** 26:18  
 135:11  
**AFFIRMED** 4:2  
**after** 4:25  
 19:15, 23 29:23  
 43:16 48:15, 19  
 49:3, 5 64:20  
 87:1 109:23  
 110:17 127:18  
 128:23, 24  
 142:6, 20  
**afternoon** 113:9,  
 10 133:9  
**agencies** 69:13  
**agency** 28:23  
**Aggregate**  
 106:24 120:9  
 124:19  
**ago** 19:6  
**agree** 101:8  
 107:23 108:10  
**agreed** 97:4  
 98:10, 13 100:2

106:23 109:19 110:20 127:11 <b>agreeing</b> 102:18 107:18 <b>agreement</b> 26:13 100:6 107:16, 22 128:7, 16 130:10, 17, 21 <b>ahead</b> 21:14 44:2 124:10 <b>air</b> 85:15 87:16 88:1, 3, 8 <b>airbags</b> 88:5 <b>air-related</b> 87:22 <b>alarms</b> 122:14 <b>aligned</b> 93:10 <b>alignment</b> 39:21 <b>allocated</b> 15:19 <b>allow</b> 12:20 14:23 38:23 42:1 108:20 121:11 122:9 <b>allowed</b> 49:5 102:7 105:12 <b>allows</b> 6:18 <b>Alstom</b> 83:9, 11 86:23 <b>Altus</b> 95:3, 6, 11 123:14 <b>amount</b> 17:12 33:14 <b>anger</b> 147:12 <b>annoying</b> 128:14 <b>anticipated</b> 24:9 118:12 <b>anybody</b> 18:16 35:6 64:8 109:4 <b>anyway</b> 88:19 <b>apparently</b> 35:15 <b>appear</b> 127:3 <b>appended</b> 5:12 <b>applied</b> 65:14 101:21 105:14 130:18, 19, 23 134:7 148:25 149:2 <b>applies</b> 113:20 114:6 <b>apply</b> 112:13 <b>approach</b> 94:12 <b>approval</b> 77:6 <b>approved</b> 99:22	<b>approximately</b> 30:22 53:8 <b>APRIL</b> 1:8, 16 151:15 <b>area</b> 20:15 31:15 38:15, 16, 18 120:17 136:3 143:6 <b>areas</b> 24:7 35:20 64:16 83:8 146:24 148:2 <b>arose</b> 60:8, 14 140:16 <b>arrival</b> 79:18 113:8, 9, 25 <b>arrivals</b> 113:10, 11 <b>arrive</b> 114:4 115:5 <b>arrived</b> 42:12 114:11 <b>arriving</b> 112:3 <b>asked</b> 5:16 6:8 98:22 102:3 108:10 110:9 146:21 147:17 <b>asking</b> 47:16 77:18 128:4 <b>aspect</b> 9:16, 21 145:16 147:4 <b>aspects</b> 10:18 21:21 27:8 44:24 54:3, 5 71:18 147:5 <b>assess</b> 121:11 122:9 <b>assessed</b> 79:6 <b>assessing</b> 81:15 136:17 <b>assessment</b> 21:6, 20 84:24 111:18 <b>assets</b> 116:25 <b>assign</b> 119:4 <b>assist</b> 9:21 65:12 <b>assistance</b> 147:13, 17 <b>assistant</b> 7:24 8:7 <b>associated</b> 23:17 56:5 89:6 <b>assuming</b> 55:17	<b>assumption</b> 91:2 99:15 100:11 135:16 <b>ATO</b> 111:24 112:5 <b>ATS</b> 78:15 79:8, 22 80:3, 7, 22, 25 81:3, 9 <b>attached</b> 103:23 <b>attending</b> 1:15 <b>attention</b> 22:14 <b>audio</b> 74:16 <b>August</b> 74:5 98:2 124:12 129:6, 10, 21 130:4, 9, 14 <b>authorization</b> 38:21 <b>Automatic</b> 78:15 79:11, 19 83:25 84:1 112:6 <b>automatically</b> 13:5 79:17 117:19 121:23 148:24 <b>availability</b> 33:24 34:5 35:16 39:3 51:18 54:7 59:25 60:12 66:7 93:14, 25 99:7 120:8, 12 121:9 122:2, 20 124:18, 20 131:23, 25 <b>available</b> 38:10 39:19 41:10 49:19 50:2 51:3, 9 60:2, 4, 5, 6 64:19 82:21 103:7 105:8, 13 106:17 <b>Average</b> 106:23 120:15 121:1 <b>averaged</b> 112:20 <b>AVKR</b> 120:13, 14 121:1 124:19 125:18 <b>awarded</b> 131:24 <b>aware</b> 33:19 64:12 80:23 85:18 142:1, 2 145:1	<b>&lt; B &gt;</b> <b>back</b> 6:16, 17 8:21 15:8 18:10 53:10 55:1, 16 59:10 66:10 73:24 92:16 93:2 107:9 124:13 125:16 128:15, 25 141:6 143:25 145:25 147:20 <b>backup</b> 36:17 78:22 80:3 <b>Baltimore</b> 8:23 <b>base</b> 119:24 135:7 <b>based</b> 17:24 51:2 62:19 66:1 71:14, 18, 20 72:5 81:22 117:15, 16 130:24 146:24 <b>baseline</b> 23:12 <b>basic</b> 51:14 85:23 87:4, 9 149:15 <b>basically</b> 8:21 15:4 16:5 44:4 46:2 48:15 122:11 <b>basis</b> 5:5 52:5 65:2 96:9, 22 104:13 126:2 127:6 <b>Bear</b> 125:23 128:12 <b>began</b> 9:4 16:24 <b>beginning</b> 25:13 31:2 82:21 104:3 <b>behalf</b> 100:21 <b>behaviour</b> 91:25 <b>Belfast</b> 7:23 63:1 84:4 <b>believe</b> 17:15, 16 24:9 28:10 39:4 56:24 59:7 64:23 65:8 70:11, 25 74:11 76:25 83:19 88:5 93:3 95:9	96:17 97:13 105:14 106:11 107:20 112:15 116:19 119:6 122:13, 15 123:11 126:5, 25 127:20 130:22 131:9 140:20 142:10 <b>believed</b> 10:6 <b>bell</b> 20:19 <b>benefit</b> 55:15 69:10 87:3 108:1 148:19 <b>best</b> 31:4 49:20 <b>better</b> 114:21 <b>big</b> 11:11 82:4 133:14 143:23 <b>biggest</b> 82:3, 7 138:20 142:19 <b>bit</b> 14:4 21:23 26:25 63:8 78:7 105:17 115:21 128:13 <b>black</b> 124:23 <b>Blair</b> 37:24 <b>board</b> 54:25 <b>body</b> 95:17 <b>Borough</b> 29:8 <b>bottom</b> 121:7 123:1 125:5 <b>bound</b> 44:15 <b>box</b> 116:5 <b>brackets</b> 121:1 <b>brains</b> 54:20 <b>brake</b> 85:15 87:16 145:6, 11, 18 146:3, 6, 7 <b>brakes</b> 145:6 <b>braking</b> 145:21 <b>brand-new</b> 60:18 61:13 <b>break</b> 6:7 12:20 63:16 68:4 77:17 <b>breakdowns</b> 141:24 146:23 <b>breakup</b> 77:12 <b>brief</b> 7:5 <b>bring</b> 28:22 <b>brings</b> 150:3 <b>broken</b> 83:8 <b>brought</b> 9:21, 23 21:11 25:19, 95:9
--	---	---	--	--

21 29:22 62:23  
**build** 43:18  
**built-in** 61:16  
**bumping** 90:3  
**burn** 16:16  
17:12, 20 42:19  
131:1, 5, 16  
132:8, 10, 18  
135:1 136:4  
137:5 149:10,  
16, 17  
**bus** 11:7, 23  
13:1, 5, 9 25:2  
28:22  
**buses** 12:17, 18  
**button** 144:1  
**buy-in** 26:19, 25  
  
< C >  
**cabing** 89:6  
**calculated**  
126:10, 20  
**calculations**  
78:14  
**calendar** 58:10,  
12, 13, 17  
**calendars** 53:11  
58:4  
**Calgary** 65:21  
**call** 15:14  
16:21 26:23  
37:17 79:13  
118:21 119:13  
131:23  
**called** 16:16  
84:10 139:4  
143:9  
**cameras** 143:19  
**Campbell**  
123:13  
**Canada** 6:5  
11:13  
**cancelled** 9:2  
**cap** 22:1  
**capabilities**  
140:8  
**capacity** 46:19  
47:18, 21 48:2,  
10, 18 58:25  
66:10, 22 67:6  
68:3 69:1, 17,  
25 70:18 71:17  
72:20 73:22  
90:6, 18 91:11,

13, 15 101:25  
102:8  
**capture** 118:1,  
17  
**captured** 121:23  
**capturing** 123:2  
**car** 62:24  
**career** 7:13  
**carried** 48:7  
142:22  
**carry** 102:1, 7, 8  
**cars** 103:8  
104:22, 23  
105:2, 8, 13  
127:11, 15  
130:11 148:8  
**case** 13:20  
14:7 20:5, 9  
36:16 39:11  
40:5 42:11  
45:1 47:14  
**categories**  
113:7, 21  
114:15, 17  
**catenary** 22:5, 6  
**caught** 22:13  
142:24 143:13  
**caused** 99:4  
144:15  
**CBTC** 29:18  
55:24  
**CCTV** 143:19  
144:9  
**centre** 7:24, 25  
8:6 29:7 32:7  
36:2 50:24, 25  
72:11 119:10  
122:15 136:9,  
10 138:1 143:19  
**certain** 4:13  
70:22 72:5  
117:18, 21  
132:21  
**certainly** 20:25  
54:12 59:12  
72:10, 12 73:11  
84:17, 21 92:22  
118:24 130:12  
136:19 146:20  
**certainty** 99:16,  
25  
**CERTIFICATE**  
151:1  
**certification**  
46:14

**certified** 41:20  
42:14 43:16  
151:3, 12, 21  
**certifier** 68:17,  
20 73:2 95:7  
123:8, 17 124:7  
**certify** 151:4  
**certifying**  
123:17  
**cetera** 54:8  
**challenge** 93:25  
**challenges**  
81:25 92:1  
93:14  
**change** 19:13  
33:22 34:3, 9  
64:18 125:9, 25  
126:2 127:3  
128:17 129:25  
130:8  
**changed** 35:14  
71:13 72:21  
**changes** 39:8,  
12, 14 44:23  
45:18 50:19  
**changing** 40:6,  
24  
**charge** 7:19  
8:8 10:16 83:4,  
19  
**chart** 113:22  
125:18  
**Charter's** 9:25  
18:11  
**check** 63:10  
92:7  
**checking** 90:17  
91:10, 16  
**Chief** 111:8  
**choice** 13:10  
**chunk** 60:2  
**circuit** 54:25  
**circumstances**  
38:13 146:22  
**City** 12:7, 12  
20:22 21:5  
24:1 26:10, 24  
28:15 34:17, 21  
35:7 43:3 64:2  
65:4 76:18  
77:3 84:23  
95:11 99:13, 24  
100:17, 19, 22  
101:2, 7 109:4  
133:4 138:16

140:10 145:15  
147:7, 18  
**City's** 23:20  
**civil** 5:19  
**classified** 69:21  
**clear** 74:25  
75:1, 2 124:6  
**clock** 63:17  
**close** 88:17  
143:25 144:1  
150:4  
**closed** 89:5  
**closely** 10:21  
19:18, 23 20:8  
93:10  
**closing** 43:14  
86:19 93:18  
143:21 144:11  
**Coast** 8:21  
**co-counsel** 4:12  
**Co-Lead** 2:2  
4:4  
**collaborative**  
4:11  
**colleague** 63:10  
**collect** 78:16  
79:3  
**collected** 78:23  
79:1, 4 80:17  
**collecting** 78:4,  
6 79:19  
**collection** 78:1  
**Column** 113:17,  
18, 19  
**columns** 113:17  
**combination**  
45:9, 11 60:10  
**come** 15:8  
22:15 55:16  
61:25 64:24  
87:10 89:16  
93:23 113:15  
118:13 122:15  
**comfortable**  
42:7  
**coming** 66:6  
73:24 93:2  
104:1 121:7  
137:21 144:12  
**commenced**  
4:22  
**commencing**  
4:1  
**comment** 76:19,  
24

**comments**  
11:25 30:4  
151:10  
**commercial**  
64:16 146:22  
147:4  
**COMMISSION**  
1:6 2:1 4:18  
14:14 17:25  
29:7 35:13  
45:8 146:21, 25  
**Commissioner's**  
147:23  
**commissioning**  
8:15 14:11, 15,  
21 15:5 33:2,  
10, 18 34:8, 13,  
18, 23 35:8, 17,  
24, 25 39:16  
45:4 48:12  
81:12, 14, 16, 20  
138:25  
**Commission's**  
4:9, 19, 24 5:4  
**committees**  
20:22, 24  
**communicated**  
118:19  
**communication**  
134:23  
**compared** 88:2  
**comparing**  
114:10  
**comparison**  
65:2  
**complement**  
50:1  
**complete** 42:13  
70:23  
**completed** 15:4  
89:11, 12  
117:18 120:4, 5  
131:22  
**completion**  
24:10 33:23  
34:4 56:19, 22  
57:2 131:19  
132:8 136:5  
**component**  
66:8 82:7 94:5  
117:18  
**components**  
117:13  
**concept** 43:4

<p><b>concern</b> 80:6 82:3 106:2 139:11 <b>concerned</b> 62:14, 19 104:18 106:6, 8, 9 109:10 <b>concerns</b> 22:7 23:14, 19 62:9, 16 82:10, 12, 23 83:1, 2 85:3 102:10 104:5, 8 109:25 111:17 138:20 139:13 147:11 <b>conclude</b> 102:3 <b>concluded</b> 57:10, 11 150:5 <b>Conclusion</b> 97:16 141:15 <b>concurrence</b> 123:5 <b>condition</b> 46:23 <b>conducted</b> 66:17 67:6 70:14 71:23 72:1 98:2 <b>Confed</b> 29:10 <b>Confederation</b> 95:14 <b>confident</b> 92:11 <b>confidential</b> 5:5 <b>confirm</b> 128:24 <b>confirmed</b> 108:4 110:17 <b>confronted</b> 17:21 <b>consecutive</b> 107:3 <b>consider</b> 63:5 101:13 <b>consideration</b> 99:10 108:8, 17 <b>considerations</b> 27:17 132:4 <b>considered</b> 91:5 115:2, 8 137:20 148:3 <b>considering</b> 138:17 <b>consistency</b> 52:3 <b>consistent</b> 45:22 52:5 57:18, 23 109:19</p>	<p><b>consistently</b> 49:11 <b>console</b> 146:8 <b>constant</b> 133:12 134:22 <b>constitute</b> 69:19, 20 <b>construction</b> 8:14 13:22 14:8 18:4 23:2, 9, 17 35:2 45:3, 8 48:11 59:18 <b>consulted</b> 64:5, 9 <b>contemplated</b> 48:9 <b>context</b> 36:17 41:2 <b>continuation</b> 16:7 <b>continue</b> 12:19 45:17 85:9 <b>continued</b> 125:7, 24 132:17 <b>contract</b> 67:18 <b>contractual</b> 29:11 <b>contrary</b> 144:24 <b>control</b> 7:24, 25 8:6 27:20 29:7, 10, 18 30:14, 17 31:24 32:7, 17, 18 36:1, 2 37:16 38:5, 10 41:9, 14, 22, 23 50:24, 25 51:1 54:15, 17, 18 55:25 72:11 84:7 104:15 119:10 122:15 136:9, 10 138:1 143:19 <b>controller</b> 29:3 31:22 32:24 35:22 36:3 54:19 56:2, 8, 14 71:4 83:9 86:12 <b>controllers</b> 29:5, 13, 15 32:1, 3, 19, 21 43:1, 2 51:5, 11 54:16, 23 55:18, 22 56:1 60:24</p>	<p>69:10 72:14 136:12 <b>controls</b> 54:18 <b>conversation</b> 102:5 <b>convert</b> 75:10 <b>converting</b> 76:3 <b>convince</b> 144:16 <b>convoluted</b> 83:7 <b>coordinated</b> 76:14 <b>coordination</b> 83:17 <b>copy</b> 6:9 <b>correct</b> 5:8 11:20 23:2, 4 30:6 36:21 37:2 38:7 57:2 59:22 68:6 88:9 96:25 97:15 112:7 113:14 114:23 115:24 118:8 120:11, 24 123:19 125:21 139:21 141:13 <b>corrected</b> 61:20 <b>corrections</b> 4:25 5:3, 11 <b>corrective</b> 134:3 <b>correctly</b> 105:2 <b>cost</b> 117:25 <b>COUNSEL</b> 2:1, 2, 3 4:5, 14 5:5 6:8 <b>count</b> 99:1 <b>counted</b> 126:23 <b>counterpart</b> 111:10 <b>couple</b> 7:18 12:19 13:8, 17 16:10 29:4 59:23 67:8, 12 77:24 78:5 98:24 103:20 140:2, 21 144:8 <b>coupled</b> 83:22 <b>course</b> 17:7 20:23 61:12 71:24 96:6 <b>COW270758</b> 97:25 <b>CPP</b> 73:22 <b>creditors</b> 64:3</p>	<p><b>criteria</b> 70:16 75:12 76:4 78:8, 10, 24 79:6, 7 82:1, 8 109:7 110:4, 13 112:9 115:10 119:22 121:9 122:24 130:17, 18 <b>critical</b> 14:23 <b>crowded</b> 102:24 <b>crowds</b> 11:13 <b>Crown</b> 5:20 <b>crunch</b> 14:5 <b>curious</b> 123:6 <b>Curriculum</b> 3:3 7:1 <b>cursor</b> 106:21 <b>curve</b> 149:1 <b>customer</b> 10:23 11:3, 10 122:6, 17 <b>customers</b> 12:20 13:2, 10 90:2 121:14 <b>cutting</b> 86:19 <b>CV</b> 6:9, 22 <b>CVR</b> 151:3 <b>cycle</b> 149:6 <b>cycles</b> 116:25  &lt; D &gt; <b>daily</b> 68:9, 21 96:22 104:13 118:11 120:15 133:9, 19 134:12 140:3 143:10 <b>Dallas</b> 8:1, 3, 20 15:12, 22 16:3, 25 18:9 25:19 50:3, 6 53:2 60:18 92:25 135:10 <b>DART</b> 14:16 <b>data</b> 78:1, 4, 6, 23 79:3, 4, 20 80:14, 18, 20 122:14, 18 <b>date</b> 13:23 24:10 25:22 35:17 43:25 47:24 58:15 59:12, 13 130:21 131:7,</p>	<p>24, 25 132:5 151:7 <b>Dated</b> 151:15 <b>dates</b> 33:24 34:5, 10 127:18 129:10 <b>Davies</b> 65:22 74:13, 18, 21 76:3, 20 <b>day</b> 1:15 11:11, 13 12:10, 15, 18 13:7, 13 50:18 60:6, 8, 15 82:21, 22 103:14, 17 110:24 111:13, 14 112:14, 17, 19, 22 116:8, 11 120:2, 23 122:2, 12 125:20 126:14 127:14 128:23, 25 129:8 130:18, 23 132:1, 14 136:10 151:15 <b>day-by-day</b> 96:9 <b>days</b> 11:16 13:25 41:25 50:20, 22 57:20 98:3, 9, 17, 24 103:20 107:3 109:23 121:2 130:19 <b>day's</b> 111:11 <b>daytime</b> 15:2 40:1 <b>DC</b> 7:18 <b>deal</b> 51:8 87:9 <b>dealing</b> 55:10 69:4 136:12, 13 <b>dealt</b> 41:16 88:16 124:6 <b>Deasy</b> 2:13 <b>debt</b> 64:3 65:5, 7 <b>December</b> 142:9 <b>decision</b> 64:6, 9 100:14 101:18 130:13 <b>decision-making</b> 12:12 <b>decisions</b> 138:3 <b>declaration</b> 4:9 <b>dedicated</b></p>
--	---	--	--	--

<p>119:25 <b>deemed</b> 5:15 <b>defer</b> 62:4 63:6 93:8 <b>definitely</b> 76:22 <b>degree</b> 65:17 85:19 <b>delay</b> 35:16, 24 <b>delays</b> 23:15, 17, 20 45:4, 6 48:10 <b>delegated</b> 88:5 <b>delivered</b> 148:7, 9 149:4, 14 <b>delivery</b> 116:2 <b>Deloitte</b> 125:8, 10, 11, 14, 15, 22 126:1, 5, 22 <b>demand</b> 13:18 102:1, 8 108:5 110:18 <b>demands</b> 11:17 <b>Demonstration</b> 116:3, 16 119:19 <b>departed</b> 78:18 <b>departing</b> 112:3 <b>department</b> 7:11, 21 8:9 10:1, 2, 17, 22 27:24 <b>departure</b> 79:18 <b>depending</b> 78:7, 24 134:9 <b>depends</b> 112:22 146:14 <b>derailments</b> 146:23 <b>describe</b> 147:6 <b>described</b> 14:6 118:6 <b>DESCRIPTION</b> 3:2 96:14 <b>design</b> 8:14, 23 9:9 <b>designed</b> 71:22 83:23, 25 90:17 144:23 145:2 <b>desk</b> 119:13, 14 <b>detail</b> 89:3 <b>details</b> 94:4 <b>detecting</b> 88:25 <b>detects</b> 88:22 <b>determine</b> 17:19 70:16 114:19 115:15</p>	<p>116:6 119:21 133:6 <b>determined</b> 111:6 114:25 131:15 <b>develop</b> 24:16 <b>developed</b> 22:10, 21 24:15 99:1 139:2, 3 <b>developing</b> 25:14 65:13 136:13 <b>dictated</b> 146:15 <b>different</b> 27:12 32:20 47:3, 9 49:23 58:18 72:1, 3 75:6 78:7 84:21 88:8 100:8 113:2 117:13 133:11 <b>difficult</b> 44:8 <b>digitally</b> 151:11 <b>direct</b> 119:16 <b>direction</b> 113:3 <b>directly</b> 18:23 119:12 <b>director</b> 10:14 95:6 <b>discipline</b> 7:15 <b>discontent</b> 147:11 <b>discuss</b> 77:25 100:22 147:1 <b>discussed</b> 12:24 23:24 63:13 93:13 100:5 107:25 141:1 <b>discussing</b> 64:1 68:4 76:3 <b>discussion</b> 12:15, 16 23:25 66:6 75:25 77:15 100:21 145:4 <b>discussions</b> 66:3 99:20 100:7, 9, 14, 16 101:15 108:23 109:1 133:12 134:11 138:3, 11 145:15 147:4 <b>displayed</b></p>	<p>146:15 <b>displays</b> 31:25 <b>disruption</b> 11:22 <b>document</b> 6:12, 16, 20 22:10, 17, 20 30:14, 17 47:24 58:21 59:2 65:18 94:16, 17, 20 96:12 97:10, 12, 18, 20, 22, 24 98:1 100:1 103:23 107:9, 10 124:15 128:13, 20 141:3, 7, 19 <b>documentation</b> 72:16 <b>documents</b> 27:13 30:1, 5, 7, 15, 25 31:10, 14 58:6, 8 59:2 69:18 73:9, 17 147:21 <b>doing</b> 10:5 18:20 21:20 33:4 34:23 60:3 63:3, 5 64:20 75:24 77:9, 20 88:24 118:3 125:11, 14, 23 146:3 <b>door</b> 85:12, 13, 15 86:16, 17, 19 88:11, 14, 15, 16, 23 89:5, 16 93:3, 4, 20 142:20 143:13, 25 144:1, 11, 17 145:2 <b>doors</b> 43:15 87:16 88:11, 17, 23 89:1, 23 90:3 92:8 93:17, 18 143:21, 22 144:11, 15, 23 <b>Doris</b> 2:7 149:23, 25 <b>dot</b> 115:6 <b>double</b> 130:11 <b>draft</b> 46:19 47:22 <b>drafted</b> 11:24 26:9 47:15</p>	<p>48:1 58:25 66:23, 25 <b>drafts</b> 31:10 <b>drawback</b> 86:23 <b>drill</b> 70:14 71:15 72:6 <b>drills</b> 44:13 58:19 66:16 67:25 68:24 69:2, 12, 16 71:22, 23 72:12 73:12 <b>drive</b> 39:10 <b>driver</b> 89:7 <b>drivers</b> 27:19 <b>drives</b> 88:3 <b>dropping</b> 54:23 <b>Duane</b> 19:16, 17 20:6 28:2 <b>due</b> 27:17 59:17 60:8 74:16 75:18 118:25 <b>Duquette</b> 19:16 <b>duration</b> 59:5, 8, 11 <b>dynamic</b> 31:17 32:25  &lt; E &gt; <b>earlier</b> 136:15 145:3 <b>early</b> 22:2 27:15 44:3, 21 45:13 54:15 74:5 138:22 142:8 <b>East</b> 8:21 <b>eastbound</b> 113:9, 10 <b>edge</b> 68:5 88:16, 17, 18, 20, 24 89:20 92:8 <b>edges</b> 142:22 <b>educate</b> 11:6 <b>effect</b> 84:9 108:23 109:1 <b>effective</b> 48:14 <b>effort</b> 62:20 90:15 104:10 <b>elected</b> 9:2 <b>electronically</b> 128:14 <b>elements</b> 36:1</p>	<p><b>Elizabeth</b> 2:13 <b>else's</b> 18:18 <b>emergency</b> 69:12 146:3 <b>employed</b> 83:6 <b>employees</b> 89:21 92:12 <b>encounter</b> 149:19 <b>ended</b> 132:12 <b>ends</b> 17:8 <b>engage</b> 48:3 <b>engineers</b> 62:24 <b>ensure</b> 41:12 126:22 <b>enter</b> 4:18 <b>entered</b> 4:25 5:6, 10 6:25 117:3 <b>entire</b> 8:9 79:16 86:6 122:23 134:7 149:2 <b>entirely</b> 16:25 <b>entitled</b> 97:13 <b>entrances</b> 121:13, 18 <b>environment</b> 29:17 92:19 142:24 <b>envisioned</b> 40:7 <b>equal</b> 120:19 <b>equipment</b> 31:24 60:23 103:6 104:8 140:5, 6 <b>equivalent</b> 15:23 <b>errors</b> 5:9 <b>especially</b> 85:20 138:12 <b>establish</b> 5:18 86:8, 22 <b>established</b> 17:23 21:1 52:12 <b>evaluable</b> 75:11 <b>evaluation</b> 21:17 68:9, 24 73:8 77:19 119:19 125:14 132:17 133:3 <b>event</b> 10:24 11:4 <b>events</b> 11:10, 11</p>
---	---	--	--	---

<p><b>eventually</b> 39:15 43:20 <b>everybody</b> 28:9 30:15 33:11 48:3 76:4 108:9 <b>evidence</b> 4:8, 19 5:1, 6, 10, 23 6:1, 5 <b>exact</b> 43:24 53:20 <b>exactly</b> 41:1 75:16 126:4 143:4 <b>example</b> 11:14 36:23 37:12 49:8 64:18 70:20 78:9 99:13 102:14, 20 113:25 <b>examples</b> 69:18 <b>exception</b> 45:23 <b>exercise</b> 70:14 76:24 <b>exercises</b> 44:13 47:4 58:19 66:17 67:25 68:24 69:3, 16, 20 70:4 71:22, 23 72:12 73:12 <b>Exhibit</b> 6:25 7:1 <b>EXHIBITS</b> 3:1 <b>exist</b> 59:1 <b>expanded</b> 17:7 43:15, 18, 23 149:2 <b>expansion</b> 17:14 84:3 <b>expect</b> 11:16 24:8 47:5 51:15 55:4, 19 56:4 87:20 92:21 127:2 135:2, 21 145:5 <b>expectation</b> 50:21 <b>expectations</b> 47:1 50:4, 6, 8 60:12 109:20 <b>expected</b> 25:7, 16 43:1 50:1, 3, 16 52:9 54:3, 4, 6 60:16 61:12 80:7 86:1 109:15 142:14, 18 144:6</p>	<p><b>expecting</b> 24:13 25:11, 12 49:12, 13, 23 56:2 <b>experience</b> 7:6, 12 12:2 13:11 16:23 21:15 25:18 28:4, 10, 25 29:16, 18 31:9 41:24 48:23, 24 51:12 53:2 55:13, 24, 25 60:21 61:3, 7 62:5 71:15 123:24 124:1 133:20 137:12, 15 144:24 146:25 <b>experienced</b> 13:15 55:2, 20 56:9 62:24 80:11 92:23 132:20 133:1 139:5, 10 <b>experiences</b> 123:21 <b>experiencing</b> 61:4, 8, 9 88:11 135:6 <b>experts</b> 22:15 <b>explain</b> 89:2 112:24 144:19 <b>explanation</b> 122:23 <b>expose</b> 90:11 <b>exposed</b> 72:2 90:12 91:22 <b>exposure</b> 43:10 <b>extended</b> 40:12 148:20 <b>extensions</b> 13:21 14:6, 11 15:12 <b>extent</b> 135:10 137:2 142:20 143:13 <b>extra</b> 14:4 <b>eye</b> 34:18 <b>eyes</b> 80:5  &lt; F &gt; <b>face</b> 71:11 <b>facilities</b> 104:24 <b>facility</b> 7:22 63:2 104:22</p>	<p>136:1 <b>facing</b> 81:25 <b>fact</b> 23:24 27:17 28:15 40:3, 18 50:11 52:8 88:1 109:22 123:7 132:6 <b>factor</b> 103:2 <b>fail</b> 111:7, 14 116:5, 7 119:22 <b>failure</b> 56:2 69:20, 22 <b>failures</b> 56:14 <b>fair</b> 18:12 25:8 62:1 75:9 76:7 115:13 <b>fall</b> 24:7 138:23 <b>familiar</b> 14:1 20:17 39:20 42:25 69:4 94:20 97:21 119:1 133:25 <b>familiarize</b> 14:12 <b>fault</b> 146:7, 14 <b>faults</b> 146:13 <b>feature</b> 80:13 81:4 102:25 <b>feed</b> 13:6 <b>feel</b> 32:15 <b>feelings</b> 109:9 <b>felt</b> 107:25 <b>field</b> 29:2 36:14 70:4 78:20 79:5 <b>figure</b> 89:8 <b>figured</b> 67:10 <b>file</b> 73:21 <b>fill</b> 90:22, 23 <b>filling</b> 18:16 <b>final</b> 26:13 31:10 96:12 <b>finalize</b> 30:7, 14 <b>finalized</b> 31:2, 14 <b>finalizing</b> 30:4 <b>finally</b> 87:1, 4 <b>financial</b> 132:4 <b>find</b> 53:11 59:1 73:23 <b>findings</b> 116:14 123:5 <b>fine</b> 63:19 75:20</p>	<p><b>finished</b> 14:9 <b>fit</b> 91:9 <b>five-minute</b> 63:16 <b>fixed</b> 133:16, 19 <b>fixes</b> 143:5 <b>fixing</b> 135:19 <b>flags</b> 38:17 <b>fleet</b> 60:18, 21 61:23, 24 85:20 98:11 99:21 100:3 102:10, 19 105:1 128:17 132:24 134:8, 10, 18 148:7, 14, 23, 24 149:2 <b>fleets</b> 133:23, 25 <b>fleet-wide</b> 134:2, 3 <b>flexibility</b> 14:4 <b>flies</b> 146:19 <b>floated</b> 110:16 <b>flush</b> 55:8 <b>focus</b> 19:20, 22 31:15, 20 86:6 136:4, 9 137:16 <b>focused</b> 30:1 31:20 32:23 147:5 <b>focusing</b> 21:21 89:14 <b>folks</b> 42:24 143:9 <b>followed</b> 78:13 115:20 <b>following</b> 132:8 <b>follow-up</b> 4:15 63:11 67:8 149:24, 25 <b>footnote</b> 125:6 <b>footnotes</b> 125:5 <b>forced</b> 45:6 103:13 <b>foregoing</b> 151:6, 12 <b>forget</b> 63:20 <b>forgot</b> 32:2 <b>forgotten</b> 99:18 <b>formal</b> 22:9 30:12 86:8 <b>format</b> 75:7 <b>formed</b> 74:1, 7 <b>former</b> 14:17 18:1 29:15</p>	<p><b>forth</b> 92:16 151:8 <b>Fortunately</b> 14:14 <b>forward</b> 18:6 45:7 130:18, 23 <b>found</b> 89:18 126:17 134:3 <b>foundations</b> 22:6 <b>freight</b> 28:3 <b>frequencies</b> 51:1 <b>frequency</b> 115:3 <b>Friday</b> 129:6 130:9 <b>front</b> 6:16 <b>fronts</b> 82:23 <b>frustrated</b> 40:4 <b>frustrating</b> 36:7, 10 40:20 <b>full</b> 12:9, 10, 14 13:12, 17 15:3 41:22, 23 42:5, 7, 8 44:4, 6 45:14, 21 46:16 49:6, 11 50:1, 12, 14 53:5, 8 60:1 89:2 <b>full-scale</b> 140:17 141:1 <b>fully</b> 46:1 83:24, 25 120:4 139:8 <b>function</b> 80:7 144:24 <b>functional</b> 92:9 <b>functioning</b> 46:1 81:8 92:9 <b>future</b> 11:16 84:4 147:25  &lt; G &gt; <b>game</b> 32:9 <b>GAUL</b> 1:7 2:6 3:3 4:2, 3 6:8, 13, 21, 23 7:2, 9 8:19 9:6, 14, 17, 19, 24 11:9, 20 12:13 13:3, 14, 20 14:13 15:14, 25 16:5, 18, 20 17:2, 5, 10, 15, 22 18:14, 19 19:2, 5, 10, 14</p>
--	--	--	--	---

20:3, 12, 19, 24  
21:10, 15, 22, 25  
22:18, 22 23:5,  
11, 18, 23 24:12  
25:9, 12, 17  
26:16 27:2, 7,  
11, 23 28:1, 19  
30:6, 10, 23  
31:4, 7, 16 32:6,  
12 33:5, 20, 25  
34:6, 11, 15, 20,  
24 35:3, 9, 15,  
23 36:11, 21  
37:2, 7, 14 38:3,  
7, 11 39:5, 15  
40:8, 11 41:4,  
17 42:16 43:7,  
20, 24 44:3, 20  
45:2, 10, 20  
46:4, 13 47:18,  
23 48:5, 13, 21  
49:5, 15, 20, 25  
50:7, 13 51:20  
52:1, 11, 21  
53:1, 10, 15, 22  
54:10 55:7, 23  
56:12, 21, 25  
57:4, 12, 17  
58:3, 9 59:3, 7,  
20, 22 60:9, 17  
61:13, 19 62:2,  
13, 17 63:15, 19,  
22 64:7, 10, 15,  
21, 24 65:6, 11,  
16 67:10, 15, 21  
68:6, 13, 20  
69:2, 9 70:2, 25  
71:3, 21 72:7,  
23 73:5, 11, 20  
74:2, 11, 24  
75:13, 16, 20  
76:8, 12, 21, 25  
77:4, 11, 22  
79:11, 15, 24  
80:4, 10, 19, 24  
81:11, 17, 21  
82:2, 12, 25  
84:25 85:5, 11  
86:16 87:18, 25  
88:9, 13 89:17  
90:8, 14, 20  
91:10, 14, 18, 24  
92:3, 22 93:1, 6,  
17 94:2, 19, 25  
95:9, 22 96:17

97:1, 8, 15, 21  
98:4, 19 99:6,  
11, 14, 19 100:7,  
18, 24 101:5, 10,  
14, 23 102:4, 14,  
22 103:19, 25  
104:7 105:1, 24  
106:6, 11, 16  
107:7, 14, 20, 24  
108:13, 22  
109:2, 8, 22  
110:5, 15 111:8,  
20 112:1, 7, 10,  
15 113:1, 14, 23  
114:18, 23  
115:14, 24  
116:9, 18, 21  
117:5 118:8, 14,  
23 119:23  
120:11, 16, 24  
121:3, 12, 22  
122:11 123:3,  
11, 15, 19, 23  
124:2, 9, 16  
125:1, 4, 21  
126:3, 25 127:5,  
17, 25 128:9, 19,  
22 129:4, 7, 13,  
17, 22 130:2, 6,  
12, 22 131:4, 12,  
17 132:11, 20  
133:8, 22 135:5,  
24 136:7, 19  
137:8, 14, 24  
138:6, 10, 18  
139:16, 21  
140:1, 17 141:9,  
13, 17 142:3, 8,  
19 143:3, 18  
144:7, 21  
145:10, 19  
146:5, 11, 19  
147:3, 9, 19  
148:4, 22 149:12  
**general** 28:7  
53:21 58:22  
**generally** 142:1  
**generate** 118:3,  
25 119:2  
**generated**  
122:14 127:8  
**generation**  
80:13 81:4  
119:17

**gentleman** 19:2  
65:20  
**gentleman's**  
35:4  
**Gillani** 2:14  
**give** 15:1 41:1  
42:24 43:10  
53:13, 21 58:21  
82:16 101:7  
106:13 143:10  
147:18  
**given** 5:7, 21  
24:9 38:20  
59:16 79:2  
81:18 108:8, 17  
119:21 121:10  
122:12 149:22  
**gives** 120:13  
**giving** 6:1  
108:10  
**glitch** 80:12, 21,  
25 81:3  
**goal** 72:4, 8  
86:20  
**goals** 30:4  
**Good** 4:3  
14:15 18:15  
29:20 40:12  
47:13 51:4  
55:11 94:25  
95:1 110:19, 21  
147:10, 15  
**gosh** 47:17  
**governor** 9:1  
**grab** 143:21  
144:14  
**gradually** 137:22  
**grand** 57:7  
**granted** 111:19  
**grew** 8:13  
**ground** 5:17  
**group** 8:4 10:4  
18:11 22:24  
23:1, 6 26:21  
27:1 35:4, 6  
46:6 62:18  
73:14 95:4, 6,  
12 101:13  
106:12 122:5  
123:14 140:2  
**groups** 20:22,  
25 21:1, 2  
83:17 133:12  
134:23

**group's** 34:16  
**guarantee** 64:2  
**guaranteeing**  
65:5  
**guess** 10:23  
22:23 28:5  
36:11 58:3, 13  
63:3 74:24  
131:23  
**guidance** 12:1  
29:21 63:4  
**guide** 86:11  
**guidelines**  
136:14 137:17  
**guts** 54:20  
  
< H >  
**half** 9:1 25:21  
136:11 142:11  
**hand** 66:24  
**handbook** 26:15  
**handle** 11:13  
71:10  
**handover** 23:22  
84:13  
**happen** 56:19  
57:9 69:21  
86:2, 3 139:11  
**happened** 39:22  
55:14 64:22  
65:1 97:7  
100:25 125:3  
128:23 129:8  
**happening** 57:7  
146:10 147:25  
**happens** 56:18  
68:19 149:11  
**happy** 6:17  
106:13, 17  
**head** 17:24  
135:22  
**heading** 49:23  
51:19 55:6, 20  
81:23 82:24  
85:2 87:24  
88:12 89:15  
93:15 111:23  
113:7 120:8  
121:1, 8 122:4  
124:17 147:8  
**headings** 111:2  
116:2  
**headway** 66:5,  
7 78:14 102:12  
112:23, 25

115:12, 14, 18,  
20 127:20, 23  
**headways**  
50:19 102:6  
105:16  
**hear** 72:12, 15  
74:19 75:20, 21  
**heard** 12:23  
16:15 23:23  
80:25  
**hearing** 4:21  
77:12  
**hearings** 4:10,  
20  
**heaters** 140:19,  
20  
**Heckert** 2:12  
77:13 151:3, 20  
**Held** 1:14  
**help** 13:2 33:3  
36:18 56:16  
65:22 96:6  
103:10 104:10  
106:21 111:3  
119:13, 14  
122:23 130:9  
133:3, 5 147:14  
**helped** 30:6  
46:18  
**helpful** 131:13  
**helping** 10:25  
**high** 11:17  
135:7, 16  
**higher** 18:22  
27:24 107:2  
115:23 117:9  
**high-level** 10:4  
**highlight** 96:6  
**hire** 84:10  
**hired** 8:24  
29:14  
**hiring** 10:11  
24:14 25:25  
**hit** 62:12 72:5  
140:14 144:11  
**hold** 90:3, 16,  
17 144:14  
**Holder** 35:4  
**Holder's** 35:6  
**honest** 24:1  
72:8 109:12, 14  
**hope** 55:7, 8  
83:12  
**hoped** 46:2, 11

52:21 53:18 <b>hoping</b> 52:19 <b>hour</b> 115:4 <b>hours</b> 15:2 37:9 39:24, 25 40:1, 19 41:13, 20, 21 46:16 78:19 149:8 <b>housed</b> 20:15 <b>hustlers</b> 84:11, 17 <b>HVAC</b> 88:8  < I > <b>IC</b> 95:6 <b>idea</b> 87:5 104:2, 21, 25 105:21 110:16, 19, 21 126:21 <b>identification</b> 143:16 <b>identified</b> 22:5 46:22 47:3 58:11 61:18 85:13 87:15 90:1 93:4, 7 114:9 122:16 139:5, 19 145:4 <b>identify</b> 60:25 131:2 143:1, 4, 5 144:4 148:20 <b>II</b> 9:8, 10, 16, 17 84:3, 4 148:5, 6, 8, 10, 17, 25 149:5, 8 <b>imagine</b> 34:24 74:7 89:10 95:23 130:15 132:20 <b>IMIRS</b> 78:10 116:3, 16, 17 119:12, 19 <b>immediate</b> 102:12 <b>impact</b> 51:17 65:4 102:19 137:18 <b>implement</b> 140:13 <b>implemented</b> 21:5 139:22 <b>implications</b> 102:11 <b>impressed</b> 24:2, 12	<b>improvements</b> 140:7 <b>inaudible</b> 74:13, 14 75:14 76:4 77:7, 9, 10 <b>incidents</b> 82:22 93:22 <b>inclement</b> 138:25 <b>include</b> 37:5, 8 59:4 <b>included</b> 21:3 66:12, 13 67:25 69:12, 22 148:14 <b>includes</b> 59:8 <b>including</b> 21:6 30:16 130:20 <b>incorporate</b> 37:5 <b>incorporates</b> 16:6 <b>increased</b> 103:1, 3 <b>incriminate</b> 5:18 <b>independent</b> 21:5, 19 68:17, 20 73:2 95:7 123:8, 16 124:7 <b>INDEX</b> 3:1 <b>indications</b> 38:9 <b>individual</b> 18:20, 24 43:8 <b>individuals</b> 29:21 63:6 111:18 <b>information</b> 58:13 59:5 64:19 79:1 80:2 81:19 96:3 116:19 117:3 118:1 119:15, 20 121:9, 20, 23 122:8 <b>initial</b> 18:6 31:9, 10 53:3 109:20 127:6 144:19 <b>initially</b> 8:5 18:23 29:21 37:14 <b>input</b> 118:16 119:12, 14 <b>inputs</b> 117:2 <b>inputted</b> 117:14 <b>Inquiries</b> 5:14	<b>Inquiry</b> 4:6 5:15, 22 <b>installation</b> 35:25 <b>installed</b> 134:4 <b>instance</b> 5:20 <b>insufficient</b> 106:3 <b>Integrated</b> 116:18 <b>intends</b> 4:18 <b>intent</b> 88:21 <b>interested</b> 62:6 <b>interjects</b> 74:16 75:18 <b>intermittent</b> 85:18 87:21 145:10 <b>intermittently</b> 57:15 <b>internal</b> 30:12 100:17, 18 <b>interrupted</b> 57:22 <b>intervene</b> 4:13 <b>interview</b> 4:7, 12, 16, 17 6:7, 10 95:13 150:3 <b>introduced</b> 99:9 <b>introduction</b> 143:15 <b>involved</b> 8:14 26:14 47:10, 11 68:21 69:24 73:2 74:14 76:23 77:3 81:15 100:20 101:1 109:1 137:25 138:2, 11 142:4, 5 145:1, 14 147:3 <b>involvement</b> 137:2 <b>issue</b> 88:14, 15 89:6, 16 102:18 110:18 143:17 <b>issued</b> 38:14 <b>issues</b> 22:4 26:13, 23 54:11 60:8, 14 61:10, 17, 20, 21, 22 62:12 69:5 71:11 74:17 85:7 87:21, 23 88:11 93:3, 4, 7	99:7 108:18 109:11 111:12 119:9 131:2 133:14, 18 134:25 135:2, 20 138:13 141:23 142:14, 16 145:5, 7, 18 147:24 148:12, 16, 21  < J > <b>James</b> 2:7 149:25 <b>Joanna</b> 10:13 18:23 19:14 20:6 <b>Joannas</b> 42:22 <b>Joanne's</b> 19:12 28:2 <b>job</b> 19:16 <b>Joe</b> 19:2 <b>John</b> 18:25 19:20, 25 20:1 22:11 133:9, 14 143:6 147:10, 13 <b>John's</b> 22:14 58:13 140:3 <b>join</b> 8:1 <b>joined</b> 8:20 12:3 18:17 24:8 25:7 <b>July</b> 30:24 74:4, 5 96:13 98:2 110:25 <b>jump</b> 63:7 124:10 <b>jumping</b> 18:9 <b>June</b> 30:24  < K > <b>Kate</b> 2:2 4:3, 4 6:14, 22, 24 7:3 8:17 9:3, 11, 15, 18, 20 11:3, 15 12:3, 25 13:11, 19 14:5 15:7, 21 16:1, 15, 19, 23 17:3, 6, 11, 18 18:9, 16 19:1, 4, 7, 11, 24 20:4, 13, 21 21:4, 13, 18, 23 22:17, 20 23:4, 7, 16, 19 24:5	25:5, 10, 15 26:8, 22 27:5, 8, 16, 25 28:14 29:25 30:8, 19, 25 31:6, 12 32:4, 8, 23 33:16, 22 34:2, 7, 12, 17, 21 35:1, 5, 12, 19 36:9, 15, 22 37:3, 12 38:1, 4, 8, 25 39:7 40:2, 9, 22 41:5 42:11 43:3, 17, 22 44:1, 17, 21 45:5, 12, 25 46:8 47:14, 19 48:1, 8, 17 49:2, 7, 18, 22 50:5, 8 51:11, 23 52:6, 17, 23 53:7, 12, 17 54:2 55:4, 16 56:8, 16, 23 57:3, 6, 14, 25 58:5, 24 59:4, 17, 21, 23 60:11 61:6, 15 62:1, 6, 15 63:7, 17, 20, 25 64:8, 12, 17, 23 65:3, 8, 12 67:8, 11, 19, 22 68:7, 15, 23 69:8, 24 70:15 71:1, 16 72:4, 17 73:1, 7, 16, 24 74:9, 12, 18 75:9, 14, 21, 23 76:2, 10, 18, 23 77:2, 7, 13, 17 79:8, 14, 21, 25 80:6, 16, 21 81:8, 13, 18, 22 82:9, 19 84:23 85:2, 6 86:15 87:15, 19 88:7, 10 89:14 90:4, 10, 19 91:7, 12, 16, 19, 25 92:20, 24 93:2, 11, 23 94:10, 22 95:2, 10 96:2, 18 97:2, 9, 16, 23 98:6 99:3, 8, 12, 17 100:1, 15, 20 101:1, 7, 11, 20
--	--	--	--	--



102:2, 9, 16  
103:15, 22  
104:1, 21  
105:19, 25  
106:9, 14, 20  
107:12, 15, 21  
108:7, 16, 25  
109:3, 18 110:1,  
8, 22 111:15, 23  
112:5, 8, 13, 21  
113:5, 15  
114:14, 19  
115:9, 17, 25  
116:15, 20  
117:2 118:5, 9,  
18 119:18  
120:7, 12, 21, 25  
121:7, 19 122:3,  
21 123:6, 13, 16,  
20, 25 124:5, 10,  
17 125:2, 13, 22  
126:21 127:2, 9,  
22 128:3, 12, 21  
129:2, 5, 9, 14,  
20, 23 130:3, 8,  
16, 24 131:10,  
14 132:7, 16  
133:2, 17  
134:24 135:18  
136:3, 16 137:4,  
10, 19 138:5, 8,  
14 139:13, 18,  
24 140:12  
141:2, 11, 14, 18  
142:4, 13, 25  
143:12 144:3,  
18 145:3, 14  
146:2, 9, 17, 20  
147:6, 16, 22  
148:18 149:9,  
21 150:2  
**keeping** 34:18  
54:21  
**kept** 35:10  
70:13 143:7  
**key** 89:4  
**Kilometre**  
106:24 124:19  
**kilometres** 82:5,  
18 120:9, 18, 20,  
22 121:6  
124:21, 22  
125:7, 12, 15, 18,  
19, 24 126:7, 11

127:3, 7, 14, 16  
128:2, 4 149:16  
**kind** 41:14  
44:8 55:7, 8  
64:18 85:7  
88:8 118:9, 14  
121:20 122:8  
123:20  
**kinda** 47:19  
**kinds** 55:5, 19  
92:1  
**KM** 120:9  
**knew** 86:4  
99:17, 22 137:14  
**knowledge**  
26:12 31:5  
65:1 146:2  
147:16  
**known** 48:2  
59:14  
**knows** 43:8  
**Kyle** 123:13  
  
**< L >**  
**laid** 58:10  
**large** 7:14  
148:12  
**largely** 30:1  
**largest** 91:3, 4  
**LARRY** 1:7 2:6  
4:2 6:13, 21, 23  
7:9 8:19 9:6,  
14, 17, 19, 24  
11:9, 20 12:13  
13:3, 14, 20  
14:13 15:14, 25  
16:5, 18, 20  
17:2, 5, 10, 15,  
22 18:14, 19  
19:2, 5, 10, 14  
20:3, 12, 19, 24  
21:10, 15, 22, 25  
22:18, 22 23:5,  
11, 18, 23 24:12  
25:9, 12, 17  
26:16 27:2, 7,  
11, 23 28:1, 19  
30:6, 10, 23  
31:4, 7, 16 32:6,  
12 33:5, 20, 25  
34:6, 11, 15, 20,  
24 35:3, 9, 15,  
23 36:11, 21  
37:2, 7, 14 38:3,  
7, 11 39:5, 15

40:8, 11 41:4,  
17 42:16 43:7,  
20, 24 44:3, 20  
45:2, 10, 20  
46:4, 13 47:18,  
23 48:5, 13, 21  
49:5, 15, 20, 25  
50:7, 13 51:20  
52:1, 11, 21  
53:1, 10, 15, 22  
54:10 55:7, 23  
56:12, 21, 25  
57:4, 12, 17  
58:3, 9 59:3, 7,  
20, 22 60:9, 17  
61:13, 19 62:2,  
13, 17 63:15, 19,  
22 64:7, 10, 15,  
21, 24 65:6, 11,  
16 67:10, 15, 21  
68:6, 13, 20  
69:2, 9 70:2, 25  
71:3, 21 72:7,  
23 73:5, 11, 20  
74:2, 11, 24  
75:13, 16, 20  
76:8, 12, 21, 25  
77:4, 11, 22  
79:11, 15, 24  
80:4, 10, 19, 24  
81:11, 17, 21  
82:2, 12, 25  
84:25 85:5, 11  
86:16 87:18, 25  
88:9, 13 89:17  
90:8, 14, 20  
91:10, 14, 18, 24  
92:3, 22 93:1, 6,  
17 94:2, 19, 25  
95:9, 22 96:17  
97:1, 8, 15, 21  
98:4, 19 99:6,  
11, 14, 19 100:7,  
18, 24 101:5, 10,  
14, 23 102:4, 14,  
22 103:19, 25  
104:7 105:1, 24  
106:6, 11, 16  
107:7, 14, 20, 24  
108:13, 22  
109:2, 8, 22  
110:5, 15 111:8,  
20 112:1, 7, 10,  
15 113:1, 14, 23  
114:18, 23

115:14, 24  
116:9, 18, 21  
117:5 118:8, 14,  
23 119:23  
120:11, 16, 24  
121:3, 12, 22  
122:11 123:3,  
11, 15, 19, 23  
124:2, 9, 16  
125:1, 4, 21  
126:3, 25 127:5,  
17, 25 128:9, 19,  
22 129:4, 7, 13,  
17, 22 130:2, 6,  
12, 22 131:4, 12,  
17 132:11, 20  
133:8, 22 135:5,  
24 136:7, 19  
137:8, 14, 24  
138:6, 10, 18  
139:16, 21  
140:1, 17 141:9,  
13, 17 142:3, 8,  
19 143:3, 18  
144:7, 21  
145:10, 19  
146:5, 11, 19  
147:3, 9, 19  
148:4, 22 149:12  
**lasted** 58:7  
**late** 59:14 74:4  
89:12  
**Laurent** 37:23,  
24  
**lead** 65:24  
**leading** 7:12  
58:15  
**leaf** 88:19  
**learning** 149:1  
**leave** 50:16  
141:18  
**led** 45:18 66:6  
80:8 83:19  
107:5 143:16  
146:22  
**Lees** 113:8  
114:1, 4 115:5  
**left** 8:20 19:5,  
14, 15 89:12  
146:18  
**left-hand** 114:15  
**Leila** 2:12  
151:3, 20  
**length** 40:12  
52:7

**lengthen** 51:23  
71:19  
**lengthened**  
52:16  
**letter** 95:3, 10,  
18, 19 96:3, 7, 18  
**letting** 87:3  
**level** 18:22  
19:8, 9 27:24  
48:24 52:3  
72:5 101:25  
117:9  
**levels** 42:8  
100:9, 25  
**liability** 5:19  
**life** 51:7  
**LIGHT** 1:6 4:5  
7:7 8:2, 23 9:4,  
7, 22 11:7 13:6  
27:21 28:17  
29:8 95:15, 20  
**liked** 13:16  
**limit** 39:3 115:8  
**limitations** 45:19  
**limited** 12:8  
39:5 95:7  
**limits** 38:17, 19  
39:6  
**lines** 13:6  
**listed** 58:18  
122:7  
**lists** 58:18  
**Litigation** 2:3  
**Liz** 2:3 63:14  
75:21  
**LLP** 2:8  
**loan** 65:21  
74:13  
**local** 69:12  
**locations** 114:7,  
9  
**locked** 38:23  
**logical** 28:13  
**long** 17:20, 23  
30:8 41:1  
50:19 52:4  
58:7, 23 82:15  
86:20 103:10  
106:16 109:13,  
21 110:11, 12  
112:2 115:22  
131:15 148:7, 9  
**longer** 39:24  
40:19 52:22, 24

57:16 105:17 108:19 131:1 <b>long-term</b> 64:3 108:1 <b>looked</b> 20:14 72:16 79:4 112:19 113:21 133:5 141:19 144:20 <b>looking</b> 11:5, 15, 21 45:13 73:8, 18 80:2 87:6 94:16 95:3 106:22 111:4 116:10 124:18 129:24 145:15 147:1 <b>looks</b> 107:16 115:9 120:14 124:24 <b>lost</b> 51:25 <b>lot</b> 10:8, 20 13:21, 25 22:4 25:1, 14 26:16, 17 28:3 29:16, 17 36:11 44:13 60:19 61:23 62:14, 20 66:12, 14 67:2 71:3 72:11 83:17 89:20, 23 92:16 94:4 106:18 138:24, 25 139:22 147:13, 14 149:7 <b>lower</b> 101:19 <b>LRT</b> 146:10 <b>Lyon</b> 113:11  <b>&lt; M &gt;</b> <b>ma'am</b> 6:13, 23 20:12 24:2 97:1, 8 125:1 141:17 <b>machine</b> 84:20 <b>made</b> 4:25 5:3, 11 11:25 18:3 30:23 31:8 39:12 41:6 47:9 66:19 75:7 80:23 91:3 101:18 110:4 128:18 130:10, 14, 17, 21 135:19	140:2, 7, 10 148:23 151:10 <b>main</b> 85:14 111:2 <b>mainline</b> 105:12 <b>maintainer</b> 117:22 <b>maintainers</b> 16:12 54:24 117:20 <b>maintaining</b> 103:6 <b>maintenance</b> 16:9 26:18 62:5, 25 63:1 69:4, 11 78:10, 12 83:9, 10, 13 87:12 93:9 94:8 104:22, 23 106:5, 12 116:1, 2, 4, 7, 12, 21, 23, 24 117:6, 7, 11, 12, 17, 20, 23, 24 118:2, 7, 10, 24, 25 119:3, 7 134:13, 21 136:1, 2, 18, 21 137:3 <b>major</b> 88:15 93:24 122:6, 17 <b>majority</b> 7:14 27:15 50:22 85:22 148:12 <b>making</b> 99:14 100:11 103:6 110:5 135:15 <b>manage</b> 32:21 <b>management</b> 20:14 72:14 116:18, 22 119:7 <b>manager</b> 10:15 14:18 18:1 <b>managers</b> 134:21 <b>Manconi</b> 20:2 133:9 143:6 <b>mandate</b> 147:23 <b>manually</b> 38:6 78:21 80:17 <b>materialized</b> 142:17 <b>math</b> 51:14 <b>maximum</b> 112:11	<b>McClellan</b> 63:10, 11 <b>McGrann</b> 2:2 4:3, 4 6:14, 22, 24 7:3 8:17 9:3, 11, 15, 18, 20 11:3, 15 12:3, 25 13:11, 19 14:5 15:7, 21 16:1, 15, 19, 23 17:3, 6, 11, 18 18:9, 16 19:1, 4, 7, 11, 24 20:4, 13, 21 21:4, 13, 18, 23 22:17, 20 23:4, 7, 16, 19 24:5 25:5, 10, 15 26:8, 22 27:5, 8, 16, 25 28:14 29:25 30:8, 19, 25 31:6, 12 32:4, 8, 23 33:16, 22 34:2, 7, 12, 17, 21 35:1, 5, 12, 19 36:9, 15, 22 37:3, 12 38:1, 4, 8, 25 39:7 40:2, 9, 22 41:5 42:11 43:3, 17, 22 44:1, 17, 21 45:5, 12, 25 46:8 47:14, 19 48:1, 8, 17 49:2, 7, 18, 22 50:5, 8 51:11, 23 52:6, 17, 23 53:7, 12, 17 54:2 55:4, 16 56:8, 16, 23 57:3, 6, 14, 25 58:5, 24 59:4, 17, 21, 23 60:11 61:6, 15 62:1, 6, 15 63:7, 17, 20, 25 64:8, 12, 17, 23 65:3, 8, 12 67:8, 11, 19, 22 68:7, 15, 23 69:8, 24 70:15 71:1, 16 72:4, 17 73:1, 7, 16, 24 74:9, 12, 18 75:9, 14, 23 76:2, 10, 18, 23	77:2, 7, 13, 17 79:8, 14, 21, 25 80:6, 16, 21 81:8, 13, 18, 22 82:9, 19 84:23 85:2, 6 86:15 87:15, 19 88:7, 10 89:14 90:4, 10, 19 91:7, 12, 16, 19, 25 92:20, 24 93:2, 11, 23 94:10, 22 95:2, 10 96:2, 18 97:2, 9, 16, 23 98:6 99:3, 8, 12, 17 100:1, 15, 20 101:1, 7, 11, 20 102:2, 9, 16 103:15, 22 104:1, 21 105:19, 25 106:9, 14, 20 107:12, 15, 21 108:7, 16, 25 109:3, 18 110:1, 8, 22 111:15, 23 112:5, 8, 13, 21 113:5, 15 114:14, 19 115:9, 17, 25 116:15, 20 117:2 118:5, 9, 18 119:18 120:7, 12, 21, 25 121:7, 19 122:3, 21 123:6, 13, 16, 20, 25 124:5, 10, 17 125:2, 13, 22 126:21 127:2, 9, 22 128:3, 12, 21 129:2, 5, 9, 14, 20, 23 130:3, 8, 16, 24 131:10, 14 132:7, 16 133:2, 17 134:24 135:18 136:3, 16 137:4, 10, 19 138:5, 8, 14 139:13, 18, 24 140:12 141:2, 11, 14, 18 142:4, 13, 25 143:12 144:3, 18 145:3, 14 146:2, 9, 17, 20	147:6, 16, 22 148:18 149:9, 21 150:2 <b>McLellan</b> 2:3 4:13 63:14 75:21 <b>meaning</b> 112:2 <b>means</b> 67:14, 17, 23 81:1 98:15 132:2 <b>meant</b> 66:25 84:7 <b>measure</b> 111:5 115:10 129:14 134:3 <b>measured</b> 113:3 125:20 <b>measures</b> 120:14 <b>measuring</b> 78:9, 25 <b>mechanic</b> 119:5 <b>mechanism</b> 69:6 <b>meet</b> 79:6, 7 82:17 102:12 104:10 108:5 111:9 <b>meeting</b> 151:10 <b>meetings</b> 133:9, 10, 19 134:13 140:3, 4 143:9, 10 <b>Member</b> 2:2, 3 65:9 74:9 101:16 107:17 <b>members</b> 18:24 21:6 22:24, 25 27:19 76:15 95:24 97:5 123:10 <b>memory</b> 59:10 <b>mention</b> 32:2 <b>mentioned</b> 18:10 19:11 26:8 37:3 39:1 49:8 67:24 74:12, 20 82:14, 19 85:25 87:19 132:9 136:15 <b>met</b> 50:6, 9 77:23 78:5 100:14 <b>metric</b> 78:8 <b>metrics</b> 129:17
--	--	---	---	---

<p><b>Metro</b> 7:18 <b>Michael</b> 2:7 <b>microphone</b> 63:21 <b>mid-2017</b> 64:25 <b>mid-September</b> 142:10 <b>mileage</b> 117:16 <b>miles</b> 8:12, 13 17:3, 5, 9 126:18 <b>Milosevic</b> 2:8 <b>mind</b> 12:7 74:25 79:10 82:2 135:17 <b>mindful</b> 146:17 <b>minds</b> 75:3 <b>mine</b> 139:11 <b>minimize</b> 137:18 <b>minimum</b> 15:17 120:15, 16 121:5 <b>minor</b> 88:1 <b>minute</b> 36:13 66:10 <b>minutes</b> 111:25 112:12 115:19, 20 121:16 146:18 <b>mixing</b> 33:8 100:8 <b>Mode</b> 111:24 112:5, 6 145:22 <b>modification</b> 134:19 148:23 <b>modifications</b> 61:24 132:24 134:15 135:12 148:13 <b>mods</b> 132:24 <b>module</b> 90:23, 25 91:1, 3 <b>modules</b> 91:5 <b>Monday</b> 110:25 130:3 <b>Monica</b> 95:5 <b>monitor</b> 62:25 63:2 <b>monitoring</b> 72:13 <b>monitors</b> 79:16 <b>month</b> 57:15, 16 58:1 74:8 <b>months</b> 25:22 30:11, 18 31:2 40:13 41:3, 4 65:23 74:14</p>	<p>136:11 142:11, 12 <b>morning</b> 4:3 15:9 49:16 50:15 51:9 67:16 113:8, 25 114:3 115:4 129:12 136:24 147:2 <b>move</b> 8:21 42:14 45:1, 7 59:24 63:9 97:19 105:21 106:21 128:13 137:1 <b>moved</b> 7:21 45:2, 16 68:25 83:20 <b>movement</b> 84:12 <b>moves</b> 84:14 115:20 <b>multiple</b> 71:24  &lt; N &gt; <b>named</b> 19:2 <b>names</b> 73:17 123:1 <b>nature</b> 60:14 <b>near</b> 44:9 137:4 <b>nearly</b> 138:2, 11 <b>necessarily</b> 40:15 131:25 146:5 <b>needed</b> 10:6 26:7 33:14 46:15 102:1 135:12 146:15 <b>needs</b> 71:4 <b>new</b> 7:11 8:2, 5, 16, 23 9:1, 25 12:21 13:4, 6 14:2, 20 16:6, 7, 22, 25 17:21 25:20 27:21 28:17, 21 33:15 41:25 60:20 63:9 84:5 85:20 86:1 98:25 99:9 130:17 133:23, 25 140:5, 13 148:14 149:5, 13 <b>nice</b> 53:6 94:21 <b>nighttime</b> 14:25</p>	<p><b>non-</b> <b>typographical</b> 5:11 <b>Non-verbal</b> 87:18 <b>norm</b> 145:12 <b>normal</b> 61:12 132:15 133:20 144:12 <b>normally</b> 92:20 144:10 <b>North</b> 19:3 <b>noted</b> 44:18 48:6 <b>notes</b> 147:21 151:13 <b>notify</b> 117:20 <b>number</b> 19:6 41:13, 20, 21 46:15 49:11 50:12 51:2 52:13 54:1 60:13, 14 70:22 72:6 78:17 82:20 88:3 90:16, 25 91:4 101:19 103:1, 3 113:17, 18, 23, 24 114:8, 10 115:16 120:18, 22 124:21 125:6, 19 126:20 127:7, 11, 13, 23 129:15, 25 134:25 135:2, 6 141:23 143:10 <b>numbers</b> 53:20 126:22, 24 <b>numerous</b> 18:2 143:8  &lt; O &gt; <b>object</b> 6:4 <b>objected</b> 5:15 <b>objectives</b> 70:17 <b>O'Brien</b> 2:7 <b>observable</b> 145:7 <b>observations</b> 70:12 <b>observe</b> 136:22, 23 <b>obstacles</b> 138:15</p>	<p><b>obstruction</b> 88:22, 25 <b>obstructions</b> 89:25 <b>obtain</b> 4:8 <b>obvious</b> 149:18 <b>OC</b> 7:11 21:2 22:24 23:1, 14 24:3, 20 26:3 29:22, 23 33:13 36:24 46:6, 24 62:21 65:21, 22 73:13 74:13 111:9 119:16 <b>Occasionally</b> 87:11 136:22 <b>occupancy</b> 38:14 <b>occur</b> 47:5 146:6 <b>occurred</b> 67:3 82:22 128:11 <b>offered</b> 147:14 <b>Officer</b> 111:9 <b>official</b> 42:2 <b>OLRT</b> 23:8 <b>OLRTC</b> 22:25 23:3 34:25 35:1 <b>ones</b> 11:12 108:24 <b>ongoing</b> 103:11 126:2 133:3 140:9 <b>onset</b> 70:9 <b>open</b> 12:8, 14 13:12 86:17 88:23 119:9 133:6 138:17 144:14 148:17 <b>opened</b> 28:18 121:14 137:13 <b>opening</b> 11:5, 11 12:5, 11, 15, 17, 18, 23 13:23 17:21 18:7 41:24 43:14 53:3 89:24 93:18 133:21 136:5 137:22 <b>openings</b> 18:7 <b>operate</b> 16:6 36:7, 25 38:6, 15 39:20 41:8 42:4 43:9 50:18 51:16</p>	<p><b>operated</b> 50:17 82:6, 18 <b>operating</b> 7:21 8:9 10:1 18:1 24:17 26:9, 10, 14, 15 32:15, 20 33:8, 13 37:16, 19, 22 38:12 42:7, 9 43:11 46:16 51:7 55:10 58:12 71:9 79:22 83:3 106:7 114:2 132:13 146:1 149:7 <b>operation</b> 28:8 41:21, 22 66:21 79:22 83:24 84:8 104:17 112:6 136:11 <b>operational</b> 7:10 9:8, 25 10:3 21:16 27:9 111:24 136:17, 20 137:6, 8 147:5 <b>operations</b> 7:16 32:7 57:22 62:7, 8, 12, 18 70:3, 13 72:10 73:13 79:16 111:11 118:21 <b>operator</b> 13:16 14:18 31:21 32:24 35:21 36:3 37:6 41:19 46:15 51:22 71:4 86:12, 17, 18 89:4 106:12 143:24 145:23, 24 146:7 <b>operators</b> 14:1, 8, 20 16:8 26:5 28:11, 20, 22 29:1 32:14 33:15 36:23 38:9 39:9, 19 40:3, 17 41:8 42:3, 12, 14 47:10, 11 48:23 51:5 53:24 60:24 61:9 69:3, 10 72:2 86:24 87:3, 12</p>
---	---	---	--	---

<p><b>operator's</b> 36:5 51:13, 18, 25 <b>opportunities</b> 36:23 39:9, 13 108:2 <b>opportunity</b> 5:7 13:16 14:10 39:17 41:8 51:12, 19 76:19 140:16 <b>opposed</b> 109:6 115:12 <b>opposite</b> 112:4 <b>ops</b> 24:3 <b>options</b> 11:8 137:20 <b>order</b> 4:21 10:6 12:19 19:19 41:19 42:3, 13 50:11 54:25 70:23 114:19 118:2 119:2, 4 134:17 140:6 145:25 <b>orders</b> 78:11 116:11 118:4 120:2, 3, 6 <b>original</b> 8:11 9:12 12:14 17:22 18:4 24:20 28:11 144:22 <b>originally</b> 9:7 33:23 34:3, 10 40:7 41:13 83:23 126:19 <b>OTTAWA</b> 1:6 4:5 7:7 9:4, 7, 22 15:24 18:10 50:9 79:13 95:11, 15, 20 <b>outcome</b> 72:18 <b>output</b> 67:20 <b>outset</b> 74:10 <b>outside</b> 42:5 115:8 140:15 <b>outstanding</b> 87:23 <b>overall</b> 102:20 123:18 <b>overcome</b> 87:4 139:9 146:16 <b>overcoming</b> 55:13 86:13 133:13</p>	<p><b>overnight</b> 39:25 40:19 <b>oversaw</b> 23:2 <b>overseeing</b> 34:13, 22 <b>oversight</b> 18:13 24:7 <b>overtalking</b> 75:19 <b>overview</b> 7:5 10:4 <b>owned</b> 33:9 36:20 <b>owner</b> 92:10  &lt; P &gt; <b>p.m</b> 1:16 105:15, 17 150:5 <b>P3</b> 123:24 124:1 <b>PA</b> 66:2 <b>package</b> 94:6 <b>paper</b> 128:14 <b>paperwork</b> 131:22 <b>paragraph</b> 96:5 97:25 98:7 <b>paragraphs</b> 95:18 <b>parallel</b> 13:1, 9 <b>paraphrase</b> 25:8 <b>part</b> 8:9, 10 9:11 21:8, 11 54:16 55:10 67:6 71:7 79:22 84:3 92:4 103:23 136:16 147:22 149:3, 9 <b>participants</b> 1:15 2:5 5:4, 10 <b>participate</b> 22:1 <b>particular</b> 27:16 45:6 80:1 81:25 118:19 133:4 <b>particularly</b> 149:22 <b>parties</b> 26:14 98:14 <b>partners</b> 147:8 <b>Partnership</b> 95:12 <b>pass</b> 69:19 76:6 106:25</p>	<p>109:15, 21 110:3, 7, 12 111:7, 13, 19 112:9, 24 113:6, 13 114:16 116:5, 7 119:22 120:17 <b>passed</b> 75:15 <b>passenger</b> 90:5 91:23, 25 137:23 <b>passengers</b> 90:9, 12 137:11 142:21 143:15 <b>passes</b> 70:22 72:5 114:20 <b>pass-fail</b> 69:18 70:1 71:2 72:19 115:22 <b>pass-fails</b> 70:21 <b>Pat</b> 10:21 66:3 102:5 <b>pause</b> 99:5 108:19 109:23 127:18 <b>paused</b> 98:23, 24 <b>PCP</b> 73:22 <b>peak</b> 49:16 98:8, 10, 16 101:3 103:9 105:9, 10 129:18 <b>pen</b> 124:23 <b>people</b> 22:3 23:5 25:20 29:23 32:10 51:15 62:14, 23, 25 69:11 72:10 78:20 80:1 81:6 84:11 87:13 89:20, 22 90:16, 22, 24 91:1, 4 92:14 93:9 94:9 100:20 116:9 136:2 143:20 144:9, 14 <b>people's</b> 75:2 <b>percent</b> 33:20 99:15, 24 100:12 107:2, 4 114:24 120:19 121:5 <b>perform</b> 134:18 <b>performance</b> 54:7 63:2</p>	<p>67:19 68:9 71:18 98:8, 16 106:15 122:10 125:19 132:17 149:15 <b>performed</b> 34:19 68:24 116:12 118:16 <b>performs</b> 117:23 <b>period</b> 13:8 14:3 15:10, 11, 18 16:11, 16, 21 17:12, 20 18:4, 5 40:10, 20, 25 41:10 42:18, 19 44:19, 23 45:7, 13, 17 46:21, 24 47:2 48:22, 25 49:10, 16, 24 50:11, 14 52:2, 10, 12, 18, 22 53:24 54:9, 12 55:3, 6, 21 56:3, 6, 10, 11, 17 57:11, 18, 20, 23 58:7, 20 59:6, 24 60:22 61:11, 16 62:10 64:1 65:15 66:18, 20 67:4, 5 68:2, 3, 8 70:24 71:25 72:20, 21, 24 73:4, 9 77:21 80:8 81:10, 14, 23 82:14 85:8 86:7 89:15 90:7 93:13, 19 94:1 95:25 98:1, 5 101:4, 22 105:10 108:19 109:14 112:17, 18 114:2, 5, 12 115:1 121:4 130:25 131:1, 6, 13, 16, 20 132:8, 10, 19 135:1 136:4 137:5 138:2 148:20 149:17 <b>periodically</b> 140:24 <b>periods</b> 16:2 17:14 103:9</p>	<p>105:9 114:10 129:18 <b>perjury</b> 6:1 <b>permit</b> 38:14 <b>permits</b> 4:14 <b>person</b> 5:20 14:17 83:4, 18 <b>perspective</b> 51:13 62:7, 8 70:19 72:19 104:2 <b>phase</b> 18:7 52:20 61:18 69:25 <b>phased</b> 12:17, 23 <b>phrase</b> 16:17 <b>picture</b> 32:9 <b>piece</b> 55:17 70:1 105:20 <b>Pimisi</b> 113:9 <b>pinpoint</b> 108:24 <b>place</b> 5:25 12:4 25:2 26:6 37:11, 13 40:10, 24 41:14 46:20 49:3 57:14 64:13, 20 130:20 141:23 <b>plan</b> 12:14 25:2 27:13, 14 41:18 42:12 46:12, 19 47:13, 15, 21 48:2, 6, 10, 14, 18 52:7 58:25 65:18 66:10, 13, 22 67:1, 7 68:3 69:17, 23 70:18 71:6, 17, 18, 19 72:20 73:22 76:15 98:13, 25 99:9 139:4, 15 140:12, 14, 15, 17 <b>planned</b> 33:23 34:3, 10 37:6 39:8, 13 40:5 41:7, 13 43:19 46:3 48:4 50:10 58:19 105:3 <b>planning</b> 7:15, 19 10:21, 24 11:4, 18 25:1 69:1</p>
--	---	--	--	--

<p><b>plans</b> 10:11 11:1, 21, 24 12:1, 4 24:15 25:1, 25 26:1 33:11 <b>platform</b> 81:7 84:13 <b>plenty</b> 20:25 <b>plus</b> 7:13 29:17 <b>point</b> 6:6 13:10 19:17 21:5 24:11 25:23 31:19 36:19 42:21, 24 48:19 51:6 59:15 80:18 87:5 91:20 96:4 98:21 103:16 138:19 148:11 <b>poles</b> 22:6 <b>pop</b> 56:6 <b>portion</b> 9:6 82:4 <b>position</b> 38:23 <b>possibly</b> 72:3 <b>post-</b> <b>certification</b> 44:19 <b>posted</b> 4:23 <b>post-May</b> 56:24 <b>post-trial</b> 131:5 135:1 <b>potential</b> 143:5 <b>potentially</b> 17:16 103:8 104:10 105:12 <b>practical</b> 104:2 <b>practice</b> 15:5, 18, 22 16:2, 21 42:18 43:6 44:18, 19, 22 45:6, 13, 17 46:19, 21, 24 47:5, 6, 16, 18, 21 48:2, 17 49:9, 24 50:10, 14 51:4, 13, 19, 24 52:2, 10, 12, 18 53:4, 24 54:8, 12 55:3, 5, 21 56:10, 17 57:11, 12 58:7, 20, 24 59:24 60:22 61:9, 11, 16 62:10 64:1</p>	<p>66:9, 22 67:6 68:2 69:1, 17, 25 70:18, 23 71:17, 25 72:19, 20, 23 73:3, 9, 21 81:23 82:13 85:8 86:6, 21 90:6 93:13, 19 94:1 116:7 136:8 138:21 <b>practices</b> 116:3, 4 <b>practising</b> 44:13 48:10 <b>predictable</b> 118:7 <b>preparation</b> 96:23 <b>prepare</b> 52:14 77:8, 18 <b>prepared</b> 30:2 87:9 <b>preparedness</b> 136:23 <b>preparing</b> 10:25 62:8 <b>prerequisites</b> 56:25 <b>pre-revenue</b> 42:18 <b>presence</b> 90:5 <b>PRESENT</b> 2:11 134:25 <b>presentations</b> 140:2, 10 <b>presenters</b> 151:9 <b>preset</b> 68:10 <b>president</b> 8:8 <b>pressed</b> 133:14, 15 <b>presumably</b> 127:15 <b>pretty</b> 30:12 40:12 45:22 47:12 52:5 57:18, 23 70:12 87:9 88:15 147:9, 15 <b>prevent</b> 147:24 <b>previous</b> 111:11 138:23 <b>previously</b> 13:24 85:25</p>	<p><b>prior</b> 18:2 83:14 100:10 139:10 <b>problem</b> 85:13 86:14, 17 89:1, 7 90:1 115:22 118:21 119:11 134:4, 6 143:8 144:4, 12, 15, 17 145:20, 21 147:10 <b>problems</b> 16:11, 13 44:14, 15 54:13, 16, 22 55:3, 5, 9, 11, 12, 14, 19 56:5, 9 60:19, 21, 25 61:3, 4, 8 62:3, 22 83:20 85:12, 19, 22 86:2 87:2, 4, 9, 12 94:3 98:21 99:4 103:5, 12 122:16 132:21, 22, 25 133:1, 3, 11, 25 134:1, 2 135:6, 9, 10 137:15, 18, 21 138:24 139:1, 3, 5, 9, 18 142:21 143:1, 11, 13, 23 145:11, 13 146:6 148:5, 6 149:18 <b>procedural</b> 4:21 <b>procedure</b> 71:7 96:11 <b>procedures</b> 10:10 26:10, 15, 17 27:12 37:18 71:9, 13 86:10, 11, 22 <b>proceeded</b> 62:10 <b>proceedings</b> 5:19, 24 151:6 <b>proceeds</b> 39:16 <b>process</b> 26:3 30:13, 14, 17 46:14 48:7 70:10 71:8 77:6 78:1, 3, 6, 13 86:13, 18 92:5 94:11 116:3, 16</p>	<p>119:20, 24, 25 122:24 124:3 134:10 149:10 <b>processes</b> 83:5 <b>produced</b> 33:6 59:13 <b>professional</b> 7:5 <b>program</b> 10:14 15:16 17:25 24:4 26:6 31:21 39:16 43:16, 18, 23 44:25 138:19 <b>programmed</b> 118:11 <b>programs</b> 11:1 25:14 32:24 118:6 <b>progress</b> 35:7 135:19, 20 140:11 <b>progressed</b> 15:1 <b>project</b> 7:8 8:25 9:2, 5, 7, 16 15:7, 9, 19 20:14 23:13, 15 28:16 64:4, 14, 16 65:4 89:12 95:15, 21 147:4 <b>projected</b> 102:1 <b>projects</b> 124:8 <b>promised</b> 45:15 <b>promoted</b> 8:7 19:16 <b>proper</b> 126:23 <b>properly</b> 14:2 100:9 109:24 120:5 143:3 144:2 <b>properties</b> 12:2 <b>property</b> 134:12 <b>proposal</b> 100:16 101:13 <b>propose</b> 122:4 <b>proposed</b> 139:6 <b>propulsion</b> 85:16 87:17 94:6 145:21 146:12 <b>propulsion-</b> <b>related</b> 94:3 <b>prosecution</b> 5:25 <b>protect</b> 145:19</p>	<p><b>protected</b> 38:16 <b>protection</b> 46:17 <b>proven</b> 104:14, 16 139:20 <b>provide</b> 6:9 7:4, 10 8:24 9:24 30:4 63:4 94:4 101:25 105:22 <b>provided</b> 9:12 12:1 16:10 33:1 121:25 122:9 <b>providing</b> 9:8 101:2 104:11 108:1 <b>provision</b> 71:16 108:20 <b>provisions</b> 67:18, 24 <b>PSOS</b> 9:10 66:2, 11, 15 67:3, 9, 11, 23, 24 70:19 74:22, 24 75:10 <b>Public</b> 4:5, 9, 20, 24 5:14 7:13 12:11 133:6, 21 <b>pull</b> 51:9 75:4, 5 126:13 <b>pulling</b> 126:7, 8 <b>purchased</b> 140:5 <b>purpose</b> 4:7 16:2 30:3 71:1 88:21 97:23 111:3 <b>purposes</b> 60:22 <b>Pursuant</b> 5:13 <b>put</b> 13:12 38:17 48:18 49:3 65:19 76:20 92:2, 23 103:13, 17, 20 110:10 137:10 145:22 <b>putting</b> 18:15 21:25  &lt; Q &gt; <b>question</b> 5:16 6:4, 19 12:12 47:16 53:16 64:11 76:13 101:6 102:3</p>
--	---	---	--	--

105:20 131:11, 18 135:25 <b>questioned</b> 111:21 <b>questions</b> 4:14, 15 59:23 63:12 67:9 93:8 94:11 96:3 111:17 149:23, 24 150:1 <b>quickly</b> 61:25 87:14 <b>quite</b> 19:23 92:11  < R > <b>RAIL</b> 1:6 4:5 7:7, 11, 15, 16, 19, 21 8:2, 3, 4, 9 9:22 10:1, 16 11:1, 7, 22 12:21 13:4, 7, 9, 15 14:18 19:20, 22 22:24 24:3 25:20 27:21, 24 28:4, 10, 17, 20, 23, 24 29:7, 8, 17 41:25 46:1 62:18 70:3, 13 72:9 73:13 95:15, 21 <b>railcar</b> 62:24 <b>railcars</b> 61:5 <b>railroad</b> 14:22 28:3, 7 32:22 33:9 37:10 48:16 55:10 59:16 72:15 79:16 139:1 <b>railway</b> 8:23 9:4, 7 <b>raised</b> 42:21 <b>ramp</b> 12:8 <b>ramps</b> 137:22 <b>ran</b> 7:22 61:10 68:4 72:6 <b>random</b> 78:11 112:16, 17 116:11 119:24 120:6 <b>randomly</b> 47:7 120:1 <b>Ratio</b> 106:24 113:19 114:12, 16, 20, 22	115:11, 23 120:12 122:12, 19 124:20 <b>rationale</b> 12:25 <b>rationalizing</b> 65:25 74:14, 21 <b>reach</b> 57:1 <b>reached</b> 56:11 <b>reacting</b> 40:2 <b>reaction</b> 144:19 <b>read</b> 6:18 94:17 97:18 124:15 <b>readiness</b> 23:21 27:9 77:8 136:18, 20 137:6, 8 <b>reading</b> 107:8 <b>ready</b> 97:19 108:11, 15 109:5 132:2 <b>real</b> 32:16 89:7, 25 142:23 <b>reality</b> 115:17 <b>really</b> 15:3 28:24 29:20 31:16, 20 33:7 46:20 50:14 62:3 64:15 66:25 70:8 71:14 72:9 74:25 75:2 86:24 100:13 107:10 115:15 143:6, 16 144:17, 18 <b>reason</b> 80:1, 13 81:4, 6 146:7 <b>reasons</b> 115:2 <b>reassigned</b> 19:21, 25 <b>recall</b> 12:13 21:10, 22 23:25 27:2, 3 28:3 29:4, 14 30:21 33:22 34:2 37:7 40:8 41:17 43:24 45:21 52:3 54:10 56:14, 21 57:5 58:9 65:23 66:3, 15 69:15 74:4 75:4 76:8 77:22 80:4	81:21 83:7 89:17 90:20 92:17 93:21 96:16 100:4, 9, 15 101:10, 24 105:2 108:25 109:2, 3, 24 110:5, 9 111:6, 8, 15 118:23 119:23 121:17, 24 126:3 131:7 134:11 137:24 140:25 143:3 144:7, 22 <b>receivable</b> 5:22 <b>receive</b> 54:4, 6 <b>received</b> 6:11 <b>receiving</b> 35:5 <b>receptive</b> 43:4 <b>RECESS</b> 63:23 76:1 <b>reclosing</b> 89:1 <b>recognize</b> 6:20 141:5, 7 <b>recollect</b> 100:12 <b>recollection</b> 49:21 <b>recommendation</b> 111:21 148:2 <b>recommendation</b> s 147:24 148:1 <b>record</b> 75:24, 25 77:14, 15 97:24 117:24 <b>recorded</b> 71:19 151:11 <b>recording</b> 78:22 80:2 <b>record-keeping</b> 116:22 <b>records</b> 70:13 79:17 <b>recruitment</b> 26:2, 4 <b>Red</b> 8:25 <b>redo</b> 24:22 <b>redrafting</b> 9:9 26:11 <b>reduce</b> 98:10 100:2 102:18 127:11 130:10 145:16 <b>reduced</b> 99:1 127:21 128:2, 5	<b>reducing</b> 103:1 105:11 110:16 <b>reduction</b> 99:21 101:3, 9 102:10 104:9 127:13 128:10 <b>refer</b> 86:8 <b>reference</b> 16:15 20:13 81:13 96:4 141:19 <b>referred</b> 42:20 113:12 <b>referring</b> 20:1 37:5 95:13 98:17 <b>refers</b> 107:9 <b>refining</b> 136:14 137:16 <b>reflect</b> 71:14 <b>reflecting</b> 66:21 <b>refresh</b> 59:10 <b>Regardless</b> 72:18 106:14 <b>regime</b> 70:8 <b>regular</b> 117:10 118:6 <b>regularly</b> 49:19 <b>relate</b> 11:1 138:12 <b>related</b> 44:24 85:22 118:1 127:13 145:18 <b>relates</b> 138:6 <b>relationship</b> 147:7 <b>relatively</b> 87:13 138:22 <b>release</b> 29:24 136:24 <b>relevant</b> 7:6 <b>reliability</b> 54:7 62:12 66:5 82:3, 10 85:7 102:21, 23 104:5, 8 109:11 133:5, 13 138:7, 12 148:6, 16 <b>reliable</b> 103:18 137:12 138:16 <b>reliably</b> 45:14 <b>remain</b> 20:9 142:5 <b>remained</b> 87:23 110:13 138:16	<b>remember</b> 12:16 26:22 32:13 35:12, 20 36:8 39:2 40:9 43:22 53:7, 12, 20 55:18 57:9 67:17 73:25 80:16 88:14 89:16 93:12 99:3, 8, 20 100:13 110:1 119:10, 20 121:19 128:16 <b>remotely</b> 1:15 <b>removal</b> 140:6 <b>removed</b> 39:14 67:5 <b>reopen</b> 143:22 <b>reopening</b> 88:25 <b>repair</b> 118:19 <b>repairs</b> 118:15 <b>repeat</b> 34:1 53:15 <b>replace</b> 18:17 54:24 94:5 140:19 <b>replaced</b> 20:6 140:21 <b>replacement</b> 116:25 <b>replicate</b> 91:21 <b>report</b> 22:9 80:12 81:3, 5 119:17 120:6 121:25 <b>reported</b> 121:20 127:4 <b>Reporter</b> 74:16 75:18 151:4, 21 <b>REPORTER'S</b> 151:1 <b>Reporting</b> 116:19 <b>reports</b> 93:20 <b>representative</b> 123:7 <b>representatives</b> 21:7 <b>represents</b> 107:17 <b>request</b> 99:23 108:14 <b>required</b> 6:2 27:17 42:13 43:5 44:10
---	---	---	--	---

61:23 66:16 67:3 90:25 105:3, 15 112:23 113:6, 12, 13 114:22 117:21 118:10 127:12, 14 128:7 131:2 148:8 <b>requirement</b> 29:12 49:17 59:9 70:21 105:5 112:10 115:23 117:11 120:17 128:10, 17 <b>requirements</b> 41:18 46:22 65:13 66:1, 9, 11 74:22 75:1, 6, 7, 15 82:5, 18 102:13 104:11 105:11 108:6 126:2 145:17 <b>reroute</b> 13:5 <b>rerouted</b> 12:18 <b>rerun</b> 71:6 <b>resolution</b> 135:21 <b>resolve</b> 87:13 <b>resolved</b> 56:10, 13 <b>resort</b> 80:17 <b>respect</b> 23:20 26:24 56:17 59:25 60:13 64:3 85:6 88:10 111:5 116:4, 15 117:2 119:18 120:7, 25 134:24 135:18 141:11, 24 145:6 <b>respond</b> 71:14 87:2 <b>response</b> 69:12 72:21 87:18 102:20 140:7 <b>responsibilities</b> 19:21 20:1 47:1 <b>responsibility</b> 65:19 84:15 <b>responsible</b> 29:13 83:10, 13	84:12 116:10 122:13 <b>rest</b> 20:10 129:10 <b>restart</b> 71:17 128:23, 24 <b>restricted</b> 39:25 145:22 <b>restriction</b> 37:13, 22 39:1 <b>restrictions</b> 37:10 <b>result</b> 11:18 44:23 48:10 106:25 125:10 128:6 <b>results</b> 71:20 72:22 73:3, 8, 12 81:15, 19 96:20 97:4 123:17 <b>RESUME</b> 63:24 77:16 <b>retraining</b> 71:5 <b>retrofit</b> 89:9 <b>revealing</b> 10:9 <b>revenue</b> 10:7 12:5, 9, 10 15:6, 20 16:13 23:21 25:22 28:18 33:24 34:4 35:16 42:9 44:6, 10, 16 47:6 50:15 61:1 66:21 86:3 90:2, 13 91:20 92:19 93:5 120:18, 20, 22 126:6, 12, 19, 23 131:7, 8, 23, 24 132:1, 3, 12, 15 135:3, 11, 22 136:6, 18, 24 137:13 138:17 139:7 140:16, 22 141:22 142:6, 9, 15, 23 145:8 147:8 148:10 149:20 <b>review</b> 5:8 30:3, 12 65:9 73:6 76:19, 24 77:8, 19, 23, 25 79:2 96:10, 21 97:6, 14 99:21	100:2, 5 101:16 107:18 108:9 111:10, 16 116:6, 13 119:21 121:10, 21 123:4, 9 124:3 125:10 127:11 <b>reviewed</b> 68:16 96:8, 21 <b>reviewing</b> 10:11 30:1 31:1 73:3 122:13 <b>reviews</b> 78:11, 12 101:2 <b>revised</b> 98:12 <b>revisions</b> 31:8 <b>RFI</b> 107:9 <b>Richard</b> 35:4 <b>Rideau</b> 95:11 113:10 <b>riding</b> 89:20, 21 90:13 92:15 <b>rings</b> 20:19 <b>role</b> 7:9 10:2, 19 18:13, 17 20:7 34:12 37:18 101:11 126:4 136:17 <b>roles</b> 10:9 71:9 <b>room</b> 27:20 68:22 <b>rotated</b> 149:6 <b>row</b> 113:20 <b>RTG</b> 24:16 26:8 34:16, 19, 23 35:2 36:20 37:1 62:21 63:2 65:18 76:14 84:10 85:1 95:13 98:22 99:4, 13, 23 103:5 104:10 108:14 111:10 119:13 133:10, 15 139:2 140:2 143:9 147:7, 12 <b>RTG's</b> 64:3 65:5, 7 <b>RTM</b> 21:3 26:20, 25 29:11, 23 85:1 86:7, 21 103:5 104:10, 24	105:7 108:3, 10 119:13 133:10, 15 136:13 139:2 147:12 <b>RTM's</b> 46:25 63:2 <b>rulebook</b> 24:17, 24 26:9, 18 <b>rules</b> 24:23 26:17 27:12 37:19 38:12 <b>run</b> 15:3, 5 26:20 44:15, 23 45:7, 17 49:1 51:13 56:10, 17 58:7 59:24 61:9, 11, 16 62:10 72:24 81:4 85:8 90:6 103:10 104:4 120:22 149:10, 13, 15 <b>running</b> 8:5 13:1, 17 14:17 15:10, 11, 15, 18, 22, 23 16:2, 21 31:19 37:15 42:3, 10, 15, 18 43:6 44:5 48:19, 20, 22, 25 49:9, 24 50:2 51:24 52:2, 10, 12, 18 53:4 55:1, 21 56:13, 15, 18 57:11, 12, 13 58:11, 15, 20 60:3 61:17 65:9, 13, 17, 18, 25 66:9, 12, 13, 15, 18, 20 67:1, 5, 24 68:1, 5, 8, 25 70:19, 24 71:25 72:19, 21, 23, 25 73:1, 3, 6, 9, 15, 25 74:4, 15, 21 76:7 77:10, 19, 21, 23, 25 79:2 80:8, 23 81:2, 10, 24 82:1, 4, 8, 11, 13, 17, 24 84:20 85:3, 10 86:4, 7, 21 87:11, 24 88:12 89:15 92:13 93:16, 19	94:11, 12 95:16, 23, 25 96:8, 9, 11, 15, 20, 21, 23 97:6, 14, 17 98:1, 10, 20, 23 99:20 100:2, 5 101:4, 12, 16, 22 102:17 103:20 104:3 107:17 108:9, 12, 14, 15, 19, 21 109:7, 11, 13, 16 110:4, 14, 23, 24, 25 111:16 116:6, 13 118:14 119:21 120:1 121:10, 21 123:4, 9, 21 124:3, 11, 12 125:9, 25 127:10, 15, 16 130:25 131:5, 18, 20 132:9, 12 135:1 136:5, 7, 8 138:21 141:14, 15 148:19 <b>runs</b> 102:17 <b>rush</b> 105:15, 17, 18 115:4 <b>Russell</b> 65:20, 22 66:22, 24 74:18, 20 75:3, 5  < S > <b>safe</b> 33:12 37:21 54:21 <b>safely</b> 43:10 <b>safety</b> 14:23 30:16 46:5, 6 85:4 111:5, 9 <b>safety-related</b> 111:12 <b>sample</b> 112:16, 18 <b>satisfied</b> 110:18 <b>Saturday</b> 129:19 <b>scenarios</b> 32:20 <b>schedule</b> 15:17 16:6 18:5 23:10, 13 33:1, 2, 6, 15, 18 34:8 35:13, 17 37:8 39:12 40:14, 24 41:16 42:5, 21
--	---	--	--	---

44:24 45:18 48:12 50:17, 18 59:21 62:11 70:6 71:21 108:5 114:1, 2 117:12, 13 124:21 126:6 127:6 132:13 134:16 <b>scheduled</b> 13:24 36:25 43:13 51:21 82:6 113:17, 23 114:4, 8, 25 115:5, 11, 16 120:19 121:5 125:12, 14, 17 126:6, 11 127:6, 13, 23 128:1, 4 129:8, 11, 25 134:21 <b>schedules</b> 37:4 116:24 <b>scheduling</b> 7:16 10:22 <b>scheme</b> 57:8 <b>scorable</b> 75:11 <b>score</b> 76:5 112:22 <b>scorecard</b> 66:8 73:19 78:1, 2 96:24 103:21 110:23, 25 111:4 124:12 129:1, 6 <b>scorecards</b> 68:22 103:22 124:11 141:6 <b>scored</b> 68:11, 13 <b>scoring</b> 68:16, 18, 21 69:6, 15, 25 71:2 78:2 94:12 123:9 <b>scratch</b> 17:13 25:24 <b>scratched</b> 124:23 <b>screen</b> 6:12 94:13 141:20 <b>Scrimgeour</b> 66:4 102:5 <b>Scrimgeour's</b> 10:21	<b>scroll</b> 6:15, 17 95:4, 17 97:17 129:9 <b>scrolling</b> 107:12 115:25 129:24 141:6 <b>searched</b> 73:23 <b>Sechiari</b> 95:5 <b>seconds</b> 115:7, 19 <b>section</b> 5:13 6:2, 5 8:11 14:2 16:7 22:2 38:18 54:20 116:1 127:19, 20 <b>sections</b> 14:20 <b>secured</b> 65:7 <b>segments</b> 8:16 <b>select</b> 120:1 <b>senior</b> 25:20 28:5 140:3 <b>sense</b> 10:12 30:20 45:5 53:14, 21 58:22 66:19 75:8 83:3 132:23 145:20 <b>sensitive</b> 88:16, 18, 20, 24 89:19 92:8 142:22 <b>separate</b> 37:19 <b>September</b> 131:8 <b>series</b> 70:16 122:7 <b>served</b> 7:24 <b>service</b> 7:15, 19 10:7, 24 11:4, 22, 23 12:6, 9, 10 13:1, 9, 13 15:6, 20 16:14 23:21 25:1, 22 28:18 33:24 34:4 35:16 42:8, 9 44:7, 11, 16 47:6 50:15 51:2 60:7 61:1 66:21 86:3 90:2, 13 91:20, 23 92:19 93:5 98:8, 11, 13, 16, 25 99:9 100:3 101:3 103:7 104:22, 23 105:3, 12 115:4	120:18, 20, 22 121:15, 17 126:9, 12, 14, 19, 24 131:7, 8, 23, 24 132:1, 3, 13, 15 133:6, 21 134:17 135:4, 11, 23 136:6, 18, 20, 25 137:12, 13, 23 138:16, 17 139:8 140:16, 22 141:22 142:7, 10, 15, 23 145:9 147:8 148:10 149:6, 20 <b>service-level</b> 105:3 <b>Services</b> 95:6 <b>set</b> 32:19 58:16 59:2 68:10 70:16 75:11 76:4 79:20 80:5, 14 114:16 151:7 <b>sets</b> 139:12 <b>setting</b> 8:5 90:21 <b>setup</b> 105:23 106:1 123:21 <b>setups</b> 106:4 <b>Shadowing</b> 2:14 <b>shake</b> 60:23, 24 149:18 <b>shakedown</b> 16:11 <b>share</b> 62:15 84:24 94:13 102:15 138:14 144:8 <b>shared</b> 5:3, 9 22:10, 11 85:1 95:24 109:8 <b>sharing</b> 6:12 141:20 <b>shift</b> 44:23 112:14 <b>shifts</b> 20:7 72:1 <b>shoes</b> 18:18 <b>shop</b> 84:14 119:3 <b>shops</b> 83:21 <b>short</b> 109:16 <b>shortened</b> 52:15	<b>shorthand</b> 151:13 <b>shortly</b> 128:22 140:22 <b>should've</b> 89:5 <b>show</b> 6:10, 15 95:4 144:9, 13 <b>showing</b> 7:3 63:18 94:15 141:3 <b>shows</b> 107:13 <b>sic</b> 6:25 29:8 88:19 <b>side</b> 11:2, 10 21:16 25:1 29:3, 23 36:5 55:9 114:15 118:21, 24 136:21 137:3 146:12 <b>sign</b> 30:16 <b>signal</b> 46:16 <b>signalling</b> 37:20 46:1 <b>signature</b> 123:3 141:16 <b>signatures</b> 123:2 <b>signed</b> 95:5 97:5 <b>signs</b> 68:17 <b>similar</b> 7:22 15:15 16:20 18:21 29:9 68:23 132:21 <b>simulate</b> 44:6 50:14 92:18 <b>simulated</b> 90:21 <b>simulating</b> 44:14 <b>simulation</b> 90:5, 8 <b>simulator</b> 32:2, 8, 11, 14, 18 <b>simulators</b> 32:13 <b>single</b> 59:1 83:4, 18 113:4 132:14 <b>sit</b> 20:21 <b>sitting</b> 27:20 51:22 123:8 <b>situate</b> 56:16 <b>situation</b> 51:15 133:17 <b>situations</b> 72:3	<b>size</b> 98:11 99:22 100:3 101:4 102:10, 19 105:1 134:9 <b>Sky</b> 29:8 <b>SkyTrain</b> 29:15 <b>slightly</b> 102:24 <b>slippage</b> 35:20, 21 <b>slipped</b> 35:18 40:15 <b>slowly</b> 39:22 87:5 <b>smaller</b> 54:1 <b>snow</b> 140:6, 7 <b>snow-related</b> 138:25 <b>solely</b> 147:5 <b>solemn</b> 4:8 <b>solution</b> 139:6 <b>solutions</b> 139:19, 22 <b>solved</b> 148:13 <b>somebody</b> 18:18 62:4 92:6 122:12 <b>someplace</b> 126:13 <b>soon</b> 26:7 <b>sooner</b> 103:12 <b>SOPs</b> 24:17, 23 <b>sorry</b> 15:25 20:3 21:13, 15 32:6 33:25 44:1 53:15 77:11 79:8 103:15 125:23 133:16 138:8 139:2 143:7 <b>sort</b> 9:12 10:1, 3 12:17 13:1 18:5, 20 22:4 27:23 28:1 37:17 38:22 39:5 40:23 42:17 43:15 45:21 46:21, 25 51:14 58:11, 18 62:25 65:20, 24 66:5 69:18 70:10 83:10 90:11 103:17 105:6 109:24 113:7 131:5
---	--	--	---	---



136:8 137:25 <b>sounds</b> 38:5 <b>source</b> 122:14, 18 <b>space</b> 91:8 <b>spans</b> 7:13 <b>spare</b> 103:2 105:6 106:1, 3, 13, 17, 18 <b>speak</b> 15:21 117:6 <b>special</b> 10:24 11:4, 10 37:17 38:12 <b>specific</b> 21:24 35:20 38:15 52:24 67:20 73:17 78:18 93:22 108:24 128:25 148:1 <b>specifically</b> 27:4 96:1 <b>specification</b> 67:20 <b>specifics</b> 126:4 <b>speed</b> 6:17 145:16 <b>spelled</b> 47:13 <b>spelling</b> 46:20 <b>spend</b> 42:4 94:8 135:25 <b>spent</b> 7:14, 17 8:2 29:25 72:10 <b>spoke</b> 42:19 <b>spot</b> 113:4 <b>spreadsheet</b> 73:18 <b>St</b> 37:23, 24 <b>staff</b> 16:9 21:3 24:21 26:5 27:19 28:16 33:14 69:4 140:4 <b>staffing</b> 10:11 24:15 26:1 27:14 <b>Stage</b> 7:7, 10 9:6, 8, 10, 13, 16, 17, 21 20:11, 23 23:8 64:25 84:3, 4 142:6 146:10, 23 148:5, 6, 8, 10, 17, 24, 25 149:5,	8 <b>staged</b> 137:22 <b>stages</b> 25:13 <b>stand</b> 32:4 <b>standard</b> 18:6 26:15 <b>standby</b> 105:6 106:19 <b>standpoint</b> 106:7, 10 <b>stands</b> 116:17 <b>start</b> 9:15 12:8, 10 25:24 27:18, 23 32:25 39:11 41:7 42:2 47:15 57:10, 13 59:12 60:5 72:24 77:24 113:24 117:8 121:15, 16 132:2, 12 <b>started</b> 9:8 10:10, 19 18:1 19:12, 17 23:7 30:21 31:17 33:16 37:15 43:23 45:12 57:24 58:22 90:13 98:20 107:8 110:14 131:8 136:8 <b>starter</b> 8:16 <b>starters</b> 94:17 <b>starting</b> 14:25 17:12 28:1 67:9 <b>startup</b> 8:2, 10 25:20 28:21 <b>startups</b> 13:4 <b>statement</b> 97:17 107:7 110:6 141:15 <b>statements</b> 151:9 <b>states</b> 98:7 <b>station</b> 89:24 92:14 114:4 121:8, 13, 18 122:1 146:6 <b>stations</b> 43:14 78:18, 21 79:18 89:22 93:19 114:11 143:20 <b>status</b> 23:9 24:6 31:23	35:11 <b>stay</b> 31:12 <b>stayed</b> 37:21 <b>stemmed</b> 10:8 <b>Stenographer/Tra nscriptionist</b> 2:12 <b>step</b> 18:18 66:10 125:16 <b>stepped</b> 64:2 <b>steps</b> 41:12 <b>sticking</b> 27:5 33:17 <b>sticky</b> 26:23 <b>stood</b> 79:9 133:13 134:14 143:11 <b>stop</b> 7:3 141:2, 20 145:23 <b>storage</b> 7:22 <b>stresses</b> 92:1 <b>stuck</b> 40:18 86:17 93:20 137:25 <b>STV</b> 1:7 2:6 8:18, 20 9:12 19:4, 5 21:7 64:9 <b>subcontractor</b> 35:2 <b>subject</b> 125:9, 25 <b>submitted</b> 96:12 <b>substantial</b> 24:10 33:23 34:4 56:19, 22 57:1 <b>substantiated</b> 109:25 <b>substitute</b> 11:23 <b>substitution</b> 25:2 <b>subsystems</b> 88:4 <b>subway</b> 7:20 13:6 <b>success</b> 109:17 <b>successful</b> 49:1 131:19 139:20 <b>successfully</b> 70:23 109:16 <b>sufficient</b> 63:18 94:23 111:18 <b>suggest</b> 22:13	148:3 <b>suggested</b> 109:4 <b>summer</b> 138:22 <b>Sunday</b> 129:20, 21 <b>superintendent</b> 7:25 <b>superintendents</b> 28:5 70:3 <b>Supervising</b> 78:16 <b>Supervision</b> 79:12 <b>supervisor</b> 119:3 <b>supervisors</b> 16:8 29:2 <b>supplement</b> 67:1 <b>supplier</b> 134:14 <b>support</b> 7:10 8:25 9:9, 13, 25 10:3 84:4 104:16 <b>supported</b> 107:21 <b>supporting</b> 10:18 <b>suppose</b> 141:20 <b>supposed</b> 24:16 88:22 90:17 115:18 126:11 <b>surprise</b> 142:20, 24 143:14 <b>suspension</b> 88:6 <b>switch</b> 140:20 144:1 <b>switches</b> 38:22 84:6 <b>system</b> 7:18, 20 11:7, 17 12:5, 11, 14, 20, 21 13:4, 18 14:24 15:3, 12 16:22 17:1, 7, 13 21:21 23:22 29:9, 10, 16, 19 30:16 31:18 32:18, 25 34:14 36:1, 20 37:6, 16, 20 38:5, 10 39:13 41:9, 10, 14, 23, 25 42:8 44:4 45:14, 22 46:2, 23 49:3, 6	51:1, 7 53:3 54:3, 6, 17 55:25 60:20, 23 61:13 68:10 78:15, 16 79:13, 15, 23 80:7, 11 81:24 84:7 85:4, 15 86:1 87:20 88:1, 11 102:21, 23 104:6, 14, 15, 19 110:2, 12 116:19, 22, 23 117:3, 4, 14, 19, 24 118:3, 17, 20, 22 119:2, 6, 7, 15, 16 120:23 126:14 127:15 131:3 132:2, 18 135:3, 22 136:12 137:7, 13 142:6, 14, 17 143:16 145:8 146:25 <b>system-related</b> 54:11 <b>systems</b> 8:16 18:2 56:5 85:14, 16, 19, 23 87:16, 21 106:18 119:1 122:6, 7, 10, 17, 20 133:23, 24 137:9 144:25 145:2, 4  < T > <b>table</b> 113:16 123:1, 2 124:20 <b>tacked</b> 41:15 <b>takes</b> 31:1 <b>Talia</b> 2:14 <b>talk</b> 111:9 <b>talked</b> 60:11 <b>talking</b> 41:2 54:9 66:14 70:4 98:22 124:14 136:1 <b>talks</b> 48:6 <b>tasked</b> 34:22 <b>teach</b> 32:20 <b>team</b> 8:2, 11 9:12 10:25 14:15, 17 17:19 18:23 19:13
---	---	--	---	---

20:14 21:6, 9, 10, 12, 17, 20 23:14 24:3 25:21 26:18 33:10 65:9 68:11, 14, 15 70:13 73:2, 6, 13, 25 74:1 77:8, 9, 19, 23 79:2 80:23 81:2 96:10, 15, 22 97:6, 14 98:10 99:21 100:2, 5 101:12, 16 107:18 108:9 111:16 116:6, 14 119:21 121:10, 21 123:4, 9 127:11 133:10 134:13 <b>teams</b> 20:22, 24 79:5 <b>technical</b> 21:17, 21 67:18 146:22 <b>Technician</b> 2:13, 14 117:22 119:5 145:24 <b>technicians</b> 118:4 <b>tend</b> 5:17, 18 <b>term</b> 83:23 <b>terminal</b> 112:3, 4 <b>terminals</b> 43:13 <b>terms</b> 26:13 45:25 54:6 91:24 115:22 132:7 144:5 <b>test</b> 37:18 65:18 76:7 96:11 140:15, 25 <b>tested</b> 81:9, 12 134:5 139:8, 15, 16, 23 142:23 <b>testing</b> 8:15 14:11, 14, 15, 21, 25 15:4 17:25 31:17, 18, 25 32:25 33:2, 9, 18 34:8, 13, 18, 22 35:7, 13, 17, 24, 25 39:16 45:3, 8 48:11 59:18 65:16 81:12, 14, 16, 19	92:18 130:20 138:24 140:13, 23 <b>tests</b> 14:23 65:14 141:1 149:15 <b>Thales</b> 29:18 32:18 55:24 <b>Theodore</b> 2:8 <b>theory</b> 105:7 115:7 <b>thing</b> 43:2 126:16 133:14 136:21 146:11 <b>things</b> 11:5, 8 12:22 22:6 24:17, 23 27:14, 20 29:4 33:17 47:4 50:20 51:9 57:8 58:14 66:12, 14 67:2 69:13 79:17 92:15 117:1 134:22 135:14 137:1 140:19 141:25 148:22 <b>thinking</b> 22:1 24:25 67:15 148:4 <b>third</b> 97:11 113:19 <b>thought</b> 45:16 46:7, 9 85:9 86:5 87:8 101:23 109:12 110:15 111:13 130:7 135:5 147:9, 14 <b>threshold</b> 70:15 <b>thresholds</b> 68:10 <b>thrown</b> 18:4 <b>tied</b> 132:4 <b>time</b> 4:14 7:14 10:13, 17, 23 13:22, 25 14:5, 9, 13 15:6, 8 17:7, 17, 21 19:13, 19 20:10 24:11 25:23 27:9 31:3, 17, 20 32:11, 16 33:14 36:19 38:2 39:18, 19,	23 40:6, 10, 12, 16, 20, 25 41:11 42:2, 4, 25 43:6 44:12 45:25 46:5 47:2 48:3 49:15 50:16 51:24, 25 52:14, 22 53:23 56:7, 11 57:18 59:15 60:2 61:16 64:13 72:11 80:18 82:15 83:2 86:20 89:12, 14 94:8 95:20 98:5 99:18 102:20 103:4 108:10, 19 109:5, 14, 21 110:11, 12 111:24 112:2, 11, 19 113:1, 2 114:2, 5, 9, 12 115:1, 8 117:16, 17, 25 121:16 128:10 131:13, 21 132:14, 24 135:25 136:13, 17 137:16 140:21 144:3 146:18, 19 147:12 148:11, 20 149:22 150:3 151:7, 10 <b>time-consuming</b> 134:10 <b>times</b> 13:25 14:24 17:8 36:11 43:13 67:12 71:24 72:6 77:24 78:5, 17, 22 79:18 126:17 <b>TOCC</b> 31:23 32:4 <b>today</b> 149:23 150:3 <b>today's</b> 4:7 <b>told</b> 66:23 122:1 141:5 <b>top</b> 114:24 141:6 <b>topic</b> 59:25 63:8, 9 <b>topics</b> 133:20 <b>Toronto</b> 29:5, 6	<b>total</b> 82:5, 18 120:18, 19, 21 121:5 122:1 <b>totality</b> 61:10 <b>touching</b> 86:24 <b>track</b> 22:7 36:12, 13 38:14, 18 39:3, 6, 18, 23 40:5, 16 54:21 120:2 140:11 143:7 <b>tracking</b> 119:8 <b>tracks</b> 84:5 116:23, 25 <b>train</b> 8:6 29:9, 18 31:23, 24 32:3, 14, 15, 16, 17, 18, 19 36:1, 23, 24 38:4, 6, 10, 15, 19, 20, 24 39:10, 20 41:9, 14, 21, 22, 23 43:9, 11 50:25 51:17, 20 54:17 55:24 78:15 79:12, 17, 18 82:20 83:24 84:6, 8, 14 87:20 89:21 90:5, 11, 24 91:9 92:2 93:4 99:1 102:17 104:15 105:6 106:13, 17 108:5 112:3, 6 115:5 126:12, 18 145:23, 25 <b>trained</b> 14:2, 20 32:10 92:14 <b>training</b> 10:11 16:8 27:13 29:13 31:21, 22 32:1, 24 35:22 36:4 37:6 41:15, 18 42:6, 13 43:5, 8, 16, 18, 23 46:5 73:14 112:14 <b>trains</b> 31:19 33:8 36:7 37:19 43:12 44:5, 10 49:11, 14, 17 50:1, 12, 15, 23 51:2, 8, 15, 25 52:4, 9,	22, 25 53:5, 9, 19 54:1, 4, 14, 21 60:1, 13 78:17 82:16, 20 83:20 84:12 89:22 90:11 91:22 92:15 98:12 99:2 101:19, 25 102:7, 17, 25 103:1, 3, 6, 13, 17, 21 104:4, 9, 12, 19 105:4, 16, 22 106:18 108:20 109:5 110:16 113:2, 18, 24 114:3, 8, 11, 25 115:1, 11, 12, 15, 16 120:23 126:7 127:24 128:7, 11 129:8, 11, 15, 25 130:10 134:5 136:23, 24 137:1 145:17 <b>tram</b> 37:15 <b>Trans</b> 62:21 <b>transcribed</b> 4:17 <b>transcript</b> 4:19, 23 5:2, 8, 9, 12 151:13 <b>transferred</b> 7:23 <b>Transit</b> 4:5 7:8, 12, 13 9:5, 22 29:6 32:6 65:21 95:12, 15, 21 <b>Transpo</b> 21:2 23:1, 14 24:3, 21 26:3 29:22, 23 33:13 36:24 46:6, 24 65:21, 23 73:13 74:13 111:9 119:16 <b>transportation</b> 8:4 <b>Transpo's</b> 7:11 <b>Travel</b> 111:24 112:2, 19 <b>travelling</b> 113:3 <b>treat</b> 122:4 <b>trial</b> 5:23 15:10, 11, 15, 23 16:21 42:3, 10, 14 43:5 48:19, 21,
--	---	--	---	---

22, 25 49:1  
56:13, 15, 18  
57:11, 13 58:11,  
15 60:3 61:17  
65:9, 13, 17, 18,  
25 66:9, 12, 13,  
15, 17, 20 67:1,  
5, 24 68:1, 5, 8,  
25 70:19 72:24  
73:1, 6, 25 74:4,  
15, 21 76:7  
77:8, 10, 19, 21,  
23, 24 79:2  
80:8, 22 81:1,  
10, 23 82:1, 4, 7,  
11, 17, 24 85:2,  
9 86:4 87:11,  
24 88:12 89:15  
92:13 93:16  
94:11, 12 95:16,  
23, 25 96:8, 9,  
11, 15, 20, 21, 23  
97:5, 13, 16  
98:1, 9, 19, 23  
99:20 100:2, 5  
101:4, 12, 15, 16,  
22 103:20  
104:3 107:17  
108:9, 12, 13, 15,  
19, 21 109:7, 11,  
13, 16 110:4, 14,  
23, 24, 25  
111:16 116:6,  
13 119:21  
120:1 121:10,  
21 123:4, 8, 21  
124:3, 11, 12  
125:8, 25  
127:10 130:25  
131:18, 20  
132:9, 12 136:5,  
7 141:14, 15  
**Trillium** 28:6, 12  
**trips** 112:16, 18  
**trouble** 80:11  
**troubleshooting**  
86:9 136:14  
137:17  
**Troy** 9:25  
10:17 18:11, 25  
19:18, 19, 20, 22,  
25 20:8, 15  
22:11 62:18  
66:4 76:16  
**Troys** 42:22

**Troy's** 20:7  
77:6  
**TRRT** 97:13  
**trust** 148:11  
**trying** 39:7  
44:6 49:7  
53:17 57:6  
75:3, 5, 10, 17  
88:14 90:3  
119:9 144:14  
**turn** 13:23  
28:23 63:21  
89:4  
**turned** 12:7  
15:20 48:15  
49:3 83:14  
92:10  
**Turning** 63:25  
**Twenty** 17:5  
**two-car** 49:17  
105:4, 6, 22  
106:1, 3, 4  
**two-page** 6:16  
**two-week** 14:3  
18:5  
**type** 8:24 12:1,  
22 18:21 22:9  
23:25 29:17  
30:14 38:13  
44:15 55:3  
56:1 59:8, 11  
61:3 69:5, 19  
71:10 72:3  
88:2 118:15  
133:11 138:13  
140:25 143:8,  
11 145:11, 12  
146:14 148:16  
**types** 47:4  
**typewritten**  
124:22  
**typical** 15:16  
**typically** 14:24  
15:16 28:22, 24  
38:22 39:17  
92:5 115:3  
134:4 145:2  
149:12, 13  
**typos** 5:8  
**Tyr** 2:8  
**< U >**  
**ultimately** 17:8  
52:18 55:20

68:16, 17 70:17  
**Um-hmm** 9:18  
**uncertainty**  
59:18  
**uncommon**  
28:21 60:20  
61:2, 7  
**underlying**  
102:25  
**underneath**  
113:6 122:8  
**understand** 9:3  
21:4, 19 29:12  
36:15 38:2  
39:8 40:25  
41:6 44:22  
46:8 49:8  
53:18, 19 57:7  
61:6 72:18  
76:5 93:24  
111:3 133:4  
**understandable**  
40:23  
**understanding**  
27:18 28:7  
125:17 126:1  
**understood**  
13:2 14:19 87:1  
**Unfortunately**  
8:25  
**Unmanned**  
83:24 84:8  
**unusual** 13:4  
85:24 86:1  
**updates** 35:6  
143:10  
**usage** 118:11  
**users** 11:6  
**uses** 29:9  
**usual** 13:12  
145:12  
**utilized** 112:23  
**UTO** 83:23  
**< V >**  
**validated** 125:8,  
24  
**Validation**  
95:16, 22 125:11  
**valuation** 73:18  
**Vancouver**  
29:15  
**varied** 78:23  
**various** 10:18,  
25 56:5 66:16

**vehicle** 39:21  
44:14 55:9, 12,  
17 60:19 62:5  
82:3, 10 85:7,  
14, 17, 22 86:9,  
13 88:4, 23  
90:16, 18 91:11  
92:4, 5, 7, 10  
93:14, 25 99:6  
105:11 106:24  
108:2 109:10  
117:5, 6, 14, 21  
120:8, 9 124:18,  
19 125:7, 23  
133:1, 11, 25  
134:1, 14, 15, 17,  
18 137:15, 20  
138:7, 12 148:6,  
16 149:17, 19  
**vehicle-related**  
54:13 55:11  
61:21 103:11  
148:12  
**vehicles** 60:19  
83:11, 13 85:20  
88:1, 2 89:8  
104:20 106:15  
108:11 117:10  
131:3 132:18  
133:5, 16, 18  
137:6, 9 141:24  
145:19 148:19  
149:5, 10, 13, 14  
**Vendetti** 10:13  
**Verbatim** 151:4,  
21  
**verified** 104:17  
134:6  
**verify** 66:4  
90:15 116:12  
134:5  
**verifying** 71:8  
**versions** 24:20  
**versus** 82:6  
**vice** 8:8  
**video** 32:9  
**Videoconferenci**  
**ng** 1:14  
**videos** 144:8, 9  
**view** 34:7  
52:17 61:11  
62:7 81:24  
84:24 101:20  
110:2, 10, 11

131:1 137:5, 11  
144:5  
**viewpoint**  
147:15  
**views** 84:25  
138:15  
**Virtual** 2:13  
**visit** 29:5  
**visited** 29:6  
**vitae** 3:3 7:1  
**voicing** 147:10  
**volume** 91:12,  
14  
**volunteers**  
90:23  
**< W >**  
**wait** 14:8  
**walk** 86:12, 18  
111:1  
**walked** 107:19  
122:25 140:4  
**walk-through**  
22:2  
**wanted** 12:9  
22:14, 15 52:25  
63:12 80:5  
149:24  
**warm** 138:22  
**warranty** 83:11  
**Washington**  
7:17  
**watch** 10:4  
136:25  
**watching**  
136:11, 12  
**weather** 138:22,  
23 139:4, 12, 14  
140:13, 14  
**weather-related**  
139:1  
**website** 4:24  
**week** 53:23  
**weekday** 112:21  
127:23  
**weekdays**  
129:18  
**weekend**  
112:21 129:13  
**weekly** 33:6  
37:4 39:12  
**weeks** 12:19  
13:8, 17 15:18  
16:10 17:16

41:2 52:13  
53:4, 5, 18 143:4  
**well-designed**  
33:11  
**well-organized**  
84:19, 20  
**westbound**  
113:8, 9, 25  
**when's** 56:22  
**wife** 8:22  
**winter** 138:23  
139:3, 12, 14  
140:13, 14  
**witness** 5:14,  
18, 21  
**witnessed** 70:9  
**wondering**  
64:17 127:10  
**work** 7:6 10:8,  
20, 22 14:16  
19:22 20:8, 23  
26:10, 24, 25  
27:15 33:3  
34:23 36:14  
64:20 77:20  
78:11 80:13  
84:2 86:7  
93:12 104:12,  
24 105:7, 9, 13  
108:3 113:22  
116:11, 12  
117:7 118:2, 4,  
15 119:2, 4  
120:2, 3, 6  
122:6 131:2  
**worked** 10:20  
14:6, 16 15:13  
16:3 28:5  
61:22 70:6, 7  
83:21 86:5  
103:4 124:8  
**working** 8:18  
9:4, 16 10:10,  
12, 17 16:24, 25  
17:19 18:11, 22,  
25 19:8, 9, 12,  
17 20:5, 10, 16,  
22, 25 21:1, 2  
23:8 28:16  
30:21 62:21  
64:14 76:10, 16  
86:21 95:20  
100:21 103:9  
118:20 132:23

134:15 142:5  
144:1 145:8  
**world** 138:1  
**worried** 81:2  
102:18  
**worry** 20:4  
**write** 39:2  
**write-up** 70:11  
**write-ups** 72:9  
**writing** 47:17  
**written** 124:24  
**wrote** 47:20

< Y >

**yard** 7:22  
37:24 50:16  
83:1, 2, 4, 6, 9,  
19, 20, 22 84:1,  
4, 7, 11, 15, 18  
126:8, 9, 13  
**yeah** 13:3  
15:14, 25 16:18  
22:19 25:9  
31:4 32:1  
41:17 43:7, 20,  
21 44:20 45:2  
46:4 49:15, 25  
50:7, 13 55:7  
57:4 60:17  
62:13 76:21  
85:11, 24 86:1  
91:10, 14  
101:14 103:25  
105:24 107:20  
118:15 131:4  
132:11, 25  
133:22 135:5  
138:10 146:11  
148:22  
**year** 9:1 25:21  
26:1 139:10  
**years** 7:13, 17,  
18 8:3, 13 19:6  
**Yep** 114:18  
123:15 129:22

< Z >

**zone** 54:15, 16,  
18, 19, 22 55:18,  
21 56:1, 2, 8, 14  
**Zoom** 1:14  
94:18, 19, 23  
122:21 124:13  
**zoomed** 94:21