## **Ottawa Light Rail Commission**

John Manconi on Monday, May 2, 2022



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

neesonsreporting.com | 416.413.7755

1	
2	
3	
4	
5	
6	OTTAWA LIGHT RAIL COMMISSION
7	CITY OF OTTAWA - JOHN MANCONI
8	MAY 2, 2022
9	
10	
11	
12	
13	
14	
15	Held via Zoom Videoconferencing, with all
16	participants attending remotely, on the 2nd day of
17	May, 2022, 9:00 a.m. to 1:00 p.m.
18	
19	
20	
21	
22	
23	
24	
25	

1	COMMISSION COUNSEL:
2	Kate McGrann, Co-Lead Counsel Member
3	
4	PARTICIPANTS:
5	John Manconi: City of Ottawa
6	Peter Wardle, Catherine Gleason-Mercier: Singleton
7	Urquhart Reynolds Vogel LLP
8	
9	Also Present:
10	Deana Santedicola, Stenographer/Transcriptionist
11	Alicia Sims, Virtual Technician
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	

1	
2	INDEX OF EXHIBITS
3	NO. DESCRIPTION PAGE/LINE NO.
4	1 Curriculum Vitae of John
5	Manconi 6:17
6	
7	
8	
9	* * The following is a list of documents undertaken
10	to be produced, items to be followed up on, or
11	questions refused * *
12	
13	
14	INDEX OF UNDERTAKINGS
15	
16	The documents to be produced are noted by U/T and
17	appear on the following page/line: 162:16, 196:24
18	
19	INDEX OF REFUSALS
20	The questions/requests refused are noted by R/F and
21	appear on the following pages: 89:12, 188:22
22	
23	
24	
25	

1 -- Upon commencing at 9:00 a.m. 2. 3 JOHN MANCONI; AFFIRMED. 4 KATE McGRANN: Good morning, Mr. 5 Manconi. My name is Kate McGrann. I am one of the 6 co-lead counsel of the Ottawa Light Rail Transit 7 Public Inquiry. 8 The purpose of today's interview is to 9 obtain your evidence under oath or solemn 10 declaration for use at the Commission's public 11 hearings. 12 This will be a collaborative hearing 13 such that my co-Counsel may intervene to ask 14 certain questions. 15 If time permits, your counsel may also 16 ask follow-up questions at the end of this 17 interview. 18 This is being transcribed and the 19 Commission intends to enter this transcript into 20 evidence at the Commission's public hearings, 21 either at the hearings or by way of procedural 22 order before the hearings commence. 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 corrections later made to it, will be shared with the Commission's participants and their Counsel on a confidential basis before being entered into evidence.

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

Pursuant to section 33(6) of the Public Inquiries Act (2009), a witness at an inquiry shall be deemed to have objected to answer any question asked of him or her upon the ground that his or her answer may tend to incriminate the witness and may tend to establish his or her liability to civil proceedings at the instance of the Crown or of any person, and no answer given by a witness at an inquiry shall be used or be receivable in evidence against him or her in any trial or other proceedings against him or her thereafter taking place other than a prosecution for perjury in giving such evidence.

1 As required by section 33(7) of that 2 Act, you are hereby advised that you have the right 3 to object to answer any question under Section 5 of 4 the Canada Evidence Act. 5 At any point if anyone needs to take a 6 break, please just say so and we'll pause the 7 recording. 8 To start, we asked your Counsel to 9 provide a copy of your CV in advance of this 10 interview. I am showing you a copy of what we 11 received. It is a one-page document. Do you 12 recognize this document as your CV? 13 JOHN MANCONI: Yes, it is a summary. 14 It is a bio, yes. 15 KATE McGRANN: So we'll enter that as 16 Exhibit 1. 17 EXHIBIT NO. 1: Curriculum Vitae 18 of John Manconi. 19 KATE McGRANN: Mr. Manconi, would you 20 provide us with a description of your professional 21 experience as it related to the work that you did 22 on Stage 1 of Ottawa's Light Rail Transit System? 23 JOHN MANCONI: So I have a career that 24 spans 32 years in municipal government. Specific 25 to transit and transit operations, I was originally

1 appointed the General Manager of OC Transpo in 2012 where I ran the operation for buses and there was 3 the diesel rail line at time. 4 And then there was a re-org when 5 Mr. Kanellakos came back and became City Manager, 6 to which he appointed me to be General Manager of 7 Transportation Services. 8 And at that point he also asked me to 9 take on the management of the public/private 10 partnership construction of the LRT program. 11 And from that point on, I was 12 overseeing both the operation of OC Transpo and 13 also the construction of the light rail system. 14 And I believe that you KATE McGRANN: 15 retired from your role as General Manager of 16 Transportation Services at the end of September of 17 2021; is that right? 18 JOHN MANCONI: That is correct. 19 The re-organization that KATE McGRANN: 20 you mentioned when Mr. Kanellakos joined, was that 21 in or about 2015? 22 JOHN MANCONI: I believe so. It was 23 either May or June of that year, yes. 24 KATE McGRANN: Prior to the re-org, so 25 between 2012 and 2015, would you please describe

1 what OC Transpo's involvement in the Stage 1 2 project involved. 3 JOHN MANCONI: At my level and my role, 4 there was virtually none. Prior to me joining OC 5 Transpo, the planning group, people such as 6 Mr. Scrimgeour and others were involved in the 7 service aspect of what the program would look like 8 once it went into service. 9 So my role was limited in that regard, 10 while we did have technical staff predominantly in 11 the planning area providing input into, you know, 12 service levels and so forth. 13 KATE McGRANN: So during the period 14 between 2012 and 2015, others at OC Transpo were 15 involved in the project looking at service 16 components; is that right? 17 JOHN MANCONI: They were involved. 18 was involved sitting at the corporate table with 19 then Mr. Kent Kirkpatrick, who was the City 20 Manager, so I was listening in at those meetings in 21 terms of once the contract was awarded, in terms of 22 how it would be handed over to OC Transpo later on. 23 KATE McGRANN: Can you speak to OC 24 Transpo's involvement in the preparation of the 25 work that would eventually inform the RFP that was

1 distributed in respect of this project? 2. JOHN MANCONI: Sorry, the work leading 3 up to the public/private partnership? 4 KATE McGRANN: Leading up to the RFP. 5 JOHN MANCONI: Of the P3? 6 KATE McGRANN: Yes. 7 JOHN MANCONI: Yeah, I wasn't involved 8 at all in that, so I can't speak it to. KATE McGRANN: With respect to the work 10 that was being done during the period between 2012 11 and 2015 on the service aspects of the project, can 12 you describe to me what that would involve, what 13 that means? 14 The work on the service JOHN MANCONI: 15 aspect would have looked at passenger volume, 16 things such as space ratios in the trains, the new 17 bus network that would eventually need to be 18 constructed and implemented, those types of things. 19 So because the way the P3 was set up 20 was we were going to -- we owned the service level 21 aspect of that program in terms of scheduling, 22 frequency and so forth. 23 Would that, the work KATE McGRANN: 24 done during that period of time, have involved 25 forecasting anticipated ridership at the launch of

1 the system and the needs of the system following 2 the public launch? 3 JOHN MANCONI: Lots of work leading up 4 I can't remember the exact date of when 5 it was awarded at Council, but absolutely. That is 6 the prep work that was even done before even my 7 time where forecast -- hence, you know, the 8 ridership forecast that was put forward out there 9 in terms of capacity that would need to be provided 10 by the rail system, absolutely, that work would 11 have been done well in advance of that. 12 KATE McGRANN: I understand that the 13 plan for the public launch contemplated a complete 14 conversion from bus rapid transit system to the LRT 15 system at one point, with no parallel bus service 16 or anything like that, just a complete transfer. 17 Was that the plan at some point in this project? 18 I have never heard that. JOHN MANCONI: 19 As long as I was involved, there was always a 20 parallel bus plan, and you saw that in the launch. 21 We ran parallel bus service for three weeks, and we 22 also injected all of the other changes of the bus 23 routes to feed the system and augment the system. 24 Did you say defeat? KATE McGRANN: 25 No, feed, feed the JOHN MANCONI:

1 system, bring ridership to those stations and 2 augment it. 3 So when you joined in KATE McGRANN: 4 2011, the plan for the launch included a parallel bus service for some period of time? 5 6 JOHN MANCONI: No, it wouldn't have been -- I don't believe there had been any design. 7 8 I mean, I didn't talk to my predecessor in that 9 I don't know what the vision was back 10 then. 11 When I took over in 2015 in terms of 12 the accountability for the launch, that is when the 13 work on what the launch plan would look like was 14 began in earnest. 15 KATE McGRANN: And when you took over 16 in 2015, was there any sort of plan in place for 17 what the beginning of public service of the system 18 would look like? 19 JOHN MANCONI: There was certainly a 20 macro level in terms of what the bus system would 21 look like because you are removing the spine in the 22 The brunt of the work was done once downtown core. 23 we established the Ready for Rail Program and the 24 Rail Activation Management Program, those systems 25 that ran for many years leading up to the launch.

1 KATE McGRANN: So you described your 2 involvement and OC Transpo's involvement in the 3 project from 2012 to 2015. Would you now describe 4 what your work looked like from 2015 onwards? 5 JOHN MANCONI: Certainly. Immediately 6 when I was appointed, we saw the clear need to 7 establish operational readiness programs and 8 transitions, and those programs needed to cover not 9 just the launch but customer-facing interfaces in 10 terms of outreach, briefings to Council, what our 11 testing and commissioning protocols would be, how 12 would we bring in expertise to help us that have 13 done and conducted new rail launches, not 14 extensions but actual live rail system launches. 15 So we did two things. We did the Ready 16 for Rail campaign, which you may have seen some of 17 the documentation on, and that was a program that 18 looked at how do we run the business and transition 19 the business to multimodal, and multimodal being of 20 course bus and rail. We had rail before, but this 21 was extensive rail that was being added to the 22 system. 23 And that fed into a series of projects 24 that looked at how we became ready for the launch 25 and the transitioning through that period, which

1 led to the Rail Activation Management Program which was a very robust program that had staff, technical 3 staff, external advisors, and was stood up on a 4 regular basis and, in fact, had been audited by the 5 Auditor General which you may have seen some 6 documentation on in terms of going into ready 7 state. 8 So really the way I would describe it 9 is Ready for Rail was projecting forward what 10 needed to be done. How do you run the business and 11 transition the business. RAMP or Rail Activation 12 Management Program was a robust oversight program 13 in terms of governance, decision-making framework, 14 projects, who did what, reporting and record taking 15 and so forth. 16 KATE McGRANN: The operational 17 readiness work that you mentioned, would that have 18 fallen under RAMP or under the Ready for Rail 19 Campaign? 20 JOHN MANCONI: A bit of both. A bit of 21 both, because you need to -- you think through it. 22 You think through how -- again, you run the 23 business and transition the business, how you 24 transition the community, your customers and so 25 forth, skill sets identification, and that led to

1 all of the projects that, you know, perhaps you 2 have seen in some of the documentation in terms of 3 key hiring, staffing, assembling of shifts, control 4 room management, training, the simulator that we 5 bought, all of those things. 6 KATE McGRANN: Over what time period 7 was the Ready for Rail Campaign active? 8 JOHN MANCONI: I don't know the exact 9 date, but I can tell you that work started 10 immediately when I was appointed in terms of the 11 thinking, the documentation, the bringing in 12 experts and then moving into the Rail Activation 13 Management Program. 14 KATE McGRANN: And did that campaign 15 wind down at any point? 16 JOHN MANCONI: So again, the Ready for 17 Rail was the first phase, and then RAMP was about 18 you are now set up to start the countdown to launch 19 in terms of activation, so it was two-prong. 2.0 KATE McGRANN: Was there a transition 21 from the Ready for Rail campaign to the RAMP 22 program? 23 JOHN MANCONI: Absolutely, and we did 24 documentation and closeout and governance on that 25 and so forth, project charters and so forth.

1 KATE McGRANN: Approximately when did 2 that transition take place? 3 JOHN MANCONI: I would be guessing, but 4 it was a multi-year program in terms of the Ready 5 for Rail, and then the RAMP program, I don't recall 6 the exact time frame on that, but it was multiyear 7 also. 8 KATE McGRANN: With respect to the 9 expertise that was brought in, what approach did 10 the City take to assess what expertise it required? 11 JOHN MANCONI: So even before the 2015 12 exercise, when I was appointed in 2012 as General 13 Manager, remembering that role was going to be just 14 to operate the system once it came on board, I 15 immediately asked Mr. John Jenkins for advice on 16 did he have anybody in the LRT joint venture team 17 that could guide me on external advisors from an 18 operational lens, not from a build lens. 19 So early in 2012 he provided me two 20 names who I immediately hired, and they began 21 immediately as my operational advisors. And that 22 scope grew significantly once I knew I was going to 23 be managing the launch and the transition into full 24 service. 25 So that team expanded - and I am just

1 thinking out loud - it could have been up to a 2 dozen external experts that, you know, spanned the 3 gamut of skill sets, operational, rail operations, 4 vehicle operations, track, launching, control room 5 advisors, training, shift composition, all those 6 skill sets, which eventually led to the Independent 7 Assessment Team. 8 KATE McGRANN: Who were the two 9 original operational advisors who were working with 10 you? 11 JOHN MANCONI: Mr. Joe North and Mr. 12 Brian Dwyer. 13 KATE McGRANN: Were they associated 14 with a company? 15 JOHN MANCONI: Joe North -- yes, they 16 were both with STV at the time. They no longer are 17 with STV. 18 PETER WARDLE: Just for the record, I 19 think the witness referred to John Jenkins. 20 assume you meant John Jensen, Mr. Manconi? 21 JOHN MANCONI: You are right, 22 apologies. 23 KATE McGRANN: After the 24 re-organization in 2015 and the time that followed, 25 would you describe to me what kind of reporting was

18

19

20

21

22

23

24

25

1 being done to other aspects of the City on the work 2 that is being done, so for example, City Council, 3 FEDCO, the Executive Steering Committee. 4 JOHN MANCONI: Certainly. So in terms 5 of the Executive Steering Committee, which Mr. Kanellakos was the Chair, we had regular 6 7 meetings there, and my team post-2015 was required 8 to provide updates, so people such as Mr. Cripps 9 would provide updates, and then subsequent to him 10 Mr. Morgan. 11 In terms of Council reporting, we were 12 doing exactly what we told Council we were going to 13 do in terms of reporting and we had the quarterly 14 memo to Council. 15 In terms of Transit Commission, because 16 there was a clear delineation as to what would go 17 to Transit Commission and what would go to FEDCO,

there was a clear delineation as to what would go to Transit Commission and what would go to FEDCO, so any operational aspects went to Transit Commission and there were numerous reports on how we were going to reconstruct the bus routes. Even prior to 2015, we brought major decisions such as station naming and train decals and interior design and layout of the stations and so forth.

And then we brought updates such as the Ready for Rail Program, customer-facing updates to

2.

Transit Commission.

And then certainly leading up to the launch, there was FEDCO updates in terms of the challenges we were having, in terms of the delays, and our assessments in terms of what was going on in terms of the delays and our best review in that regard.

KATE McGRANN: With respect to the reporting to City Council, you mentioned that there were quarterly reports. Were there any additional reports made, and if there were reports outside that quarterly reporting, what would trigger those?

JOHN MANCONI: There was requests to go to FEDCO with updates. There was also technical briefings. I can't remember exactly how many technical briefings we did. I do know the first delay we had a technical briefing, which all of

So there was various triggers, and of course, governance is managed by those that chair those committees, so the Mayor would ask for updates; Transit Commission Chair Hubley, he would ask for those updates; and of course, Council members could always ask the Chair for updates in that regard.

Council, of course, is invited and the media.

1 So there was numerous updates stemming 2 from numerous activities. 3 What would a technical KATE McGRANN: 4 briefing involve on this particular project? 5 JOHN MANCONI: On this one? The first 6 delay, as an example, was where myself, Mr. Cripps 7 and others basically were explaining where we sat 8 with the Project Agreement vis-a-vis at the time 9 the consortium was not acknowledging that the 10 launch was going to be late. We felt they were 11 going to be late. 12 And so of course, there was a lot of 13 concern about implementing bus changes if they 14 didn't meet their prescribed date of the May launch 15 original date. 16 So with the technical briefing, the way 17 it works at the City is the technical briefing, all 18 of Council was invited; the media is invited. 19 Staff present. Council members can ask questions, 20 and then the media can ask questions. So that is 21 an example of that. 22 We also had technical briefings when 23 there was some challenges with the rail system. 24 Can you speak a little KATE McGRANN: 25 bit more of the technical briefings that were held

1 in respect of challenges to the rail system? 2. JOHN MANCONI: There was one, and I 3 can't remember if it was a formal technical 4 briefing. It was certainly a full media briefing. 5 For example, when the catenary came down, the 6 overhead wire in the St-Laurent tunnel that caused 7 major delays, so we held a media briefing on that. 8 And I was there, Mr. Charter was there, Mr. Lauch 9 was there, I know the Mayor and the Chair were 10 there also present in terms of speaking to those 11 things. 12 And then there was also proactive media 13 outreach, such as when we met with the CEO of 14 Alstom and so forth, and I know the Mayor held a 15 media availability there. 16 So it is a combination of technical 17 briefings and media availabilities. 18 KATE McGRANN: And the technical 19 briefings, who determines when one of those will 20 take place? 21 JOHN MANCONI: It is -- it depends on 22 who the Chair of the various committees is. 23 can be any City committee. The Chair can ask for 24 And then the Clerk obviously is involved 25 There is certain rules and from governance.

1 procedures that need to be prescribed in terms of 2. that. So the City Clerk whose office would manage 3 the technical briefing, along with corporate 4 communications. 5 KATE McGRANN: Would OC Transpo ever 6 seek on its own initiative to hold a technical 7 briefing? 8 JOHN MANCONI: We would suggest if we 9 wanted to. If you had a matter that you -- because 10 often the technical briefing is in advance of a 11 committee meeting, so that you can share that 12 information so that if all members of Council can't 13 attend the technical meeting -- the 14 governance -- or sorry, the specific standing 15 committee meeting, they can go to the technical 16 briefing. 17 So it is a combination that can be 18 recommended by staff, yes, absolutely. 19 Were you or was OC KATE McGRANN: 20 Transpo more generally involved in any reporting to 21 the City's funding partners at the Provincial and 22 Federal Government? 23 JOHN MANCONI: I was not involved in 24 that discussion, any of those discussions. 25 Or reporting to them at KATE McGRANN:

```
1
    all, like formally in a written report or anything
 2.
    like that?
 3
                JOHN MANCONI:
                                Myself, no.
 4
                                Do you know if anybody
                KATE McGRANN:
5
    at OC Transpo was?
 6
                JOHN MANCONI: I believe Michael Morgan
7
    would have had input into any reporting, but we
8
    would have to validate that.
9
                               Would you please
                KATE McGRANN:
10
    describe how the City was approaching oversight of
11
    the construction of the system when it fell under
12
    your supervision.
13
                JOHN MANCONI: Certainly.
                                            We took an
14
    innovative approach, and what I did is I
15
    established an Independent Assessment Team, because
16
    of course with P3s, it is different than just
17
    traditional design and build where you have on-site
    full-time supervision. That does not occur with
18
19
    P3s.
2.0
                And we wanted to know state of
21
    readiness and we wanted to know if there was going
22
    to be delays, how we would manage them, because the
23
    switchover to an integrated multimodal system is
24
    complicated.
25
                So we put together an Independent
```

Assessment Team of experts. We wanted a fresh set of eyes, particularly on some of the technical issues, some of the more complicated aspects such as the tunnel, tunnel ventilation systems, the communication-based train control system, often called the Thales system, control room, construction status, elevators and escalators which are very sophisticated, SCADA.

So we pulled together an integrated team of experts that had not just constructed this infrastructure but were involved in the readiness and the launch of new subways, LRTs, elements that had high volume rail service, tunnels and the level of sophistication that we had in terms of our system. We put that together early on, and that oversight was not just a paper exercise. It was we physically walked the entire system often end to end or parts of the system, so we would walk the tunnel, as an example. We would go see some of the stations, the key larger stations, Rideau, Bayview, the terminus stations.

We would also engage the consortium to share with us their view of where they felt the schedule was, and then we did an independent assessment of where we believed the schedule was

1 both through data and through field reconnaissance. 2 And they were often done in one-week intervals, so 3 the team would be here for a week and we would 4 produce an assessment at the end of that, and that 5 was done many, many times throughout the project. 6 KATE McGRANN: Can you speak to how the 7 oversight of construction was being done by the 8 City when you stepped into the role in 2015, so 9 what was the state of play when you took over? 10 JOHN MANCONI: So the City had, through 11 the office of -- the Rail Office had oversight of 12 construction through normal public/private 13 partnership practices, construction management 14 practices. So they had inspectors. They had 15 reports that they had to review. They had key 16 documentation. And the Project Agreement is very 17 specific in terms of what needs to be produced and 18 in terms of documentation and tests and 19 verification and so forth. 20 So there was staff that were overseeing 21 those aspects of the build. 22 KATE McGRANN: And when you took over 23 in 2015, were there any specific areas of concern 24 or requiring attention brought to your attention? 25 JOHN MANCONI: Yeah, the macro theme

appeared to be, because they were tracking very well leading up to the sinkhole on Rideau Street, the one theme that came out from our perspective, from our team, was that the consortium had to mobilize a significant amount of the resources that they had on the ground to deal with the sinkhole and the downstream effects of the project schedule on that.

Now, that was never agreed to by the consortium. That was our view that the challenges of the sinkhole caused disruption in the critical path and also in terms of the resources. So they had to redeploy resources to that area.

Again, that was our view. They never agreed to that assessment of it. But that was our concern in terms of the potential delays and the potential downstream effects on achieving the outcome of the Project Agreement.

KATE McGRANN: Prior to the establishment of the Independent Assessment Team, were there any external advisors to the City who were assisting in the oversight of the construction project?

JOHN MANCONI: I wasn't overseeing the day-to-day build, so that would be something that

1 Mr. Cripps or others would have to answer. 2 KATE McGRANN: What oversight plans did 3 the City have in place in or about 2015 when you 4 started focussing on this project, so for example, 5 change management plans, project control plans, 6 audit plans? 7 JOHN MANCONI: So people such as 8 Mr. Cripps and others in that office were -- they 9 had done complicated projects, so they had a robust 10 system through their project management system on 11 change management. There was a prescribed process 12 in the Project Agreement and so forth, and they 13 brought their construction management oversight 14 into that. The specifics of it, again you would 15 have to ask them in terms of that regard. 16 And they had --17 KATE McGRANN: And could you speak to 18 any -- sorry, I didn't mean to interrupt you. 19 JOHN MANCONI: They had full 20 documentation on change management and use of the 21 e-Builder and so forth, software technology and so 22 forth. 23 KATE McGRANN: Were there any material 24 changes made to that approach during your time on 25 the project?

1 JOHN MANCONI: No, our approach was to 2 add additional layers of independent expert 3 assessors that had launched and managed and operated rail systems that had similar aspects. 4 5 KATE McGRANN: And with respect to the 6 RAMP - I want to call it the "RAMP program", but I 7 know that the "P" is for program. 8 So with respect to RAMP, how long did 9 RAMP remain active for? Was it still active 10 post-revenue service availability, for example? 11 JOHN MANCONI: Oh, absolutely. 12 through revenue service availability. It went 13 through the various -- remembering that even after 14 achieving revenue service availability and the 15 trial running, we ran a number of scenarios to 16 further test the system and it ran post-launch. Ιt 17 ran post the three weeks of parallel service. And 18 then it wound down after the three weeks of 19 post-revenue service. 20 The exact date I don't have, of course, 21 but it went through all of those major milestones 22 and beyond. 23 What involvement, if KATE McGRANN: 24 any, did RTG and its subcontractors have in RAMP? 25 They had full JOHN MANCONI:

1 involvement. They were briefed in the construct of 2 the program. So we walked them through how the 3 program was going to be governed, what it looked 4 like, how often we were going to be reporting, how 5 we would increase that reporting in meeting. 6 Obviously when you go launch, it is very similar to 7 what NASA does in launching satellites and systems. 8 You do a countdown, and so that as you get closer 9 to launch date, you are meeting more often, 10 literally around the clock at the tail end of it. 11 And so RTG was -- OLRTC, RTG, RTM, all 12 of them were briefed on it. We asked them to 13 participate in key meetings, so they would be 14 brought into the RAMP room. That was our meeting 15 They saw the calendar. They understood location. 16 They understood the number of the countdown. 17 exercises. They understood the sequencing. And 18 there was extensive interaction between the various 19 teams, and it is all three of them, RTG, OLRTC and 20 RTM. 21 KATE McGRANN: And were they, RTG, 22 OLRTC and RTM, receptive to RAMP? 23 JOHN MANCONI: Absolutely. 24 And how would you KATE McGRANN: 25 describe the quality of their involvement in RAMP?

1 JOHN MANCONI: They were very 2 impressed. They had experts that had worked in 3 other projects around the world, and they were very 4 complimentary about the robustness, the structure, 5 the governance, the ability to make -- there was 6 strict decision-making framework and so forth. So 7 they were very, very -- they saw it as a true 8 partnership in terms of how we would achieve 9 revenue service. 10 They also understood and respected the 11 tight controls that we had in terms of things such 12 as Go/No-Go, Project Agreement, safety 13 certification, IC and so forth. 14 KATE McGRANN: You mentioned Go/No-Go. 15 My understanding is that is a reference to a list 16 with a certain number of components that were 17 necessary to be in place before the system could be 18 launched to public service; is that fair? 19 JOHN MANCONI: Correct. 2.0 KATE McGRANN: And I understand with 21 respect to that list, a colour-coded system was 22 used to indicate the status of each of the items on 23 the list. Could you describe that colour coding 24 system? 25 The colour JOHN MANCONI: Correct.

1 coding system on both Go/No-Go and all of the other 2 elements of the RAMP room, were green, yellow, red, 3 green of course meaning you have met all the 4 obligations of the Project Agreement, the IC, 5 safety certification, best management practices, all those things. 6 7 And the Go/No-Go had to all be green 8 for us to move forward in full public launch, and that was similar with all the other elements of the 9 10 system. 11 Yellow meant there was issues that 12 needed to be addressed. 13 Red, of course, was there was 14 significant challenges that needed to be corrected 15 and decisions made. 16 KATE McGRANN: Was it possible for an 17 item that had been coded green to revert back to 18 yellow or red? 19 I am trying to think if JOHN MANCONI: 20 that occurred on the subsets. I don't remember 21 specifically. I mean, it theoretically could have. 22 Certainly on the Go/No-Go, we wanted greens on the 23 "Go". There could have been, you know, fine-tuning 24 notes and so forth, like there is in any build, 25 whether it is your house or whether it is a kitchen

```
1
    addition, there is always little things that you
 2
    are going to tag on to that. But there could have
 3
    been.
 4
                KATE McGRANN: Who determined what
5
    items were placed on the Go/No-Go list?
 6
                JOHN MANCONI: So the Go/No-Go list
7
    came together as part of our RAMP program
8
    development. We looked at what was in the Project
9
    Agreement, and we also implemented some best
10
    practices. And again, it was the sum of the minds
11
    of all those experts and our team, OC Transpo,
12
    the -- so the composition of that room, people such
13
    as Michael Morgan, Troy Charters, the people that I
14
    mentioned earlier on, the Independent Assessment
15
    Team -- sorry, the advisors that we brought on.
16
                KATE McGRANN:
                               And was that Go/No-Go
17
    list used all the way up to the launch of public
18
    service?
19
                               Absolutely.
                JOHN MANCONI:
20
                               And so I take it at some
                KATE McGRANN:
21
    point all of the items on that list were colour
22
    coded green?
23
                JOHN MANCONI:
                                Yes.
24
                                Do you remember when
                KATE McGRANN:
25
    that was?
               And I don't expect you to know the date,
```

1 but with reference to trial running, the two week 2 period following revenue service achievement? 3 I do not remember the JOHN MANCONI: 4 exact date. I do remember standing at the easel 5 where the physical document was pinned, and we were 6 going through as a group. And again, it was a very 7 robust decision-making framework where everybody 8 had to agree that there was greens on that. I don't remember the exact date. 10 KATE McGRANN: So the coding was done 11 on a consensus basis with everybody in RAMP? 12 JOHN MANCONI: And with evidence. Ιf 13 you disagreed, you had to explain why you 14 disagreed, and if it was green, we had 15 documentation such as trial running that 16 substantiated the trial running. 17 KATE McGRANN: And with respect to the 18 decisions on the coding, were RTG, OLRTC or RTM 19 involved in those decisions as to what code should 20 apply to any item on the list? 21 JOHN MANCONI: They had -- I believe 22 they would have seen the list, because again it was 23 physically in the room, and perhaps we would have 24 walked them through when we briefed them on that. 25 But again, that was the City's

```
1
    oversight to say that contractually, through
 2
    contract, best practices, IC, safety certification,
 3
    that we the City believed we had everything in
 4
    place to move to public launch.
5
                               Okay, so I take it that
                KATE McGRANN:
6
    RTG and its subcontractors did not have any input
7
    into the coding of the items on the Go/No-Go list?
8
                JOHN MANCONI:
                                I can't say yes, I can't
9
    say no, because I don't recall. You know, in the
10
    thousands of discussions there could have been
11
    discussions by members of my team saying what do
12
    you think of that element and so forth. I don't
13
    know.
14
                KATE McGRANN:
                               What, if any, role did
15
    Infrastructure Ontario have in the project as it
16
    was going through the construction phase?
17
                JOHN MANCONI:
                                They were involved in
18
    the Executive Steering Committee meetings and had a
19
    lot of input early on in terms of milestone
20
   payments and things like that, but as it got closer
21
    to launch and some of the challenges with launch,
22
    that is not their area of expertise.
23
                Their expertise lies in funding -- not
24
    funding, but contract writing and oversight in
25
    terms of the contract and so forth.
                                          But they
```

1 don't -- at the time they had limited experience on 2 launching and running operational services. 3 So their input was focussed on what 4 does the Project Agreement say and does 5 Infrastructure Ontario have any advice vis-a-vis 6 the various clauses and so forth. 7 KATE McGRANN: With respect to their 8 early involvement looking at the milestones, what 9 are you referring to there? 10 JOHN MANCONI: So milestone payments in terms of how -- I know there was some changes to 11 12 some of those early on. Again, that would have 13 been in the period where I was sitting as my OC 14 Transpo role in terms of I think it was early works 15 associated with the tunnel, so Infrastructure 16 Ontario would have provided input vis-a-vis what 17 their template says and interpretation and so 18 forth. 19 KATE McGRANN: Were you involved in 20 discussions about changes to any milestone 21 payments? 22 JOHN MANCONI: There was one that I 23 recall. I believe that is the one I am referring 24 I think it had to do with the tunnel, but my 25 input at the time was very, very limited. Again, I

1 was the operator at that time. I was not 2 overseeing construction. 3 Okay, so this is prior KATE McGRANN: 4 to the re-organization in 2015? 5 JOHN MANCONI: Yeah, there was -- yeah, 6 actually, there was two. There was the tunnel and 7 then there was the yard, milestone payment for the 8 yard work, the MSF. 9 KATE McGRANN: And what did that 10 involve? 11 JOHN MANCONI: They were substantially 12 completed under the definition of a "yard", the 13 maintenance facility, where all the trains were 14 stored and staff are housed and so forth, so that 15 was a payment under the Project Agreement that they 16 were entitled to. 17 KATE McGRANN: And was there any change 18 to that milestone or how it was approached? 19 JOHN MANCONI: For the yard, what I 20 recollect of it is there was work associated with 21 the CBTC, the communication train control system, 22 the room was physically constructed and all the 23 feeds and so forth, but it wasn't complete but it 24 met the definition of substantial completion, as I 25 recall.

1 KATE McGRANN: And why was that -- why 2 do you raise that as something to talk about, as we 3 are talking about the involvement of IO? Was there 4 a concern that at any point that the milestone had 5 not been met or that there was outstanding work 6 that may lead to a different interpretation of 7 whether the milestone had been met? 8 JOHN MANCONI: No, my input on that 9 was, you know, make sure that the oversight is done 10 to ensure that this doesn't compromise anything 11 downstream in terms of the system being fitted up, 12 to which those that were in charge at the time 13 said, No, we are good to go in terms of the 14 milestone payment and met the definition of 15 substantial completion. 16 KATE McGRANN: And what oversight were 17 you hoping would be conducted when you say make 18 sure the oversight is done? 19 JOHN MANCONI: Make sure -- my view was 20 always have a lens to revenue service. You know, 21 what is the path to getting to that service. 22 And again, I was just the operator at 23 the time so I didn't have any other inputs into 24 that, so just a comment in terms of making sure 25 that there is nothing in that yard that is not

```
1
    completed that doesn't compromise that end goal of
 2
    revenue service.
 3
                                I believe that the CBTC
                KATE McGRANN:
 4
    work in the maintenance and storage facility was
5
    not completed; is that right?
 6
                JOHN MANCONI: I don't know the extent
7
    of what the work was required to be done and what
8
    state it was at the time. All I remember was that
9
    people such as Mr. Cripps and his staff were saying
10
    everything in the yard that needs to be done to
11
    meet this milestone payment is completed.
12
                                The maintenance and
                KATE McGRANN:
13
    service facility was to be fully automated; is that
14
    right?
15
                JOHN MANCONI:
                                Correct.
16
                KATE McGRANN:
                                And was it fully
17
    automated at the time that you left the City in
18
    September of 20 -- I'm sorry --
19
                                2021.
                JOHN MANCONI:
2.0
                KATE McGRANN:
                                2021.
2.1
                JOHN MANCONI:
                                It was not.
22
                                And do you know why that
                KATE McGRANN:
23
    is?
24
                JOHN MANCONI: I don't know all the
25
    technical reasons for it other than obviously there
```

1 is a lot going on in that yard. They were 2 deploying trains. They were at one point building 3 They were expanding the system for Stage 4 So CBTC is not my area of expertise, but there 5 was challenges there. 6 KATE McGRANN: And do you know what the 7 implications of not fully automating the yard were 8 for the preparation for public launch? 9 JOHN MANCONI: I don't know what they 10 are specifically vis-a-vis a fully automated yard 11 because they are not used extensively around the 12 world, but it was not one of my concerns. 13 And why is that? KATE McGRANN: 14 JOHN MANCONI: A very small fleet. Ιt 15 is not a large fleet. Automation of -- I didn't 16 see any great advantage to full automation at this 17 point in time. And it just simply wasn't a 18 constraint in terms of the challenges that they 19 were facing. 20 KATE McGRANN: Did you understand, for 21 example, that maintenance plans were built on the 22 presumption that the yard would be fully automated? 23 JOHN MANCONI: I wouldn't have that 24 level of detail from Alstom. I wouldn't be aware 25 of that, no.

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

KATE McGRANN: Did you have any conversations with RTG, RTM, Alstom or Thales that -- to inform your view that the fact that the yard was not fully automated was not a cause for concern? JOHN MANCONI: They never raised it as a concern to me. Quite frankly, when we pushed them for it, again, there was no objections that it would cause them any concern. KATE McGRANN: And when you say you pushed them, when you pushed them for it, what are you referring to? JOHN MANCONI: I was reminding them that that was part of their innovation of their proposal that they had put forward and that an automated yard was one of their functionalities that they wanted, but they never at any point said that that automation would cause them any service issues. The question of the lack KATE McGRANN: of automation in the maintenance and storage facility, is that something that you took advice on from the team of experts that you have described? Absolutely, people such JOHN MANCONI: as Tom Prendergast were encouraging, and you may

1 have seen some of that feedback, that they 2 instituted what is called the yardmaster, so you 3 are controlling all the train movements in the 4 So again, automation is great, but it also 5 can present its challenges. You know, what happens 6 when it goes down, you then have to have what are 7 called hostlers, and those are the people that move 8 the trains. And our approach was if the train 9 automation wasn't in place or if it was in place, 10 you would still need to have the appropriate 11 resources to move those trains around, even of a 12 fleet of this size. 13 And did anybody who was KATE McGRANN: 14 advising the City on this project raise any 15 concerns about implications of the yard not being 16 fully automated for public service and reliability 17 of service following the launch? 18 JOHN MANCONI: Not that I am aware of, 19 no, not to me. 2.0 KATE McGRANN: Was a yard master 21 appointed to the yard? 22 JOHN MANCONI: RTM acknowledged that 23 they put in the equivalent of a yard master. 24 "yard master" is a very old rail term. They did 25 heed our advice and put additional resources in

1 there. 2. I don't know at this point in time if 3 there is an actual title of a yard master, but 4 there are people over at RTM overseeing the yard 5 operation and train movements. 6 KATE McGRANN: And do you remember 7 approximately when RTM confirmed that they had put 8 somebody in that role or people in that role at the 9 maintenance and service facility? 10 JOHN MANCONI: I don't remember. 11 KATE McGRANN: Can you say whether it 12 was before or after the launch of public service? 13 JOHN MANCONI: Well, they had people in 14 there before the launch of public service, 15 obviously. They had people in charge of the yard 16 and so forth. And that was working with us hand in 17 hand in terms of hearing our advice in terms of how 18 to run operations in the yard. 19 And so they would have had people 20 overseeing the yard well before public launch. 21 KATE McGRANN: So was it your 22 understanding that whatever the modern version of 23 the yard master role is, RTM had to fill that prior 24 to public launch? 25 That was my JOHN MANCONI:

1 understanding, yes. 2. KATE McGRANN: Did Infrastructure 3 Ontario provide any advice about how to approach 4 the relationship the City had with its private 5 partner at any point through the construction 6 phase? 7 JOHN MANCONI: There was general 8 comments that perhaps they would have been made. Ι 9 mean, in what respect in terms of the relationship? 10 KATE McGRANN: How to approach disputes 11 that arose between the City and RTG, for example. 12 JOHN MANCONI: Well, leading up to the 13 first delay, there wasn't a lot of -- there wasn't 14 a lot of documented disputes. It was a very good 15 relationship. We met very, very frequently. You 16 know, the collective focus of Infrastructure 17 Ontario, myself, Mr. Kanellakos, Mr. Morgan was we 18 had a signed Project Agreement, legally binding the 19 consortium to give us a system that met all the 20 requirements of the Project Agreement. 21 And so the approach that we all took in 22 a very professional manner was when there were 23 issues, I wouldn't call them disputes, but 24 interpretations and discussions, we would -- you 25 know, we would all have our laptops and we would go

1 to that lengthy Project Agreement and say, you know, what clause are you referring to? And we 2 3 would open it up, and we would get technical people 4 to look at it and work our way through it, and we 5 did that often in a positive, collaborative 6 environment. 7 KATE McGRANN: And was Infrastructure 8 Ontario directly involved in that exercise that you just described where you go to the project clause 9 10 and you assess it and you discuss it and things 11 like that? 12 JOHN MANCONI: Well, they would have 13 been involved at the macro level. You know, we 14 would give them updates on where we were. But they 15 weren't involved in the technical areas because 16 they didn't have technical expertise or, you know, 17 when you drill down into the clauses and you are 18 doing specific things such as track and so forth, 19 that is not their area of expertise. 2.0 KATE McGRANN: And you mentioned that 21 there weren't many issues as between the City and 22 its private partner up until the first delay. 23 are you referring to when you say "the first 24 delay"?

JOHN MANCONI:

When they couldn't make

1 the May timeline. 2. KATE McGRANN: That is the May 2018 3 revenue service availability date? 4 JOHN MANCONI: I believe so, yes, yeah, 5 the first date that they were targeting, yes. 6 KATE McGRANN: And when did it become 7 apparent to the City that that date would not be 8 met? 9 JOHN MANCONI: Well, we were showing it 10 through our various exercises and observations for 11 I would have to go back and check the 12 But the position and the way the contract records. 13 works is RTG -- OLRTC, RTG, RTM were saying they 14 were going to achieve that date, so the technical 15 briefing that I mentioned, and I don't remember the 16 exact date, that is when we said, you know, there 17 is some challenges. They have acknowledged they 18 are not going to meet it. It was very late in the 19 process leading up to that date because there was 20 the notice period if they weren't going to make it 21 and so forth. 22 So we were concerned and we had 23 highlighted that through our various assessments. 24 And following the KATE McGRANN: 25 failure to meet the May 2018 RSA date, did IO's,

```
1
    Infrastructure Ontario's, involvement in the
 2
   project change?
 3
                               They were involved in
                JOHN MANCONI:
 4
    the meetings. They were part of our governance
5
   meeting, and again, they couldn't offer much on the
    technical perspective, but they were clear on what
 6
7
    the Project Agreement, what the signed legal
8
    agreement said and the steps associated with it and
9
   how to move through it, how to step through it.
10
                KATE McGRANN: At any point during the
11
    life of the project up until your departure, did
12
    Infrastructure Ontario provide the City with any
13
    advice that the City chose not to follow?
14
                JOHN MANCONI:
                               Not that I am aware of.
15
                KATE McGRANN: Was Infrastructure
16
    Ontario involved in advising the City on how to
17
    apply the payment mechanism with respect to the
18
    maintenance payments?
19
                JOHN MANCONI: You would have to ask
20
    Michael Morgan on that. He was involved, and Troy
21
    Charter.
              They were involved in the detailed piece.
22
    I was not involved in any discussions with
23
    Infrastructure Ontario on the payment. This is
24
    post-launch you are talking about?
25
                KATE McGRANN:
                               Correct.
```

```
1
                JOHN MANCONI: Yeah, I was not involved
 2
    with any discussions with Infrastructure Ontario,
 3
    no.
 4
                KATE McGRANN: And to your knowledge,
5
   was anybody else?
 6
                JOHN MANCONI:
                               Not that I am aware of.
7
                KATE McGRANN:
                               So we have spoken about
8
    Infrastructure Ontario. We have spoken a little
9
    bit about the Independent Assessment Team, and I'll
10
    come back to that with some questions.
11
                Were there any other advisors to the
12
    City who were involved in the work that you were
13
    doing from 2015 onwards?
14
                JOHN MANCONI: In terms of disputes and
15
    challenges and options when the delays occurred in
16
    performance, there was Deloitte, Remo Bucci, there
17
    was Brian Guest, the Executive Steering Committee,
18
    of which the composition I am sure you have.
19
    trying to think.
                      Sharon Vogel.
2.0
                KATE McGRANN: And Ms. Vogel was legal
21
    Counsel, I believe?
22
                JOHN MANCONI: Correct.
23
                KATE McGRANN: So I am not looking for
24
    any legal advice that you or the City received or
25
    that you sought. Mr. Bucci from Deloitte, what
```

```
1
    work was being -- was Deloitte doing?
 2.
                JOHN MANCONI:
                               Deloitte was helping us
 3
    on calculating the points deductions,
 4
    interpretation of the Project Agreement on how the
5
   payment mechanism worked, providing support to my
 6
    team in terms of analyzing all that and ensuring
7
    that we are in compliance with the Project
8
    Agreement.
9
                KATE McGRANN: And over what period of
10
    time was Deloitte doing that work?
11
                               Well, we engaged early
                JOHN MANCONI:
12
    on Deloitte as part of our RAMP work because we
13
    wanted to have a very robust auditable payment team
14
    ready to make the payments. While everybody
15
    focuses on the build, the 30-year concession is a
16
    very complicated space also, so Mr. Bucci and his
17
    team helped my team develop an organizational
18
    structure and the skill sets and spreadsheets and
19
    how to manage the payment mechanisms.
2.0
                So that was involved for I will say
21
   many, many months, if not a few years.
22
                KATE McGRANN: And then did
23
    Deloitte -- has Deloitte remained involved
24
    following the public launch of the system?
25
                JOHN MANCONI: Absolutely. I don't
```

```
1
    know if they are still there. Right up until my
 2
    departure, Mr. Bucci and his team were involved.
 3
                KATE McGRANN: You mentioned Brian
 4
            I believe he is with a company called
5
    Boxfish?
 6
                JOHN MANCONI:
                                That's correct.
7
                KATE McGRANN:
                               What work was Mr. Guest
8
    doing?
9
                               So he was advising the
                JOHN MANCONI:
    Steering Committee and Mr. Kanellakos on what
10
11
    options were before us once revenue service started
12
    to degrade significantly.
13
                               Could you explain what
                KATE McGRANN:
14
    you mean when you say "once revenue service started
15
    to degrade significantly"?
16
                JOHN MANCONI: Well, we had issues with
17
    the switch heaters. We had some poor service
18
    months. We had the catenary issue. And we had the
19
    January 1st New Year's Eve episode, those things.
20
    That is when they started to accumulate a lot of
21
    points under the Project Agreement, and you know,
22
    it eventually led up to -- I can't speak to it, or
23
    Mr. Wardle will tell me if I can or can't, but our
24
    legal action that we took vis-à-vis the service
25
   points.
```

1 KATE McGRANN: And what kind of advice 2 is Mr. Guest providing? Is he providing strategic 3 Is he providing technical advice, 4 financial advice? 5 JOHN MANCONI: So he is providing 6 strategic advice, but that is intertwined with what 7 the Project Agreement says, what the value of the 8 points deductions are, what options existed from a 9 procurement legal perspective, and so forth. 10 What did Mr. Guest bring KATE McGRANN: 11 to the team that wasn't brought by your legal 12 advisors and Deloitte? 13 PETER WARDLE: I quess I just -- you 14 know, I hesitate to become involved, but I know 15 that a number of these discussions would have taken 16 place involving any partner, Sharon Vogel, and so 17 those are privileged communications. 18 So I don't have a problem with you 19 asking questions about Mr. Guest's role in a 20 general way, but I am going to have to instruct the 21 witness not to provide any information that was --22 any advice that was given by Mr. Guest at a meeting 23 where outside legal counsel was present. 24 Did you have an issue KATE McGRANN: 25 with the question I just -- I understand your

1 caution. Did you have an issue with the question 2 that I just asked as I just asked it? 3 PETER WARDLE: I don't. I just think 4 the witness is starting to get into the content of 5 some of those discussions, and so I don't want him 6 to do so, if that is okay. I am trying to be 7 careful here. 8 So with your Counsel's KATE McGRANN: 9 caution in mind, I am just trying to understand 10 what Mr. Guest brought to the table, so can you 11 help me understand that? 12 JOHN MANCONI: Yeah, no, thank you to 13 both, because Mr. Wardle is right. Mr. Guest was 14 often in the room when Ms. Vogel was there. 15 But what he brought at a 100,000 foot 16 elevation is he was involved in the original 17 Project Agreement and the program development, 18 working for the City, for Mr. Kirkpatrick and Nancy 19 Schepers and so forth, so he had all the history as 20 to how the Project Agreement came together, and he 21 has extensive experience in public/private 22 partnerships and the Infrastructure Ontario 23 template and the Infrastructure Ontario expertise. 24 KATE McGRANN: Is there any reason that 25 you wouldn't just go to Infrastructure Ontario for

1 expertise on their template and the areas that they 2 work in? 3 I would say at that JOHN MANCONI: 4 point in time - and this isn't a criticism; it is 5 just my own view - is that people such as Mr. Guest 6 and Mr. Bucci and Ms. Vogel and even certain 7 aspects of myself and others had more hands-on real 8 expertise because we didn't just do the think it. 9 We planned it. We thought it. We executed. 10 were in the build. We were in the operational 11 aspects. 12 So the level of expertise that 13 Mr. Guest and Mr. Bucci brought, you know, was 14 significant, and in many cases would have 15 outstripped some of the folks at Infrastructure 16 Ontario at that point in time. 17 KATE McGRANN: And just specifically 18 with respect to the expertise of Infrastructure 19 Ontario's templates and agreements and things like 20 that, why wouldn't you go directly to them, why go 21 to Mr. Guest instead? 22 JOHN MANCONI: Well, we continued to go 23 to Infrastructure Ontario. They were part of our 24 Executive Steering Committee. They are not part of 25 That was a conscious decision. Stage 2. But in

1 terms of Stage 1, they were involved and they 2 listened in on every Executive Steering Committee 3 meeting and were asked by Mr. Kanellakos if they 4 had perspectives and views and there was dialogue 5 with them. 6 KATE McGRANN: Our focus is on Stage 1, 7 but because of that focus, we are interested in 8 changes made to Stage 2 as a result of the 9 experience on Stage 1. Was the decision not to 10 include Infrastructure Ontario in Stage 2 a result 11 of anything that was experienced during Stage 1? 12 JOHN MANCONI: No, it was not. 13 KATE McGRANN: You discussed 14 Mr. Guest's involvement post the launch of public 15 service, I believe; is that fair? 16 JOHN MANCONI: He was involved 17 throughout the journey of the project at different 18 degrees, but post-launch deep into when we had the 19 challenges, you know, further along down the road, 20 when we got into some significant challenges, he 21 was involved more than he was before. 22 So his involvement varied throughout 23 the life of the project. 24 During the construction KATE McGRANN: 25 phase, what was his involvement like?

1 JOHN MANCONI: Again, early on, I 2 wasn't there. When I took over in 2015, it was 3 There wasn't a need for his expertise at sporadic. 4 the time because we were moving forward towards 5 substantial completion, revenue service availability, and so forth. 6 7 He was aware of what was going on, but 8 wasn't actively involved in the construction 9 oversight piece. 10 KATE McGRANN: Speaking about the 11 City's oversight of the construction, you have 12 described the work of RAMP, and I understand that 13 RTG, OLRTC and RTM attended some of those meetings 14 and provided information that way. 15 How else did the City obtain 16 information from RTG about the progress of the 17 construction to inform its oversight? 18 JOHN MANCONI: We -- part of the 19 Independent Assessment Team work, they were 20 involved and not in a casual fashion. It was a 21 structured approach where we would assemble the 22 IAT, remembering these folks came from across North 23 America, so we would plan it well in advance. 24 And the front end of the week we would 25 sit with RTG, OLRTC, RTM, ask them to present where

1 they believed they were in the construction and in 2 the path to revenue service, and then we would go 3 out together with them to review. And they gave us 4 unfettered access to everything. We could -- we 5 would ask to go into control rooms, into escalator 6 service doors, wherever we wanted to go, they would 7 enable us to go and we could talk to anybody we 8 wanted to as part of our review. 9 KATE McGRANN: And other than those 10 meetings, was RTG providing regular schedule 11 Were they providing any sort of 12 standardized or regular reporting to the City? 13 Well, absolutely. JOHN MANCONI: 14 mean, Mr. Morgan and Mr. Cripps had their own 15 regular meetings. They had technical meetings. Ι 16 had phone calls, discussions at the executive 17 They would reach out to me and I would levels. 18 reach out to them. 19 So there was constant formal meetings. 20 There was dialogue non-stop. 21 KATE McGRANN: I understand that there 22 were a number of working groups implemented 23 throughout the construction period involving people 24 from the City and people from RTG and its 25 subcontractors; is that right?

1 JOHN MANCONI: Yes, and we would also 2 bring in -- I would pay for independent experts, 3 such as what we did with the tunnel ventilation 4 system, same with the track switch issues. 5 formed workshops. Again, it was a collaborative 6 effort. Peter Lauch and his team were very open to 7 getting into a room and having good discussions on 8 resolving technical issues. 9 KATE McGRANN: Well, from the 10 time -- from 2015 to the launch of public service, 11 could you just describe the relationship that the 12 City had with RTG on a day-to-day basis and how 13 that worked? 14 JOHN MANCONI: In terms of the type of 15 relationship we had? 16 KATE McGRANN: Yes. 17 JOHN MANCONI: I would describe it as 18 collaborative. They were under immense pressure 19 because delays cost money, but they were very open 20 to hearing our views and sharing information and 21 spending time with us on either technical issues, 22 on strategies, on how to get to revenue service. 23 They had a lot of changeover at the 24 senior leadership team. The Project Director, I 25 believe that was the title, you know, I met many of

25

non-negotiable.

1 them, and each and every one of them approached me 2 in terms of wanting to work together in a 3 partnership fashion to get to revenue service. 4 So I would describe it as collaborative 5 and professional. Certainly they understood that I 6 was going to be unrelenting in ensuring that we met 7 all the requirements of the Project Agreement and 8 the safety certification and the Independent 9 That was a non-negotiable and they Certifier. 10 understood that. 11 Were there any other KATE McGRANN: 12 non-negotiable components of the relationship from 13 the City's perspective? 14 JOHN MANCONI: They understood that the 15 Project Agreement was a signed legal document and 16 that neither Steve nor I or anyone had Council's 17 authority to deviate from any of that, so if there 18 was any requests for deviations, we would always 19 consider them but we -- you know, depending on what 20 the Project Agreement says, there was always a path 21 to how those decisions needed to be made. 22 So there was no ability for Steve or 23 myself to arbitrarily make a decision that deviated

from the Project Agreement, and that was a

1 KATE McGRANN: So two things in there, 2 I think. One, I understand that neither you nor 3 Mr. Kanellakos had the authority to deviate from 4 the Project Agreement yourselves. Was it also the 5 case that there was no opportunity to deviate from the Project Agreement at the City level if such a 6 7 deviation could potentially benefit the project? 8 JOHN MANCONI: I would have to ask our 9 clerk and our City solicitor. My understanding is, 10 being in municipal government for 32 years, is that 11 theoretically Council has authority to change 12 things, and there is a path to that. 13 But -- so that would be something that 14 if there was a request to deviate from the Project 15 Agreement, that would have to be a Council 16 decision, as far as I am concerned. That is more 17 appropriately put towards the Clerk and the City 18 Solicitor, though. 19 KATE McGRANN: To your recollection, 20 was that a path that was ever explored on this 21 project? 22 There was discussions JOHN MANCONI: 23 from OLRTC, RTG, RTM to look at different 24 scenarios, which we always listened to, and we said 25 if we needed to take something forward, we would,

but there was nothing of significance that had
technical merit or any advantage to anybody to take
forward.

KATE McGRANN: In the context of the different scenarios that were raised by RTG and its subcontractors, was there ever any discussion about opening public service with less than what was envisioned in the Project Agreement and then ramping up to full public service?

JOHN MANCONI: Yes, there was a meeting where that suggestion was put forward, and I did see it in the media coverage, to which -- again, describing the environment that I described since I have been talking this morning is we said, Tell us what you are thinking.

There was no formal plan from them.

There was no specifics. It was ideas such as, could you close off the Rideau Street entrance and not have that as part of the opening. We didn't immediately say no. We said, Thanks for the idea. Here is why you can't do it.

There was discussions of could we do a segment opening. We said, Thanks for the idea.

That gets done on extensions. So often you'll see across North America, particularly in the States,

where there is trams or very low volume LRTs. They just did it in Boston. There is an extension and you can open up that extension.

This was the core or the spine of the system and we explained to them in great detail as to why we couldn't do partial openings, above and beyond that is not what we were paying for.

Remembering at the highest level, the Project Agreement was very specific. We are paying you 'x' amount of dollars. You shall give us a fully tested and commissioned system.

So from a pure contractual perspective, obviously our position is that is not what Council and the taxpayer bought. However, even if it were a good idea, we would take it forward, but we explained to them why a partial opening wasn't feasible. We explained why closing off the Rideau Street entrance was not feasible and so forth. And they understood it, and we didn't hear anything back after that from them on that.

KATE McGRANN: The suggestion to keep the Rideau Street entrance closed, the suggestion to use a segment at opening, were both of those brought up at the same meeting?

JOHN MANCONI: My recollection was it

```
1
    was at the same meeting, yes.
 2.
                KATE McGRANN: And everything that you
 3
    just described to your recollection, that was a
 4
    single discussion?
 5
                JOHN MANCONI: I don't know if there
6
    was other discussions from my staff. I remember
7
    that meeting where they brought that up and I
8
    remember we reported back to FEDCO that those items
9
   had been brought up, that they gave us ideas, to
10
    which we explained they were not feasible and why.
11
    And there was no questions after that.
12
                But at that meeting, I asked
13
    Mr. Scrimgeour, who was, you know, a very good
14
    transit planner, why those things wouldn't work, to
15
    which there was no follow-up questions or no
16
    follow-up writing or anything like that saying to
17
    me, that I am aware of, that they wanted to do
18
    phased openings or partial openings and so forth.
19
                               Did they explain to you
                KATE McGRANN:
20
    at this meeting or otherwise the reasons why they
21
    were looking to proceed with less than a full
22
    service offering at public launch?
23
                JOHN MANCONI: I don't recall.
                                                 They
24
    could have.
25
                                You mentioned that there
                KATE McGRANN:
```

was a -- there were service reasons why these would not be feasible. Could you just briefly explain what those are?

JOHN MANCONI: Certainly. I'll take the partial opening as an example. So if you pick any segment of that line, the worst thing you can do to a customer is introduce a transfer. If you look at all of the documentation we brought to Transit Commission, that is, again, the operating arm of the governance body, I can't remember the exact number but I believe 80 percent of our customer base were going to have a change in their commute as a result of this opening the spine of the system.

Many of those customers were going to have a transfer introduced to their commute for the first time in their commute. So if you are coming in from Kanata, Orleans, the outer suburbs, you used to take an express bus and you would go all the way into downtown Ottawa. With the opening of the LRT system's first phase, you were going to get on a bus, stop at those terminus stations, and enter into a train and that train would take you downtown very quickly and efficiently.

If you did a segment opening, you would

then introduce what could theoretically be a double transfer where you would transfer from bus to train and train back to bus.

So let's take you didn't want to open up Lyon Station or you didn't want to open up Rideau Station, remembering this train is going at a high speed, those are long distances, and so our job is to protect the customer, the taxpayer, the value, the outcome, introducing a double transfer to a customer, the pain threshold on that commute in transit terms would have been extreme, as an example.

The Rideau Street entrance as another example, the volumes at Rideau Street pre-COVID, you only had to go and sit there and watch that, that would have caused major, major flow within the station, remembering that every station, when you are in the preliminary design phase and planning, they are modelled for people movement through that station, corridors, gates, entrance points, loading zones, escalators, elevators.

And our system, we have double redundancy. We have double escalators, double elevators. Closing off a station could have had impacts on someone in a wheelchair or flood the

gates and could have caused congestion, egress for fire and so forth.

So those are all the things we took them through, from a customer lens, a safety lens, operational lens, and again, you know, to be blunt also contractually we weren't paying for a partial system. We were paying for an entire system. They knew what they signed up for.

KATE McGRANN: With respect to the payment aspect of this consideration, was it the case that RTG was suggesting a partial opening while simultaneously demanding payment for a full system?

JOHN MANCONI: I don't recall if we even got into that level of detail. Again, it was a great discussion. They brought it up. They said, Have you thought about, and I said, Well, let's talk about it right now. And we walked them through -- we would have had the similar discussion that I just walked you through right now.

Payments, we didn't even get to that point because, again, my recollection of it is everybody left the room and said, Okay, we understand. They may not have agreed with it because obviously they wanted to get substantial

25

1 completion payment, which is a very large sum of 2 money, but there wasn't any post-objection or could 3 have, should have. None of that came back to me in 4 terms of that. And I don't even recall if we got 5 to the payment piece. I don't recall that. 6 KATE McGRANN: So when you saying that 7 they are paying for the full system, that is just a 8 general comment. It is not in response to any part 9 of any proposal that was made with respect to less 10 than a full opening? 11 JOHN MANCONI: Correct. 12 KATE McGRANN: At this meeting, do you 13 think you effectively sent the message that 14 anything less than a full opening is a non-starter 15 and not worth bringing it up again? 16 No, we did what every JOHN MANCONI: 17 rail system does, every large-scale capital project. We said, there is a definition of 18 19 substantial completion. There is a definition of 20 revenue service availability. We need to meet 21 those. 22 And with all that comes what is often 23 the term in construction is a "punch list". No

different than when you buy a new house or your

kitchen renovation, you have the little deficiency

1 list that you have agreed to that those are 2 outstanding and you withhold payments on that. And 3 that was -- we were going to be fair and reasonable 4 in that regard and open to ideas and suggestions in 5 that regard. 6 KATE McGRANN: How likely did you think 7 it was following that meeting that RTG may suggest 8 anything less than a full opening to the City ever 9 again? 10 At that time, I think JOHN MANCONI: 11 the relationship was very healthy and I think they 12 would have come back and -- you know, they knew our 13 position, both myself and Steve were very 14 reasonable that there was opportunities that we 15 could work within the confines of the Project 16 Agreement such as landscaping and things like that 17 that could help them get to that opening. 18 So at that point in time, the dialogue 19 was very healthy. 20 KATE McGRANN: Did any of the experts 21 who were advising the City ever raise the concept 22 of opening with anything less than public service 23 in their discussions? 24 JOHN MANCONI: Anything less than, 25 sorry, public service, what do you mean?

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

KATE McGRANN: Full public service?

2 JOHN MANCONI: Oh, yeah, the same

everybody absolutely understood.

things came up. I mean, this is a common thing that is done in extensions, but this was not an extension. And again, once everybody heard the rationale that I just took you through, it was an immediate -- if you are in this business and I walk you through what I have just walked you through,

And we looked at it. I mean, if we could have opened up the east end versus just the west end, but we didn't see a value proposition for the customer, which this is a customer service. is -- we are there to move at the time, you know, I think 350,000 passenger trips per day through the core.

We couldn't see a space where we could put our customers and our Council through so much pain, remembering they had been through five years of detours, bus detours. I think that is what is lost on all this. The customers had gone through major, major deviations, so we had closed the -sequentially we had closed the bus rapid transit system, so your stop may have changed one day, your pickup point, your commute times were all extended

```
1
    from the east and the west, all that -- all those
 2
    customers had gone through those pain points, and
 3
    to introduce something as a double transfer or, no,
 4
    you can't go in on the Rideau Street side, you need
5
    to walk around, and you know, all those things,
 6
    that we couldn't see a space for that working
7
    without compromising service.
8
                KATE McGRANN:
                                With respect to the
9
    City's expert advisors raising the possibility of
10
    something less than a full public service from the
11
    outset, who was involved in discussions about that
12
    issue?
13
                JOHN MANCONI: I remember it coming up
14
           I don't remember which expert, and I
    once.
15
    remember, again, it was literally a five-minute
16
    conversation where we talked about what I just
17
    elaborated to you, and then that was, oh, yeah,
18
    that makes total sense.
                              So I --
19
                KATE McGRANN:
                                Do you --
20
                JOHN MANCONI:
                                There was no -- I don't
21
    recollect any constant, you know, discussion of we
22
    should do a partial opening.
23
                KATE McGRANN: Do you recall when that
24
    conversation took place?
25
                                I don't.
                                          I don't.
                JOHN MANCONI:
```

```
1
                KATE McGRANN: Can you place it in time
 2
    in the life of the project with respect to sort of
 3
    the major -- I won't say milestones because that
 4
    has got a specific meaning here, but the major
5
    check points?
 6
                JOHN MANCONI: All I can tell you is it
7
    was after the first delay, and again, it was a
8
    comment in passing about have you ever thought
9
    about partial openings.
10
                KATE McGRANN: So when you say it was
11
    after the first delay, it was after May 2018?
12
                JOHN MANCONI:
                               Yes.
13
                KATE McGRANN: And do you remember what
14
    that comment was responding to or what may have
15
    triggered it being made?
16
                JOHN MANCONI: Well, it was all of us
17
    looking at when could revenue service availability
18
    be achieved.
19
                KATE McGRANN: And so what sparked that
20
    comment? You are looking at a schedule, is that
21
    what it is?
22
                JOHN MANCONI: I honestly don't
23
    remember.
               It was a passing comment on would the
24
    City -- it wasn't even have you thought.
25
    would the City ever contemplate a partial opening,
```

1 to which my response has always been, What do you 2 mean by that? 3 Because a partial opening can mean 4 different things to different people. A partial 5 opening can mean that all your landscaping is not 6 done, all your paths aren't paved, you have got 7 temporary lighting versus permanent. Those are the 8 things that we were very, very open to, but double 9 transfers, people in wheelchairs not having access 10 to elevators and escalators and so forth, that we 11 were not open to. 12 KATE McGRANN: So maybe if I can just 13 rephrase this to make sure I understand. Anything 14 less than all the promised trains running through 15 all of the promised stations with the promised 16 headway and with the promised schedule, that was 17 required by the City? 18 JOHN MANCONI: The Project Agreement 19 specified the outcome, which was move a certain 20 volume of passengers every single day during the 21 various schedules of the week. 22 KATE McGRANN: And that was an absolute 23 requirement by the City for public launch? 24 JOHN MANCONI: Reflective of our 25 ridership, correct, yes.

1 KATE McGRANN: Did the City's approach 2 to monitoring RTG's compliance with the 3 construction schedule change at any point through 4 the construction phase? 5 JOHN MANCONI: You would have to ask 6 Mr. Morgan the specifics on that. As it pertained 7 to the IAT team, I could tell you that the 8 consortium was very open to sharing schedule 9 details once we started to do the independent 10 assessments. 11 KATE McGRANN: With respect to the IAT 12 team, the Independent Assessment Team, do you 13 recall when you first asked them to assess the 14 schedule? 15 I don't know the exact JOHN MANCONI: 16 I can't remember the circumstances of it. 17 That would be helpful. KATE McGRANN: 18 JOHN MANCONI: Sorry, and what 19 specifically would you --20 KATE McGRANN: Please explain the 21 circumstances that led to asking them to adjust the 22 schedule 23 JOHN MANCONI: So we landed the 24 delay -- or they landed the delay on us, and I at 25 the time reached out to Steve and explained that I

1 wanted to do a deeper dive into the schedule. we were requesting the - and, Peter, correct me if 3 I get the terminology incorrect - I think it is 4 called a P26 schedule, the technical term for the 5 detailed schedule, to which they were very, very 6 reluctant to share that with us because they have 7 no requirement to share that with us under a P3. 8 That is their schedule. It is proprietary. It has 9 got details with their subs and so forth that 10 theoretically we don't need to -- we should not 11 have. 12 And then there was a leadership change. 13 Peter Lauch took over, and while we didn't get all 14 the P26 details, there was more collaboration on 15 sharing the schedule challenges. So Mr. Lauch 16 would bring his Technical Directors in. I can't 17 remember, there was a gentleman that came in from 18 Australia. He was very good at saying, Here is 19 what we are tracking well on, and here are our 20 challenges within the schedule. 21 And that is above and beyond what they 22 were doing through the normal oversight with 23 Michael Morgan's team and so forth. 24 KATE McGRANN: You said when "they 25 landed the delay on us", I'm assuming that is RTG?

```
1
                JOHN MANCONI: OLRTC, RTG, RTM, yeah, I
 2
    always put them all together.
 3
                KATE McGRANN:
                               And that was the delay
 4
    to the Project Agreement revenue service
5
    availability date?
 6
                JOHN MANCONI: Correct.
7
                KATE McGRANN: And you have said that
   you spoke to Steve. Is that Mr. Kanellakos?
8
                JOHN MANCONI:
                               Correct.
10
                KATE McGRANN: Who was on the
11
    Independent Assessment Team?
12
                JOHN MANCONI: It changed regularly.
13
    There was some core members.
                                   So Tom Prendergast,
14
    who was the former Chairman of MTA in New York
    City, was my advisor, and he was the person that I
15
16
   would brainstorm with as to what expertise we
17
    needed to bring in, Joe North, Brian Dwyer, Larry
18
    Gaul, Anil, and I can't remember Anil's last name.
19
    We had a scheduling expert that had worked at La
20
    Guardia extensively.
21
                We had -- we brought in on an as-needed
22
    basis technical experts, such as track. We would
23
    call people in via at the time conference calls and
24
    so forth. So the composition of that team -- oh,
25
    we had Jack D'Andrea, who was a construction
```

1 expert. 2. So it varied, myself, Jocelyne Begin, 3 Michael Morgan, those people, Steve Cripps. 4 KATE McGRANN: The core members who 5 remained throughout the project, that would be 6 Mr. Prendergast, Mr. North. Anybody else? 7 JOHN MANCONI: Larry Gaul stayed on. 8 Larry Gaul was a key advisor on the launch. 9 stayed there had until the end. Mr. Dwyer ended 10 earlier. And then, again, there was people in 11 constant contact right to the end, and beyond, and 12 still are there, in my understanding. 13 When you say "the end", KATE McGRANN: 14 are you referring to the public launch of the 15 system? 16 JOHN MANCONI: They were -- the IAT 17 work wrapped up after we went to public launch, but 18 the advisory roles continued. So you would have to 19 check with Mr. Charter and Mr. Morgan, who is still 20 advising. 21 KATE McGRANN: In addition to looking 22 at the schedule, did the Independent Assessment 23 Team take a look at the readiness of the various 24 aspects of the system for public launch? 25 JOHN MANCONI: Absolutely. So we had

1 Scott Kreiger, who is a vehicle expert. We had 2 Anil, who had done subway extensions, 2nd Avenue 3 Subway, so he was familiar with stations. Again, 4 those are all public-facing. 5 So everybody on that team, again, had 6 not just constructed but they had been part of 7 They had worked at agencies and had operations. 8 that expertise in terms of being able to view it 9 through the public lens and service lens. 10 KATE McGRANN: With respect to the 11 schedule delays, do you have a view of what the 12 major factors were that contributed to the delays 13 in the schedule? 14 JOHN MANCONI: My view based on what we 15 saw was, again, the stress that the sinkhole caused 16 on the program. 17 Escalators, they had a major issue with 18 escalators that we could not deviate from, and they 19 had to rectify it. I can't remember, but it is 20 double digits. It is a lot of escalators in the 21 system, so they had a major, major design issue 22 that they had to rectify to get sign-off by the 23 regulatory body. 24 And leading up to substantial

completion, they had challenges on workmanship and

1 quality, and you know, things such as stairwell types and code issues, so challenges on the code 3 piece. 4 CBTC was a challenge not from a 5 technology perspective, but CBTC requires unfettered access to track, so the only way Thales 6 7 will sign off and certify is if they see obviously 8 their trains operating in a configuration that 9 enables them to sign off. So they were building 10 and couldn't give Thales unfettered access to the 11 track. 12 The tunnel ventilation system is very, 13 very complicated, so some challenges there. 14 And again, if you go to the IAT 15 reports, I think you start to see those buckets in 16 terms of the challenges. 17 KATE McGRANN: With respect to the 18 sinkhole, can you speak a little bit more to the 19 implications it had for the overall construction 20 schedule, from what you saw? 21 JOHN MANCONI: Again, it was our view. 22 It was a view and it can't be quantified because it 23 was a view that they didn't agree with. Ιt 24 appeared that because of the scope and scale of 25 that sinkhole, resources both in the field and

professional advisors, you know, engineers had to 1 2 shift from the entire 12 and a half kilometre build 3 to a challenging point, obviously with the sinkhole 4 and they had to fill it and they had to re-mine it 5 and so forth. 6 So again, it is an observation. 7 is no data to substantiate that. It is when I sit 8 in a room with people that have built very complicated subway systems and tunnels, that was 9 10 the view. 11 KATE McGRANN: Did you have a view as 12 to whether the financial impact of the sinkhole on 13 RTG had any implications for the construction of 14 the system? 15 JOHN MANCONI: I wasn't privy to their 16 financial cash flow, so I don't have a view on 17 that. 18 KATE McGRANN: Is this a topic that 19 anybody from RTG ever spoke to you about? 20 JOHN MANCONI: In general terms, they 21 would -- you know, they were worried about cash 22 They were late, and when you are late, you 23 have got a cash flow situation. 24 And so they were stressed in that 25 regard, yes.

1 KATE McGRANN: And in the general 2 conversations that you had with RTG about its 3 worries about cash flow, did anybody say anything 4 to you about the impact of those concerns or the 5 cash flow reality on the construction of the 6 system? 7 JOHN MANCONI: Not that I recall. Tt. 8 was more sharing of, you know, this is difficult on 9 them, and then obviously you just know that when 10 you are delayed, again, it is no different than a 11 renovation of a house. The longer it takes, 12 somebody is carrying the cost of that. And the way 13 the P3 works is that that risk is not on us. 14 on them. 15 KATE McGRANN: With the benefit of 16 hindsight, in your view, was it in the best 17 interests of the project for the risk to be 18 transferred, the geo-technical risk, completely to 19 RTG? 2.0 JOHN MANCONI: Absolutely. 21 And why do you say that? KATE McGRANN: 22 A couple of things. JOHN MANCONI: 23 They were paid to take that risk on. The value of 24 that I will never know, but they were paid for 25 that.

1 And the City did some really good work 2 on the geo-technical piece where we provided 3 additional bore hole soil information to them, more 4 than what is typically done in a tunnel. And the 5 City didn't have that expertise. We were not in the tunnel business. We did not know how to manage 6 tunnel construction, nor did they want to. And we 7 8 went into it eyes wide open, as did every bidder in 9 terms of that. 10 And had we not done that risk transfer, 11 the City would be in deep financial challenges when 12 that sinkhole occurred and the downstream effects 13 on that. 14 So you know, one of the core principles 15 of P3 is risk transfer and looking at those risks, 16 and it was absolutely the right decision to do at 17 that point in time. 18 Do you feel that the KATE McGRANN: 19 City was accurately advised of the impact of the 20 sinkhole on the project and the progress of 21 construction following the sinkhole? 22 From the consortium? JOHN MANCONI: 23 KATE McGRANN: Yes. 24 JOHN MANCONI: My view is everybody was 25 trying to do the best they could, but keep in mind

1 that that's a variable that they planned for it and 2 they responded very well it to. 3 But it was a very fluid situation. So 4 they were sharing information to the best of their 5 ability at that point in time. 6 KATE McGRANN: And do you feel that 7 following the sinkhole through to public service, 8 RTG continued to provide the information that it 9 had about the schedule accurately to the City? 10 JOHN MANCONI: The schedule was 11 stressed. I just don't know because I don't know 12 if they knew exactly why it was stressed or where 13 it was stressed and how to recover it. I just know 14 that there was good dialogue where we were very 15 receptive in sharing with them on ideas and how to 16 recover the schedule. 17 Hence bringing in experts to help them 18 think through things such as the tunnel ventilation 19 system, the escalator system, and so forth. 20 So again, at that point in time, there 21 was good dialogue. It is a big, complicated 22 project, that, you know, had a sinkhole occur to 23 it, and so there was adjustments. There was 24 leadership changes on their front. They were 25 There were some advice that they heeding advice.

1 were saying, No, thank you, we are not going to 2 listen to what the City has to offer. 3 KATE McGRANN: Do you remember any 4 particular instances of advice that the City 5 provided to RTG to help recover the schedule that 6 RTG did not follow? 7 JOHN MANCONI: We were encouraging them 8 to triple-shift and work weekends, and you know, 9 again, I don't know why it was no, whether it was 10 cash flow or whether it was resource availability, 11 but they said, We hear you, thanks very much. 12 were doing some extra shift work, but in certain 13 areas, like I know in Rideau they were working 14 triple shifts and so forth. 15 Our thoughts and our view was triple 16 shift across the whole network or do it station by 17 station and start to increase productivity, because 18 it was the ease of construction work that was 19 lagging behind also. 20 KATE McGRANN: Did the Independent 21 Assessment Team ever agree with the schedule and 22 the projected revenue service availability dates 23 that were being provided by RTG? 24 JOHN MANCONI: No, our forecast was 25 always longer.

1 KATE McGRANN: And did that disconnect 2 between RTG's forecasted schedule and the 3 Independent Assessment Team's forecasted schedule 4 have any impact on the relationship between the 5 City and RTG? 6 JOHN MANCONI: I wouldn't know. Т 7 mean, things -- again, there was collaboration 8 right until public launch, so I can't talk on their 9 behalf. 10 KATE McGRANN: Was there a loss of 11 trust on the part of the City and the information 12 that RTG was providing about the schedule? 13 JOHN MANCONI: Loss of trust? 14 KATE McGRANN: Yes, did the City stop 15 trusting RTG's projections when it came to the 16 construction schedule? 17 JOHN MANCONI: You know, those are 18 powerful words. I would describe it as -- I am 19 very conservative in projecting timelines. I think 20 if there was any frustration, it wasn't about 21 It was about stop being overly optimistic trust. 22 that you can recover the schedule to the degree 23 that you can without doing some significant things. 24 And to their credit, they did do some 25 significant things. There was a glass issue, and

1 they templated the glass and procured it locally. 2. So again, it is not lack of trust. It 3 was I think they were overly optimistic that they 4 could recover parts of the schedule that we 5 disagreed with. 6 KATE McGRANN: Did you ever have any 7 conversations with anyone at RTG about the source 8 of their optimism, why they believed that they 9 could meet the dates that they were sharing with 10 the City? 11 I had lots of JOHN MANCONI: 12 discussions with Peter Lauch about, you know, 13 cautioning him to not be overly optimistic and what 14 his thought was in terms of what led to that 15 optimism, and so forth, and I think some things 16 they were doing to feed that optimism, such as 17 additional resources or expertise. They were open 18 to suggestions. 19 And did he share with KATE McGRANN: 20 you why he believed that his schedule was correct, 21 despite what the work of the IAT team was showing? 22 JOHN MANCONI: No, I think him and his 23 advisors were -- they saw our work. They believed 24 where they were. And it was just a professional 25 difference of opinion in terms of what our

1 assessment was. 2. KATE McGRANN: Several completion dates 3 were announced by the City that were not achieved. 4 Was the IAT consulted about the likelihood of 5 meeting those dates before the City shared those 6 dates with the public? 7 JOHN MANCONI: Well, remember, the 8 dates come from RTG, and yes, we did our 9 assessments of those and, you know, Mr. Lauch, 10 including at public meetings, he committed to dates 11 that they didn't achieve. You would have to ask 12 them as to what led them believing they could 13 achieve those dates. 14 KATE McGRANN: So was it the case that 15 RTG was publicly announcing dates and the City had 16 no ability to have any effect on those 17 announcements, whether they should be made or not? 18 JOHN MANCONI: So if their position, 19 and just like the first one, they believe they can 20 achieve it, that they could, and so when Mr. Lauch 21 promised, and I can't remember which one it was, 22 but at one of the committees that we'll achieve the 23 next date, perhaps what he had in mind was 24 additional resources that we didn't have eyes on. 25 They don't have to share all that information with

1 us, so he could have done acceleration work. 2 could have gone to triple shifts, or he could have 3 brought in additional resources, or he could have 4 seen something that we didn't see. 5 So it is -- again, it is their 6 construction schedule to manage, and if they 7 believe they can achieve it and they want to 8 publicly say that, they say that. Our job is to 9 oversee it and make sure they are in compliance 10 with the Project Agreement. 11 KATE McGRANN: Can you speak about the 12 repercussions for the City when completion dates 13 were announced for the project that were not met? 14 JOHN MANCONI: So as the build 15 progressed, we made those bus changes that I talked 16 to you about before that caused pain to our 17 customers. 18 The minute they announced launch dates, 19 we had to make certain changes to incrementally 20 change the bus system for the customers. And then 21 ultimately when we peel away the three weeks of 22 parallel service, the final changes are 23 implemented. It was a conscious incremental change 24 to commutes. 25 When you announce a date and then you

1 say, Oops, we didn't make it, which happened 2 multiple times with RTG, and you are a customer, 3 you ask yourself, Why did you put me through that 4 pain if I have to wait yet again 'x' number of 5 That is what led to a lot of the uproar. months? 6 You know, the Councillors felt the brunt of that 7 because they would call the Councillors and say, 8 You just changed my bus route, but now I hear that 9 is not going to take effect for another 'x' number 10 of months. 11 So that was the pain that our customers 12 would feel. And staff, they would be demoralized 13 in terms of nobody wants to take a customer through 14 pain. 15 KATE McGRANN: Would it be fair to say 16 that every time a publicly announced date is not 17 met, the pressure to meet the next date is 18 increased? 19 JOHN MANCONI: No, the empathy is 20 always there. The pressure to achieve a date is 21 It is a very -- we engrained in our not pressure. 22 culture that the path to public launch was revenue 23 service availability, compliance with the Project 24 Agreement, Independent Safety Certifier signing 25 off, Independent Certifier signing off on the trial

1 running, and then all our programs associated with 2 the RAMP program in terms of all those drills that 3 we did and the simulation with live loads and so 4 forth. 5 So it was a very structured process of 6 those are the boxes that we need to be in full 7 compliance with to get to where we need to get to. 8 The public pressure is not pressure to 9 deviate from those. It is about being empathetic 10 and understanding and knowing that those customers 11 are going through a change in their commute. 12 KATE McGRANN: Was there a way forward 13 at any point, in your view, in which the interim 14 dates that are missed are not announced and a more 15 realistic view of the schedule is taken and a more 16 realistic date is announced, avoiding the 17 disappointment to the public and all of the 18 implications that you have just described? 19 JOHN MANCONI: Hindsight being 20/20, 20 they couldn't do what you have just suggested 21 because of that initial delay, because that initial 22 delay, the May -- is it a 2018 date? Please 23 correct me if I am wrong. The first contractual 24 date that they had signed up for. 25 That was the beginning of the most

significant change for the bus route system, so remembering we were being told we are going to make it, we are going to make it, we know we are going to make it, that set off that chain of events that I just talked to you about. You were in that pain threshold for the customer because leading up to that was incremental changes of the bus rapid transit system being closed down for conversion. You couldn't reverse it back.

And trust me, we spent a lot of time thinking what else can we do if there is another delay. Is there a way to ratchet this back. And again, bus computers, rail commuters, you don't want your commute to change, right. We like structure. We like routines. So throttling back and reinstituting, we didn't do that. We threw extra buses at the service, as you know, the 40 buses that we were supposed to dispose of. We brought those on board to create extra capacity and so forth when we had problems.

So we were always thinking, to your point, what could we do differently, and there wasn't anything that stood out because going back and re-engineering the bus route changes would cause more pain and more disruption and confusion.

1 Remembering that doing bus changes, it 2 is an algorithm, right. It is a bus schedule. 3 This isn't a small bus system. It is a thousand 4 buses. You need to do scheduling. You need to do 5 decal changes. You need to do the app changes. 6 You need to push through the website, the portals, 7 all their Twitter feeds, all that. So that 8 takes -- a bus schedule change takes, I can't 9 remember exactly now, I think it is around six 10 months. 11 So A, you couldn't do it; B, you could 12 have been causing more change and more confusion 13 and more pain; and C, the logistics of doing that 14 was very, very complicated. 15 But we did always ask ourselves, What 16 could we do. And hence, you know, the Red Vest 17 Ambassadors, the extra buses and so forth. That 18 was all to take care of our customers. 19 KATE McGRANN: RTG made a claim for a 20 delay event and a relief event in connection with 21 the sinkhole, right? 22 JOHN MANCONI: I am going to ask Peter 23 if I should be commenting on that. 24 PETER WARDLE: Well, let's just take it 25 question by question, Mr. Manconi. I don't think

1 there is anything wrong with this question. This is public information. 3 JOHN MANCONI: Okay. Well, they put in 4 claims, yes. 5 KATE McGRANN: Were you involved in the 6 City's decision to deny those claims? 7 JOHN MANCONI: Yes, I was. 8 KATE McGRANN: At any point, was there 9 any consideration of making any accommodation 10 beyond the terms of the Project Agreement in the 11 interest of the project overall? 12 R/F PETER WARDLE: I think I am going to 13 have to decline to have the witness answer that 14 question on the basis that it would get him into 15 privileged advice. 16 KATE McGRANN: And just for the record, 17 would you confirm that is a refusal? 18 PETER WARDLE: Yes. 19 KATE McGRANN: Did the outstanding 20 claims in respect of the sinkhole have any impact, 21 in your view, on the information that RTG provided 22 to you about its construction schedule following 23 the denial of --24 No, again, the JOHN MANCONI: 25 relationship was collaborative and they were trying

1 to get to revenue service availability and substantial completion. 3 KATE McGRANN: We'll take the morning 4 break now. 5 So we can go off the record. 6 -- RECESSED AT 10:48 A.M. 7 -- RESUMED AT 11:00 A.M. 8 KATE McGRANN: At any point during the 9 construction stage of Ottawa's Light Rail Transit 10 System, did the City have any concerns that OLRTC 11 was not sufficiently resourced to complete the 12 construction in compliance with the Project 13 Agreement? 14 JOHN MANCONI: The construction, no. 15 KATE McGRANN: Were you involved in or 16 aware of any discussions with anyone at RTG or its 17 contractors about the level of resourcing for OLRTC 18 with respect to the construction work that was 19 being done? 2.0 JOHN MANCONI: Again, back to the 21 observations we made with the IAT team about 22 capacity, about extra resources being brought on to 23 finish the job, those were our comments there. 24 In what context did KATE McGRANN: 25 those discussions take place?

1 JOHN MANCONI: When we are out 2 visiting, when we are doing our independent 3 assessment work on the -- how should I say it? 4 straight civil work piece, stations, as an example, 5 it was our observation, our view, again, not 6 knowing their cash flow situation or their 7 constraints, that additional resources could gain 8 them traction on their critical path and on their 9 schedule overall. 10 KATE McGRANN: And what was the 11 response to those suggestions by the City and its 12 advisors? 13 JOHN MANCONI: I think they were 14 neutral on it. They weren't -- you know, they 15 would say thank you, we are doing what we need to 16 Again, they brought in a new Project Director, 17 and his name escapes me right now, but he knew that 18 Rideau Station was a very critical, complicated 19 build, with a lot of CBTC wiring and SCADA wiring 20 and so forth. So he brought extra resources to 21 that. 22 They were very appreciative to working 23 collaboratively on workshops in terms of the tunnel 24 ventilation system and what we could do to 25 accelerate that.

So again, it was a collaborative effort. They were receptive. But also they had the right to say, Thanks for your opinion, we are doing what we have got to do.

KATE McGRANN: And other than the suggestions made in the context that you just described, did the City take any other steps to question the resources that OLRTC was devoting to the construction of the system, manufacturing the vehicles, et cetera?

JOHN MANCONI: Well, we made comments and we made suggestions in terms of ensuring they had experienced people that had built and overseen these construction projects.

We raised concerns about there was a lot of changes at the Superintendent level, for example, at stations. There was -- seemed to be a bit of turnover there. But again, we don't know the details associated with that. That could have just been people moved on to other jobs.

And, you know, general observations on making sure that critical infrastructure such as the catenary is checked and triple-checked and that you have the appropriate resources on that, and then we did our own oversight. We provided them,

1 for example, a catenary assessment that we shared with them that we paid for independently. 3 Were there other KATE McGRANN: 4 assessments that the City did independently that it 5 shared with RTG? 6 JOHN MANCONI: We brought in a track 7 switch expert -- not a track switch, sorry. 8 terminology escapes me. It is an old technology 9 piece. Track circuit expert. 10 We brought in tunnel ventilation 11 experts, and we brought in track experts, and some 12 of it was workshop facilitation. Some of it was go 13 out and assess it and give them a view and so 14 forth, again, all of which they were very 15 receptive. 16 KATE McGRANN: And all of those experts 17 that you just described were brought in during the 18 construction phase? 19 JOHN MANCONI: Correct. 2.0 KATE McGRANN: What led the City to 21 decide to bring in these experts? 22 JOHN MANCONI: A strong belief in a 23 fresh set of eyes, more expertise that, again, has 24 built, managed and run these operations. 25 about just bringing in perspectives and making sure

1 that we are all coalescing around the right 2 challenges and the right solutions. 3 KATE McGRANN: Were these experts 4 brought in in response to any challenges that were 5 being seen in the progress of the construction or 6 manufacturing of the system? 7 JOHN MANCONI: An example is the tunnel 8 ventilation system, we were very concerned about 9 the lead time on those systems, the installation, 10 the completion of the Rideau tunnel, so we brought 11 in a tunnel ventilation expert on how to help them 12 along with that. 13 We brought in the fire department on 14 testing and commissioning the fire alarm, the 15 e-telephones, the emergency telephone phones that 16 you would have seen in many of the reports and we 17 just brought them in to do that partnership piece 18 that we talked about. 19 KATE McGRANN: Why bring the catenary 20 expert in? 21 JOHN MANCONI: Pardon me? 22 Why did you bring the KATE McGRANN: 23 catenary expert in? 24 Oh, there was concern JOHN MANCONI: 25 about the catenary in terms of the install quality,

1 not the material, and so part of our Independent 2 Assessment Team were out doing a field assessment. 3 We said, we'll bring in our own set of eyes, and 4 that individual did an assessment of the catenary 5 system and we shared that information with RTG and 6 it helped them in terms of addressing some of the 7 issues in terms of the catenary system. 8 KATE McGRANN: Did that expert provide 9 any recommendations about -- let me start with 10 Did the expert that you brought in identify 11 any concerns about the catenary system, 12 installation, quality of materials, anything? 13 JOHN MANCONI: There was a report done. 14 I don't remember the specifics of it. I believe we 15 either gave the report to RTG or we shared the 16 findings of the report. 17 KATE McGRANN: And was there any 18 follow-up done by the City to see if any findings 19 and recommendations were implemented by RTG? 2.0 JOHN MANCONI: Every subsequent IAT 21 review, we were looking at the catenary in terms of 22 We were having discussions with RTG about 23 our observations on what had improved, what some of 24 the outstanding challenges were, such as the 25 additional carbon wear. We saw carbon wear on the

1 vehicles and so forth. So yes, there was ongoing 2 dialogue with those. 3 And did you just KATE McGRANN: 4 continue to see challenges with the catenary system 5 through to public launch? 6 JOHN MANCONI: We saw in the winter of 7 the first year there was concern of carbon buildup 8 on the top of the vehicles which can be attributed 9 to certain wear on the catenary and the pantograph. 10 The pantograph is the arm that connects the vehicle 11 to the wire. 12 And so when there is awkward wear 13 patterns on that, it can lead to carbon on the 14 roof, the black soot on the roof, so but that was 15 early in the first winter of the public launch. 16 KATE McGRANN: Let me put it this way. 17 So you said you continued to see challenges with 18 the catenary. At any point before the public 19 launch, did the City believe that all issues with 20 the catenary had been identified and resolved? 21 JOHN MANCONI: We continued to make 22 observations about the catenary/pantograph 23 interface, so where those two points touch, to 24 which Alstom and others explained and said they had 25 no concerns with those. They had looked at it.

1 There was no issues for us to be concerned about. 2. KATE McGRANN: And did those assurances 3 alleviate the City's concerns? 4 JOHN MANCONI: What they shared with us 5 made sense at the time, and again, I was depending 6 on catenary experts to look at those things. 7 there was nothing, you know, during all those 8 thousands and thousands and thousands of miles of 9 trial running or kilometres of trial running and 10 post trial running, none of the issues that 11 occurred post launch were occurring during our 12 testing and trial and commissioning phase. 13 KATE McGRANN: Did any issues that you 14 recall appear for the first time during trial 15 running? 16 JOHN MANCONI: All the issues post 17 launch did not occur during trial running. 18 My question is KATE McGRANN: 19 different. 2.0 JOHN MANCONI: Okay. 21 KATE McGRANN: Did any issues 22 experienced during trial running appear for the 23 first time during trial running? 24 JOHN MANCONI: You would have to ask 25 the assessment team that, you know, signed off on

1 the scorecard. There was no significant issues 2 that was brought up to the RAMP, other than those 3 days when we stopped. 4 KATE McGRANN: When you refer to the 5 assessment team, are you talking about the Trial 6 Running Review Team? 7 JOHN MANCONI: Yes, the Trial Running 8 Review Team. KATE McGRANN: At any point during 10 construction did the City ask RTG to provide more 11 information about its efforts to recover the 12 schedule? So beyond the regular schedule updates, 13 beyond the P26 information that you referenced, was 14 there a request for a recovery plan or anything 15 like that? 16 JOHN MANCONI: Absolutely, and they 17 were sharing and not waiting until formalization of 18 those things, but they were sharing through regular 19 updates, for example, what they were doing at 20 Rideau Station with the extra shifts, with the 21 extra -- they brought in new contractors to string 22 wire because there was literally hundreds of 23 kilometres of wires that had passed through the 24 Rideau Station, as an example, and they were

sharing that information with us.

1 KATE McGRANN: Did the Independent 2 Assessment Team assess the recovery? 3 Every time we did an JOHN MANCONI: 4 assessment, we assessed everything that they shared 5 with us, and we also asked for additional 6 information. 7 KATE McGRANN: And I think you said 8 earlier that the Independent Assessment Team never 9 agreed with RTG's projected dates. Was their view 10 of the recovery plan -- what was their view of the 11 recovery plan? Did they agree that that schedule 12 was feasible? 13 JOHN MANCONI: So there was certain 14 elements that we -- that the team appreciated and 15 agreed with, and there were certain elements that 16 we were less than optimistic on. But it was a 17 fluid process, right. I can't remember how many of 18 those we did, but we did a lot of assessments. 19 And as we progressed through, they 20 started to knock off those issues that were a big 21 concern, which is no different than any other rail 22 project. You come down. You start to knock off 23 those big items and you are always going to be left 24 with some things at the end. 25 And so they were progressing through.

1 So for example, the escalators, we were very, very 2 concerned about the escalators, and you know, they 3 had to do a major re-engineering and reconstruction 4 on those to get provincial approval for escalators 5 from the governing body. 6 And that was nothing -- none of us 7 could deviate from that. That is a 8 provincially-regulated function, that they regulate 9 elevators and escalators, and they had a major 10 challenge there, and to their credit, they sorted 11 their way through it. They brought in experts. 12 They listened to our panel. They put additional 13 resources and so forth. 14 KATE McGRANN: You mentioned that, you 15 know, there is disagreement between RTG and the 16 Independent Assessment Team about the schedule. Ιt 17 is a fluid process. 18 At some point did you become frustrated 19 with the information that RTG was providing about 20 the schedule and how it was going to recover it 21 after dates had been missed and things like that? 22 JOHN MANCONI: No, my frustration came 23 from when they were made aware of challenges from 24 us, they were always very good at either explaining

why or why they were not addressing them or they

would go and address them but what would sometimes happen is things that they had previously corrected would then flare up and that raised concerns about did they have enough resources.

And again, it is not necessarily trades and frontline workers, but was there enough focus on ensuring that once you resolve the problem - you know, as I said, we knocked them off - did they stay congruent and kept managing that while dealing with the other challenges. That is where my frustration came from, because they had the expertise. They had access to some of the best expertise in the industry.

And when we would tell them bring in some experts, like they did with SNC-Lavalin from the west coast, they brought in some experts on the tunnel ventilation system and worked hand in hand with us.

KATE McGRANN: You know the focus of the Commission's work is looking at the breakdowns and derailments that occurred on the system after it launched public service. Can you give me an example of an issue that was resolved that became an issue again that was related to the reliability or safety of the running of the trains?

1 JOHN MANCONI: On the safety piece, 2 they were very safety conscious. I'll give you a 3 very simple, straightforward example that made it 4 They forgot to turn off the outdoor to the news. 5 water fountains as part of their winter shutdown, 6 and we had spent countless hours with them on 7 winter readiness and, you know, checklists, 8 operational shutdowns, what are you doing. And lo 9 and behold, they forgot to shut the water valves 10 off on the outdoor water fountains and they froze 11 and, you know, water spillage and ice everywhere, 12 and it made the news, to which they went, Yeah, we 13 missed it. It should have been on the checklist. 14 It was on the checklist. We didn't do it. 15 And so those are the examples of the 16 things that, again, were organized, congruent, 17 documented, and then someone lost focus on those. 18 KATE McGRANN: Any examples of an issue 19 that you had been advised had been corrected but 20 then flared up again with respect to the 21 reliability of the vehicles and running the 22 vehicles? 23 JOHN MANCONI: Concern about yard 24 As you know, we had some derailments in movements. 25 There is a curve in particular, I don't the yard.

1 know exactly where, I don't have that level of 2 detail, but that is an example of there is an 3 issue. Our safety officer issued the notice. 4 were looking into it. And then we had repetitive 5 yard derailments in the same location. It is 6 problematic. It is concerning. 7 KATE McGRANN: And with respect to the 8 running of the vehicles on the system itself, like 9 the actual passenger line? 10 JOHN MANCONI: Some frustration on the 11 whistleblowers, you are aware of that situation, 12 where the cameras still are not resolved in terms 13 of the platform door cameras. That is something 14 that has been lingering, well, since the launch. 15 In terms of vehicles in the morning, 16 there is a checklist that you have to -- before the 17 handover occurs to us, has everything been done on 18 the vehicles. There is a data logger, for example, 19 in the yard that needs to be reset on a certain 20 frequency, because we had an interruption on 21 service one time. Somebody forgot to reset that 22 data logger. 23 Again, an issue that caused service 24 interruption, not a safety infraction, but service

interruption, it gets identified.

They jump all

1 over it immediately. Like there is never 2 hesitation. They resolve it, root cause analysis, 3 all those good things you do in engineering. 4 then fast forward four, five, six months later, 5 whatever that frequency is, somebody forgot to 6 reset the data logger, as an example. 7 Are all of the issues KATE McGRANN: 8 that you are describing related to human error, 9 failure to follow an operating procedure, take a 10 step? 11 JOHN MANCONI: We don't have that line 12 of sight, right, because I don't have that level of 13 detail. Is it checklists not being followed? 14 it automated work orders not being generated? Ι 15 don't know. Human error? I don't know. 16 KATE McGRANN: A couple of questions 17 about testing and commissioning. 18 JOHN MANCONI: Uhm-hmm. 19 KATE McGRANN: Did the City have the 20 opportunity to review RTG's testing and 21 commissioning plans when they were first put 22 together? 23 There is a working group JOHN MANCONI: 24 that developed that testing and commissioning plan 25 that was because of our -- the PA barely spoke to

1 it. It just talked about 12 days, and we were 2 proactive and we wanted to have a clearly 3 documented process that both parties agreed to well 4 in advance. There was a working group that was 5 assembled. 6 KATE McGRANN: So I think you are 7 referring to the trial running; is that right? 8 JOHN MANCONI: Correct. 9 KATE McGRANN: I am speaking about the 10 testing and commissioning of the various components 11 of the system, and then the integration testing 12 that took place in advance of substantial 13 completion, I believe. 14 JOHN MANCONI: Okay. 15 Do you know what I am KATE McGRANN: 16 speaking of? 17 Okay, yes. JOHN MANCONI: 18 KATE McGRANN: Did the City have the 19 opportunity to review the testing and commissioning 20 plans that RTG prepared when they were first put 21 together? 22 I would -- I don't have JOHN MANCONI: 23 that level of detail. You would have to ask 24 Michael Morgan and his staff. 25 What was your KATE McGRANN:

1 involvement in the testing and commissioning that 2 took place prior to substantial completion? 3 JOHN MANCONI: The RAMP room was very 4 specific that everything in the PA that required 5 testing and commissioning, sign-off or 6 certification needed to be done, so it was an 7 outcome reporting through to the RAMP room, and 8 again, that level of detail I don't have. That 9 would be a Michael Morgan or his staff. 10 KATE McGRANN: Did you attend as a 11 general rule all of the RAMP meetings? 12 JOHN MANCONI: Yes. 13 KATE McGRANN: Did you understand that 14 there was any compression of the integration 15 testing in particular as a result of delays in the 16 construction schedule? 17 JOHN MANCONI: Which integration 18 testing, sorry? 19 Integration of the KATE McGRANN: 20 systems on the line, like the entire subway 21 system -- or LRT system? 22 JOHN MANCONI: Well, there was always 23 talk about what would happen if there was delays to 24 construction and what would be compressed. 25 With all these delays, I don't know

1 what level of compression occurred. There was 2 nothing that got escalated to me that said we are 3 compromising anything in terms of testing and 4 commissioning that is not in compliance with the 5 PA. 6 KATE McGRANN: And would you expect 7 anything along those lines to be escalated to you? 8 Oh, absolutely. JOHN MANCONI: 9 Anything that was not in compliance with the 10 Project Agreement, there was a requirement to 11 escalate to the RAMP room. 12 KATE McGRANN: Did you understand more 13 generally that there was compression of the testing 14 and commissioning schedule that originally had been 15 put in place? 16 JOHN MANCONI: So compression of any 17 schedule is not uncommon. The issue is what is the 18 level of complexity. What do you do to manage that 19 Do you do testing at night? compression? 20 do additional testing? Do you do testing on the 21 weekends? 22 And again, I was dependent on my 23 experts and my technical staff to ensure that all 24 testing was done in accordance with best practices 25 and the Project Agreement.

1	KATE McGRANN: Did you understand that
2	there was compression of the testing and
3	commissioning schedule on this project?
4	JOHN MANCONI: I knew there was
5	compression. I don't know the exact elements of
6	what was compressed and how that compression was
7	managed.
8	KATE McGRANN: I understand that there
9	were monthly testing and commissioning meetings
10	that took place up until June 2018; are you
11	familiar with what I am talking about?
12	JOHN MANCONI: I believe so, yes.
13	KATE McGRANN: And then I understand
14	that those meetings stopped in June of 2018. Are
15	you aware of that?
16	JOHN MANCONI: I am not aware of that.
17	KATE McGRANN: Are you aware of those
18	meetings stopping at any point in time?
19	JOHN MANCONI: I am not aware of that.
20	KATE McGRANN: Were there any
21	particular complications experienced in the testing
22	and commissioning of this project that were brought
23	to your attention as areas of potential concern?
24	JOHN MANCONI: No, other than the
25	overall schedule in terms of how do we ensure we do

- all the testing. For example, on the vehicles,
  there was a formal handover process for the
  vehicles, and how we kept track of that through the
  RAMP room and so forth.
  - There was general concern about the schedule overall, obviously, because there needed to be a lot of work done in the time frames that were set forth.
  - KATE McGRANN: Was the City -- let's say from the beginning of 2019 onwards, was the City ever advised of any issues with respect to the capacity of the maintenance and service facility to do everything that was being done in there, assembly of vehicles, maintenance of vehicles, et cetera?
  - JOHN MANCONI: I don't remember the exact date. I don't think it was 2019. I think it was more like 2020. Again, I don't know the exact date. But out of the blue Alstom reached out to me to say that they were going to speak to OLRTC, RTG or whoever they had the contract with to move the manufacturing out of the MSF.
  - I immediately escalated that to Peter Lauch, and he said, Yes, we are under discussions with them to move the manufacturing of the trains

1 out of the maintenance storage facility to their 2 new location in Toronto. I don't know exactly 3 I think it is Brampton or somewhere there. 4 KATE McGRANN: Prior to that 5 out-of-the-blue conversation in 2020, was the City 6 ever advised of any pressure or demand on the 7 manufacturing and storage facility as a result of 8 the various activities that were taking place in 9 that facility? 10 JOHN MANCONI: Quite the opposite. 11 Alstom was touting it as their model. They wanted 12 to expand it worldwide where they would assemble 13 vehicles and maintain them. 14 And again, I don't know the exact date, 15 whether it was late 2019 or 2020, that I believe 16 there was a phone call from Alstom on that. 17 said, We need to move out of there because there is 18 too much going on. 19 But leading up to that, I was not aware 20 of any concerns, but it was a unique model, there 21 is no doubt about that, where vehicles were being 22 assembled locally, and then put into service. 23 KATE McGRANN: Did any of the City's 24 advisors ever raise any concerns about the ability 25 of the MSF to support all of the activities and

1 demands that were being made on it? 2. JOHN MANCONI: Not that I recollect. 3 KATE McGRANN: Now, I understand that 4 RTG first applied for substantial completion in May 5 of 2019; is that what you recall? 6 JOHN MANCONI: You have to forgive me, 7 there was a lot of dates and a lot of moving -- so 8 if that is what the documentation shows. 9 KATE McGRANN: Heading into -- let's do 10 it this way. In the spring of 2019, so April, May, 11 can you speak to whether any issues were being 12 observed with the vehicles at that point in time? 13 JOHN MANCONI: Not on my level, other 14 than there was a lot of vehicles that needed to get 15 to that green status, because we have the 16 scorecard, about how many vehicles were completed, 17 and to get to green, you know, you had to be 18 literally defect-free other than minor pieces. 19 So what the RAMP room was talking about 20 was issues that were coming up, mostly minor, such 21 as door handles on the cab door, heat on either the 22 westerly or the easterly direction cab because you 23 are facing the sun, sun visors, things like that, 24 oh, windows in the cab, the operator cab, whether 25 we could customize it so that they could have fresh

1 air. 2. There was certainly a heating and 3 cooling issue in the operator cab in terms of which 4 direction the train was heading, if it was getting 5 sun all afternoon and so forth. 6 Other than that, there was nothing 7 major on the vehicles that were on the tracks that 8 was being brought to my attention. A lot of work 9 to get all the vehicles done leading up to 10 substantial completion and revenue service 11 availability. 12 KATE McGRANN: And in terms of the work 13 needed to get the vehicles done, there were 14 vehicles that were still being built? 15 JOHN MANCONI: Well, "built" is a loose 16 I mean, they were -- at the tail end they 17 were all built. There was things that needed to be 18 finalized in the vehicles. 19 KATE McGRANN: And when you say "at the 20 tail end they were all built", when, to your 21 understanding, were all of the vehicles built, 22 leaving aside retrofits and things like that? 23 JOHN MANCONI: We would have to check 24 the records. There is records on -- there 25 is -- Richard Holder had this specific process for

1 when he accepted vehicles and under what 2. conditions. You would have to ask him. 3 KATE McGRANN: Was it your 4 understanding that retrofits were required for the 5 vehicles all the way through trial running and into 6 revenue service availability? 7 JOHN MANCONI: There was things that we 8 agreed to that could come after the fact, and in 9 fact, there was new things that occurred after 10 revenue service such as strap hangers and things 11 like that. 12 When you say there were KATE McGRANN: 13 things that we agreed to after the fact, after what 14 fact? 15 JOHN MANCONI: So an example was I 16 believe operators were asking for a fresh air 17 window adjustment. I think that is something that 18 we all realized we could not do for the launch and 19 we said we would do that afterwards. 2.0 KATE McGRANN: Are you aware of any 21 other retrofits that were agreed to to the vehicles 22 before public launch to be completed after? 23 JOHN MANCONI: There is a list of those 24 that Michael Morgan would have documented. 25 believe another example was the cab door

1 reinforcement, because the glass was -- under 2 certain conditions wasn't holding up and so there 3 was a reinforcement process. I believe there was a 4 hinge issue that was causing the glass to come 5 loose or crack. 6 KATE McGRANN: If I refer to the Minor 7 Deficiencies List, do you know what I am referring 8 to? JOHN MANCONI: Yes. 10 KATE McGRANN: And it is my 11 understanding that that was a list of outstanding 12 issues that would not impact the safety, use or 13 enjoyment of the system but needed to be addressed; 14 is that a fair summary of --15 JOHN MANCONI: I believe so, yes. 16 KATE McGRANN: Who was in charge of 17 reviewing that list on the City's side? 18 JOHN MANCONI: Michael Morgan and his 19 team. 2.0 KATE McGRANN: Was the IAT involved in 21 advising on the contents of that list? 22 JOHN MANCONI: They could have been 23 indirectly. Michael would have provided us a 24 summary of what would have been on that list. 25 Can you explain what the KATE McGRANN:

1 Independent Certifier's role was with respect to the Minor Deficiencies List? 2 3 JOHN MANCONI: I don't have the exact 4 wording on what the IC would have done on that. 5 know that they have to sign off on substantial 6 I would have to refer back to -- if completion. 7 Peter knows or back to the Project Agreement. 8 don't have the specifics in front of me. 9 That is okay. KATE McGRANN: I am iust 10 trying to understand what your understanding was. 11 We can't ask you recite the Project Agreement, 12 that's not fair. What did you understand the 13 Independent Certifier's role was with respect to 14 the Minor Deficiencies List. 15 JOHN MANCONI: I viewed it more on the 16 substantial completion on the Project Agreement. Ι 17 knew that we could not move forward if we didn't 18 have the Independent Certifier and the Safety 19 Certifier signatures moving forward to get to 20 eventually public revenue service. 21 In your view, or do you KATE McGRANN: 22 know, if the City and RTG agreed to place an issue 23 on the Minor Deficiencies List, could the 24 Independent Certifier reject it from that list 25 because it was more serious than the list was

1 intended to hold? 2. JOHN MANCONI: As you can appreciate, 3 it is years ago. I honestly don't remember right 4 now what the role specific to that list of the IC 5 is. I would be speculating. 6 KATE McGRANN: With respect to the 7 first failed application that RTG made for 8 substantial completion, what in your view were the 9 most -- were the main indicators that substantial 10 completion had not been achieved? 11 JOHN MANCONI: I don't recall. I would 12 have to see the documentation. 13 KATE McGRANN: Do you recall having any 14 concerns about the safety or reliability of the 15 system at the time that the first application for 16 substantial completion was made? 17 JOHN MANCONI: When was the first 18 application made? 19 KATE McGRANN: I believe it was made in 20 May of 2019. 21 JOHN MANCONI: Yeah, again, I don't 22 remember the circumstances around that. I mean, it 23 was rejected. Again, I don't recall why it was 24 rejected. Obviously, there was major things that 25 we disagreed with.

1 I can remember we would have had 2 discussions on that, but obviously there was 3 Whether they were safety concerns, concerns. 4 whether they were completion concerns, I don't 5 know. I don't recollect. 6 KATE McGRANN: Do you know -- so 7 substantial completion is achieved, I believe, on 8 July 26th of 2019. There is still matters on the 9 Minor Deficiencies List at that point in time; is 10 that right? 11 JOHN MANCONT: Yes. 12 Were there any other KATE McGRANN: 13 outstanding matters to be addressed with respect to 14 compliance with the Project Agreement other than 15 those listed on the Minor Deficiencies List? 16 JOHN MANCONI: Michael's job was to 17 grab everything that we needed to, because you have 18 one shot to do that, and I believe it grabbed 19 everything that we were aware of at the time, 20 without the ability to forecast anything that was 21 going to occur post revenue service launch. 22 KATE McGRANN: Any known issues that 23 were not captured by the Minor Deficiencies List? 24 Not that I am aware of. JOHN MANCONI: 25 Am I right that there KATE McGRANN:

1 was a period of pre-trial running in between the 2 achievement of substantial completion and the 3 commencement of trial running? 4 JOHN MANCONI: I believe there was. 5 KATE McGRANN: What was the purpose of 6 the pre-trial running? 7 JOHN MANCONI: It is part of the 8 process, and it is practising. It is to test the 9 system, test the entire regime. 10 KATE McGRANN: And how did that differ 11 from trial running or testing and commissioning? 12 JOHN MANCONI: Well, trial running you 13 are into the prescribed -- you have seen the 14 scorecards and the process on that, and it has to 15 be certified by the Independent Certifier, and 16 there was the agreement that we had reached in 17 terms of how we would measure things, what we would 18 measure and so forth. 19 I don't recollect if during pre-trial 20 Troy and the team were doing any mock scoring or 21 not. 22 But again, it is not -- you know, 23 launching a rail system is keep running your 24 You want to shake out all the issues, 25 whether it is public-facing systems, whether it is

1 your SCADA, whether it is your vehicles. I know 2 the focus is always on vehicles, but it is an 3 integrated system. So you want the system to --4 you want to exercise the lungs of the system and 5 put it through its paces. 6 So the more you run vehicles and 7 systems and so forth, the more you get to see what 8 could possibly pop up because you can't anticipate this stuff. And until you get to full, live loads, 9 10 you'll never know what is going to come. 11 KATE McGRANN: What is a full, live 12 load? 13 When you go into full JOHN MANCONI: 14 revenue service. 15 KATE McGRANN: So --16 JOHN MANCONI: So in our case, AM and 17 PM peak where you have got the maximum number of 18 customers on your system. 19 When you refer to there KATE McGRANN: 20 are things that you won't find out until you have 21 got the full live load, are you referring only to 22 running the system according to schedule, or are 23 you referring to running the system according to 24 schedule with the volume of passengers that 25 were --

1 JOHN MANCONI: All of it. 2. All of it. KATE McGRANN: 3 JOHN MANCONI: All of it. All the 4 touch points are touched. Because we did lots of 5 mock simulation, including our buses, through the 6 transfer stations. 7 KATE McGRANN: Were there concerns 8 about the safety or reliability of the system 9 heading into the trial running period? 10 JOHN MANCONI: Nobody raised any safety 11 issues that -- to me or to the RAMP room that I am 12 aware of. And what was the second part, 13 reliability? 14 KATE McGRANN: Reliability. 15 JOHN MANCONI: Yeah, no, the one area 16 that we had concern was were they going to when the 17 live loads came have enough technicians available 18 when there was an issue, that they would be able to 19 respond quickly. 2.0 KATE McGRANN: So there were concerns 21 about whether RTM was sufficiently resourced to 22 respond to issues that arose during revenue 23 service? 24 Not sufficiently JOHN MANCONI: 25 resourced. Our position was you over-resource.

1 With a system as busy as this one, our view was 2 over-resource at the front end with technicians 3 because there will be problems that nobody can 4 anticipate, and that way you can have an on-board 5 technician on the vehicle, as an example, or switch 6 technicians that can address those issues 7 immediately. 8 They did not agree with that view. 9 KATE McGRANN: And when was that view 10 first shared by the City with RTM? 11 JOHN MANCONI: Constantly. It was 12 shared many, many times in the RAMP room leading up 13 to launch. It was an advice that was given from 14 people that ran rail systems and people like myself 15 that had done openings of buildings and so forth 16 where you over-resource it. That way you can 17 address problems as they occur, because we knew, 18 anybody that has opened up a rail system, you will 19 have issues that you can never, ever, ever simulate 20 through trial running, testing, pre-trial running, 21 commission. 22 There will always be things that come 23 up post launch that you are not aware of. 24 We are speaking in very KATE McGRANN: 25 general terms right now. Did the City provide any

1 specific information or advice to RTM in terms of what it would like to see by way of RTM's resources 3 on the ground to address issues that came up during 4 service? 5 Yes, we did. JOHN MANCONI: We 6 recommended to have a technician on every vehicle 7 and a technician at every switch. 8 KATE McGRANN: And the response that 9 was received to those suggestions? 10 JOHN MANCONI: No, they were not going 11 to do that. They did eventually increase a few 12 technicians for vehicles, and they at one point, 13 and I can't remember when but it was significantly 14 post launch, they added some switch technicians. 15 believe during the opening, they may have had some 16 extra technicians floating, but we were looking for 17 assigned technicians on the vehicles and assigned 18 technicians at the switches, to which --19 And then -- sorry, go KATE McGRANN: 20 ahead. 21 JOHN MANCONI: To which they could 22 listen to our advice, but again, this is a 23 public/private partnership and we cannot impose 24 that on them. 25 And that advice was KATE McGRANN:

1 provided in advance of the launch of public revenue service? 3 JOHN MANCONI: Yes. 4 KATE McGRANN: Was it provided in advance of the trial running phase? 5 6 JOHN MANCONI: I don't remember exactly 7 when, but it was suggested regularly and they did 8 provide some resources but not one on every 9 vehicle. 10 KATE McGRANN: You are speaking to the 11 need to over-resource so that you are prepared to 12 respond to unforeseen issues on the system. 13 JOHN MANCONI: Uhm-hmm. 14 KATE McGRANN: I would like to know 15 whether there were any known reliability issues 16 with the system heading into trial running? 17 JOHN MANCONI: There was vehicle 18 availability launching in the morning that appeared 19 to be about organization in the yard. So in other 20 words, the trains come back. You have to clean 21 them, inspect them, and then re-launch. 22 That was our -- you know, it is that 23 cadence that we were reminding them of in terms of, 24 you know, in the morning the term in rail is you 25 "make score". It means you produce the number of

1 trains, whether it is New York City or the City of 2 Ottawa, if you need 'x' number of trains, they are 3 ready to go. It was that cadence that we were 4 saying, you know, you don't seem to have that 5 cadence. Make sure that you meet those objectives. 6 So we were reminding them of the 7 importance of doing that in the morning. 8 KATE McGRANN: And so there is vehicle 9 availability issues when it comes to launching in 10 the morning, and you said that appeared to be about 11 organization in the yard. 12 JOHN MANCONI: Yes. 13 Was it your KATE McGRANN: 14 understanding that RTM was just simply not able to 15 get through the regular maintenance activities 16 required every evening in time to launch the trains 17 the next morning? 18 JOHN MANCONI: Well, that was earlier 19 on, and then during -- as you can tell by the 20 scores, they turned that around and focussed and 21 were able to do that very, very well. 22 And so they made score every day in 23 terms of the vehicle requirements. So they had the 24 skill sets. They had the resources. So they 25 obviously heeded our advice.

```
1
                They did bring in extra resources to
 2
    get to the launch, and so that led to them --
 3
    again, it is back to they were listening to our
 4
    advice and that perspective paid off because they
5
    were able to achieve the requirements of the trial
6
    running.
7
                KATE McGRANN: Other than the vehicle
8
    availability and the ability to meet score, as you
9
   put it, in the morning, were there any other known
10
    reliability issues with the system heading into
11
    trial running?
12
                JOHN MANCONI:
                                Nothing major that I can
13
    recall, no.
14
                KATE McGRANN: Anything about running
15
    the trains through the day, anything like that?
16
                                Nothing that I can
                JOHN MANCONI:
17
    recall.
18
                                Vehicle failures or
                KATE McGRANN:
19
    faults on the system during the day?
2.0
                JOHN MANCONI: Nothing that I can
21
    recall leading up to that, no.
22
                KATE McGRANN: Do you recall any of the
23
    City's expert advisors raising any concerns about
24
    the readiness of the system heading into trial
25
    running?
```

1 JOHN MANCONI: We were all concerned 2 about what I talked about before, make sure that 3 every issue, that you have pat down, that you have 4 got it under control, doesn't re-creep into the 5 space, because that was a theme that we had seen in 6 the past. 7 They responded on the resourcing, 8 over-resourcing for the launch, so they did step up 9 They did bring in resources to make technicians. 10 sure they could get and make score every day. 11 The consistency of that was that we 12 were concerned about in terms of will they sustain 13 it, and so it was good, good dialogue, you listened 14 to our advice, you have listened to the experts. 15 Now, don't drop it down. Don't -- you know, keep 16 going with that cadence that you did during trial 17 running. 18 As you are heading into KATE McGRANN: 19 trial running, were all of the items on the 20 Go/No-Go list coded green? 21 JOHN MANCONI: No, there was a process 22 for Go/No-Go, and I don't remember exactly when, 23 but leading up to a certain period, there 24 was -- that Go/No-Go was linked to a timeline, and 25 I'm sorry, I don't remember whether it was public

1 launch or whether it was trial running. 2 obviously leading up to that, there was -- they 3 weren't all green. There were some things that 4 were green very early on, there were some things 5 that were yellow and some things that were red. 6 KATE McGRANN: Do you recall if 7 anything was red heading into trial running? 8 It was green when it JOHN MANCONI: 9 needed to be green, whether -- I can't remember if 10 it was trial running or public launch. So whenever 11 it needed to and our process associated with that 12 Go/No-Go list, it was green when it needed to be 13 green, all of it. 14 KATE McGRANN: With respect to trial 15 running, I would like to understand how the 16 criteria that was applied at the beginning of trial 17 running and then throughout was determined. 18 So I think you mentioned earlier that 19 there was a working group, but can you just explain 20 to me how was the criteria determined for trial 21 running? And I will let you know before we get 22 into these questions, I have a copy of a 2017 23 criteria and a copy of July 2019 criteria that I 24 will show to you. I just don't want to interfere 25 with your answer.

1 JOHN MANCONI: Sure. 2. KATE McGRANN: So maybe you can start 3 generally and then we can go to the documents as 4 needed. 5 JOHN MANCONT: Sure. So when it was 6 raised to me that there was no specific criteria to 7 this trial running, my direction was very simple. 8 Get the experts in the room. Partner up with 9 OLRTC, RTG, RTM, and come up with measurable 10 criteria. 11 I was not involved in the development 12 of that document. The expertise came from those 13 that knew how to build, operate and maintain, and 14 it was done with our partner at the table. 15 that is how that document came into being. 16 KATE McGRANN: And just so that we 17 ensure that we are speaking about the same 18 document, if you bear with me for a second. Let me 19 know if you need me to zoom in on this at all, but 20 I am showing you a document COW442401 titled -- the 21 subject of which is: "Trial Running Evaluation 22 Process and, in quotes, "'Scorecard' Approach". 23 And the date attached at least is May 24 11, 2017. 25 Uhm-hmm. JOHN MANCONI:

1 KATE McGRANN: I am happy to scroll 2 through this so you can review it, but are you 3 familiar with this document? 4 JOHN MANCONI: In general terms, yes. 5 KATE McGRANN: And is this the document 6 that you were referring to when you said that 7 people got together in a room from the City, RTG 8 and its subcontractors and agreed to criteria? 9 JOHN MANCONI: Yeah, again, as you can 10 appreciate, at the General Manager level I wasn't involved in documents. I set the direction to say 11 12 I want measurable criteria so that we -- both 13 parties come out and we can demonstrate that we 14 have achieved the trial running period. 15 KATE McGRANN: Do you know how long it 16 took the parties to come up with this criteria? 17 JOHN MANCONI: I don't. There was a 18 lot of work that was done with it because most --19 one of the things I learned was that most people 20 don't have any criteria. 21 KATE McGRANN: Could you tell me what 22 you mean by that? 23 JOHN MANCONI: Some agencies just run 24 the trains, and then when they say we think we are 25 good to go, they are good to go. We wanted

1 measurable criteria to it, and that was an 2 eye-opener for me. So we put criteria to it. 3 But I don't know how long this took to 4 get to where -- it took -- they had a lot of 5 dialogue on it and a lot of perspectives. 6 KATE McGRANN: When you say that others 7 do not have criteria, are you aware of any projects 8 in which the responsibility is divided in the way 9 it is on this one, being a DVFM, in which there is 10 no trial running criteria? 11 T don't JOHN MANCONI: I am not aware. 12 I am not an expert in that area. know. 13 Did any of the City's KATE McGRANN: 14 expert advisors review and approve this criteria on 15 behalf of the City? 16 JOHN MANCONI: Well, I know, for 17 example, Joe North was involved in that. I know 18 the RAMP room folks, we talked about it often in 19 terms of the scores. We saw -- our job was to 20 receive the scorecard on a daily basis when we were 21 doing this, so there was lots -- I can't -- I don't 22 know who was involved in it, but I know that people like Joe North were involved, and I see names on 23 24 here that I am familiar with. 25 KATE McGRANN: You have jumped ahead of

1 me a little bit to the scoring. I am still in 2017 2 when the criteria is being decided upon. 3 JOHN MANCONI: Sure. 4 KATE McGRANN: Did you take a look at this criteria when it was finalized and agreed to 5 6 by the parties? 7 JOHN MANCONI: No, I was told there was 8 a fully documented program in place, and I asked if 9 everybody was satisfied with it. 10 KATE McGRANN: Was it your 11 understanding when this criteria was -- first of 12 all, it looks like this criteria is finalized in 13 2017. Is that accurate? 14 JOHN MANCONI: I heard of two 15 situations which came up. One was Mr. Scrimgeour 16 wanted some changes done to it which I immediately 17 said, Go and speak, and if it is material, I want 18 to hear it back. If it is not material, it is not 19 something that needs to be escalated. 2.0 And then there was some dialogue about 21 who had signed off which version at what time. 22 And is this all in 2017? KATE McGRANN: 23 JOHN MANCONI: No, I believe the 24 version was very late in the process, as was 25 Mr. Scrimgeour's comments.

1 KATE McGRANN: So just sticking for the 2 moment with this 2017 criteria, was it your 3 understanding that this criteria was finalized in 4 2017? 5 JOHN MANCONI: We set up the RAMP room. 6 We did up the calendar. And the dialogue was 7 always we have a process to measure trial running. 8 And was it your KATE McGRANN: 9 understanding that the document that we are looking 10 at here was the process? 11 JOHN MANCONI: I can't confirm that 12 that is the document. Obviously at the General 13 Manager level I'm asking is everything in place to 14 proceed to where we need to get to. And I 15 don't -- I depend on my experts and my technical 16 leaders to provide us what we need to ensure at the 17 program level we have everything in place. 18 KATE McGRANN: At any point prior to 19 the commencement of trial running, did anybody 20 raise with you that there wasn't a finalized trial 21 running process and so that needed to be addressed? 22 JOHN MANCONI: No, it came up. 23 remember exactly when and it could have even been during trial running that the final version had not 24 25 been signed off, to which I said immediately get it

```
1
    signed off because we are using the trial running
 2
   process.
 3
                                Did you have a general
                KATE McGRANN:
 4
    understanding heading into trial running as to what
5
    the requirements were with respect to, for example,
 6
    the number of days that needed to be pass days in
7
    order to achieve trial running?
8
                               96 percent 9 days out of
                JOHN MANCONI:
9
    the 12.
10
                                Did you say 6 percent?
                KATE McGRANN:
11
                JOHN MANCONI:
                                96.
12
                KATE McGRANN:
                                96 percent --
13
                                9 out of 12 days.
                JOHN MANCONI:
14
                KATE McGRANN:
                                96 percent of what?
15
                JOHN MANCONI:
                                Of the score for I
16
    believe it is the peak volume periods. There is a
17
    definition of all those terms.
18
                Remembering that the score is across a
19
    bunch of lenses, there is station availability,
20
    there is customer-facing elements. I can't
21
    remember all of them. You would have to scroll
22
    down, but I believe there is five or six buckets.
23
                And then there is certain criteria that
24
    you can fail a day on automatically. And then
25
    there is a minimum threshold. I believe it was 94
```

1 percent, no lower than 94 percent, something like 2 that. 3 Again, it is many years ago. I would 4 have to go back and refresh my memory. 5 KATE McGRANN: So trial running is run in July of -- well, July and August of 2019, right. 6 7 Your understanding from the very first day of trial 8 running is that it is 96 percent on 9 out of 12 9 days? 10 JOHN MANCONI: That is what the 11 documentation had, and that is what the experts 12 were supposed to be measuring against, yes. 13 KATE McGRANN: And I just want to make 14 sure that your answer is clear. Did you understand 15 from day one of trial running that the objective 16 was 96 percent 9 out of 12 days? 17 JOHN MANCONI: I believe I do. That. 18 was way back then, yes. 19 KATE McGRANN: And at any point prior 20 to trial running, did you ever sit down with the 21 written criteria and take a look at it to 22 familiarize yourself with the criteria as you head 23 into this critical time for the system? 24 JOHN MANCONI: I was depending on all 25 the people around me to bring forward what was

1 documented and signed off on in terms of the 2 testing regime. 3 KATE McGRANN: Did you review the 4 criteria before trial running started? 5 JOHN MANCONI: No, I was explained how 6 the trial running would run, and that there was a 7 group that had been assembled in accordance with 8 this document and that there was a scorecard that 9 would be produced daily to the RAMP room in terms 10 of pass or fail and the scores. 11 But at no point before KATE McGRANN: 12 the start of trial running did you review the 13 criteria as it was written? 14 JOHN MANCONI: I may have. I reviewed 15 thousands of documents, hundreds of documents. Т 16 may have read this. I don't recollect. It was not 17 my job to review or to sign off on that. signing authority was others. But I may have read 18 19 I don't recall if I did or did not. 20 KATE McGRANN: Who briefed you on the 21 trial running criteria before the start of trial 22 running? 23 JOHN MANCONI: I believe we had a 24 briefing in the RAMP room, so we all knew. 25 many, many months in advance, there was a -- what I

1 was constantly told was there was a structured 2 process for the measurement. There would be a 3 scorecard. There would be a team, and there was a 4 documented process as to what that criteria was and 5 how to score it. 6 And I am going to show KATE McGRANN: 7 you a different document, if my computer will let 8 So this is a document titled "Trial Running 9 Test Procedure". It is -- it has got a document 10 number that I won't read out because it is long, 11 "Rev[ision]: Final RevO2", dated July 31st, 2019, 12 and for the record, this is OTT377178. 13 This is a 19-page document. I am happy 14 to scroll through it to give you an opportunity to 15 review it. I am just going to move through it 16 briefly now. 17 My question for you is have you seen 18 this document before? 19 JOHN MANCONI: I have glanced at it, 20 yes. 21 KATE McGRANN: Did you see this 22 document at any point prior to or during trial 23 running of the system? 24 I may have. Again, JOHN MANCONI: 25 there was a lot of documentation on a multi-billion

```
1
    dollar system.
                    I may have. I don't know.
 2.
                KATE McGRANN: You mentioned that
 3
    Mr. Scrimgeour said to you at some point that he
 4
    wanted to make some changes to the trial running
5
    criteria; have I got that right?
 6
                                No, he said it to the
                JOHN MANCONI:
7
    RAMP room.
8
                               Oh, he said it to the
                KATE McGRANN:
9
    RAMP room?
10
                JOHN MANCONI:
                                Yes.
11
                KATE McGRANN: And do you remember
12
    approximately when he raised this desire?
13
                JOHN MANCONI:
                                It was during -- I
14
    believe it was during trial running, and when he
15
    started to explain it, it seemed very minor.
                                                    Ιt
16
    wasn't about -- I don't even remember what it was
17
    about, to which I quickly said, Take the discussion
18
    offline.
              If it is material and significant,
19
    obviously we need to hear about it.
2.0
                KATE McGRANN: Do you remember what the
21
    reaction to the others in the RAMP room was to
22
    Mr. Scrimgeour suggesting that changes be made to
23
    the trial running criteria during the trial running
24
    period?
25
                                I think we were all what
                JOHN MANCONI:
```

1 exactly is it that you need, and that is, you know, 2 how the discussion started. It didn't sound 3 significant in nature. That is why I said, Take it 4 offline and come back if it is significant. 5 KATE McGRANN: And did he come back to 6 you? 7 JOHN MANCONI: I can't remember exactly 8 when, but I asked if the issue was resolved and the 9 issue was resolved. 10 KATE McGRANN: And did you ask for any 11 details about it? 12 JOHN MANCONI: I don't recall. T am 13 sure I would have. 14 KATE McGRANN: During the time that 15 trial running was taking place, did you ever learn 16 that changes had been made to the criteria that 17 were being applied? 18 JOHN MANCONI: I had learned that the 19 final documentation which reflected the 96, 9 out 20 of 12, had not been signed off and, you know, I put 21 that in parentheses, and that I immediately 22 instructed the team to document it and so forth, 23 which -- you know, because there was some 24 confusion. 25 RTG at one point, some members of their

1 team were tracking to 98 percent, and that led to 2 dialogue to which I immediately said, Well, what 3 does the document say, and that is when I learned 4 it wasn't signed off and I immediately instructed 5 them to sign it off. 6 Who did you understand KATE McGRANN: 7 had not signed off on the criteria? 8 JOHN MANCONI: My understanding of it 9 was Richard Holder said, No, there was some 10 discussion that we had done and we didn't sign off 11 the final revisions, to which I said, What are 12 those final revisions? Again, if they are 13 substantial, I want to know about it. 14 But that is when the topic of is it 96 15 or 98 percent started to occur. And as we all 16 know, it was always set at 96 percent from dating 17 back to 2017. And that is when I instructed them 18 to sign off on it and finalize it. 19 Whoever was working on this, I 20 immediately instructed at the time, I believe 21 Michael Morgan -- well, Michael Morgan was in 22 I said, Get the people in the room charge. 23 together immediately to sign off on this. 24 Was the issue raised by KATE McGRANN: 25 Mr. Scrimgeour related to the issue raised by

24

25

1 Mr. Holder? Was this all part of the same 2 conversation? 3 JOHN MANCONI: I don't recall. To be 4 frank, Mr. Scrimgeour's issue seemed very minor and 5 trivial. It had something -- I believe it had 6 something to do with stations, and to the point 7 where I said, That sounds very immaterial, but go 8 and sort it out and get back to me. 9 And that is how I work in terms of the 10 governance of that group, was if there was 11 substantial changes, they needed to come back to 12 that group, so I don't believe -- Mr. Holder's 13 comments was about, you know, we had the criteria, 14 but we didn't sign all this off in terms of 15 everybody's signature on it, so they were 16 instructed to fix that immediately. 17 KATE McGRANN: Walk me through how the concern identified by Mr. Holder was first brought 18 19 to your attention. 20 JOHN MANCONI: I don't -- all I 21 remember was we were in a meeting and the words 22 came out that we hadn't -- and this is someone 23 speaking said, We didn't sign off on the final

document, to which I said, What do you mean you

didn't sign off on it? Well, the signatures aren't

1 on it. It was described as we didn't sign off on I said go and sign off on it, because as you 3 can tell, we have a very rigorous documentation 4 management process. 5 So the concern was that KATE McGRANN: 6 the City hadn't signed off on it? RTG had, but the 7 City had not? 8 JOHN MANCONI: I don't know who had 9 signed off and who hadn't. At that point, I didn't 10 I said, I want a fully executed signed-off 11 document on file that is crystal clear that both 12 parties agreed to in terms of the criteria. 13 And what documenting of KATE McGRANN: 14 that process was done? 15 JOHN MANCONI: The documents that you 16 are presenting here. 17 KATE McGRANN: This document here, the 18 2019 document? 19 JOHN MANCONI: So that and whatever 20 else needed to come out of it in terms of the score 21 sheets and all of it. I don't know the scope of 22 work that they did. All I know -- or our 23 requirement was that when we were in this space, we 24 needed to have a clear path on what both parties 25 agreed to.

```
1
                And when I heard that the final
 2
    signatures had not been on, I said, Go and execute
 3
    and make sure they are all signed off. So I don't
 4
    know if that is the final, final one that they said
5
   wasn't signed and then went back and signed and so
 6
            But it is full documentation was the
    forth.
7
    requirement.
8
                                Explain to me, were you
                KATE McGRANN:
9
    involved in the evaluation of trial running at all?
10
                JOHN MANCONI:
                                No.
11
                KATE McGRANN: Were you tracking the
12
    progress of the trial running procedures and things
13
    like that?
14
                JOHN MANCONI:
                                There was a huge
15
    calendar in the RAMP room on the right-hand side,
16
    and every single day we would put the score and
17
    whether it was a pass or a fail.
18
                KATE McGRANN:
                                Had you seen a copy of
19
    the scorecard?
20
                JOHN MANCONI: They would show -- they
21
    would flash the scorecard to us in the RAMP room,
22
    yeah.
23
                KATE McGRANN: And --
24
                JOHN MANCONI: Because they were
25
    meeting -- the procedures were, they were --
```

1 remember, I believe there is a protocol on the 2 team, a 30-minute meeting, scoring and so forth, 3 and they would then come to the RAMP meeting. 4 laid all that out in terms of when they would be 5 doing the scoring. Their job was to come into the 6 RAMP room to say pass or fail and the score. 7 KATE McGRANN: You said they would 8 flash the scorecard. Did they show it to you for 9 long enough that you could review the results? 10 JOHN MANCONI: Sure, I looked at it and 11 asked -- particularly on the fail, I wanted to know 12 where did they fail and what were the challenges. 13 And it was a -- it was a verbal walk-on 14 presentation from Troy and the team saying, here is 15 the score; here is what went well; here are the 16 challenges; here is what didn't go well. 17 obviously on the fail days we wanted to know 18 exactly what occurred. 19 KATE McGRANN: Did you have the 20 opportunity to affect the scoring of each day's 21 results? 22 JOHN MANCONI: Absolutely not. 23 KATE McGRANN: Was there ever any 24 discussion about, for example, whether a day would 25 be counted as a pause or a restart that you were

1 involved in? 2. JOHN MANCONI: I recollect on the pause 3 they came in and said we might move to a pause day. 4 There was some discussion on that. And other than 5 that, that is -- their job was to report to us was 6 it a pass or a fail and, again, debrief on what 7 went well and what didn't go well. 8 KATE McGRANN: So you are reviewing the 9 scorecard every day. Did you have sufficient time 10 to ask any questions you had about the scores and 11 have them answered? 12 JOHN MANCONI: Absolutely. Everybody 13 in the RAMP room could ask any question. 14 KATE McGRANN: Were you reporting on 15 the daily results to anybody else such as 16 Mr. Kanellakos or the Mayor? 17 JOHN MANCONI: I remember I was 18 reporting to Mr. Kanellakos. I think it was a 19 phone call. I don't recollect exactly. And I 20 think I was just saying whether it was a pass or a 21 fail. 22 KATE McGRANN: Were you providing him 23 with any details in addition to whether it was a 24 pass or a fail? 25 I don't recall. I know JOHN MANCONI:

1	when we wanted to pause, we had a discussion about
2	that.
3	KATE McGRANN: I am going to show you
4	the package put together by the Independent
5	Certifier at the end of trial running. So bear
6	with me.
7	So this is a 31-page document, the
8	cover letter dated August 23, 2019, from Altus
9	Group to Michael Morgan, the City Representative,
10	regarding "Validation of Trial Running Acceptance".
11	Have you seen this letter before?
12	JOHN MANCONI: Yes.
13	KATE McGRANN: And then on the third
14	page in titled "TRRT Conclusion of Trial Running
15	Statement"; have you seen this page before?
16	JOHN MANCONI: Yes.
17	KATE McGRANN: The second paragraph,
18	which reads:
19	"As peak service performance
20	was achieved over several days, the
21	TRRT agreed to reduce the peak
22	service fleet size to 13 from 15
23	trains to accommodate a revised
24	Service Plan as agreed to by the
25	Parties."

23

24

25

1 What can you tell me about how that 2 agreement was reached? 3 JOHN MANCONI: So during the trial 4 running, Mr. Scrimgeour brought up the fact that we 5 did not need 15 trains, to which I said, We don't, 6 And he said, Because that was based on why not? 7 way back during the planning of this whole program 8 we were at 100 million -- 101 million passengers 9 and they were projecting the same rate of growth 10 five, six years later after construction, which 11 would have put us well over the 100 million mark. 12 Our ridership at the time I believe was 13 around 96 million because we had dipped, and to 14 which he said, We do not need all those trains out 15 And so we agreed that we could go to 13 16 trains for peak service based on his expertise and 17 his input. 18 KATE McGRANN: And even if you could go 19 there for peak service, why not continue to require 20 15 to see if the system can do it? 21 JOHN MANCONI: Well, we did during 22

JOHN MANCONI: Well, we did during trial running. They did do 15 trains. There was days they scored very, very well with 15 trains, so as I shared at my briefing to Council that we did see them exercise the 15 trains so we knew we could

19

20

21

22

23

24

25

John Manconi on 5/2/2022 1 do it. And we also know that we only needed 13 2 trains, so we did do both. 3 KATE McGRANN: And then I quess my 4 question to you is why not just continue to require 5 during trial running 15 trains all the way through? 6 JOHN MANCONI: We had seen the 15 7 They did well. They even did well on the trains. 8 back end where, you know, they achieved the 9 out 9 of the 12 then they kept going. 10 And in terms of moving into the revenue 11 service, we didn't need the 15 trains. Remembering 12 there was a Minor Deficiency List including 13 vehicles, this would give them extra trains to 14 address those deficiencies in a timely manner. It. 15 was our expectation and our hope that they would do 16 that, so it would give us extra spares. 17 And when you are in the train business, 18 the more spares, the better, so that if you do have

And when you are in the train business, the more spares, the better, so that if you do have someone that gets sick on a vehicle and you need to pull the train out, you have got an extra spare vehicle. The spare ratio on this system was very, very light. We had one hot spare and one maintenance vehicle spare.

So this was about doing the right thing from a capacity-wise and also providing you

```
1
    additional buffer for spare and for deficiency
 2
    catch-up.
 3
                               Now, as I understand
                KATE McGRANN:
 4
    your evidence, part of the way through trial
5
    running, Mr. Scrimgeour pops up and says, We don't
 6
    need 15 trains, and that is the first time that you
7
    have heard that; is that right?
8
                JOHN MANCONI:
                               Absolutely.
9
                KATE McGRANN: And so the idea is just,
10
    okay, we'll drop it down to 13. Was that decision
11
    triggered in any way by any -- like by any
12
    conversations with RTG?
13
                               No.
                                     So what followed
                JOHN MANCONI:
14
    was, Tell me more. Tell the RAMP room more.
                                                   Tell
15
    the experts more. Tell everybody more,
16
    Mr. Scrimgeour. Why would we do this?
17
                And then, experts being experts, led to
18
    exactly what I just shared with you, that this will
19
    enable us to have additional spares.
                                           It will
20
    enable Alstom, we had hoped at the time, to get
21
    through those remaining vehicle deficiencies in a
22
    timely manner, and provide the City with an extra
23
    layer of buffer for incidents on trains,
24
    remembering you can never anticipate things going
25
    wrong until you get into full loads and we would
```

1 have had and we did have the additional vehicles to 2 address issues during full revenue service 3 post-launch. 4 KATE McGRANN: Were there concerns 5 about Alstom's ability to deal with the outstanding 6 issues on the trains if the number of trains in 7 peak period was not dropped from 15 to 13? 8 In hindsight? Probably. JOHN MANCONI: 9 Again, this was us just forecasting on -- we knew 10 we had a vehicle deficiency list, and we wanted to 11 knock those off very quickly. We knew, and this 12 came from the experts, that the spare ratio for a 13 small fleet like ours that was going to be busy was 14 very, very light. 15 So it was -- again, I heard from the 16 experts and my technical staff that this -- A, we 17 didn't need the capacity; B, this would help knock 18 off the deficiency list; and C, it would give the 19 City more flexibility to address train issues post 20 launch. 21 KATE McGRANN: You mentioned a vehicle 22 deficiency list. Were you referring to the Minor 23 Deficiencies List, or was there something else? 24 JOHN MANCONI: Yeah, yeah, no the 25 things on the list that went to them in terms of

2.

1 deficiencies.

KATE McGRANN: I asked you if there were concerns about whether Alstom would be able to resolve the vehicle issues and the Minor Deficiencies List if the number of trains was not dropped from 15 to 13, and you answered with the benefit of hindsight.

At the time, during trial running, were there concerns that Alstom was going to have difficulty addressing the vehicle-related issues on a Minor Deficiencies List if the number of trains was not reduced?

JOHN MANCONI: At that time, no, because they had stepped up their cadence. They had put extra resources. They had brought those techs that we talked about, and they had done -- you know, through that sense of urgency, they really brought things together. You know, the analogy I often bring, it is like a restaurant opening, at the last minute everything comes together if you have got the right team.

And they had brought the right team, and at that point in time we believed that had if we didn't need the capacity, this would help them deal with those deficiencies and get the

```
1
    reliability consistent to address issues when they
 2
    occurred and so forth.
 3
                Again, that is that point in time, not
 4
    anticipating, not knowing the ability to see what
5
    was going to happen post launch of things that
6
    never came up during the trial running.
7
                KATE McGRANN:
                                I am going to scroll
8
    down and just show you the scorecard from the first
9
    day of trial running, so it is Monday, July 29th.
10
                JOHN MANCONI:
                                Okay.
11
                                And if you look
                KATE McGRANN:
12
    at -- you had told me that your understanding of
13
    trial running was that it was 96 percent, 9 out of
14
    12 days?
15
                JOHN MANCONI:
                                Correct.
16
                KATE McGRANN:
                                Is the percentage that
17
   you are referring to the "AVKR (average over 12
18
    days)" number that we see on the scorecard?
19
                                I believe so, yeah.
                JOHN MANCONI:
2.0
                                So the scorecard is 98
                KATE McGRANN:
21
    percent average over 12 days.
22
                JOHN MANCONI:
                                Uhm-hmm.
23
                KATE McGRANN: So can you help me how
24
    that -- help me understand how that aligns with
25
    what you understood the criteria was throughout
```

1 trial running? 2. JOHN MANCONI: Somewhere during the 3 process somebody had come up with 98 percent. That. 4 was not the original criteria. And I mentioned 5 earlier on that, you know, people on the RTG folks 6 side of things were striving for 98 percent, to 7 which when I heard about this confusion was it 98 8 or 96, I said, The number is? And everybody said, 9 It is 96. Well, address it and it has to be 96. 10 We are not -- you know, Alstom -- RTG would have 11 loved to go to 98. They were trying to get to 98. 12 And then I speak about that in my notes to Council. 13 But the pass/fail criteria was the 96 14 that was originally envisioned. 15 KATE McGRANN: I don't think you have 16 mentioned any confusion yet over what the 17 requirement was. You have mentioned Mr. Holder 18 raising concerns that a document was not properly 19 signed off on, and you instructed that it be signed 20 off on. 21 Tell me about the confusion that you 22 identified about the scoring and what the threshold 23 was. 24 JOHN MANCONI: Yeah, no, I was 25 mentioning earlier on that I believe it was Mr.

1 Lauch at one of the meetings talked about is 2 it -- sorry, I thought I turned these messages off. 3 I said, What do you mean 98 percent? 4 And then that led to the discussion of is it 98 or 5 96? It was always 96 and we were going to measure 6 to 96. 7 So that came up at one of the meetings. 8 I don't remember exactly when. Again, in terms of 9 our governance, I said, What does the agreement 10 That is when it led to, Oh, we didn't sign say? 11 off on all that final stuff. Okay, but it was 12 always 96, 9 days out of 12. Everybody agreed to 13 I said I want it fully document so that we 14 can demonstrate that we have done what we always 15 intended to do. 16 I am finding it a little KATE McGRANN: 17 bit difficult to follow how this all unrolled. So 18 I don't believe that you mentioned Mr. Lauch's 19 involvement in this before. Could you just walk me 20 through as best you recall how the discrepancy 21 between the 98 and the 96 percent first came to 22 your attention and everything that followed. 23 JOHN MANCONI: Certainly. The scoring 24 team would do their scoring, of which Mr. Lauch and 25 I believe -- sorry, I don't remember his director's

1 name right now. They were on the scoring team. They would come to the RAMP room, present the 2 3 scoring. 4 And at one of those meetings the 98/96 5 percent discussion bubbled up. I don't remember 6 how it bubbled up. I don't remember why it bubbled 7 But I said, What does the agreement speak to? 8 What was our original agreement? And it was 96 9 We were -- and I wanted it addressed and percent. 10 I wanted it addressed the minute I found out about 11 it. 12 KATE McGRANN: And what do you recall 13 Mr. Lauch contributing to this conversation? 14 JOHN MANCONI: Just that when someone 15 is -- I believe it was Richard Holder said, Yeah, 16 we didn't sign off on the finer final little 17 pieces, and Mr. Lauch said, Yeah, I think we were 18 measuring to 98 and we should have been measuring 19 to 96. 20 And at that point in time, I didn't see 21 it as a problem. You are going to a higher score. 22 It wasn't like we were going to a lower score. 23 Sorry, you understood KATE McGRANN: 24 that going from 98 to 96 was going to a higher 25 score?

1 They were trying to JOHN MANCONI: 2 achieve a higher score than what we had originally 3 agreed to. 4 KATE McGRANN: And why would you 5 not -- why would the City not want to see its 6 private partner achieve the higher score, if that 7 is what they wanted to do? 8 Well, in fact, they did JOHN MANCONI: 9 on certain days, but the agreement we had in place 10 that was developed by those experts that were 11 tasked with developing that sheet, that score, 12 recommended and everybody agreed to 96 percent 9 13 days out of 12, with the lower threshold of 94. 14 KATE McGRANN: At any point during the 15 conversation or otherwise, did anybody say that 16 they didn't want to try for the 98 percent? 17 Nobody, and in fact, if JOHN MANCONI: 18 you look at -- I believe there was numerous days 19 that they exceeded 98 percent. I think one day 20 they may have hit 99. 21 KATE McGRANN: So help me understand if 22 that is the case why the City would agree to drop 23 it to 96? 24 JOHN MANCONI: We did not drop it to 25 We stayed with what we agreed to from the 96.

```
1
    professionals and the technical people that worked
 2
    for me recommended was the appropriate score for
 3
    our system for them to be measured upon.
 4
                KATE McGRANN:
                                And other than --
 5
                                We did not drop it.
                JOHN MANCONI:
 6
                KATE McGRANN:
                                And you are looking at
7
    the scorecard every day?
8
                                I am hearing the results
                JOHN MANCONI:
9
    every day. I am not looking through every line.
10
    am not analyzing it. I have experts to pay -- that
11
    were paid to do that. I was hearing pass/fail, and
12
    as I said before, if it was a fail, I really wanted
13
    to know where they failed.
14
                KATE McGRANN: Were you provided with a
    copy of the scorecard every day outside of the RAMP
15
16
    meeting?
17
                                Outside of the meeting?
                JOHN MANCONI:
18
                KATE McGRANN:
                                Yes.
19
                                Not that I recollect,
                JOHN MANCONI:
20
    no.
21
                KATE McGRANN:
                               And during the meeting,
22
    you are telling me that you did not review the
23
    scorecard top to bottom to see what the results
24
    were?
25
                JOHN MANCONI:
                                There was days that we
```

1 looked at it, they spoke to me about it. They may 2 have even been passing out copies. I don't recall. 3 It was a long time ago, but I wanted to know 4 pass/fail, what was the score, and what were the 5 issues. 6 Did you understand that KATE McGRANN: 7 any other -- that there was confusion about any 8 other aspect of the criteria for trial running at 9 any point during the trial running period? 10 JOHN MANCONI: Nobody brought any other 11 matter to my attention. 12 KATE McGRANN: Number of days that 13 criteria needed to be achieved, did you understand 14 there was any confusion about that or any change to 15 that? 16 The only two confusion JOHN MANCONI: 17 points that I recollect was Mr. Scrimgeour raising 18 the issue about stations and this discussion about 19 we are measuring to a higher level than what we had 20 agreed to. 21 KATE McGRANN: Anybody ever mention to 22 you that you were shooting for 12 consecutive days 23 as opposed to 9 out of 12 days? 24 JOHN MANCONI: There were people, and I 25 am speculating, I think people thought 12 out of 12

1 had to be the goal, and it could have been, I don't 2 know. 3 KATE McGRANN: What is the basis for 4 that speculation? 5 JOHN MANCONI: Oh, because of the 6 constant use of 12 days of running. I know there 7 was people that thought we had to run 12 days with 8 full fleet when really, if you look at the detail, 9 as you know, there is -- it is a schedule and there 10 is days we run -- there is off peak, we run 11, we 11 run 7, we run 3. It was to exercise the entire 12 schedule, and it was more than just vehicles. 13 KATE McGRANN: I'm sorry, when you say 14 that there are days that you run 11, you run 7, you 15 run 3, are you referring to days within the trial 16 running? 17 JOHN MANCONI: Parts of the day, yes, 18 because you scale up and you scale down, right. 19 You go for morning peak, and then you drop down 20 midway, and then you ramp back up and you are 21 exercising the system. 22 Sunday service I believe is 10 trains. 23 Off peak service during the day is 11. And at 24 nighttime we go down to 11, 7 and I believe at one 25 point 3, so you had to exercise all that.

1 KATE McGRANN: When it was clarified 2 that the criteria that would be applied is the 2017 3 criteria that we looked at earlier in COW442401, do 4 you recall if any steps were taken to document that 5 decision on the criteria? 6 JOHN MANCONI: Probably. We had people 7 doing recordkeeping in the RAMP room. I don't 8 Again, I had people managing all that for know. 9 me. 10 KATE McGRANN: You are not aware of 11 whether any steps were taken to document that 12 criteria being agreed to by everybody? 13 JOHN MANCONI: Well, they were directed 14 to sign whatever needed to be signed and make sure 15 it was documented was the direction I gave. 16 KATE McGRANN: I am going to show you a 17 different document. So this is document COW158931. 18 It is an August 16th, 2019, letter from RTG to 19 Michael Morgan. Have you seen this document 20 before? 21 JOHN MANCONI: I may have. 22 KATE McGRANN: Do you want to take a 23 second to read it and see if you remember it? 24 me know when you are done. 25 [Witness reviews JOHN MANCONI:

1 document. 1 2. Okay, that page is done. 3 KATE McGRANN: Okay. 4 JOHN MANCONI: Okav. 5 Do you remember seeing KATE McGRANN: 6 this document on or about August 16th of 2019? 7 JOHN MANCONI: No. 8 KATE McGRANN: Do you remember seeing 9 this document any time before today? 10 JOHN MANCONI: I may have. 11 So it sounds to me like KATE McGRANN: 12 the answer is no, you don't remember seeing it? 13 JOHN MANCONI: I have seen so many 14 documents. I may have seen this. I believe I have 15 seen this recently, but I don't recall. 16 KATE McGRANN: Do you recall ever 17 learning that the trial running criteria was 18 memorialized in a letter from RTG to the City as 19 part of the process? 2.0 JOHN MANCONI: Well, I believe this was 21 part of my direction. It appears to be the 22 direction that I set in terms of get it finalized 23 and documented. I don't remember the -- what is 24 the date on this one? Does this fit in in terms of 25 during the trial period?

1 KATE McGRANN: So this document is 2 dated August 16th, 2019. The letter from the 3 Independent Certifier that we were looking at a 4 second ago stated that trial running was conducted 5 from July 29th to August 22nd of 2019. 6 JOHN MANCONI: Yeah, so that fits in. 7 It is a date within the KATE McGRANN: 8 trial running period for sure. 9 JOHN MANCONI: Correct, so it fits in 10 with what I was just talking about where I gave 11 direction to make sure that everything is 12 documented in accordance with the decisions. 13 KATE McGRANN: Are you aware of any 14 other documentation of the decisions with respect 15 to the trial running criteria? 16 JOHN MANCONI: As I said before, there 17 was minute-takers. There was lots of documentation 18 on this program that could have been. But in terms 19 of this decision, this lines up with what I was 20 just explaining in terms of ensuring we are 21 documenting. 22 KATE McGRANN: Were there minute-takers 23 in the RAMP room when you were receiving updates on 24 the scoring of the previous day every day? 25 JOHN MANCONI: There probably were,

1 yes. We had resource-loading for minute-takers. 2. KATE McGRANN: I would like to ask you 3 some questions about the decision to pause trial 4 running, so I'll stop sharing the screen for the 5 moment. 6 I understand that you prepared a draft 7 memo to Council that reported on performance over 8 the first three days of trial running and the 9 decision to pause thereafter; is that right? 10 JOHN MANCONI: Correct. 11 KATE McGRANN: I don't know that we 12 have received a copy of that memo. Mr. Wardle, 13 could you provide us with a copy, or if it has 14 already been provided, would you please let us know 15 under what doc ID? 16 U/T PETER WARDLE: Yeah, it has been 17 provided to you. It may -- it just may have been 18 difficult to find. But my understanding is we have 19 provided it. We'll get you the document number. 20 KATE McGRANN: Okay, thank you. What I 21 have got right now is a quote from a media article 22 from that memo that says that part of the memo 23 stated that: 24 "Performance over the first 25 three days of trial running has

1 resulted in the joint decision to 2. pause the ongoing system 3 assessment." [As read.] 4 Can you speak to me about what it was 5 about the performance over the first three days 6 that led to discussions about pausing? 7 JOHN MANCONI: We would have to go back 8 to the scorecards for those, but obviously things that probably weren't passing is my recollection of 9 10 it right now. We would have to go back and look. 11 And the agreement, as you probably 12 know, provides an opportunity to pause. 13 parties discuss it. And we had discussed it. 14 request had come to us. We had discussed it in the 15 RAMP room, and we made a decision to pause. 16 KATE McGRANN: So a couple of things in 17 How did -- the notion of a potential pause, 18 who first raised that? 19 It was the OLRTC, RTM, JOHN MANCONI: 20 RTG team. 21 KATE McGRANN: And how was it raised? 22 JOHN MANCONI: They raised it and I 23 believe it was at a RAMP meeting. They said 24 obviously if things were not passing, there is a 25 provision for pause. We would like to pause.

```
1
    looked at my team and I said, Is that congruent
 2
    with the terms?
                    And they said, Yes, there is a
 3
    pause clause in there and they asked to exercise
 4
    that, and we agreed, and we granted the pause.
5
                                I am going to give you
                KATE McGRANN:
6
    the opportunity to review the scorecards for the
7
    first few days right now to help refresh your
8
    memory.
9
                JOHN MANCONI:
                                Okay.
10
                KATE McGRANN:
                                So just let me know when
11
    you need me to scroll down?
12
                JOHN MANCONI: Okay, you can scroll
13
                 So that is day one, right?
    down there.
                                              Day one
14
    was a fail, right?
15
                KATE McGRANN:
                                Yes.
16
                JOHN MANCONI:
                                This is -- it says
17
    Tuesday, but it says "Trial Running Day #: 1", so
18
    is that day two?
19
                KATE McGRANN: I would assume that
20
   because it is a fail on day one, they are starting
21
    again on day one --
22
                JOHN MANCONI:
                                Oh, yes, got it.
23
                                Is that fair?
                KATE McGRANN:
                                                Is that
24
    right?
25
                                Yeah, I believe that is
                JOHN MANCONI:
```

1 what they did, yes. So was that a pass? Yeah, 2 that was a pass? And can we get to the bottom 3 there? 4 KATE McGRANN: This is coded as a 5 "Repeat", as far as I can tell. 6 JOHN MANCONI: A repeat, yes. 7 KATE McGRANN: Just tell me when you want me to scroll up, I want to make sure you have 8 9 time to read all this. 10 JOHN MANCONI: [Witness reviews 11 document.1 12 That is good. 13 That is a restart. Okay. 14 KATE McGRANN: So those are the 15 scorecards for the first three days. 16 JOHN MANCONI: Yes. 17 KATE McGRANN: The RAMP meeting that 18 you described, is that one of the -- is this a 19 meeting in which you are briefed on the results of 20 the previous day or is it a different RAMP meeting? 21 JOHN MANCONI: I would assume so. Ι 22 mean, it was a meeting where the request to pause 23 came up. 24 And when you say it is a KATE McGRANN: 25 RAMP meeting, is it that it is a meeting in the

1 RAMP room, or is it a meeting of everybody in the 2 RAMP program? 3 JOHN MANCONI: Well, remembering at 4 this point in time we are literally living in the 5 We are there all day. RAMP room. 6 And so whether it was a point where the 7 restart came or whether it was, Hey, we want to 8 meet, anything associated with the launch of the 9 system, we were meeting in the RAMP room and we 10 were actually resourced, if we needed to, to go 11 24/7. So they were very long days. 12 So we were in the RAMP room when the 13 request to pause came up. 14 KATE McGRANN: Do you remember who 15 specifically raised the request to pause? 16 I don't. T believe it JOHN MANCONI: 17 may have been Peter, but I don't recall 18 specifically. 19 KATE McGRANN: And when you say 20 "Peter", you mean Peter Lauch? 21 JOHN MANCONI: Peter Lauch it could 22 have been, yeah. 23 KATE McGRANN: And what was the 24 response to that request? 25 Well, I immediately JOHN MANCONI:

1 asked, Is there a provision for a pause? Again, I don't know all this stuff in finite details, and I 2 3 was explained there is a provision for a pause and 4 what that would look like and what needed to occur. 5 Did you make any KATE McGRANN: 6 inquiries into whether the provisions for the pause 7 had been satisfied? 8 JOHN MANCONI: Yes. 9 So describe that to me. KATE McGRANN: 10 Explain to me how the conversation followed once it 11 was raised that a pause may be possible. 12 JOHN MANCONI: So step one, picture the 13 room is full of the technical expertise, my staff, 14 the score people and so forth, to which I said, 15 Okay, there is a pause provision? 16 And what is the basis of that pause 17 provision? And my recollection of it, it was I was 18 explained why they wanted to pause, what they were 19 going to do, and that they were entitled to request 20 that. And there was language that both parties 21 agreed to to do that pause. 22 Why did they want to KATE McGRANN: 23 pause? 24 JOHN MANCONI: Things were not 25 going -- well, my recollection was things were not

1 going well and they needed to regroup. 2. KATE McGRANN: And do you remember 3 specifically what wasn't going well? 4 JOHN MANCONI: No. Obviously, they 5 weren't passing. They had the fail. They had the 6 reset and the restart, and --7 KATE McGRANN: And what did they want 8 to do if a pause was granted? JOHN MANCONI: I don't recall. 10 KATE McGRANN: Do you recall being 11 assured that pausing would somehow improve the 12 results of trial running? 13 JOHN MANCONI: I don't recall, but 14 obviously that was their objective. 15 KATE McGRANN: Whose decision was it on 16 behalf of the City to agree to the pause? 17 JOHN MANCONI: As I did with all the 18 decisions, I looked to my experts and my technical 19 people to ensure, A, they could request that; and 20 B, had they satisfied the requirements of that. 21 it was a group decision with obviously the 22 governance of the agreement. 23 KATE McGRANN: Did you understand that 24 anybody working on behalf of the City had had any 25 discussions about a potential pause before it was

```
1
    raised in this meeting you are describing?
 2.
                JOHN MANCONI:
                                Sorry, did I know that
 3
   people --
 4
                KATE McGRANN: Were you aware of any
5
    other discussions that had happened about this
6
    prior to the meeting that you are describing?
7
                JOHN MANCONI:
                                Not that I recollect.
8
                KATE McGRANN: How long did the
9
    conversation take from when this was raised to the
10
    agreement to pause?
11
                JOHN MANCONI: I don't honestly
12
    remember.
13
                KATE McGRANN: Could you say whether it
14
    was five minutes or three hours?
15
                JOHN MANCONI: It took the time it
16
    needed to for me to, as I do with every decision,
17
    to understand what my professionals and what my
18
    technical staff were recommending, why they were
19
    recommending, were they entitled to that.
2.0
                So we took the time necessary to
21
    analyze it and make a recommendation to support the
22
    pause.
23
                KATE McGRANN: And what information, if
24
    any, can you give me about how long that
25
    conversation took?
```

```
1
                JOHN MANCONI: I don't recall.
                                                 Again,
 2
    we were in the RAMP room steady.
 3
                               Sorry, I missed the last
                KATE McGRANN:
4
   part.
5
                JOHN MANCONI: We were in the RAMP room
6
    for extended periods of time, so I don't recall how
7
    long we spent on this specific issue, but we took
8
    the time needed to understand it thoroughly.
9
                KATE McGRANN: Were there any
10
    conditions imposed on the City's agreement to
11
    pause?
12
                JOHN MANCONI: Sorry, what do you mean
13
    by conditions?
14
                KATE McGRANN: For example, we, the
15
    City, will agree to pause this if you report back
16
    in four hours on the progress that you are making;
17
   we, the City, will agree to pause this if you, RTG,
    do 'x', 'y' and 'z'?
18
19
                JOHN MANCONI: I am not sure what --
20
    where the basis for that would have been. I mean,
21
    we wanted good, reliable service, and so I am sure
22
    the discussion was about they are going to regroup
23
    and they are going to reset. They are going to do
24
    well.
           They are focussed. They have identified
25
    like a soft opening in a restaurant, right, you
```

1 have a soft opening. Things don't go well. 2 regroup, you look at what you did well. You look 3 at the things you didn't do well. Then you go to 4 full opening and things improve, or you do your 5 second soft opening. 6 So I am sure that is what they were 7 doing, and as usual, we said, If there is anything 8 you need from us, we are happy to share ideas and 9 perspectives. 10 Were any conditions KATE McGRANN: 11 imposed on the City's agreement to pause? 12 JOHN MANCONI: Not that I recollect. 13 Did RTG ask anything of KATE McGRANN: 14 the City as part of the pause? You said that you 15 offered to come back to us. Did they come back to 16 you with any requests? 17 Not that I recollect. JOHN MANCONI: 18 KATE McGRANN: The news article that I 19 have to work from, which I am happy to show you, 20 reports that your memo was not sent to Council 21 ultimately and that Mr. Kanellakos said that he 22 stopped the memo from going out because it was 23 inconsistent with the commitment we made to Council 24 to notify them once RTG met the testing requirement 25 and not to tell them about any delays during

1 testing. 2. Was there a commitment made to Council 3 that they wouldn't be advised of any delays in 4 testing? 5 JOHN MANCONI: Well, Mr. Kanellakos is 6 I mean, when that article came out, I don't 7 even remember the discussion. There was so much 8 that went on. I remember the memo not going out, 9 but as you probably know, Mr. Kanellakos 10 articulated to Council a couple of months ago that 11 he did in fact stop the memo and the rationale with 12 that was that we had told Council, I believe it was 13 in a FEDCO deck, that we would let them know when 14 the trial running had completed and they had 15 satisfied the requirement of that, including the IC 16 sign-off and so forth. 17 And when I look back at that 18 conversation, he was consistent in that we weren't 19 going to advise our governing body of every little 20 operational issue that was occurring on the trial 21 running period. And --22 Was there -- sorry, go KATE McGRANN: 23 ahead. 24 JOHN MANCONI: Sorry, and as the memo 25 explains, as I recollect, the pausing of the trial

```
1
   period is included in the trial running program.
 2.
                                The commitment that is
                KATE McGRANN:
 3
    made to Council about what would and would not be
 4
    reported on, you said it is in a report to FEDCO;
5
    have I got that right?
 6
                JOHN MANCONI:
                               Well, those are your
7
            We didn't say what would and what would not
8
    be reported on. We said we would advise Council
9
    when they had satisfied the conditions of trial
10
    running.
11
                                Okay, and that
                KATE McGRANN:
12
    commitment is made in a presentation to FEDCO?
13
                JOHN MANCONI:
                                I believe so.
                                               T can't
14
    remember if it is a presentation or a memo, but
15
    yeah, we would report when we reached the end of
16
    trial running and moved to revenue service,
17
    something to that effect.
18
                KATE McGRANN:
                                I just want to make sure
19
    that I know where to go look when I understand the
20
    basis for the statements and what was to be
21
    reported to Council. Anything else that you are
22
    aware of that I should be looking at to understand
23
    the promises and commitments made to report to
24
    Council on trial running?
25
                JOHN MANCONI: Again, there is so many
```

```
1
    documents. I don't remember if it was a memo or a
 2
    presentation or a technical briefing.
                                            I just know
 3
    that we told Council we will let you know when
 4
    trial running has been satisfied and signed off.
 5
                KATE McGRANN:
                                The decision to pause,
6
    did this all -- I understand that you don't
7
    remember how long the conversation took, but from
8
    the time that the notion is introduced to the
9
    City's agreement to pause, did that all take place
10
    in one meeting, like all the same meeting?
11
                JOHN MANCONI:
                                I believe so, yes.
                                                    That.
12
    is my recollection of it.
13
                KATE McGRANN: Any breakouts from that
14
    meeting to have independent discussions only with
15
    the City's advisors or anything like that?
16
                JOHN MANCONI: So there could have
17
    been, and I say that because if you look at our
18
    governance and our layout of our RAMP room, there
19
    was breakout rooms when we wanted to have
20
    confidential discussions. We may have done that.
21
    I don't recollect. It is a long time ago.
                                                 It is
22
    all about the input decision-making process.
23
                We could have excused them and said,
24
    We'll get right back to you, or we could
25
    have -- there was a discussion. There was input.
```

1 My advisors and my technical staff explained to me 2 the pause requirements and what we could and 3 couldn't do, and it was granted. I believe it was 4 all in the same meeting. Did we excuse them and 5 have a deep think on it? Perhaps. I don't 6 recollect. 7 KATE McGRANN: Who do you recall taking 8 advice from on this particular topic? 9 JOHN MANCONI: Well, I had a tradition 10 of going around the table and asking everybody for 11 their input, and then I would always close off 12 with, let's -- are we unanimous in our decisions? 13 And I would go around the room. 14 That was my traditional decision-making 15 framework on significant decisions, so I probably 16 would have done the same thing then. 17 KATE McGRANN: Who do you recall being 18 part of the table discussion? 19 JOHN MANCONI: If you look at the 20 composition of the RAMP room, it is all those 21 people that are there, so Michael Morgan, Troy, 22 I don't know if Tom would have been there 23 or calling in virtually, Jocelyne, other people 24 that were involved in the operational matters. So 25 there would have been a group of people in there.

1 Do you recall anybody KATE McGRANN: 2 raising any concerns about agreeing to the pause? 3 I don't recall the JOHN MANCONI: 4 conversation. I recall we had the conversation to 5 ensure they were entitled to that, and we granted 6 And we would have had discussion again from 7 input from everybody that was part of that 8 committee. With respect to the KATE McGRANN: 10 results from the trial running, there is a partial 11 summary on the last page of this document. 12 JOHN MANCONI: Uhm-hmm. 13 KATE McGRANN: I think you mentioned 14 earlier that it ran from July 29th to August 22nd. 15 There is a chart on the last page that starts on 16 August 3rd, so I believe that is following we 17 agreed to -- that is the restart day. 18 JOHN MANCONI: IJhm-hmm. 19 KATE McGRANN: And this shows the AVKR. 20 I am testing myself here, but I believe that is the 21 aggregate vehicle kilometre ratio; does that ring a 22 bell for you? 23 JOHN MANCONI: I think so, yeah. 24 But it doesn't track the KATE McGRANN: 25 performance of the other components that were being

1 I went through the scorecards and I took a tested. 2 look for the entire 23 days for the category of 3 maintenance practices, there are 12 failure days 4 for that particular category. 5 And of the 12 days that are used from 6 the evaluation, so that is Friday, August 9th to 7 Thursday, August 22nd, 5 of those days were a fail 8 for maintenance practices. 9 Were you aware that -- of these failure 10 rates for the maintenance practices component of 11 trial running at the time? 12 JOHN MANCONI: I could have been, but I 13 don't know the scope of them. It could have been 14 issues that -- on work orders or it could have been 15 one response that could have thrown -- I don't know 16 the scope and scale of them. I would have to go 17 back and look at it. 18 KATE McGRANN: And what would you look 19 at if you were going to go back and look at it? 20 JOHN MANCONI: Well, I would do two 21 things. I would look at the scorecard, then I 22 would go and drill down to those that were involved 23 to ask the specifics and documentation and so 24 forth. 25 KATE McGRANN: So I can show you an

1 example of a scorecard where there was a failure of 2 maintenance practices. This one for Monday, August 3 19th, it is scored as a "Pass" day. Under 4 "Maintenance Delivery" heading, the "Maintenance 5 practices", it is a "Fail". So does this help you 6 at all? 7 JOHN MANCONI: It says on the bottom: 8 "Due to an occurrence, 9 processes and procedures are being 10 adiusted." 11 So I would need more details. 12 KATE McGRANN: And again -- so we have 13 looked at a scorecard, and the other thing you 14 mentioned you would do is you would go and speak to 15 the people who were involved to try to understand 16 this? 17 JOHN MANCONI: No, that is not what I 18 did. I thought you were asking me right now if I 19 wanted to drill down what I would do. 20 KATE McGRANN: Yeah. 21 JOHN MANCONI: My job at this point was 22 to depend on my experts and my technical staff. So 23 I wasn't drilling down. If they told me it was a 24 pass, it is a pass. 25 I thought you were asking me if I

1 wanted to know what occurred on that day, what 2 I would do exactly what you just said, would I do. 3 and then I would drill down and ask people detail 4 into what that note number 1 is. I don't know what 5 that note number 1 caused that failure. It could 6 have been minor, major, I don't know. 7 KATE McGRANN: Who would you go speak 8 to to understand. 9 I would have started JOHN MANCONI: 10 with Troy and Larry Gaul. 11 KATE McGRANN: Was anybody raising 12 concerns in the RAMP room or otherwise throughout 13 the trial running period about the performance of 14 RTM on the maintenance side of trial running? 15 JOHN MANCONI: As I said earlier, we 16 were always wondering if they were going to take 17 our advice and over-resource consistently. 18 did a good job at the tail end leading into trial 19 running and during trial running. There was always 20 a concern about sustainment of that. 21 Whether they were going to -- the key 22 word, the key concern if I had to describe one, was 23 consistency. Were they going to be consistent in 24 the handing of the baton from testing and 25 commissioning to live operations, and live

1 operations is very different. 2. And so they stepped up the resources. 3 Their scores reflected that. The forward looking, 4 because we were trying to be proactive, was were 5 they going to be consistent in that. 6 Their scores reflect KATE McGRANN: 7 that they failed on maintenance practices more 8 than -- like more than half of the days of trial 9 running. 10 JOHN MANCONI: Okay. 11 So where in the scores KATE McGRANN: 12 is it reflecting that their performance has 13 improved? 14 JOHN MANCONI: So on the days that were 15 counted, they passed maintenance 7 out of the 12 I 16 believe you were saying? 17 KATE McGRANN: They did pass 7 out of 18 12. 19 JOHN MANCONI: Yes, so they passed on 20 My staff were not flagging any significant that. 21 maintenance issues, even on those fails. So I have 22 to go with what my staff and what my technical 23 expertise share with me. 24 The observation that was general in 25 nature from all of us was, were they going to be

18

19

20

21

22

23

24

25

1 consistent and ensure that the maintenance regime either stayed at that 7 out of 12 or improved on 3 that 7 out of 12. 4 KATE McGRANN: Did you have any 5 concerns about the reliability of service based on 6 the maintenance performance during trial running? 7 JOHN MANCONI: The concern that you 8 always need to have, irrespective of what it is, is 9 what occurs once you get into full revenue service 10 under different circumstances, full loads and 11 things like that, degraded service and things like 12 that. 13 And given the KATE McGRANN: 14 performance of RTM during trial running on the 15 maintenance components, the items on the Minor 16 Deficiencies List, and the no need for retrofits 17

performance of RTM during trial running on the maintenance components, the items on the Minor Deficiencies List, and the no need for retrofits and things like that on the vehicles, was there any consideration given to focussing demands on the maintenance program heading into revenue service on system-critical events only or to otherwise shift the focus of the maintenance demands to help RTM in the various tasks it was going to need to accomplish?

JOHN MANCONI: Yeah, we made it clear to them that we were going to continue our

monitoring program of vehicles in particular, as an example, and we had carried on and they were paying for that. I believe that was part of the term sheet, that we were going to ensure that they were staying focussed and consistent and on top of the maintenance issues and deal with the minor deficiency pieces.

So that was our proactive approach to saying they won't agree -- they can't agree to everything we are asking for, but we can do oversight on that. We have the ability to provide oversight, and they agreed to that, as you probably see in some of the documentations, that we would continue to monitor them in terms of vehicles and critical systems and so forth.

ATTE McGRANN: Other than the additional oversight that the City implemented, any consideration to taking a soft approach to work orders, for example, to try to create some space for RTM to deal with the variety of known issues plus the unknown issues that you have identified that are likely to come up with a launch of a new system like this?

JOHN MANCONI: Yeah, we did. You know, there was concerns over the number of open work

1 orders, as you probably know, which led to some 2 challenges on monthly maintenance payments. And 3 Steve and myself agreed to put together a working 4 group to look at all those work orders, and you may 5 have seen some of that documentation. We spent 6 many, many, many months looking at how we could 7 help them close work orders, because quite frankly 8 what they were -- it is their work order system to 9 manage the system, and they were not managing the 10 work orders appropriately, which can be very 11 significant if you don't close off certain work 12 orders for both -- not just for deduction of 13 points, but also for system reliability and us 14 having the oversight that we need to as the 15 governing body in terms of the system. 16 So we put together a work group headed 17 by Troy and Michael and others, and they looked at the thousands of work orders and I know they closed 18 19 off a bunch of them. And we were trying to help 20 them out in that regard. 21 KATE McGRANN: And it sounds like that 22 took place after the launch of revenue service, 23 after a couple of months; is that right? 24 JOHN MANCONI: Correct, yeah. They 25 were struggling closing off work orders and dealing

1 with their work order management system that they 2 implemented as part of their proposal. 3 KATE McGRANN: Was there any 4 consideration heading into the public launch of the 5 system of taking a softer approach to work orders, 6 non-essential work orders, to allow RTM to focus 7 its attention on known issues and issues that were 8 unexpected but you expected to come up in some form 9 as a result of the system being new? 10 JOHN MANCONI: That request was never 11 raised to me. I don't even know if it was an issue 12 leading up to launch, and so I wasn't aware of that 13 being a concern of theirs or that it was drawing up 14 resources or anything like that. I became aware of 15 it after launch. 16 KATE McGRANN: Heading into revenue 17 service, were you aware that there was warranty 18 work that needed to be done on the vehicles and the 19 system more generally? 2.0 That is common, yes. JOHN MANCONI: 21 KATE McGRANN: And you were aware that 22 there was planned normal course maintenance work 23 that was required to be done on the vehicles and 24 the system? 25 JOHN MANCONI: Of course, yeah, all

1 normal, because the vehicles had run for thousands 2 of kilometres, right. 3 KATE McGRANN: You anticipated that 4 there would be reactive maintenance to new issues 5 that present themselves once the system begins to 6 run? 7 JOHN MANCONI: Absolutely. 8 KATE McGRANN: And was there 9 manufacturing work taking place out of the 10 maintenance and storage facility as you are heading 11 into the public launch of revenue service? 12 JOHN MANCONI: I believe so, yes. 13 KATE McGRANN: Is it fair to say that 14 you were aware that the maintenance and storage 15 facility and the staff working on maintenance would 16 be subject to significant pressure given all of the 17 topics that we just outlined? 18 JOHN MANCONI: That was never raised to 19 me that that was a challenge that they wanted to 20 overcome at that point in time. 21 KATE McGRANN: Regardless of whether it 22 was raised to you by RTM, you were aware of all of 23 these components. Did you ever turn your mind to 24 the question of whether they were under pressure? 25 JOHN MANCONI: I visited the site

1 numerous times, announced and unannounced. 2 you can only go with what you are dealing with. 3 They were responsible for managing both the 4 manufacturing and the maintenance of that system. 5 There were -- there is always competing demands in 6 any operational system. It is how you manage it 7 and how you plan it and how you organize it. 8 Did any of your expert KATE McGRANN: 9 advisors raise any concerns with you heading into 10 revenue service about the number of demands on the 11 maintenance team and their ability to manage those 12 demands? 13 Again, there was a JOHN MANCONI: 14 general concern about consistency and the ability 15 to manage the system and run it and maintain it, 16 but in terms of the competing demands about they 17 are building trains and maintaining trains, none 18 that I recollect in terms of it being a major 19 barrier to success. 2.0 KATE McGRANN: We talked before about 21 the concept of a less than full launch to public 22 service. 23 Uhm-hmm. JOHN MANCONI: 24 Did anybody ever raise KATE McGRANN: 25 the notion of holding off on public launch for a

1 period of time longer than the City did to allow 2 for more running, debugging, catching up on 3 outstanding issues, anything like that? 4 JOHN MANCONI: Did anybody request that 5 of us? Did anybody raise it as 6 KATE McGRANN: 7 an idea? 8 JOHN MANCONI: No. The vehicles had 9 run an extended period of time. There had been 10 multiple delays. The positive of the delays was 11 there was extra track time. Everything is being 12 exercised, not just the trains. Again, I know 13 everybody focussed on the train, but the catenary, 14 the switch gear system, the wayside system, the 15 switches, so everything was being exercised. 16 The issue is that once you decide to go 17 into trial running and substantial completion, you 18 have to forecast that cutover, the parallel 19 service, the bus changes and so forth. 20 So if you were successful in trial 21 running, there was no need to extend that because 22 we had the proper checks and balances in place, and 23 we had the parallel bus service. 24 Did any of the City's KATE McGRANN: 25 advisors raise any concerns about the readiness of

1 the system for public service after revenue service 2 availability was achieved before opening to the 3 public? 4 JOHN MANCONI: No, not that I am aware 5 of, other than the consistency on the maintenance 6 and the ability to stay focussed. There was 7 constant discussion about that, because when they 8 performed well, they performed really well. When 9 they had issues, like I described before, it would 10 flare up, they would deal with it and then it could 11 re-flare up. So it was an issue of consistency, 12 cadence, sense of urgency, maintaining that energy, 13 which is important to operational aspects. 14 KATE McGRANN: With respect to the 15 deductions made to the maintenance payments that 16 the City made to RTM - I think I looked at this 17 already, but I just want to make sure - at any 18 point in looking at that did the City consider the 19 implications of those discussions on the overall 20 service that the system would provide to its 21 passengers? 22 R/F PETER WARDLE: And I quess I have the 23 same concern that there -- you know, any 24 discussions that this witness was present for 25 involving that issue likely involved outside

```
1
    counsel, so I think I am going to ask that he
 2
    refuse it.
 3
                KATE McGRANN: With respect to the
 4
    derailments, can you walk me through your view of
5
    those incidents and how they were responded to.
 6
                JOHN MANCONI:
                                In terms of the City
7
    response or RTM?
8
                KATE McGRANN:
                                Both, how the
9
    partnership responded to the derailments.
10
                JOHN MANCONI:
                                The derailments or the
11
    cause of the derailments, or all of it?
12
                KATE McGRANN: All of it, if you can.
13
                JOHN MANCONI: Well, it is certain --
14
    you know, once we see the final results, but based
15
    on what I heard when I was there and what I heard
16
    and I have heard subsequently through media, it
17
    certainly appears to be lack of maintenance, lack
18
    of that focus that I talked about.
19
                And so, again, when it occurred, all
20
   hands on deck, professional, caring,
21
    safety-oriented. We grounded the fleet. We did
22
    all the right things. The issue is, you know, is
23
    this -- you know, the City has a right to expect
24
    that its partner has the expertise and the
25
    capabilities to do what it is contractually
```

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1 obligated to do, and in many of these maintenance regimes, when things, you know, went sideways, you know, it was getting frustrated that -- you know, it is like the wheel flats, oops, we didn't have the technician, or oops, we didn't have the backup wheel truing machine ready.

Those are disappointing things that, no different than you hiring a contractor for your house, you pay a fee, you expect that expert to have the expertise to plan it, execute it, manage it and oversee it.

And so I would describe it as disappointing if it is that it is lack of maintenance and lack of routines and structures, so when I hear about bolts coming off of key components, those are fundamental things that should not be occurring from world class organizations such as Alstom and others. And T am not pointing fingers or accusing them. You have asked me for my opinion, it is disappointing. response, the professionalism, the ability to work collaboratively is there. It is just back to what I have been saying through these four hours is the issue would get resolved, tamp it down, new issue, and then this issue would pop up. It seemed to be

1 inconsistent. Has that improved? I don't know. I am 2. 3 not there. There was many, many months of great 4 service. And so on the derailments, you know, 5 those are serious issues. 6 KATE McGRANN: Coming back to the item 7 you mentioned about working with RTM to help them 8 close out work orders, and you said that that was a 9 conversation that went on for many months, I think? 10 JOHN MANCONI: Yes. 11 Was any resolution of KATE McGRANN: 12 that issue achieved? 13 PETER WARDLE: So, yeah, my 14 understanding is that is a matter that is still in 15 dispute between the parties, and there have been a 16 number of without prejudice discussions that I 17 believe are continuing. 18 KATE McGRANN: Did RTM make any 19 requests of the City to change its approach to 20 anything after revenue service to assist in meeting 21 the maintenance demands of the system that the City 22 did not agree to? 23 JOHN MANCONI: Did not agree to? 24 PETER WARDLE: So, again, I just -- I 25 know you are trying to find a way to tackle the

1 subject, Ms. McGrann, and I am being careful 2 because I don't have direct knowledge of this. But 3 my understanding is, as Mr. Manconi indicated, 4 there was a working group formed and it has had a 5 number of discussions. There has been no 6 resolution of the issue. 7 And I believe the discussions that have 8 taken place within that working group have been on 9 a without prejudice basis. 10 So if there is anything outside of that 11 in terms of formal project correspondence either 12 from the RTG side or from the City side, obviously 13 we have produced it. 14 Let's try this. Could KATE McGRANN: 15 you describe the working relationship between the 16 City and RTM following the launch of public 17 service? 18 JOHN MANCONI: Very collaborative. 19 personally had weekly meetings with the CEO -- the 20 two CEOs, Mario and -- again, there is so many 21 names and it has been such a long time, but the 22 financial CEO who had been brought in after another 23 org change to resolve cash flow and things like 24 that. 25 We were very supportive. As you know,

we granted them extended shutdowns, and that is for them to catch up on their work orders, to improve service reliability, to address unknowns. I think we did two shutdowns that we supported them on.

The working group was very collaborative. Again, I can't get into the specifics of it, but there was consensus by certain parties and unfortunately on their side they can't get everybody on the same page was the feedback I received on that.

So the City was absolutely trying to help them out on cash flow, on being reasonable, on being fair, and on ensuring that we maintained our oversight role and our accountability to Council and the taxpayer.

We -- I was thanked literally every week about being open to ideas and suggestions, the shutdowns, unheard of that we proactively helped them on shutdowns and very, very collaborative on all aspects.

KATE McGRANN: So were the shutdowns provided for in the Project Agreement, or were those outside of the Project Agreement?

JOHN MANCONI: There is an ability to do an extended shutdown window, but this exceeded

1 that. Both occurrences exceeded that, and the 2 first one I believe we tabled it with them with a 3 slight payment reduction; the second one they came 4 back and said, Would you ever consider another 5 reduction -- shout down, and we, again, had full 6 support to help them be successful. 7 KATE McGRANN: Can you help me, when 8 you say that the first one took place with a slight 9 payment deduction, was RTM receiving any payments 10 at that point in time? 11 JOHN MANCONI: There was a 12 reduction -- yeah, they received some payments. Ι 13 can't get into the specifics based on what Peter is 14 saying, but yeah, there are -- again, there were 15 months that they performed and they have received 16 some payments. I don't know where it stands right 17 now, but I had to, again, with good governance and 18 good oversight because I was asked by Council when 19 we brought this forward, was we are agreeing to a 20 shutdown and we have negotiated a reduction in 21 payment if they are entitled to it. 22 So the rest are all details on that. 23 And I think there was a memo issued on that. 24 With respect to the work KATE McGRANN: 25 that was done on Stage 2, as I said before, our

focus is on Stage 1, but can you speak to whether any lessons learned that would be relevant to the Commission's area of focus were taken from Stage 1 and applied to Stage 2?

JOHN MANCONI: Absolutely. We had the reports that were done from a procurement. We had the KPMG study that was done and so forth on stage -- not KPMG, sorry. I think it was Deloitte. It was a review of Stage 1 that was asked for and it was completed.

But more importantly, what Michael, myself and others did is we kept a running list of lessons learned and we met with both constructors, SNC-Lavalin and Kiewit, for the two different aspects of Stage 2.

And not only did we give them the list, and the examples are use gas heaters versus electric, watch your ambient temperature for welding, there is certain temperatures that you should watch for, and so forth, we brought in the experts, so the Tom Prendergasts and those folks, and we met with the head of those consortiums and we did a technical debrief so that one-on-one -- and I can tell you that the head of Kiewit here in Ottawa was very appreciative of the track welding

1 issue because we have a limited temperature range 2 that you can weld a track in Ottawa, as an example, 3 the gas switch heaters, all sorts of things were 4 brought into Stage 2. So not just from 5 procurement, but also from a technical aspect on 6 those pieces. 7 Bringing in the best of the best, so 8 Kiewit has hired one of the best CBTC experts in 9 the world on their team to help them, start early 10 on all sorts of things related to testing and 11 commissioning on the constructor side of things, so 12 lots of lessons learned were brought forward into 13 Stage 2. 14 KATE McGRANN: The running list that 15 you and Mr. Morgan prepared, if I wanted to go 16 searching for that list, where would I look to find 17 it? What is it called? 18 JOHN MANCONI: Michael could give that 19 to Peter. 20 KATE McGRANN: Mr. Wardle, can you take 21 a look and if that list has been provided to us, 22 would you identify it by doc ID, and if not, would 23 you send us a copy? 24 U/T PETER WARDLE: Yes, I can ask. 25 believe Mr. Morgan was asked questions about some

1 of these issues when he was examined. If there is a list somewhere, I'll -- well, why don't I make 3 that inquiry of him and we'll see if there is a 4 list. 5 KATE McGRANN: Thanks. And Mr. Manconi 6 says there is, so hopefully there is because it 7 would be interesting to look at. 8 Did the composition of the City team 9 for Stage 2, is it bigger than the team used for 10 Stage 1? 11 JOHN MANCONI: It fluctuates. I mean, 12 Stage 2 is broken into different technologies and 13 so forth, so you have got a diesel line, you have 14 got an electric line, and also the City has created 15 it own internal capacity as we grew through the 16 five, six years of construction, so it varies. 17 KATE McGRANN: Changes to the trial 18 running criteria included in the Project Agreement 19 for Stage 2? 2.0 JOHN MANCONI: I would have to check. 21 It has been awhile since I have looked at the Stage 22 2 documents. I believe it has changed, but I don't 23 remember what it is. 24 Do you have any view in KATE McGRANN: 25 general other than what you have already described

1 as to what contributed to the breakdowns and 2 derailments that were experienced on Stage 1 after 3 it went into revenue service? 4 JOHN MANCONI: My own personal views? 5 KATE McGRANN: Yes. 6 It is what I have talked JOHN MANCONI: 7 about through this interview about staying on top 8 of things, staying focussed. Modern railroads need 9 extensive oversight and regular consistent 10 application of maintenance regimes to it, and 11 outside looking in, I can't -- you know, because 12 I'm not in those shops. I don't run it. I know 13 that, you know, people such as firms that they have 14 hired, that we have hired, that my experts and so 15 forth have all said it is about the maintenance 16 regimes and making sure you make score every day 17 and that you look ahead to the warranty issues, to 18 the life cycle issues, and you stay on top of 19 things. 20 So make score every day. You do that 21 by very, very, very robust maintenance regimes. 22 KATE McGRANN: With the benefit of 23 hindsight, anything that the City could have done 24 differently that you think may have lessened the 25 likelihood of the breakdowns or derailments?

JOHN MANCONI: No, I don't think so. I think we exceeded what most large scale -- certainly the experts have told me they haven't seen the level of oversight and the robustness and, you know, the millions of dollars that we have invested in bringing experts in.

Remembering at one point, you know, I had a panel of 40 experts. This is back to -- you know, if you go back to your opening question, what did I do on day one? Well, I brought in a bunch of experts and said, Give me the top ten risks that we should govern, and we governed them all, and that is some of the stuff that get to the Go/No-Go and the culture and the oversight.

So in hindsight, the City did -exceeded what it theoretically and technically and
contractually could have and should have done. My
view is we have a maintainer that either grossly
underestimated or for whatever reason fell short of
staying on top of maintaining the integrated system
of a complicated railroad.

KATE McGRANN: Any view on whether any aspect of the physical system, so the trains, the infrastructure, the line, et cetera, contributed to the breakdowns and derailments?

1 Every single expert I JOHN MANCONI: 2 have had in here has said that with the proper 3 maintenance, the vehicles, the catenary, the 4 stations, the elevators, escalators, there is no 5 need to be concerned about those. There is nobody 6 that has told me otherwise. 7 KATE McGRANN: The Commission has been 8 asked to look into the commercial and technical 9 circumstances that led to the breakdowns and 10 derailments. Are there any topics or areas that we 11 didn't discuss this morning that you think the 12 Commission should be looking at in its work? 13 JOHN MANCONI: None that comes to mind. 14 KATE McGRANN: And the Commissioner has 15 been asked to make recommendations to try to 16 prevent similar issues from occurring in the 17 Any specific recommendations or general 18 areas of recommendations that you would recommend 19 for that work? 2.0 JOHN MANCONI: Again, none that we 21 haven't covered today. 22 KATE McGRANN: Mr. Wardle, do you want 23 to ask any follow-up questions of the witness? 24 No, thank you. PETER WARDLE: 25 That brings my questions KATE McGRANN:

```
1
    for today to a close. Thank you very much for your
    time.
 2
 3
                  JOHN MANCONI: Okay, you are welcome.
 4
    -- Adjourned at 1:08 p.m.
 5
 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, DEANA SANTEDICOLA, RPR, CRR,
4	CSR, Certified Shorthand Reporter, certify:
5	That the foregoing proceedings were
6	taken before me at the time and place therein set
7	forth;
8	That the statements of the
9	presenters and all comments made at the time of the
10	meeting were recorded stenographically by me and
11	were thereafter transcribed;
12	That the foregoing is a true and
13	certified transcript of my shorthand notes so
14	taken.
15	
16	
17	
18	Dated this 3rd day of May, 2022.
19	
20	
21	
22	NEESONS, A VERITEXT COMPANY,
23	PER: DEANA SANTEDICOLA, RPR, CRR, CSR
24	
25	

WORD INDEX
**CRD INDEX**  * 1
<2> 2 1:8 38:4 51:25 52:8, 10 194:25 195:4, 15 196:4, 13 197:9, 12, 19, 22 20 37:18

**20/20** 86:19

```
2009 5:14
2011 11:4
2012 7:1, 25
8:14 9:10 12:3
15:12, 19
2015 7:21, 25
8:14 9:11
11:11, 16 12:3,
4 15:11 16:24
17:21 24:8, 23
26:3 35:4
46:13 53:2
55:10
2017 127:22
128:24 131:1,
13, 22 132:2, 4
139:17 159:2
2018 44:2, 25
68:11 86:22
108:10, 14
2019 109:10, 17
110:15 111:5,
10 116:20
117:8 127:23
134:6 136:11
141:18 145:8
159:18 160:6
161:2, 5
2020 109:18
110:5, 15
2021 7:17
37:19, 20
2022 1:8, 17
202:18
22nd 161:5
176:14 177:7
23 145:8 177:2
24/7 166:11
26th 117:8
29th 151:9
161:5 176:14
2nd 1:16 74:2
< 3 >
3 158:11, 15, 25
30-minute 143:2
30-year 47:15
31-page 145:7
31st 136:11
32 6:24 57:10
33(6 5:13
33(7 6:1
350,000 66:15
3rd 176:16
```

202:18
<4> 40 87:17 199:8
<5> 5 6:3 177:7
< 6 > 6 133:10 6:17 3:5
<7> 7 158:11, 14, 24 180:15, 17 181:2, 3
< 8 > 80 61:11 89:12 3:21
<pre>&lt; 9 &gt; 9  133:8, 13 134:8, 16 138:19  147:8 151:13  153:12 155:12  157:23 9:00  1:17  4:1 94  133:25 134:1  155:13 96  133:8, 11, 12, 14  134:8, 16 138:19  139:14, 16  146:13 151:13  152:8, 9, 13  153:5, 6, 12, 21  154:8, 19, 24 155:12, 23, 25 98  139:1, 15 151:20  152:3, 6, 7, 11  153:3, 4, 21  154:18, 24 155:16, 19 98/96  154:4 99  155:20 9th  177:6</pre>
<a> a.m 1:17 4:1 90:6, 7 ability 29:5 56:22 79:5 83:16 110:24 117:20 125:8 149:5 151:4</a>

```
182:11 186:11,
14 188:6
190:21 193:24
absolute 69:22
absolutely 10:5,
10 14:23 21:18
27:11 28:23
31:19 39:24
47:25 54:13
66:9 73:25
77:20 78:16
98:16 107:8
143:22 144:12
148:8 185:7
193:11 195:5
accelerate 91:25
acceleration
84:1
Acceptance
145:10
accepted 113:1
access 54:4
69:9 75:6, 10
101:12
accommodate
145:23
accommodation
89:9
accomplish
181:23
accountability
11:12 193:14
accumulate
48:20
accurate 131:13
accurately
78:19 79:9
accusing 190:19
achieve 29:8
44:14 83:11, 13,
20, 22 84:7
85:20 125:5
133:7 155:2, 6
achieved 68:18
83:3 116:10
117:7 129:14
145:20 147:8
157:13 188:2
191:12
achievement
32:2 118:2
achieving 25:17
27:14
acknowledged
40:22 44:17
```

acknowledging
19:9
<b>Act</b> 5:14 6:2, 4
<b>action</b> 48:24
Activation
11:24 13:1, 11
14:12, 19
active 14:7
27:9
actively 53:8 activities 19:2
110:8, 25 124:15
actual 12:14
41:3 103:9
add 27:2
added 12:21
122:14
addition 31:1
73:21 144:23
additional 18:10
27:2 40:25
78:3 82:17
83:24 84:3
91:7 95:25
99:5 100:12
107:20 148:1,
19 149:1 182:17 address 101:1
121:6, 17 122:3
147: <i>14</i> 149:2,
19 151:1 152:9
193:3
addressed
30:12 114:13
117:13 132:21
154:9, <i>10</i>
addressing
95:6 100:25
150:10
Adjourned 201:5
adjust 70:21
adjusted 178:10
adjustment 113: <i>17</i>
adjustments
79:23
advance 6:9
10:11 21:10
53:23 105:4, 12
123:1, 5 135:25
advantage
38:16 58:2
<b>advice</b> 15:15
34:5 39:22
40:25 41:17

42:3 45:13
46:24 49:1. 3. 4.
46:24 49:1, 3, 4, 6, 22 79:25
80:4 89:15
121: <i>13</i> 122: <i>1</i> ,
22, 25 124:25
125: <i>4</i> 126: <i>14</i>
175:8 179: <i>17</i> advise 172: <i>19</i>
<b>advise</b> 172:19
173:8
advised 6:2
78:19 102:19
109: <i>11</i> 110: <i>6</i> 172:3
advising 40:14
45:16 48:9
65:21 73:20
114:21
advisor 72:15
73:8
advisors 13:3
15: <i>17</i> , <i>21</i> 16: <i>5</i> ,
9 25:21 31:15
46:11 49:12
67:9 76:1
82:23 91: <i>1</i> 2
110:2 <i>4</i> 125:23
130: <i>14</i> 174: <i>15</i>
175: <i>1</i> 186: <i>9</i>
187:25
<b>advisory</b> 73:18 <b>affect</b> 143:20
AFFIRMED 4:3
after 4:25
16.22 27.12 10
41:12 59:20 60:11 68:7, 11 73:17 100:21
60:11 68:7, 11
73:17 100:21
101: <i>21</i> 113: <i>8</i> , <i>9</i> ,
13, 22 146:10
183:22, 23
184: <i>15</i> 188: <i>1</i>
191:20 192:22
198:2
afternoon 112:5
agencies 74:7
129:23
<b>aggregate</b> 176: <i>21</i>
ago 116:3
134:3 157:3
161: <i>4</i> 172: <i>10</i>
174:21
agree 32.8
75:23 80:21

00.44 404.0
99: <i>11</i> 121: <i>8</i>
155:22 168: <i>16</i>
170: <i>15</i> , <i>17</i> 182:9 191:22, 23
agreed 25:9, 15
63:24 65:1
00:24 00:1
99: <i>9</i> , <i>15</i> 105: <i>3</i>
113:8, <i>13</i> , <i>21</i>
115:22 129:8
131:5 141: <i>1</i> 2,
25 145:21, 24
146: <i>15</i> 153: <i>12</i>
155: <i>3</i> , <i>1</i> 2, <i>25</i> 157:20 159: <i>1</i> 2
107.20 109.12
164: <i>4</i> 167:21 176:17 182:12
1/0:1/ 182:12
183:3
<b>agreeing</b> 176:2
194:19
Agreement 19:8
24:16 25:18
26:12 29:12
30:4 31:9 34:4
35:15 42:18, 20 43:1 45:7, 8
43:7 45:7, 8
47:4, 8 48:21 49:7 50:17, 20 56:7, 15, 20, 24
49:7 50:77, 20
50:7, 75, 20, 24
57: <i>4</i> , <i>6</i> , <i>15</i> 58: <i>8</i>
59:9 65:16 69:18 72:4
84: <i>10</i> 85:2 <i>4</i>
89: <i>10</i> 90: <i>13</i>
107: <i>10</i> , <i>25</i>
107.70, 20 115:7-11-16
115:7, <i>11</i> , <i>16</i>
117: <i>14</i> 118: <i>16</i>
146:2 153:9 154:7, 8 155:9
163: <i>11</i> 168:22
169: <i>10</i> 170: <i>10</i>
171: <i>11</i> 174:9
193:22, 23
193.22, 23 197: <i>18</i>
agreements
51: <i>19</i>
<b>ahead</b> 122:20 130:25 172:23
198: <i>17</i>
air 112:1
113: <i>16</i>
<b>alarm</b> 94: <i>14</i>
algorithm 88:2
Alicia 2.11
Alicia 2:11 aligns 151:24

alleviate 97:3

<b>allow</b> 184:6
187: <i>1</i>
10/./
<b>Alstom</b> 20:14
38:24 39:2
96:24 109:19
110: <i>11</i> , <i>16</i>
110: <i>11</i> , <i>16</i> 148:20 150:3, 9
152:10 190:18
<b>Alstom's</b> 149:5
<b>Altus</b> 145:8
Ambassadors
88:17
ambient 195:18
<b>America</b> 53:23
58:25
amount 25:5
59:10
<b>analogy</b> 150: <i>19</i>
analogy 150:19 analysis 104:2
<b>analyze</b> 169:21
analyzing 47:6
156: <i>10</i>
<b>Anil</b> 72:18 74:2
<b>Anil's</b> 72:18
announce 84:25
announced
83:3 84:13, 18
05.3 04.13, 10 05.46 06.44 46
85:16 86:1 <i>4</i> , 16
186:1
announcements
83:17
announcing
83: <i>15</i>
answered
144: <i>11</i> 150: <i>6</i>
anticipate 119:8
121: <i>4</i> 148:24
anticipated 9:25
185:3
anticipating
151: <i>4</i>
<b>anybody</b> 15: <i>16</i>
22:4 40:13 46:5 54:7 58:2 73:6 76:19
46:5 54:7 58:2
73:6 76:19
77:3 121:18
132:19 144:15
155: <i>15</i> 157:2 <i>1</i>
168:24 176: <i>1</i>
179: <i>11</i> 186: <i>24</i>
187: <i>4</i> , <i>6</i>
apologies 16:22
app 88:5
apparent 44:7

appear 3:17, 21 97:14, 22 appeared 25:1 75:24 123:18 124:10 appears 160:21 189:17 appended 5:11 application 116:7, 15, 18 198:10 applied 111:4 127:16 138:17 159:2 195:*4* **apply** 32:20 45:17 appointed 7:1, 6 12:6 14:10 15:12 40:21 appreciate 116:2 129:10 appreciated 99:14 appreciative 91:22 195:25 approach 15:9 22:14 26:24 27:1 40:8 42:3, 10, 21 53:21 70:1 128:22 182:8, 18 184:5 191:*19* approached 35:18 56:1 approaching 22:10 appropriate 40:10 92:24 156:2 appropriately 57:17 183:10 approval 100:4 **approve** 130:14 **Approximately** 15:*1* 41:*7* 137:12 **April** 111:*10* arbitrarily 56:23 **area** 8:11 25:13 33:22 38:4 43:19 120:15 130:12 195:3 areas 24:23 43:15 51:1

80:*13* 108:*23* 200:10, 18 **arm** 61:10 96:10 arose 42:11 120:22 article 162:21 171:18 172:6 articulated 172:10 aside 112:22 **asked** 5:16 6:8 7:8 15:15 28:12 50:2 52:3 60:12 70:13 99:5 131:8 138:8 143:11 150:2 164:3 167:1 190:20 194:18 195:9 196:25 200:8, 15 **asking** 49:19 70:21 113:16 132:13 175:10 178:18, 25 182:10 as-needed 72:21 aspect 8:7 9:15, 21 63:10 157:8 196:5 199:23 aspects 9:11 17:1, 18 23:3 24:21 27:4 51:7, 11 73:24 188:13 193:20 195:*15* assemble 53:21 110:12 assembled 105:5 110:22 135:7 assembling 14:3 assembly 109:14 assess 15:10 43:10 70:13 93:13 99:2 assessed 99:4 Assessment 16:7 22:*15* 23:1, 25 24:4 25:15, 20 31:14 46:9 53:19

70:12 72:11
73:22 80:21
70:12 72:11 73:22 80:21 81:3 83:1 91:3
93:1 95:2, 4
97:25 98:5
99:2, <i>4</i> , <i>8</i>
100:16 163:3
assessments
18:5 44:23
70:10 83:9
93:4 99:18
assessors 27:3
assigned 122:17
assist 191:20
assisting 25:22
associated
16: <i>13</i> 34: <i>15</i>
16: <i>13</i> 34: <i>15</i> 35: <i>20</i> 45: <i>8</i>
86:1 92:19
127: <i>11</i> 166: <i>8</i>
<b>assume</b> 16:20
164: <i>19</i> 165: <i>21</i>
assuming 71:25
assurances 97:2
<b>assured</b> 168:11
attached 128:23
attend 21:13
106: <i>10</i>
attended 53:13
attended 33.73 attending 1:16 attention 24:24
100.22 112.0
108:23 112: <i>8</i> 140: <i>19</i> 153:22
157: <i>11</i> 184: <i>7</i>
attributed 96:8
audit 26:6
auditable 47:13
audited 13:4
audited 13:4 Auditor 13:5
augment 10:23
11:2
<b>August</b> 134:6
145:8 159: <i>18</i>
160:6 161:2, <i>5</i>
176: <i>14</i> , <i>16</i>
477.C 7 470.0
Australia 71:18
Australia 71:18 authority 56:17
07.0, 77 100.70
automated
37:13, 17 38:10,
22 39:4, 16
40: <i>16</i> 104: <i>14</i>
automatically

133:24 automating 38:7 Automation 38:15, 16 39:18, 21 40:4. 9 availabilities 20:17 availability 20:15 27:10, 12, 14 44:3 53:6 64:20 68:17 72:5 80:10, 22 85:23 90:1 112:11 113:6 123:18 124:9 125:8 133:19 188:2 available 120:17 Avenue 74:2 average 151:17, 21 **AVKR** 151:*17* 176:19 avoiding 86:16 awarded 8:21 10:5 aware 38:24 40:18 45:14 46:6 53:7 60:17 90:16 100:23 103:11 108:*15*, *16*, *17*, 19 110:19 113:20 117:*19*. 24 120:12 121:23 130:7, 11 159:10 161:*13* 169:*4* 173:22 177:9 184:*12*, *14*, *17*, 21 185:14, 22 188:4 **awhile** 197:21 **awkward** 96:12 < B > back 7:5 11:9 30:17 44:11 46:10 59:20

60:8 62:3 64:3

65:12 87:9, 12,

115:6, 7 123:20

134:*4*, *18* 138:*4*,

125:3 131:18

15, 23 90:20

*5* 139:*17* 140:*8*, *11* 142:5 146:7 147:8 158:20 163:7. 10 170:*15* 171:*15* 172:17 174:24 177:17, 19 190:22 191:6 194:*4* 199:*8*, *9* **backup** 190:5 balances 187:22 **barely** 104:25 **barrier** 186:19 **base** 61:12 based 74:14 146:6, 16 181:5 189:14 194:13 basically 19:7 **basis** 5:5 13:4 32:11 55:12 72:22 89:14 130:*20* 158:*3* 167:16 170:20 173:20 192:9 **baton** 179:24 **Bayview** 23:20 **bear** 128:18 145:5 began 11:14 15:20 beginning 11:17 86:25 109:10 127:16 **begins** 185:5 behalf 81:9 130:15 168:16, 24 **behold** 102:9 **belief** 93:22 believe 7:14, 22 11:7 22:6 32:21 34:23 37:3 44:*4* 46:21 48:4 52:15 55:25 61:11 83:19 84:7 95:*14* 96:19 105:13 108:*12* 110:*15* 113:*16*, *25* 114:*3*, *15* 116:*19* 117:*7*, *18* 118:*4* 122:15 131:23 133:16, 22, 25

134:*1*7 135:23 137:14 139:20 140:5, 12 143:1 146:12 151:19 152:*25* 153:*18*. 25 154:15 155:18 158:22, 24 160:14, 20 163:23 164:25 166:16 172:12 173:13 174:11 175:3 176:*16*, 20 180:16 182:3 185:12 191:17 192:7 194:2 196:25 197:22 believed 23:25 33:3 54:1 82:8, 20, 23 150:23 believing 83:12 **bell** 176:22 benefit 57:7 77:15 150:7 198:22 best 18:6 30:5 31:9 33:2 77:16 78:25 79:4 101:12 107:24 153:20 196:7, 8 **better** 147:18 **bidder** 78:8 bia 79:21 99:20, 23 **bigger** 197:9 **binding** 42:18 **bio** 6:14 **bit** 13:20 19:25 46:9 75:18 92:18 131:1 153:17 **black** 96:14 **blue** 109:19 **blunt** 63:5 **board** 15:14 87:19 **body** 61:10 74:23 100:5 172:19 183:15 **bolts** 190:15 **bore** 78:3 Boston 59:2 **bottom** 156:23 165:2 178:7

bought 14:5 59:14 **boxes** 86:*6* Boxfish 48:5 brainstorm 72:16 Brampton 110:3 break 6:6 90:4 breakdowns 101:20 198:1, 25 199:25 200:9 **breakout** 174:19 breakouts 174:*1*3 **Brian** 16:12 46:17 48:3 72:17 **briefed** 28:1, 12 32:24 135:20 165:*19* briefing 18:17 19:*4*, *16*, *17* 20:4, 7 21:3, 7, 10, 16 44:15 135:24 146:24 174:2 briefings 12:10 18:*15*, *16* 19:22, 25 20:17, 19 briefly 61:2 136:16 **bring** 11:*1* 12:12 49:10 55:2 71:16 72:17 93:21 94:19, 22 95:3 101:14 125:1 126:9 134:25 150:19 **bringing** 14:11 64:15 79:17 93:25 196:7 199:6 **brings** 200:25 **broken** 197:12 brought 15:9 17:21, 24 24:24 26:13 28:14 31:15 49:11 50:10, 15 51:13 59:24 60:7, 9 61:8 63:16 72:21 84:3 87:19 90:22 91:16, 20 93:6,

10, 11, 17 94:4, 10, 13, 17 95:10 98:2, 21 100:11 101:16 108:22 112:8 140:18 146:4 150:15, 18, 22 157:10 192:22 194:19 195:20 196:4, 12 199:10 brunt 11:22 85:6 bubbled 154:5, 6 Bucci 46:16, 25 47:16 48:2 51:6, 13 buckets 75:15 133:22 buffer 148:1, 23 build 15:18 22:17 24:21 25:25 30:24 47:15 51:10 76:2 84:14 91:19 128:13 building 38:2 75:9 186:17 buildings 121:15 buildup 96:7 built 38:21 76:8 92:13 93:24 112:14, 15, 17, 20, 21 bunch 133:19 183:19 199:10 bus 9:17 10:14, 15, 20, 21, 22 11:5, 20 12:20 17:20 19:13 61:19, 22 62:2, 3 66:20, 23 84:15, 20 85:8 87:1, 7, 13, 24 88:1, 2, 3, 8 187:19, 23 buses 7:2 87:17, 18 88:4, 17 120:5 business 12:18, 19 13:10, 11, 23 66:7 78:6 147:17 busy 121:1 149:13	
buffer 148:1, 23 build 15:18 22:17 24:21 25:25 30:24 47:15 51:10 76:2 84:14 91:19 128:13 building 38:2 75:9 186:17 buildings 121:15 buildup 96:7 built 38:21 76:8 92:13 93:24 112:14, 15, 17, 20, 21 bunch 133:19 183:19 199:10 bus 9:17 10:14, 15, 20, 21, 22 11:5, 20 12:20 17:20 19:13 61:19, 22 62:2, 3 66:20, 23 84:15, 20 85:8 87:1, 7, 13, 24 88:1, 2, 3, 8 187:19, 23 buses 7:2 87:17, 18 88:4, 17 120:5 business 12:18, 19 13:10, 11, 23 66:7 78:6 147:17 busy 121:1	10, 13, 17 95:10 98:2, 21 100:11 101:16 108:22 112:8 140:18 146:4 150:15, 18, 22 157:10 192:22 194:19 195:20 196:4, 12 199:10 brunt 11:22 85:6 bubbled 154:5, 6 Bucci 46:16, 25 47:16 48:2 51:6, 13 buckets 75:15
build 15:18 22:17 24:21 25:25 30:24 47:15 51:10 76:2 84:14 91:19 128:13 building 38:2 75:9 186:17 buildings 121:15 buildup 96:7 built 38:21 76:8 92:13 93:24 112:14, 15, 17, 20, 21 bunch 133:19 183:19 199:10 bus 9:17 10:14, 15, 20, 21, 22 11:5, 20 12:20 17:20 19:13 61:19, 22 62:2, 3 66:20, 23 84:15, 20 85:8 87:1, 7, 13, 24 88:1, 2, 3, 8 187:19, 23 buses 7:2 87:17, 18 88:4, 17 120:5 business 12:18, 19 13:10, 11, 23 66:7 78:6 147:17 busy 121:1	
	buffer 148:1, 23 build 15:18 22:17 24:21 25:25 30:24 47:15 51:10 76:2 84:14 91:19 128:13 building 38:2 75:9 186:17 buildings 121:15 buildup 96:7 built 38:21 76:8 92:13 93:24 112:14, 15, 17, 20, 21 bunch 133:19 183:19 199:10 bus 9:17 10:14, 15, 20, 21, 22 11:5, 20 12:20 17:20 19:13 61:19, 22 62:2, 3 66:20, 23 84:15, 20 85:8 87:1, 7, 13, 24 88:1, 2, 3, 8 187:19, 23 buses 7:2 87:17, 18 88:4, 17 120:5 business 12:18, 19 13:10, 11, 23 66:7 78:6 147:17

**buy** 64:24 < C > cab 111:21, 22, *24* 112:3 113:25 **cadence** 123:23 124:3, 5 126:16 150:14 188:12 calculating 47:3 calendar 28:15 132:6 142:*15* call 27:6 42:23 72:23 85:7 110:*16* 144:*19* **called** 23:6 40:2, 7 48:4 71:4 196:17 **calling** 175:23 **calls** 54:16 72:23 cameras 103:12, 13 campaign 12:16 13:*19* 14:*7*, *14*, 21 Canada 6:4 capabilities 189:25 capacity 10:9 87:19 90:22 109:12 149:17 150:2*4* 197:15 capacity-wise 147:25 capital 64:17 captured 117:23 carbon 95:25 96:7, 13 care 88:18 141:10 career 6:23 careful 50:7 192:1 caring 189:20 carried 182:2 carrying 77:12 **case** 57:5 63:11 83:14 119:*16* 155:*22* **cases** 51:*14* cash 76:16, 21, 23 77:3, 5 80:10 91:6 192:23 193:12

**casual** 53:20 **catch** 193:2 catching 187:2 **catch-up** 148:2 category 177:2, 4 catenary 20:5 48:18 92:23 93:1 94:19, 23, 25 95:*4*, 7, 11, 21 96:4, 9, 18, 20 97:6 187:13 200:3 catenary/pantogr **aph** 96:22 Catherine 2:6 caused 20:6 25:11 62:16 63:1 74:15 84:*16* 103:23 179:5 **caution** 50:1, 9 cautioning 82:13 **CBTC** 35:21 37:3 38:4 75:4, 5 91:19 196:8 **CEO** 20:13 192:19. 22 **CEOs** 192:20 certain 4:14 20:25 29:16 51:6 69:19 80:12 84:19 96:9 99:13, 15 103:19 114:2 126:23 133:23 155:*9* 183:*11* 189:13 193:7 195:19 certainly 11:19 12:5 17:*4* 18:*2* 20:4 22:13 30:22 56:5 61:*4* 112:*2* 153:23 189:17 199:3 CERTIFICATE 202:1 certification 29:13 30:5 33:2 56:8 106:*6* certified 118:15

202:4, 13

Certifier 56:9 85:24, 25 115:18, 19, 24 118:*15* 145:*5* 161:3 **Certifier's** 115:1, 13 certify 75:7 202:4 **cetera** 92:10 109:15 199:24 **chain** 87:4 **Chair** 17:6 18:20, 22, 24 20:9, 22, 23 Chairman 72:14 challenge 75:4 100:10 185:19 challenges 18:4 19:23 20:1 25:10 30:14 33:21 38:5, 18 40:5 44:17 46:15 52:19, 20 71:15, 20 74:25 75:2, 13, 16 78:11 94:2, 4 95:24 96:4, 17 100:23 101:10 143:12, 16 183:2 challenging 76:3 change 26:5, 11, 20 35:17 45:2 57:11 61:12 70:3 71:12 84:20, 23 86:11 87:1, 14 88:8, 12 157:14 191:19 192:23 **changed** 66:24 72:12 85:8 197:22 changeover 55:23 changes 10:22 19:*13* 26:*24* 34:11, 20 52:8 79:24 84:15, 19, 22 87:7, 24 88:1, 5 92:16 131:*16* 137:*4*, *22* 138:*16* 140:11 187:19 197:17

**charge** 36:12 41:15 114:16 139:22 **chart** 176:15 **Charter** 20:8 45:21 73:19 charters 14:25 31:*13* check 44:11 68:5 73:19 112:23 197:20 checked 92:23 checklist 102:*13*, *14* 103:*16* checklists 102:7 104:13 checks 187:22 **chose** 45:13 circuit 93:9 circumstances 70:16, 21 116:22 181:10 200:9 **CITY** 1:7 2:5 7:5 8:19 15:10 17:*1*, *2* 18:*9* 19:17 20:23 21:2 22:10 24:8, 10 25:21 26:3 33:3 37:17 40:14 42:4, 11 43:21 44:7 45:12, 13, 16 46:12, 24 50:18 53:15 54:12, 24 55:12 57:6, 9, 17 65:8, 21 68:24, 25 69:17, 23 72:15 78:1, 5, 11, 19 79:9 80:2, *4* 81:5, 11, 14 82:10 83:3.5. *15* 84:*12* 90:*10* 91:11 92:7 93:4, 20 95:18 96:19 98:10 104:19 105:18 109:9, 11 110:5 115:22 121:*10*, *25* 124:*1* 129:*7* 130:*15* 141:*6*, *7* 145:9 148:22 149:*19* 155:*5*,

22 160:18 168:16, 24 170:15, 17 171:14 182:17 187:1 188:16, 18 189:6, 23 191:19, 21 192:12, 16 193:11 197:8, 14 198:23 199:15 City's 21:21 32:25 53:11 56:13 67:9 70:1 89:6 97:3 110:23 114:17 125:23 130:13 170:10 171:11 174:9, 15 187:24 civil 5:18 91:4 claim 88:19 claims 89:4, 6, 20 clarified 159:1 class 190:17
<b>clause</b> 43:2, 9
164:3
clauses 34:6
43:17
<b>clean</b> 123:20
clear 12:6
clean 123:20 clear 12:6 17:16 45:6
134: <i>14</i> 141: <i>11</i> ,
24 181:24
clearly 105:2
Clerk 20:24
21:2 57:9, <i>17</i>
clock 28:10
close 58:18
175: <i>11</i> 183: <i>7</i> ,
175.77 165.7, 11 191:8 201:1
closed 59:22
66:22, 23 87:8
183: <i>18</i> closeout 14: <i>24</i>
closer 28:8
33:20
closing 59:17
62:2 <i>4</i> 183:2 <i>5</i>
02.27 103.20
coalescing 94:1 coast 101:16
co-Counsel 4:13
code 32:19
75:2
10.2

**coded** 30:17 31:22 126:20 165:*4* **coding** 29:23 30:1 32:10, 18 33:7 Co-Lead 2:2 4.6 collaboration 71:14 81:7 collaborative 4:12 43:5 55:5, 18 56:4 89:25 92:1 192:18 193:*6*, *19* collaboratively 91:23 190:22 collective 42:16 colour 29:23, 25 31:21 colour-coded 29:21 combination 20:16 21:17 **come** 46:10 65:12 83:8 99:22 113:8 114:*4* 119:*10* 121:22 123:20 128:9 129:13, 16 138:4, 5 140:11 141:20 143:3, 5 152:3 154:2 163:*14* 171:*15* 182:22 184:8 comes 64:22 124:9 150:20 200:13 coming 61:17 67:*13* 111:*20* 190:15 191:6 commence 4:22 commencement 118:3 132:19 commencing 4:1 **comment** 36:24 64:8 68:8, 14, 20, 23 commenting 88:23 comments 42:8 90:23 92:11

131:25 140:13 202:9 commercial 200:8 COMMISSION 1:6 2:1 4:19 17:15, 17, 19 18:*1*, *22* 61:*9* 121:21 200:7, 12 commissioned 59:11 Commissioner 200:14 commissioning 12:11 94:14 97:12 104:17, 21, 24 105:10, 19 106:1, 5 107:*4*, *14* 108:*3*, 9, 22 118:11 179:25 196:11 Commission's 4:10, 20, 24 5:4 101:20 195:3 commitment 171:23 172:2 173:2. 12 commitments 173:23 committed 83:10 Committee 17:3, 5 20:23 21:11, 15 33:18 46:17 48:10 51:24 52:2 176:8 committees 18:21 20:22 83:22 common 66:3 184:20 communication 35:21 communication**based** 23:5 communications 21:4 49:17 community 13:24 **commute** 61:13, 16, 17 62:10 66:25 86:11 87:14 commuters

87:13 commutes 84:24 **company** 16:*14* 48:4 202:22 competing 186:*5*, *16* **complete** 10:13, 16 35:23 90:11 completed 35:12 37:1, 5, 11 111:16 113:22 172:*14* 195:10 completely 77:18 completion 35:24 36:15 53:5 64:1, 19 74:25 83:2 84:12 90:2 94:10 105:13 106:2 111:*4* 112:10 115:6, *16* 116:8, *10*, *16* 117:*4*, 7 118:2 187:17 complexity 107:18 compliance 47:7 70:2 84:9 85:23 86:7 90:*12* 107:*4*, *9* 117:*14* complicated 22:24 23:3 26:9 47:16 75:13 76:9 79:21 88:14 91:18 199:21 complications 108:21 complimentary 29:4 component 177:10 components 8:16 29:16 56:12 105:10 176:25 181:*15* 185:23 190:16 composition 16:5 31:12 46:18 72:24 175:20 197:8

compressed 106:24 108:6 compression 106:14 107:1, *13, 16, 19* 108:2, 5, 6 compromise 36:10 37:1 compromising 67:7 107:3 computer 136:7 computers 87:13 **concept** 65:21 186:*21* **concern** 19:13 24:23 25:16 36:4 39:5, 7, 9 94:24 96:7 99:21 102:23 108:23 109:5 120:16 140:18 141:5 179:20, 22 181:7 184:13 186:14 188:23 concerned 44:22 57:16 94:8 97:1 100:2 126:1, 12 200:5 concerning 103:6 concerns 38:12 40:15 77:4 90:10 92:15 95:11 96:25 97:3 101:3 110:20, 24 116:14 117:3, 4 120:7, 20 125:23 149:*4* 150:3, 9 152:18 176:2 179:12 181:5 182:25 186:9 187:25 concession 47:15 Conclusion 145:14 conditions 113:2 114:2 170:*10*, *13* 171:10 173:9

conducted
12:13 36:17
161: <i>4</i>
conference
72:23
confidential 5:5
174:20
configuration
75:8
confines 65:15
confirm 89:17
132:11
confirmed 41:7
confusion
87:25 88:12
138:2 <i>4</i> 152: <i>7</i> ,
16, 21 157:7, 14,
16
congestion 63:1
congruent
101:9 102: <i>16</i>
164: <i>1</i>
connection
88:2 <i>0</i>
connects 96:10
conscious
51:25 84:23
102:2
consecutive
157:22
consensus
32:11 193:7
conservative
81: <i>19</i>
consider 56:19
188: <i>18</i> 194: <i>4</i>
consideration
63:10 89:9
181: <i>18</i> 182: <i>18</i>
184: <i>4</i>
consistency
126:11 179:23
186: <i>14</i> 188: <i>5</i> , <i>11</i>
consistent
151: <i>1</i> 172: <i>18</i>
179:23 180:5
151.7 172.76 179:23 180:5 181:1 182:5
198: <i>9</i>
consistently
179: <i>17</i>
consortium
19:9 23:22
25:4, 10 42:19
70:8 78:22
. 0.0 10.22

consortiums 195:22 constant 54:19 67:21 73:11 158:6 188:7 Constantly 121:11 136:1 constraint 38:18 constraints 91:7 construct 28:1 constructed 9:18 23:10 35:22 74:6 construction 7:10, 13 22:11 23:7 24:7, 12, 13 25:22 26:13 33:16 35:2 42:5 52:2*4* 53:8, 11, 17 54:1, 23 64:23 70:3, 4 72:25 75:19 76:13 77:5 78:7, 21 80:18 81:16 84:6 89:22 90:9, 12, 14, 18 92:9, 14 93:18 94:5 98:10 106:*16*, *24* 146:10 197:16 constructor 196:11 constructors 195:13 consulted 83:4 **contact** 73:11 contemplate 68:25 contemplated 10:13 content 50:4 **contents** 114:21 context 58:4 90:24 92:6 continue 96:4 146:*19* 147:*4* 181:25 182:*14* continued 51:22 73:18 79:8 96:17, 21 continuing 191:*17* 

contract 8:21 33:2, *24*, *25* 44:12 109:21 contractor 190:8 contractors 90:17 98:21 contractual 59:12 86:23 contractually 33:1 63:6 189:25 199:17 contributed 74:12 198:1 199:2*4* contributing 154:13 control 14:3 16:4 23:5, 6 26:5 35:21 54:5 126:*4* controlling 40:3 controls 29:11 conversation 67:*16*, *24* 110:*5* 140:2 154:*1*3 155:15 167:10 169:9. 25 172:18 174:7 176:4 191:9 conversations 39:2 77:2 82:7 148:12 conversion 10:14 87:8 cooling 112:3 **copies** 157:2 **copy** 6:9, 10 127:22, 23 142:18 156:15 162:12, 13 196:23 core 11:22 59:4 66:16 72:13 73:4 78:14 corporate 8:18 21:3 correct 5:8 7:18 29:19, 25 37:15 45:25 46:22 48:6 64:11 69:25 71:2 72:6, 9 82:20 86:23 93:19 105:8

151:*15* 161:*9* 162:*10* 183:*24* corrected 30:14 101:2 102:19 corrections 4:25 5:3, 11 correspondence 192:11 corridors 62:20 **cost** 55:19 77:12 Council 10:5 12:10 17:2, 11, 12, 14 18:9, 18, 23 19:18, 19 21:12 57:11, 15 59:13 66:18 146:24 152:12 162:7 171:*20*, 23 172:2, 10, 12 173:3, 8, 21, 24 174:3 193:*14* 194:18 Councillors 85:6, 7 **Council's** 56:16 COUNSEL 2:1, 2 4:6, 15 5:4 6:8 46:21 49:23 189:1 Counsel's 50:8 countdown 14:18 28:8, 16 counted 143:25 180:*15* countless 102:6 **couple** 77:22 104:16 163:16 172:10 183:23 **course** 12:20 18:18, 20, 23 19:12 22:16 27:20 30:3, 13 184:22. 25 **cover** 12:8 145:8 coverage 58:12 **covered** 200:21 COW158931 159:*17* COW442401 128:20 159:3 **crack** 114:5 create 87:19

182:19 **created** 197:14 credit 81:24 100:10 **Cripps** 17:8 19:6 26:1, 8 37:9 54:14 73:3 criteria 127:16, 20, 23 128:6, 10 129:8, 12, 16, 20 130:1, 2, 7, 10, *14* 131:2, *5*, *11*, 12 132:2, 3 133:23 134:21, *22* 135:*4*, *13*, *21* 136:4 137:5, 23 138:16 139:7 140:13 141:12 151:25 152:*4*, 13 157:8, 13 159:2, 3, 5, 12 160:*17* 161:*15* 197:18 critical 25:11 91:8, 18 92:22 134:23 182:15 criticism 51:4 **Crown** 5:19 CRR 202:3, 23 crystal 141:11 **CSR** 202:4, 23 culture 85:22 199:*14* Curriculum 3:4 6:17 **curve** 102:25 customer 61:7. 12 62:8, 10 63:4 66:13 85:2, 13 87:6 customer-facing 12:9 17:25 133:20 customers 13:24 61:15 66:18, 21 67:2 84:17, 20 85:11 86:10 88:18 119:18 customize 111:25 **cutover** 187:18 CV 6:9, 12 **cycle** 198:18

< D > daily 130:20 135:9 144:15 **D'Andrea** 72:25 data 24:1 76:7 103:18, 22 104:6 date 10:4 14:9 19:14, 15 27:20 28:9 31:25 32:4, 9 44:3, 5, 7, 14, 16, 19, 25 70:16 72:5 83:23 84:25 85:16, 17, 20 86:16, 22, 24 109:17, 19 110:*14* 128:*23* 160:24 161:7 **dated** 136:11 145:8 161:2 202:18 dates 80:22 82:9 83:2, 5, 6, 8, 10, 13, 15 84:12, 18 86:14 99:9 100:21 111:7 dating 139:16 day 1:16 66:15, 24 69:20 124:22 125:*15*, 19 126:10 133:24 134:7. 15 142:16 143:24 144:3, 9 151:9 155:19 156:*7*, *9*, *15* 158:17, 23 161:24 164:13, 17, 18, 20, 21 165:*20* 166:*5* 176:17 178:3 179:1 198:16. 20 199:10 202:18 days 98:3 105:1 133:6, 8, 13 134:9, 16 143:17 145:20 146:23 151:*14*, 18, 21 153:12 155:9, 13, 18 156:25 157:12, 22, 23 158:6, 7,

*10, 14, 15* 162:*8,* 25 163:5 164:7 165:15 166:11 177:2, 3, 5, 7 180:*8*, *14* day's 143:20 day-to-day 25:25 55:12 deal 25:6 149:5 150:25 182:6, 20 188:10 dealing 101:9 183:25 186:2 **Deana** 2:10 202:3, 23 debrief 144:6 195:23 debugging 187:2 decal 88:5 decals 17:22 decide 93:21 187:*16* decided 131:2 decision 51:25 52:9 56:23 57:16 78:16 89:6 148:10 159:5 161:19 162:3, 9 163:*1*, 15 168:15, 21 169:16 174:5 decision-making 13:13 29:6 32:7 174:22 175:14 decisions 17:21 30:15 32:18, 19 56:21 161:12, 14 168:18 175:12, 15 deck 172:13 189:20 declaration 4:10 **decline** 89:13 deduction 183:12 194:9 deductions 47:3 49:8 188:*15* **deemed** 5:15 **deep** 52:18 78:11 175:5 **deeper** 71:1

defeat 10:24

defect-free 111:*18* **Deficiencies** 114:7 115:2, *14*, *23* 117:9. *15*. *23* 147:14 148:21 149:23 150:*1*, *5*, 11, 25 181:16 deficiency 64:25 147:12 148:1 149:10, 18, 22 182:7 definition 35:12, *24* 36:14 64:18, 19 133:17 degrade 48:12, 15 degraded 181:11 **degree** 81:22 degrees 52:18 delay 18:17 19:6 42:13 43:22, 24 68:7, *11* 70:24 71:25 72:3 86:21, 22 87:12 88:20 delayed 77:10 delays 18:4, 6 20:7 22:22 25:16 46:15 55:19 74:11, 12 106:15, 23, 25 171:25 172:3 187:10 delineation 17:16 **Delivery** 178:4 **Deloitte** 46:16. 25 47:1, 2, 10, 12. 23 49:12 195:8 demand 110:6 demanding 63:12 demands 111:1 181:18, 21 186:5, 10, 12, 16 191:2*1* demonstrate 129:13 153:14 demoralized 85:12 denial 89:23

**deny** 89:6

department 94:13 departure 45:11 48:2 **depend** 132:15 178:22 dependent 107:22 depending 56:19 97:5 134:24 **depends** 20:21 deploying 38:2 derailments 101:21 102:24 103:5 189:4, 9, 10, 11 191:4 198:2, 25 199:25 200:10 describe 7:25 9:12 12:3 13:8 16:25 22:10 28:25 29:23 55:11, 17 56:4 81:*18* 167:*9* 179:22 190:12 192:*15* described 12:1 39:23 43:9 53:12 58:13 60:3 86:18 92:7 93:17 141:1 165:18 188:9 197:25 describing 58:13 104:8 169:1,6 DESCRIPTION 3:3 6:20 design 11:7 17:22 22:17 62:18 74:21 desire 137:12 despite 82:21 detail 38:24 59:5 63:15 103:2 104:13 105:23 106:8 158:8 179:3 detailed 45:21 71:5 details 70:9 71:9, 14 92:19 138:11 144:23

167:2 178:11 194:22 determined 31:4 127:17, 20 determines 20:19 **detours** 66:20 develop 47:17 developed 104:24 155:10 developing 155:11 development 31:8 50:17 128:11 deviate 56:17 57:3, 5, 14 74:18 86:9 100:7 deviated 56:23 deviation 57:7 deviations 56:18 66:22 devoting 92:8 dialogue 52:4 54:20 65:18 79:14.21 96:2 126:13 130:5 131:20 132:6 139:2 diesel 7:3 197:13 differ 118:10 difference 82:25 different 22:16 36:6 52:17 57:23 58:5 64:24 69:4 77:10 97:19 99:21 136:7 159:17 165:20 180:1 181:10 190:8 195:*14* 197:12 differently 87:22 198:24 difficult 77:8 153:17 162:18 difficulty 150:10 digits 74:20 dipped 146:13 direct 192:2 **directed** 159:13 direction 111:22 112:*4* 

128:7 129: <i>11</i>
159: <i>15</i> 160: <i>21</i> ,
22 161: <i>11</i>
directly 43:8
51:2 <i>0</i>
Director 55:24
91: <i>16</i>
Directors 71:16
director's
153:25
disagreed 32:13,
<i>14</i> 82:5 116:25
disagreement
100: <i>15</i>
disappointing
190: <i>7</i> , <i>13</i> , <i>20</i>
disappointment
86:17
disconnect 81:1
discrepancy
153:20
<b>discuss</b> 43:10
163:13 200:11
discussed
52: <i>13</i> 163: <i>13</i> , <i>14</i>
discussion
21:2 <i>4</i> 58: <i>6</i>
60: <i>4</i> 63: <i>16</i> , <i>19</i>
67:21 137:17
67:21 137:17 138:2 139:10 143:24 144:4
130.2 139.10
143:2 <i>4</i> 144: <i>4</i>
145: <i>1</i> 153: <i>4</i>
154:5 157: <i>18</i>
170.22 172.7
170:22 172:7 174:25 175: <i>18</i>
174.20 175.78
176:6 188:7
discussions
21:24 33:10, 11
34:20 42:24
45:22 46:2
49:15 50:5
54:16 55:7
57:22 58:22
60:6 65:23
67:11 82:12
00.16 05 05.00
90:16, 25 95:22
109:2 <i>4</i> 117:2
163: <i>6</i> 168:25
169: <i>5</i> 174: <i>14</i> ,
20 188:19, 24
101.16 100.5
191: <i>16</i> 192: <i>5</i> , <i>7</i>
dispose 87:18
<b>dispute</b> 191:15
disputes 42:10,
14, 23 46:14
71, 20 70.17

.2
disruption 25:11 87:25 distances 62:7 distributed 9:1 dive 71:1 divided 130:8 doc 162:15 196:22
document 6:11, 12 32:5 56:15 128:12, 15, 18, 20 129:3, 5 132:9, 12 135:8 136:7, 8, 9, 13, 18, 22 139:3 140:24 141:11, 17, 18 145:7 152:18 153:13 159:4, 11, 17, 19 160:1, 6, 9 161:1 162:19 165:11 176:11
documentation 12:17 13:6 14:2, 11, 24 24:16, 18 26:20 32:15 61:8 111:8 116:12 134:11 136:25 138:19 141:3 142:6 161:14, 17 177:23 183:5 documentations
182:13 documented 42:14 102:17 105:3 113:24 131:8 135:1 136:4 159:15 160:23 161:12 documenting 141:13 161:21 documents 3:9, 16 128:3 129:11 135:15
141:15 160:14 174:1 197:22 doing 17:12 43:18 46:13 47:1, 10 48:8 71:22 80:12 81:23 82:16 88:1, 13 91:2,

*15* 92:*4* 95:*2* 

98:19 102:8 118:20 124:7 130:21 143:5 147:24 159:7 171:7 dollar 137:1 dollars 59:10 199:5 door 103:13 111:21 113:25 doors 54:6 double 62:1, 9, 22, 23 67:3 69:8 74:20
doubt 110:21
downstream
OC. 7 47 00:44
25:7, 17 36:11 78:12
downtown
11:22 61:20, 24 <b>dozen</b> 16:2
draft 162:6
drawing 184:13
diawing 104.73
<b>drill</b> 43: <i>17</i> 177:22 178: <i>19</i>
179:3
drilling 178:23
drills 86:2
drop 126:15
148: <i>10</i> 155:22,
24 156:5 158:19
dropped 149:7
150: <i>6</i>
<b>Due</b> 178:8
<b>DVFM</b> 130:9
<b>Dwyer</b> 16: <i>12</i> 72: <i>17</i> 73: <i>9</i>
72:17 73:9
<e> earlier 31:14 73:10 99:8</e>
124:18 127:18
152:5, 25 159:3
176: <i>14</i> 179: <i>15</i>
<b>early</b> 15:19 23:15 33:19
23:15 33:19
34:8, 12, 14
47:11 53:1
96: <i>15</i> 127: <i>4</i>
196:9
earnest 11:14
ease 80:18
<b>easel</b> 32:4
east 66:11 67:1

easterly 111:22 **e-Builder** 26:21 **effect** 83:16 85:9 173:17 effectively 64:13 **effects** 25:7, 17 78:12 efficiently 61:24 **effort** 55:6 92:2 **efforts** 98:11 **earess** 63:1 elaborated 67:17 **electric** 195:18 197:*14* **element** 33:12 elements 23:12 30:2, 9 99:14, *15* 108:5 133:20 elevation 50:16 elevators 23:7 62:21, 24 69:10 100:9 200:4 emergency 94:15 empathetic 86:9 **empathy** 85:19 enable 54:7 148:19.20 enables 75:9 encouraging 39:25 80:7 **ended** 73:9 energy 188:12 **engage** 23:22 engaged 47:11 engineering 104:3 engineers 76:1 engrained 85:21 enjoyment 114:*1*3 **ensure** 36:10 107:23 108:25 128:17 132:16 168:19 176:5 181:*1* 182:*4* ensuring 47:6 56:6 92:12 101:7 161:20 193:*13* **enter** 4:19 6:15 61:23 entered 4:25 5:5, 10

**entire** 23:17 63:7 76:2 106:20 118:9 158:11 177:2 entitled 35:16 167:19 169:19 176:5 194:21 **entrance** 58:18 59:18, 22 62:13, 20 environment 43:6 58:13 envisioned 58:8 152:*14* **episode** 48:19 equivalent 40:23 error 104:8, 15 errors 5:9 **escalate** 107:11 escalated 107:2, 7 109:23 131:19 escalator 54:5 79:19 escalators 23:7 62:21, 23 69:10 74:17, 18, 20 100:*1*, *2*, *4*, *9* 200:4 **escapes** 91:17 93:8 establish 5:18 12:7 established 11:23 22:15 establishment 25:20 e-telephones 94:15 **Evaluation** 128:21 142:9 177:6 **Eve** 48:19 **evening** 124:*16* event 88:20 **events** 87:4 181:20 eventually 8:25 9:17 16:6 48:22 115:20 122:11 everybody 32:7, 11 47:14 63:23 66:5, 9 74:5 78:24 131:9 144:12 148:15

152:8 153: <i>1</i> 2
150.0 150.10
137 0 133 17
102.0 100.12
155: <i>1</i> 2
100.1 175.10
155:12 159:12 166:1 175:10 176:7 187:13
176.7 107.12
170.7 107.13
193: <i>9</i>
everybody's
140: <i>15</i>
ovidence 1:0
evidence 4:9,
20 5:1, 6, 10, 21,
20 3.7, 0, 70, 27,
<i>25</i> 6: <i>4</i> 32: <i>12</i>
148: <i>4</i>
exact 10:4
exact 10:4
11·8 15·6
14:8 15:6
27:20 32: <i>4</i> , 9
27.20 02.7,0
44: <i>16</i> 61: <i>11</i>
70: <i>15</i> 108: <i>5</i>
100.17 10
109: <i>17</i> , <i>18</i>
110: <i>14</i> 115:3
110.74 113.3
exactly 17·12
exactly 17:12
18·15 79·12
00.0.400.4
88:9 103: <i>1</i> 110:2 123: <i>6</i>
110.2 122.6
110.2 123.0
126:22 132:23
120.22 102.20
138: <i>1</i> , 7 143: <i>18</i>
144:19 148:18
153:8 179:2
100.0 179.2
<b>examined</b> 197: <i>1</i>
example 17:2
•
40 0 04 00 5
19: <i>6</i> , <i>21</i> 20: <i>5</i>
19:6, 21 20:5
19: <i>6</i> , <i>21</i> 20: <i>5</i> 23: <i>19</i> 26: <i>4</i>
19:6, 21 20:5 23:19 26:4 27:10 38:21
23:19 26:4 27:10 38:21
23:19 26:4 27:10 38:21
23:19 26:4 27:10 38:21 42:11 61:5
23:19 26:4 27:10 38:21 42:11 61:5
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4
23:19 26:4 27:10 38:21 42:11 61:5
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2 examples
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2 examples 102:15, 18
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2 examples 102:15, 18 195:17
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2 examples 102:15, 18 195:17
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2 examples 102:15, 18 195:17 exceeded
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2 examples 102:15, 18 195:17 exceeded
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2 examples 102:15, 18 195:17 exceeded
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2 examples 102:15, 18 195:17 exceeded
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2 examples 102:15, 18 195:17 exceeded
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2 examples 102:15, 18 195:17 exceeded 155:19 193:25 194:1 199:2, 16 excuse 175:4
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2 examples 102:15, 18 195:17 exceeded 155:19 193:25 194:1 199:2, 16 excuse 175:4
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2 examples 102:15, 18 195:17 exceeded 155:19 193:25 194:1 199:2, 16 excuse 175:4 excused 174:23
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2 examples 102:15, 18 195:17 exceeded 155:19 193:25 194:1 199:2, 16 excuse 175:4 excused 174:23
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2 examples 102:15, 18 195:17 exceeded 155:19 193:25 194:1 199:2, 16 excuse 175:4 excused 174:23 execute 142:2
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2 examples 102:15, 18 195:17 exceeded 155:19 193:25 194:1 199:2, 16 excuse 175:4 excused 174:23
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2 examples 102:15, 18 195:17 exceeded 155:19 193:25 194:1 199:2, 16 excuse 175:4 excused 174:23 execute 142:2 190:10
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2 examples 102:15, 18 195:17 exceeded 155:19 193:25 194:1 199:2, 16 excuse 175:4 excused 174:23 execute 142:2 190:10 executed 51:9
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2 examples 102:15, 18 195:17 exceeded 155:19 193:25 194:1 199:2, 16 excuse 175:4 excused 174:23 execute 142:2 190:10 executed 51:9
23:19 26:4 27:10 38:21 42:11 61:5 62:12, 14 91:4 92:17 93:1 94:7 98:19, 24 100:1 101:23 102:3 103:2, 18 104:6 109:1 113:15, 25 121:5 130:17 133:5 143:24 170:14 178:1 182:2, 19 196:2 examples 102:15, 18 195:17 exceeded 155:19 193:25 194:1 199:2, 16 excuse 175:4 excused 174:23 execute 142:2 190:10

22
Executive 17:3, 5 33:18 46:17 51:24 52:2 54:16 exercise 15:12 23:16 43:8 119:4 146:25 158:11, 25 164:3 exercised 187:12, 15 exercises 28:17 44:10 exercising
158:21 Exhibit 6:16, 17 EXHIBITS 3:2 existed 49:8 expand 110:12 expanded 15:25 expanding 38:3 expect 31:25 107:6 189:23
190:9 expectation 147:15 expected 184:8 experience 6:21 34:1 50:21 52:9 experienced 52:11 92:13 97:22 108:21
198:2 expert 27:2 67:9, 14 72:19 73:1 74:1 93:7, 9 94:11, 20, 23 95:8, 10 125:23 130:12, 14 186:8 190:9 200:1
expertise 12:12 15:9, 10 33:22, 23 38:4 43:16, 19 50:23 51:1, 8, 12, 18 53:3 72:16 74:8 78:5 82:17 93:23 101:12,
13 128:12 146:16 167:13 180:23 189:24 190:10 <b>experts</b> 14:12 16:2 23:1, 10

29:2 31:11

39:23 55:2 65:20 72:22 79:17 93:11, 16, 21 94:3 97:6 100:11 101:15, 16 107:23 126:14 128:8 132:15 134:11 148:15, 17 149:12, 16 155:10 156:10 168:18 178:22 195:21 196:8 198:14 199:3, 6, 8, 11
48:13 60:19
48: <i>13</i> 60: <i>19</i> 61:2 70: <i>20</i>
111.25 127.10
114:25 127: <i>19</i> 137: <i>15</i> 142: <i>8</i>
137:75 142:8
167: <i>10</i>
explained 59:5,
16, 17 60:10
70:25 96:24
135:5 167:3, 18
175:1
explaining 19:7
100:2 <i>4</i> 161:2 <i>0</i>
100.24 101.20
explains 172:25
explored 57:20
express 61:19
<b>extend</b> 187:21
extended 66:25
170:6 187:9
193: <i>1</i> , <i>25</i>
extension 59:2,
3 66:5
extensions
extensions
12:14 58:24
12: <i>14</i> 58: <i>24</i> 66: <i>4</i> 74: <i>2</i>
12: <i>14</i> 58: <i>24</i> 66: <i>4</i> 74: <i>2</i> <b>extensive</b> 12: <i>21</i>
12:14 58:24 66:4 74:2 <b>extensive</b> 12:21 28:18 50:21
12:14 58:24 66:4 74:2 <b>extensive</b> 12:21 28:18 50:21 198:9
12:14 58:24 66:4 74:2 extensive 12:21 28:18 50:21 198:9 extensively
12:14 58:24 66:4 74:2 extensive 12:21 28:18 50:21 198:9 extensively
12:14 58:24 66:4 74:2 extensive 12:21 28:18 50:21 198:9 extensively
12:14 58:24 66:4 74:2 extensive 12:21 28:18 50:21 198:9 extensively 38:11 72:20 extent 37:6
12:14 58:24 66:4 74:2 extensive 12:21 28:18 50:21 198:9 extensively 38:11 72:20 extent 37:6 external 13:3
12:14 58:24 66:4 74:2 extensive 12:21 28:18 50:21 198:9 extensively 38:11 72:20 extent 37:6 external 13:3 15:17 16:2
12:14 58:24 66:4 74:2 extensive 12:21 28:18 50:21 198:9 extensively 38:11 72:20 extent 37:6 external 13:3 15:17 16:2 25:21
12:14 58:24 66:4 74:2 extensive 12:21 28:18 50:21 198:9 extensively 38:11 72:20 extent 37:6 external 13:3 15:17 16:2 25:21 extra 80:12
12:14 58:24 66:4 74:2 extensive 12:21 28:18 50:21 198:9 extensively 38:11 72:20 extent 37:6 external 13:3 15:17 16:2 25:21 extra 80:12 87:17, 19 88:17
12:14 58:24 66:4 74:2 extensive 12:21 28:18 50:21 198:9 extensively 38:11 72:20 extent 37:6 external 13:3 15:17 16:2 25:21 extra 80:12 87:17, 19 88:17 90:22 91:20
12:14 58:24 66:4 74:2 extensive 12:21 28:18 50:21 198:9 extensively 38:11 72:20 extent 37:6 external 13:3 15:17 16:2 25:21 extra 80:12 87:17, 19 88:17 90:22 91:20 98:20, 21
12:14 58:24 66:4 74:2 extensive 12:21 28:18 50:21 198:9 extensively 38:11 72:20 extent 37:6 external 13:3 15:17 16:2 25:21 extra 80:12 87:17, 19 88:17 90:22 91:20

148:22 150:*15* 187:*11* **extreme** 62:11 eye-opener 130:2 eyes 23:2 78:8 83:24 93:23 95:3 < F > facilitation 93:12 facility 35:13 37:4, 13 39:22 41:9 109:12 110:*1*, *7*, *9* 185:*10*, *15* facing 38:19 111:23 fact 13:4 39:3 113:8, 9, 13, 14 146:4 155:8, 17 172:11 **factors** 74:12 fail 133:24 135:*10* 142:*17* 143:6, 11, 12, 17 144:6, 21, 24 156:*12* 164:*14*, 20 168:5 177:7 178:5 **failed** 116:7 156:*13* 180:*7* **fails** 180:21 failure 44:25 104:9 177:3, 9 178:1 179:5 **failures** 125:18 fair 29:18 52:15 65:3 85:*15* 114:*14* 115:12 164:23 185:13 193:13 **fallen** 13:18 familiar 74:3 108:11 129:3 130:24 familiarize 134:22 **fashion** 53:20 56:3 fast 104:4 **faults** 125:19 **feasible** 59:17, 18 60:10 61:2

99:12 **fed** 12:23 **FEDCO** 17:3, 17 18:3, 14 60:8 172:13 173:*4*, 12 Federal 21:22 **fee** 190:9 feed 10:23, 25 82:16 feedback 40:1 193:9 **feeds** 35:23 88:7 feel 78:18 79:6 85:12 fell 22:11 199:19 **felt** 19:10 23:23 85:6 field 24:1 75:25 95:2 file 141:*11* fill 41:23 76:4 final 84:22 132:24 136:11 138:19 139:11, 12 140:23 142:*1*, *4* 153:*11* 154:*16* 189:*14* **finalize** 139:*18* finalized 112:18 131:*5*, *12* 132:*3*, 20 160:22 financial 49:4 76:12, 16 78:11 192:22 **find** 119:20 162:*18* 191:*25* 196:16 **finding** 153:16 **findings** 95:16, 18 finer 154:16 fine-tuning 30:23 fingers 190:19 finish 90:23 **finite** 167:2 fire 63:2 94:13, 14 **firms** 198:13 **fit** 160:24 fits 161:6, 9 **fitted** 36:11

five-minute
67: <i>15</i>
fix 140: <i>16</i>
flagging 180:20
flare 101:3
188: <i>10</i>
flared 102:20 flash 142:21
flash 142·21
143:8
flats 190:4
fleet 38:14, 15
40:12 145:22
149: <i>1</i> 3 158: <i>8</i>
189:2 <i>1</i>
flexibility 1/10:10
flexibility 149:19 floating 122:16
floating 122:76
flood 62:25
flow 62:16
76: <i>16</i> , <i>22</i> , <i>23</i>
77:3, 5 80:10
91:6 192:23
193: <i>12</i>
fluctuates
197: <i>11</i>
fluid 79:3
99:17 100:17
fluid 79:3 99:17 100:17
100us 42.70
52:6, 7 101:6,
19 102:17
119:2 181:2 <i>1</i>
184:6 189: <i>18</i>
195: <i>1</i> , <i>3</i>
focuses 47:15
focussed 34:3
124:2 <i>0</i> 170:2 <i>4</i>
182:5 187: <i>13</i> 188:6 198: <i>8</i>
188: <i>6</i> 198: <i>8</i>
focussing 26:4
181: <i>18</i>
folks 51:15
53:22 130:18
152: <i>5</i> 195: <i>21</i>
follow 45:13
80:6 104:9
153: <i>17</i>
followed 3:10
16:2 <i>4</i> 104: <i>1</i> 3
148: <i>13</i> 153:22
167: <i>10</i>
following 3:9,
17, 21 10:1
32:2 40:17
JZ.Z 4U.1/
44:2 <i>4</i> 47:2 <i>4</i>
65:7 78:21

79:7 89:22
176: <i>16</i> 192: <i>16</i>
follow-up 4:16
60: <i>15</i> , <i>16</i> 95: <i>18</i>
200:23
foot 50:15 forecast 10:7, 8
101eCast 10.7, 6
80:2 <i>4</i> 117:20
187:18
forecasted 81:2,
3
forecasting
9:25 149:9
foregoing 202:5,
12
<b>forgive</b> 111:6 <b>forgot</b> 102:4, 9 103:21 104:5
forgot 102:4, 9
103: <i>21</i> 104: <i>5</i>
<b>form</b> 184:8
formal 20:3
54:19 58:16
109:2 192: <i>11</i>
formalization
98:17
formally 22:1 formed 55:5
<b>formed</b> 55:5
192: <i>4</i>
former 72:14
forth 8:12 9:22
13: <i>15</i> , <i>25</i> 14: <i>25</i>
17:23 20: <i>14</i>
24:19 26:12, 21,
22 29:6, 13
30:24 33:12, 25
34: <i>6</i> , <i>18</i> 35: <i>14</i> ,
23 41:16 43:18
44:21 49:9
50:19 53:6
59:18 60:18
63:2 69:10
71:9, 23 72:24
76:5 79:19
80:14 82:15
86:4 87:20
88: <i>17</i> 91: <i>20</i>
93:14 96:1
100:13 109:4, 8
112:5 118:18
119:7 121: <i>15</i>
138:22 142:6
143:2 151:2
167: <i>14</i> 172: <i>16</i>
177:24 182:15
187: <i>19</i> 195: <i>7</i> ,
101.19 190.7,

20 197:13
198: <i>15</i> 202: <i>7</i>
forward 10:8
13:9 30:8
39: <i>15</i> 53: <i>4</i>
57:25 58:3, 11
59:15 86:12
104: <i>4</i> 115: <i>17</i> ,
19 134:25
180:3 194: <i>19</i>
196: <i>12</i>
<b>found</b> 154:10
fountains 102:5,
10
frame 15:6
frames 109:7
framework
13:13 20:6
13: <i>1</i> 3
32:7 175:75
<b>trank</b> 140:4
frankly 39:7
183:7
frequency 9:22
103:20 104:5
frequently 42:15
fresh 23:1
93:23 111:25
113: <i>16</i>
Friday 177:6
Friday 177:6 front 53:24
front 53:24
79:2 <i>4</i> 115:8
121:2
frontline 101:6
froze 102:10
frustrated
100: <i>18</i> 190:3
frustration
81:20 100:22
101:11 103:10
full 15:23 20:4
26:19 27:25
30:8 38:16
58:9 60:21
63:12 64:7, 10,
14 65:8 66:1
67:10 06:6
67: <i>10</i> 86: <i>6</i> 119: <i>9</i> , <i>11</i> , <i>13</i> , <i>21</i>
119:9, 11, 13, 21
142:6 148:25
149:2 158:8
167: <i>1</i> 3 171: <i>4</i>
181: <i>9</i> , <i>10</i>
101.8, 10
186:21 194:5
full-time 22:18
fully 37:13, 16 38:7, 10, 22
38:7, 10, 22

59:11 131:8 141:10 153:13 function 100:8 **functionalities** 39:16 fundamental 190:*16* **funding** 21:21 33:23, 24 **future** 200:17 < G > **gain** 91:7 **gamut** 16:3 gas 195:17 196:3 gates 62:20 63:1 **Gaul** 72:18 73:7, 8 179:10 gear 187:14 **General** 7:1, 6, 15 13:5 15:12 42:7 49:20 64:8 76:20 77:1 92:21 106:11 109:5 121:25 129:4, 10 132:12 133:3 180:24 186:*14* 197:*25* 200:17 generally 21:20 107:13 128:3 184:19 generated 104:*14* gentleman 71:17 geo-technical 77:18 78:2 give 42:19 43:14 59:10 75:10 93:13 101:22 102:2 136:14 147:13, 16 149:18 164:*5* 169:*24* 195:16 196:18 199:11 given 5:7, 20 49:22 121:*13* 181:*13*, *18* 185:16

**giving** 5:25 39:4 40:16 glanced 136:19 **glass** 81:25 82:1 114:1. 4 Gleason-Mercier 2:6 **Go/No-Go** 29:12, 14 30:1, 7, 22 31:5, 6, 16 33:7 126:20, 22, 24 127:12 199:13 **goal** 37:1 158:1 Good 4:4 36:13 42:14 55:7 59:15 60:13 71:18 78:1 79:14, 21 100:24 104:3 126:13 129:25 165:12 170:21 179:18 194:17, 18 **govern** 199:12 governance 13:*1*3 14:24 18:20 20:25 21:14 29:5 45:4 61:10 140:10 153:9 168:22 174:18 194:17 governed 28:3 199:12 governing 100:5 172:19 183:15 government 6:24 21:22 57:10 grab 117:*17* **grabbed** 117:18 **granted** 164:4 168:8 175:3 176:5 193:1 great 38:16 40:*4* 59:*5* 63:*16* 191:3 green 30:2, 3, 7, *17* 31:22 32:*14* 111:*15*, *17* 126:20 127:3, 4, 8, 9, 12, 13 **greens** 30:22 32:8

John Manconi on 5/2/2
<b>grew</b> 15:22
197: <i>15</i>
grossly 199:18
<b>ground</b> 5:16
25:6 122:3
grounded
189: <i>21</i>
<b>group</b> 8:5 32:6
104:23 105: <i>4</i>
127: <i>19</i> 135: <i>7</i>
140:10, 12
145:9 168: <i>21</i>
175:25 183: <i>4</i> ,
16 192: <i>4</i> , 8
193:5
groups 54:22
growth 146:0
growth 146:9 Guardia 72:20
Guardia 72.20
guess 49:13
147:3 188:22
<b>Guest</b> 46: <i>17</i> 48: <i>4</i> , 7 49: <i>2</i> , <i>10</i> ,
Guest 46:17
48:4, 7 49:2, 10,
22 50:10, 13
51: <i>5</i> , <i>13</i> , <i>21</i>
22 50:10, 13 51:5, 13, 21 <b>Guest's</b> 49:19
52·1 <i>1</i>
guide 15:17
< H >
half 76:2 180:8
hand 41:16, 17
101: <i>17</i>
handed 8:22
handing 179:24
handing 179:24 handles 111:21

handover 103:17 109:2 **hands** 189:20 hands-on 51:7 **hangers** 113:10 **happen** 101:2 106:23 151:5 happened 85:1 169:5 happens 40:5 **happy** 129:1 136:*13* 171:*8*, *19* head 134:22 195:22, 24 **headed** 183:*16* **Heading** 111:9 112:4 120:9 123:16 125:10, 24 126:18

127:7 133:*4* 178:4 181:19 184:*4*, *16* 185:10 186:9 **headway** 69:16 **healthy** 65:11, 19 **hear** 59:*19* 80:11 85:8 131:18 137:19 190:15 **heard** 10:18 66:5 131:14 142:1 148:7 149:*15* 152:*7* 189:15, 16 hearing 4:12 41:17 55:20 156:8. 11 hearings 4:11, 20, 21, 22 **heat** 111:21 heaters 48:17 195:17 196:3 heating 112:2 heed 40:25 **heeded** 124:25 heeding 79:25 **Held** 1:15 19:25 20:7, 14 help 12:12 50:11 65:17 79:17 80:5 94:11 149:17 150:2*4* 151:23, 24 155:21 164:7 178:5 181:*21* 183:*7*, 19 191:7 193:12 194:6, 7 196:9 helped 47:17 95:6 193:18 **helpful** 70:17 helping 47:2 hesitate 49:14 hesitation 104:2 **Hev** 166:7 high 23:13 62:7 higher 154:21, 24 155:2, 6 157:19 highest 59:8 highlighted

44:23

hindsight 77:16 86:19 149:8 150:7 198:23 199:*15* hinge 114:4 hired 15:20 196:8 198:14 hiring 14:3 190:8 **history** 50:19 hit 155:20 **hold** 21:6 116:1 **Holder** 112:25 139:9 140:1, 18 152:*17* 154:*15* **Holder's** 140:12 holding 114:2 186:25 **hole** 78:3 honestly 68:22 116:3 169:11 **hope** 147:*15* **hoped** 148:20 hopefully 197:6 hoping 36:17 hostlers 40:7 **hot** 147:22 hours 102:6 169:14 170:16 190:23 house 30:25 64:24 77:11 190:9 housed 35:14 **Hubley** 18:22 huge 142:14 **human** 104:8, 15 hundreds 98:22 135:15

<1>IAT 53:22 70:7, 11 73:16 75:14 82:21 83:4 90:21 95:20 114:20 IC 29:13 30:4 33:2 115:4 116:4 172:15 ice 102:11 ID 162:15 196:22 idea 58:20, 23 59:15 148:9 187:7 ideas 58:17 60:9 65:4 79:15 171:8 193:*17* identification 13:25 identified 96:20 103:25 140:18 152:22 170:24 182:21 identify 95:10 196:22 immaterial 140:7 immediate 66:7 **Immediately** 12:5 14:10 15:15, 20, 21 58:20 104:1 109:23 121:7 131:16 132:25 138:21 139:2, 4, 20, 23 140:16 166:25 **immense** 55:18 impact 76:12 77:4 78:19 81:4 89:20 114:12 **impacts** 62:25 implemented 9:18 31:9 54:22 84:23 95:19 182:17 184:2 implementing 19:13 **implications** 38:7 40:15 75:19 76:13 86:18 188:19 importance 124:7 important 188:13 importantly 195:11 **impose** 122:23 **imposed** 170:10 171:11 impressed 29:2 **improve** 168:*11* 171:*4* 193:*2* improved 95:23 180:13 181:2

191:2

incidents 148:23 189:5 **include** 52:10 included 11:4 173:*1* 197:*18* including 83:10 120:5 147:12 172:15 inconsistent 171:23 191:1 incorrect 71:3 increase 28:5 80:17 122:11 increased 85:18 incremental 84:23 87:7 incrementally 84:19 incriminate 5:17 Independent 16:6 22:15, 25 23:24 25:20 27:2 31:14 46:9 53:19 55:2 56:8 70:9, 12 72:11 73:22 80:20 81:3 85:2*4*, 25 91:2 95:1 99:1, 8 100:16 115:1, 13, 18, 24 118:*15* 145:*4* 161:3 174:*14* independently 93:2, 4 **INDEX** 3:2, 14, 19 indicate 29:22 indicated 192:3 indicators 116:9 indirectly 114:23 individual 95:4 **industry** 101:*13* **inform** 8:25 39:3 53:17 information 21:12 49:21 53:14, 16 55:20 78:3 79:4, 8 81:11 83:25 89:2, 21 95:5 98:11, 13, 25 99:6 100:19 122:1 169:23

infraction
103:2 <i>4</i>
infrastructure
23:11 33:15
34:5, 15 42:2,
16 43:7 45:1,
12, 15, 23 46:2,
12, 10, 20 40.2, 9 50.00 00 05
8 50:22, 23, 25
51:15, 18, 23
52:10 92:22
199:2 <i>4</i>
initial 86:21
initiative 21:6
injected 10:22
innovation
39: <i>14</i>
innovative 22:14 input 8:11 22:7
111put 0.77 22:7
33:6, 19 34:3,
16, 25 36:8
146: <i>17</i> 174:22,
25 175:11 176:7
inputs 36:23
Inquiries 5:14
167: <i>6</i>
<b>Inquiry</b> 4:7 5: <i>14</i> , <i>21</i> 197:3
0.14, 21 197.3
inspect 123:21
inspectors
24: <i>14</i>
install 94:25
installation 94:9
95:12
instance 5:19 instances 80:4
instances 80.4
instituted 40:2
instruct 49:20
instructed
138:22 139: <i>4</i> ,
17, 20 140:16
152: <i>19</i>
integrated
22:23 23:9 119:3 199:2 <i>0</i>
119:3 199:2 <i>0</i>
integration
105: <i>11</i> 106: <i>14</i> ,
17, 19
-
intended 116: <i>1</i>
153: <i>15</i>
intends 4:19
interaction
28:18
interest 89:11
interested 52:7

```
interesting
197:7
interests 77:17
interface 96:23
interfaces 12:9
interfere 127:24
interim 86:13
interior 17:22
internal 197:15
interpretation
34:17 36:6 47:4
interpretations
42:24
interrupt 26:18
interruption
103:20, 24, 25
intertwined 49:6
intervals 24:2
intervene 4:13
interview 4:8,
17 6:10 198:7
introduce 61:7
62:1 67:3
introduced
61:16 174:8
introducing 62:9
invested 199:6
invited 18:18
19:18
involve 9:12
19:4 35:10
involved 8:2, 6,
15, 17, 18 9:7,
24 10:19 20:24
21:20, 23 23:11
32:19 33:17
34:19 43:8, 13,
15 45:3, 16, 20,
21, 22 46:1, 12
47:20, 23 48:2
49:14 50:16
52:1, 16, 21
53:8, 20 67:11
89:5 90:15
114:20 128:11
129:11 130:17,
22, 23 142:9
144:1 175:24
177:22 178:15
188:25
involvement 8:1,
24 12:2 27:23
28:1, 25 34:8
36:3 45:1
```

```
52:14, 22, 25
106:1 153:19
involving 49:16
54:23 188:25
IO 36:3
IO's 44:25
irrespective
181:8
issue 48:18
49:24 50:1
67:12 74:17, 21
81:25 101:23,
24 102:18
103:3, 23
107:17 112:3
114:4 115:22
120:18 126:3
138:8, 9 139:24,
25 140:4
157:18 170:7
172:20 184:11
187:16 188:11,
25 189:22
190:24. 25
191:12 192:6
196:1
issued 103:3
194:23
issues 23:3
30:11 39:19
42:23 43:21
48:16 55:4, 8,
21 75:2 95:7
96:19 97:1, 10,
13, 16, 21 98:1
99:20 104:7
109:11 111:11,
20 114:12
117:22 118:24
120:11, 22
121:6, 19 122:3
123:12, 15
124:9 125:10
149:2, 6, 19
150:4, 10 151:1
157:5 177:14
180:21 182:6,
20, 21 184:7
185:4 187:3
188:9 191:5
197:1 198:17,
18 200:16
item 30:17
32:20 191:6
```

```
items 3:10
29:22 31:5, 21
33:7 60:8
99:23 126:19
181:15
< J >
Jack 72:25
January 48:19
Jenkins 15:15
16:19
Jensen 16:20
job 62:8 84:8
90:23 117:16
130:19 135:17
143:5 144:5
178:21 179:18
jobs 92:20
Jocelyne 73:2
175:23
Joe 16:11, 15
72:17 130:17, 23
JOHN 1:7 2:5
3:4 4:3 6:13,
18, 23 7:18, 22
8:3, 17 9:2, 5, 7,
14 10:3, 18, 25
11:6, 19 12:5
13:20 14:8, 16,
23 15:3, 11, 15
16:11, 15, 19, 20,
21 17:4 18:13
19:5 20:2, 21
21:8, 23 22:3, 6,
13 24:10, 25
25:24 26:7, 19
27:1, 11, 25
28:23 29:1, 19,
25 30:19 31:6,
19, 23 32:3, 12,
21 33:8, 17
34:10, 22 35:5,
11, 19 36:8, 19
37:6, 15, 19, 21,
24 38:9, 14, 23
39:6, 13, 24
40:18, 22 41:10,
13, 25 42:7, 12
43:12, 25 44:4,
9 45:3, 14, 19
46:1, 6, 14, 22
47:2, 11, 25
48:6, 9, 16 49:5
50:12 51:3, 22
52:12, 16 53:1,
```

18 54:13 55:1, 14, 17 56:14 57:8, 22 58:10 59:25 60:5. 23 61:4 63:14 64:11, 16 65:10, 24 66:2 67:13, 20, 25 68:6, 12, 16, 22 69:18, 24 70:5, 15, 18, 23 72:1, 6, 9, 12 73:7, 16, 25 74:14 75:21 76:15, 20 77:7, 20, 22 78:22, 24 79:10 80:7, 24 81:6, 13, 17 82:11, 22 83:7, 18 84:14 85:19 86:19 88:22 89:3, 7, 24 90:14, 20 91:1, 13 92:11 93:6, 19, 22 94:7, 21, 24 95:13, 20 96:6, 21 97:4, 16, 20, 24 98:7, 16 99:3, 13 100:22 102:1, 23 103:10 104:11, 18, 23 105:8, 14, 17, 22 106:3, 12, 17, 22 107:*8*, *16* 108:*4*, 12, 16, 19, 24 109:16 110:10 111:2, 6, 13 112:*15*, *23* 113:7, *15*, *23* 114:9, 15, 18, 22 115:*3*, *15* 116:*2*, 11, 17, 21 117:11, 16, 24 118:*4*, *7*, *1*2 119:13, 16 120:1, 3, 10, 15, 24 121:11 122:5, 10, 21 123:3, 6, 13, 17 124:12, 18 125:12, 16, 20 126:1, 21 127:8 128:*1*, *5*, *25* 129:4, 9, 17, 23 130:11, 16

131:3, 7, 14, 23 132:5, 11, 22 133:8, 11, 13, 15 134:10, 17, 24 135:5, 14, 23 136:19, 24 137:6, 10, 13, 25 138:7, 12, 18 139:8 140:3, 20 141:8, 15, 19 142:10, 14, 20, 24 143:10, 22 144:2, 12, 17, 25 145:12, 16 146:3, 21 147:6 148:8, 13 149:8, 24 150:13 151:10, 15, 19, 22 152:2, 24 153:23 154:14 155:1, 8, 17, 24 156:5, 8, 17, 19, 25 157:10, 16, 24 158:5, 17 159:6, 13, 21, 25 160:4, 7, 10, 13, 20 161:6, 9, 16, 25 162:10 163:7, 19, 22 164:9, 12, 16, 22, 25 165:6, 10, 16, 21 166:3, 16, 21, 25 167:8, 12, 24 168:4, 9, 13, 17 169:2, 7, 11, 15 170:1, 5, 12, 19 171:12, 17 172:5, 24 173:6, 13, 25 174:11, 16 175:9, 19 176:3, 12, 18, 23 177:12, 20 178:7, 17, 21 179:9, 15 180:10, 14, 19 181:7, 24 182:24 183:24 184:10, 20, 25 185:7, 12, 18, 25 186:13, 23 177:12, 20 178:7, 17, 21 179:9, 15 180:10, 14, 19 181:7, 24 182:24 183:24 184:10, 20, 25 185:7, 12, 18, 25 186:13, 23 177:12, 20 178:7, 17, 21 179:9, 15 180:10, 14, 19 181:7, 24 182:24 183:24 184:10, 20, 25 185:7, 12, 18, 25 186:13, 23 192:18 193:24 194:11 195:5	
184: 10, 20, 25 185: 7, 12, 18, 25 186: 13, 23 187: 4, 8 188: 4 189: 6, 10, 13 191: 10, 23	132:5, 11, 22 133:8, 11, 13, 15 134:10, 17, 24 135:5, 14, 23 136:19, 24 137:6, 10, 13, 25 138:7, 12, 18 139:8 140:3, 20 141:8, 15, 19 142:10, 14, 20, 24 143:10, 22 144:2, 12, 17, 25 145:12, 16 146:3, 21 147:6 148:8, 13 149:8, 24 150:13 151:10, 15, 19, 22 152:2, 24 153:23 154:14 155:1, 8, 17, 24 156:5, 8, 17, 19, 25 157:10, 16, 24 158:5, 17 159:6, 13, 21, 25 160:4, 7, 10, 13, 20 161:6, 9, 16, 25 162:10 163:7, 19, 22 164:9, 12, 16, 22, 25 165:6, 10, 16, 21 166:3, 16, 21, 25 167:8, 12, 24 168:4, 9, 13, 17 169:2, 7, 11, 15 170:1, 5, 12, 19 171:12, 17 172:5, 24 173:6, 13, 25 174:11, 16 175:9, 19 176:3, 12, 18, 23 177:12, 20 178:7, 17, 21 179:9, 15 180:10, 14, 19 181:7, 24
181:7, 24 182:24 183:24 184:10, 20, 25 185:7, 12, 18, 25 186:13, 23 187:4, 8 188:4 189:6, 10, 13 191:10, 23	169:2, 7, 11, 15 170:1, 5, 12, 19 171:12, 17 172:5, 24 173:6, 13, 25 174:11, 16 175:9, 19 176:3, 12, 18, 23 177:12, 20 178:7, 17, 21 179:9, 15
	180: 10, 14, 19 181: 7, 24 182: 24 183: 24 184: 10, 20, 25 185: 7, 12, 18, 25 186: 13, 23 187: 4, 8 188: 4 189: 6, 10, 13 191: 10, 23

196:*18* 197:*11*, *20* 198:*4*, *6* 199:1 200:1, 13, 20 201:3 ioined 7:20 11:3 joining 8:4 **joint** 15:*16* 163:1 **journey** 52:17 **July** 117:8 127:23 134:6 136:11 151:9 161:*5* 176:*14* jump 103:25 jumped 130:25 **June** 7:23 108:10, 14

< K > **Kanata** 61:18 Kanellakos 7:5, 20 17:6 42:17 48:10 52:3 57:3 72:8 144:16, 18 171:21 172:5, 9 **Kate** 2:2 4:4, 5 6:15, 19 7:14, 19, 24 8:13, 23 9:4, 6, 9, 23 10:*12*, *24* 11:*3*, 15 12:1 13:16 14:*6*, *14*, *20* 15:*1*, *8* 16:*8*, *13*, 23 18:8 19:3, 24 20:18 21:5, 19, 25 22:4, 9 24:6, 22 25:19 26:2, 17, 23 27:5, 23 28:21, 24 29:14, 20 30:16 31:4, 16, 20, 24 32:10, 17 33:5, 14 34:7, 19 35:3, 9, 17 36:1, 16 37:3, 12, 16, 20, 22 38:6, 13, 20 39:1, 10, 20 40:13, 20 41:6, 11, 21 42:2, 10 43:7, 20 44:2, 6, 24 45:10, 15, 25 46:*4*, *7*, *20*, *23* 

47:9, 22 48:3, 7, 13 49:1, 10, 24 50:8, 24 51:17 52:6, 13, 24 53:10 54:9, 21 55:9, 16 56:11 57:1, 19 58:4 59:21 60:2, 19, *25* 63:9 64:*6*, 12 65:6, 20 66:1 67:8, 19, 23 68:1, 10, 13, 19 69:12, 22 70:1, 11, 17, 20 71:24 72:3, 7, 10 73:4, 13, 21 74:10 75:17 76:11, 18 77:1, 15, 21 78:18, 23 79:6 80:3, 20 81:1, 10, 14 82:6, 19 83:2, 14 84:11 85:15 86:12 88:19 89:5, 8, 16, 19 90:3, 8, 15, 24 91:10 92:5 93:3, 16, 20 94:3, 19, 22 95:8, 17 96:3, 16 97:2, 13, 18, *21* 98:*4*, *9* 99:*1*, 7 100:14 101:19 102:18 103:7 104:7, *16*, 19 105:6, 9, 15, *18*, *25* 106: *10*, 13, 19 107:6, 12 108:1, 8, 13, 17, *20* 109:*9* 110:*4*, 23 111:3, 9 112:12, 19 113:3, 12, 20 114:6, 10, 16, 20, *25* 115:9, *21* 116:6, 13, 19 117:6, 12, 22, 25 118:*5*, *10* 119:11, 15, 19 120:2, *7*, *14*, *20* 121:*9*, *24* 122:*8*, *19*, *25* 123:*4*, *10*, *14* 124:8, *13* 125:7, 14, 18, 22

126:*18* 127:*6*,

14 128:2, 16 129:1, 5, 15, 21 130:*6*, *13*, *25* 131:*4*, *10*, *22* 132:1, 8, 18 133:3, 10, 12, 14 134:5, 13, 19 135:3, 11, 20 136:6, 21 137:2, *8*, *11*, *20* 138:*5*, 10, 14 139:6, 24 140:*17* 141:*5*, 13, 17 142:8, 11, 18, 23 143:7, 19, *23* 144:8, *14*, *22* 145:3, 13, 17 146:18 147:3 148:*3*, *9* 149:*4*, 21 150:2 151:7, 11, 16, 20, 23 152:15 153:16 154:12, 23 155:4, 14, 21 156:*4*, *6*, *14*, *18*, 21 157:6, 12, 21 158:3, 13 159:1, *10*, *16*, *22* 160:*3*, 5, 8, 11, 16 161:1, 7, 13, 22 162:2, 11, 20 163:*16*, *21* 164:*5*, *10*, *15*, *19*, *23* 165:*4*, *7*, *14*, *17, 24* 166: *14*, *19*, *23* 167:*5*, *9*, 22 168:2, 7, 10, *15*, *23* 169:*4*, *8*, *13*, *23* 170:*3*, *9*, *14* 171:10, 13, 18 172:22 173:2, 11, 18 174:5, 13 175:7, 17 176:1, 9, 13, 19, 24 177:18, 25 178:12, 20 179:7, 11 180:6, 11, 17 181:4, 13 182:16 183:21 184:3, *16*, *21* 185:3, *8*, *13*, *21* 186:*8*, *20*, *24* 187:*6*, *24* 188:*14* 189:*3*, *8*,

*1*2 191:*6*, *11*, *18* 192:*14* 193:*21* 

194:*7*, *24* 196:*14*, *20* 197:*5*, *17*, *24* 198:5. 22 199:22 200:7, 14, 22, 25 **Kent** 8:19 **kept** 101:9 109:3 147:9 195:*12* key 14:3 23:20 24:15 28:13 73:8 179:21, 22 190:*15* **Kiewit** 195:14, 24 196:8 kilometre 76:2 176:21 kilometres 97:9 98:23 185:2 kind 16:25 49:1 Kirkpatrick 8:19 50:18 **kitchen** 30:25 64:25 knew 15:22 63:8 65:12 79:12 91:17 108:*4* 115:*17* 121:17 128:13 135:24 146:25 149:9, 11 knock 99:20, 22 149:11. 17 **knocked** 101:8 **knowing** 86:10 91:6 151:*4* knowledge 46:4 192:2 known 117:22 123:15 125:9 182:20 184:7 knows 115:7 **KPMG** 195:7, 8 Kreiger 74:1 < L > **La** 72:19 lack 39:20 82:2 189:17 190:13,

La 72:19 lack 39:20 82:2 189:17 190:13, 14 lagging 80:19 laid 143:4 landed 70:23, 24 71:25

landecaning
landscaping
65: <i>16</i> 69: <i>5</i>
language 167:20
laptops 42:25
large 38: <i>15</i> 64: <i>1</i> 199: <i>2</i>
64:7 199:2
larger 23:20
large-scale
64:17
<b>Larry</b> 72:17
73:7, 8 175:22
179: <i>10</i>
late 19:10, 11
44:18 76:22
110: <i>15</i> 131:24
<b>Lauch</b> 20:8
55:6   71:13, 15
82:12 83:9, 20
109: <i>24</i> 153: <i>1</i> ,
<i>24</i> 154:13, 17
166: <i>20</i> , <i>21</i>
<b>Lauch's</b> 153: <i>18</i> <b>launch</b> 9: <i>25</i>
launch 9:25
10:2, 13, 20
11: <i>4</i> , <i>1</i> 2, <i>1</i> 3, <i>2</i> 5
12:9, 24 14:18
15:23 18:3
19:10, 14 23:12
28:6, 9 30:8
31: <i>17</i> 33: <i>4</i> , <i>21</i>
38:8 40:17
11.12 11 20 21
41:12, 14, 20, 24 47:24 52:14
55:10 60:22
55:10 60:22
69:23 73:8, <i>14</i> ,
17, 24 81:8
84:18 85:22
96:5, 15, 19
97:11, 17
103: <i>14</i> 113: <i>18</i> ,
22 117:21
121: <i>13</i> , 23
122:14 123:1
124: <i>16</i> 125:2
126:8  127:1, 10
149:2 <i>0</i> 151: <i>5</i>
166:8 182:22
183:22 184: <i>4</i> ,
<i>1</i> 2, <i>15</i> 185: <i>11</i>
186:2 <i>1</i> , <i>25</i>
192: <i>16</i>
launched 27:3
29:18 101:22
launches 12:13,
14

launching 16:4 28:7 34:2 118:23 123:18 124:9 layer 148:23 layers 27:2 layout 17:23 174:18 lead 36:6 94:9 96:13 leaders 132:16 leadership 55:24 71:12 79:24 leading 9:2, 4 10:3 11:25 18:2 25:2 42:12 44:19 74:24 87:6 110:19 112:9 121:12 125:21 126:23 127:2 179:18 184:12 learn 138:15 learned 129:19 138:18 139:3 195:2, 13 196:12 learning 160:17 leaving 112:22 led 13:1, 25 16:6 48:22 70:21 82:14 83:12 85:5 93:20 125:2 139:1 148:17 153:4, 10 163:6 183:1 200:9 left 37:17 63:23 99:23 legal 45:7 46:20, 24 48:24 49:9, 11, 23 56:15 legally 42:18 lengthy 43:1 lens 15:18 36:20 63:4, 5 74:9 lenses 133:19 lessened 198:24 lessons 195:2, 13 196:12 leter 145:8, 11 159:18 160:18 161:2	
lead 36:6 94:9 96:13 leaders 132:16 leadership 55:24 71:12 79:24 leading 9:2, 4 10:3 11:25 18:2 25:2 42:12 44:19 74:24 87:6 110:19 112:9 121:12 125:21 126:23 127:2 179:18 184:12 learn 138:15 learned 129:19 138:18 139:3 195:2, 13 196:12 learning 160:17 leaving 112:22 led 13:1, 25 16:6 48:22 70:21 82:14 83:12 85:5 93:20 125:2 139:1 148:17 153:4, 10 163:6 183:1 200:9 left 37:17 63:23 99:23 legal 45:7 46:20, 24 48:24 49:9, 11, 23 56:15 legally 42:18 lengthy 43:1 lens 15:18 36:20 63:4, 5 74:9 lenses 133:19 lessened 198:24 lessons 195:2, 13 196:12 letter 145:8, 11 159:18 160:18	28:7 34:2 118:23 123:18 124:9 layer 148:23 layers 27:2 layout 17:23
96:13 leaders 132:16 leadership 55:24 71:12 79:24 leading 9:2, 4 10:3 11:25 18:2 25:2 42:12 44:19 74:24 87:6 110:19 112:9 121:12 125:21 126:23 127:2 179:18 184:12 learn 138:15 learned 129:19 138:18 139:3 195:2, 13 196:12 learning 160:17 leaving 112:22 led 13:1, 25 16:6 48:22 70:21 82:14 83:12 85:5 93:20 125:2 139:1 148:17 153:4, 10 163:6 183:1 200:9 left 37:17 63:23 99:23 legal 45:7 46:20, 24 48:24 49:9, 11, 23 56:15 legally 42:18 lengthy 43:1 lens 15:18 36:20 63:4, 5 74:9 lenses 133:19 lessened 198:24 lessons 195:2, 13 196:12 letter 145:8, 11 159:18 160:18	
42:12 44:19 74:24 87:6 110:19 112:9 121:12 125:21 126:23 127:2 179:18 184:12 learn 138:15 learned 129:19 138:18 139:3 195:2, 13 196:12 learning 160:17 leaving 112:22 led 13:1, 25 16:6 48:22 70:21 82:14 83:12 85:5 93:20 125:2 139:1 148:17 153:4, 10 163:6 183:1 200:9 left 37:17 63:23 99:23 legal 45:7 46:20, 24 48:24 49:9, 11, 23 56:15 legally 42:18 lengthy 43:1 lens 15:18 36:20 63:4, 5 74:9 lenses 133:19 lessened 198:24 lessons 195:2, 13 196:12 letter 145:8, 11 159:18 160:18	96:13 leaders 132:16 leadership 55:24 71:12 79:24 leading 9:2, 4
179:18 184:12 learn 138:15 learned 129:19 138:18 139:3 195:2, 13 196:12 learning 160:17 leaving 112:22 led 13:1, 25 16:6 48:22 70:21 82:14 83:12 85:5 93:20 125:2 139:1 148:17 153:4, 10 163:6 183:1 200:9 left 37:17 63:23 99:23 legal 45:7 46:20, 24 48:24 49:9, 11, 23 56:15 legally 42:18 lengthy 43:1 lens 15:18 36:20 63:4, 5 74:9 lenses 133:19 lessened 198:24 lessons 195:2, 13 196:12 letter 145:8, 11 159:18 160:18	42:12 44:19 74:24 87:6 110:19 112:9 121:12 125:21
learning 160:17 leaving 112:22 led 13:1, 25 16:6 48:22 70:21 82:14 83:12 85:5 93:20 125:2 139:1 148:17 153:4, 10 163:6 183:1 200:9 left 37:17 63:23 99:23 legal 45:7 46:20, 24 48:24 49:9, 11, 23 56:15 legally 42:18 lengthy 43:1 lens 15:18 36:20 63:4, 5 74:9 lenses 133:19 lessened 198:24 lessons 195:2, 13 196:12 letter 145:8, 11 159:18 160:18	179:18 184:12 learn 138:15 learned 129:19 138:18 139:3
83:12 85:5 93:20 125:2 139:1 148:17 153:4, 10 163:6 183:1 200:9 left 37:17 63:23 99:23 legal 45:7 46:20, 24 48:24 49:9, 11, 23 56:15 legally 42:18 lengthy 43:1 lens 15:18 36:20 63:4, 5 74:9 lenses 133:19 lessened 198:24 lessons 195:2, 13 196:12 letter 145:8, 11 159:18 160:18	learning 160:17 leaving 112:22 led 13:1, 25 16:6 48:22
63:23 99:23 legal 45:7 46:20, 24 48:24 49:9, 11, 23 56:15 legally 42:18 lengthy 43:1 lens 15:18 36:20 63:4, 5 74:9 lenses 133:19 lessened 198:24 lessons 195:2, 13 196:12 letter 145:8, 11 159:18 160:18	83:12 85:5 93:20 125:2 139:1 148:17 153:4, 10 163:6 183:1 200:9
lengthy 43:1 lens 15:18 36:20 63:4, 5 74:9 lenses 133:19 lessened 198:24 lessons 195:2, 13 196:12 letter 145:8, 11 159:18 160:18	63:23 99:23 <b>legal</b> 45:7 46:20, 24 48:24 49:9, 11, 23 56:15
lessened 198:24 lessons 195:2, 13 196:12 letter 145:8, 11 159:18 160:18	lengthy 43:1 lens 15:18 36:20 63:4, 5 74:9
	lessened 198:24 lessons 195:2, 13 196:12 letter 145:8, 11 159:18 160:18

level 8:3 9:20 11:20 23:13 38:24 43:13 51:12 57:6 59:8 63:15 90:17 92:16 103:1 104:12 105:23 106:8 107:1, 18 111:13 129:10 132:13, 17 157:19 199:4 levels 8:12 54:17 liability 5:18 lies 33:23 life 45:11 52:23 68:2 198:18 LIGHT 1:6 4:6 6:22 7:13 90:9 147:22 149:14 lighting 69:7 likelihood 83:4 198:25 limited 8:9 34:1, 25 196:1
lines 107:7
161· <i>19</i>
lingering 103: <i>14</i> linked 126: <i>24</i>
listed 117:15
listen 80:2 122:22
listened 52:2
57:24 100: <i>1</i> 2
126: <i>13</i> , <i>14</i> listening 8: <i>20</i>
125:3
literally 28:10 67:15 98:22
111: <i>18</i> 166: <i>4</i>
193: <i>16</i> <b>live</b> 12: <i>14</i> 86: <i>3</i>
440.0 44.04
120:1/ 179:25
119:9, 11, 21 120:17 179:25 living 166:4 LLP 2:7
lo 102:8 load 119: <i>12</i> , <i>21</i>
loading 62:20
loads 86:3 119:9 120: <i>17</i>
148:25 181:10

```
locally 82:1
110:22
location 28:15
103:5 110:2
logger 103:18,
22 104:6
logistics 88:13
long 10:19
27:8 62:7
129:15 130:3
136:10 143:9
157:3 166:11
169:8, 24 170:7
174:7, 21 192:21
longer 16:16
77:11 80:25
187:1
looked 9:15
12:4, 18, 24
28:3 31:8
66:10 96:25
143:10 157:1
159:3 164:1
168:18 178:13
183:17 188:16
197:21
looking 8:15
34:8 46:23
60:21 68:17, 20
73:21 78:15
95:21 101:20
103:4 122:16
132:9 156:6, 9
161:3 173:22
180:3 183:6
188:18 198:11
200:12
looks 131:12
loose 112:15
114:5
loss 81:10, 13
lost 66:21
102:17
lot 19:12 33:19
38:1 42:13, 14
48:20 55:23
74:20 85:5
87:10 91:19
92:16 99:18
109:7 111:7, 14
112:8 129:18
130:4, 5 136:25
Lots 10:3
82:11 120:4
```

130:21 161:17 196:*12* **loud** 16:*1* loved 152:11 **low** 59:1 **lower** 134:1 154:22 155:13 **LRT** 7:10 10:14 15:16 61:21 106:*21* **LRTs** 23:12 59:1 lungs 119:4 **Lyon** 62:5 < M >machine 190:6 macro 11:20 24:25 43:13 made 4:25 5:3, 11 18:11 26:24

30:15 42:8 52:8 56:21 64:9 68:15 83:17 84:15 88:19 90:21 92:6, 11, 12 97:5 100:23 102:3, 12 111:1 116:7, 16, 18, 19 124:22 137:22 138:16 163:15 171:23 172:2 173:3. 12. 23 181:24 188:15, 16 202:9 main 116:9 **maintain** 110:*13* 128:13 186:15 maintained 193:13 maintainer 199:18 maintaining 186:*17* 188:*12* 199:20 maintenance

35:13 37:*4*, 12 38:21 39:21

41:9 45:18

110:1 124:15

147:23 177:3, 8,

109:12, 14

10 178:2, 4 179:14 180:7,

15, 21 181:1, 6, 15, 19, 21 182:6 183:2 184:22 185:4, 10, 14, 15 186:4, 11 188:5, 15 189:17 190:1, 14 191:21 198:10, 15, 21 200:3 major 17:21 20:7 27:21 62:16 66:22 68:3, 4 74:12, 17, 21 100:3, 9 112:7 116:24 125:12 179:6 186:18 making 36:24 89:9 92:22 93:25 170:16 198:16 manage 21:2 22:22 47:19 78:6 84:6
10.0 04.0
107: <i>18</i> 183: <i>9</i>
186: <i>6</i> , <i>11</i> , <i>15</i>
190: <i>10</i>
managed 18:20
27:3 93:2 <i>4</i>
27:3 93:2 <i>4</i> 108: <i>7</i>
108:7
108:7 management
108:7 management 7:9 11:24 13:1,
108:7 management 7:9 11:24 13:1, 12 14:4, 13
108:7 management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10,
108:7 management 7:9 11:24 13:1, 12 14:4, 13
108:7 management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10,
108:7 management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1
108:7 management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1 Manager 7:1, 5,
108:7 management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1 Manager 7:1, 5, 6, 15 8:20
108:7 management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1 Manager 7:1, 5, 6, 15 8:20 15:13 129:10
108:7 management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1 Manager 7:1, 5, 6, 15 8:20 15:13 129:10 132:13
108:7 management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1 Manager 7:1, 5, 6, 15 8:20 15:13 129:10 132:13 managing 15:23
management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1  Manager 7:1, 5, 6, 15 8:20 15:13 129:10 132:13 managing 15:23 101:9 159:8
108:7 management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1 Manager 7:1, 5, 6, 15 8:20 15:13 129:10 132:13 managing 15:23 101:9 159:8 183:9 186:3
108:7 management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1 Manager 7:1, 5, 6, 15 8:20 15:13 129:10 132:13 managing 15:23 101:9 159:8 183:9 186:3 MANCONI 1:7
management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1  Manager 7:1, 5, 6, 15 8:20 15:13 129:10 132:13 managing 15:23 101:9 159:8 183:9 186:3  MANCONI 1:7 2:5 3:5 4:3, 5
management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1  Manager 7:1, 5, 6, 15 8:20 15:13 129:10 132:13  managing 15:23 101:9 159:8 183:9 186:3  MANCONI 1:7 2:5 3:5 4:3, 5 6:13, 18, 19, 23
management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1  Manager 7:1, 5, 6, 15 8:20 15:13 129:10 132:13  managing 15:23 101:9 159:8 183:9 186:3  MANCONI 1:7 2:5 3:5 4:3, 5 6:13, 18, 19, 23 7:18, 22 8:3, 17
management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1  Manager 7:1, 5, 6, 15 8:20 15:13 129:10 132:13  managing 15:23 101:9 159:8 183:9 186:3  MANCONI 1:7 2:5 3:5 4:3, 5 6:13, 18, 19, 23 7:18, 22 8:3, 17
management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1  Manager 7:1, 5, 6, 15 8:20 15:13 129:10 132:13  managing 15:23 101:9 159:8 183:9 186:3  MANCONI 1:7 2:5 3:5 4:3, 5 6:13, 18, 19, 23 7:18, 22 8:3, 17 9:2, 5, 7, 14
management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1  Manager 7:1, 5, 6, 15 8:20 15:13 129:10 132:13  managing 15:23 101:9 159:8 183:9 186:3  MANCONI 1:7 2:5 3:5 4:3, 5 6:13, 18, 19, 23 7:18, 22 8:3, 17 9:2, 5, 7, 14 10:3, 18, 25
management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1  Manager 7:1, 5, 6, 15 8:20 15:13 129:10 132:13  managing 15:23 101:9 159:8 183:9 186:3  MANCONI 1:7 2:5 3:5 4:3, 5 6:13, 18, 19, 23 7:18, 22 8:3, 17 9:2, 5, 7, 14 10:3, 18, 25 11:6, 19 12:5
management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1  Manager 7:1, 5, 6, 15 8:20 15:13 129:10 132:13  managing 15:23 101:9 159:8 183:9 186:3  MANCONI 1:7 2:5 3:5 4:3, 5 6:13, 18, 19, 23 7:18, 22 8:3, 17 9:2, 5, 7, 14 10:3, 18, 25 11:6, 19 12:5 13:20 14:8, 16,
management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1  Manager 7:1, 5, 6, 15 8:20 15:13 129:10 132:13  managing 15:23 101:9 159:8 183:9 186:3  MANCONI 1:7 2:5 3:5 4:3, 5 6:13, 18, 19, 23 7:18, 22 8:3, 17 9:2, 5, 7, 14 10:3, 18, 25 11:6, 19 12:5 13:20 14:8, 16, 23 15:3, 11
management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1  Manager 7:1, 5, 6, 15 8:20 15:13 129:10 132:13 managing 15:23 101:9 159:8 183:9 186:3  MANCONI 1:7 2:5 3:5 4:3, 5 6:13, 18, 19, 23 7:18, 22 8:3, 17 9:2, 5, 7, 14 10:3, 18, 25 11:6, 19 12:5 13:20 14:8, 16, 23 15:3, 11 16:11, 15, 20, 21
management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1  Manager 7:1, 5, 6, 15 8:20 15:13 129:10 132:13  managing 15:23 101:9 159:8 183:9 186:3  MANCONI 1:7 2:5 3:5 4:3, 5 6:13, 18, 19, 23 7:18, 22 8:3, 17 9:2, 5, 7, 14 10:3, 18, 25 11:6, 19 12:5 13:20 14:8, 16, 23 15:3, 11 16:11, 15, 20, 21 17:4 18:13
management 7:9 11:24 13:1, 12 14:4, 13 24:13 26:5, 10, 11, 13, 20 30:5 141:4 184:1  Manager 7:1, 5, 6, 15 8:20 15:13 129:10 132:13 managing 15:23 101:9 159:8 183:9 186:3  MANCONI 1:7 2:5 3:5 4:3, 5 6:13, 18, 19, 23 7:18, 22 8:3, 17 9:2, 5, 7, 14 10:3, 18, 25 11:6, 19 12:5 13:20 14:8, 16, 23 15:3, 11 16:11, 15, 20, 21

21:8, 23 22:3, *6*, 13 24:10, 25 25:24 26:7, 19 27:1, 11, 25 28:23 29:1, 19, 25 30:19 31:6, 19, 23 32:3, 12, 21 33:8, 17 34:10, 22 35:5, 11, 19 36:8, 19 37:6, 15, 19, 21, 24 38:9, 14, 23 39:6, 13, 24 40:18, 22 41:10, 13, 25 42:7, 12 43:12, 25 44:4, 9 45:3, 14, 19 46:1, *6*, *14*, *22* 47:2, 11, 25 48:6, 9, 16 49:5 50:12 51:3, 22 52:12, 16 53:1, 18 54:13 55:1, 14, 17 56:14 57:8, 22 58:10 59:25 60:5, 23 61:4 63:14 64:11, 16 65:10, 24 66:2 67:13, 20, 25 68:6, 12, 16, 22 69:18, 24 70:5, 15, 18, 23 72:1, 6, 9, 12 73:7, 16, 25 74:14 75:21 76:15, 20 77:7, 20, 22 78:22, 24 79:10 80:7, 24 81:6, 13, 17 82:11, 22 83:7, 18 84:14 85:19 86:19 88:22, 25 89:3, 7, 24 90:14, 20 91:1, 13 92:11 93:6, 19, 22 94:7, 21, 24 95:13, 20 96:*6*, *21* 97:*4*, 16, 20, 24 98:7, 16 99:3, 13 100:22 102:1, 23 103:10 104:11, 18, 23 105:8, *14*, *17*, *22* 106:3, 12, 17, 22

107:*8*, *16* 108:*4*, 12, 16, 19, 24 109:16 110:10 111:2, 6, 13 112:*15*, *23* 113:7, 15, 23 114:9, 15, 18, 22 115:*3*, *15* 116:*2*, 11, 17, 21 117:11, 16, 24 118:*4*, *7*, *12* 119:*13*, *16* 120:1, 3, 10, 15, *24* 121:*11* 122:5, 10, 21 123:3, 6, 13, 17 124:12, 18 125:12, 16, 20 126:1, 21 127:8 128:*1*, *5*, *25* 129:4, 9, 17, 23 130:11, 16 131:*3*, *7*, *14*, *23* 132:5, 11, 22 133:8, 11, 13, 15 134:10, 17, 24 135:*5*, *14*, *23* 136:*19*, *24* 137:6, 10, 13, 25 138:7, 12, 18 139:8 140:3, 20 141:8, 15, 19 142:*10*, *14*, *20*, *24* 143:*10*, *22* 144:2, *12*, *17*, *25* 145:12, 16 146:3, *21* 147:6 148:*8*, *1*3 149:*8*, 24 150:13 151:*10*, *15*, *19*, *22* 152:2, *24* 153:23 154:*14* 155:1, 8, 17, 24 156:5, 8, 17, 19, *25* 157:10, 16, 24 158:5, 17 159:6, 13, 21, 25 160:*4*, *7*, *10*, *13*, 20 161:6, 9, 16, 25 162:10 163:7, 19, 22 164:9, 12, 16, 22, *25* 165:*6*, *10*, *16*, 21 166:3, *16*, *21*, *25* 167:8, *12*, *24* 

168:*4*, *9*, *13*, *17* 169:2, 7, 11, 15 170:1, 5, 12, 19 171:12, 17 172:5, *24* 173:6, 13, 25 174:11, 16 175:9, 19 176:3, 12, 18, 23 177:12, 20 178:*7*, *17*, *21* 179:*9*, *15* 180:10, 14, 19 181:*7*, *24* 182:2*4* 183:2*4* 184:*10*, *20*, *25* 185:7, 12, 18, 25 186:13, 23 187:*4*, *8* 188:*4* 189:6, 10, 13 191:10, 23 192:3, 18 193:2*4* 194:*11* 195:5 196:18 197:5, 11, 20 198:*4*, *6* 199:*1* 200:1, 13, 20 201:3 manner 42:22 147:*14* 148:*22* manufacturing 92:9 94:6 109:22, 25 110:7 185:9 186:*4* **Mario** 192:20 mark 146:*11* master 40:20, *23, 24* 41:3, 23 material 26:23 95:1 131:17, 18 137:18 materials 95:12 **matter** 21:9 157:11 191:14 **matters** 117:*8*, *13* 175:24 maximum 119:*17* Mayor 18:21 20:9, 14 144:16 McGrann 2:2 4:*4*, 5 6:15, 19 7:14, 19, 24 8:13, 23 9:4, 6,

*9*, *23* 10: *12*, *24* 

11:3, *15* 12:*1* 13:*16* 14:*6*, *14*, 20 15:1, 8 16:8, 13, 23 18:8 19:3, *24* 20:*18* 21:5, 19, 25 22:4, 9 24:6, 22 25:19 26:2, 17, 23 27:5, 23 28:21, 24 29:14, 20 30:16 31:4, 16, 20, 24 32:10, 17 33:5, 14 34:7, 19 35:3, 9, 17 36:1, 16 37:3, 12, 16, 20, 22 38:6, 13, 20 39:1, 10, 20 40:13, 20 41:6, 11, 21 42:2, 10 43:7, 20 44:2, 6, *24* 45: 10, 15, 25 46:*4*, *7*, *20*, *23* 47:9, 22 48:3, 7, 13 49:1, 10, 24 50:8, 24 51:17 52:6, 13, 24 53:10 54:9, 21 55:9, 16 56:11 57:1, 19 58:4 59:21 60:2, 19, *25* 63:9 64:*6*, 12 65:6, 20 66:1 67:8. 19. 23 68:1, 10, 13, 19 69:12, 22 70:1, 11, 17, 20 71:24 72:3, 7, 10 73:4, 13, 21 74:10 75:17 76:11, 18 77:1, 15, 21 78:18, 23 79:6 80:3, 20 81:1, 10, 14 82:6, 19 83:2, 14 84:11 85:15 86:12 88:19 89:5, 8, 16, 19 90:3, 8, 15, 24 91:10 92:5 93:3, 16, 20 94:3, 19, 22 95:8, 17 96:3, 16 97:2, 13, 18, 98:*4*, *9* 99:*1*, 21

7 100: <i>14</i>
101:19 102:18
103:7 104: <i>7</i> , <i>16</i> ,
<i>19</i> 105: <i>6</i> , <i>9</i> , <i>15</i> ,
<i>18</i> , <i>25</i> 106: <i>10</i> ,
10, 20 100.70,
13, 19 107:6, 12
108:1, 8, 13, 17, 20 109:9 110:4,
100.1, 0, 13, 17,
<i>20</i> 109: <i>9</i> 110: <i>4</i> ,
22 111.2 0
23 111:3, 9
112: <i>1</i> 2, <i>1</i> 9
113: <i>3</i> , <i>1</i> 2, <i>20</i>
114:6, <i>10</i> , <i>16</i> , <i>20</i> ,
<i>25</i> 115: <i>9</i> , <i>21</i>
116: <i>6</i> , <i>13</i> , <i>19</i>
117:6, 12, 22, 25
118: <i>5</i> , <i>10</i>
110.0, 10
119: <i>11. 15. 19</i>
119: <i>11</i> , <i>15</i> , <i>19</i>
120.2, 7, 14, 20
121:9, 24 122:8,
19, 25   123: <i>4</i> , <i>10</i> ,
<i>14</i> 124:8, <i>13</i>
125: <i>7</i> , <i>14</i> , <i>18</i> , <i>22</i>
126: <i>18</i> 127: <i>6</i> ,
<i>14</i> 128:2, <i>16</i>
120.1 5 15 21
129: <i>1, 5, 15, 21</i>
130: <i>6. 13. 25</i>
121.4 10 22
130: <i>6</i> , <i>1</i> 3, <i>2</i> 5 131: <i>4</i> , <i>10</i> , <i>22</i>
132: <i>1, 8, 18</i>
133: <i>3</i> , <i>10</i> , <i>12</i> , <i>14</i>
134:5, 13, 19
135: <i>3</i> , <i>11</i> , <i>20</i>
136: <i>6</i> , <i>21</i> 137:2,
130.0, 27 137.2,
<i>8</i> , <i>11</i> , <i>20</i> 138: <i>5</i> ,
10, 14 139:6, 24
10, 14 139.0, 24
140: <i>17</i> 141: <i>5</i> ,
12 17 1/2.8 11
13, 17 142.0, 11,
13, 17 142:8, 11, 18, 23 143:7, 19,
22 144.0 14 22
23 144:8, <i>14</i> , 22
145:3, 13, 17
146: <i>18</i> 147:3
148: <i>3</i> , <i>9</i> 149: <i>4</i> ,
04 450.0 454.7
<i>21</i> 150:2 151:7,
11, 16, 20, 23
450:45 450:40
152: <i>15</i> 153: <i>16</i> 154: <i>1</i> 2, 23
154· <i>12</i> 23
10-1.12, 20
155: <i>4</i> , <i>14</i> , <i>21</i>
156: <i>4</i> , <i>6</i> , <i>14</i> , <i>18</i> ,
<i>21</i> 157: <i>6</i> , <i>12</i> , <i>21</i>
158:3, <i>13</i> 159: <i>1</i> ,
<i>10</i> , <i>16</i> , <i>22</i> 160: <i>3</i> ,
5, 8, 11, 16
161:1, 7, 13, 22
162:2, 11, 20
102.2, 11, 20
163: <i>16</i> , <i>21</i>
- ,
161.5 10 15 10
164:5, 10, 15, 19,

*23* 165:*4*, *7*, *14*, *17, 24* 166:*14*, 19, 23 167:5, 9, 22 168:2, 7, 10, *15*, *23* 169: *4*, *8*, 13, 23 170:3, 9, 14 171:10, 13, 18 172:22 173:2, 11, 18 174:*5*, *1*3 175:*7*, 17 176:1, 9, 13, 19, 24 177:18, 25 178:12, 20 179:*7*, *11* 180:*6*, *11*, *17* 181:*4*, *13* 182:16 183:21 184:3, 16, 21 185:3, *8*, *13*, *21* 186:*8*, *20*, *24* 187:*6*, *24* 188:*14* 189:*3*, *8*, *12* 191:*6*, *11*, *18* 192:*1*, *14* 193:21 194:7, *24* 196:14, 20 197:*5*, *17*, *24* 198:5, 22 199:22 200:7, 14, 22, 25 meaning 30:3 68:*4* **means** 9:13 123:25 meant 16:20 30:11 measurable 128:9 129:12 130:1 measure 118:17, *18* 132:7 153:*5* measured 156:3 measurement 136:2 measuring 134:12 154:18 157:19 mechanism 45:17 47:5 mechanisms 47:19 **media** 18:*18* 19:*18*, *20* 20:*4*, 7, 12, 15, 17 58:12 162:21

189:*16* 

**meet** 19:14 37:11 44:18, 25 64:20 82:9 85:17 124:5 125:8 166:8 meeting 21:11, 13, 15 28:5, 9, 14 45:5 49:22 52:3 58:10 59:24 60:1, 7, 12. 20 64:12 65:7 83:5 140:21 142:25 143:2, 3 156:*16*, *17*, *21* 163:23 165:17, 19, 20, 22, 25 166:1, 9 169:*1*, *6* 174:*10*, 14 175:4 191:20 202:10 meetings 8:20 17:7 28:13 33:18 45:4 53:13 54:10, 15, 19 83:10 106:11 108:9, 14, 18 153:1, 7 154:*4* 192:*19* Member 2:2 **members** 18:24 19:19 21:12 33:11 72:13 73:4 138:25 memo 17:14 162:7, 12, 22 171:20, 22 172:8, 11, 24 173:*14* 174:*1* 194:23 memorialized 160:*18* memory 134:4 164:8 mention 157:21 mentioned 7:20 13:17 18:9 29:14 31:14 43:20 44:15 48:3 60:25 100:14 127:18 137:2 149:21 152:*4*, *16*, *17* 153:18 176:13 178:14 191:7

mentioning 152:*25* **merit** 58:2 **message** 64:13 messages 153:2 met 20:13 30:3 35:24 36:5, 7, 14 42:15, 19 44:8 55:25 56:6 84:13 85:17 171:24 195:13, 22 Michael 22:6 31:13 45:20 71:23 73:3 105:24 106:9 113:24 114:18, *23* 139:21 145:9 159:19 175:21 183:17 195:11 196:18 **Michael's** 117:*16* midway 158:20 **miles** 97:8 milestone 33:19 34:10, 20 35:7, 18 36:4, 7, 14 37:11 milestones 27:21 34:8 68:3 million 146:8, 11, 13 **millions** 199:5 **mind** 50:9 78:25 83:23 185:23 200:13 minds 31:10 minimum 133:25 minor 111:18, 20 114:6 115:2, *14*, *23* 117:*9*, *15*, 23 137:15 140:*4* 147:*1*2 149:22 150:4, 11 179:6 181:*15* 182:*6* **minute** 84:18 150:2*0* 154:10 minutes 169:14 minute-takers 161:17, 22 162:1 missed 86:14 100:21 102:13 170:3 mobilize 25:5

**mock** 118:20 120:5 model 110:11, 20 modelled 62:19 modern 41:22 198:8 moment 132:2 162:5 **Monday** 151:9 178:2 money 55:19 64:2 monitor 182:*14* monitoring 70:2 182:1 **monthly** 108:9 183:2 months 44:11 47:21 48:18 85:5, 10 88:10 104:*4* 135:25 172:10 183:6, 23 191:3, 9 194:*15* Morgan 17:10 22:6 31:13 42:17 45:20 54:14 70:6 73:3, 19 105:24 106:9 113:24 114:18 139:21 145:9 159:19 175:21 196:15, 25 **Morgan's** 71:23 morning 4:4 58:14 90:3 103:15 123:18, 24 124:7, 10, 17 125:9 158:19 200:11 **move** 30:8 33:4 40:7, 11 45:9 66:14 69:19 109:21, *25* 110:*17* 115:17 136:15 144:3 **moved** 92:20 173:16 movement 62:19 movements 40:3 41:5 102:*24* 

Ottawa Light Rail Cor John Manconi on 5/2/
moving 14:12 53:4 111:7 115:19 147:10 MSF 35:8 109:22 110:25 MTA 72:14 multi-billion 136:25 multimodal 12:19 22:23 multiple 85:2 187:10 multiyear 15:6 multi-year 15:4 municipal 6:24 57:10
<n> names 15:20 130:23 192:21 naming 17:22 Nancy 50:18 NASA 28:7 nature 138:3 180:25 necessarily 101:5 necessary 29:17 169:20 needed 12:8 13:10 30:12, 14</n>

56:21 57:25 72:17 106:6 109:6 111:14 112:13, 17 114:13 117:17 127:9, 11, 12 128:4 132:21 133:6 140:11 141:*20*, *24* 147:1 157:13 159:14 166:10 167:4 168:1 169:16 170:8 184:18 needs 6:5 10:1 24:17 37:10 103:*19* 131:*19* **NEESONS** 202:22 negotiated 194:20 **neither** 56:16 57:2

network 9:17 80:16 **neutral** 91:14 **new** 9:16 12:13 23:12 48:19 64:24 72:14 91:16 98:21 110:2 113:9 124:1 182:22 184:9 185:*4* 190:24 news 102:4, 12 171:*18* **night** 107:19 nighttime 158:24 non-essential 184:6 non-negotiable 56:9, 12, 25 non-starter 64:14 **non-stop** 54:20 nontypographical 5:11 normal 24:12 71:22 184:22 185:*1* **North** 16:11, 15 53:22 58:25 72:17 73:6 130:17, 23 **note** 179:4. 5 **noted** 3:16, 20 notes 30:24 152:12 202:13 **notice** 44:20 103:3 **notify** 171:24 notion 163:17 174:8 186:25 number 27:15 28:16 29:16 49:15 54:22 61:11 85:4, 9 119:17 123:25 124:2 133:6 136:10 149:6 150:*5*, *11* 151:18 152:8 157:12 162:19 179:*4*, *5* 182:*25* 

186:10 191:16

192:5

numerous 17:19 19:1, 2 155:18 186:1 < 0 > object 6:3 objected 5:15 objections 39:8 objective 134:15 168:14 objectives 124:5 obligated 190:1 obligations 30:4 observation 76:6 91:5 180:24 observations 44:10 90:21 92:21 95:23 96:22 **observed** 111:12 obtain 4:9 53:15 **OC** 7:1, 12 8:1, 4, 14, 22, 23 12:2 21:5, 19 22:5 31:11 34:13 occur 22:18 79:22 97:17 117:21 121:17 139:*15* 167:*4* occurred 30:20 46:15 78:12 97:11 101:21 107:1 113:9 143:18 151:2 179:1 189:19 occurrence 178:8 occurrences 194:1 occurring 97:11 172:20 190:17 200:16 occurs 103:17 181:9 offer 45:5 80:2 **offered** 171:*15* offering 60:22 office 21:2 24:11 26:8 officer 103:3 **offline** 137:18

138:*4* old 40:24 93:8 **OLRTC** 28:11, 19, 22 32:18 44:13 53:13.25 57:23 72:1 90:10, 17 92:8 109:20 128:9 163:19 on-board 121:4 one-on-one 195:23 one-page 6:11 one-week 24:2 ongoing 96:1 163:2 on-site 22:17 **Ontario** 33:15 34:5, 16 42:3, 17 43:8 45:12, 16, 23 46:2, 8 50:22, 23, 25 51:16, 23 52:10 Ontario's 45:1 51:19 onwards 12:4 46:13 109:10 Oops 85:1 190:*4*, *5* open 43:3 55:6, *19* 59:3 62:*4*, *5* 65:4 69:8, 11 70:8 78:8 82:17 182:25 193:17 **opened** 66:11 121:18 opening 58:7, 19, 23 59:16, 23 61:5, 13, 20, 25 63:11 64:10, 14 65:8, 17, 22 67:22 68:25 69:3, 5 122:15 150:20 170:25 171:*1*, *4*, *5* 188:2 199:9 openings 59:6 60:18 68:9 121:15 **operate** 15:14 128:*13* operated 27:4 operating 61:9 75:8 104:9

operation 7:2, 12 41:5 operational 12:7 13:16 15:*18*. *21* 16:*3*. 9 17:18 34:2 51:10 63:5 102:8 172:20 175:24 186:6 188:13 operations 6:25 16:3, *4* 41:*18* 74:7 93:24 179:25 180:1 operator 35:1 36:22 111:24 112:3 operators 113:*16* **opinion** 82:25 92:3 190:20 opportunities 65:14 opportunity 5:7 57:5 104:20 105:19 136:14 143:20 163:12 164:6 **opposed** 157:23 **opposite** 110:*10* optimism 82:8. 15, 16 optimistic 81:21 82:3, 13 99:16 **options** 46:15 48:11 49:8 **order** 4:22 133:7 183:8 184:1 orders 104:14 177:14 182:19 183:*1*, *4*, *7*, *10*, 12, 18, 25 184:5, 6 191:8 193:2 org 192:23 organization 123:19 124:11 organizational 47:17 organizations 190:18 organize 186:7 organized 102:16

original 16:9
19: <i>15</i> 50: <i>16</i>
152: <i>4</i> 154:8
originally 6:25
107: <i>14</i> 152: <i>14</i>
155:2
<b>Orleans</b> 61: <i>18</i>
OTT377178
136: <i>1</i> 2
<b>OTTAWA</b> 1:6, 7 2:5 4:6 61:20
2:5 4:6 61:20
124:2 195:25
196:2
<b>Ottawa's</b> 6:22
90:9
outcome 25:18
62:9 69:19
106:7
outdoor 102: <i>4</i> ,
10
outer 61:18
<b>outlined</b> 185:17
out-of-the-blue
110:5
outreach 12:10
20:13
outset 67:11
<b>outside</b> 18: <i>11</i>
49:23 156: <i>15</i> ,
<i>17</i> 188:25
192: <i>10</i> 193:23
198: <i>11</i>
outstanding
36: <i>5</i> 65:2
89·19 95·24
114·11 117·13
114: <i>11</i> 117: <i>13</i> 149: <i>5</i> 187: <i>3</i>
outstripped
51: <i>15</i>
overall 75:19
89: <i>11</i> 91:9
108:25 109: <i>6</i>
188: <i>19</i>
overcome
185:2 <i>0</i>
overhead 20:6
overly 81:21
82:3, <i>1</i> 3
over-resource
120:25 121:2,
16 123:11
179: <i>17</i>
over-resourcing
126:8

oversee 84:9 190:11 overseeing 7:12 24:20 25:24 35:2 41:*4*. 20 overseen 92:13 oversight 13:12 22:10 23:16 24:7, 11 25:22 26:2, 13 33:1, 24 36:9, 16, 18 53:9, 11, 17 71:22 92:25 182:11, 12, 17 183:*14* 193:*14* 194:18 198:9 199:*4*, *14* **owned** 9:20 < P > **p.m** 1:17 201:5 **P26** 71:4, 14 98:13 **P3** 9:5, 19 71:7 77:13 78:15 **P3s** 22:16, 19 **PA** 104:25 106:4 107:5 paces 119:5 **package** 145:4 PAGE/LINE 3:3, 17 **pages** 3:21 paid 77:23, 24 93:2 125:*4* 156:11 **pain** 62:10 66:19 67:2 84:16 85:4, 11, 14 87:5, 25 88:13 panel 100:12 199:8 pantograph 96:9, 10 paper 23:16 paragraph 145:*17* **parallel** 10:15, 20, 21 11:4 27:17 84:22 187:18, 23 **Pardon** 94:21 parentheses

138:21

part 31:7 39:14 45:4 47:12 51:23, 24 53:18 54:8 58:19 64:8 74:6 81:11 95:1 102:5 118:7 120:12 140:1 148:*4* 160:*19*, 21 162:22 170:*4* 171:*14* 175:18 176:7 182:3 184:2 partial 59:6, 16 60:*18* 61:*5* 63:6, 11 67:22 68:*9*, *25* 69:*3*, *4* 176:*10* participants 1:16 2:4 5:4, 10 participate 28:13 particular 19:4 80:4 102:25 106:*15* 108:*21* 175:8 177:*4* 182:*1* particularly 23:2 58:25 143:11 parties 105:3 129:13, 16 131:6 141:*12*, *24* 145:25 163:*1*3 167:*20* 191:*15* 193:*8* partner 42:5 43:22 49:16 128:8, 14 155:6 189:2*4* partners 21:21 partnership 7:10 9:3 24:13 29:8 56:3 94:17 122:23 189:9 partnerships 50:22 **parts** 23:18 82:4 158:17 **pass** 133:6 135:10 142:17 143:6 144:6, *20*, *24* 165: *1*, *2* 178:*3*, *24* 180:*17* 

**pass/fail** 152:13 156:*11* 157:*4* **passed** 98:23 180:15. 19 passenger 9:15 66:15 103:9 passengers 69:*20* 119:*24* 146:8 188:21 **passing** 68:8, 23 157:2 163:9, *24* 168:5 **pat** 126:3 path 25:12 36:21 54:2 56:20 57:12, 20 85:22 91:8 141:24 **paths** 69:6 **patterns** 96:13 **pause** 6:6 143:25 144:2, 3 145:1 162:3, 9 163:2, *12*, *15*, *17*, *25* 164:3, *4* 165:22 166:13, *15* 167: *1*, *3*, *6*, 11, 15, 16, 18, 21, *23* 168:*8*, *16*, *25* 169:*10*, *22* 170:11, 15, 17 171:*11*, *14* 174:5, 9 175:2 176:2 **pausing** 163:*6* 168:11 172:25 **paved** 69:6 pay 55:2 156:*10* 190:*9* paying 59:7, 9 63:6, 7 64:7 182:2 payment 35:7, 15 36:14 37:11 45:17, 23 47:5, 13, 19 63:10, 12 64:1, 5 194:3, 9, 21 payments 33:20 34:10, 21 45:18 47:14 63:21 65:2 183:2 188:*15* 194:*9*, 12, 16

**peak** 119:17 133:16 145:19, 21 146:16, 19 149:7 158:*10*, 19, 23 **peel** 84:21 people 8:5 17:8 26:7 31:12, 13 37:9 39:24 40:7 41:4, 8, 13, 15, 19 43:3 51:5 54:23, 24 62:19 69:*4*, *9* 72:*23* 73:3, 10 76:8 92:13, 20 121:14 129:7, 19 130:22 134:25 139:22 152:*5* 156:*1* 157:2*4*. 25 158:7 159:*6*, *8* 167:14 168:19 169:3 175:*21*, 23, 25 178:15 179:3 198:13 **percent** 61:11 133:8, 10, 12, 14 134:1, 8, 16 139:1, 15, 16 151:13, 21 152:3, 6 153:3, 21 154:5, 9 155:12, 16, 19 percentage 151:*16* performance 46:16 145:19 162:*7*, *24* 163:*5* 176:25 179:13 180:*12* 181:*6*, *14* performed 188:*8* 194:*15* period 8:13 9:10, 24 11:5 12:25 14:6 32:2 34:13 44:20 47:9 54:23 118:1 120:9 126:23 129:*14* 137:*24* 149:7 157:9 160:25 161:8 172:21 173:1 179:*13* 187:*1*, *9* 

<b>periods</b> 133: <i>16</i>
170:6
perjury 5:24
permanent 69:7
permits 4:15 person 5:20
72: <i>15</i>
personal 198: <i>4</i>
personally
192: <i>19</i>
perspective
25:3 45:6 49:9
56:13 59:12
75: <i>5</i> 125: <i>4</i>
perspectives
52:4 93:25
130:5 171:9
pertained 70:6
<b>Peter</b> 2:6 16:18 49:13 50:3
55:6 71:2, <i>1</i> 3
82:12 88:22, 24
89:12, 18
109:23 115:7
162: <i>16</i> 166: <i>17</i> .
20, 21 188:22
191: <i>13</i> , <i>24</i>
194: <i>13</i> 196: <i>19</i> ,
24 200:24
phase 14:17
33:16 42:6
52:25 61:21 62:18 70:4
93:18 97:12
123:5
<b>phased</b> 60:18
<b>phone</b> 54:16
110: <i>16</i> 144: <i>19</i>
<b>phones</b> 94:15
physical 32:5
199:23
physically 23:17 32:23
35:22
pick 61:5
pickup 66:25
picture 167: <i>12</i>
piece 45:21
53:9 64:5 75:3
78:2 91: <i>4</i> 93: <i>9</i>
94:17 102:1
pieces 111: <i>18</i>
154: <i>17</i> 182: <i>7</i>
196:6
pinned 32:5

place 5:24 11:16 15:2 20:20 26:3 29:17 33:4 40:9 49:16 67:24 68:1 90:25 105:12 106:2 107:15 108:10 110:8 115:22 131:8 132:13, 17 138:15 155:9 174:9 183:22 185:9 187:22 192:8 194:8 202:6 placed 31:5 plan 10:13, 17, 20 11:4, 13, 16 53:23 58:16 98:14 99:10, 11 104:24 145:24 186:7 190:10 planned 51:9 79:1 184:22 planner 60:14
planning 8:5, 11
62: <i>18</i> 146:7
plans 26:2, 5, 6
38:21 104:21 105:20
<b>platform</b> 103: <i>13</i>
play 24:9 plus 182:21
plus 182:21
PM 119: <i>17</i> point 6: <i>5</i> 7: <i>8</i> ,
11 10:15, 17
14: <i>15</i> 31:2 <i>1</i>
36: <i>4</i> 38:2, <i>17</i> 39: <i>1</i> 7 41:2
42:5 45:10
51: <i>4</i> , <i>16</i> 63:22
65:18 66:25
70:3 76:3 78:17 79:5, 20
86:13 87:22
89:8 90:8
96:18 98:9
100: <i>18</i> 108: <i>18</i> 111: <i>1</i> 2 117: <i>9</i>
122:12 132:18
134: <i>19</i> 135: <i>11</i> 136: <i>22</i> 137:3
136:22 137:3 138:25 140:6
141:9 150:23

151:3 154:20 155:14 157:9 158:25 166:4, 6 178:21 185:20 188:18 194:10 199:7 pointing 190:19 points 47:3 48:21, 25 49:8 62:20 67:2 68:5 96:23 120:4 157:17 183:13 poor 48:17 pop 119:8 190:25 pops 148:5
portals 88:6
position 44:12
59:13 65:13
83: <i>18</i> 120: <i>25</i>
positive 43:5
187:10
possibility 67:9 possible 30:16
167: <i>11</i>
possibly 119:8
post 27:17
52:14 97:10, 11,
16 117:21
121:23 122: <i>14</i>
149: <i>19</i> 151: <i>5</i>
post-2015 17:7
posted 4:23 post-launch
27:16 45:24
52:18 149:3
post-objection
64:2
post-revenue
27:10, 19
potential 25:16, 17 108:23
163: <i>17</i> 168: <i>25</i>
potentially 57.7
powerful 81:18
practices 24.73,
<i>14</i> 30:5 31: <i>10</i>
33:2 107:24
177:3, 8, 10
178:2, 5 180:7 practising 118:8
pre-COVID
62: <i>14</i>

predecessor
11:8
predominantly
8: <i>10</i>
prejudice
191: <i>16</i> 192: <i>9</i>
preliminary
62:18
Prendergast
39:25 72:13
73:6
Prendergasts
195:21
<b>prep</b> 10:6
preparation
8:24 38:8
prepared
105:20 123:11
162:6 196: <i>15</i>
prescribed
19: <i>14</i> 21: <i>1</i>
26: <i>11</i> 118: <i>13</i>
Present 2:9
19:19 20:10
40:5 49:23
53:25 154:2
185: <i>5</i> 188:2 <i>4</i>
presentation
143: <i>14</i> 173: <i>1</i> 2,
<i>14</i> 174:2
presenters
202:9
presenting
141: <i>16</i>
pressure 55:18
85:17, 20, 21
86:8 110:6
185: <i>16</i> , <i>24</i>
presumption
38:22
pre-trial 118:1,
6, 19 121:20
prevent 200:16
previous 161:24
165:2 <i>0</i>
previously 101:2
previously 101:2 principles 78:14
<b>Prior</b> 7:24 8:4
17:21 25:19 35:3 41:23
35:3 41:23
106:2 110: <i>4</i>
132:18 134:19
136:22 169: <i>6</i>
private 42:4

43:22 155:6

privileged 49:17 89:15 **privy** 76:15 proactive 20:12 105:2 180:*4* 182:8 proactively 193:18 **problem** 49:18 101:7 154:21 problematic 103:6 problems 87:20 121:*3*, *17* procedural 4:21 procedure 104:9 136:9 procedures 21:1 142:12, 25 178:9 proceed 60:21 132:*14* proceedings 5:19, 23 202:5 **process** 26:11 44:19 86:5 99:17 100:17 105:3 109:2 112:25 114:3 118:*8*, *14* 126:21 127:11 128:22 131:24 132:7, 10, 21 133:2 136:2, 4 141:*4*, *14* 152:3 160:19 174:22 processes 178:9 procured 82:1 procurement 49:9 195:6 196:5 produce 24:4 123:25 produced 3:10, 16 24:17 135:9 192:13 productivity 80:17 professional 6:20 42:22 56:5 76:1 82:24 189:20 professionalism 190:21

professionals 156:1 169:17
program 7:10
8:7 9:21 11:23,
24 12:17 13:1,
2, 12 14:13, 22
15:4, 5 17:25 27:6, 7 28:2, 3
31:7 50:17
74:16 86:2
131:8 132: <i>17</i>
146:7 161: <i>18</i>
166:2 173: <i>1</i>
181: <i>19</i> 182: <i>1</i>
<b>programs</b> 12:7, 8 86: <i>1</i>
progress 53:16
78:2 <i>0</i> 94:5
142:12 170:16
progressed
84: <i>15</i> 99: <i>19</i> progressing
99.25
project 8:2, 15 9:1, 11 10:17 12:3 14:25 19:4, 8 24:5, 16
9:1, 11 10:17
12:3 14:25
19:4, 8 24:5, 16
25:7, 18, 23 26:4, 5, 10, 12,
25 29:12 30: <i>4</i>
31:8 33: <i>15</i>
34: <i>4</i> 35: <i>15</i>
40:14 42:18, 20
43:1, 9 45:2, 7,
11 47: <i>4</i> , 7 48:21 49:7
50:17, 20 52:17,
23 55:24 56:7,
<i>15</i> , <i>20</i> , <i>24 57</i> : <i>4</i> ,
6, 7, 14, 21 58:8
59:9 64:18
65:15 68:2
69:18 72:4 73:5 77:17
78:20 79:22
78:20 79:22 84: <i>10</i> , <i>1</i> 3 85:23
89:10, 11 90:12
91: <i>16</i> 99:22
107:10, 25
108:3, 22 115:7, 11, 16 117:14
11, 16 117.14 192: <i>11</i> 193:22,
23 197:18
projected 80:22
99:9

projecting 13:9 81:19 146:9 projections 81:15 projects 12:23 13:14 14:1 26:9 29:3 92:14 130:7 **promised** 69:14, 15, 16 83:21 promises 173:23 **proper** 187:22 200:2 **properly** 152:*18* **proposal** 39:*15* 64:9 184:2 proposition 66:12 proprietary 71:8 prosecution 5:24 protect 62:8 protocol 143:1 protocols 12:11 **provide** 6:9, 20 17:8, 9 42:3 45:12 49:21 79:8 95:8 98:10 121:25 123:8 132:16 148:22 162:13 182:*11* 188:*20* provided 10:9 15:19 34:16 53:14 78:2 80:5, 23 89:21 92:25 114:23 123:*1*, *4* 156:*14* 162:14, 17, 19 193:22 196:21 **provides** 163:*12* providing 8:11 47:5 49:2, 3, 5 54:10, 11 81:12 100:19 144:22 147:25 Provincial 21:21 100:4 provinciallyregulated 100:8 provision 163:25 167:*1*, *3*, 15, 17 provisions

167:6

**Public** 4:7, 10, 20, 24 5:13 10:2, 13 11:17 29:18 30:8 31:*17* 33:*4* 38:8 40:16 41:12, 14, 20, 24 47:24 52:14 55:10 58:7, 9 60:22 65:22, 25 66:1 67:10 69:23 73:1*4*, 17, 24 74:9 79:7 81:8 83:6, 10 85:22 86:*8*, *17* 89:2 96:5, 15, 18 101:22 113:22 115:20 123:1 126:25 127:*10* 184:*4* 185:11 186:21, *25* 188: *1*, *3* 192:16 public/private 7:9 9:3 24:12 50:21 122:23 public-facing 74:*4* 118:25 **publicly** 83:15 84:8 85:16 **pull** 147:20 **pulled** 23:9 **punch** 64:23 **pure** 59:12 purpose 4:8 118:5 Pursuant 5:13 **push** 88:6 **pushed** 39:7, 11 **put** 10:8 22:25 23:15 39:15 40:23, 25 41:7 57:17 58:11 66:18 72:2 85:3 89:3 96:16 100:12 104:21 105:20 107:*15* 110:*22* 119:5 125:9 130:2 138:20 142:*16* 145:*4* 146:*11* 150:*15* 183:*3*, *16* 

< Q >

quality 28:25 75:1 94:25 95:12, 22 quantified 75:22 quarterly 17:13 18:10, 12 question 5:15 6:3 39:20 49:25 50:1 88:25 89:1, 14 92:8 97:18 136:17 144:13 147:*4* 185:2*4* 199:9 questions 3:11 4:14, 16 19:19, 20 46:10 49:19 60:11, 15 104:16 127:22 144:10 162:3 196:25 200:23, 25 questions/reques **ts** 3:20 **quickly** 61:24 120:19 137:17 149:11 **Quite** 39:7 110:*10* 183:*7* **quote** 162:21 **quotes** 128:22 < R > **R/F** 3:20 89:12 188:22 **RAIL** 1:6 4:6 6:22 7:3, 13 10:10 11:23, 24 12:13, 14, 16, 20, 21 13:1, 9, 11, 18 14:7, 12, 17, 21 15:5 16:3 17:25 19:23 20:1 23:13 24:11 27:4 40:24 64:17 87:13 90:9 99:21 118:23 121:*14*, *18* 123:24 railroad 199:21 railroads 198:8 **raise** 36:2 40:14 65:21 110:24 132:20

186:*9*, *24* 187:*6*, 25 raised 39:6 58:5 92:15 101:3 120:*10* 128:6 137:12 139:24, 25 163:18, 21, 22 166:15 167:11 169:1, 9 184:11 185:18, 22 raising 67:9 125:23 152:18 157:17 176:2 179:*11* **RAMP** 13:11, 18 14:17, 21 15:5 27:6, 8, 9, 24 28:14, 22, 25 30:2 31:7 32:11 47:12 53:12 86:2 98:2 106:3, 7, 11 107:11 109:*4* 111:*19* 120:11 121:12 130:18 132:5 135:*9*, *24* 137:*7*, 9, 21 142:15, 21 143:3, 6 144:*1*3 148:14 154:2 156:*15* 158:*20* 159:7 161:23 163:15.23 165:*17*, *20*, *25* 166: 1, 2, 5, 9, 12 170:2, 5 174:18 175:20 179:12 ramping 58:9 ran 7:2 10:21 11:*25* 27:*15*, *16*, 17 121:14 176:*14* range 196:1 **rapid** 10:*14* 66:23 87:7 ratchet 87:12 rate 146:9 rates 177:10 ratio 147:21 149:12 176:21 rationale 66:6 172:11 **ratios** 9:16 reach 54:17, 18

70.05
reached 70:25
109: <i>19</i> 118: <i>16</i>
146:2 173: <i>15</i>
reaction 137:21
reactive 185:4
read 135:16, 18
136: <i>10</i> 159:23
163:3 165:9
readiness 12:7
13:17 22:21 23:11 73:23
23:11 73:23
102:7 125:2 <i>4</i>
187:25
reads 145:18
Page 143.70
Ready 11:23
12: <i>15</i> , <i>24</i> 13: <i>6</i> ,
9, 18 14:7, 16,
<i>21</i> 15: <i>4</i> 17: <i>25</i>
47: <i>14</i> 124:3
190:6
real 51:7
realistic 86:15,
16
reality 77:5
realized 113:18
really 13:8
<b>really</b> 13:8 78:1 150:18
156: <i>12</i> 158: <i>8</i>
100.72 100.0
188:8
reason 50:24
199: <i>19</i>
reasonable 65:3,
<i>14</i> 193: <i>12</i>
reasons 37:25
60:20 61:1
recall 15:5
22.0 24.22
33:9 34:23 35:25 60:23 63:14 64:4, 5
35:25 60:23
63: <i>14</i> 64: <i>4</i> , <i>5</i>
67:23 70:13
77:7 97:1 <i>4</i>
111: <i>5</i> 116: <i>11</i> ,
13, 23   125:13,
17, 21, 22 127:6
135:19 138:12
140:3 144:25 153:20 154: <i>1</i> 2
153: <i>20</i> 154: <i>12</i>
157·2 150· <i>∆</i>
160: <i>15</i> , <i>16</i>
166: <i>17</i> 168: <i>9</i> ,
10.17 103.9, 10, 13 170:1, 6
175:7, <i>17</i> 176: <i>1</i> ,
3, 4
receivable 5:21
receive 130:20

received 6:11 46:24 122:9 162:*12* 193:*10* 194:12. 15 receiving 161:23 194:9 receptive 28:22 79:15 92:2 93:15 RECESSED 90:6 recite 115:11 recognize 6:12 recollect 35:20 67:2*1* 111:2 117:5 118:*19* 135:16 144:2, 19 156:19 157:*17* 169:*7* 171:12, 17 172:25 174:21 175:6 186:18 recollection 57:19 59:25 60:3 63:22 163:9 167:*17*, 25 174:12 recommend 200:18 recommendation 169:*21* recommendation **s** 95:9, 19 200:15, 17, 18 recommended 21:18 122:6 155:12 156:2 recommending 169:18, 19 reconnaissance 24:1 reconstruct 17:20 reconstruction 100:3 record 13:14 16:18 89:16 90:5 136:12 recorded 202:10 recording 6:7 recordkeeping 159:7 records 44:12 112:24 recover 79:13,

16 80:5 81:22

82:4 98:11 100:*20* **recovery** 98:14 99:2, 10, 11 re-creep 126:4 rectify 74:19, 22 **red** 30:2, 13, 18 88:*16* 127:*5*, 7 redeploy 25:13 **reduce** 145:21 reduced 150:12 reduction 194:3, 5, 12, 20 redundancy 62:23 re-engineering 87:24 100:3 refer 98:4 114:6 115:6 119:*19* reference 29:15 32:1 referenced 98:13 **referred** 16:19 referring 34:9, 23 39:12 43:2, 23 73:14 105:7 114:7 119:2*1*, 23 129:6 149:22 151:17 158:*15* **re-flare** 188:*11* reflect 180:6 reflected 138:19 180:3 reflecting 180:12 Reflective 69:24 **refresh** 134:4 164:7 **refusal** 89:17 REFUSALS 3:19 **refuse** 189:2 refused 3:11, 20 regard 8:9 11:9 18:7, 25 26:*15* 65:*4*. *5* 76:25 183:20 regarding 145:10 Regardless 185:*21* **regime** 118:9

135:2 181:1

**regimes** 190:2 198:10, 16, 21 **regroup** 168:*1* 170:22 171:2 regular 13:*4* 17:6 54:10, 12, 15 98:12, 18 124:15 198:9 regularly 72:12 123:7 regulate 100:8 regulatory 74:23 reinforcement 114:1.3 reinstituting 87:16 reject 115:24 **rejected** 116:23, related 6:21 101:24 104:8 139:25 196:*10* relationship 42:*4*, 9, 15 55:11, 15 56:12 65:11 81:4 89:25 192:15 re-launch 123:21 relevant 195:2 reliability 40:16 101:24 102:21 116:*14* 120:*8*, 13. 14 123:15 125:10 151:1 181:5 183:13 193:3 **reliable** 170:21 relief 88:20 reluctant 71:6 remain 27:9 remained 47:23 73:5 remaining 148:2*1* remember 10:4 18:*15* 20:*3* 30:20 31:24 32:*3*, *4*, 9 37:8 41:6, 10 44:15 60:6, 8 61:10 67:13, 14, 15 68:13, 23 70:16 71:17 72:18 74:19 80:3

83:7, 21 88:9 95:14 99:17 109:*16* 116:*3*, 22 117:1 122:*13* 123:*6* 126:22, 25 127:9 132:23 133:21 137:11, 16, 20 138:7 140:21 143:1 144:17 153:8, 25 154:5, 6 159:23 160:*5*, *8*, 12, 23 166:14 168:2 169:12 172:7, 8 173:14 174:1, 7 197:23 remembering 15:13 27:13 53:22 59:8 62:6, 17 66:19 87:2 88:1 133:18 147:11 148:24 166:3 199:7 reminding 39:13 123:23 124:6 **re-mine** 76:4 **Remo** 46:16 remotely 1:16 removing 11:21 renovation 64:25 77:11 re-org 7:4, 24 re-organization 7:19 16:24 35:4 **Repeat** 165:5, 6 repercussions 84:12 repetitive 103:4 rephrase 69:13 report 22:1 95:13, 15, 16 144:5 170:15 173:4, 15, 23 reported 60:8 162:7 173:*4*, *8*, 21 Reporter 202:4 REPORTER'S 202:1 reporting 13:14 16:25 17:11, 13

18:9, 12 21:20,

25 22:7 28: <i>4</i> , 5
54: <i>12</i> 106:7
144: <i>14</i> , <i>1</i> 8
reports 17:19
18:10, 11 24:15
75.15 01.16
75: <i>15</i> 94: <i>16</i> 171: <i>20</i> 195: <i>6</i>
171:2 <i>0</i> 195:6
Representative
145:9
request 57:14
00:44 400:44
98: <i>14</i> 163: <i>14</i>
165:22 166: <i>13</i> ,
15 04 107.10
15, 24 167:19 168:19 184:10
168: <i>19</i> 184: <i>10</i>
187: <i>4</i>
requesting 71:2
**************************************
requests 18:13
56:18 171:16
191: <i>19</i>
require 146:19
147: <i>4</i>
required 6:1
15: <i>10</i> 17: <i>7</i>
37:7 69:17
106: <i>4</i> 113: <i>4</i>
100.7 110.7
124: <i>16</i> 184:23
requirement
69:23 71:7
107: <i>10</i> 141:23
142:7 152: <i>17</i>
171:2 <i>4</i> 172: <i>15</i>
requirements
requirements
42:20 56:7
124:23 125: <i>5</i>
124.23 123.3
133: <i>5</i> 168: <i>20</i>
175:2
requires 75:5
requiring 24:24
reset 103:19, 21
104: <i>6</i> 168: <i>6</i>
170:23
resolution
191: <i>11</i> 192: <i>6</i>
191.77 192.0
resolve 101:7
104.2 150.4
104:2 150:4
192:23
resolved 96:20
101:23 103: <i>1</i> 2
138: <i>8</i> , <i>9</i> 190:2 <i>4</i>
resolving 55:8
resource 80:10
resourced
00 // /00 0/
90:11 120:21.
90: <i>11</i> 120: <i>21</i> ,
90: <i>11</i> 120:21, 25 166: <i>10</i>

resource**loading** 162:*1* resources 25:5, 12, 13 40:11, 25 75:25 82:17 83:24 84:3 90:22 91:7, 20 92:8, 24 100:13 101:*4* 122:*2* 123:8 124:24 125:1 126:9 150:15 180:2 184:*14* resourcing 90:17 126:7 respect 9:1, 9 15:8 18:8 20:1 27:5, 8 29:21 32:17 34:7 42:9 45:17 51:18 63:9 64:9 67:8 68:2 70:11 74:10 75:17 89:20 90:18 102:20 103:7 109:11 115:*1*, *1*3 116:*6* 117:13 127:14 133:5 161:*14* 176:9 188:14 189:3 194:2*4* respected 29:10 respond 120:19, 22 123:12 responded 79:2 126:7 189:5, 9 responding 68:14 response 64:8 69:1 91:11 94:4 122:8 166:*24* 177:*15* 189:7 190:21 responsibility 130:8 responsible 186:3 rest 194:22 restart 143:25 165:13 166:7 168:6 176:17 restaurant 150:19 170:25

result 52:8, 10 61:*13* 106:*15* 110:7 184:9 resulted 163:1 results 143:9. 21 144:15 156:8, 23 165:19 168:12 176:*10* 189:*14* RESUMED 90:7 retired 7:15 retrofits 112:22 113:*4*, *21* 181:*16* Rev[ision 136:11 revenue 27:12, 14 29:9 32:2 36:20 37:2 44:3 48:11, 14 53:5 54:2 55:22 56:3 64:20 68:17 72:4 80:22 85:22 90:1 112:10 113:6, 10 115:20 117:21 119:14 120:22 123:1 147:10 149:2 173:16 181:9, 19 183:22 184:16 185:11 186:10 188:1 191:20 198:3 reverse 87:9 revert 30:17 review 5:8 18:6 24:15 54:3, 8 95:21 98:6, 8 104:20 105:19 129:2 130:14 135:3, 12. 17 136:15 143:9 156:22 164:6 195:9 reviewed 135:14 reviewing 114:*17* 144:8 **reviews** 159:25 165:10 **revised** 145:23 revisions 139:11, 12 **RevO2** 136:11

Reynolds 2:7 **RFP** 8:25 9:4 **Richard** 112:25 139:9 154:*15* **Rideau** 23:20 25:2 58:18 59:17, 22 62:6, 13, 14 67:4 80:13 91:18 94:10 98:20, 24 ridership 9:25 10:8 11:1 69:25 146:12 right-hand 142:15 rigorous 141:3 ring 176:21 risk 77:13, 17, 18, 23 78:10, 15 risks 78:15 199:11 road 52:19 robust 13:2, 12 26:9 32:7 47:13 198:21 robustness 29:4 199:4 role 7:15 8:3, 9 15:13 24:8 33:14 34:14 41:8, 23 49:19 115:*1*, *1*3 116:*4* 193:*14* roles 73:18 roof 96:14 room 14:4 16:4 23:6 28:14 30:2 31:12 32:23 35:22 50:14 55:7 63:23 76:8 106:3, 7 107:11 109:4 111:19 120:11 121:12 128:8 129:7 130:18 132:5 135:*9*, *24* 137:*7*, 9, 21 139:22 142:15, 21 143:6 144:13 148:14 154:2 159:7 161:23 163:*15* 166:*1*, *5*, 9, 12 167:13 170:2, 5 174:18

175:13, 20 179:*12* **rooms** 54:5 174:19 root 104:2 route 85:8 87:1, 24 **routes** 10:23 17:20 **routines** 87:15 190:*14* **RPR** 202:3, 23 **RSA** 44:25 **RTG** 27:24 28:11, 19, 21 32:18 33:6 39:2 42:11 44:13 53:13, 16, 25 54:10.24 55:12 57:23 58:5 63:11 65:7 71:25 72:1 76:13, 19 77:2, 19 79:8 80:5, 6, 23 81:5, 12 82:7 83:8, 15 85:2 88:19 89:21 90:16 93:5 95:5, 15, 19, 22 98:10 100:15, 19 105:20 109:20 111:*4* 115:22 116:7 128:9 129:7 138:25 141:6 148:12 152:5, 10 159:18 160:18 163:20 170:17 171:*13*, *24* 192:12 **RTG's** 70:2 81:2, 15 99:9 104:20 **RTM** 28:11, 20, 22 32:18 39:2 40:22 41:*4*, 7, 23 44:13 53:13, 25 57:23 72:1 120:21 121:10 122:1 124:14 128:9 163:19 179:*14* 181:*14*, 21 182:20

184:6 185:22

188: <i>16</i> 189:7
188·16 180·7
191: <i>7</i> , <i>18</i>
102:16 104:0
192:16 194:9
<b>RTM's</b> 122:2
rule 106:11
rules 20:25
<b>run</b> 12: <i>18</i>
13:10, 22 41:18
93: <i>24</i> 119:6
100.00 101.5
93:24 119:6 129:23 134:5 135:6 158:7, 10,
135.6 158.7 10
100.0 100.7, 70,
<i>11, 14, 15</i> 185: <i>1</i> ,
6 196.15 197.0
<i>6</i> 186: <i>15</i> 187: <i>9</i>
198: <i>12</i>
running 27:15
32:1, 15, 16
02.7, 70, 70
34:2 69: <i>14</i>
34:2 69: <i>14</i> 86: <i>1</i> 97: <i>9</i> , <i>10</i> ,
50.1 31.3, 10,
15, 17, 22, 23
00.6 7 404.05
98:6, 7 101:25
102.21 103.8
102.27 103.0
102:2 <i>1</i> 103:8 105: <i>7</i> 113: <i>5</i>
110.1 2 6 11
118: <i>1, 3, 6, 11,</i>
<i>1</i> 2, 23 119:22,
23 120:9
121:20 123: <i>5</i> ,
121.20 120.0,
16 125:6, 11, 14, 25 126:17, 19 127:1, 7, 10, 15, 17, 21 128:7, 21
25 126:17 10
25 120.17, 19
127: <i>1. 7. 10. 15</i> .
17 01 100.7 01
17, 21 128:7, 21
129: <i>14</i> 130: <i>10</i>
120.77 100.70
132:7, 19, 21, 24
133: <i>1</i> , <i>4</i> , 7
134: <i>5</i> , <i>8</i> , <i>15</i> , <i>20</i>
125, 1 6 12 21
135: <i>4</i> , <i>6</i> , <i>12</i> , <i>21</i> ,
22 136:8, 23
407.4 44 00
137: <i>4</i> , <i>14</i> , 23
137: <i>4</i> , <i>14</i> , 23 138: <i>15</i> 142:9
138: <i>15</i> 142: <i>9</i> ,
138: <i>15</i> 142: <i>9</i> ,
138: <i>15</i> 142:9, <i>1</i> 2 145: <i>5</i> , <i>10</i> , <i>14</i>
138: <i>15</i> 142:9, <i>12</i> 145: <i>5</i> , <i>10</i> , <i>14</i> 146: <i>4</i> , <i>22</i> 147: <i>5</i>
138: <i>15</i> 142:9, <i>12</i> 145: <i>5</i> , <i>10</i> , <i>14</i> 146: <i>4</i> , <i>22</i> 147: <i>5</i>
138: <i>15</i> 142: <i>9</i> , <i>12</i> 145: <i>5</i> , <i>10</i> , <i>14</i> 146: <i>4</i> , <i>22</i> 147: <i>5</i> 148: <i>5</i> 150: <i>8</i>
138: <i>15</i> 142: <i>9</i> , <i>12</i> 145: <i>5</i> , <i>10</i> , <i>14</i> 146: <i>4</i> , <i>22</i> 147: <i>5</i> 148: <i>5</i> 150: <i>8</i> 151: <i>6</i> , <i>9</i> , <i>13</i>
138: <i>15</i> 142: <i>9</i> , <i>12</i> 145: <i>5</i> , <i>10</i> , <i>14</i> 146: <i>4</i> , <i>22</i> 147: <i>5</i> 148: <i>5</i> 150: <i>8</i> 151: <i>6</i> , <i>9</i> , <i>13</i>
138:15 142:9, 12 145:5, 10, 14 146:4, 22 147:5 148:5 150:8 151:6, 9, 13 152:1 157:8, 9
138:15 142:9, 12 145:5, 10, 14 146:4, 22 147:5 148:5 150:8 151:6, 9, 13 152:1 157:8, 9 158:6, 16
138:15 142:9, 12 145:5, 10, 14 146:4, 22 147:5 148:5 150:8 151:6, 9, 13 152:1 157:8, 9 158:6, 16
138:15 142:9, 12 145:5, 10, 14 146:4, 22 147:5 148:5 150:8 151:6, 9, 13 152:1 157:8, 9 158:6, 16 160:17 161:4, 8,
138:15 142:9, 12 145:5, 10, 14 146:4, 22 147:5 148:5 150:8 151:6, 9, 13 152:1 157:8, 9 158:6, 16 160:17 161:4, 8, 15 162:4, 8, 25
138:15 142:9, 12 145:5, 10, 14 146:4, 22 147:5 148:5 150:8 151:6, 9, 13 152:1 157:8, 9 158:6, 16 160:17 161:4, 8, 15 162:4, 8, 25
138:15 142:9, 12 145:5, 10, 14 146:4, 22 147:5 148:5 150:8 151:6, 9, 13 152:1 157:8, 9 158:6, 16 160:17 161:4, 8, 15 162:4, 8, 25 164:17 168:12
138:15 142:9, 12 145:5, 10, 14 146:4, 22 147:5 148:5 150:8 151:6, 9, 13 152:1 157:8, 9 158:6, 16 160:17 161:4, 8, 15 162:4, 8, 25 164:17 168:12
138:15 142:9, 12 145:5, 10, 14 146:4, 22 147:5 148:5 150:8 151:6, 9, 13 152:1 157:8, 9 158:6, 16 160:17 161:4, 8, 15 162:4, 8, 25 164:17 168:12 172:14, 21
138:15 142:9, 12 145:5, 10, 14 146:4, 22 147:5 148:5 150:8 151:6, 9, 13 152:1 157:8, 9 158:6, 16 160:17 161:4, 8, 15 162:4, 8, 25 164:17 168:12 172:14, 21 173:1, 10, 16, 24
138:15 142:9, 12 145:5, 10, 14 146:4, 22 147:5 148:5 150:8 151:6, 9, 13 152:1 157:8, 9 158:6, 16 160:17 161:4, 8, 15 162:4, 8, 25 164:17 168:12 172:14, 21 173:1, 10, 16, 24
138:15 142:9, 12 145:5, 10, 14 146:4, 22 147:5 148:5 150:8 151:6, 9, 13 152:1 157:8, 9 158:6, 16 160:17 161:4, 8, 15 162:4, 8, 25 164:17 168:12 172:14, 21 173:1, 10, 16, 24 174:4 176:10
138:15 142:9, 12 145:5, 10, 14 146:4, 22 147:5 148:5 150:8 151:6, 9, 13 152:1 157:8, 9 158:6, 16 160:17 161:4, 8, 15 162:4, 8, 25 164:17 168:12 172:14, 21 173:1, 10, 16, 24 174:4 176:10 177:11 179:13,
138:15 142:9, 12 145:5, 10, 14 146:4, 22 147:5 148:5 150:8 151:6, 9, 13 152:1 157:8, 9 158:6, 16 160:17 161:4, 8, 15 162:4, 8, 25 164:17 168:12 172:14, 21 173:1, 10, 16, 24 174:4 176:10 177:11 179:13,
138:15 142:9, 12 145:5, 10, 14 146:4, 22 147:5 148:5 150:8 151:6, 9, 13 152:1 157:8, 9 158:6, 16 160:17 161:4, 8, 15 162:4, 8, 25 164:17 168:12 172:14, 21 173:1, 10, 16, 24 174:4 176:10 177:11 179:13, 14, 19 180:9
138:15 142:9, 12 145:5, 10, 14 146:4, 22 147:5 148:5 150:8 151:6, 9, 13 152:1 157:8, 9 158:6, 16 160:17 161:4, 8, 15 162:4, 8, 25 164:17 168:12 172:14, 21 173:1, 10, 16, 24 174:4 176:10 177:11 179:13, 14, 19 180:9 181:6, 14 187:2,
138:15 142:9, 12 145:5, 10, 14 146:4, 22 147:5 148:5 150:8 151:6, 9, 13 152:1 157:8, 9 158:6, 16 160:17 161:4, 8, 15 162:4, 8, 25 164:17 168:12 172:14, 21 173:1, 10, 16, 24 174:4 176:10 177:11 179:13, 14, 19 180:9 181:6, 14 187:2,
138:15 142:9, 12 145:5, 10, 14 146:4, 22 147:5 148:5 150:8 151:6, 9, 13 152:1 157:8, 9 158:6, 16 160:17 161:4, 8, 15 162:4, 8, 25 164:17 168:12 172:14, 21 173:1, 10, 16, 24 174:4 176:10 177:11 179:13, 14, 19 180:9
138:15 142:9, 12 145:5, 10, 14 146:4, 22 147:5 148:5 150:8 151:6, 9, 13 152:1 157:8, 9 158:6, 16 160:17 161:4, 8, 15 162:4, 8, 25 164:17 168:12 172:14, 21 173:1, 10, 16, 24 174:4 176:10 177:11 179:13, 14, 19 180:9 181:6, 14 187:2,

196:*14* 197:*18* < S > **safety** 29:12 30:5 33:2 56:8 63:4 85:24 101:25 102:1, 2 103:*3*, *24* 114:12 115:18 116:*14* 117:3 120:8, 10 safety-oriented 189:*21* Santedicola 2:10 202:3, 23 **sat** 19:7 satellites 28:7 satisfied 131:9 167:7 168:*20* 172:15 173:9 174:*4* **SCADA** 23:8 91:19 119:1 scale 75:24 158:18 177:16 199:2 scenarios 27:15 57:24 58:5 schedule 23:24. 25 25:7 54:10 68:20 69:16 70:3, 8, 14, 22 71:1, *4*, *5*, *8*, *15*, 20 73:22 74:11, 13 75:20 79:9, 10, 16 80:5, 21 81:2, 3, 12, 16, *22* 82:*4*, *20* 84:6 86:15 88:2, 8 89:22 91:9 98:12 99:11 100:16, 20 106:16 107:14, 17 108:3, 25 109:6 119:22, *24* 158:*9*, *12* schedules 69:21 scheduling 9:21 72:19 88:4 **Schepers** 50:19 **scope** 15:22 75:24 141:21 177:13, 16

**score** 123:25 124:22 125:8 126:10 133:15, 18 136:5 141:20 142:16 143:6, 15 154:21, 22, 25 155:2, *6*, *11* 156:2 157:*4* 167:*14* 198:*16*, 20 scorecard 98:1 111:*16* 128:*22* 130:20 135:8 136:3 142:*19*, 21 143:8 144:9 151:8, 18, 20 156:*7*, *15*, *23* 177:21 178:1, 13 scorecards 118:14 163:8 164:*6* 165:*15* 177:*1* **scored** 146:23 178:3 scores 124:20 130:19 135:10 144:*10* 180:*3*, *6*, 11 **scoring** 118:20 131:*1* 143:*2*, *5*, 20 152:22 153:23, *24* 154:1, 3 161:24 **Scott** 74:1 **screen** 162:4 Scrimgeour 8:6 60:13 131:15 137:3, 22 139:25 146:*4* 148:5, 16 157:17 Scrimgeour's 131:25 140:*4* scroll 129:1 133:*21* 136:*14* 151:7 164:*11*, 12 165:8 searching 196:*16* section 5:13 6:1, 3 **seek** 21:6 segment 58:23 59:23 61:6, 25

**send** 196:23 **senior** 55:24 **sense** 67:18 97:5 150:17 188:*12* September 7:16 37:18 sequencing 28:17 sequentially 66:23 **series** 12:23 **serious** 115:25 191:5 **service** 8:7, 8, 12, 15 9:11, 14, 20 10:15, 21 11:*5*, *17* 15:*24* 23:13 27:10, 12, 14, 17, 19 29:9, 18 31:18 32:2 36:20, 21 37:2, 13 39:18 40:16, 17 41:9, 12, 14 44:3 48:*11*, *14*, 17, 24 52:15 53:5 54:2, 6 55:10, 22 56:3 58:7, 9 60:22 61:1 64:20 65:22, 25 66:1, 13 67:7, 10 68:17 72:4 74:9 79:7 80:22 84:22 85:23 87:17 90:1 101:22 103:21, 23, 24 109:12 110:22 112:10 113:6, 10 115:20 117:21 119:*14* 120:23 122:*4* 123:2 145:19, 22, 24 146:16, 19 147:11 149:2 158:22, *23* 170:21 173:*16* 181:*5*, *9*, 11, 19 183:22 184:17 185:11 186:*10*, *22* 187:19, 23 188:1, 20 191:4, 20 192:17 193:3 198:3 **Services** 7:7, 16 34:2 **set** 9:19 14:18 23:1 87:4 93:23 95:3 109:8 129:11 132:5 139:16 160:22 202:6 **sets** 13:25 16:3, 6 47:18 124:24 **shake** 118:24 **share** 21:11 23:23 71:6, 7 82:19 83:25 171:8 180:23 **shared** 5:3.9 83:5 93:1, 5 95:5, 15 97:4 99:4 121:10, 12 146:24 148:18 **sharing** 55:20 70:8 71:15 77:8 79:4, 15 82:9 98:17, 18, *25* 162:*4* **Sharon** 46:19 49:16 **sheet** 155:11 182:*4* sheets 141:21 **shift** 16:5 76:2 80:12, 16 181:20 **shifts** 14:3 80:14 84:2 98:20 shooting 157:22 **shops** 198:*12* **short** 199:19 Shorthand 202:4, 13 **shot** 117:18 **shout** 194:5 **show** 127:24 136:6 142:20 143:8 145:3 151:8 159:16 171:19 177:25 showing 6:10 44:9 82:21 128:20 **shows** 111:8

176: <i>19</i>
<b>shut</b> 102:9
shutdown 102:5
193:25 194:20
shutdowns
102:8 193: <i>1</i> , <i>4</i> ,
18, 19, 21
sick 147:19
side 67:4
114:17 142:15
152:6 179:14 192:12 193:8
192: <i>12</i> 193:8 196: <i>11</i>
sideways 190:2
sight 104:12
sign 75:7, 9
115: <i>5</i> 135: <i>17</i>
139:5, 10, 18, 23
140: <i>14</i> , 23, 25
141:1, 2 153:10
141: <i>1</i> , <i>2</i> 153: <i>10</i> 154: <i>16</i> 159: <i>14</i>
signature
140: <i>15</i>
signatures
115:19 140:25
142:2
signed 42:18
45:7 56:15
63:8 86:2 <i>4</i> 97:25 131:2 <i>1</i>
122:25 122:1
135.1 138.20
132:25 133:1 135:1 138:20 139:4, 7 141:6,
9 142:3, 5
152: <i>19</i> 159: <i>14</i>
174: <i>4</i>
signed-off
141:10
significance
58:1
significant 25:5
30:14 51:14
52:20 81:23, 25
87:1 98:1
137: <i>18</i> 138: <i>3</i> , <i>4</i> 175: <i>15</i> 180: <i>20</i>
183: <i>11</i> 185: <i>16</i>
significantly
15:22 48: <i>1</i> 2, <i>1</i> 5
122: <i>13</i>
signing 85:24,
25 135: <i>18</i>
sign-off 74:22
106: <i>5</i> 172: <i>16</i>

cimilar 27:4
similar 27:4
28:6 30:9
63:19 200:16
<b>simple</b> 102:3
128:7
<b>simply</b> 38:17 124:14
Sims 2:11
simulate 121:19
simulation 86:3
120:5
simulator 14:4
simultaneously
63:12
<b>single</b> 60:4
69:2 <i>0</i> 142:16
200:1
Singleton 2:6
sinkhole 25:2, 6,
11 74:15 75:18,
25 76:3, 12
78:12, 20, 21
79:7, 22 88:21
89:2 <i>0</i>
sit 53:25 62:15
76:7 134:2 <i>0</i>
<b>site</b> 185:25
sitting 8:18
34:13
situation 76:23
79:3 91:6
103: <i>11</i>
situations
131: <i>15</i>
<b>size</b> 40:12
145:22
<b>skill</b> 13:25 16:3,
6 47:18 124:24
slight 194:3, 8
small 38:14
88:3 149: <i>13</i>
SNC-Lavalin
101: <i>15</i> 195: <i>14</i>
soft 170:25
171:1, 5 182:18
softer 184:5
software 26:21
soil 78:3
solemn 4:9
solicitor 57:9, 18
solutions 94:2
somebody 41:8
77.12 102.21
77:12 103:21
104:5 152:3
soot 96:14

sophisticated
23:8 sophistication
23:14
<b>Sorry</b> 9:2
21:14 26:18 31:15 37:18
65:25 70:18
93:7 106:18
122: <i>19</i> 126: <i>25</i>
153:2, <i>25</i>
154:23 158: <i>1</i> 3 169:2 170: <i>3</i> , <i>1</i> 2
169:2 170:3, 12
172:22, 24 195:8 <b>sort</b> 11:16
54: <i>11</i> 68: <i>2</i>
140:8
<b>sorted</b> 100:10
sorts 196:3, 10
sought 46:25 sound 138:2 sounds 140:7 160:11 183:21
sound 138:2
<b>sounds</b> 140:7
source 82:7
space 9:16
47:16 66:17
67:6 126:5
141:23 182:19
spanned 16:2
spans 6:24 spare 147:20,
21, 22, 23 148:1
149: <i>12</i>
spares 147:16,
18 148:19
sparked 68:19
<b>speak</b> 8:23 9:8
19:24 24:6
19:24 24:6 26:17 48:22 75:18 84:11
109:20 111:11
131:17 152:12
154:7 163: <i>4</i>
178: <i>14</i> 179: <i>7</i>
195:1
<b>speaking</b> 20:10 53:10 105:9, 16
121.24 122.10
53:10 105:9, 16 121:24 123:10 128:17 140:23 Specific 6:24
Specific 6:24
21:14 24:17, 23
43:18 59:9
68: <i>4</i> 106: <i>4</i>
112:25 116: <i>4</i>

122:*1* 128:*6* 170:7 200:17 specifically 30:21 38:10 51:17 70:19 166:15, 18 168:3 specifics 26:14 58:17 70:6 95:14 115:8 177:23 193:7 194:13 specified 69:19 speculating 116:5 157:25 speculation 158:4 **speed** 62:7 spending 55:21 **spent** 87:10 102:6 170:7 183:5 **spillage** 102:*11* **spine** 11:21 59:4 61:13 **spoke** 72:8 76:19 104:25 157:1 **spoken** 46:7, 8 sporadic 53:3 spreadsheets 47:18 **spring** 111:10 **staff** 8:10 13:2, 3 19:19 21:18 24:20 35:14 37:9 60:6 85:12 105:24 106:9 107:23 149:16 167:13 169:18 175:1 178:22 180:20, 22 185:15 staffing 14:3 Stage 6:22 8:1 38:3 51:25 52:1, 6, 8, 9, 10, *11* 90:9 194:25 195:*1*, *3*, *4*, *8*, *9*, *15* 196:*4*, *13* 197:9, 10, 12, 19, 21 198:2 stairwell 75:1 standardized 54:12

**standing** 21:*14* 32:4 **stands** 194:*16* **start** 6:8 14:18 75:15 80:17 95:9 99:22 128:2 135:12, *21* 196:9 started 14:9 26:4 48:11, 14, 20 70:9 99:20 135:*4* 137:*15* 138:2 139:15 179:9 starting 50:4 164:20 **starts** 176:15 **state** 13:7 22:20 24:9 37:8 **stated** 161:*4* 162:23 Statement 145:15 statements 173:20 202:8 **States** 58:25 station 17:22 62:5, 6, 17, 20, 24 80:16, 17 91:18 98:20, 24 133:19 stations 11:1 17:23 23:20, 21 61:22 69:15 74:3 91:*4* 92:17 120:6 140:6 157:18 200:4 **status** 23:7 29:22 111:*15* **stay** 101:9 188:*6* 198:*18* **stayed** 73:7, 9 155:25 181:2 staying 182:5 198:7, 8 199:20 **steady** 170:2 **Steering** 17:3, 5 33:18 46:17 48:10 51:24 52:2 stemming 19:1 Stenographer/Tra nscriptionist

2:10

501111 Wanoon 611 0/2/2
stenographically
202:10
step 45:9
104: <i>10</i> 126: <i>8</i>
167:12
stepped 24:8
150: <i>14</i> 180: <i>2</i>
<b>steps</b> 45:8 92:7 159: <i>4</i> , <i>11</i>
92:7 159: <i>4</i> , <i>11</i>
<b>Steve</b> 56:16, 22
<b>Steve</b> 56:16, 22 65:13 70:25
72:8 73:3 183:3
<b>sticking</b> 132:1
St-Laurent 20:6
<b>stood</b> 13:3
87:23
<b>stop</b> 61:22
66:24 81:14 21
66:24 81:14, 21 162:4 172:11
stopped 98:3
108: <i>14</i> 171:22
stopping 108:18
<b>storage</b> 37: <i>4</i> 39:21 110:1, 7
185: <i>10</i> , <i>14</i>
stored 35:14
straight 91:4
straightforward
102:3
<b>strap</b> 113: <i>10</i>
strategic 49:2, 6
strategies 55:22
<b>Street</b> 25:2
58:18 59:18, 22
62: <i>13</i> , <i>14</i> 67: <i>4</i>
62:13, 14 67:4 stress 74:15
<b>stressed</b> 76:24
79:11, 12, 13
strict 29:6
string 98:21
striving 152:6
strong 93:22
structure 29:4
47:18 87:15
structured
53:21 86:5
136:1
structures
190: <i>14</i>
struggling
183:25
<b>study</b> 195:7 <b>stuff</b> 119:9
stuff 119:9
153: <i>11</i> 167:2

199:13 STV 16:16, 17 subcontractors 27:24 33:6 54:25 58:6 129:8 subject 128:21 185:16 192:1 subs 71:9 subsequent 17:9 95:20 subsequently 189:16 subsets 30:20 substantial 35:24 36:15 53:5 63:25 64:19 74:24 90:2 105:12 106:2 111:4 112:10 115:5, 16 116:8, 9, 16 117:7 118:2 139:13 140:11 187:17 substantially 35:11 substantiate 76:7 substantiate 76:7 substantiate 76:7 substantiate 76:7 substantiate 32:16 subway 74:2, 3 76:9 106:20 subways 23:12 success 186:19 successful 187:20 194:6 sufficient 144:9 sufficiently 90:11 120:21, 24 suggest 21:8 65:7 suggested 86:20 123:7 suggestion 58:11 59:21, 22 suggestion 58:11 59:21, 22 suggestions 65:4 82:18 91:11 92:6, 12 122:9 193:17 sum 31:10 64:1	2
76:7 substantiated 32:16 suburbs 61:18 subway 74:2, 3 76:9 106:20 subways 23:12 success 186:19 successful 187:20 194:6 sufficient 144:9 sufficiently 90:11 120:21, 24 suggest 21:8 65:7 suggested 86:20 123:7 suggesting 63:11 137:22 suggestion 58:11 59:21, 22 suggestions 65:4 82:18 91:11 92:6, 12 122:9 193:17	199:13 STV 16:16, 17 subcontractors 27:24 33:6 54:25 58:6 129:8 subject 128:21 185:16 192:1 subs 71:9 subsequent 17:9 95:20 subsequently 189:16 subsets 30:20 substantial 35:24 36:15 53:5 63:25 64:19 74:24 90:2 105:12 106:2 111:4 112:10 115:5, 16 116:8, 9, 16 117:7 118:2 139:13 140:11 187:17 substantially 35:11
subway 74:2, 3 76:9 106:20 subways 23:12 success 186:19 successful 187:20 194:6 sufficient 144:9 sufficiently 90:11 120:21, 24 suggest 21:8 65:7 suggested 86:20 123:7 suggesting 63:11 137:22 suggestion 58:11 59:21, 22 suggestions 65:4 82:18 91:11 92:6, 12 122:9 193:17	76:7 substantiated 32:16
187:20 194:6 sufficient 144:9 sufficiently 90:11 120:21, 24 suggest 21:8 65:7 suggested 86:20 123:7 suggesting 63:11 137:22 suggestion 58:11 59:21, 22 suggestions 65:4 82:18 91:11 92:6, 12 122:9 193:17	subway 74:2, 3 76:9 106:20 subways 23:12 success 186:19
65:7 suggested 86:20 123:7 suggesting 63:11 137:22 suggestion 58:11 59:21, 22 suggestions 65:4 82:18 91:11 92:6, 12 122:9 193:17	187:20 194:6 sufficient 144:9 sufficiently 90:11 120:21, 24
63:11 137:22 suggestion 58:11 59:21, 22 suggestions 65:4 82:18 91:11 92:6, 12 122:9 193:17	65: <i>7</i> <b>suggested</b> 86:20 123:7
65:4 82:18 91:11 92:6, 12 122:9 193:17	63:11 137:22 suggestion 58:11 59:21, 22
24 31.70 01.7	65:4 82:18 91:11 92:6, 12

<b>summary</b> 6: <i>13</i>
114: <i>14</i> , <i>24</i> 176: <i>11</i>
sun 111:23
112:5
<b>Sunday</b> 158:22
Superintendent 92:16
supervision
22:12, 18
support 47:5
110:25 169:2 <i>1</i>
194:6 <b>supported</b> 193:4
supportive
192:25
<b>supposed</b> 87: <i>18</i> 134: <i>12</i>
sustain 126:12
sustainment
179:20
<b>switch</b> 48: <i>17</i> 55: <i>4</i> 93: <i>7</i>
121:5 122:7, 14
187: <i>14</i> 196: <i>3</i>
switches
122: <i>18</i> 187: <i>15</i> switchover
22:23
System 6:22
7:13 10:1, 10,
<i>14</i> , <i>15</i> , <i>23</i> 11: <i>1</i> , <i>17</i> 20, 12:14, 22
17, 20 12:14, 22 15:14 19:23
20:1 22:11, 23
23:5. 6. 15. 17.
18 26:10 27:16 29:17, 21, 24
29:17, 21, 24
30:1, 10 35:21 36:11 38:3
42:19 47:24
55: <i>4</i> 59: <i>5</i> , 11
61: <i>14</i> 62: <i>22</i>
63:7, 13 64:7, 17 66:24 73:15,
24 74:21 75:12
76: <i>14</i> 77: <i>6</i>
79:19 84:20
87: <i>1</i> , <i>8</i> 88: <i>3</i> 90: <i>10</i> 91: <i>24</i>
92:9 94:6, 8
95: <i>5</i> , <i>7</i> , <i>11</i> 96: <i>4</i>
101: <i>17</i> , <i>21</i>
103:8 105: <i>11</i> 106: <i>21</i> 114: <i>13</i>
106.21 114:13

116:15 118:9, 23 119:3, 4, 18, 22, 23 120:8 121:1, 18 123:12, 16 125:10, 19, 24 134:23 136:23 137:1 146:20 147:21 156:3 158:21 163:2 166:9 182:23 183:8, 9, 13, 15 184:1, 5, 9, 19, 24 185:5 186:4, 6, 15 187:14 188:1, 20 191:21 199:20,
23 system-critical 181:20 systems 11:24 23:4 27:4 28:7 76:9 94:9 106:20 118:24, 25 119:7 121:14 182:15 system's 61:21
table 8:18 50:10 128:14 175:10, 18 tabled 194:2 tackle 191:25 tag 31:2 tail 28:10 112:16, 20 179:18 takes 77:11 88:8 talk 11:8 36:2 54:7 63:18 81:8 106:23 talked 67:16 84:15 87:5 94:18 105:1 126:2 130:18 150:16 153:1 186:20 189:18 198:6 talking 36:3 45:24 58:14 98:5 108:11 111:19 161:10

tamp 190:24 targeting 44:5 tasked 155:11 tasks 181:22 taxpayer 59:14 62:8 193:15 team 15:16, 25 16:7 17:7 22:15 23:1, 10 24:3 25:4, 20 31:11, 15 33:11 39:23 46:9 47:6, 13, 17 48:2 49:11 53:19 55:6, 24 70:7, 12 71:23 72:11, 24 73:23 74:5 80:21 82:21 90:21 95:2 97:25 98:5, 6, 8 99:2, 8, 14 100:16 114:19 118:20 136:3 138:22 139:*1* 143:*2*, *14* 150:21, 22 153:24 154:1 163:20 164:1 186:11 196:9 197:8, *9* teams 28:19 **Team's** 81:3 technical 8:10 13:2 18:*14*, *16*, 17 19:3, 16, 17, 22, 25 20:3, 16, 18 21:3, 6, 10, 13, 15 23:2 37:25 43:3, 15, 16 44:14 45:6 49:3 54:15 55:8, 21 58:2 71:*4*, *16* 72:22 107:23 132:15 149:16 156:1 167:13 168:18 169:18 174:2 175:*1* 178:22 180:22 195:23 196:5 200:8 technically 199:*16* Technician 2:11 121:5 122:6, 7

190:5

technicians
120: <i>17</i> 121:2, <i>6</i>
122: <i>12</i> , <i>14</i> , <i>16</i> ,
17, 18 126:9
technologies
197: <i>1</i> 2
technology
oc.od 75.5 oc.o
26:21 75:5 93:8
26:21 75:5 93:8 <b>techs</b> 150:16
telephone 94:15
temperature
195: <i>18</i> 196: <i>1</i>
temperatures
195: <i>19</i>
template 34:17
50:23 51: <i>1</i>
templated 82:1
templates 51:19
temporary 69.7
templated 82.7 templates 51:19 temporary 69:7 tend 5:17, 18
teria 5.77, 76
leiiii 40.24
64:23 71: <i>4</i>
112: <i>16</i> 123:2 <i>4</i>
182:3
terminology
71:3 93:8
terminus 23:21
61:22
terms 8:21
9:21 10:9
11:11, 20 12:10
13:6, 13 14:2,
10, 19 15: <i>4</i>
17: <i>4</i> , <i>11</i> , <i>13</i> , <i>15</i>
18: <i>3</i> , <i>4</i> , <i>5</i> , <i>6</i>
20:10 21:1 23:14 24:17, 18
22:14 24:17 19
25.14 24.17, 10
25:12, 16 26:15
25:12, 16 26:15 29:8, 11 33:19,
25 34:11, 14
36:11, 13, 24
38: <i>18</i> 41: <i>17</i>
42:9 46: <i>14</i>
47:6 52:1
55:14 56:2
62: <i>11</i> 64: <i>4</i>
02.11 04.4
74:8 75:16
76: <i>20</i> 78:9
82:14, 25 85:13
86:2 89:10
91:23 92:12
94:25 95:6, 7,
21 103:12, 15
107:3 108:25
112:3, <i>1</i> 2
112.3, 12

```
118:17 121:25
122:1 123:23
124:23 126:12
129:4 130:19
133:17 135:1, 9
140:9, 14
141:12, 20
143:4 147:10
149:25 153:8
160:22, 24
161:18, 20
164:2 182:14
183:15 186:16,
18 189:6 192:11
test 27:16
118:8, 9 136:9
tested 59:11
177:1
testing 12:11
94:14 97:12
104:17, 20, 24
105:10, 11, 19
106:1, 5, 15, 18
107:3, 13, 19, 20,
24 108:2, 9, 21
109:1 118:11
121:20 135:2
171:24 172:1, 4
176:20 179:24
196:10
tests 24:18
Thales 23:6
39:2 75:6, 10
thanked 193:16
Thanks 58:20,
23 80:11 92:3
197:5
theirs 184:13
theme 24:25
25:3 126:5
theoretically
30:21 57:11
62:1 71:10
199:16
thing 61:6 66:3
147:24 175:16
178:13
things 9:16, 18
12:15 14:5
20:11 29:11
30:6 31:1
33:20 43:10, 18
48:19 51:19
57:1, 12 60:14
63:3 65:16
```

```
66:3 67:5 69:4,
8 75:1 77:22
79:18 81:7, 23,
25 82:15 97:6
98:18 99:24
100:21 101:2
102:16 104:3
111:23 112:17,
22 113:7, 9, 10,
13 116:24
118:17 119:20
121:22 127:3, 4,
5 129:19
142:12 148:24
149:25 150:18
151:5 152:6
163:8, 16, 24
167:24, 25
171:1, 3, 4
177:21 181:11,
17 189:22
190:2, 7, 16
192:23 196:3,
10, 11 198:8, 19
thinking 14:11
16:1 58:15
87:11, 21
third 145:13
thoroughly
170:8
thought 51:9
63:17 68:8, 24
82:14 153:2
157:25 158:7
178:18, 25
thoughts 80:15
thousand 88:3
thousands
33:10 97:8
135:15 183:18
185:1
threshold 62:10
87:6 133:25
152:22 155:13
threw 87:16
throttling 87:15
thrown 177:15
Thursday 177:7
tight 29:11
time 4:15 7:3
9:24 10:7 11:5
14:6 15:6
16:16, 24 19:8
26:24 34:1, 25
35:1 36:12, 23
```

37:8, 17 38:17 41:2 47:10 51:4, 16 53:4 55:10, 21 61:17 65:*10*, *18* 66:*14* 68:1 70:25 72:23 78:17 79:5, 20 85:16 87:10 94:9 97:5, 14, 23 99:3 103:21 108:18 109:7 111:12 116:15 117:9, 19 124:16 131:21 134:23 138:14 139:20 144:9 146:*12* 148:*6*, 20 150:8, 13, 23 151:3 154:20 157:3 160:9 165:*9* 166:*4* 169:*15*, *20* 170:*6*, *8* 174:*8*, 21 177:11 185:20 187:1, 9, 11 192:21 194:10 201:2 202:6, 9 timeline 44:1 126:24 timelines 81:19 timely 147:14 148:22 times 24:5 66:25 85:2 121:12 186:1 title 41:3 55:25 titled 128:20 136:8 145:14 today 160:9 200:21 201:1 **today's** 4:8 told 17:12 87:2 131:7 136:1 151:12 172:12 174:3 178:23 199:3 200:6 **Tom** 39:25 72:13 175:22 195:*21* top 96:8 156:23 182:5 198:*7*, *18* 199:*11*, *20* 

**topic** 76:18 139:*14* 175:*8* topics 185:17 200:10 **Toronto** 110:2 total 67:18 touch 96:23 120.4 touched 120:4 touting 110:11 track 16:4 43:18 55:4 72:22 75:6, 11 93:6, 7, 9, 11 109:3 176:*24* 187:11 195:25 196:2 tracking 25:1 71:19 139:1 142:11 tracks 112:7 traction 91:8 **trades** 101:5 tradition 175:9 traditional 22:17 175:14 train 17:22 23:5 35:21 40:3, 8 41:5 61:23 62:2, 3, 6 112:*4* 147:*17*, 20 149:19 187:*1*3 training 14:4 16:5 **trains** 9:16 35:13 38:2, 3 40:8, 11 69:14 75:8 101:25 109:25 123:20 124:1, 2, 16 125:*15* 129:*24* 145:23 146:5, 14, 16, 22, 23, 25 147:2, 5, 7, 11, 13 148:6, 23 149:6 150:5, *11* 158:22 186:17 187:12 199:23 trams 59:1 transcribed 4:18 202:11 transcript 4:19, 23 5:2, 8, 9, 12 202:13

transfer 10:16
transfer 10:16
61:7, 16 62:2, 9
67:3 78:10, 15
120:6
transferred
77:18
transfers 69:9
<b>Transit</b> 4:6
6:22, 25 10: <i>14</i>
17: <i>15</i> , <i>17</i> , <i>1</i> 8
18: <i>1</i> , <i>22</i> 60: <i>14</i>
61:9 62:11
66:23 87:8 90:9
transition 12:18
13:11, 23, 24
14.20 45.2 22
14:20 15:2, 23
transitioning
12:25
transitions 12:8
<b>Transpo</b> 7:1, 12
8: <i>5</i> , <i>14</i> , <i>22</i> 21: <i>5</i> ,
20 22:5 31:11
34:14
Transportation
7:7, 16
<b>Transpo's</b> 8:1,
24 12:2
trial 5:22 27:15
32:1, 15, 16
85:25 97:9, 10,
10 14 17 22 22
12, 14, 17, 22, 23
12, 14, 17, 22, 23 98:5, 7 105:7 113:5 118:3, 11,
113:5 118: <i>3</i> , <i>11</i> ,
12 120:9
121:20 123: <i>5</i> ,
16 125:5, 11, 24
126: <i>16</i> , <i>1</i> 9
127:1, 7, 10, 14,
16, 20 128:7, 21
129: <i>14</i> 130: <i>10</i>
132:7, 19, 20, 24
133: <i>1</i> , <i>4</i> , 7 134: <i>5</i> , 7, <i>15</i> , <i>20</i>
134: <i>5</i> , <i>7</i> , <i>15</i> , <i>20</i>
135: <i>4</i> , <i>6</i> , <i>1</i> 2, <i>21</i>
136: <i>8</i> , <i>22</i> 137: <i>4</i> ,
14, 23 138:15
142:9, <i>12</i> 145: <i>5</i> ,
10, 14 146:3, 22
147:5 148: <i>4</i>
150:8 151: <i>6</i> , <i>9</i> ,
<i>13</i> 152: <i>1</i> 157: <i>8</i> ,
9 158:15
160:17, 25
100.77.20
161:4 8 15
161: <i>4</i> , <i>8</i> , <i>15</i> 162: <i>3</i> , <i>8</i> , <i>25</i>

164:*17* 168:*12* 172:*14*, *20*, *25* 173:1, 9, 16, 24 174:*4* 176:*10* 177:*11* 179:*13*. 14, 18, 19 180:8 181:*6*, *14* 187:17, 20 197:17 **trigger** 18:12 triggered 68:15 148:11 triggers 18:19 triple 80:14, 15 84:2 triple-checked 92:23 triple-shift 80:8 **trips** 66:15 **trivial** 140:5 **Troy** 31:*13* 45:20 118:20 143:14 175:21 179:10 183:17 **TRRT** 145:14, 21 true 29:7 202:12 truing 190:6 trust 81:11, 13, 21 82:2 87:10 **trusting** 81:*15* **trying** 30:19 46:19 50:6, 9 78:25 89:25 115:*10* 152:*11* 155:*1* 180:*4* 183:19 191:25 193:11 **Tuesday** 164:17 **tunnel** 20:6 23:4, 19 34:15, 24 35:6 55:3 75:12 78:4, 6, 7 79:18 91:23 93:10 94:7, 10, 11 101:17 tunnels 23:13 76:9 turn 102:4 185:23 turned 124:20 153:2 turnover 92:18 Twitter 88:7

type 55:14 types 9:18 75:2 typically 78:4 **typos** 5:8 < U > **U/T** 3:16 162:*16* 196:*24* Uhm-hmm 104:18 123:13 128:25 151:22 176:12, 18 186:23 ultimately 84:21 171:21 unanimous 175:12 unannounced 186:*1* uncommon 107:*17* underestimated 199:*19* understand 10:12 29:20 38:20 49:25 50:9. 11 53:12 54:21 57:2 63:24 69:13 106:13 107:12 108:1, 8, 13 111:3 115:*10*, 12 127:15 134:14 139:6 148:*3* 151:*24* 155:*21* 157:*6*, *13* 162:6 168:23 169:17 170:8 173:19, 22 174:6 178:*15* 179:*8* understanding 29:15 41:22 42:1 57:9 73:12 86:10 112:2*1* 113:*4* 114:*11* 115:*10* 124:14 131:11 132:3, 9 133:*4* 134:7 139:8 151:*1*2 162:*1*8 191:14 192:3

understood 28:15, 16, 17

two-prong 14:*19* 

14 59:19 66:9 151:25 154:23 undertaken 3:9 **UNDERTAKINGS** 3:14 unexpected 184:8 unfettered 54:4 75:6, 10 unforeseen 123:*12* unfortunately 193:8 **unheard** 193:18 **unique** 110:20 unknown 182:21 unknowns 193:3 unrelenting 56:6 **unrolled** 153:17 updates 17:8, 9, *24*, *25* 18:3, *14*, 22, 23, 24 19:1 43:14 54:11 98:12, 19 161:23 **uproar** 85:5 urgency 150:17 188:12 Urguhart 2:7 **usual** 171:7 < V > validate 22:8 Validation 145:10 **value** 49:7 62:9 66:12 77:23 **valves** 102:9 variable 79:1 **varied** 52:22 73:2 varies 197:16 variety 182:20 **various** 18:19 20:22 27:13 28:18 34:6 44:10, 23 69:21 73:23 105:10 110:8 181:22 vehicle 16:4 74:1 96:10 121:5 122:6 123:9, 17 124:8, 23 125:7, 18

29:10 56:5, 10,

147:19, 21, 23 148:21 149:10, 21 150:4 176:21 vehicle-related 150:10 vehicles 92:10 96:1, 8 102:21, *22* 103:*8*, *15*, *18* 109:1, 3, 14 110:13, 21 111:12, 14, 16 112:7, *9*, *13*, *14*, 18, 21 113:1, 5, 21 119:1, 2, 6 122:12, 17 147:13 149:1 158:12 181:17 182:*1*, *14* 184:18, 23 185:*1* 187:*8* 200:3 ventilation 23:4 55:3 75:12 79:18 91:24 93:10 94:8, 11 101:17 **venture** 15:16 verbal 143:13 verification 24:19 **VERITEXT** 202:22 version 41:22 131:2*1*. 24 132:24 versus 66:11 69:7 195:17 Vest 88:16 Videoconferenci **ng** 1:*15* view 23:23 25:10, 14 36:19 39:3 51:5 74:8, 11, 14 75:21, 22, 23 76:10, 11, 16 77:16 78:24 80:15 86:13, 15 89:21 91:5 93:13 99:9, 10 115:21 116:8 121:*1*, *8*, *9* 189:*4* 197:2*4* 199:18, 22 **viewed** 115:15

views 52:4 55:20 198:4
Virtual 2:11
virtually 8:4
175:23
vis-a-vis 19:8
34:5, 16 38:10
vis-à-vis 48:24
vision 11:9
visited 185:25
visiting 91:2 visors 111:23
<b>Vitae</b> 3:4 6:17
Vogel 2:7
46:19, 20 49:16
50: <i>14</i> 51: <i>6</i>
<b>volume</b> 9:15
23:13 59:1
69:20 119:24
133: <i>16</i>
<b>volumes</b> 62:14
< W >
<b>wait</b> 85:4
<b>waiting</b> 98:17

**waiting** 98:77 walk 23:18 66:7 67:5 140:17 153:19 189:*4* walked 23:17 28:2 32:24 63:18, 20 66:8 **walk-on** 143:*13* wanted 21:9 22:20, 21 23:1 30:22 39:17 47:13 54:6, 8 60:17 63:25 71:1 105:2 110:11 129:25 131:*16* 137:*4* 143:11, 17 145:1 149:10 154:9, 10 155:7 156:12 157:3 167:18 170:21 174:19 178:19 179:1 185:19 196:*15* wanting 56:2 wants 85:13 Wardle 2:6 16:*18* 48:*23* 49:13 50:3, 13

88:24 89:12, 18

162:12, 16 188:22 191:*13*, *24* 196:20, 24 200:22. 24 warranty 184:*17* 198:*17* watch 62:15 195:18, 20 water 102:5, 9, 10, 11 wayside 187:14 wear 95:25 96:9, 12 website 4:24 88:6 week 24:3 32:1 53:24 69:21 193:17 weekends 80:8 107:21 weekly 192:19 weeks 10:21 27:17, 18 84:21 weld 196:2 welding 195:19, 25 west 66:12 67:1 101:16 westerly 111:22 wheel 190:4, 6 wheelchair 62:25 wheelchairs 69:9 whistleblowers 103:11 **wide** 78:8 wind 14:15 **window** 113:*17* 193:25 windows 111:24 winter 96:6, 15 102:5, 7 wire 20:6 96:11 98:22 wires 98:23 wiring 91:*19* withhold 65:2 witness 5:14, 17, 20 16:19 49:21 50:4 89:13 159:25

165:10 188:24

74:25

200:23

wondering 179:16 **won't** 68:3 119:20 136:10 182:9 word 179:22 **wording** 115:*4* **words** 81:*18* 123:20 140:21 173:7 work 6:21 8:25 9:2, 9, 14, 23 10:3, 6, 10 11:*13*, *22* 12:*4* 13:*17* 14:*9* 17:1 35:8, 20 36:5 37:*4*, 7 43:4 46:12 47:1, 10, 12 48:7 51:2 53:12, 19 56:2 60:14 65:15 73:17 78:1 80:8, 12, 18 82:21, 23 84:1 90:18 91:3, 4 101:20 104:14 109:7 112:8, 12 129:18 140:9 141:22 171:19 177:14 182:18, *25* 183:*4*, *7*, *8*, 10, 11, 16, 18, 25 184:1, 5, 6, 18, 22 185:9 190:21 191:8 193:2 194:24 200:12, 19 worked 29:2 47:5 55:13 72:19 74:7 101:*17* 156:*1* **workers** 101:6 working 16:9 41:16 50:18 54:22 67:6 80:13 91:22 104:23 105:*4* 127:19 139:19 168:24 183:3 185:15 191:7 192:*4*, *8*, *15* 193:5 workmanship

**works** 19:*17* 34:14 44:13 77:13 workshop 93:12 workshops 55:5 91:23 **world** 29:3 38:12 190:17 196:9 worldwide 110:12 **worried** 76:21 worries 77:3 **worst** 61:6 worth 64:15 wound 27:18 **wrapped** 73:17 writing 33:24 60:16 written 22:1 134:21 135:13 wrong 86:23 89:1 148:25 < Y > yard 35:7, 8, 12, 19 36:25 37:10 38:1, 7, 10, 22 39:4, 16 40:4, 15, 20, 21, 23, 24 41:3, *4*, *15*, *18*, 20, 23 102:23, *25* 103:*5*, *19* 123:19 124:11 yardmaster 40:2 **Yeah** 9:7 24:25 35:5 44:4 46:1 50:12 66:2 67:17 72:1 102:12 116:21 120:15 129:9 142:22 149:2*4* 151:*19* 152:*24* 154:*15*, *17* 161:6 162:16 164:25 165:1 166:22 173:15 176:23 178:20 181:24 182:24 183:24 184:25 191:13 194:12, 14

year 7:23 96:7

**vears** 6:24

11:25 47:21

57:10 66:19 116:3 134:3 146:10 197:16 Year's 48:19 yellow 30:2, 11, 18 127:5 York 72:14 124:1

< Z > zones 62:21 Zoom 1:15 128:19