Court File No. CV-21-88145-0000

ONTARIO
SUPERIOR COURT OF JUSTICE

BETWEEN

CITY OF OTTAWA

Applicant

and

RIDEAU TRANSIT GROUP GENERAL PARTNERSHIP A JOINT-VENTURE PARTNERSHIP CONSISTING OF, ACS RTG PARTNER INC., SNC RTG PARTNER INC. AND ELLISDON RTG PARTNER INC.

Respondents

APPLICATION PURSUANT TO Rule 14.05(3)(d) and (h) of the *Rules of Civil Procedure*

APPLICATION RECORD

February 9, 2022

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CV-21-88145-0000
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RIDEAU TRANSIT GROUP GENERAL PARTNERSHIP A JOINT-VENTURE PARTNERSHIP CONSISTING OF ACS RTG PARTNER INC., SNC RTG PARTNER INC. AND ELLISDON RTG PARTNER INC.

Respondents

APPLICATION PURSUANT TO Rule 14.05(3)(d) and (h) of the *Rules of Civil Procedure*

NOTICE OF APPLICATION

TO THE RESPONDENTS

A LEGAL PROCEEDING HAS BEEN COMMENCED by the applicant. The claim made by the applicant appears on the following page.

THIS APPLICATION will come on for a hearing on a date to be fixed by the Registrar, at 161 Elgin Street Ottawa ON K2P 2K1.

IF YOU WISH TO OPPOSE THIS APPLICATION, to receive notice of any step in the application or to be served with any documents in the application, you or an Ontario lawyer acting for you must forthwith prepare a notice of appearance in Form 38A prescribed by the Rules of Civil Procedure, serve it on the applicant's lawyer or, where the applicant does not have a lawyer, serve it on the applicant, and file it, with proof of service, in this court office, and you or your lawyer must appear at the hearing.

IF YOU WISH TO PRESENT AFFIDAVIT OR OTHER DOCUMENTARY EVIDENCE TO THE COURT OR TO EXAMINE OR CROSS-EXAMINE WITNESSES ON THE APPLICATION, you or your lawyer must, in addition to serving your notice of appearance, serve a copy of the evidence on the applicant's lawyer or, where the applicant does not have a lawyer, serve it on the applicant, and file it, with proof of service, in the court office where the application is to be heard as soon as possible, but at least four days before the hearing.

IF YOU FAIL TO APPEAR AT THE HEARING, JUDGMENT MAY BE GIVEN IN YOUR ABSENCE AND WITHOUT FURTHER NOTICE TO YOU. IF YOU WISH TO

OPPOSE THIS APPLICATION BUT ARE UNABLE TO PAY LEGAL FEES. LEGAL AID MAY BE AVAILABLE TO YOU BY CONTACTING A LOCAL LEGAL AID OFFICE.

Date December 15th, 2021 Issued by _____
Local Registrar

Address of court office: 161 Elgin Street
Ottawa ON K2P 2K1

TO: **RIDEAU TRANSIT GROUP GENERAL PARTNERSHIP**
1 First Canadian Place, Suite 6000
P.O. Box 367, 100 King Street West
Toronto, ON M5X 1E2

AND TO: **ACS RTG PARTNER INC.**
c/o ACS Infrastructure Canada Inc.
155 University Avenue, Suite 1800
Toronto, ON M5H 3B7

AND TO: **SNC RTG PARTNER INC.**
c/o 455 René-Lévesque Blvd. West
Montreal, QC H2Z 1Z3

AND TO: **ELLISDON RTG PARTNER INC.**
c/o 455 René-Lévesque Blvd. West
Montreal, QC H2Z 1Z3

APPLICATION

1. The Applicant, the City of Ottawa (the "**City**"), makes application for:

   a. A declaration regarding the City's rights under the Project Agreement made on February 12, 2013 between the City and Rideau Transit Group General Partnership ("**RTG**" or "**Project Co**") (as amended, the "**Project Agreement**") in respect of Stage 1 of the Confederation Line light rail transit system in Ottawa (the "**Project**"), and in particular, a declaration that there is a Project Co Event of Default as described in the September 24, 2021 Notice of Project Co Event of Default (the "**2021 Defaults**") in relation to:

      i. Section 45.1(a)(x) of the Project Agreement given that RTG incurred a total of 1300 or more Failure Points in any rolling 3 Contract Months;

      ii. Section 45.1(a)(xi) of the Project Agreement given that RTG incurred a total of 1600 or more Failure Points in any rolling 6 Contract Months;

      iii. Section 45.1(a)(xii) of the Project Agreement given that RTG incurred a total of 2000 or more Failure Points in any rolling 12 Contract Months;

   b. the costs of this proceeding on a substantial indemnity scale, plus all applicable taxes; and

   c. such further and other relief as this Honourable Court may deem just.

2. The grounds for the Application are set out below.

A. OVERVIEW

3. Stage 1 of the Confederation Line (the "**Line**") has been plagued with significant problems resulting from RTG's failures to comply with its contractual obligations since the launch of service in the fall of 2019 (15 months later than contractually required). These failures have

had a significant impact on the City's ability to provide a safe and reliable transit system for transit riders and have deprived the City of the light rail transit system RTG contracted to provide.

4. The City was more than patient with RTG's initial difficulties. However, by March 2020, given the severity of the problems being encountered and the lack of reliable service, the City was entitled to and did deliver on March 10, 2020 a Project Co Notice of Event of Default (the "**First Notice of Default**").

5. In the First Notice of Default, the City relied on a number of grounds, including grounds related to the contractual performance monitoring system, being a Failure Points regime, as well as other Project Co Events of Default.

6. The City was not required to, but did, give RTG an opportunity to remedy all of its defaults listed in the First Notice of Default, including the Failure Points Defaults (as defined below). RTG delivered a plan to cure or remedy its defaults which it began to implement, albeit slowly, in the spring of 2020. RTG's ability to remedy its defaults was aided by the lower ridership on the Line during COVID. RTG's performance improved since the First Notice of Default, but it did not cure the Project Co Events of Default that were the subject of that First Notice of Default.

7. Then, on August 8 and September 19, 2021, derailments occurred on the Line (the "**Derailments**"). These Derailments were significant events and, in respect of the second derailment, involved the derailment of a Vehicle with passengers on board. The Failure Points incurred by RTG quickly accumulated. The Line ceased operating after the second derailment and remained out of service until November 12, 2021, almost two months later.

when, after a simulated service was run for a number of days to test the infrastructure and System, service resumed, albeit at a significantly reduced level.

8. On September 24, 2021, the City delivered a second Notice of Project Co Event of Default (the "**Second Notice of Default**"). In relation to the Second Notice of Default, the City indicated that it would only provide RTG with a cure period in relation to its Failure Points Defaults, which again it was not required to do under the Project Agreement, if RTG acknowledged that it was in default.

9. On October 3, 2021, RTG disputed that it was in default, but has not done so in good faith. RTG has not offered any reason as to why it is not in default and delayed the meetings required by the contractual dispute resolution procedure to confirm RTG's defaults resulting from the Derailments.

10. In addition, RTG is not contractually entitled to a cure period in relation to the Failure Points Defaults in the Second Notice of Default.

11. The Failure Points at issue are an empirical measure of performance and are recorded in a system that RTG itself created and maintains. As such, RTG's Failure Points Defaults are indisputable.

12. The City has been patient with RTG. That patience is at an end, particularly given the Derailments and the resulting accumulation of Failure Points. This is a matter of public safety. The City now seeks this Honourable Court's confirmation that RTG is in fact in default of its contractual obligations so that the City can appropriately exercise its options under the Project Agreement, up to and including termination.

B. THE PARTIES

13. The Applicant, the City of Ottawa, is a municipality in the Province of Ontario, established pursuant to the provisions of the *City of Ottawa Act*, 1999, S.O. 1999 c.14, as amended (the "**Act**"), with powers and duties set out in the Act.

14. The Respondent, Rideau Transit Group General Partnership, is a general partnership comprised of ACS RTG Partner Inc., SNC RTG Partner Inc., and EllisDon RTG Partner Inc. RTG is a Special Purpose Vehicle formed under the laws of the Province of Ontario and was formed specifically to design, build, finance, and maintain the Project.

15. RTG represented in the Project Agreement at Section 5.1(a)(iv) that it and the Project Co Parties, which includes the Construction and Maintenance Contractors, have extensive experience and are knowledgeable in the design, construction and maintenance of light rail transit projects and have the required ability, experience, skill, and capacity to perform the activities within the Project Scope in a timely and professional manner as set out in the Project Agreement. This representation has not been accurate based on the performance issues on the Line to date, including the two Derailments.

C. BACKGROUND - THE PROJECT AND THE PROJECT AGREEMENT

1. Project Co's Design and Construction Obligations and Maintenance Obligations

16. The Project was undertaken using a Public Private Partnership ("**P3**") model. The Project Agreement is a Design Build Finance Maintain form. The Project Agreement was executed on February 12, 2013, following an extensive procurement period of over a year.

17. Under the Project Agreement, RTG is, in broad terms, responsible at its own cost and risk for the design and construction of the Project, which includes all the infrastructure for the Project (such as the track, signalling, and systems), as well as the Vehicles. RTG, in

designing and building the Project, is required to satisfy the technical specifications of the Project Agreement (referred as the Output Specifications) and the other requirements of the Project Agreement. This risk allocation is typical in the P3 model.

18. During the Construction Period, RTG received significant payments as it achieved certain significant milestones under the Project Agreement, including on the achievement of Substantial Completion. Subsequently, when Revenue Service Availability was achieved such that the City had the ability to commence public service, RTG received the Revenue Service Availability Payment.

19. After design and construction of the Project is substantially complete, there is a Maintenance Term during which time Project Co is responsible for performing the "Maintenance Services" which involves maintaining both the infrastructure and Vehicles so as to meet the contractual maintenance standards (referred to as the Maintenance and Rehabilitation Requirements and described in Schedule 15-3 to the Project Agreement).

20. During the Maintenance Term, RTG receives Monthly Service Payments based on a formula set out in Schedule 20 of the Project Agreement. These payments are subject to certain Deductions related to the performance of the Maintenance Services in defined categories. As is described in detail below, in addition to these Deductions, RTG's performance is subject to a Failure Points regime which allows the City to exercise a number of important rights if the Failure Points exceed defined thresholds, including the right to deliver a Notice of Project Co Event(s) of Default.

21. Throughout the entirety of the Construction Period and Maintenance Term, Project Co is obligated to ensure that the infrastructure and the Vehicles satisfy both the Output

Specifications and the Maintenance and Rehabilitation Requirements, as required pursuant to Section 20.1(b) of the Project Agreement.

22. This single point of responsibility for both (i) design and construction, and (ii) maintenance of the Project is intended to be one of the fundamental benefits of the P3 model because the City can look to one entity, namely RTG, to address any issues that arise over the entirety of the Project Term.

2. The Failure Points Regime and Failure Points Defaults

23. Pursuant to Section 31.2 of the Project Agreement and Section 1.1 and 1.2 of Part G of Schedule 20 to the Project Agreement, RTG is obligated to measure the performance of its Maintenance Services each Contract Month and Failure Points are allocated to RTG in respect of the occurrence of:

    a. Availability Failures (including Vehicle Availability, System Availability and Station Availability Failures);

    b. System Events;

    c. Service Failures; and

    d. Quality Failures (each a "**Failure**" and collectively, "**Failures**").

24. Appendix C to Schedule 20 to the Project Agreement sets out specific objective Failure Points that apply to the above categories based on specific circumstances that may occur during RTG's performance of its Maintenance Services.

25. The Failure Points, among other things, are tracked using a system developed and implemented by RTG known as the Integrated Management Information Reporting System ("**IMIRS**"). The data produced by IMIRS is produced by RTG and provides an empirical assessment of RTG's performance of its Maintenance Services on an objective basis.

26. On a monthly basis, RTG is obligated to provide the City with a monthly Performance Monitoring Report ("**PMR**") which reports the Failure Points data from its IMIRS system. The PMR provides summaries of failures that have occurred over that Contract Month as well as an aggregate Failure Point total for that Contract Month. RTG also submits a monthly Payment Adjustment Report ("**PAR**") pursuant to Section 34.6(a) of the Project Agreement where it sets out any proposed adjustments for Deductions from the Monthly Service Payment for City approval.

27. A Project Co Event of Default is triggered if Project Co accumulates Failure Points above stipulated thresholds. In addition, there are lower thresholds for separate Project Agreement remedies such as Warning Notices and Monitoring Notices, but for the purposes of this Application it is the Project Co Event of Default thresholds that are relevant, given the magnitude of the Failure Points incurred by Project Co.

28. The thresholds for Project Co Events of Default based on Failure Points are as follows:

    a. RTG incurring a total of 1300 or more Failure Points in any rolling 3 Contract Months (Section 45.1(a)(x) of the Project Agreement);

    b. RTG incurring a total of 1600 or more Failure Points in any rolling 6 Contract Months (Section 45.1(a)(xi) of the Project Agreement); and

    c. RTG incurring a total of 2000 or more Failure Points in any rolling 12 Contract Months (Section 45.1(a)(xii) of the Project Agreement) (collectively the "**Failure Points Defaults**").

3. Project Co Events of Default

29. There are 21 discrete Project Co Events of Default listed in the Sections 45.1(a)(i) to (xxi) of the Project Agreement. For many, but not all, of these Project Co Events of Default,

Project Co is provided with an opportunity to put forward a "reasonable plan and schedule for diligently remedying the Project Co Event of Default" and then is required to remedy the default within 30 days of the notice of default or, if the breach is not capable of being remedied within 30 days, then such longer period as is acceptable to the City, acting reasonably (the "**Cure Period**").

30. In respect of the Failure Points Defaults, RTG has **no** contractual right to remedy the default – there is no Cure Period, unlike certain other Project Co Events of Default.

4. Termination

31. On the occurrence of a Project Co Event of Default or at any time after the City becomes aware of a Project Co Event of Default, pursuant to Section 45.3 of the Project Agreement, the City may terminate the Project Agreement by notice having immediate effect unless:

    a. Project Co cures its default during the Cure Period, if a Cure Period is available (which it is **not** in relation to a Failure Points Default as noted above); or

    b. Project Co disputes the default "in good faith", in which case termination cannot proceed until it is confirmed through the Dispute Resolution Procedure found in Schedule 27 to the Project Agreement that a Project Co Event of Default has occurred.

5. Dispute Resolution Procedure

32. The Dispute Resolution Procedure found at Schedule 27 to the Project Agreement addresses all Disputes. In Schedule 27 the word "Dispute" is defined broadly as including "all disputes, controversies or claims arising out of or relating to any provision of ...[the] Project Agreement or the alleged wrongful exercise or failure to exercise by a Party of a discretion

or power given to that Party under …[the] Project Agreement, or the interpretation, enforceability, performance, breach, termination or validity of [the] Project Agreement."

33. The Dispute Resolution Procedure involves the following steps for Disputes that arise after Substantial Completion of the Project:

a. if the parties are unable to resolve a Dispute at the lowest level of management, a written Notice of Dispute (the "**Notice of Dispute**") may be delivered which triggers the Dispute Resolution Procedure (the "**Level 1 Discussions**");

b. on receipt of a Notice of Dispute, the City Representative and Project Co Representative are to meet ("**Party Representatives Resolution Meeting**") and each is to promptly and diligently make all reasonable *bona fide* efforts to resolve the Dispute (the "**Level 2 Negotiations**");

c. if a Dispute is not resolved by the Party Representatives within 10 business days following the receipt of the Notice of Dispute, or within such longer period of time as the Party Representatives may both expressly agree, then at any time after the expiry of the 10 business days either Party Representative may, by written notice, refer the Dispute to executives of the Parties in positions of authority higher than the Party Representatives to promptly and diligently make all reasonable *bona fide* efforts to resolve the Dispute (the "**Level 3 Negotiations**"); and

d. The Parties can then arbitrate on consent or litigate if there is no consent pursuant to Sections 7 and 9 of Schedule 27 to the Project Agreement.

6. The 2020 Defaults

34. The Project belatedly achieved the Substantial Completion Milestone on July 26, 2019 and Revenue Service Availability on August 30, 2019 (15 months after the contractual date of May 24, 2018).

35. Given RTG's failures to launch service on the Line by dates it had committed to meet, it was important for RTG, the City, and the Project that the launch be successful so that transit riders would have a positive experience. However, in fact, the launch of the Line was beset with a number of problems, and significant transit delays resulted during the fall of 2019. These early problems, included, among other things, problems with:

    a. the train control monitoring system;

    b. the Vehicle passenger doors; and

    c. other reliability issues.

36. The delays and issues in the fall of 2019 resulted in a barrage of negative coverage by local and national news outlets and social media. The City was required to repeatedly and consistently initiate single tracking and/or replacement bus service to mitigate customer impacts. From October to December 2019 the City recorded over 50 events where bus replacement service and/or single tracking was necessary and the City was forced to reserve 20 buses solely for the replacement service.

37. The winter of 2019/2020 saw additional serious issues arise including but not limited to:

    a. failures of the overhead catenary system;

    b. switch heater failures;

    c. failures of inductors; and

    d. excessive braking leading to wheel flats.

38. The Line and related infrastructure were not functioning reliably, eroding public trust as RTG was simply unable to provide the required number of trains, particularly during rush hour service.

39. On December 18, 2019, the City wrote to RTG advising that it had exceeded the Failure Points thresholds for a Project Co Event of Default as set out in the Project Agreement based on the accumulation of Failure Points for Vehicle and System Availability Failures in September, October and November, 2019. The City also advised that because RTG failed to provide appropriate responses to Quality Failures, RTG also accumulated Failure Points for Quality Failures and Service Failures combined from September to November 2019 in excess of the thresholds for a Project Co Event of Default as set out in the Project Agreement.

40. On March 10, 2020, as a result of Project Co's accumulation of Failure Points, the City issued the First Notice of Default. There were a number of Project Co Defaults listed, including the Failure Points Default, as well as a lack of availability of the System for System Users and a breach of representations and warranties. The City took a conservative approach and relied on only **three categories** of Failure Points in its Notice of Default which are the following categories measured empirically and which involve little or no subjective exercise of judgment:

    a. Vehicle Availability;

    b. Station Availability; and

    c. System Events.

41. The City offered RTG a reasonable period of time to remedy all of its Project Co Events of Default, though the City noted that it was not required to do so in relation to the Failure Points Defaults, as noted above. RTG delivered several iterations of a plan and schedule to

remedy its defaults (the "**Cure Plan**"). The City was not entirely satisfied with the Cure Plan because the Cure Plan did not indicate that RTG would be applying sufficient resources to address issues promptly, but RTG proceeded to start to implement that plan, as it was obliged to do until the defaults were cured.

42. In July 2020, the Vehicles on the Line experienced significant wheel cracking, which required replacement of the wheels on the Vehicles and caused RTG to incur a significant number of Failure Points.

43. To date, RTG has not fully remedied all of the 2020 Defaults. The City implemented an extended monitoring period to monitor RTG's remediation and implementation of its Cure Plan given that RTG had not remedied its defaults. By the summer of 2021, RTG's performance had improved and the Failure Points were far fewer then they had been (albeit aided by the City's concession to allow fewer trains to run during COVID). This extended monitoring period was set to expire in September 2021, but then the Derailments occurred.

44. In relation to the First Notice of Default, although RTG delivered a Cure Plan as described above, at the same time it disputed that it was in default. In this regard on March 13, 2020, RTG delivered a Notice of Dispute.

45. Following delivery of the Notice of Dispute, on June 4, 2020, the City requested that the Parties engage in Level 2 Negotiations pursuant to the Dispute Resolution Procedure, or alternatively, to bypass that stage for efficiency, among other reasons.

46. After the departure of RTG's then Chief Executive Officer, Mr. Peter Lauch, the City worked to advance the Level 2 Negotiations. RTG eventually agreed to participate in Level 2 Negotiations on June 29, 2021.

47. As of the date of this Application, the City and RTG have been unable to resolve the Dispute in respect of the 2020 Defaults.

48. While this Dispute remains unresolved, the City only refers to the First Notice of Default and related issues in this Application for the purpose of providing context. The City does not seek a declaration in respect of the First Notice of Default at this time, but rather its request for a declaration is focussed on the clear and significant defaults that followed in August and September 2021. In relation to the first Notice of Default, the City maintains that those defaults were not cured and it reserves its rights in respect of same, but given the significant Failure Points incurred since August 2021, the City is asking that this Honourable Court on this Application make a declaration in respect of the 2021 Events of Default only.

D. PROJECT CO 2021 EVENTS OF DEFAULT

1. The 2021 Project Co Events of Default

49. On August 8, 2021, a Vehicle derailment occurred at Tunney's Pasture Station when an axle broke, causing the wheel of one of the train cars to derail, resulting in the full grounding of the fleet until August 14, 2021 (the "**August Derailment**").

50. As a result of the August Derailment, RTG incurred 2,825 Failure Points (comprised of 2,405 points for System Events, and 420 Failure Points for Vehicle Kilometres Availability Failures). This allocation of Failure Points for one single Contract Month exceeds even the 12-month threshold for a Project Co Event of Default, based on only two categories of Failure Points.

51. Six weeks after the August Derailment, on September 19, 2021, a second Vehicle derailment occurred, this time near Tremblay Station with passengers on board. This significant derailment again resulted in full grounding of the fleet and given the seriousness of the

situation a comprehensive safety investigation was commenced (the "**September Derailment**").

52. As a result of the September Derailment, RTG incurred 2,890 Failure Points (comprised of 2,470 Failure Points for System Events, and 420 Failure Points for Vehicle Kilometres Availability Failures).

53. As a result of the August and the September Derailments, and in particular, the associated award of Failure Points to RTG, **new** Project Co Events of Default arose both in relation to new Failure Points Defaults and given the lack of availability of the System to System Users. These Project Co Events of Default are separate from the Project Co Events of Default in the First Notice of Default.

54. On September 24, 2021, the City issued a Notice of Project Co Event of Default to RTG (the "**Second Notice of Default**") in relation to the new Failure Points Defaults given that RTG had incurred 2,825 Failure Points for the month of August 2021 alone for just Systems Events and Vehicle Kilometres Availability (which is far above the 3, 6, or 12 month thresholds for default in the Project Agreement). The City also relied on the Project Co Event of Default for the lack of availability of the System to System Users which default is not relevant for the purpose of this Application.

55. In this Second Notice of Default, the City indicated that it would **only** provide RTG with a Cure Period for the Failure Points Defaults **if** RTG acknowledged the Default. RTG refused to acknowledge the Failure Points Default. As a result, the City is not contractually obligated to allow RTG a Cure Period.

56. The Second Notice of Default specifically reserved the City's rights to further update the Second Notice of Default given that the September Derailment had occurred in the middle

of the month, and as such, the Failure Points for the month of September had not yet been fully recorded and reported.

57. RTG's PMR for the September 2021 Contract Month indicates that RTG incurred 2,890 Failure Points (comprised of 2,470 Failure Points for System Events, and 420 Failure Points for Vehicle Kilometres Availability) for its September performance of its Project Agreement obligations.

58. As a result, on November 1, 2021, the City issued an update to the Second Notice of Default. This update to the Second Notice of Default included the September 2021 Contract Month Failure Points as calculated by IMIRS, which were 2,470 for Systems Events and 420 for Vehicle Kilometres Availability alone, totalling 2,890 in these two categories only (which again is far above the 3, 6, or 12 month thresholds for default in the Project Agreement).

59. On December 7, 2021, the City sent a further update to the Second Notice of Default including the October 2021 Contract Month Failure Points as calculated by IMIRS, which were 4,615 for Systems Events and 420 for Vehicle Kilometres Availability, totalling 5,035 in these two categories only (which again is far above the 3, 6, and 12 month thresholds for default in the Project Agreement).

60. Cumulatively, in the months of August, September, and October 2021, RTG has accrued a total of 10,750 Failure Points in two categories alone (System Events and Vehicle Kilometres Availability) exceeding the 3, 6, and 12 month thresholds for default in the Project Agreement.

2. RTG's Attempts to Delay the Dispute Resolution Procedure

61. Following the issuance of the Second Notice of Default, the City and RTG engaged in a series of discussions in respect of the default.

62. RTG formally responded to the Second Notice of Default on October 3, 2021, but failed to acknowledge the obvious Events of Default, asserting that it was premature to determine whether Events of Default had occurred but providing no substantive reasons why it was not in default following the two Derailments.

63. On October 5, 2021, the City met with RTG to discuss the Default, among other issues.

64. On October 6, 2021, following this discussion with RTG, the City delivered a Notice of Dispute to RTG pursuant to Section 1.3 of Schedule 27 to the Project Agreement.

65. In this Notice of Dispute, the City requested that RTG agree to participate in negotiation meetings required under Schedule 27 of the Project Agreement.

66. A Level 2 Negotiation took place on October 27, 2021, three weeks after the City first requested a meeting.

67. A Level 3 Negotiation then took place on November 9, 2021.

68. The City therefore is in a position to seek confirmation of this Honourable Court of the Failure Points Defaults given that RTG has refused to acknowledge these defaults.

E. CONFIRMATION OF FAILURE POINTS DEFAULTS

69. The Applicant seeks a declaration from this Honourable Court confirming the validity of the Failure Points Defaults as described in the Second Notice of Default of September 24, 2021, as updated.

RULES RELIED UPON

70. The Applicant relies upon Rules 14.05, 38, 39 and 57 of the *Rules of Civil Procedure*, R.R.O. 1990, Reg 194 and upon such further and other grounds as counsel may advise and this Honourable Court may permit.

EVIDENCE AT THE HEARING

71. The following documentary evidence will be used at the hearing of the application:

    a. The Affidavit of Michael Morgan, Director, Rail Construction Program of the City to be sworn, and exhibits attached thereto; and

    b. Such further and other evidence as counsel may advise and this Honourable Court may permit.

December 15, 2021

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CITY OF OTTAWA	-and-	**RIDEAU TRANSIT GROUP GENERAL PARTNERSHIP *et al.***	Court File No:
Applicant		Respondent	

ONTARIO
SUPERIOR COURT OF JUSTICE

Proceeding commenced at **OTTAWA**

NOTICE OF APPLICATION

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TAB 2

Court File No. CV-21-88145-0000

ONTARIO
SUPERIOR COURT OF JUSTICE

BETWEEN

CITY OF OTTAWA

Applicant

and

RIDEAU TRANSIT GROUP GENERAL PARTNERSHIP A JOINT-VENTURE PARTNERSHIP CONSISTING OF ACS RTG PARTNER INC., SNC RTG PARTNER INC. AND ELLISDON RTG PARTNER INC.

Respondents

APPLICATION PURSUANT TO Rule 14.05(3)(d) and (h) of the *Rules of Civil Procedure*

AFFIDAVIT OF MICHAEL MORGAN
(SWORN FEBRUARY 8, 2022)

I, Michael Morgan, of the City of Ottawa in the Province of Ontario, MAKE OATH AND SAY:

1. I am the Director, Rail Construction Program at the City of Ottawa (the "**City**"). Since January 2019, I have had responsibility for overseeing construction completion of Stage 1 of the Confederation Line project (the "**Project**"). Day-to-day operations and maintenance oversight are provided by the City's Rail Operations team; however, I have ongoing responsibility for oversight of Final Completion of the Project and act as City Representative under the Project Agreement for the Project.

2. My role in respect of the Project was added to my existing responsibilities for managing the construction of the Stage 2 light rail transit projects in the City, including the Belfast Yard expansion, Confederation Line fleet expansion, Confederation Line East

Expansion, Confederation Line West expansion, and the North-South expansion of the Trillium Line.

3. As such, I have knowledge of the matters contained in this Affidavit. Where my evidence is based on information provided by others, I have stated the source of that information and believe it to be true.

4. I have held the position of Director, Rail Construction Program for four and a half years and am responsible for oversight of the City's major rail expansion programs. Prior to that I was Director, Rail Operations at the City for two and a half years between 2014 and 2017. In my role with Rail Operations, I was responsible for operations and maintenance of the Trillium Line and was responsible for preliminary operational matters, Light Rail Operator mobilization, and regulatory matters on the Confederation Line. In each of these positions, I assisted in the oversight of the light rail projects in the City.

5. Prior to joining the City, I worked for Bombardier Transportation on various light rail projects including on the Gold Coast Light Rail in Queensland, Australia, YongIn Everline in YongIn, South Korea, JFK AirTrain in Queen's, New York, and SkyTrain Millennium Line in Burnaby, British Columbia. I also spent four and a half years working on the JFK AirTrain project during the operations and maintenance phase of that system.

A. BACKGROUND

1. The Parties

6. The City is a municipality located in the Province of Ontario. The *City of Ottawa Act*[1] grants the City various powers and duties, including establishing and operating a public transit system.[2]

7. The Respondent, Rideau Transit Group General Partnership ("**RTG**"), is a general partnership comprised of ACS RTG Partner Inc., SNC RTG Partner Inc., and EllisDon RTG Partner Inc. RTG is a Special Purpose Vehicle formed under the laws of the Province of Ontario and was formed specifically to design, build, finance and maintain the Project.

8. RTG represented in the Project Agreement (at Section 5.1(a)(iv)), that it and the Project Co Parties, which includes the Construction and Maintenance Contractors, have extensive experience and are knowledgeable in the design, construction and maintenance of light rail transit projects and have the required ability, experience, skill, and capacity to perform the activities within the Project Scope in a timely and professional manner as set out in the Project Agreement. Attached to this Affidavit as **Exhibit "A"** are excerpts of the Project Agreement relevant to this Application.

2. The Project

9. Starting in 2008, the City embarked on a plan to improve public transit, including the approval by City Council in November 2013 of a new 25-year Transportation Master Plan.

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1 1999, S.O. 1999 c.14, as amended

2 Section 12.17, *City of Ottawa Act*.

10. The Transportation Master Plan included the construction of light rail transit and, in particular, contemplated the construction of the Project, converting the existing Transitway to light rail between Tunney's Pasture and Blair stations, as well as an extension of the current LRT and O-Train.[3] Attached as **Exhibit "B"** to this Affidavit is a copy of the Transportation Master Plan.

11. The Transportation Master Plan resulted in the following light rail transit projects:

    (a) Stage 1 the Confederation Line;

    (b) Stage 2 of the Confederation Line; and

    (c) An extension to the Trillium Line.

12. The design, construction, and maintenance of the Project, which is referred to in the Master Plan as the Stage 1 Confederation Line project, was undertaken using a Public Private Partnerships (P3) model. The Project Agreement is a Design Build Finance Maintain form of agreement. This means that Project Co takes on risks regarding the design, construction, and maintenance of the Project, as outlined below. The City looks to one entity, namely RTG, for all issues that arise over the entirety of the Project Term relating to the design, construction and maintenance of the Project.

13. The Project Agreement was executed on February 12, 2013, following a procurement period during which RTG was afforded multiple opportunities to review and comment upon the Project Agreement including by submitting Requests for Information and attending Commercially Confidential Meetings. As well, RTG had the opportunity to review and assess extensive Background Information. The RFP was issued on October 27, 2011, Commercial Close was February 12, 2013, and Financial Close was February

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[3] Transportation Master Plan, Section 6.1 and Exhibit 6.1. [https://ottawa.ca/en/planning-development-and-construction/official-plan-and-master-plans/transportation-master-plan]

14, 2013 – a duration of over a year. RTG therefore had ample opportunities to review the Project Agreement and understand the risk allocation contained in it prior to executing the Project Agreement.

3. RTG's Design and Construction Obligations and Maintenance Obligations

14. Under the Project Agreement, RTG is, in broad terms, responsible at its own cost and risk for the design and construction of the Project, which includes all the infrastructure for the Project (such as the track, signalling, and systems), as well as the Vehicles. RTG then maintains the Project for a 30-year Maintenance Term. RTG, in designing and building the Project, is required to satisfy the technical specifications of the Project Agreement (referred as the Output Specifications), as well as the other requirements of the Project Agreement.

(a) Payments

15. During the Construction Period, RTG received significant payments as it achieved certain significant milestones under the Project Agreement, including upon the achievement of the Substantial Completion Milestone. Subsequently, when Revenue Service Availability was achieved such that the City had the ability to commence public service, RTG received the Revenue Service Availability Payment.

16. As noted above, after Revenue Service Availability is achieved, there is a 30-year Maintenance Term, which is described in Section 27.1 of the Project Agreement, during which time RTG is responsible for performing the "Maintenance Services". These Maintenance Services involve maintaining both the infrastructure and Vehicles so as to meet the contractual maintenance standards (referred to as the Maintenance and

Rehabilitation Requirements). The relevant provisions of the Project Agreement describing the Maintenance Services are included in **Exhibit "A"** to this Affidavit.

17. During the Maintenance Term, RTG receives Monthly Service Payments from the City based on a formula set out in Schedule 20 – Payment Mechanism to the Project Agreement. These payments are subject to certain Deductions related to the performance of the Maintenance Services in defined categories set out in Section 34.6(i)(ii) of the Project Agreement. As is described in detail below, in addition to these Deductions, RTG's performance is subject to a Failure Points regime which allows the City to exercise a number of important rights if the Failure Points exceed contractually defined thresholds, including the right to deliver a Notice of Project Co Event(s) of Default. A copy of Schedule 20 to the Project Agreement is included in its entirety at **Exhibit "A"** to this Affidavit.

18. During the procurement period, RTG had the opportunity to review the Failure Point regime as set out in Schedule 20 to the Project Agreement, along with the other provisions of the Project Agreement and consider the risks it was undertaking in agreeing to this regime.

(b) Obligations throughout Project Term and Single Point of Responsibility

19. Throughout the entirety of the Construction Period and Maintenance Term, RTG is obligated to ensure that the infrastructure and the Vehicles satisfy both the Output Specifications and the Maintenance and Rehabilitation Requirements as set out in Section 20.1(b) of the Project Agreement, which are included at **Exhibit "A"** to this Affidavit.

20. As Director, Rail Construction Program, I look to RTG as a single point of responsibility whether a problem that arises over the course of the Project relates to (i) design and construction or (ii) maintenance. I expect RTG to address all problems and deal with its Subcontractors directly.

B. THE FAILURE POINTS REGIME AND FAILURE POINTS DEFAULTS

21. Pursuant to Section 31.2 of the Project Agreement, RTG is obligated to measure the performance of its Maintenance Services each Contract Month[4] and Failure Points are allocated to RTG as described in Part G of Schedule 20 to the Project Agreement in respect of the occurrence of:

(a) Availability Failures (including Vehicle Availability, System Availability and Station Availability Failures);

(b) System Events;

(c) Service Failures; and

(d) Quality Failures (each a "**Failure**" and collectively, "**Failures**").[5]

22. Appendix C to Schedule 20 to the Project Agreement sets out specific objective Failure Points that apply to the above categories based on specific circumstances that may occur during RTG's performance of its Maintenance Services.

23. The Failure Points, and other metrics, are tracked using a system developed and implemented by RTG called the Integrated Management Information Reporting System ("**IMIRS**"). The data produced by IMIRS is therefore produced by RTG and

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[4] A Contract Month is defined in Section 1.9 of Schedule 20 to the Project Agreement as a Calendar Month.

[5] These Failure Points are applied as described in Part G of Schedule 20 to the Project Agreement. In particular, Appendix C to Schedule 20 sets out specific objective Failure Points that apply to specific circumstances that occur during RTG's performance of its Maintenance Services.

provides an empirical assessment of RTG's performance of its Maintenance Services on an objective basis.

24. On a monthly basis, RTG is obligated to provide the City with a monthly Performance Monitoring Report ("**PMR**") pursuant to Section 34.6 of the Project Agreement. This monthly report sets out the Failure Points data from RTG's IMIRS system. In particular, the PMR provides summaries of Failure Points that have occurred over that Contract Month as well as an aggregate Failure Point total for that Contract Month. RTG also submits a monthly Payment Adjustment Report ("**PAR**") where it sets out any proposed adjustments for Deductions from the Monthly Service Payment for City approval.

25. If Project Co accumulates Failure Points above stipulated thresholds it constitutes a Project Co Event of Default. There are lower thresholds for separate Project Agreement remedies such as Warning Notices[6] and Monitoring Notices.[7] I understand that for the purposes of this Application it is the Project Co Event of Default thresholds based on Failure Points that are relevant, given the magnitude of the Failure Points incurred by RTG in August and September 2021, as discussed below.

26. The thresholds for Project Co Events of Default based on Failure Points are as follows:

    (a) RTG being awarded a total of 1300 or more Failure Points in any rolling 3 Contract Months (Section 45.1(a)(x) of the Project Agreement);

    (b) RTG being awarded a total of 1600 or more Failure Points in any rolling 6 Contract Months (Section 45.1(a)(xi) of the Project Agreement); and

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[6] Project Agreement, Section 31.3.
[7] Project Agreement, Section 31.4.

(c) RTG being awarded a total of 2000 or more Failure Points in any rolling 12 Contract Months (Section 45.1(a)(xii) of the Project Agreement) (collectively the "**Failure Points Defaults**").

C. PROJECT CO EVENTS OF DEFAULT

27. There are 21 discrete Project Co Events of Default listed in Sections 45.1(a)(i) to (xxi) of the Project Agreement. For many, but not all, of these Project Co Events of Default, Project Co is provided with an opportunity to put forward a "reasonable plan and schedule for diligently remedying the Project Co Event of Default" and then Project Co is required to remedy the default within 30 days of the Notice of Default or, if the breach is not capable of being remedied within 30 days, then such longer period as is acceptable to the City, acting reasonably[8] (the "**Cure Period**").

28. However, in respect of the Failure Points Defaults, there is no contractual right to remedy the default – there is no Cure Period under the Project Agreement, unlike certain other Project Co Events of Default.

D. TERMINATION

29. On the occurrence of a Project Co Event of Default or at any time after the City becomes aware of a Project Co Event of Default, the City may terminate the Project Agreement by notice having immediate effect[9] unless:

(a) Project Co cures its default during the Cure Period, if a Cure Period is available (which it is not in relation to a Failure Points Defaults as noted above); or

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[8] Project Agreement, Section 45.4.
[9] Project Agreement, Section 45.3.

(b) Project Co disputes the default "in good faith", in which case termination cannot proceed until it is confirmed through the Dispute Resolution Procedure found in Schedule 27 to the Project Agreement that a Project Co Event of Default has occurred.

E. DISPUTE RESOLUTION PROCEDURE

30. The Dispute Resolution Procedure found at Schedule 27 to the Project Agreement addresses all Disputes that arise between the City and Project Co during the Project. A copy of Schedule 27 to the Project Agreement is included in its entirety at **Exhibit "A"** to this Affidavit. In Schedule 27 the word "Dispute" is defined broadly as including "all disputes, controversies or claims arising out of or relating to any provision of …[the] Project Agreement or the alleged wrongful exercise or failure to exercise by a Party of a discretion or power given to that Party under …[the] Project Agreement, or the interpretation, enforceability, performance, breach, termination or validity of [the] Project Agreement."[10]

31. The Dispute Resolution Procedure involves the following steps for Disputes that arise after Substantial Completion of the Project:

(a) if the parties are unable to resolve a Dispute at the lowest level of management, a written Notice of Dispute (the "**Notice of Dispute**") may be delivered which triggers the Dispute Resolution Procedure[11] (the "**Level 1 Discussions**");

(b) on receipt of a Notice of Dispute, the City Representative and Project Co Representative are to meet ("**Party Representatives Resolution Meeting**")

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[10] Project Agreement, Schedule 27, Section 1.1.
[11] Project Agreement, Schedule 27, Section 1.3.

and each is to promptly and diligently make all reasonable bona fide efforts to resolve the Dispute[12] (the "**Level 2 Negotiations**");

(c) if a Dispute is not resolved by the Party Representatives within 10 business days following the receipt of the Notice of Dispute, or within such longer period of time as the Party Representatives may both expressly agree, then at any time after the expiry of the 10 business days either Party Representative may, by written notice, refer the dispute to executives of the Parties in positions of authority higher than the Party Representatives to promptly and diligently make all reasonable *bona fide* efforts to resolve the Dispute[13] (the "**Level 3 Negotiations**"); and

(d) The Parties can then arbitrate on consent or litigate if there is no consent pursuant to Sections 7 and 9 of Schedule 27 to the Project Agreement.

32. There are also other optional dispute resolution mechanisms that the Parties can elect to use, including expert determination[14] and adjudication.[15]

F. CONTEXT - THE 2020 PROJECT CO EVENTS OF DEFAULTS

33. The Project belatedly achieved the Substantial Completion Milestone on July 26, 2019 and then achieved Revenue Service Availability on August 30, 2019 (15 months after the contractual date of May 24, 2018).

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[12] Project Agreement, Schedule 27, Section 2.1.
[13] Project Agreement, Schedule 27, Section 3.1.
[14] Project Agreement, Schedule 27, Section 5.1.
[15] Project Agreement, Schedule 27, Section 6.1.

34. The launch was beset with a number of problems, and significant transit delays resulted during the fall of 2019. These early problems, included, among other things, problems with:

(a) the train control monitoring system;

(b) the Vehicle passenger doors; and

(c) other reliability issues.

35. Attached as **Exhibit "C"** to this Affidavit are copies of the City's letters to RTG in relation to the various problems observed by the City following the launch of the Project in the fall of 2019.

36. The delays and issues in the fall of 2019 resulted in a barrage of negative coverage by local and national news outlets and social media. The City was required to repeatedly and consistently initiate single tracking and/or replacement bus service to mitigate customer impacts – in fact, from October to December 2019 the City recorded over 50 events where bus replacement service and/or single tracking was necessary and the City was forced to reserve 20 buses solely for the replacement service. Attached as **Exhibit "D"** to this Affidavit is a copy of the City's letter to RTG dated January 24, 2020 describing the replacement bus service put in place. Attached as **Exhibit "E"** to this Affidavit is a sampling of the negative news coverage from the fall of 2019 regarding the Project.

37. The winter of 2019/2020 saw additional serious issues arise on the Project including:

(a) failures of the overhead catenary system;

(b) switch heater failures;

(c) failures of inductors; and

(d) excessive braking leading to wheel flats.

38. Attached as **Exhibit** "**F**" to this Affidavit are copies of the City's letters to RTG in relation to the various problems with the Project encountered during the winter of 2019/2020.

39. In addition, in July 2020, significant wheel cracking of the Vehicles was observed, requiring replacement of the wheels. As of the date of this Application, RTG has still not completed the replacement of the cracked wheels. Attached as **Exhibit** "**G**" to this Affidavit are copies of the City's letters to RTG regarding the wheel cracking issue.

40. Moreover, the Project was not functioning reliably which eroded public trust because RTG was simply unable to provide the required number of trains, particularly during rush hour service or "Peak Periods" as confirmed in letters from the City to RTG dated January 9, 2020 and January 24, 2020. Attached as **Exhibits** "**H**" and "**D**" to this Affidavit are copies of the City's letters to RTG dated January 9, 2020 and January 24, 2020.

41. On December 18, 2019, the City wrote to RTG advising that it had exceeded the Failure Points thresholds for a Project Co Event of Default as set out in the Project Agreement based on the accumulation of Failure Points for Vehicle and System Availability Failures in September, October and November, 2019. The City also advised that RTG had accumulated significant Failure Points for Quality Failures and Service Failures combined from September to November 2019. Attached as **Exhibit** "**I**" to this Affidavit is a copy of the City's letter to RTG dated December 18, 2019.

42. On March 10, 2020, as a result of RTG's accumulation of Failure Points, the City issued a Notice of Default, a copy of which is attached at **Exhibit** "**J**" to this Affidavit (the

"**First Notice of Default**"). There were a number of Project Co Defaults listed, including a lack of availability of the System for System Users and a breach of representations and warranties.

43. With regards to the Failure Points Defaults, the City took a conservative approach and relied on only **three categories** of Failure Points in the First Notice of Default. These categories are measured empirically and involve little or no subjective exercise of judgment such that RTG could not and did not disagree with the Failure Points in these categories:

(a) Vehicle Availability;

(b) Station Availability; and

(c) System Events.

44. RTG's accumulation of Failure Points, as summarized in the First Notice of Default, were as follows:

Type	Month						Totals
	Sept'19	Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	
Vehicle Availability	80	30	30	10	300	240	690
Station Availability	30	30	90	30	0	0	180
System Event	715	325	390	195	1,885	1430	4,940
TOTAL	825	385	510	235	2,185	1,670	5,810

3-Month Accumulations							
Sept'19 to Nov'19			1720				
Oct'19 to Dec'19				1130			
Nov'19 to Jan'20					2930		
Dec'19 to Feb'20						4090	

6 - Month Accumulation	
Sept'19 to Feb'20	5,810

45. The City offered RTG a reasonable period of time to remedy **all** of its Project Co Events of Default, though the City noted that it was not required to do so in relation to the

Failure Points Defaults, pursuant to Section 45.4 of the Project Agreement, as noted above. RTG delivered various iterations of a plan and schedule to remedy its Defaults, the first of which was delivered to the City on March 31, 2020 (the "**Cure Plan**"). Attached as **Exhibit** "**K**" to this Affidavit is a copy of RTG's letter dated March 31, 2020 (without attachments) which enclosed the first iteration of the Cure Plan.

46. On April 7, 2020, the City wrote to RTG regarding the first iteration of its Cure Plan. Among other things, on pages 2 and 3 of the letter the City noted that the Cure Plan presented by RTG on March 31, 2020 did not include adequate schedule information and did not adequately articulate the resources proposed by RTG to deal with the Events of Default. Attached as **Exhibit** "**L**" to this Affidavit is a copy of the City's letter dated April 7, 2020 (without attachment).

47. On April 25, 2020, RTG delivered an updated Cure Plan. On May 4, 2020, the City responded to RTG regarding the updated Cure Plan, noting, among other things, that the updated Cure Plan failed to provide a date by which the Defaults would be remedied. Copies of RTG's letter dated April 25, 2020 (without attachments), enclosing its updated Cure Plan and the City's letter dated May 4, 2020 (without attachment) are attached as **Exhibit**s "**M**" and "**N**" to this Affidavit.

48. Though the City was not entirely satisfied with the Cure Plan because it did not apply enough resources to address issues promptly, RTG proceeded to start to implement that plan, as it was obligated to do under the Project Agreement pursuant to Section 45.4(c) and (f).

49. As noted above, in July 2020, the Vehicles experienced significant wheel cracking, which required replacement of the wheels on the Vehicles and caused RTG to incur a

significant number of Failure Points and which extended the City's monitoring of RTG's remedy of its Project Co Events of Default.

50. To date, RTG has not fully remedied all of the 2020 Defaults.

51. The City implemented an extended monitoring period to monitor RTG's remediation and implementation of its Cure Plan given that RTG had not remedied its Defaults. Attached as **Exhibit "O"** to this Affidavit is a copy of the City's letter to RTG dated October 13, 2020. In this letter, the City confirmed that "as RTG implements its rectification plan, the City will be assessing whether it is succeeding in doing so in the context of remedying its defaults in respects of items (1) [there is no material adverse impact on the availability of the System to System Users] and (3) [the City's reputation and the reputation of the Project are no longer compromised] above. We note that RTG's efforts in this regard have been assisted by the fact that RTG has had significantly lower ridership and demand on the System as a result of the slow return to work in the City of Ottawa following the COVID-19 pandemic."

52. While RTG's performance over late 2020 and 2021 had improved and the Failure Points were far fewer than they had been, RTG's performance was aided by the City allowing RTG to run fewer trains as a result of the lower ridership due to COVID.

53. The City's extended monitoring period was set to expire in September 2021, as noted in the City's letter dated April 1, 2021, but then the Derailments, detailed below, occurred. Attached as **Exhibit "P"** to this Affidavit is a copy of the City's letter dated April 1, 2021 regarding the expiry of the extended monitoring period.

54. In relation to the First Notice of Default, although RTG delivered a Cure Plan as described above, at the same time it disputed that it was in default. In this regard on

March 13, 2020, RTG delivered a Notice of Dispute. Attached as **Exhibit "Q"** to this Affidavit is a copy of RTG's Notice of Dispute dated March 13, 2020.

55. Following delivery of its Notice of Dispute, on June 4, 2020, the City requested a Level 2 Negotiation pursuant to the Dispute Resolution Procedure or alternatively, to bypass that stage for efficiency, among other reasons. Attached as **Exhibit "R"** to this Affidavit is a copy of the City's letter dated June 4, 2020, wherein the City requested Level 2 Negotiation during the week of June 8, 2020.

56. After the departure of RTG's then Chief Executive Officer, Mr. Peter Lauch, I worked to advance the Level 2 Negotiations. RTG agreed to participate in a meeting on June 29, 2021, but no resolution was reached.

57. As of the date of this Application, the City and RTG have been unable to resolve the Dispute in respect of the 2020 Defaults.

58. While this Dispute remains unresolved, I refer to the First Notice of Default and related issues for the purpose of providing context to the 2021 Project Co Events of Default, as detailed below.

G. 2021 PROJECT CO EVENTS OF DEFAULT

59. On August 8, 2021, a Vehicle derailment occurred at Tunney's Pasture Station when an axle broke, causing the wheel of one of the train cars to derail, resulting in the full grounding of the fleet until August 14, 2021 (the "**August Derailment**").



60. As a result of the August Derailment, RTG incurred 2,825 Failure Points in August 2021 in just two categories (comprised of 2,405 points for System Events, and 420 Failure Points for Vehicle Kilometres Availability Failures). This allocation of Failure Points for one single Contract Month exceeds the 12-month threshold for a Project Co Event of Default, based on only two categories of Failure Points. Attached as **Exhibits "S"** and "**T**" to this Affidavit are copies of RTG's monthly PAR and its PMR for August 2021.

61. Six weeks after the August Derailment, on September 19, 2021, a second Vehicle derailment occurred, this time near Tremblay Station with passengers on board. This significant derailment again resulted in full grounding of the fleet and given the seriousness of the situation a comprehensive safety investigation was commenced (the "**September Derailment**", collectively with the August Derailment, the "**Derailments**").

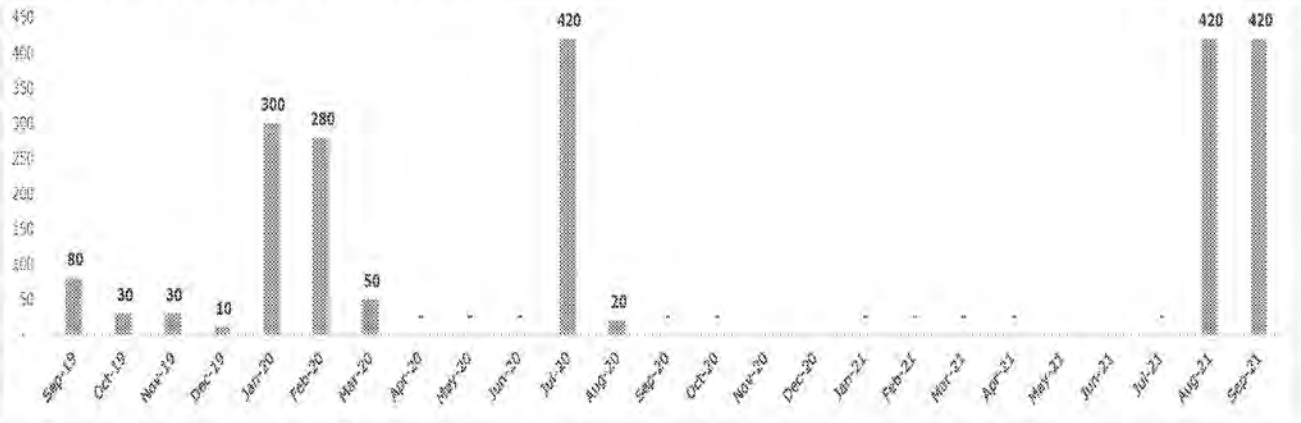


62. As a result of the September Derailment, RTG incurred 2,890 Failure Points in September 2021 again in just two categories (comprised of 2,470 Failure Points for System Events, and 420 Failure Points for Vehicle Kilometres Availability Failures).

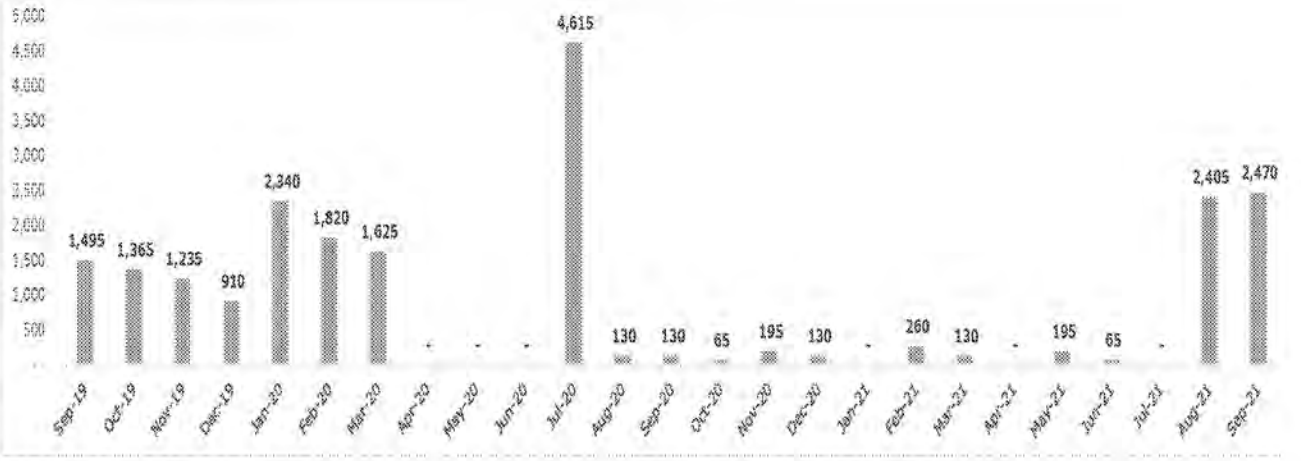
63. As a result of the August and the September Derailments, and in particular, the associated award of Failure Points to RTG, **new** Project Co Events of Default arose both in relation to new Failure Points Defaults and also given the lack of availability of the System to System Users. These Project Co Events of Default are separate Project Co Events of Default to those that gave rise to the First Notice of Default. Again, the City took a conservative approach – this time relying on only two categories of Failure Points that RTG could not credibly dispute (being Vehicle Kilometre Availability Failure Points and System Event Failure Points).

64. The Failure Points for the period since the line launched in September 2019 for just the Vehicle Kilometres Availability Failure Points and System Event Failure Points are as follows:

Vehicle Kilometres Availability



System Events



65. On September 24, 2021, the City issued a Notice of Project Co Event of Default to RTG (the "**Second Notice of Default**") in relation to the new Failure Points Defaults given that RTG had incurred 2,825 Failure Points for the month of August 2021 alone for just Systems Events and Vehicle Kilometres Availability (which is far above the 3,

6, or 12 month thresholds for default in the Project Agreement). A copy of the Second Notice of Default is attached to this Affidavit as **Exhibit "U"**.

66. In this Second Notice of Default, the City indicated that it would **only** provide RTG with a Cure Period for the Failure Points Defaults **if** RTG acknowledged the Default. RTG refused to acknowledge the Failure Points Default. As a result, the City is not contractually obligated to provide RTG with a Cure Period.

67. The Second Notice of Default specifically reserved the City's rights to further update the Second Notice of Default given that the September Derailment had occurred in the middle of the month, and as such, the Failure Points for the month of September had not yet been fully recorded and reported.

68. RTG's PMR for the September 2021 Contract Month indicates that RTG incurred 2,890 Failure Points (comprised of 2,470 Failure Points for System Events, and 420 Failure Points for Vehicle Kilometres Availability) for its September 2021 performance of its Project Agreement obligations. RTG's PMR and PAR for September 2021 are attached at **Exhibits "V"** and "**W**" to this Affidavit.

69. As a result, on November 1, 2021, the City issued an update to the Second Notice of Default. Attached as **Exhibit "X"** to this Affidavit is a copy of the updated Second Notice of Default.

70. This update to the Second Notice of Default included the September 2021 Contract Month Failure Points as calculated by IMIRS, which were 2,470 for Systems Events and 420 for Vehicle Kilometre Availability alone, totalling 2,890 in these two categories only (which again is far above the 3, 6, or 12 month thresholds for default in the Project Agreement).

71. On December 7, 2021, the City sent a further update to the Second Notice of Default including the October 2021 Contract Month Failure Points as calculated by IMIRS, which were 4,615 for Systems Events and 420 for Vehicle Kilometre Availability, totalling 5,035 in these two categories only (which again is far above the 3, 6 and 12 month thresholds for default in the Project Agreement). Attached as **Exhibit "Y"** to this Affidavit is a copy of the City's December 7, 2021 further updated Second Notice of Default.

72. Cumulatively, in the months of August, September and October 2021, RTG accrued a total of 10,750 Failure Points in two categories alone (System Events and Vehicle Kilometre Availability) exceeding the 3, 6 and 12 month thresholds for default in the Project Agreement.

H. RTG'S RESPONSE TO THE DEFAULT

73. RTG formally responded to the Second Notice of Default on October 3, 2021, but failed to acknowledge the obvious Events of Default, asserting that it was premature to determine whether Events of Default had occurred but providing no substantive reasons why it was not in default following the two Derailments. Attached as **Exhibit "Z"** to this Affidavit is RTG's letter to the City dated October 3, 2021.

74. On October 5, 2021, I met with Nicolas Truchon via Microsoft Teams to discuss a variety of matters on a without prejudice basis, including the Events of Default.

75. On October 6, 2021, following this discussion with RTG, the City delivered a Notice of Dispute to RTG pursuant to Section 1.3 of Schedule 27 to the Project Agreement. Attached as **Exhibit "AA"** to this Affidavit is a copy the City's Notice of Dispute dated October 6, 2021.

76. In this Notice of Dispute, the City requested that RTG agree to participate in negotiation meetings in accordance with Schedule 27 of the Project Agreement.

77. On October 7, 2021, RTG responded to the Notice of Dispute, and enclosed a response by Rideau Transit Management ("**RTM**"), a Subcontractor to RTG that provides Maintenance Services. RTM's response erroneously claimed that it was premature to engage in Level 2 Negotiations since, in its view, meaningful Level 1 Negotiations had not yet occurred. Attached as **Exhibit "BB"** to this Affidavit is a copy of RTG's letter to the City dated October 7, 2021.

78. In order to respond to RTG's position, the City wrote to RTG on October 8, 2021 offering, in good faith, another Level 1 meeting in efforts to advance the Dispute toward Level 2 Negotiations. Attached as **Exhibit "CC"** to this Affidavit is a copy of the City's letter to RTG dated October 8, 2021.

79. RTG responded by email on October 11, 2021 advising that it was unwilling to participate in the Level 1 meeting that the City had offered in good faith. Attached as **Exhibit "DD"** to this Affidavit is a copy of RTG's email refusing to participate in the Level 1 meeting.

80. Despite promises to coordinate and schedule a meeting, RTG failed to do so. As a result, the City wrote to RTG on October 15, 2021, again requesting a Level 2 Negotiation, offering the next two business days as possible dates for this meeting. Attached as **Exhibit "EE"** to this Affidavit is a copy of the City's letter to RTG dated October 15, 2021.

81. RTG responded by letter on October 18, 2021, where RTG again refused to either:

(a) acknowledge the discussions that had already occurred at the lowest level of management; or

(b) cooperate and proceed to Level 2 Negotiations.

82. Attached as **Exhibit "FF"** to this Affidavit is a copy of RTG's letter to the City dated October 18, 2021.

83. Despite the City's repeated attempts to schedule Level 1 Discussions and Level 2 Negotiations, RTG attempted to delay and defer any such meetings.

84. RTG eventually agreed to attend a Level 2 Negotiation on October 27, 2021, three weeks after the City first requested a meeting. I met with Nicolas Truchon on October 27, 2021. We did not resolve the Dispute at this meeting.

85. RTG agreed to proceed to a Level 3 Negotiation on November 9, 2021, but only if the City agreed to a Level 3 Negotiation regarding two of RTG's disputes which RTG had previously not advanced in a timely way and which were in no way related to the 2021 Project Co Events of Default. Attached as **Exhibit "GG"** to this Affidavit is a copy of RTG's letter dated November 5, 2020.

86. The City agreed, given the importance of progressing this Dispute in respect of the Failure Points Default. As such, on November 9, 2021, I, along with the General Manager of OC Transpo Renée Amilcar, met with Nicolas Truchon, Mario Guerra, Ramon Villaamil and Jody Becker of RTG. We did not resolve the Dispute at this meeting.

87. RTG did not serve a Notice of Adjudication following this meeting.

88. This Affidavit is sworn in support of the City's Application seeking a declaration from this Honourable Court confirming the validity of the Failure Points Defaults in respect

of the 2021 Defaults as described in the Second Notice of Default and for no improper purpose.

SWORN by Michael Morgan at the City of Ottawa, in the Province of Ontario, before me via videoconference at the Town of Ajax in the Province of Ontario on February 8, 2022 in accordance with O. Reg. 431/20, Administering Oath or Declaration Remotely.

Commissioner for Taking Affidavits
(or as may be)

Catherine Gleason-Mercier
LSO#: 64400A

MICHAEL MORGAN

This is Exhibit "A" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax in the Province of Ontario on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

PROJECT AGREEMENT

OTTAWA LIGHT RAIL TRANSIT PROJECT

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SCHEDULES

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Schedule 2	–	Completion Documents
Schedule 3	–	Custody Agreement
Schedule 4	–	Lenders' Direct Agreement
Schedule 5	–	Direct Agreements
Schedule 6	–	Independent Certifier Agreement
Schedule 7	–	**[Intentionally deleted]**
Schedule 8	–	Energy Matters
Schedule 9	–	Key Individuals
Schedule 10	–	Review Procedure
Schedule 11	–	Quality Management
Schedule 12	–	**[Intentionally deleted]**
Schedule 13	–	Project Co Proposal Extracts
Schedule 14	–	Commissioning
Schedule 15	–	Output Specifications
15-1	–	Technical Definitions and Reference Documents
15-2	–	Design and Construction Requirements
15-3	–	Maintenance and Rehabilitation Requirements
15-4	–	Regulatory Standards
Schedule 16	–	Title Encumbrances
Schedule 17	–	Environmental Obligations
Schedule 18	–	Communications and Public Consultation Protocol
Schedule 19	–	Milestone Payments
Schedule 20	–	Payment Mechanism
Schedule 21	–	**[Intentionally deleted]**
Schedule 22	–	Variation Procedure
Schedule 23	–	Compensation on Termination
Schedule 24	–	Expiry Transition Procedure
Schedule 25	–	Insurance and Performance Security Requirements
Schedule 26	–	Record Provisions
Schedule 27	–	Dispute Resolution Procedure
Schedule 28	–	Refinancing
Schedule 29	–	Standby Letter of Credit
Schedule 30	–	Insurance Trust Agreement
Schedule 31	–	Project Co Information
Schedule 32	–	Financial Model Extracts
Schedule 33	–	Works Reports
Schedule 34	–	Vehicle and Fixed Equipment Warranties
Schedule 35	–	Additional Vehicles
Schedule 36	–	Milestones
Schedule 37	–	Mobility Matters

Schedule 38 – Extension and Additional Phases
Schedule 39 – Operations Matters
Schedule 40 – Highway Work
Schedule 41 – Intellectual Property
Schedule 42 - **[Intentionally deleted]**
Schedule 43 - Procurement Support Services
Schedule 44 - Stage 2 Additional Vehicles
Schedule 45 - Belfast MSF Expansion
Schedule 46 - Stage 2 Interface and Design Management Services

THIS PROJECT AGREEMENT is made as of the 12th day of February, 2013

BETWEEN:

CITY OF OTTAWA

(THE "CITY")

AND

RIDEAU TRANSIT GROUP GENERAL PARTNERSHIP, by its Partners ACS RTG PARTNER INC., SNC RTG PARTNER INC. and ELLISDON RTG PARTNER INC.

("PROJECT CO")

WHEREAS:

A. The City wishes to procure (i) a new light rail transit system in Ottawa, Ontario, as the first of several phases in the City's Transportation Master Plan and which includes a 12.5 km line along the City's Bus Rapid Transit corridor from Blair station in the east to Tunney's Pasture station in the west, a tunnel through the Downtown Core and 3 underground stations, (ii) the widening of Highway 417 and (iii) the completion of related Civic Works.

B. Project Co will carry out and perform the Project Scope (the "**Project**").

C. The City and Project Co wish to enter into this project agreement (the "**Project Agreement**"), which sets out the terms and conditions upon which Project Co shall perform the activities within the Project Scope.

D. The construction of the System and the Highway Work will provide an overall improvement to the quality of life of the citizens of Ottawa and its outlying regions as well as to visitors to the City.

E. IO is engaged as a consultant by the City as its commercial procurement lead with respect to the Project. IO is not acting as a Crown Agent in connection with this Project Agreement or the Project and, accordingly, HMQ will not be liable for any liability of IO in connection therewith.

F. Public ownership and control of the System and Highway 417 will be preserved.

G. With a view to ensuring that both Parties are able to properly and effectively discharge their respective duties, functions and responsibilities under Applicable Law, it is the intent that the City and Project Co work collaboratively, responsibly and cooperatively throughout the Project Term.

H. This Project Agreement was amended on April 19, 2017 to add a new Schedule 43 entitled Procurement Support Services.

I. This Project Agreement was further amended on June 21, 2017 to add a new Schedule 44 entitled Stage 2 Additional Vehicles.

J. This Project Agreement was further amended on September 26, 2017 to add a new Schedule 45 entitled Belfast MSF Expansion DBF Schedule.

K. This Project Agreement was further amended on September 16, 2019 to add a new Schedule 46 entitled Stage 2 Interface and Design Management Services.

L. The Project Agreement was further amended on September 16, 2019 to amend the Maintenance Services to include the maintenance of the Stage 2 Additional Vehicles, the Belfast MSF Expansion, Stage 2 East and Stage 2 West.

NOW THEREFORE in consideration of the mutual covenants and agreements of the Parties hereinafter contained and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties covenant and agree as follows:

1. DEFINITIONS AND INTERPRETATION

1.1 Definitions and Interpretation

(a) This Project Agreement shall be interpreted in accordance with Schedule 1 – Definitions and Interpretation.

(b) This Project Agreement is comprised of this executed agreement and the following documents, all of which are hereby incorporated by reference into and form part of this Project Agreement.

Schedule No.		Description
Schedule 1	–	Definitions and Interpretation
Schedule 2	–	Completion Documents
Schedule 3	–	Custody Agreement
Schedule 4	–	Lenders' Direct Agreement
Schedule 5	–	Direct Agreements
Schedule 6	–	Independent Certifier Agreement
Schedule 7	–	**[Intentionally deleted]**
Schedule 8	–	Energy Matters
Schedule 9	–	Key Individuals
Schedule 10	–	Review Procedure
Schedule 11	–	Quality Management
Schedule 12	–	**[Intentionally deleted]**
Schedule 13	–	Project Co Proposal Extracts
Schedule 14	–	Commissioning
Schedule 15	–	Output Specifications

15-1	–	Technical Definitions and Reference Documents
15-2	–	Design and Construction Requirements
15-3	–	Maintenance and Rehabilitation Requirements
15-4	–	Regulatory Standards
Schedule 16	–	Title Encumbrances
Schedule 17	–	Environmental Obligations
Schedule 18	–	Communications and Public Consultation Protocol
Schedule 19	–	Milestone Payments
Schedule 20	–	Payment Mechanism
Schedule 21	–	**[Intentionally deleted]**
Schedule 22	–	Variation Procedure
Schedule 23	–	Compensation on Termination
Schedule 24	–	Expiry Transition Procedure
Schedule 25	–	Insurance and Performance Security Requirements
Schedule 26	–	Record Provisions
Schedule 27	–	Dispute Resolution Procedure
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Schedule 29	–	Standby Letter of Credit
Schedule 30	–	Insurance Trust Agreement
Schedule 31	–	Project Co Information
Schedule 32	–	Financial Model Extracts
Schedule 33	–	Works Reports
Schedule 34	–	Vehicle and Fixed Equipment Warranties
Schedule 35	–	Additional Vehicles
Schedule 36	–	Milestones
Schedule 37	–	Mobility Matters
Schedule 38	–	Extension and Additional Phases
Schedule 39	–	Operations Matters
Schedule 40	–	Highway Work
Schedule 41	–	Intellectual Property
Schedule 42	-	**[Intentionally Deleted]**
Schedule 43	-	Procurement Support Services
Schedule 44	-	Stage 2 Additional Vehicles
Schedule 45	-	Belfast MSF Expansion
Schedule 46	-	Stage 2 Interface and Design Management Services

(c) The documents comprising this Project Agreement are complementary and what is called for by any one of them shall be interpreted as if called for by all, except in the event of ambiguities, conflicts or inconsistencies, in which case Section 1.2 shall apply.

(d) Except for those parts of Project Co's proposal which are incorporated by reference into this Project Agreement by the Project Co Proposal Extracts, on Financial Close, the Request for Proposals and Project Co's proposal shall be superseded entirely by this Project Agreement and rendered null and void, and shall not be relied upon or used by Project Co, the City or anyone else (including anyone pursuant to Schedule 27 – Dispute

Resolution Procedure or any arbitral body or any court) in any way to interpret or qualify the scope of the Project Scope, any obligations or liabilities of Project Co, or anything else contained in this Project Agreement.

(e) Unless it is specifically provided that a consent, approval or satisfaction is in the Discretion of the City, no consent, approval or satisfaction of the City or the City Representative shall be unreasonably withheld or delayed.

(f) Unless it is specifically provided that a consent, approval or satisfaction is in the discretion of Project Co, no consent, approval or satisfaction of Project Co or the Project Co Representative shall be unreasonably withheld or delayed.

1.2 Conflict of Terms

(a) In the event of ambiguities, conflicts or inconsistencies between or among any of the provisions of this Project Agreement, the provisions shall govern in the following order of precedence with each taking precedence over those listed subsequently:

(i) the provisions of amendments in writing to this Project Agreement signed by the Parties and Variation Confirmations shall govern and take precedence only over those specific provisions of this Project Agreement expressly amended thereby;

(ii) any provision establishing a higher standard of safety, reliability, durability, performance or service shall take precedence over a provision establishing a lower standard of safety, reliability, durability, performance or service;

(iii) Schedules 43, 44, 45 and 46;

(iv) the body of this Project Agreement;

(v) Schedule 1 – Definitions and Interpretation;

(vi) Schedule 27 – Dispute Resolution Procedure;

(vii) Schedule 19 – Milestone Payments;

(viii) Schedule 20 – Payment Mechanism;

(ix) Schedule 15 – Output Specifications;

(x) Schedule 17 – Environmental Obligations;

(xi) Schedule 25 – Insurance and Performance Security Requirements;

(xii) Schedule 22 – Variation Procedure;

(xiii) Schedule 10 – Review Procedure;

(xiv) Schedule 14 – Commissioning;

(xv) Schedule 11 – Quality Management;

(xvi) Schedule 28 – Refinancing;

(xvii) Schedule 23 – Compensation on Termination;

(xviii) Schedule 26 – Record Provisions;

(xix) Schedule 24 – Expiry Transition Procedure;

(xx) the other Schedules in the order in which they are listed in Section 1.1(b); and

(xxi) Schedule 13 – Project Co Proposal Extracts.

(b) Subject to Section 1.2(a), if the ambiguity, conflict or inconsistency is between a provision of general application and a provision that applies only to a specific part of the Project Scope, the provision that applies to the specific part of the Project Scope shall govern for that specific part of the Project Scope.

(c) To the extent that Schedule 40 – Highway Work contains provisions that apply only to the Highway Work, those provisions that apply only to Highway Work shall govern and take precedence, otherwise the provisions of this Project Agreement and in particular of this Section 1.2 shall prevail.

(d) If any ambiguity, conflict or inconsistency is not readily resolved by the foregoing provisions of this Section 1.2, then Project Co or the City, upon discovery of same, shall immediately give notice to the City Representative. The City Representative shall, within 10 Business Days after such notice, make a determination of which provision governs and give notice of such determination, in writing, to Project Co.

(e) The City and Project Co shall comply with the determination of the City Representative pursuant to this Section 1.2 unless the City or Project Co disputes the decision of the City Representative in which event such Dispute may be referred for resolution in accordance with Schedule 27 – Dispute Resolution Procedure.

1.3 Conflict of Documents

(a) In the event of ambiguities, conflicts or inconsistencies between or among this Project Agreement and the Lenders' Direct Agreement, the Lenders' Direct Agreement shall prevail. Notwithstanding the foregoing, if there is any right or remedy in favour of the City set out in the Lenders' Direct Agreement or any part thereof which is not set out or provided for in the Project Agreement, such additional right or remedy shall not constitute an ambiguity, conflict or inconsistency.

1.4 Legal Requirements

(a) Whenever standards of Applicable Law differ, the most stringent standards shall govern.

(b) Project Co shall use commercially reasonable efforts to minimize:

(i) any interference with the operations of the City, any City Party (and in the context of DB Co and any DB Co Party, this obligation shall be subject to any specific obligations agreed between Project Co and DB Co under the DB Co Interface Agreement to minimize such interference), any Governmental Authority or any Other Contractor, including the performance of the Governmental Activities and the Other Works;

(ii) any interference with the construction, operation, maintenance and rehabilitation of the transit system and the Highway; and

(iii) any lane closures, traffic diversions or restrictions or other impairment of the public's use and enjoyment of the System and the Highway.

20. DESIGN AND CONSTRUCTION OBLIGATIONS

20.1 Overall Responsibility

(a) Project Co shall perform and complete the Design and Construction Works:

(i) so as to satisfy the Output Specifications;

(ii) in accordance with the Project Co Proposal Extracts;

(iii) in accordance with the Design Data;

(iv) in accordance with the Works Schedule; and

(v) in accordance with the other terms and conditions of this Project Agreement.

(b) Without prejudice to Section 20.1(a), but subject to Section 16.5 and to the provisions of the Maintenance and Rehabilitation Requirements, Schedule 20 – Payment Mechanism and Schedule 24 – Expiry Transition Procedure, if, at any time during the Project Term, any of the Design and Construction Works, the System or any parts thereof do not fully satisfy the Output Specifications and/or any other term or condition of this Project Agreement (other than the Project Co Proposal Extracts), Project Co shall, at its own cost and expense, rectify the Design and Construction Works, the System and any part thereof so that:

(i) the Design and Construction Works, the System and all parts thereof shall, at all times, comply with and satisfy in full the Output Specifications and the other terms and conditions of this Project Agreement (other than the Project Co Proposal Extracts); and

(ii) the Design and Construction Works, the System and all parts thereof will, at all times, be able to meet all safety and performance standards and other

requirements set out in Schedule 15-3 – Maintenance and Rehabilitation Requirements.

20.2 Completion of the System

(a) Project Co shall design, engineer, construct and commission the System so as to provide to the City a complete and operational System in accordance with the Output Specifications and the Project Co Proposal Extracts, and that will allow Project Co to perform the Maintenance Services, all in accordance with and subject to the terms of this Project Agreement and allow the City to perform the Operations.

(b) All of the Contracts collectively shall be sufficient to create the entire System and accomplish Integration on or before the Revenue Service Availability Date.

(c) Project Co shall cause 2017 Readiness to occur on or before the 2017 Readiness Date.

20.3 Development of Design

(a) Project Co shall, at its own cost, develop and complete the design of the System and all Design Data in accordance with the requirements of this Project Agreement, including Schedule 10 – Review Procedure and this Section 20.3.

(b) The further development of the design and the process by which it is progressed must fully comply with the requirements of this Project Agreement.

(c) In order to develop the detailed design of the System, Project Co shall consult with the Stakeholders (which consultation requirements pursuant to the Environmental Assessments are further described in Schedule 17 – Environmental Obligations) and the City Representative and the City Design Team in an interactive process. If the result of any consultation with Stakeholders, is a change to the scope, configuration or size of any New System Infrastructure or a change in the Construction Activities, or a change in the Maintenance Services, which change has been approved by the City in its Discretion, then such change shall, subject to and in accordance with Schedule 22 – Variation Procedure, result in a Variation.

(d) The Parties agree that Appendix A to Schedule 10 – Review Procedure is an initial list of Design Data and other items that will require design review, which Design Data and other items shall include (to a scale required by the City Representative):

(i) design development drawings, reports, schedules and specifications progressed from Commercial Close with extensive user group input, showing all architectural, engineering and landscape design information sufficient to allow for the development of working drawing documentation, submitted at 60% completion (the "**Pre-final Design Development Submittals**") and at 100% completion (the "**Final Design Development Submittals**") of the development of the working drawings (collectively, the "**Design Development Submittals**");

27. MAINTENANCE SERVICES

27.1 Overall Responsibility

(a) During the Maintenance Term, Project Co shall perform the Maintenance Services in respect of the System:

(i) so as to satisfy the Output Specifications; and

(ii) in accordance with the other terms of this Project Agreement.

(b) Subject to Section 33.1(b), one or more Maintenance Contractors may perform the Maintenance Services in respect of the System. Project Co may itself or through Subcontracts perform minor aspects of the Maintenance Services or such greater portion of the Maintenance Services as the City shall approve in its Discretion.

27.2 Commencement of Maintenance Services

(a) Project Co shall commence the Maintenance Services on the Revenue Service Commencement Date and shall perform the Maintenance Services until the end of the Maintenance Term, taking into account the Timing Principle.

27.3 Equipment for Maintenance Services

(a) Project Co will procure, deliver, install, commission, maintain, repair, decommission, upgrade and replace any equipment required by Project Co to perform the Maintenance Services.

27.4 Price adjustment for Maintenance Services arising from Stage 2 Variations and Stage 2 Integration Activities

(a) If, as a result of the activities carried out by Project Co under the Procurement Support Services Variation and/or the Stage 2 Interface and Design Management Variation, Project Co has notified the City in accordance with the terms of either such Variation that an adjustment to the Fixed Price (as defined in the Stage 2 MOU) is justified under the terms of the Stage 2 MOU and/or a change to the risk allocation under this Agreement is required to leave Project Co in the same commercial position contemplated by the Stage 2 MOU, and such an adjustment or change is either agreed or determined pursuant to the dispute resolution procedures set out in the Stage 2 MOU and/or the relevant Stage 2 Variations, the City shall promptly issue a Variation Enquiry to give effect to such adjustment under this Agreement and the relevant provisions of Schedule 22 - Variation Procedure shall apply except that the City shall not be entitled to withdraw any such Variation Enquiry unless the Parties otherwise agree.

(b) In connection with the integration of the Stage 1 System with the Stage 2 System, including any trial running of any part of the System (the "**Stage 2 Integration Activities**"), the City shall issue a Variation Enquiry:

(b) In the event any Insurance Proceeds under Insurance Policies as referred to in Schedule 30 – Insurance Trust Agreement are available to carry out the Reinstatement Work, such Insurance Proceeds shall be paid into the Insurance Trust Account and shall be dispensed in accordance with the provisions of the Insurance Trust Agreement to carry out the Reinstatement Work

30.4 Clarification concerning Insurance Trust Agreement

(a) For the purposes of the Insurance Trust Agreement, the City and Project Co agree that, to the extent the Insurance Trust Agreement contains terms that are defined by reference to this Project Agreement, this shall be taken to refer to such terms as they may be updated from time to time in accordance with this Project Agreement. The City and Project Co shall procure that the Lenders' Agent and the Account Trustee acknowledge and give effect to this agreement in their dealings under the Insurance Trust Agreement.

31. MONITORING

31.1 Monitoring of Performance

(a) Project Co shall monitor the performance of the Maintenance Services in the manner and at the frequencies set out in the Output Specifications and the Payment Mechanism, and shall compile and at all times maintain records which are accurate and complete of such monitoring and performance. In addition to Project Co's obligations as set out in the Output Specifications and the Payment Mechanism, Project Co shall, as reasonably requested by the City, provide the City Representative with relevant particulars of any aspects of Project Co's performance which fail to meet the requirements of this Project Agreement.

(b) The City may, at any and all reasonable times, observe, inspect, monitor, audit and take any steps reasonably necessary to satisfy itself as to the adequacy of the monitoring, including performing sample checks.

31.2 Failure Points

(a) In each Contract Month, Project Co shall measure the performance of the Maintenance Services, and based on the performance of the Maintenance Services in the applicable Contract Month, Failure Points may be awarded in respect of the Maintenance Services in accordance with the Payment Mechanism.

31.3 Warning Notices

(a) Without prejudice to the City's rights under Section 45 and any other rights under this Project Agreement, if Project Co accrues more than the following number of Failure Points in any one Contract Month, then the City may give written notice (a "**Warning Notice**") to Project Co setting out the matter or matters giving rise to such notice and stating that it is a "**Warning Notice**":

(i) 120 Failure Points in respect of Vehicle and System Availability Failures;

(ii) 120 Failure Points in respect of Station Availability Failures; or

(iii) 50 Failure Points in respect of Quality Failures and Service Failures, combined.

31.4 Monitoring Notices

(a) Without prejudice to the City's rights under Section 45 and any other rights under this Project Agreement, if Project Co accrues more than the following number of Failure Points in any rolling 3 Contract Months, the City may, by notice (a "**Monitoring Notice**") to Project Co require Project Co to increase the level of Project Co's monitoring of its own performance of its obligations under this Project Agreement until such time as Project Co shall have demonstrated to the reasonable satisfaction of the City that it is performing, and is capable of continuing to perform, its obligations under this Project Agreement in respect of the relevant Maintenance Services:

(i) 240 Failure Points in respect of Vehicle and System Availability Failures;

(ii) 240 Failure Points in respect of Station Availability Failures; or

(iii) 75 Failure Points in respect of Quality Failures and Service Failures, combined.

(b) The City may give a Warning Notice pursuant to Section 31.3 despite the issuance of a Monitoring Notice in respect of the same matter where a further breach occurs or the original breach has not been remedied within a reasonable period, and whether or not the previous Monitoring Notice remains in effect.

(c) If a Monitoring Notice is given, then:

(i) such Monitoring Notice shall specify in reasonable detail the additional measures to be taken by Project Co in monitoring its own performance;

(ii) if Project Co, acting reasonably, objects to any of the specified measures on the grounds that they are excessive or that the City was not entitled to give the Monitoring Notice, Project Co shall, within 3 Business Days of the receipt of the Monitoring Notice, notify the City in writing of the matters objected to and any changes necessary in order to prevent prejudice to Project Co's performance of its obligations under this Project Agreement;

(iii) if Project Co gives the City a notice under Section 31.4(c)(ii), the measures to be taken by Project Co shall be agreed between the Parties or, in the absence of agreement within 10 Business Days of the City's receipt of such notice, may be referred for resolution in accordance with Schedule 27 – Dispute Resolution Procedure;

(iv) if Project Co fails to increase Project Co's monitoring as provided herein, the City may perform such monitoring save where Project Co, acting in good faith, is pursuing a Dispute pursuant to Section 31.4(c)(iii);

(v) if it is determined in accordance with Schedule 27 – Dispute Resolution Procedure that the City was entitled to give the applicable Monitoring Notice, Project Co shall bear its own costs and reimburse the City for any reasonable costs and expenses incurred by or on behalf of the City in relation to the giving of such Monitoring Notice; and

(vi) if it is determined in accordance with Schedule 27 – Dispute Resolution Procedure that the City was not entitled to give the applicable Monitoring Notice, the City shall bear its own costs and reimburse Project Co for any reasonable costs and expenses incurred by or on behalf of Project Co in relation to the giving of such Monitoring Notice.

(d) In respect of any Monitoring Notice, if Project Co shall have demonstrated to the reasonable satisfaction of the City that Project Co has performed its obligations under this Project Agreement for a period of 90 consecutive days and during such period has not received a Warning Notice or Monitoring Notice in respect of the same or similar Maintenance Services, Project Co may apply for the withdrawal of such Monitoring Notice. If the City is satisfied, acting reasonably, that Project Co has satisfied the aforesaid requirements, it shall, within 10 Business Days of receipt of such application, withdraw such Monitoring Notice and cease to perform or require the performance of the increased monitoring implemented in respect of such Monitoring Notice.

(e) If it is determined in accordance with Schedule 27 – Dispute Resolution Procedure that the City was not entitled to give any Monitoring Notice, the City shall promptly withdraw such Monitoring Notice and cease to perform or require the performance of the increased monitoring implemented in respect of such Monitoring Notice.

32. CITY'S REMEDIAL RIGHTS

32.1 Exercise of Remedial Rights

(a) The City may exercise all rights set out in this Section 32 at any time and from time to time if:

(i) the City, acting reasonably, considers that a breach by Project Co of any obligation under this Project Agreement, or any act or omission on the part of Project Co or any Project Co Party:

(A) does or can reasonably be expected to create a serious threat to the health, safety or security of any person, including any System User, City Party or City Third Party Beneficiary;

(B) does or can reasonably be expected to result in a materially adverse interruption in the Maintenance Services or the availability of the System to System Users;

(C) does or can reasonably be expected to materially prejudice the performance of any Governmental Activities; or

(D) may potentially compromise the reputation or integrity of the City or any City Party or the nature of the City or the Project, so as to negatively affect public perception of the City or the Project,

provided that:

(E) in respect of a breach by Project Co of any obligation under this Project Agreement, or any act or omission on the part of Project Co or any Project Co Party, which can reasonably be expected to cause any of the consequences set out in Sections 32.1(a)(i)(A), 32.1(a)(i)(B) and 32.1(a)(i)(C), the City shall not exercise its rights under this Section 32 unless Project Co has failed to cure the relevant breach, act or omission within 5 Business Days of notice from the City or, if such breach, act or omission cannot reasonably be cured within such 5 Business Day period, Project Co thereafter fails to diligently and continuously pursue such cure and to cure such breach, act or omission within a reasonable period thereafter, provided that Project Co shall not be entitled to a cure period if any of the consequences set out in Sections 32.1(a)(i)(A), 32.1(a)(i)(B) and 32.1(a)(i)(C) actually occur; and

(F) in respect of Section 32.1(a)(i)(D), the City shall not exercise its rights under this Section 32 unless Project Co has failed to cure the relevant breach, act or omission within 5 Business Days of notice from the City or, if such breach, act or omission cannot reasonably be cured within such 5 Business Day period, Project Co thereafter fails to diligently and continuously pursue such cure and to cure such breach, act or omission within a reasonable period thereafter;

(ii) Project Co accrues, in any Contract Month, more than:

(A) 300 Failure Points in respect of Vehicle and System Availability Failures;

(B) 300 Failure Points in respect of Station Availability Failures; or

(C) 150 Failure Points in respect of Quality Failures and Service Failures, combined;

(iii) while a Monitoring Notice is in effect that is not being disputed by Project Co, acting in good faith, Project Co receives a Warning Notice in respect of the same or similar Maintenance Services;

(iv) if, pursuant to Part 5 of Schedule 11 – Quality Management, a Quality Audit that is not being disputed by Project Co, acting in good faith, shows that Project Co has not performed or is not performing its obligations and Project Co has failed to perform the rectification or Maintenance Services as provided in the Output Specifications;

(v) a labour dispute materially affects or can reasonably be expected to materially affect the Project Scope, the Governmental Activities or the availability of the System to System Users;

(vi) the City has received a notice under any Maintenance Contractor's Direct Agreement, if applicable, that entitles the City to exercise step-in rights thereunder; or

(vii) Project Co has failed to comply with any written direction issued by or on behalf of the City.

32.2 Emergency

(a) Notwithstanding that Project Co is not in breach of its obligations under this Project Agreement, the City may exercise all of the rights set out in this Section 32 at any time and from time to time during the Maintenance Term if the City, acting reasonably, considers the circumstances to constitute an Emergency.

32.3 Rectification

(a) Without prejudice to the City's rights under Section 45 and any other rights under this Project Agreement, in any of the circumstances set out in Sections 32.1 or 32.2, the City may, by written notice, require Project Co to take such steps as the City, acting reasonably, considers necessary or expedient to mitigate, rectify or protect against such circumstance, including, if applicable, the termination and replacement of Subcontractors, and Project Co shall use commercially reasonable efforts to comply with the City's requirements as soon as reasonably practicable.

(b) If the City gives notice to Project Co pursuant to Section 32.3(a) and either:

(i) Project Co does not either confirm, within 5 Business Days of such notice or such shorter period as is appropriate in the case of an Emergency or, if applicable, in the event the City is entitled to exercise step-in rights under the Maintenance Contractor's Direct Agreement, that it is willing to take the steps required in such notice or present an alternative plan to the City to mitigate, rectify and protect against such circumstances that the City may accept or reject acting reasonably; or

(ii) Project Co fails to take the steps required in such notice or accepted alternative plan within such time as set out in such notice or accepted alternative plan or within such longer time as the City, acting reasonably, shall think fit,

then the City may take such steps as it considers to be appropriate, acting reasonably, including, if applicable, exercising step-in rights under the Maintenance Contractor's Direct Agreement and requiring the termination and replacement of Subcontractors, either itself or by engaging others (including a third party) to take any such steps, and may perform or obtain the performance of the relevant Maintenance Services to the standards required by this Project Agreement, and the provisions of Section 42 including Section 42.1(a)(iv) and Section 42.2, shall apply. For greater certainty Maintenance

Services performed by Project Co and by Subcontractors from time to time pursuant to the provisions of Section 27.1(b) do not require Project Co or such Subcontractors to enter into a Maintenance Contractor's Direct Agreement in respect of the Maintenance Services that they perform.

(c) Notwithstanding the foregoing provisions of this Section 32.3, in the event of an Emergency, the notice under Section 32.3(a) shall be given as promptly as possible having regard to the nature of the Emergency and the City may, prior to Project Co's confirmation under Section 32.3(b)(i), take such steps as are appropriate having regard to the nature of the Emergency.

(d) Where the City considers it to be necessary to do so, the steps which the City may take pursuant to this Section 32.3 subsequent to the provision of the notice under Section 32.3(a) unless the notice is given at a later time as provided in Section 32.3(c), may, at the City's option, include the partial or total suspension of Project Co's right and obligation to perform any Maintenance Services having regard to the circumstances in question (without any extension of the Project Term or suspension of any other Maintenance Services, and the provisions of Section 42, including Section 42.1(a)(iv) and Section 42.2, shall apply, but such suspension shall be only for so long as, as applicable:

(i) the circumstances referred to in Section 32.1 or 32.2 subsist; or

(ii) in respect of any such circumstances relating to Project Co's performance of the Maintenance Services, until such time as Project Co shall have demonstrated to the reasonable satisfaction of the City that, notwithstanding such circumstances, Project Co has taken such steps, including, if applicable, the termination and replacement of Subcontractors, as are required pursuant to this Section 32.3 and as are necessary to be capable of performing its obligations in respect of the relevant Maintenance Services to the required standard in accordance with this Project Agreement, and thereafter Project Co shall perform its obligations as aforesaid.

32.4 Costs and Expenses

(a) Subject to the City's obligations pursuant to Sections 32.5 and 32.6:

(i) Project Co shall bear all costs and expenses incurred by Project Co in relation to the exercise of the City's rights pursuant to this Section 32; and

(ii) Project Co shall reimburse the City for all reasonable costs and expenses incurred by the City in relation to the exercise of the City's rights pursuant to this Section 32.

32.5 Reimbursement Events

(a) In this Section 32.5, a "**Reimbursement Event**" means:

(i) an act or omission of Project Co or any Project Co Party or a breach of any obligation under this Project Agreement, but only to the extent such act, omission or breach is caused by a City Party or City Third Party Beneficiary;

(ii) a labour dispute involving employees of any City Party or City Third Party Beneficiary that materially affects or can reasonably be expected to materially affect the Project Scope; or

(iii) an Emergency not resulting from Project Co's breach of its obligations under this Project Agreement.

(b) If the City either takes steps itself or requires Project Co to take steps in accordance with this Section 32 as a result of a Reimbursement Event:

(i) the City shall reimburse Project Co for the reasonable costs and expenses incurred by Project Co in relation to the exercise of the City's rights pursuant to this Section 32 that would not otherwise have been incurred by Project Co in the proper performance of its obligations under this Project Agreement; and

(ii) subject to Section 32.5(c), the City shall bear all costs and expenses incurred by the City in relation to the exercise of the City's rights pursuant to this Section 32.

(c) If, in exercising its rights pursuant to this Section 32, the City performs any part of the Maintenance Services either itself or by engaging others, the City shall be entitled to deduct from any Monthly Service Payment the reasonable cost of performing such Maintenance Services. If the City makes such a deduction, then Project Co shall be relieved of its reimbursement obligations under Section 32.4(a)(ii) up to the amount equal to the deduction.

32.6 Reimbursement if Improper Exercise of Rights

(a) If the City exercises its rights pursuant to this Section 32, but the City was not entitled to do so, the City shall reimburse Project Co for the reasonable costs and expenses directly incurred by Project Co over and above those that would otherwise have been incurred by Project Co in the proper performance of its obligations under this Project Agreement and that are directly and reasonably incurred by Project Co in complying with those written requirements of the City issued as a result of the City having exercised such rights.

(b) Project Co acknowledges and agrees that Project Co has no right to require a determination of whether or not the City is entitled to exercise its rights pursuant to this Section 32 before taking any such action that the City may require and Project Co shall comply with all of the City's requirements. Only concurrently with or after complying with the City's requirements shall Project Co be entitled to refer any Dispute for resolution in accordance with Schedule 27 – Dispute Resolution Procedure.

(b) Project Co shall not be entitled to any Monthly Service Payments for any period prior to the Revenue Service Commencement Date.

34.5 Adjustments to Monthly Service Payment Periods

(a) The Annual Service Payment payable in respect of each of the first Contract Year and the last Contract Year shall be adjusted in accordance with Schedule 20 – Payment Mechanism.

34.6 Invoicing and Payment Arrangements

(a) Within 5 Business Days following the end of each Contract Month, Project Co shall issue to the City an invoice for the amount of the Monthly Service Payment owing by the City to Project Co for such Contract Month, with such adjustments as provided in the Payment Adjustment Report issued in the previous Contract Month.

(b) Project Co shall comply with all requirements of Schedule 20 – Payment Mechanism in respect of invoices and shall include with each invoice such supporting documentation as the City may reasonably require in connection with payments hereunder.

(c) Each invoice shall be in a form agreed by the Parties, acting reasonably, and shall include as a minimum:

(i) the Monthly Service Payment payable in respect of the applicable Contract Month;

(ii) any adjustments set out in the Payment Adjustment Report issued in the previous Contract Month that have been approved by the City;

(iii) any other adjustments to reflect overpayments and underpayments, as agreed between the Parties or determined in accordance with Schedule 27 – Dispute Resolution Procedure;

(iv) any amount owing to the City under this Project Agreement;

(v) any amount owing to Project Co under this Project Agreement;

(vi) the net amount owing by the City to Project Co, or by Project Co to the City, as applicable; and

(vii) a statutory declaration in form and in substance satisfactory to the City with respect to CLA compliance and payment to all lien claimants:

(A) from Project Co, and

(B) upon request by the City, from any Project Co Party.

(d) The invoices issued to the City in respect of the first Monthly Service Payment following the Revenue Service Commencement Date shall include up to date copies of the parcel registers for all of the Stage 1 Lands, which subsearches of title in support thereof shall not be performed earlier than 45 days following the Revenue Service Availability Date.

(e) HST shall be shown separately on all invoices from Project Co, together with Project Co's HST registration number.

(f) Upon agreement of the Parties, the form of invoice may be changed from time to time.

(g) The City Representative shall review each invoice submitted in accordance with this Section 34.6. The City shall pay the amount stated in such invoice on the first Business Day of the Contract Month next following the Contract Month in which the invoice is received. Any such payment shall be subject to adjustment pursuant to Section 34.6(k).

(h) The City shall not be obligated to make any payment to Project Co unless all conditions precedent applicable to such payment under this Project Agreement have been satisfied by Project Co. Further, the City shall not be obligated to pay an invoice delivered by Project Co after the second Contract Month following the Revenue Service Commencement Date until Project Co has delivered the Payment Adjustment Report referred to in Section 34.6(i) for the previous Contract Month. In the event that Project Co delivers any Payment Adjustment Report later than the stipulated date in Section 34.6(i), the City's obligation to pay the invoice issued by Project Co for the immediately following Contract Month shall be extended by the number of days by which Project Co was late in delivering the applicable Payment Adjustment Report to the City.

(i) Within 5 Business Days following the end of each Contract Month, Project Co shall also submit to the City:

(i) a Performance Monitoring Report in respect of the Contract Month just ended (as further described in Part 8 of Schedule 11 – Quality Management); and

(ii) a report (a "**Payment Adjustment Report**") setting out any adjustments required between the actual Monthly Service Payments determined by Project Co to be owing by the City to Project Co in respect of the Contract Month just ended and the amount that was paid by the City during such Contract Month, including details of:

(A) all Deductions in relation to Availability Failures;

(B) all Deductions in relation to Quality Failures;

(C) all Deductions in relation to Service Failures; and

(D) any Gainshare Adjustment or Painshare Adjustment.

(j) Project Co shall include with each Payment Adjustment Report such supporting documentation as is reasonably required to substantiate and confirm the adjustments set out in each Payment Adjustment Report.

(k) Within 10 Business Days of receipt by the City of the Payment Adjustment Report, the City Representative shall:

(i) determine and advise Project Co that the Payment Adjustment Report is approved by the City, in which case the adjustments set out therein will be reflected by Project Co in the invoice next issued by Project Co; or

(ii) if the City disputes Project Co's entitlement to any part of the amounts set out therein, notify Project Co in writing of that part of the amounts (insofar as at the time of such notice the City is reasonably able to quantify it) which the City disputes and submit to Project Co such supporting documentation as is reasonably required to substantiate and confirm such claim. In such event, the City shall withhold payment of any disputed amount pending agreement or determination of Project Co's entitlement to the disputed amount in accordance with Section 34.9.

34.7 Electronic Invoicing

(a) Project Co shall cooperate with the reasonable requirements of the City, and shall submit its invoices and all other documentation relating to this Project Agreement in a form and with the structure and content as is reasonably required to be compatible with the City's information systems.

34.8 Final Payment Periods

(a) At the beginning of each of the final 3 Contract Months immediately prior to the Expiry Date, the City shall estimate, acting reasonably, the adjustments to the Monthly Service Payments for each such Contract Month. The City may withhold the amounts that it has reasonably estimated for such adjustments from amounts paid to Project Co during each of the final 3 Contract Months.

(b) Within 10 Business Days of receipt by the City of the applicable Payment Adjustment Report for each of the final 3 Contract Months, the City Representative shall either:

(i) determine and advise Project Co that the Payment Adjustment Report is approved by the City and perform a reconciliation between the amount payable based on such Payment Adjustment Report and the amount the City previously paid in respect of the applicable Contract Month. Based on such reconciliation, either the City or Project Co shall pay to the other Party the amount properly owing in accordance with such reconciliation; or

(ii) if the City disputes Project Co's entitlement to any part of the amounts set out therein, notify Project Co in writing of that part of the amounts (insofar as at the time of such notice the City is reasonably able to quantify it) which the City disputes and submit to Project Co such supporting documentation as is reasonably

under any insurance policy, or would have recovered if it had complied with the requirements of this Project Agreement in respect of insurance or the terms of any policy of insurance required under this Project Agreement, which amount, for greater certainty, shall not include any excess or deductibles or any amount over the maximum amount insured under any such insurance policy.

44.5 Modifications

(a) The Parties shall use commercially reasonable efforts to agree to any modifications to this Project Agreement which may be equitable having regard to the nature of an event or events of Force Majeure. Schedule 27 – Dispute Resolution Procedure shall not apply to a failure of the City and Project Co to reach agreement pursuant to this Section 44.5.

45. PROJECT CO DEFAULT

45.1 Project Co Events of Default

(a) Subject to Section 45.1(b), for the purposes of this Project Agreement, "**Project Co Event of Default**" means any one or more of the following events or circumstances:

(i) the occurrence of any of the following events other than as a consequence of a breach by the City of its payment obligations hereunder:

(A) Project Co admits in writing its inability to pay its debts generally as they become due, or makes a general assignment for the benefit of creditors, or a receiver, manager, administrator, administrative receiver, receiver and manager, trustee, custodian or other similar official or any other like person is appointed by or on behalf of or at the instance of a creditor of Project Co with respect to Project Co or any of the property, assets or undertaking of Project Co, or any creditor of Project Co takes control, or takes steps to take control, of Project Co or any of Project Co's assets, or any proceedings are instituted against Project Co that result in Project Co being declared or ordered bankrupt or in administration, liquidation, winding-up, reorganization, compromise, arrangement, adjustment, protection, relief or composition of it or with respect to it or its debts or obligations, or any such proceedings are instituted by Project Co seeking any such result, or any such proceedings are instituted by a person other than Project Co, the City, a City Party or a person related to any of them seeking such result and such proceedings have or will have a material adverse effect on the Governmental Activities or the availability of the System to System Users (where such proceedings have not been withdrawn, stayed, discharged, or are otherwise of no further effect, within 90 days of being instituted), under any Applicable Law (including the *Bankruptcy and Insolvency Act* (Canada) and the *Companies' Creditors Arrangement Act* (Canada)) relating to bankruptcy, insolvency or reorganization of or relief with respect to debtors or debtors' obligations or assets or other similar matters, or seeking the appointment of a receiver,

manager, administrator, administrative receiver, receiver and manager, trustee, custodian or other similar official or like person for it or with respect to any of its assets, or any resolutions are passed or other corporate actions of Project Co are taken to authorize any of the actions set forth in this Section 45.1(a)(i)(A);

(B) Project Co ceases performing a substantial portion of its business, or a substantial portion of such business is suspended or is not being performed, whether voluntarily or involuntarily, that has or will have a material adverse effect on Project Co's ability to perform its obligations under this Project Agreement;

(C) if any execution, sequestration, extent, garnishment or other process of or order by any court becomes enforceable against Project Co or if a distress or analogous process is levied against any property of Project Co that materially adversely affects Project Co's ability to perform its obligations hereunder; or

(D) Project Co shall suffer any event, or any event or set of circumstances occurs or comes about, analogous to the foregoing events or sets of circumstances set out this Section 45.1(a)(i) in any jurisdiction in which it is incorporated or resident and such event or set of circumstances would, if set out in Section 45.1(a)(i)(A), (B) or (C), constitute a Project Co Event of Default;

(ii) Project Co failing to achieve Revenue Service Availability within 365 days after the Required Revenue Service Availability Date (the "**Longstop Date**");

(iii) Project Co:

(A) failing to deliver a rectification plan under Section 22.3(a)(iii)(B);

(B) delivering a rectification plan under Section 22.3(a)(iii)(B) which indicates that Project Co will not achieve Revenue Service Availability by the Longstop Date; or

(C) delivering a rectification plan under Section 22.3(a)(iii)(B) that is not acceptable to the Independent Certifier, acting reasonably, as to the matters set out in Section 22.3(a)(iii)(B)(II);

(iv) Project Co making any representation or warranty herein that is false or misleading when made, and that has or will have at any time a material adverse effect on the performance of the activities within the Project Scope, the Governmental Activities or the availability of the System to System Users, or that may compromise (1) the City's or any City Party's reputation or integrity or the nature of the City or the Project, or (2) the ability of the City to conduct its affairs, so as to negatively affect public perception of the City or the Project, and, in the case of a false or misleading representation or warranty that is capable of being

remedied, such breach is not remedied within 10 Business Days of receipt of notice of the same from the City;

(v) Project Co committing a breach of Section 52 or 53 or a breach of its obligations under this Project Agreement (other than a breach that is referred to in Sections 45.1(a)(i) to (iv) inclusive or 45.1(a)(vi) to (xxi) inclusive) which has or will have a material adverse effect on the Governmental Activities, the availability of the Highway or the availability of the System to System Users, other than where such breach is a consequence of a breach by the City of its obligations under this Project Agreement, and upon becoming aware of such breach Project Co failing to remedy such breach in accordance with all of the following:

(A) Project Co shall:

(I) immediately commence and thereafter diligently continue to remedy the breach and to mitigate any adverse effects on the City and the Governmental Activities, the availability of the Highway or the availability of the System to System Users;

(II) put forward, within 5 Business Days of receipt of notice of such breach from the City, a reasonable plan and schedule for diligently remedying the breach and mitigating its effect, which plan and schedule shall specify in reasonable detail the manner in which, and the latest date by which, such breach is proposed to be remedied, which latest date shall in any event be within 60 days of notice of such breach, or if such breach is not capable of being rectified in such period then such longer period as is reasonable in the circumstances; and

(III) thereafter perform its obligations to achieve all elements of such plan and schedule in accordance with its terms within the time for the performance of its obligations thereunder; and

(B) upon Project Co failing to comply with any of the provisions of Section 45.1(a)(v)(A):

(I) Project Co shall continue to diligently remedy the breach and to mitigate any adverse effects on the City and the Governmental Activities, the availability of the Highway or the availability of the System to System Users;

(II) Project Co shall, within 3 Business Days after notice from the City, submit a plan and schedule, which the City shall have no obligation to accept, for remedying the breach and mitigating its effect within such period, if any, acceptable to the City, in its Discretion, and thereafter perform its obligations to achieve all elements of such plan and schedule in accordance with its terms

within the time for the performance of its obligations thereunder; and

(III) for greater certainty, Project Co failing to comply with any of the provisions of this Section 45.1(a)(v)(B), or the City, in its Discretion, not accepting the plan and schedule submitted by Project Co pursuant to that Section, shall constitute a Project Co Event of Default;

(vi) Project Co wholly abandoning the Works for a period which exceeds 3 Business Days from receipt by Project Co of a written request to return to the Site, other than as a consequence of a breach by the City of its obligations under this Project Agreement;

(vii) Project Co ceasing to perform any Maintenance Services in accordance with this Project Agreement which is necessary for the Governmental Activities or the availability of the System to System Users, other than as a consequence of a breach by the City of its obligations under this Project Agreement;

(viii) Project Co failing to comply with Section 59.1 or 59.3;

(ix) the occurrence of any Change in Ownership or Change in Control which is prohibited by Section 59.4;

(x) Project Co being awarded a total of 1300 or more Failure Points in any rolling 3 Contract Months;

(xi) Project Co being awarded a total of 1600 or more Failure Points in any rolling 6 Contract Months;

(xii) Project Co being awarded a total of 2000 or more Failure Points in any rolling 12 Contract Months;

(xiii) Project Co failing to remove an Encumbrance that arose due to an act or omission of Project Co or any Project Co Party (other than a Title Encumbrance and any Encumbrance derived through the City) within 45 days of the earlier of:

(A) the registration of such Encumbrance against title to the Lands or any part thereof; and

(B) the date on which Project Co or any Project Co Party knew, or ought to have known, about the existence of the Encumbrance;

(xiv) Project Co failing to pay any sum or sums due to the City under this Project Agreement, which sum or sums are not being disputed by Project Co in accordance with Schedule 27 – Dispute Resolution Procedure and which sum or sums, either singly or in aggregate, exceed(s) $250,000 (index linked), and such

failure continues for 30 days from receipt by Project Co of a notice of non-payment from the City;

(xv) Project Co failing to comply with Section 60;

(xvi) Project Co failing to comply with Section 7.3 or Schedule 28 – Refinancing;

(xvii) Project Co failing to obtain any bond, security or insurance required to be obtained by or on behalf of Project Co pursuant to this Project Agreement or any such bond, security or insurance being vitiated or otherwise ceasing to be in full force and effect or in material compliance with the requirements set out in this Project Agreement, other than as a consequence of a breach by the City of its obligations under this Project Agreement, and:

(A) in respect of insurance, such breach by Project Co is not remedied within 10 Business Days of the occurrence of the breach; and

(B) in respect of a bond or security, such breach by Project Co is not remedied within 5 Business Days of Project Co becoming aware of such breach;

(xviii) Project Co failing to comply with any determination, order or award made against Project Co in accordance with Schedule 27 – Dispute Resolution Procedure;

(xix) at any time after the Revenue Service Availability Date, Project Co committing a breach of its obligations under this Project Agreement (other than its obligations in Schedule 45 or otherwise as a consequence of a breach by the City of its obligations under this Project Agreement) which results in a criminal conviction or a conviction under the *OHSA* against Project Co or any Project Co Party or the City (an "**H&S Conviction**") provided however that:

(A) an H&S Conviction against Project Co, a Project Co Party or the City shall not constitute a Project Co Event of Default if, within 90 days from the date of the H&S Conviction (whether or not the H&S Conviction is subject to an appeal or any further judicial process), the involvement in the Project Scope of each relevant Project Co Party (which in the case of an individual director, officer or employee shall be deemed to include the Project Co Party of which that person is a director, officer or employee) is terminated in accordance with Section 59.3 or Project Co takes such other disciplinary action against each such Project Co Party as is acceptable to the City, in its Discretion; and

(B) in determining whether to exercise any right of termination for a Project Co Event of Default pursuant to this Section 45.1(a)(xix), the City shall:

(I) act in a reasonable and proportionate manner having regard to such matters as the gravity of any offence and the identity of the person committing the act leading to the H&S Conviction; and

(II) give all due consideration, where appropriate, to action other than termination of this Project Agreement;

(xx) Project Co failing to comply with Section 28.5;

(xxi) Project Co wholly abandoning the Highway Work for a period which exceeds 3 Business Days from receipt by Project Co of a written request to return to the Highway Site, other than as a consequence of a Delay Event or a breach by the City of its obligations under this Project Agreement;

(b) The City shall not exercise any rights under this Section 45 (except its rights under Section 45.5(a)) as a result of a Project Co Event of Default referred to in Sections 45.1(a)(vii), 45.1(a)(x) to 45.1(a)(xii) until the day after the Revenue Service Availability Payment Date. For greater certainty, if the City is prevented from exercising any rights under this Section 45 by the terms of the immediately preceding sentence, then, notwithstanding the passage of time or any intervening event (including that the City may have exercised its rights under Section 45.5(a)), on and after the day after the Revenue Service Availability Payment Date, the City may exercise any such rights.

45.2 Notification of Occurrence

(a) Project Co shall, promptly upon Project Co becoming aware of the occurrence, notify the City of the occurrence, and details, of any Project Co Event of Default and of any event or circumstance which is likely, with the passage of time, giving of notice, determination of any condition, or otherwise, to constitute or give rise to a Project Co Event of Default.

45.3 Right to Termination

(a) On the occurrence of a Project Co Event of Default, or at any time after the City becomes aware of a Project Co Event of Default (and, if the occurrence of a Project Co Event of Default is disputed by Project Co in good faith, then following confirmation in accordance with Schedule 27 – Dispute Resolution Procedure that a Project Co Event of Default has occurred), the City may, subject to Section 45.4, terminate this Project Agreement in its entirety by written notice having immediate effect, such notice to be given to Project Co, and to any person specified in the Lenders' Direct Agreement to receive such notice.

45.4 Remedy Provisions

(a) In the case of a Project Co Event of Default referred to in Sections 45.1(a)(i)(B), 45.1(a)(i)(C), 45.1(a)(i)(D) (where the Project Co Event of Default referred to in Section 45.1(a)(i)(D) is analogous to a Project Co Event of Default referred to in Section 45.1(a)(i)(B) or 45.1(a)(i)(C)), 45.1(a)(iii), 45.1(a)(iv), 45.1(a)(vi), 45.1(a)(vii), 45.1(a)(viii), 45.1(a)(ix) (where the Project Co Event of Default referred to in Section 45.1(a)(ix) is capable of being remedied), 45.1(a)(xiv), 45.1(a)(xvi), 45.1(a)(xvii) (where the Project Co Event of Default referred to in Section 45.1(a)(xvii) is not in respect of insurance), 45.1(a)(xviii), 45.1(a)(xix), 45.1(a)(xx) or 45.1(a)(xxi) the City shall, prior to being entitled to terminate this Project Agreement, give notice of default to

Project Co, and to any person specified in the Lenders' Direct Agreement to receive such notice, and Project Co shall:

(i) within 5 Business Days of such notice of default, put forward a reasonable plan and schedule for diligently remedying the Project Co Event of Default, which schedule shall specify in reasonable detail the manner in, and the latest date by which, such Project Co Event of Default is proposed to be remedied, which latest date shall, in any event, be within 30 days of the notice of default, or if such breach is not capable of being remedied in such period then such longer period as is acceptable to the City, acting reasonably; and

(ii) thereafter, perform its obligations to achieve all elements of such plan and schedule in accordance with its terms within the time for the performance of its obligations thereunder.

(b) Where Project Co puts forward a plan and schedule in accordance with Section 45.4(a)(i) that has a date for the Project Co Event of Default to be remedied that is beyond 30 days from the notice of default, the City shall have 5 Business Days from receipt of the same within which to notify Project Co that the City does not accept such longer period in the plan and schedule and that the 30 day limit will apply, failing which the City shall be deemed to have accepted the longer period in the plan and schedule.

(c) If a Project Co Event of Default, of which a notice of default was given under Section 45.4(a), occurs and:

(i) Project Co fails to immediately commence and thereafter diligently continue to remedy the Project Co Event of Default and to mitigate any adverse effects on the City and the Governmental Activities, the availability of the Highway or the availability of the System to System Users; or

(ii) Project Co fails to put forward a plan and schedule pursuant to Section 45.4(a)(i); or

(iii) such Project Co Event of Default is not remedied within 30 days of such notice of default or such longer period as is established pursuant to the plan and schedule established pursuant to Sections 45.4(a) and (b); or

(iv) where Project Co puts forward a plan and schedule pursuant to Section 45.4(a)(i) and Project Co fails to perform its obligations thereunder necessary to achieve all elements of such plan and schedule in accordance with its terms within the time for the performance of its obligations,

then the City may terminate this Project Agreement in its entirety by written notice with immediate effect, such notice to be given to Project Co, and to any person specified in the Lenders' Direct Agreement to receive such notice.

(d) Notwithstanding that the City may give the notice referred to in Section 45.4(a), and without prejudice to the other rights of the City in this Section 45.4, at any time during

which a Project Co Event of Default is continuing, the City may, at Project Co's risk and expense, take such steps as the City considers appropriate, either itself or by engaging others (including a third party) to take such steps, to perform or obtain the performance of Project Co's obligations under this Project Agreement or to remedy such Project Co Event of Default.

(e) Upon the occurrence of a Project Co Event of Default that Project Co has remedied pursuant to this Section 45.4, such occurrence of a Project Co Event of Default shall thereafter cease to be a Project Co Event of Default and the City shall not be entitled to terminate this Project Agreement for that occurrence of a Project Co Event of Default.

(f) In the case of a Project Co Event of Default referred to in Sections 45.1(a)(x), (xi) or (xii), in addition to and without prejudice to any of the City's other remedies including its right to terminate this Project Agreement pursuant to Section 45, the City may require Project Co to provide the plan and schedule referred to in Section 45.4(a)(i) and thereafter perform the obligations referred to in Section 45.4(a)(ii), in which event the provisions of Sections 45.4(b), (c) and (d) shall thereupon apply.

45.5 Replacement of Non-Performing Maintenance Contractor

(a) The City may, acting reasonably, require Project Co to terminate the Maintenance Contract and ensure that a replacement Maintenance Contractor is appointed in accordance with Section 59.3 to provide the Maintenance Services within 60 days:

(i) if the City could have exercised a right to terminate this Project Agreement but for the provisions of Section 45.1(b), and the Project Co Event of Default was caused, or contributed to, by Project Co (in the case of Project Co directly performing the Maintenance Services) or a Maintenance Contractor, as applicable, or otherwise relates to the Maintenance Services; or

(ii) as an alternative to termination of this Project Agreement pursuant to Section 45.3 or 45.4, in any circumstance in which the City could exercise such right of termination, if the Project Co Event of Default was caused, or contributed to, by the Maintenance Contractor or otherwise relates to the Maintenance Services; or

(iii) if Project Co accrues, in any rolling 6 Contract Months more than:

(A) 1000 Failure Points in respect of Vehicle and System Availability Failures;

(B) 1500 Failure Points in respect of Station Availability Failures; or

(C) 250 Failure Points in respect of Quality Failures and Service Failures, combined,

provided that this Section 45.5 shall not give rise to partial termination of either the obligation to provide the activities within the Project Scope or this Project Agreement.

SCHEDULE 20

PAYMENT MECHANISM

PART A: DEFINITIONS

Section 1. Definitions

1.1 "**Accelerated Service Level**" means a circumstance in any Contract Year where Project Co is required, by virtue of:

(a) a Major Service Change occurring in that Contract Year or any previous Contract Year; or

(b) the occurrence of the Stage 2 East Revenue Service Commencement Date or the Stage 2 West Revenue Service Commencement Date earlier than the relevant Original Planned Revenue Service Commencement Date for either such Stage,

to provide a Service Level in excess of the Service Level contemplated for that Contract Year by the Operations Service Plan in effect at the date of the Maintenance Services Variation.

1.2 "**Aggregate Station Availability Ratio**" for Contract Month *n* means the total Scheduled Station Hours for all Stations in Contract Month *n* less the total Station Availability Failure Hours for all Stations in Contract Month *n*, divided by the total Scheduled Station Hours for all Stations in Contract Month *n*. For clarity, the formula is provided below:

$$ASAR_n = \frac{SSH_n - SAF_n}{SSH_n}$$

Where:

$ASAR_n$ Means the Aggregate Station Availability Ratio for the relevant Contract Month *n*;

SSH_n Means the sum total of Scheduled Station Hours for all Stations during Contract Month *n*, and includes both Peak and Off-Peak hours; and

SAF_n Means the sum total of Station Availability Failure Hours for all Stations during Contract Month *n*, and includes both Peak and Off-Peak hours.

1.3 "**Aggregate Vehicle Kilometres Availability Ratio**" for any period *n* means the total Revenue Service Vehicle Kilometres in period *n* plus the number of Scheduled Revenue Service Vehicle Kilometres which were "missed" or not achieved during period *n* and which are attributed in the relevant Performance Monitoring Report as being due to a Non-Project Co Cause, divided by the total Scheduled Revenue Service Vehicle Kilometres for period *n*. For clarity, the formula is provided below:

$$AVKR_n = \frac{Rkm_n + NPCCkm_n}{Skm_n}$$

Where:

$AVKR_n$	Means the Aggregate Vehicle Kilometres Ratio for the relevant period n;
Rkm_n	Means the total amount of Revenue Service Vehicle Kilometres for period n, and includes both Peak and Off-Peak service;
$NPCCkm_n$	Means the number of Scheduled Revenue Service Vehicle Kilometres which were "missed" or not achieved during period n and which are attributed in the relevant Performance Monitoring Report as being due to a Non-Project Co Cause; and
Skm_n	Means the total Scheduled Revenue Service Vehicle Kilometres for period n, and includes both Peak and Off-Peak service.

1.4 "**Annual Service Payment**" means the sum in Canadian dollars calculated in accordance with the provisions set out in Section 2 of Part B of this Schedule 20.

1.5 "**Availability Failure**" means either a Vehicle Kilometres Availability Failure or a Station Availability Failure.

1.6 "**Average Monthly Lifecycle Payment**" means:

(a) prior to the earlier of the Stage 2 East Revenue Service Commencement Date and the Stage 2 West Revenue Service Commencement Date, the total amount of the Lifecycle Payments set out in Column C of Table 3 of Appendix A of this Schedule 20, divided by the number of Contract Months in the Maintenance Term, being $618,065.31; and

(b) from the earlier of the Stage 2 East Revenue Service Commencement Date and the Stage 2 West Revenue Service Commencement Date, the total amount of the sum of Lifecycle Payments set out in Column C and Column D of Table 3 of Appendix A payable after such date, divided by the number of Contract Months remaining in the Maintenance Term from such date, on the assumption that the Stage 2 East Revenue Service Commencement Date occurs on December 17, 2024, being $1,996,701.08.

For clarity:

(c) the Lifecycle Payment amounts set out in Table 3 of Appendix A are expressed in Inflation Base Date prices and hence, the calculation of the Average Monthly Lifecycle Payment in respect of a relevant Contract Month shall be index-linked in accordance with the escalation factor in Section 4.2 of Part B of this Schedule 20;

(d) the calculation in subsection (b) shall be made on the achievement of the earlier of the Stage 2 East Revenue Service Commencement Date and the Stage 2 West Revenue Service Commencement Date and the dollar figure included in that subsection shall be updated accordingly; and

(e) the dollar figure included in subsection (b) may be further updated following any Variation initiated pursuant to Section 5.3 of this Part B.

1.7 "**City Representative**" has the meaning given in Schedule 1 – Definitions and Interpretation.

1.8 "**City Trial Running**" has the meaning given to the term "Trial Running" in the DB Co Works Agreement.

1.9 **"Contract Month"** means a calendar month, except with respect to:

(a) the first Contract Month of the Maintenance Term, which runs from the Revenue Service Commencement Date until the end of the calendar month in which such day falls (and for the avoidance of doubt this shall be Contract Month 1, and all other Contract Months shall be numbered sequentially from this); and

(b) the last Contract Month of the Maintenance Term, which runs from the first day of the calendar month in which the Expiry Date falls until the Expiry Date.

1.10 "**Contract Year**" means the period of 12 calendar months that commences on January 1st of each calendar year and ends on December 31st of such calendar year, provided that:

(a) the first Contract Year shall be such period that commences on the first day of the first Contract Month and ends on the next ensuing December 31st; and

(b) the final Contract Year shall be such period that commences on January 1st that precedes the date on which the Project Agreement expires or is terminated, for whatever reason, and ends on the expiry or termination of the Project Agreement.

1.11 "**CPI-XFET**" means the Consumer Price Index excluding food, energy, and the effect of indirect taxes for Canada, as reported by Statistics Canada.

1.12 "**Daily Operating Report**" means the daily report prepared by Project Co regarding prior day(s) service delivery, vehicle, systems, station performance and Helpdesk activity, as described in Appendix A to Attachment 14 of Schedule 15-3 – Maintenance and Rehabilitation Requirements of the Project Agreement.

1.13 "**Deduction**" means a deduction made from a Monthly Service Payment in accordance with this Schedule 20.

1.14 "**East Trial Running Period**" means the period between the Stage 2 East Substantial Completion Date and the Stage 2 East Revenue Service Availability Date.

1.15 "**Eligible Lifecycle Costs**" is defined in Section 3 of Part F of this Schedule 20.

1.16 "**Escalation Factor**" means the escalation factor calculated in accordance with Section 4.1 of Part B of this Schedule 20.

1.17 "**Event**" means:

(a) A Vehicle Kilometres Availability Failure;

(b) A Station Availability Failure; or

(c) an incident or state of affairs which does not meet or comply with the Performance Criteria set out in Schedule 15-3 – Maintenance and Rehabilitation Requirements, which is capable of becoming:

(i) a Service Failure, if the Event is not Responded to within the Response Time or Rectified within the Rectification Time; or

(ii) if, in accordance with Schedule 15-3 – Maintenance and Rehabilitation Requirements, no Rectification Time or Response Time applies, the Event shall be either a Service Failure or Quality Failure as determined by the designation of the applicable Performance Criteria in Schedule 15-3 – Maintenance and Rehabilitation Requirements as Failure Type "SF" or "QF" respectively,

1.18 "**Event of Vandalism**" has the meaning given in Appendix A, Attachment 16 to Schedule 15-3 - Maintenance and Rehabilitation Requirements.

1.19 "**Failure Points**" means points allocated to Project Co in respect of the occurrence of Availability Failures, System Events, Service Failures and Quality Failures which are determined by the provisions set out in Part G of this Schedule 20.

1.20 "**Group 1 Stations**", "**Group 2 Stations**", and "**Group 3 Stations**" are defined in Appendix D.

1.21 "**Helpdesk**" means the contact point to be established by Project Co pursuant to Appendix A, Attachment 11 of Schedule 15-3 – Maintenance and Rehabilitation Requirements in respect of the helpdesk service for the notification of Events and other day to day matters arising in relation to the provision of Maintenance Services.

1.22 "**Inflation Base Date**" means October 1, 2016.

1.23 "**Insurance Payment**" means the amount calculated in accordance with Schedule 25 - Insurance and Performance Security Requirements.

1.24 "**Insurance Review Date**" has the meaning given in Schedule 25 - Insurance and Performance Security Requirements.

1.25 "**Joint Insurance Cost Report**" has the meaning given in Schedule 25 - Insurance and Performance Security Requirements.

1.26 "**Labour Industrial Aggregate Index**" means the Industrial aggregate excluding unclassified businesses index for Canada, CANSIM 281-0063, as reported by Statistics Canada.

1.27 "**Lifecycle Payment**" means the relevant amounts for each Contract Month as represented in Columns C and D of Table 3 in Appendix A to this Schedule 20 and does not include additional costs other than anticipated costs (and directly related contingencies and reserves) in respect of the replacement, refreshment and/or refurbishment of the Fixed Facilities, Fixed Equipment, Vehicles, and Vehicle Equipment during the Maintenance Term.

1.28 "**Materials Index – Machinery**" means the Machinery Manufacturing index for Canada, CANSIM 329-0077, as reported by Statistics Canada.

1.29 "**Materials Index - Electrical**" means the Electrical Equipment Manufacturing index for Canada, CANSIM 329-0077, as reported by Statistics Canada.

1.30 "**Materials Index – Machinery and Equipment**" means the Machinery and Equipment index for Canada, CANSIM 329-0075, as reported by Statistics Canada.

1.31 "**Materials Index – Durable Manufacturing**" means the Durable Manufacturing index for Canada, CANSIM 281-0063, as reported by Statistics Canada.

1.32 "**Monthly Service Payment**" means the sum in Canadian Dollars payable by the City to Project Co in accordance with the Project Agreement, as calculated in Section 1.1 of Part B of this Schedule 20.

1.33 "**Non-Project Co Cause**" means any one of the following issues or events, to the extent that such issue or event directly causes an interruption, slowdown, partial or complete shutdown of service on the System that leads to a reduction in Revenue Service Vehicle Kilometres:

(a) An order issued by the Operations Control Centre or another entity or agency of the City of Ottawa which affects service, including an order to slow down or stop train service on the System, provided that such order has not been caused by circumstances attributed to Project Co;

(b) A derailment, grade crossing accident, collision, or any other accident involving vehicles which have been entered into revenue service, which occurs for reasons unrelated to Project Co's performance of the Maintenance Services and beyond Project Co's control;

(c) An Event of Vandalism which is specifically described in the Vandalism Matrix in Attachment 16 to Schedule 15-3 in the column titled "Relief from deductions under the Payment Mechanism";

(d) The actions of Protesters and/or Trespassers;

(e) Passenger activity during Revenue Service Hours including requests for emergency stops, or sick or injured passengers requiring medical attention;

(f) Failure by any Driver or other City personnel to act in accordance with Standard Operating Procedures and/or the LRT Rules;

(g) Any event which is a Relief Event, but only to the extent that the Project Agreement does not already provide Project Co with relief from Deductions in respect of reduced Revenue Service Vehicle Kilometres due to such event;

(h) The actions of any Additional Contractors or Third Party Contractors, provided that if the City has assigned certain responsibilities to Project Co in respect of the Additional Works or Third Party Works, as the case may be, in accordance with Section 9.7(a) of the Project Agreement, then a Non-Project Co Cause shall only apply in a case where:

(i) the City fails to carry out its obligations under Sections 9.7(b) or 9.7(c), as applicable; or

(ii) the Additional Contractor(s) and/or Third Party Contractor(s) engage in unlawful or negligent acts;

(i) The actions of governmental authorities or emergency response personnel who require access to the System and/or disruptions in service, provided that any such actions are not the result of Project Co failing to comply with any legal or regulatory obligation;

(j) Any loss or reduction in service during a Major Maintenance Shutdown Period (as defined in Schedule 15-3), or during any other period of time during which the City explicitly agrees that Project Co is authorized to cause a reduction or shutdown of service on the System without penalty;

(k) Residual delays caused by any of the items listed in this section; and

(l) Any other interruption, slowdown, partial or complete shutdown of service on the System which occurs due to the City's operation of the System and which is not attributed to Project Co's performance of the Maintenance Services.

1.34 "**Off-Peak Period**" means all hours during which Revenue Service is required to be provided on the System, and which are not Peak Period hours.

1.35 "**Peak Period**" means:

(a) Between the hours of 06:30 and 9:00 on each Weekday which is not a statutory holiday in the Province of Ontario; and

(b) Between the hours of 14:45 and 18:00 on each Weekday which is not a statutory holiday in the Province of Ontario.

1.36 "**Performance Criteria**" means a description in Schedule 11 – Quality Management, Schedule 15-3 – Maintenance and Rehabilitation Requirements, or Schedule 17 – Environmental Obligations of the level of performance that Project Co must achieve to attain compliance with the relevant output specification.

1.37 "**Performance Monitoring Report**" has the meaning given in Schedule 11 – Quality Management.

1.38 "**Permanent Repair**" means Rectification where a Temporary Repair has been permitted and carried out pursuant to Section 3 of Part E of this Schedule 20.

1.39 "**Quality Failure**" means any failure by Project Co to provide the Maintenance Services in accordance with any Performance Criteria designated as Failure Type "QF" in Schedule 11 – Quality Management, Schedule 15-3 – Maintenance and Rehabilitation Requirements, or Schedule 17 – Environmental Obligations.

1.40 "**Quality Failure Deduction**" means a Deduction which may be made in respect of a Quality Failure.

1.41 "**Rectification**" means, following the occurrence of an Event and where rectification is applicable in accordance with Schedule 15-3 – Maintenance and Rehabilitation Requirements, making good

the Event so that the subject matter of the Event complies with the levels of service required pursuant to the Project Agreement. Without prejudice to the generality of the foregoing this shall include (a) restoring any functional capability which has been disabled or is otherwise not in compliance with the Maintenance and Rehabilitation Requirements; (b) repairing any defect, hazard, or other condition which was not in compliance with the Maintenance and Rehabilitation Requirements; and (c) formally notifying the Helpdesk that Rectification has been completed; and "Rectify" or "Rectified" shall be construed accordingly.

1.42 "**Rectification Time**" means the period specified in Schedule 15-3 – Maintenance and Rehabilitation Requirements within which Rectification of the relevant Event must be completed, calculated from the time that such Event is reported to the Helpdesk. For the avoidance of doubt, if no period for rectification is specified in Schedule 15-3 – Maintenance and Rehabilitation Requirements in respect of the relevant Event, no Rectification Time applies.

1.43 "**Remedial Period**" means the period allowed for remedying a Quality Failure in accordance with Section 1.3 of Part E of this Schedule 20.

1.44 "**Response**" means, following the notification of the occurrence of an Event and where response is applicable in accordance with Schedule 15 – Output Specifications, the following actions by Project Co:

(a) establishing the location, investigating the nature and cause of the Event and attending the site if necessary;

(b) appointing a suitably qualified, experienced and accountable person to assess the situation who, within reasonable limits, is empowered to take or to authorize any required action;

(c) taking any necessary actions to make the non-compliant system or item safe and secure, thereby as a minimum fulfilling all health and safety requirements;

(d) taking any and all necessary actions to establish temporary measures that mitigate the effect of the Event and maintain the normal functioning of the System to the extent possible;

(e) when necessary, giving the City Representative an assessment of the problem, the action taken, details of any work required with timescales and any limitations that this may impose on the System and the Maintenance Services; and

(f) formally advising the Helpdesk that the Response has been completed.

1.45 "**Response Time**" means the time required by Schedule 15 – Maintenance and Rehabilitation Requirements for Project Co to complete its Response measured from when an Event is reported to the Helpdesk.

1.46 "**Revenue Service Vehicle Kilometres**" means the total distance travelled by vehicles in Revenue Service during a Contract Month, measured in Kilometres and reported by the Performance Monitoring Report for that Contract Month.

1.47 "**Scheduled Revenue Service Vehicle Kilometres**" means the total revenue service vehicle kilometres required in a Contract Month by the City through the booking process set out in Article 3.3 of Appendix A to Schedule 15-3, measured in kilometres and reported by the Performance Monitoring Report for that Contract Month.

1.48 "**Scheduled Station Hours**" means the total number of hours during a Contact Month that a Station is required to be open and available for use during Revenue Service Hours in accordance with the Station Access Standard, based on the Operations Service Plan then in effect.

1.49 "**Service Failure**" means any failure by Project Co to provide the Maintenance Services in accordance with Performance Criteria designated Failure Type "SF" in Schedule 11 – Quality Management, Schedule 15-3 – Maintenance and Rehabilitation Requirements, or Schedule 17 – Environmental Obligations and which, where a Response Time or Rectification Time applies, has not been responded to or rectified (as the case may be) within the relevant time. For the avoidance of doubt, where no Response Time and/or Rectification Time applies (for example, in respect of scheduled activities) there shall be a Service Failure at the point at which the non-compliance occurred (for example, non-performance of the scheduled activity by the scheduled time).

1.50 "**Service Failure Deduction**" means a Deduction which may be made in respect of a Service Failure.

1.51 "**Service Level**" has the meaning given in Schedule 15-1 – Maintenance and Rehabilitation Requirements.

1.52 "**Stage 2 East Initial Payment**" has the meaning given to it in Schedule 25 – Insurance and Performance Security Requirements.

1.53 "**Stage 2 West Initial Payment**" has the meaning given to it in Schedule 25 – Insurance and Performance Security Requirements.

1.54 "**Station Access Standard**" means the standard set out in Article 3.0(b)(ii) of Attachment 7 to Appendix A of Schedule 15-3 to the Project Agreement.

1.55 "**Station Availability Failure**" occurs where any Station does not comply with the Station Access Standard otherwise than by reason of any Station-Related Non-Project Co Cause.

1.56 "**Station Availability Failure Deduction**" means a Deduction calculated in accordance with Section 2.1 of Part D of this Schedule 20, regarding any failure of Project Co during a Contract Month to maintain Stations in compliance with the Station Access Standard.

1.57 "**Station Availability Failure Hours**" means, for any Station, the total number of hours during a Contract Month during which there is a condition of Station Availability Failure. For each Contract Month, Station Availability Failure Hours shall be rounded to the nearest 15-minute increment, and may be expressed as a decimal.[1]

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[1] Example: Three (3) hours and fifteen (15) minutes of Station Availability Failure shall be represented as 3.25 Station Availability Failure Hours.

1.58 "**Station-Related Non-Project Co Cause**" means any one of the following issues or events, to the extent that such issue or event causes a Station to be non-compliant with the Station Access Standard:

(a) An Event of Vandalism which:

(i) Disables one or more Elevators; or

(ii) Results in the Station being unsafe for entry by passengers,

provided that the Station-Related Non-Project Co Cause condition shall be limited to Project Co's Rectification or Remedial Period, as set out in Schedule 15-3, related to the Elevator disablement or the Event of Vandalism, as applicable;

(b) The actions of Protesters and/or Trespassers;

(c) Any event which is a Relief Event, but only to the extent that the Project Agreement does not already provide Project Co with relief from Deductions in respect of Station Availability Failure due to such event;

(d) The actions of any Additional Contractors or Third Party Contractors, provided that if the City has assigned certain responsibilities to Project Co in respect of the Additional Works or Third Party Works, as the case may be, in accordance with Section 9.7(a) of the Project Agreement, then a Non-Project Co Cause shall only apply in a case where:

(i) the City fails to carry out its obligations under Sections 9.7(b) or 9.7(c), as applicable; or

(ii) the Additional Contractor(s) and/or Third Party Contractor(s) engage in unlawful or negligent acts;

(e) The actions of governmental authorities or emergency response personnel who require closure of Stations or other actions which are inconsistent with the Station Access Standard, provided that any such actions are not the result of Project Co failing to comply with any legal or regulatory obligation; and

(f) Any closure of Stations during a Major Maintenance Shutdown Period (as defined in Schedule 15-3), or during any other period of time during which the City explicitly agrees that Project Co is authorized to cause a reduction or shutdown of service on the System without penalty.

1.59 "**System Event**" means an event identified as such in Table 1 in Article 1.7 of Part D to this Schedule 20.

1.60 "**Temporary Repair**" means, in respect of the occurrence of an Event which results in a Service Failure, Quality Failure, or Station Availability Failure, works of a temporary nature that do not constitute Rectification but temporarily allow for safe use of the affected elements of the System and substantially make good the relevant Event for the period until a Permanent Repair can be undertaken.

1.61 "**Total Vehicle Kilometres**" is defined in Schedule 15-1, and for clarity includes Revenue Service Vehicle Kilometres, as well as additional distance travelled by vehicles for purposes of entering into or exiting from service, or training of operators, and is measured in kilometres and reported by the Performance Monitoring Report for that Contract Month.

1.62 "**Trial Running Payments**" means the amounts payable pursuant to Sections 1.5 and 1.6 of Part B to this Schedule 20.

1.63 **"Trial Running Periods"** means, collectively, the East Trial Running Period and the West Trial Running Period.

1.64 "**Un-Adjusted Service Payment**" means the amount that would be calculated for the relevant Contract Month in accordance with the formula set out in Section 1.1 of Part B of this Schedule 20, with the following exceptions:

(a) without applying the sums represented by the symbols ΣD, GS, PS, or ADHA or TR; and

(b) replacing the term LCP_n with the Average Monthly Lifecycle Payment

1.65 "**Vehicle Kilometres Availability Failure**" means any failure of the System to attain the Scheduled Revenue Service Vehicle Kilometres for a Contract Month, otherwise than by reason of any Non-Project Co Causes.

1.66 "**Vehicle Kilometres Availability Failure Deduction**" means a Deduction calculated in accordance with Section 1.1 of Part D of this Schedule 20, regarding Vehicle Kilometres Availability Failure.

1.67 "**Volume Payment**" means the sum in Canadian dollars calculated monthly, in accordance with the provisions set out in Section 3.1 of Part B of this Schedule 20.

1.68 "**Weekday**" means Monday, Tuesday, Wednesday, Thursday, or Friday.

1.69 "**West Trial Running Period**" means the period between the Stage 2 West Substantial Completion Date and the Stage 2 West Revenue Service Availability Date.

PART B: CALCULATION OF SERVICE PAYMENTS

Section 1. Monthly Service Payment

1.1 The Monthly Service Payment shall be payable in respect of each Contract Month during the Maintenance Term. Subject to Sections 2.4 and 2.5 of this Part B, the Monthly Service Payment shall be calculated in accordance with the following formula:

$$\boldsymbol{MSP_n = \left(\frac{ASP_n}{12}\right) + VP + LCP_n - \Sigma D + GS - PS - ADHA + TR}$$

Where:

MSP_n	Means the Monthly Service Payment for the Contract Month for which the formula is to be applied.
ASP_n	Means the applicable Annual Service Payment for the Service Level in effect for the relevant Contract Year, calculated in accordance with the provisions set out in Section 2.1 of Part B of this Schedule 20.
VP	Means the Volume Payment for the relevant Contract Month, calculated in accordance with the provisions set out in Section 3.1 of Part B of this Schedule 20.
LCP_n	Means the Lifecycle Payment for the relevant Contract Month, calculated in accordance with the provisions set out in Section 3.2 of Part B of this Schedule 20.
ΣD	Means the sum of Vehicle Kilometres Availability Failure Deductions, Station Availability Failure Deductions, Quality Failure Deductions, and Service Failure Deductions in respect of the relevant Contract Month.
GS	Means any Gainshare Adjustment arising pursuant to the terms of Section 5 of Part 1 to Schedule 8 – Energy Matters and Section 5 of Part 2 to Schedule 8 – Energy Matters.
PS	Means any Painshare Adjustment arising pursuant to the terms of Section 5 of Part 1 to Schedule 8 – Energy Matters and Section 5 of Part 2 to Schedule 8 – Energy Matters.
$ADHA$	Means any Annual Driver Hours Adjustment arising pursuant to the terms of Section 7.2 of Schedule 39 – Operations Matters.
TR	Means the Trial Running Payments arising pursuant to Section 1.5 and Section 1.6 below.

1.2 Project Co shall apply any Gainshare Adjustment and/or Painshare Adjustment calculated for a Contract Year as a single lump sum amount, applied to the Monthly Service Payment in respect

of the Contract Month in which the relevant Gainshare Adjustment and/or Painshare Adjustment was determined in accordance with Schedule 8 – Energy Matters.

1.3 Project Co shall apply any Annual Driver Hours Adjustment calculated for a Contract Year as a single lump sum amount, applied to the Monthly Service Payment in respect of the Contract Month in which the relevant Annual Driver Hours Adjustment was determined in accordance with Schedule 39 - Operations Matters.

1.4 If the calculation prescribed by Section 1.1 of Part B to this Schedule 20 yields an amount for a Contract Month which is a negative number, then the Monthly Service Payment for the relevant Contract Month shall be deemed to be zero (0).

1.5 In consideration for the due and proper performance of the Maintenance Services during the East Trial Running Period, the Trial Running Payments for the relevant Contract Month(s) shall be:

(a) the sum of $60,244 per day together with the corresponding Trial Running Volume Payment per day calculated in accordance with the provisions set out in Section 3.1 of Part B of this Schedule 20;

1.6 In consideration for the due and proper performance of the Maintenance Services during the West Trial Running Period, the Trial Running Payments for the relevant Contract Month(s) shall be:

(a) the sum of $32,742 per day together with the corresponding Trial Running Volume Payment per day calculated in accordance with the provisions set out in Section 3.1 of Part B of this Schedule 20

Section 2. Annual Service Payment

2.1 The Annual Service Payment for any Contract Year shall be calculated in accordance with the following formula:

$$\boldsymbol{ASP_n = CP_n + (MP_n * ESC_n) + (SPV_n * ESC_n)}$$

Where:

ASP_n	Means the total, escalated Annual Service Payment for the relevant Contract Year.
CP_n	Means the Capital Payment during the relevant Contract Year, as referenced in Column B of Table 1 in Appendix A.
MP_n	Means the un-escalated Maintenance Payment for the Service Level in effect during the relevant Contract Year, as referenced in Column B of Table 2 in Appendix A.
SPV_n	Means the un-escalated SPV Payment during the relevant Contract Year, as referenced in Column D of Table 1 in Appendix A.

ESC_n	Means the Escalation Factor for the relevant Contract Year as calculated in accordance with Section 4.1 of this Part B.

Section 3. Volume Payment and Lifecycle Payment

3.1 The Volume Payment for any Contract Month n shall be calculated in accordance with the following formula:

$$VP_n = Tkm_n * PPkm_n * ESC_n$$

Where:

VP_n	Means the Volume Payment for the Service Level in effect during the relevant Contract Month n;
Tkm_n	Means the Total Vehicle Kilometres for the relevant Contract Month n;
$PPkm$	Means the Price per Vehicle Kilometre for the Service Level in effect during the relevant Contract Month, as set out in Column C of Table 2 in Appendix A to this Schedule 20; and
ESC_n	Means the Escalation Factor for the relevant Contract Year as calculated in accordance with Section 4.1 of this Part B.

For the purposes of calculating the Trial Running Payments pursuant to Sections 1.5 and 1.6 of this Part B, the Trial Running Volume Payment shall be calculated on the basis of the Volume Payment formula above, save that:

(i) the Total Vehicle Kilometres for the relevant Contract Month n shall refer only to those incurred during the relevant Trial Running Period and in respect of the relevant part of the Stage 2 System (and such Total Vehicle Kilometres shall not otherwise be counted as part of the Volume Payment above); and

(ii) the Price Per Vehicle Kilometer for the East Trial Running Period shall be that of Service Level 3a and the Price Per Vehicle Kilometre for the West Trial Running Period shall be that of Service Level 4;

(iii) The Parties acknowledge that, during the East Trial Running Period and the West Trial Running Period, but only after the completion of the City Trial Running for each such Trial Running Period, the Stage 2 East System and the Stage 2 West System, respectively, shall be operated for three hours daily on the basis of an off-peak, PM service, and there shall be no material deviation from this by either Party without the consent of the other Party, not to be unreasonably withheld or delayed. The City shall provide Drivers and other operational support (including Guideway access) as may be reasonably required from the City to support these operations, subject to arrangements agreed in advance by the Parties, each acting reasonably.

3.2 The Lifecycle Payment applicable for any Contract Month *n* shall be calculated in accordance with the following formula:

$$LCP_n = (LCP\_S1_{Month\ n} * LCESC_n) + (LCP\_S2_{Month\ m} * LCESC_n)$$

Where:

LCP_n Means the total, escalated Lifecycle Payment applicable for the relevant Contract Month *n*;

$LCP\_S1_{Month\ n}$ Means the Lifecycle Payment in respect of the Stage 1 System for the relevant Contract Month *n* as set out in Column C of Table 3 in Appendix A to this Schedule 20;

$LCP\_S2_{Month\ m}$ Means, subject to Sections 5.3(a) and (b) of this Part B, the Lifecycle Payment in respect of the Stage 2 System for the relevant Contract Month *m* as set out in Column D of Table 3 in Appendix A to this Schedule 20. For the avoidance of doubt, subject to any Variation made pursuant Section 5.3 of this Part B, the Lifecycle Payment in respect of the Stage 2 System will be paid on the dates set out for Contract Month *m* regardless of any change to Contract Month *n*;

$LCESC_n$ Means the Lifecycle Escalation Factor for the relevant Contract Year as calculated in accordance with Section 4.2 of this Part B.

Section 4. Escalation Factors

4.1 The Escalation Factor shall be calculated in accordance with the following formula:

$$ESC_n = \frac{(CPI_n * W_{CPI}) + (Labour_n * W_L) + (M1_n * W_{M1}) + (M2_n * W_{M2}) + (M3_n * W_{M3}) + (M4_n * W_{M4})}{(CPI_o * W_{CPI}) + (Labour_o * W_L) + (M1_o * W_{M1}) + (M2_o * W_{M2}) + (M3_o * W_{M3}) + (M4_o * W_{M4})}$$

Where:

ESCn Means the Escalation Factor applicable to the relevant Contract Year *n*.

CPI_n Means the value of CPI-XFET on January 1 of the relevant Contract Year "n", to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.

W_{CPI} Means 20.00%.

$Labour_n$ Means the value of the Labour Industrial Aggregate Index on January 1 of the relevant Contract Year "n", to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index, or

failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.

W_L Means 65.00%.

$M1_n$ Means the value of the Materials Index – Machinery, on January 1 of the relevant Contract Year "n", to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.

W_{M1} Means 4.00%.

$M2_n$ Means the value of the Materials Index – Electrical, on January 1 of the relevant Contract Year "n", to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.

W_{M2} Means 3.00%.

$M3_n$ Means the value of the Materials Index – Machinery and Equipment, on January 1 of the relevant Contract Year "n", to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.

W_{M3} Means 3.00%.

$M4_n$ Means the value of the Materials Index – Durable Manufacturing, on January 1 of the relevant Contract Year "n", to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.

W_{M4} Means 5.00%.

CPI_0 Means the value of CPI-XFET on the Inflation Base Date, to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index at the Inflation Base Date, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.

$Labour_o$ Means the value of the Labour Industrial Aggregate Index on the Inflation Base Date, to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index at the Inflation Base Date, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.

$M1_o$ Means the value of the Materials Index – Machinery on the Inflation Base Date, to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index at the Inflation Base Date, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.

$M2_o$ Means the value of the Materials Index – Electrical on the Inflation Base Date, to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index at the Inflation Base Date, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.

$M3_o$ Means the value of the Materials Index – Machinery and Equipment on the Inflation Base Date, to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index at the Inflation Base Date, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.

$M4_o$ Means the value of the Materials Index – Durable Manufacturing on the Inflation Base Date, to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index at the Inflation Base Date, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.

4.2 The Lifecycle Escalation Factor shall be calculated in accordance with the following formula:

$$LCESC_n = \frac{(CPI_n * W_{CPI}) + (Labour_n * W_L) + (M1_n * W_{M1}) + (M2_n * W_{M2}) + (M3_n * W_{M3}) + (M4_n * W_{M4})}{(CPI_o * W_{CPI}) + (Labour_o * W_L) + (M1_o * W_{M1}) + (M2_o * W_{M2}) + (M3_o * W_{M3}) + (M4_o * W_{M4})}$$

Where:

$LCESCn$ Means the Lifecycle Escalation Factor applicable to the relevant Contract Year n.

CPI_n Means the value of CPI-XFET on January 1 of the relevant Contract Year "n", to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most

closely resembles such index.

W_{CPI}	Means 30.00%.
$Labour_n$	Means the value of the Labour Industrial Aggregate Index on January 1 of the relevant Contract Year "n", to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.
W_L	Means 50.00%.
$M1_n$	Means the value of the Materials Index – Machinery, on January 1 of the relevant Contract Year "n", to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.
W_{M1}	Means 5.00%.
$M2_n$	Means the value of the Materials Index – Electrical, on January 1 of the relevant Contract Year "n", to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.
W_{M2}	Means 5.00%.
$M3_n$	Means the value of the Materials Index – Machinery and Equipment, on January 1 of the relevant Contract Year "n", to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.
W_{M3}	Means 5.00%.
$M4_n$	Means the value of the Materials Index – Durable Manufacturing, on January 1 of the relevant Contract Year "n", to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.
W_{M4}	Means 5.00%.

CPI_0	Means the value of CPI-XFET on the Inflation Base Date, to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index at the Inflation Base Date, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.
$Labour_0$	Means the value of the Labour Industrial Aggregate Index on the Inflation Base Date, to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index at the Inflation Base Date, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.
$M1_0$	Means the value of the Materials Index – Machinery on the Inflation Base Date, to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index at the Inflation Base Date, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.
$M2_0$	Means the value of the Materials Index – Electrical on the Inflation Base Date, to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index at the Inflation Base Date, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.
$M3_0$	Means the value of the Materials Index – Machinery and Equipment on the Inflation Base Date, to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index at the Inflation Base Date, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.
$M4_0$	Means the value of the Materials Index – Durable Manufacturing on the Inflation Base Date, to be determined by reference to the most recent available monthly data published by Statistics Canada for the relevant index at the Inflation Base Date, or failing such publication, such other index as the Parties may agree, or as may be determined in accordance with Schedule 27 – Dispute Resolution Procedure, which most closely resembles such index.

Section 5. Changes in Service Level and Partial Years

5.1 If the Service Level is changed during a Contract Year resulting in a change in the Annual Service Payment during such Contract Year, the formula in Section 2.1 above shall be applied by using one of the two methods below, as agreed by the City and Project Co:

(a) Pro-rating the Annual Service Payment for such Contract Year based on the number of days in the Contract Year each Service Level is in effect; or

(b) Re-applying the above formula on the date on which the new Service Level comes into effect, and using the resulting Annual Service Payment as the basis for calculating the Monthly Service Payment from that date forward.

5.2 If the Service Level is changed during a Contract Month resulting in a change in the applicable Price per Vehicle Kilometre, then the total Volume Payment for that Contract Month shall be calculated as an aggregate based on:

(a) With regard to Total Vehicle Kilometres run prior to the change in Service Level, the Price per Vehicle Kilometre in effect prior to the change in Service Level; and

(b) With regard to Total Vehicle Kilometres run following the change in Service Level, the Price per Vehicle Kilometre associated with the new Service Level.

5.3

Lifecycle Payments

(a) If the Stage 2 East Revenue Service Commencement Date and the Stage 2 West Revenue Service Commencement Date both occur within six (6) months of the Original Planned Revenue Service Commencement Date for the relevant Stage, the Lifecycle Payments in respect of Stage 2 shall remain unchanged relative to the profile provided in Column D of Table 3 in Appendix A;

(b) If the Stage 2 East Revenue Service Commencement Date and/or the Stage 2 West Revenue Service Commencement Date occurs more than six (6) months after the Original Planned Revenue Service Commencement Date for the relevant Stage, then the City shall issue a Variation Enquiry under Schedule 22 – Variation Procedure with a view to adjusting the Lifecycle Payments in respect of the Stage 2 System, as per the profile provided in Column D of Table 3 in Appendix A, for the remaining term between the Revenue Service Commencement Date for that Stage and the Expiry Date, so as to ensure that Project Co is put in a no better and no worse position compared with the position had the Revenue Service Commencement Date for such Stage commenced on the Original Planned Revenue Service Commencement Date. The City shall not be entitled to withdraw any such Variation Enquiry unless the Parties otherwise agree.

Other costs

(c) If the Stage 2 East Substantial Completion Date and/or Stage 2 West Substantial Completion Date occurs after the Planned Substantial Completion Date for the relevant Stage without the required level of advance notice of postponement of such date having been given of any postponement of such date pursuant to Section 5.3 (d) below, then the City shall (save to the extent the delay in question has been caused by Project Co or a Project Co Party, other than as a result of any act or omission of Project Co or a Project Co Party that forms part of the Stage 2 Integration Activities instructed pursuant to a Variation Enquiry issued under Section 27.4(b)), make daily payments at the appropriate rate in the table below as compensation for Project Co's additional costs and losses arising as a result of such lack of advance notice of postponement (without prejudice to the operation of Section 5.3(b) above, where applicable), based on the level of advance notice (if any) that has been given of such postponement. Such amounts shall accrue from

the relevant Planned Substantial Completion Date (subject to Section 5.3(d)(ii) below) to the Stage 2 East Substantial Completion Date or, as the case may be, the Stage 2 West Substantial Completion Date and any amounts accrued shall be added to the next available instalment(s) of the Monthly Service Payment.

Required level of notice of postponement of the Planned Substantial Completion Date	**Payments for Stage 2 East**	**Payments for Stage 2 West**
Less than or equal to 30 days	$60,244	$32,742
More than 30 days and less than 89 days	$38,271	$21,139
More than 89 days and less than 179 days	$18,170	$18,170
More than or equal to 180 days	Zero	Zero

(d) The City may at any time issue a notice to Project Co to postpone the Planned Substantial Completion Date for either the Stage 2 East System or the Stage 2 West System, provided that:

(i) if the notice of postponement is issued more than 180 days before the then current Planned Substantial Completion Date for that Stage, there shall be no cost to the City as result of issuing such notice; and

(ii) if the notice of postponement is issued after any of the notice requirements referred to in Section 5.3(c) have already been missed, this shall not affect Project Co's ongoing entitlement to payments under Section 5.3(c) in respect of any such missed notice requirements.

(e) Project Co shall be entitled to assume that the Stage 2 East Substantial Completion Date or Stage 2 West Substantial Completion Date (as the case may be) shall not occur prior to the Planned Substantial Completion Date (including any postponement to such date notified pursuant to this Section 5.3), unless the City issues a Variation Enquiry under Schedule 22 – Variation Procedure to require Project Co to commence the Maintenance Services earlier than the Planned Substantial Completion Date (to the extent possible) and so as to ensure that Project Co is put in a no better and no worse position as a result of such requirement to accelerate the commencement of Maintenance Services. In this regard, the City acknowledges that Project Co does not anticipate being able to provide the Maintenance Services in respect of Trial Running (as defined in the DB Co Works

Agreement) more than three months in advance of the Planned Substantial Completion Commencement Date.

For the purposes of this Section 5.3 the following definitions shall apply:

"**Original Planned Revenue Service Commencement Date**" means:

(a) in respect of Stage 2 East, 17 December 2024; and

(b) in respect of Stage 2 West, 15 June 2025.

"**Planned Substantial Completion Date**" means:

(a) in respect of Stage 2 East, 26 November 2024; and

(b) in respect of Stage 2 West, 25 May 2025.

or such other date as may apply pursuant to Section 5.3(d) above.

5.4 With respect to the Contract Months in which:

(a) the Revenue Service Commencement Date, and

(b) the Expiry Date,

occur, unless such date falls on the first or last day of the Contract Month (respectively), a pro rata adjustment to the Monthly Service Payment shall be made to reflect the actual number of days in the relevant Contract Month.

Section 6. Insurance Payments

6.1 No later than 60 days prior to each Insurance Review Date, Project Co will require its insurance broker to prepare and submit to the City the Joint Insurance Cost Report. The City and Project Co, both acting reasonably, will agree on the Insurance Payment.

6.2 Project Co will provide the City with an invoice for the Insurance Payment when it receives an invoice for the premiums for the Relevant Insurance. This invoice will be separate from any invoice delivered in respect of the Monthly Service Payment.

6.3 In respect of Stage 2 East and Stage 2 West, Project Co will provide the City with an invoice for the Stage 2 East Initial Payment and the Stage 2 West Initial Payment when it receives an invoice for the Stage 2 East Incremental Premium Amount or the Stage 2 West Incremental Premium Amount, as the case may be.

6.4 The City shall pay each Insurance Payment, the Stage 2 East Initial Payment and the Stage 2 West Initial Payment within 30 days of receipt of the relevant invoice delivered in accordance with this Section 6.

6.5 Capitalised terms used in this Section 6 which are not otherwise defined in this Schedule 20 or in Schedule 1 – Definitions shall have the meaning given to them in Schedule 25 – Insurance and Performance Security Requirements.

PART C: DEDUCTIONS FROM MONTHLY SERVICE PAYMENTS - GENERAL

Section 1. Entitlement to Make Deductions

1.1 If at any time during the Maintenance Term a Quality Failure, Service Failure or Availability Failure shall occur, the City shall be entitled to make a Deduction from the relevant Monthly Service Payment in respect of that Quality Failure, Service Failure or Availability Failure. Notwithstanding the foregoing, Deductions shall not apply:

(a) in respect of the Maintenance Services provided in respect of the Stage 2 East System during the East Trial Running Period; and

(b) in respect of the Maintenance Services provided in respect of the Stage 2 West System during the West Trial Running Period:

provided that this shall not affect the City's ability to abate the payments otherwise payable to Project Co in respect of such Maintenance Services during such periods to the extent such Maintenance Services are not provided in accordance with the terms of this Agreement and provided further that:

(i) this shall not affect the parties' respective rights and obligations under Section 32 (City's Remedial Rights);

(ii) the amount of any such abatement shall be in proportion to the value of the Maintenance Services that are not provided in accordance with the terms of this Agreement;

(iii) the maximum aggregate of all such abatements that the City can make from the applicable Trial Running Payment in respect of any Contract Month shall be the amount of the Trial Running Payment that would have been calculated for the relevant Contract Month in accordance with Section 1.5 or 1.6, as applicable, of Part B to this Schedule 20 prior to the application of any abatements; and

(iv) the City shall only seek to abate any such payments where:

(A) the failure to provide such Maintenance Services is of a material nature in the context of the provision of the totality of the Maintenance Services being provided in respect of the Stage 2 East System during the East Trial Running Period or in respect of the Stage 2 West System during the West Trial Running Period; and

(B) Project Co has failed to implement an appropriate remedial plan within 24 hours of the earlier of (i) the time when Project Co became aware of the failure or (ii) the time when Project Co reasonably ought to have been aware of the failure.

1.2 The maximum aggregate of all Deductions that the City can make from a Monthly Service Payment in respect of any Contract Month shall be the Un-Adjusted Service Payment relating to that Contract Month.

Section 2. Classification of Deductions

2.1 Subject to Section 2.2 of Part C of this Schedule 20, the classification of an Event as a potential Quality Failure, Service Failure, or Availability Failure shall be made at the time at which the occurrence of the Event is reported to the Helpdesk. An Event which is incorrectly classified may be re-classified with the approval of the City Representative and the Project Co Representative, acting reasonably, in which case the applicable Performance Monitoring Report and Daily Operating Report will be revised accordingly.

2.2 A Vehicle Kilometres Availability Failure is not required to be reported to the Helpdesk. Vehicle Kilometres Availability Failures will be determined through the Daily Operating Report process and summarized for Payment Mechanism calculation purposes in the Performance Monitoring Report.

PART D: DEDUCTIONS FOR VEHICLE AND STATION UNAVAILABILITY

Section 1. Vehicle Kilometres Availability Failure Deductions

1.1 The Vehicle Kilometres Availability Failure Deduction in respect of a Contract Month *n*, shall be calculated in accordance with the following formula:

$$\boldsymbol{VAFD_n = [VAFD_{Peak}] + [VAFD_{Off-Peak}] + \sum EvD}$$

Where:

VAFD n	Means the Vehicle Kilometres Availability Failure Deduction applicable to Contract Month *n*
VAFD Peak	Means the Vehicle Kilometres Availability Failure Deduction for Vehicle Kilometres Availability Failure during Peak Period applicable to Contract Month *n*, calculated in accordance with Section 1.2 of this Part D to Schedule 20.
VAFD Off-Peak	Means the Vehicle Kilometres Availability Failure Deduction for Vehicle Kilometres Availability Failure during Off-Peak Period applicable to Contract Month *n*, calculated in accordance with Section 1.3 of this Part D to Schedule 20.
EvD	Means the sum of System Event Deductions applicable to Contract Month *n*, calculated in accordance with Section 1.7 of this Part D to Schedule 20.

1.2 The amount to be deducted in respect of Vehicle Kilometres Availability Failure for Peak Periods during Contract Month *n*, shall be calculated in accordance with the following formula:

$$\boldsymbol{VAFD_{Peak} = DF_{Peak,n} * UASP_n * .70}$$

Where:

$VAFD_{Peak}$	Means the amount to be deducted in respect of Vehicle Kilometres Availability Failure for Peak Periods applicable to Contract Month *n*
$DF_{Peak,n}$	Means the Deduction Factor for Peak Period service during Contract Month *n*, determined in accordance with Section 1.4 of this Part D to Schedule 20.
$UASP_n$	Means the Un-Adjusted Service Payment for Contract Month *n*.

1.3 The amount to be deducted in respect of Vehicle Kilometres Availability Failure for Off-Peak Periods during Contract Month *n*, shall be calculated in accordance with the following formula:

$$\boldsymbol{VAFD_{Off-Peak} = DF_{Off-Peak,n} * UASP_n *.30}$$

Where:

$VAFD_{Off\text{-}Peak}$	Means the amount to be deducted in respect of Vehicle Kilometres Availability Failure for Off-Peak Periods applicable to Contract Month n
$DF_{Off\text{-}Peak,\,n}$	Means the Deduction Factor for Off-Peak Period service during Contract Month n, determined in accordance with Section 1.5 of this Part D to Schedule 20.
$UASP_n$	Means the Un-Adjusted Service Payment for Contract Month n.

1.4 The Deduction Factor in respect of Peak Periods during Contract Month n, shall be determined by calculating the Availability Ratio for Contract Month n, in accordance with the formula set out below, and applying the corresponding Deduction Factor from Table 1 and Table 2 in Appendix B to this Schedule 20 (see Section 1.7 for additional detail).

$$AR_{Peak,n} = \frac{\left(\mathbf{Rkm}_{\,Peak,n} + \mathbf{NPCCkm}_{Peak,n}\right)}{\mathbf{Skm}_{\,Peak,n}}$$

Where:

$AR_{Peak,\,n}$	Means the Availability Ratio for Peak Period service during Contract Month n.
$Rkm_{Peak,\,n}$	Means the total amount of Revenue Service Vehicle Kilometres during Peak Periods for Contract Month n.
$NPCCkm_{Peak,\,n}$	Means the number of Scheduled Revenue Service Vehicle Kilometres which were "missed" or not achieved at Peak Periods during Contract Month n and which are attributed in the relevant Performance Monitoring Report as being due to a Non-Project Co Cause.
$Skm_{Peak,\,n}$	Means the total Scheduled Revenue Service Vehicle Kilometres during Peak Periods for Contract Month n.

1.5 The Deduction Factor in respect of Off-Peak Periods during Contract Month n, shall be determined by calculating the Availability Ratio for Contract Month n, in accordance with the formula set out below, and applying the corresponding Deduction Factor from Table 1 and Table 2 in Appendix B to this Schedule 20 (see Section 1.7 for additional detail).

$$AR_{Off-Peak,n} = \frac{\left(\mathbf{Rkm}_{\,Off-Peak,\;n} + \mathbf{NPCCkm}_{Off-Peak,\;n}\right)}{\mathbf{Skm}_{\,Off-Peak,\;n}}$$

Where:

$AR_{Off\text{-}Peak,\,n}$	Means the Vehicle Availability Ratio for Off-Peak Period service during Contract Month n.
$Rkm_{Off\text{-}Peak,\,n}$	Means the total amount of Revenue Service Vehicle Kilometres during Off-Peak Periods for Contract Month n.

$NPCCkm_{Off\text{-}Peak,\ n}$	Means the number of Scheduled Revenue Service Vehicle Kilometres which were "missed" or not achieved at Off-Peak Periods during Contract Month *n* and which are attributed in the relevant Performance Monitoring Report as being due to a Non-Project Co Cause.
$Skm_{Off\text{-}Peak,\ n}$	Means the total Scheduled Revenue Service Vehicle Kilometres during Off-Peak Periods for Contract Month *n*.

1.6 For the purposes of Sections 1.4 and 1.5 of this Part D to Schedule 20, when selecting a Deduction Factor from the tables in Appendix B to this Schedule 20, the Availability Ratio shall be rounded to the nearest 0.1%.

1.7 For the purposes of Sections 1.4 and 1.5 of this Part D to Schedule 20, the Deduction Factors in Table 1 in Appendix B shall be applied during Service Levels 1-3a and Deduction Factors in Table 2 in Appendix B shall be applied during Service Levels 4-9, with the exception of a period of the first three months of Service Level 4, wherein the Deduction Factors in Table 1 shall be applicable.

1.8 The following deductions ("System Event Deductions") shall also apply in respect of Vehicle Kilometres Availability Failure. The maximum aggregate amount of System Event Deductions to be applied in one day shall be $105,000.

SYSTEM EVENT DEDUCTIONS - TABLE 1

System Event	System Event Deduction Applied
On any single Weekday during a Contract Month, the Aggregate Vehicle Kilometres Availability Ratio for either (a) morning Peak Period service (06:30 to 09:00) or (b) afternoon Peak Period service (14:45 to 18:00) is less than 88%.	$52,500 per occurrence. For clarity, each Peak Period which fails to meet the 88% service standard shall result in the $52,500 System Event Deduction, such that Project Co could receive two such deductions in a single day, one in respect of morning Peak Period service and the second in respect of afternoon Peak Period service.
On any single day during a Contract Month, the Aggregate Vehicle Kilometres Availability Ratio for that day is less than 90%	$52,500 per occurrence.

1.9 A portion of the System Event Deductions and the maximum daily aggregate amount listed above shall be index-linked using the Escalation Factor as referred to in Section 4.1 of Part B to this Schedule 20. The relevant portion to be indexed shall be, in each Contract Year, the fraction represented by $MP_n/(CP_n + MP_n)$ for that Contract Year, as defined in Section 2.1 of Part B to this Schedule 20.

Section 2. Station Availability Failure Deductions

2.1 The Station Availability Failure Deduction in respect of a Contract Month *n*, shall be calculated in accordance with the following formula:

$$\boldsymbol{SAFD_n = [SAFD_{Peak}] + [SAFD_{Off-Peak}]}$$

Where:

SAFDn	Means the Station Availability Failure Deduction applicable to Contract Month *n*
$SAFD_{Peak}$	Means the amount deducted in respect of Station Availability Failure during Peak Period applicable to Contract Month *n*, calculated in accordance with Section 2.2 of this Part D to Schedule 20.
$SAFD_{Off\text{-}Peak}$	Means the amount deducted in respect of Station Availability Failure during Off- Peak Period applicable to Contract Month *n*, calculated in accordance with Section 2.3 of this Part D to Schedule 20.

2.2 The amount to be deducted in respect of Station Availability Failure during Peak Periods during Contract Month *n*, shall be calculated in accordance with the following formula:

$$\boldsymbol{SAFD_{Peak} = St.DF_{Peak,n} * UASP_n * .70}$$

Where:

$SAFD_{Peak}$	Means the amount to be deducted in respect of Station Availability Failure during Peak Period applicable to Contract Month *n*
$St.DF_{Peak,n}$	Means the Station Deduction Factor for Peak Period service during Contract Month *n*, determined in accordance with Section 2.4 of this Part D to Schedule 20.
$UASP_n$	Means the Un-Adjusted Service Payment for Contract Month *n*.

2.3 The amount to be deducted in respect of Station Availability Failure during Off-Peak Periods during Contract Month *n*, shall be calculated in accordance with the following formula:

$$\boldsymbol{SAFD_{Off-Peak} = St.DF_{Off-Peak,n} * UASP_n * .30}$$

Where:

$SAFD_{Off\text{-}Peak}$	Means the amount to be deducted in respect of Station Availability Failure during Off-Peak Period applicable to Contract Month *n*
$St.DF_{Off\text{-}Peak,n}$	Means the Station Deduction Factor for Off-Peak Period service during Contract Month *n*, determined in accordance with Section 2.5 of this Part D to Schedule 20.

$UASP_n$ Means the Un-Adjusted Service Payment for Contract Month n.

2.4 The Station Deduction Factor in respect of Peak Periods during Contract Month n, shall be determined by calculating the Station Availability Ratio for Contract Month n, in accordance with the formula set out below, and applying the corresponding Station Deduction Factor from Table 3 and Table 4 in Appendix B to this Schedule 20 (see Section 2.6 for additional detail).

$$SAR_{P,n} = .65 * \left[\frac{(SSH_{Gp.1\,P,n} - SAF_{Gp.1\,P,n})}{SSH_{Gp.1\,P,n}}\right] + .20 * \left[\frac{(SSH_{Gp.2\,P,n} - SAF_{Gp.2\,P,n})}{SSH_{Gp.2\,P,n}}\right] + .15 * \left[\frac{(SSH_{Gp.3\,P,n} - SAF_{Gp.3\,P,n})}{SSH_{Gp.3\,P,n}}\right]$$

Where:

$SAR_{P,n}$ Means the Station Availability Ratio for Peak Period service during Contract Month n

$SSH_{Gp.1P,n}$ Means the sum total of Scheduled Station Hours for all Group 1 stations during Peak Periods for Contract Month n

$SAF_{Gp.1P,n}$ Means the sum total of Station Availability Failure Hours for all Group 1 stations during Peak Periods for Contract Month n

$SSH_{Gp.2P,n}$ Means the sum total of Scheduled Station Hours for all Group 2 stations during Peak Periods for Contract Month n

$SAF_{Gp.2P,n}$ Means the sum total of Station Availability Failure Hours for all Group 2 stations during Peak Periods for Contract Month n

$SSH_{Gp.3P,n}$ Means the sum total of Scheduled Station Hours for all Group 3 stations during Peak Periods for Contract Month n

$SAF_{Gp.3P,n}$ Means the sum total of Station Availability Failure Hours for all Group 3 stations during Peak Periods for Contract Month n

2.5 The Station Availability Factor in respect of Off-Peak Periods during Contract Month n, shall be determined by calculating the Station Availability Ratio for Contract Month n, in accordance with the formula set out below, and applying the corresponding Station Availability Factor from Table 3 and Table 4 in Appendix B to this Schedule 20 (see Section 2.6 for additional detail).

$$SAR_{OP,n} = .65 * \left|\frac{(SSH_{Gp.1\,OP,n} - SAF_{Gp.1\,OP,n})}{SSH_{Gp.1\,OP,n}}\right| + .20 * \left|\frac{(SSH_{Gp.2\,OP,n} - SAF_{Gp.2\,OP,n})}{SSH_{Gp.2\,OP,n}}\right| + .15 * \left|\frac{(SSH_{Gp.3\,OP,n} - SAF_{Gp.3\,OP,n})}{SSH_{Gp.3\,OP,n}}\right|$$

Where:

$SAR_{OP,n}$ Means the Station Availability Ratio for Off-Peak Period service during Contract Month

$SSH_{Gp.1OP,n}$ Means the sum total of Scheduled Station Hours for all Group 1 stations during Off-Peak Periods for Contract Month n

$SAF_{Gp.1OP,\ n}$	Means the sum total of Station Availability Failure Hours for all Group 1 stations during Off-Peak Periods for Contract Month *n*
$SSH_{Gp.2OP,\ n}$	Means the sum total of Scheduled Station Hours for all Group 2 stations during Off-Peak Periods for Contract Month *n*
$SAF_{Gp.2OP,\ n}$	Means the sum total of Station Availability Failure Hours for all Group 2 stations during Off-Peak Periods for Contract Month *n*
$SSH_{Gp.3OP,\ n}$	Means the sum total of Scheduled Station Hours for all Group 3 stations during Off-Peak Periods for Contract Month *n*
$SAF_{Gp.3OP,\ n}$	Means the sum total of Station Availability Failure Hours for all Group 3 stations during Off-Peak Periods for Contract Month *n*

2.6 For the purposes of Sections 2.4 and 2.5 of this Part D to Schedule 20, the Deduction Factors in Table 3 in Appendix B shall be applied during Service Levels 1-3a and Deduction Factors in Table 4 in Appendix B shall be applied during Service Levels 4-9, with the exception of a period of the first three months of Service Level 4, wherein the Deduction Factors in Table 3 shall be applicable.

Section 3. Partial Availability

3.1 Where a Station does not meet the Station Access Standard, but the following conditions hold:

(a) At least one platform is accessible by elevator, and all access to such platform is otherwise in compliance with the Station Access Standard; and

(b) At least one entrance to the Station is open and access through this entrance to the accessible platform is in compliance with the Station Access Standard,

then Project Co shall be given credit for partial availability and the Station Availability Failure Hours that would otherwise be assessed for the duration of the Station's failure to meet the Station Access shall be reduced by 50%.

3.2 Where the City exercises its discretion under Article 3.0(c)(i)(B) of Schedule 15-3 to permit a Vehicle which does not meet the Vehicle Cleaning Standard or Vehicle Maintenance Standard (i)(xiv) to be entered into Revenue Service as part of a Train, the Revenue Service Vehicle Kilometres traveled by that Vehicle while it fails to meet such standard shall be deemed to be reduced by 50%.

PART E: DEDUCTIONS FOR QUALITY AND SERVICE FAILURES

Section 1. Amount Of Deductions For Quality Failures

1.1 The amount of the Deduction in respect of a Quality Failure shall be as follows:

(a) in the case of a Minor Quality Failure, the sum of $265, index-linked using the Escalation Factor as referred to in Section 4.1 of Part B in this Schedule 20;

(b) in the case of a Medium Quality Failure, the sum of $530, index-linked using the Escalation Factor as referred to in Section 4.1 of Part B in this Schedule 20; and

(c) in the case of a Major Quality Failure, the sum of $1050, index-linked using the Escalation Factor as referred to in Section 4.1 of Part B in this Schedule 20.

1.2 There are no Response Times or Rectification Times in respect of Quality Failures. The occurrence of a Quality Failure will result in a Quality Failure Deduction in respect of the Contract Month in which the Quality Failure occurred.

1.3 Following the occurrence of a Quality Failure, Project Co shall be allowed a Remedial Period. The length of the relevant Remedial Period shall be specified by the relevant Performance Criteria. If, before the expiry of the Remedial Period, Project Co demonstrates, to the reasonable satisfaction of the City Representative, that it has remedied the Quality Failure, no further Deduction shall be made in respect of the Quality Failure. Otherwise, a further Deduction shall be made of the appropriate amount (as described in Section 1.1 of Part E of this Schedule 20) and a further Remedial Period or Remedial Periods of equal duration shall apply (and, if appropriate, Deductions shall continue to be made) until such time as Project Co shall demonstrate, to the reasonable satisfaction of the City Representative, that it has remedied the Quality Failure.

Section 2. Amount Of Deductions For Service Failures

2.1 The amount of the Deduction in respect of a Service Failure shall be as follows:

(a) in the case of a Minor Service Failure, the sum of $105, index-linked using the Escalation Factor as referred to in Section 4.1 of Part B in this Schedule 20;

(b) in the case of a Medium Service Failure, the sum of $265, index-linked using the Escalation Factor as referred to in Section 4.1 of Part B in this Schedule 20; and

(c) in the case of a Major Service Failure, the sum of $530, index-linked using the Escalation Factor as referred to in Section 4.1 of Part B in this Schedule 20.

2.2 Where a Service Failure Performance Criteria has a Response Time or a Rectification Time, a Service Failure shall only occur if the Event in question has not been responded to within the applicable Response Time or rectified within the applicable Rectification Time.

2.3 Following the occurrence of a Service Failure, Project Co shall be allowed an additional Response Time or Rectification Time (as the case may be) equivalent to the original Response Time or Rectification Time. If, before the expiry of this additional period, Project Co demonstrates, to the reasonable satisfaction of the City Representative, that it has remedied the

Service Failure, no further Deduction shall be made in respect of the Service Failure. Otherwise, a further Deduction shall be made of the appropriate amount (as described in Section 2.1 of Part E of this Schedule 20) and a further Response Time or Rectification Time of equal duration shall apply (and, if appropriate, Deductions shall continue to be made) until such time as Project Co shall demonstrate, to the reasonable satisfaction of the City Representative, that it has remedied the Service Failure.

2.4 The provisions of Section 2.3 of this Part E shall not apply to Service Failures where, if the response or rectification is not carried out within the Response Time or the Rectification Time, as applicable, the City Representative notifies the Project Co Representative that the City no longer requires Project Co to address such Service Failure.

2.5 Where a Service Failure Performance Criteria has no Response Time or Rectification Time, a Service Failure shall occur upon the occurrence of the Event in question and a Service Failure Deduction shall apply in accordance with Sections 2.1 and 2.3 of this Part E.

Section 3. Temporary Repairs

3.1 If Project Co informs the City that it is unable to Rectify an Event within the specified Rectification Time due to the need for specialized materials or personnel that are not, and cannot reasonably be expected to be, immediately available but that a Temporary Repair can be effected:

(a) The City may, in its discretion and acting reasonably, permit Project Co to carry out the Temporary Repair proposed by Project Co; and

(b) where a Temporary Repair is permitted, a deadline by which a Permanent Repair must be made shall be agreed to by the Parties, each acting reasonably, giving Project Co a reasonable period within which to carry out the Permanent Repair (the "Permanent Repair Deadline").

3.2 If the Temporary Repair is effected within the specified Rectification Time and the Permanent Repair is effected by no later than the Permanent Repair Deadline, no Quality or Service Failure (as applicable) will occur, and no Deduction may be made, in respect of the Event.

3.3 If the Temporary Repair is not effected within the specified Rectification Time, a Quality or Service Failure (as applicable) shall be deemed to occur and the following provisions shall apply:

(a) there shall be a further period beginning at the expiry of the Rectification Time and of a duration equal to that of the Rectification Time;

(b) Project Co shall ensure that the Temporary Repair is successfully carried out prior to the expiry of the additional period referred to in Section 3.3(a);

(c) if the Temporary Repair is not successfully carried out prior to the expiry of the additional period referred to in Section 3.3(a) a further Quality or Service Failure (as applicable) shall occur and a further additional period shall commence;

(d) unless the Temporary Repair has been successfully carried out prior to the expiry of the additional period then a further Quality or Service Failure (as applicable) shall occur until such time as the Temporary Repair shall have been successfully completed; and

(e) if the Temporary Repair is not successfully carried out prior to the Permanent Repair Deadline, and no Permanent Repair has been successfully carried out, the right for Project Co to carry out a Temporary Repair pursuant to this Section 3 shall cease and Section 3.4 of this Part E shall apply.

3.4 If the Permanent Repair is not effected by the Permanent Repair Deadline, a Quality or Service Failure (as applicable) shall be deemed to occur.

PART F: REVIEW AND AMENDMENT OF PAYMENT MECHANISM

Section 1. Five Year Review

1.1 The amount of Deductions for Vehicle Kilometres Availability Failures, Station Availability Failures, Quality Failures and Service Failures, as well as the overall functioning of the Payment Mechanism shall be reviewed by the City and Project Co at any time if requested by either Party, up to a maximum of one review per Contract Year. In any event, a review shall be carried out at least once in every five Contract Years.

1.2 The City and Project Co shall act reasonably and diligently in carrying out the reviews.

1.3 For the avoidance of doubt, the Parties intend that any changes made as a result of such a review shall not alter the overall risk profile of the relevant Maintenance Services or the likely magnitude of Vehicle Kilometres Availability Failures, Station Availability Failures, Quality Failures and Service Failures. Where proposed changes would result in any such alteration, the matter shall be deemed to be a Variation and Schedule 22 - Variation Procedure shall apply.

1.4 The City and Project Co may in respect of each matter the subject of the review either:

(a) agree that the status of the relevant matter shall continue to apply unchanged in the Contract Year immediately following the review; or

(b) agree adjustments to the relevant matter to take effect in the Contract Year immediately following the review.

1.5 Any agreed adjustment pursuant to a review shall be effective from the commencement of the Contract Year immediately following the relevant review carried out in accordance with Section 1.1 of this Part F.

Section 2. Peak Periods and Station Grouping

2.1 The City may change the definition of "Peak Period" and "Off-Peak Period", for the purposes of the Payment Mechanism, at its sole discretion at any time during the Maintenance Term by providing Project Co with sixty (60) days written notice, provided that the total number of Peak Period hours in a week does not exceed twenty-nine (29) hours.

2.2 The City may change the grouping of Stations (Group 1, Group 2, and Group 3 definitions), for the purposes of the Payment Mechanism, at its sole discretion at any time during the Maintenance Term by providing Project Co with sixty (60) days written notice, provided that:

(a) Group 1 shall not include more than twelve (12) Stations; and

(b) Group 2 shall not include more than seven (7) Stations

2.3 The City may increase the total number of Peak Period hours per week and/or increase the number of Group 1 or Group 2 stations, beyond the limits set out in 2.1 and 2.2, above, subject to agreement between the Parties on appropriate amendments to the Payment Mechanism in order to ensure there is no change in overall risk profile of the relevant Maintenance Services or the likely magnitude of Vehicle Kilometres Availability Failures, Station Availability Failures, Quality Failures and Service Failures.

Section 3. Lifecycle Payment Adjustment

3.1 In the event of an Accelerated Service Level, Project Co may request adjustments to the schedule of Lifecycle Payments set out in Table 3 of Appendix A to this Schedule 20, in accordance with the provisions of Section 3 to this Part F, provided that, notwithstanding the remaining provisions of this Section 3, in respect of any Accelerated Service Level described in paragraph (b) of the definition for that term, the Parties shall make such adjustments to the procedure set out in this Section 3 as are necessary to ensure that Project Co is put in no better and no worse position compared with the position had such Accelerated Service Level not been required.

3.2 Any adjustments to the schedule of Lifecycle Payments under this Section 3 of Part F shall be limited by the following constraints:

(a) Adjustments shall be limited to costs in respect of the replacement, refreshment and/or refurbishment during the Maintenance Term of the following components of the System ("Eligible Lifecycle Costs"):

(i) Trackwork, as described in Part 2 of Schedule 15-2 to the Project Agreement; and

(ii) Overhead Catenary System, as described in Part 4 of Schedule 15-2 to the Project Agreement;

(b) Adjustments shall be limited to the following forms of adjustment:

(i) Acceleration of already scheduled Lifecycle Payments in respect of Eligible Lifecycle Costs, such that Project Co would be entitled to receive a specific Lifecycle Payment or portion thereof in a Contract Month which is earlier than under the then-prevailing schedule of Lifecycle Payments; or

(ii) Introduction of new Lifecycle Payments in respect of Eligible Lifecycle Costs which, by virtue of the Accelerated Service Level, will either:

(A) require an additional cycle of replacement, refreshment and/or refurbishment during the Maintenance Term which is over and above such cycles already scheduled in the Maintenance and Rehabilitation Plan; or

(B) reach the end of their lifecycle and require replacement, refreshment and/or refurbishment during the Maintenance Term where no such

replacement, refreshment and/or refurbishment is scheduled in the then-prevailing Maintenance and Rehabilitation Plan; and

(c) Adjustments must:

(i) be attributable by the quantity of service provided by Project Co, measured by vehicle kilometres, and

(ii) not be attributable to any Project Co failure to adhere to its Maintenance and Rehabilitation Plan,

each supported by items 3.3(c) and 3.3(d) in the application process described below.

3.3 Project Co shall apply for an adjustment to the schedule of Lifecycle Payments as a Project Co Variation Notice in accordance with the provisions of Schedule 22 – Variation Procedure. In addition to the requirements of Schedule 22, Project Co's application shall contain the following elements:

(a) Identify the components of the System and Eligible Lifecycle Costs which form the basis of the application;

(b) Identify the originally scheduled dates (if any) for replacement, refreshment and/or refurbishment of the relevant components of the System in the Maintenance and Rehabilitation Plan, and the proposed amended dates for such lifecycle works;

(c) Describe the rationale for the proposed amended dates for lifecycle works, with specific reference to the following:

(i) The number of vehicle kilometres scheduled by the Preliminary Service Plan to have been provided at the originally scheduled date of lifecycle works;

(ii) The number of vehicle kilometres that will have been provided by Project Co at the proposed amended date of lifecycle works; and

(iii) Reference to manufacturer specifications or industry standards and the impact of the Accelerated Service Level in triggering a need for replacement, refreshment and/or refurbishment in accordance with these specifications or standards; and

(d) Carry out an Internal Quality Audit (as described in Schedule 10 of the Project Agreement) on Project Co's adherence to its Maintenance and Rehabilitation Plan for the relevant components of the System

3.4 For greater certainty, where Project Co's application includes a request for introduction of new Lifecycle Payments in accordance with Section 3.2 of this Part F, then the amount of such new Lifecycle Payments shall be determined in accordance with the terms of Schedule 22 – Variation Procedure.

3.5 Project Co's application shall provide the City with at least eighteen (18) months of notice in advance of any proposed amended or additional Lifecycle Payment.

3.6 Project Co and the City shall work collaboratively to minimize the number of adjustments to the Lifecycle Payment schedule, including:

(a) wherever possible, agreeing upon adjustments to the Lifecycle Payment schedule that take account of a number of years of Accelerated Service Level where it is apparent that the condition of Accelerated Service Level will continue to persist and future Service Levels can reasonably be predicted; and

(b) deferring adjustment to the Lifecycle Payment schedule where the City, acting reasonably, believes that a condition of Accelerated Service Level is temporary and Service Levels will soon revert to or track the Operations Service Plan in effect at Financial Close, and there is no long term lifecycle impact to Project Co.

PART G: FAILURE POINTS

Section 1. Failure Points

1.1 Failure Points shall be awarded for every Quality Failure, Service Failure, System Event and Availability Failure which occurs during the Maintenance Term, unless such Failure Points are cancelled pursuant to any other provision of the Project Agreement. Notwithstanding the foregoing, Failure Points shall not apply:

(a) in respect of the Maintenance Services provided in respect of the Stage 2 East System between the Stage 2 East Substantial Completion Date and the Stage 2 East Revenue Services Commencement Date; and

(b) in respect of the Maintenance Services provided in respect of the Stage 2 West System between the Stage 2 West Substantial Completion Date and the Stage 2 West Revenue Services Commencement Date,

provided that this shall not affect the parties' respective rights and obligations under Section 32 (City's Remedial Rights)

1.2 The number of Failure Points attributable to Quality Failures, Service Failures, System Events and Availability Failures is set out in Appendix C to this Schedule 20.

(a) Failure Points in respect of System Events shall be awarded following the identification of each such System Event through the Daily Operating Report;

(b) Failure Points in respect of Vehicle Kilometres Availability Failure shall be awarded for each Contract Month based on the relevant Aggregate Vehicle Kilometres Availability Ratio calculated for that Contract Month, in accordance with Section 1.1 of Appendix C to this Schedule 20;

(c) Failure Points in respect of Station Availability Failure shall be awarded for each Contract Month based on the relevant Aggregate Station Availability Ratio calculated for that Contract Month, in accordance with Section 3.1 of Appendix C to this Schedule 20;

(d) Failure Points in respect of Quality Failures and Service Failures shall be awarded in respect of each Quality Failure and Service Failure, in accordance with Section 4 and 5 of Appendix D to this Schedule 20.

1.3 For the purposes of Section 1.2(d) of this Part G to Schedule 20, the Failure Points in respect of Section 4.0 in Appendix C shall be applied during Service Levels 1-3 and the Failure Points in respect of Section 5.0 in Appendix C shall be applied during Service Levels 3a-9.

1.4 For the avoidance of doubt when awarding Failure Points, where a further Quality Failure or Service Failure is deemed to have occurred in accordance with Sections 2.2 and 2.3 of Part E of this Schedule 20, the appropriate number of Failure Points shall be awarded in respect of each such Quality Failure and Service Failure, even though they arise from the same circumstances.

PART H: MONITORING AND REPORTING

Section 1. Sources of Information

1.1 The table below sets out the sources of the factual information regarding the performance of the Maintenance Services for the relevant Contract Month for the purposes of calculating the relevant Monthly Service Payment, the Deductions assessed and the number of Failure Points awarded.

Item	Source
Revenue Service Vehicle Kilometres for Contract Month *n*	Performance Monitoring Report for Contract Month *n*
Scheduled Revenue Service Vehicle Kilometres for Contract Month *n*	Performance Monitoring Report for Contract Month *n*
Number of Scheduled Revenue Service Vehicle Kilometres which were "missed" or not traveled by Project Co due to a Non-Project Co Cause, for Contract Month *n*	Performance Monitoring Report for Contract Month *n*
Total Vehicle Kilometres for Contract Month *n*	Performance Monitoring Report for Contract Month *n*
Scheduled Station Hours	Operations Service Plan in effect as of the relevant date
Station Availability Failure Hours	Performance Monitoring Report for Contract Month *n*
Quality Failures	Performance Monitoring Report for Contract Month *n*
Service Failures	Performance Monitoring Report for Contract Month *n*

Section 2. Failure by Project Co to Monitor or Report

2.1 If there shall be any error or omission in the Performance Monitoring Report for any Contract Month, Project Co and the City shall agree the amendment to the Performance Monitoring Report or, failing agreement within 10 days of notification of the error or omission which shall not be made more than 2 calendar months following the relevant Performance Monitoring Report, except in the circumstances referred to in Section 2.4 of this Part H either party may refer the matter to the Dispute Resolution Procedure.

2.2 If Project Co fails to monitor or accurately report any Availability Failure, Service Failure or Quality Failure then, without prejudice to the Deduction to be made in respect of the relevant Availability Failure or Quality Failure, the failure to monitor or report shall be deemed to be a new Quality Failure, and Project Co shall be awarded 2 Quality Failure points for each occurrence of such Quality Failure, unless the circumstances set out in Section 2.4 of this Part H apply, in which case Project Co shall be awarded 5 Quality Failure Points for each such occurrence.

2.3 In the event that any inspection or investigation by the City of records made available pursuant to the Project Agreement reveals any further matters of the type referred to in Sections 2.1 and 2.2 above, those matters shall be dealt with in accordance with Section 2.1 and 2.2 of this Part H, as appropriate, and the City shall, in addition, be entitled to make Deductions in respect of any Availability Failure, Service Failure or Quality Failure in the manner prescribed in Part C of this Schedule 20. Any such Deductions shall be made from the Monthly Service Payment, payable in respect of the Contract Month in which the relevant matters were revealed by City investigations or, to the extent that the City is unable to make any further deductions from the Monthly Service Payment in respect of that Contract Month by virtue of Section 1.2 of Part C of this Schedule 20, may be carried forward and deducted from Monthly Service Payments due in respect of subsequent Contract Months.

2.4 For the purposes of Sections 1.1 and 1.2 of this Part H the relevant circumstances are:

(a) fraudulent action or inaction;

(b) deliberate misrepresentation; or

(c) gross misconduct or incompetence in each case on the part of Project Co or a Project Co Party.

2.5 The provisions of this Part H shall be without prejudice to any rights of the City pursuant to Sections 32, 45 and 60 of the Project Agreement.

APPENDIX A: ANNUAL SERVICE PAYMENT AND MONTHLY SERVICE PAYMENT INPUTS

Table 1

COLUMN A	COLUMN B	Column C	Column D	COLUMN E
Contract Year	**Capital Payment (not subject to escalation)**	**Maintenance Payment (in Inflation Base Date Prices)**	**SPV Payments (in Inflation Base Date Prices)**	**Price per Vehicle Kilometre (in Inflation Base Date prices)**
1*	$22,553,594.00	As per Table 2 and relevant Service Level in effect.	$1,351,161.37	As per Table 2 and relevant Service Level in effect.
2	$22,549,436.16	As per Table 2 and relevant Service Level in effect.	$1,092,406.81	As per Table 2 and relevant Service Level in effect.
3	$23,056,827.00	As per Table 2 and relevant Service Level in effect.	$955,441.31	As per Table 2 and relevant Service Level in effect.
4	$23,086,669.00	As per Table 2 and relevant Service Level in effect.	$960,196.00	As per Table 2 and relevant Service Level in effect.
5	$23,098,335.66	As per Table 2 and relevant Service Level in effect.	$983,705.29	As per Table 2 and relevant Service Level in effect.
6	$23,128,377.33	As per Table 2 and relevant Service Level in effect.	$955,221.18	As per Table 2 and relevant Service Level in effect.
7	$23,119,544.00	As per Table 2 and relevant Service Level in effect.	$964,554.46	As per Table 2 and relevant Service Level in effect.
8	$23,101,085.66	As per Table 2 and relevant Service Level in effect.	$952,095.41	As per Table 2 and relevant Service Level in effect.
9	$23,094,002.33	As per Table 2 and relevant Service Level in effect.	$956,674.00	As per Table 2 and relevant Service Level in effect.

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10	$23,095,335.66	As per Table 2 and relevant Service Level in effect.	$955,265.21	As per Table 2 and relevant Service Level in effect.
11	$23,099,169.00	As per Table 2 and relevant Service Level in effect.	$997,220.93	As per Table 2 and relevant Service Level in effect.
12	$23,112,794.00	As per Table 2 and relevant Service Level in effect.	$987,007.16	As per Table 2 and relevant Service Level in effect.
13	$23,091,085.66	As per Table 2 and relevant Service Level in effect.	$1,009,944.13	As per Table 2 and relevant Service Level in effect.
14	$23,098,627.33	As per Table 2 and relevant Service Level in effect.	$955,969.61	As per Table 2 and relevant Service Level in effect.
15	$23,099,502.33	As per Table 2 and relevant Service Level in effect.	$950,862.72	As per Table 2 and relevant Service Level in effect.
16	$23,011,960.66	As per Table 2 and relevant Service Level in effect.	$1,043,359.02	As per Table 2 and relevant Service Level in effect.
17	$23,086,044.00	As per Table 2 and relevant Service Level in effect.	$965,082.76	As per Table 2 and relevant Service Level in effect.
18	$23,056,835.66	As per Table 2 and relevant Service Level in effect.	$995,944.21	As per Table 2 and relevant Service Level in effect.
19	$23,095,669.00	As per Table 2 and relevant Service Level in effect.	$1,118,597.57	As per Table 2 and relevant Service Level in effect.
20	$23,070,169.00	As per Table 2 and relevant Service Level in effect.	$1,160,421.22	As per Table 2 and relevant Service Level in effect.
21	$22,875,460.66	As per Table 2 and relevant	$1,366,149.55	As per Table 2 and relevant

		Service Level in effect.		Service Level in effect.
22	$22,916,210.66	As per Table 2 and relevant Service Level in effect.	$1,323,093.21	As per Table 2 and relevant Service Level in effect.
23	$23,070,002.33	As per Table 2 and relevant Service Level in effect.	$1,160,597.32	As per Table 2 and relevant Service Level in effect.
24	$23,098,169.00	As per Table 2 and relevant Service Level in effect.	$1,132,773.58	As per Table 2 and relevant Service Level in effect.
25	$23,234,252.33	As per Table 2 and relevant Service Level in effect.	$989,164.38	As per Table 2 and relevant Service Level in effect.
26	$23,235,960.66	As per Table 2 and relevant Service Level in effect.	$987,359.36	As per Table 2 and relevant Service Level in effect.
27	$23,232,710.66	As per Table 2 and relevant Service Level in effect.	$990,793.30	As per Table 2 and relevant Service Level in effect.
28	$23,150,002.33	As per Table 2 and relevant Service Level in effect.	$1,078,182.71	As per Table 2 and relevant Service Level in effect.
29	$23,103,085.66	As per Table 2 and relevant Service Level in effect.	$1,041,554.00	As per Table 2 and relevant Service Level in effect.
30	$22,891,419.00	As per Table 2 and relevant Service Level in effect.	$1,257,364.04	As per Table 2 and relevant Service Level in effect.
31*	$22,553,594.00	As per Table 2 and relevant Service Level in effect.	$1,351,161.37	As per Table 2 and relevant Service Level in effect.

* Contract Year 1 and 31 are partial years; total number of Contract Months equals 360 months.

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Table 2 – Maintenance Payment and Price per Vehicle Kilometre

COLUMN A	COLUMN B	COLUMN C
Service Level	**Maintenance Payment (in Inflation Base Date prices)**	**Price per Vehicle Kilometre (in Inflation Base Date prices)**
Service Level 1	$22,513,921.91	$1.1126
Service Level 2	$22,590,980.53	$1.0778
Service Level 3	$23,200,205.78	$1.0693
Service Level 3a	$44,909,926.31	$0.8382
Service Level 4	$56,697,100.70	$0.8382
Service Level 5	$57,252,713.42	$0.8382
Service Level 6	$57,630,540.13	$0.8382
Service Level 7	$58,929,802.36	$0.8382
Service Level 8	$59,157,462.57	$0.8382
Service Level 9	$59,453,559.46	$0.8382

Table 3 – Lifecycle Payments

COLUMN A	COLUMN B	COLUMN C	COLUMN D
Contract Month *n*	**Contract Month *m***	**Lifecycle Payment – Stage 1 (in Inflation Base Date prices)**	**Lifecycle Payment – Stage 2 (in Inflation Base Date prices)**
1	25-May-18 / 31-May-18	-	-
2	01-Jun-18 / 30-Jun-18	-	-
3	01-Jul-18 / 31-Jul-18	$212,604.00	-
4	01-Aug-18 / 31-Aug-18	-	-
5	01-Sep-18 / 30-Sep-18	-	-
6	01-Oct-18 / 31-Oct-18	$65,755.50	-
7	01-Nov-18 / 30-Nov-18	-	-
8	01-Dec-18 / 31-Dec-18	-	-
9	01-Jan-19 / 31-Jan-19	$65,711.12	-
10	01-Feb-19 / 28-Feb-19	-	-
11	01-Mar-19 / 31-Mar-19	-	-
12	01-Apr-19 / 30-Apr-19	$68,829.96	-
13	01-May-19 / 31-May-19	-	-
14	01-Jun-19 / 30-Jun-19	-	-
15	01-Jul-19 / 31-Jul-19	$68,829.96	-
16	01-Aug-19 / 31-Aug-19	-	-
17	01-Sep-19 / 30-Sep-19	-	-
18	01-Oct-19 / 31-Oct-19	$68,829.96	-
19	01-Nov-19 / 30-Nov-19	-	-
20	01-Dec-19 / 31-Dec-19	-	-
21	01-Jan-20 / 31-Jan-20	$77,324.84	-
22	01-Feb-20 / 29-Feb-20	$8,221.56	-
23	01-Mar-20 / 31-Mar-20	$8,221.56	-
24	01-Apr-20 / 30-Apr-20	$81,229.04	-
25	01-May-20 / 31-May-20	$8,221.56	-
26	01-Jun-20 / 30-Jun-20	$8,221.56	-
27	01-Jul-20 / 31-Jul-20	$81,229.04	-
28	01-Aug-20 / 31-Aug-20	$8,221.56	-
29	01-Sep-20 / 30-Sep-20	$8,221.56	-
30	01-Oct-20 / 31-Oct-20	$81,229.04	-
31	01-Nov-20 / 30-Nov-20	$8,221.56	-

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COLUMN A	COLUMN B	COLUMN C	COLUMN D
Contract Month *n*	Contract Month *m*	Lifecycle Payment – Stage 1 (in Inflation Base Date prices)	Lifecycle Payment – Stage 2 (in Inflation Base Date prices)
32	01-Dec-20 / 31-Dec-20	$8,221.56	-
33	01-Jan-21 / 31-Jan-21	$59,360.14	-
34	01-Feb-21 / 28-Feb-21	$1,424.66	-
35	01-Mar-21 / 31-Mar-21	$1,424.66	-
36	01-Apr-21 / 30-Apr-21	$32,777.49	-
37	01-May-21 / 31-May-21	$1,424.66	-
38	01-Jun-21 / 30-Jun-21	$1,424.66	-
39	01-Jul-21 / 31-Jul-21	$32,777.49	-
40	01-Aug-21 / 31-Aug-21	$1,424.66	-
41	01-Sep-21 / 30-Sep-21	$1,424.66	-
42	01-Oct-21 / 31-Oct-21	$32,777.49	-
43	01-Nov-21 / 30-Nov-21	$1,424.66	-
44	01-Dec-21 / 31-Dec-21	$1,424.66	-
45	01-Jan-22 / 31-Jan-22	$128,346.59	$1,861.33
46	01-Feb-22 / 28-Feb-22	$98,315.02	-
47	01-Mar-22 / 31-Mar-22	$98,315.02	-
48	01-Apr-22 / 30-Apr-22	$127,233.46	$5,583.99
49	01-May-22 / 31-May-22	$98,315.02	-
50	01-Jun-22 / 30-Jun-22	$98,315.02	-
51	01-Jul-22 / 31-Jul-22	$127,233.46	$5,583.99
52	01-Aug-22 / 31-Aug-22	$98,315.02	-
53	01-Sep-22 / 30-Sep-22	$98,315.02	-
54	01-Oct-22 / 31-Oct-22	$127,233.46	$5,583.99
55	01-Nov-22 / 30-Nov-22	$98,315.02	-
56	01-Dec-22 / 31-Dec-22	$98,315.02	-
57	01-Jan-23 / 31-Jan-23	$524,283.77	$11,132.60
58	01-Feb-23 / 28-Feb-23	$498,496.96	-
59	01-Mar-23 / 31-Mar-23	$498,496.96	-
60	01-Apr-23 / 30-Apr-23	$519,431.16	$22,502.22
61	01-May-23 / 31-May-23	$498,496.96	-
62	01-Jun-23 / 30-Jun-23	$498,496.96	-
63	01-Jul-23 / 31-Jul-23	$519,431.16	$22,502.22
64	01-Aug-23 / 31-Aug-23	$498,496.96	-

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COLUMN A	COLUMN B	COLUMN C	COLUMN D
Contract Month *n*	Contract Month *m*	Lifecycle Payment – Stage 1 (in Inflation Base Date prices)	Lifecycle Payment – Stage 2 (in Inflation Base Date prices)
65	01-Sep-23 / 30-Sep-23	$498,496.96	-
66	01-Oct-23 / 31-Oct-23	$519,431.16	$22,502.22
67	01-Nov-23 / 30-Nov-23	$498,496.96	-
68	01-Dec-23 / 31-Dec-23	$498,496.96	-
69	01-Jan-24 / 31-Jan-24	$347,380.41	$23,905.95
70	01-Feb-24 / 29-Feb-24	$297,344.80	-
71	01-Mar-24 / 31-Mar-24	$297,344.80	-
72	01-Apr-24 / 30-Apr-24	$406,604.40	$27,811.07
73	01-May-24 / 31-May-24	$297,344.80	-
74	01-Jun-24 / 30-Jun-24	$297,344.80	-
75	01-Jul-24 / 31-Jul-24	$406,604.40	$27,811.07
76	01-Aug-24 / 31-Aug-24	$297,344.80	-
77	01-Sep-24 / 30-Sep-24	$297,344.80	-
78	01-Oct-24 / 31-Oct-24	$406,604.40	$27,811.07
79	01-Nov-24 / 30-Nov-24	$297,344.80	-
80	01-Dec-24 / 31-Dec-24	$297,344.80	-
81	01-Jan-25 / 31-Jan-25	$462,005.69	$59,819.12
82	01-Feb-25 / 28-Feb-25	$354,205.79	$34,244.58
83	01-Mar-25 / 31-Mar-25	$354,205.79	$34,244.58
84	01-Apr-25 / 30-Apr-25	$464,416.03	$56,702.70
85	01-May-25 / 31-May-25	$354,205.79	$34,244.58
86	01-Jun-25 / 30-Jun-25	$354,205.79	$34,244.58
87	01-Jul-25 / 31-Jul-25	$464,416.03	$56,702.70
88	01-Aug-25 / 31-Aug-25	$354,205.79	$34,244.58
89	01-Sep-25 / 30-Sep-25	$354,205.79	$34,244.58
90	01-Oct-25 / 31-Oct-25	$464,416.03	$56,702.70
91	01-Nov-25 / 30-Nov-25	$354,205.79	$34,244.58
92	01-Dec-25 / 31-Dec-25	$354,205.79	$34,244.58
93	01-Jan-26 / 31-Jan-26	$619,265.87	$69,681.51
94	01-Feb-26 / 28-Feb-26	$508,526.15	$16,859.13
95	01-Mar-26 / 31-Mar-26	$508,526.15	$16,859.13
96	01-Apr-26 / 30-Apr-26	$625,700.93	$131,505.55
97	01-May-26 / 31-May-26	$508,526.15	$16,859.13

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COLUMN A	COLUMN B	COLUMN C	COLUMN D
Contract Month *n*	Contract Month *m*	Lifecycle Payment – Stage 1 (in Inflation Base Date prices)	Lifecycle Payment – Stage 2 (in Inflation Base Date prices)
98	01-Jun-26 / 30-Jun-26	$508,526.15	$16,859.13
99	01-Jul-26 / 31-Jul-26	$625,700.93	$131,505.55
100	01-Aug-26 / 31-Aug-26	$508,526.15	$16,859.13
101	01-Sep-26 / 30-Sep-26	$508,526.15	$16,859.13
102	01-Oct-26 / 31-Oct-26	$625,700.93	$131,505.55
103	01-Nov-26 / 30-Nov-26	$508,526.15	$16,859.13
104	01-Dec-26 / 31-Dec-26	$508,526.15	$16,859.13
105	01-Jan-27 / 31-Jan-27	$308,779.92	$518,525.22
106	01-Feb-27 / 28-Feb-27	$223,711.72	$398,090.85
107	01-Mar-27 / 31-Mar-27	$223,711.72	$398,090.85
108	01-Apr-27 / 30-Apr-27	$250,282.60	$535,693.62
109	01-May-27 / 31-May-27	$223,711.72	$398,090.85
110	01-Jun-27 / 30-Jun-27	$223,711.72	$398,090.85
111	01-Jul-27 / 31-Jul-27	$250,282.60	$535,693.62
112	01-Aug-27 / 31-Aug-27	$223,711.72	$398,090.85
113	01-Sep-27 / 30-Sep-27	$223,711.72	$398,090.85
114	01-Oct-27 / 31-Oct-27	$250,282.60	$535,693.62
115	01-Nov-27 / 30-Nov-27	$223,711.72	$398,090.85
116	01-Dec-27 / 31-Dec-27	$223,711.72	$398,090.85
117	01-Jan-28 / 31-Jan-28	$667,474.98	$1,037,659.70
118	01-Feb-28 / 29-Feb-28	$640,717.49	$900,578.72
119	01-Mar-28 / 31-Mar-28	$640,717.49	$900,578.72
120	01-Apr-28 / 30-Apr-28	$669,144.34	$1,043,328.45
121	01-May-28 / 31-May-28	$640,717.49	$900,578.72
122	01-Jun-28 / 30-Jun-28	$640,717.49	$900,578.72
123	01-Jul-28 / 31-Jul-28	$669,144.34	$1,043,328.45
124	01-Aug-28 / 31-Aug-28	$640,717.49	$900,578.72
125	01-Sep-28 / 30-Sep-28	$640,717.49	$900,578.72
126	01-Oct-28 / 31-Oct-28	$669,144.34	$1,043,328.45
127	01-Nov-28 / 30-Nov-28	$640,717.49	$900,578.72
128	01-Dec-28 / 31-Dec-28	$640,717.49	$900,578.72
129	01-Jan-29 / 31-Jan-29	$527,016.96	$518,277.79
130	01-Feb-29 / 28-Feb-29	$446,803.32	$409,493.31

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COLUMN A	COLUMN B	COLUMN C	COLUMN D
Contract Month *n*	Contract Month *m*	Lifecycle Payment – Stage 1 (in Inflation Base Date prices)	Lifecycle Payment – Stage 2 (in Inflation Base Date prices)
131	01-Mar-29 / 31-Mar-29	$446,803.32	$409,493.31
132	01-Apr-29 / 30-Apr-29	$631,977.21	$457,310.70
133	01-May-29 / 31-May-29	$446,803.32	$409,493.31
134	01-Jun-29 / 30-Jun-29	$446,803.32	$409,493.31
135	01-Jul-29 / 31-Jul-29	$631,977.21	$457,310.70
136	01-Aug-29 / 31-Aug-29	$446,803.32	$409,493.31
137	01-Sep-29 / 30-Sep-29	$446,803.32	$409,493.31
138	01-Oct-29 / 31-Oct-29	$631,977.21	$457,310.70
139	01-Nov-29 / 30-Nov-29	$446,803.32	$409,493.31
140	01-Dec-29 / 31-Dec-29	$446,803.32	$409,493.31
141	01-Jan-30 / 31-Jan-30	$483,955.48	$1,183,355.05
142	01-Feb-30 / 28-Feb-30	$304,121.66	$1,143,161.90
143	01-Mar-30 / 31-Mar-30	$304,121.66	$1,143,161.90
144	01-Apr-30 / 30-Apr-30	$482,308.22	$1,170,439.12
145	01-May-30 / 31-May-30	$304,121.66	$1,143,161.90
146	01-Jun-30 / 30-Jun-30	$304,121.66	$1,143,161.90
147	01-Jul-30 / 31-Jul-30	$482,308.22	$1,170,439.12
148	01-Aug-30 / 31-Aug-30	$304,121.66	$1,143,161.90
149	01-Sep-30 / 30-Sep-30	$304,121.66	$1,143,161.90
150	01-Oct-30 / 31-Oct-30	$482,308.22	$1,170,439.12
151	01-Nov-30 / 30-Nov-30	$304,121.66	$1,143,161.90
152	01-Dec-30 / 31-Dec-30	$304,121.66	$1,143,161.90
153	01-Jan-31 / 31-Jan-31	$615,503.84	$1,138,038.90
154	01-Feb-31 / 28-Feb-31	$443,208.30	$1,089,925.50
155	01-Mar-31 / 31-Mar-31	$443,208.30	$1,089,925.50
156	01-Apr-31 / 30-Apr-31	$612,413.83	$1,181,041.85
157	01-May-31 / 31-May-31	$443,208.30	$1,089,925.50
158	01-Jun-31 / 30-Jun-31	$443,208.30	$1,089,925.50
159	01-Jul-31 / 31-Jul-31	$612,413.83	$1,181,041.85
160	01-Aug-31 / 31-Aug-31	$443,208.30	$1,089,925.50
161	01-Sep-31 / 30-Sep-31	$443,208.30	$1,089,925.50
162	01-Oct-31 / 31-Oct-31	$612,413.83	$1,181,041.85
163	01-Nov-31 / 30-Nov-31	$443,208.30	$1,089,925.50

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COLUMN A	COLUMN B	COLUMN C	COLUMN D
Contract Month *n*	Contract Month *m*	Lifecycle Payment – Stage 1 (in Inflation Base Date prices)	Lifecycle Payment – Stage 2 (in Inflation Base Date prices)
164	01-Dec-31 / 31-Dec-31	$443,208.30	$1,089,925.50
165	01-Jan-32 / 31-Jan-32	$1,158,657.50	$1,796,233.70
166	01-Feb-32 / 29-Feb-32	$1,043,523.35	$1,703,325.41
167	01-Mar-32 / 31-Mar-32	$1,043,523.35	$1,703,325.41
168	01-Apr-32 / 30-Apr-32	$1,058,768.66	$1,804,262.27
169	01-May-32 / 31-May-32	$1,043,523.35	$1,703,325.41
170	01-Jun-32 / 30-Jun-32	$1,043,523.35	$1,703,325.41
171	01-Jul-32 / 31-Jul-32	$1,058,768.66	$1,804,262.27
172	01-Aug-32 / 31-Aug-32	$1,043,523.35	$1,703,325.41
173	01-Sep-32 / 30-Sep-32	$1,043,523.35	$1,703,325.41
174	01-Oct-32 / 31-Oct-32	$1,058,768.66	$1,804,262.27
175	01-Nov-32 / 30-Nov-32	$1,043,523.35	$1,703,325.41
176	01-Dec-32 / 31-Dec-32	$1,043,523.35	$1,703,325.41
177	01-Jan-33 / 31-Jan-33	$777,588.85	$1,582,988.55
178	01-Feb-33 / 28-Feb-33	$763,103.38	$1,486,503.67
179	01-Mar-33 / 31-Mar-33	$763,103.38	$1,486,503.67
180	01-Apr-33 / 30-Apr-33	$776,812.87	$1,579,008.35
181	01-May-33 / 31-May-33	$763,103.38	$1,486,503.67
182	01-Jun-33 / 30-Jun-33	$763,103.38	$1,486,503.67
183	01-Jul-33 / 31-Jul-33	$776,812.87	$1,579,008.35
184	01-Aug-33 / 31-Aug-33	$763,103.38	$1,486,503.67
185	01-Sep-33 / 30-Sep-33	$763,103.38	$1,486,503.67
186	01-Oct-33 / 31-Oct-33	$776,812.87	$1,579,008.35
187	01-Nov-33 / 30-Nov-33	$763,103.38	$1,486,503.67
188	01-Dec-33 / 31-Dec-33	$763,103.38	$1,486,503.67
189	01-Jan-34 / 31-Jan-34	$1,124,972.16	$938,760.70
190	01-Feb-34 / 28-Feb-34	$1,079,272.07	$869,904.46
191	01-Mar-34 / 31-Mar-34	$1,079,272.07	$869,904.46
192	01-Apr-34 / 30-Apr-34	$1,189,622.13	$895,976.22
193	01-May-34 / 31-May-34	$1,079,272.07	$869,904.46
194	01-Jun-34 / 30-Jun-34	$1,079,272.07	$869,904.46
195	01-Jul-34 / 31-Jul-34	$1,189,622.13	$895,976.22
196	01-Aug-34 / 31-Aug-34	$1,079,272.07	$869,904.46

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COLUMN A	COLUMN B	COLUMN C	COLUMN D
Contract Month *n*	Contract Month *m*	Lifecycle Payment – Stage 1 (in Inflation Base Date prices)	Lifecycle Payment – Stage 2 (in Inflation Base Date prices)
197	01-Sep-34 / 30-Sep-34	$1,079,272.07	$869,904.46
198	01-Oct-34 / 31-Oct-34	$1,189,622.13	$895,976.22
199	01-Nov-34 / 30-Nov-34	$1,079,272.07	$869,904.46
200	01-Dec-34 / 31-Dec-34	$1,079,272.07	$869,904.46
201	01-Jan-35 / 31-Jan-35	$901,985.08	$1,226,281.40
202	01-Feb-35 / 28-Feb-35	$786,937.46	$1,206,222.62
203	01-Mar-35 / 31-Mar-35	$786,937.46	$1,206,222.62
204	01-Apr-35 / 30-Apr-35	$916,763.13	$1,215,527.23
205	01-May-35 / 31-May-35	$786,937.46	$1,206,222.62
206	01-Jun-35 / 30-Jun-35	$786,937.46	$1,206,222.62
207	01-Jul-35 / 31-Jul-35	$916,763.13	$1,215,527.23
208	01-Aug-35 / 31-Aug-35	$786,937.46	$1,206,222.62
209	01-Sep-35 / 30-Sep-35	$786,937.46	$1,206,222.62
210	01-Oct-35 / 31-Oct-35	$916,763.13	$1,215,527.23
211	01-Nov-35 / 30-Nov-35	$786,937.46	$1,206,222.62
212	01-Dec-35 / 31-Dec-35	$786,937.46	$1,206,222.62
213	01-Jan-36 / 31-Jan-36	$901,558.41	$768,963.19
214	01-Feb-36 / 29-Feb-36	$774,321.43	$732,956.90
215	01-Mar-36 / 31-Mar-36	$774,321.43	$732,956.90
216	01-Apr-36 / 30-Apr-36	$902,713.99	$822,820.44
217	01-May-36 / 31-May-36	$774,321.43	$732,956.90
218	01-Jun-36 / 30-Jun-36	$774,321.43	$732,956.90
219	01-Jul-36 / 31-Jul-36	$902,713.99	$822,820.44
220	01-Aug-36 / 31-Aug-36	$774,321.43	$732,956.90
221	01-Sep-36 / 30-Sep-36	$774,321.43	$732,956.90
222	01-Oct-36 / 31-Oct-36	$902,713.99	$822,820.44
223	01-Nov-36 / 30-Nov-36	$774,321.43	$732,956.90
224	01-Dec-36 / 31-Dec-36	$774,321.43	$732,956.90
225	01-Jan-37 / 31-Jan-37	$1,466,455.92	$3,013,049.70
226	01-Feb-37 / 28-Feb-37	$1,371,010.88	$2,911,210.69
227	01-Mar-37 / 31-Mar-37	$1,371,010.88	$2,911,210.69
228	01-Apr-37 / 30-Apr-37	$1,406,823.93	$3,041,384.22
229	01-May-37 / 31-May-37	$1,371,010.88	$2,911,210.69

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COLUMN A	COLUMN B	COLUMN C	COLUMN D
Contract Month *n*	Contract Month *m*	Lifecycle Payment – Stage 1 (in Inflation Base Date prices)	Lifecycle Payment – Stage 2 (in Inflation Base Date prices)
230	01-Jun-37 / 30-Jun-37	$1,371,010.88	$2,911,210.69
231	01-Jul-37 / 31-Jul-37	$1,406,823.93	$3,041,384.22
232	01-Aug-37 / 31-Aug-37	$1,371,010.88	$2,911,210.69
233	01-Sep-37 / 30-Sep-37	$1,371,010.88	$2,911,210.69
234	01-Oct-37 / 31-Oct-37	$1,406,823.93	$3,041,384.22
235	01-Nov-37 / 30-Nov-37	$1,371,010.88	$2,911,210.69
236	01-Dec-37 / 31-Dec-37	$1,371,010.88	$2,911,210.69
237	01-Jan-38 / 31-Jan-38	$1,194,064.39	$964,308.23
238	01-Feb-38 / 28-Feb-38	$1,164,036.28	$834,971.82
239	01-Mar-38 / 31-Mar-38	$1,164,036.28	$834,971.82
240	01-Apr-38 / 30-Apr-38	$1,184,241.47	$968,983.92
241	01-May-38 / 31-May-38	$1,164,036.28	$834,971.82
242	01-Jun-38 / 30-Jun-38	$1,164,036.28	$834,971.82
243	01-Jul-38 / 31-Jul-38	$1,184,241.47	$968,983.92
244	01-Aug-38 / 31-Aug-38	$1,164,036.28	$834,971.82
245	01-Sep-38 / 30-Sep-38	$1,164,036.28	$834,971.82
246	01-Oct-38 / 31-Oct-38	$1,184,241.47	$968,983.92
247	01-Nov-38 / 30-Nov-38	$1,164,036.28	$834,971.82
248	01-Dec-38 / 31-Dec-38	$1,164,036.28	$834,971.82
249	01-Jan-39 / 31-Jan-39	$820,107.22	$2,725,932.46
250	01-Feb-39 / 28-Feb-39	$775,161.99	$2,620,061.48
251	01-Mar-39 / 31-Mar-39	$775,161.99	$2,620,061.48
252	01-Apr-39 / 30-Apr-39	$870,572.91	$2,676,187.41
253	01-May-39 / 31-May-39	$775,161.99	$2,620,061.48
254	01-Jun-39 / 30-Jun-39	$775,161.99	$2,620,061.48
255	01-Jul-39 / 31-Jul-39	$870,572.91	$2,676,187.41
256	01-Aug-39 / 31-Aug-39	$775,161.99	$2,620,061.48
257	01-Sep-39 / 30-Sep-39	$775,161.99	$2,620,061.48
258	01-Oct-39 / 31-Oct-39	$870,572.91	$2,676,187.41
259	01-Nov-39 / 30-Nov-39	$775,161.99	$2,620,061.48
260	01-Dec-39 / 31-Dec-39	$775,161.99	$2,620,061.48
261	01-Jan-40 / 31-Jan-40	$956,540.51	$1,299,824.26
262	01-Feb-40 / 29-Feb-40	$835,197.94	$1,256,424.22

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COLUMN A	COLUMN B	COLUMN C	COLUMN D
Contract Month *n*	Contract Month *m*	Lifecycle Payment – Stage 1 (in Inflation Base Date prices)	Lifecycle Payment – Stage 2 (in Inflation Base Date prices)
263	01-Mar-40 / 31-Mar-40	$835,197.94	$1,256,424.22
264	01-Apr-40 / 30-Apr-40	$1,013,058.01	$1,277,110.33
265	01-May-40 / 31-May-40	$835,197.94	$1,256,424.22
266	01-Jun-40 / 30-Jun-40	$835,197.94	$1,256,424.22
267	01-Jul-40 / 31-Jul-40	$1,013,058.01	$1,277,110.33
268	01-Aug-40 / 31-Aug-40	$835,197.94	$1,256,424.22
269	01-Sep-40 / 30-Sep-40	$835,197.94	$1,256,424.22
270	01-Oct-40 / 31-Oct-40	$1,013,058.01	$1,277,110.33
271	01-Nov-40 / 30-Nov-40	$835,197.94	$1,256,424.22
272	01-Dec-40 / 31-Dec-40	$835,197.94	$1,256,424.22
273	01-Jan-41 / 31-Jan-41	$893,566.05	$154,418.70
274	01-Feb-41 / 28-Feb-41	$646,295.05	$115,298.81
275	01-Mar-41 / 31-Mar-41	$646,295.05	$115,298.81
276	01-Apr-41 / 30-Apr-41	$1,041,064.00	$192,295.35
277	01-May-41 / 31-May-41	$646,295.05	$115,298.81
278	01-Jun-41 / 30-Jun-41	$646,295.05	$115,298.81
279	01-Jul-41 / 31-Jul-41	$1,041,064.00	$192,295.35
280	01-Aug-41 / 31-Aug-41	$646,295.05	$115,298.81
281	01-Sep-41 / 30-Sep-41	$646,295.05	$115,298.81
282	01-Oct-41 / 31-Oct-41	$1,041,064.00	$192,295.35
283	01-Nov-41 / 30-Nov-41	$646,295.05	$115,298.81
284	01-Dec-41 / 31-Dec-41	$646,295.05	$115,298.81
285	01-Jan-42 / 31-Jan-42	$661,318.02	$2,297,716.44
286	01-Feb-42 / 28-Feb-42	$250,542.74	$2,144,932.07
287	01-Mar-42 / 31-Mar-42	$250,542.74	$2,144,932.07
288	01-Apr-42 / 30-Apr-42	$712,587.72	$2,453,048.01
289	01-May-42 / 31-May-42	$250,542.74	$2,144,932.07
290	01-Jun-42 / 30-Jun-42	$250,542.74	$2,144,932.07
291	01-Jul-42 / 31-Jul-42	$712,587.72	$2,453,048.01
292	01-Aug-42 / 31-Aug-42	$250,542.74	$2,144,932.07
293	01-Sep-42 / 30-Sep-42	$250,542.74	$2,144,932.07
294	01-Oct-42 / 31-Oct-42	$712,587.72	$2,453,048.01
295	01-Nov-42 / 30-Nov-42	$250,542.74	$2,144,932.07

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COLUMN A	COLUMN B	COLUMN C	COLUMN D
Contract Month *n*	Contract Month *m*	Lifecycle Payment – Stage 1 (in Inflation Base Date prices)	Lifecycle Payment – Stage 2 (in Inflation Base Date prices)
296	01-Dec-42 / 31-Dec-42	$250,542.74	$2,144,932.07
297	01-Jan-43 / 31-Jan-43	$1,056,514.61	$1,436,379.92
298	01-Feb-43 / 28-Feb-43	$481,707.07	$1,091,083.97
299	01-Mar-43 / 31-Mar-43	$481,707.07	$1,091,083.97
300	01-Apr-43 / 30-Apr-43	$1,304,578.52	$1,525,769.98
301	01-May-43 / 31-May-43	$481,707.07	$1,091,083.97
302	01-Jun-43 / 30-Jun-43	$481,707.07	$1,091,083.97
303	01-Jul-43 / 31-Jul-43	$1,304,578.52	$1,525,769.98
304	01-Aug-43 / 31-Aug-43	$481,707.07	$1,091,083.97
305	01-Sep-43 / 30-Sep-43	$481,707.07	$1,091,083.97
306	01-Oct-43 / 31-Oct-43	$1,304,578.52	$1,525,769.98
307	01-Nov-43 / 30-Nov-43	$481,707.07	$1,091,083.97
308	01-Dec-43 / 31-Dec-43	$481,707.07	$1,091,083.97
309	01-Jan-44 / 31-Jan-44	$843,082.03	$2,389,102.63
310	01-Feb-44 / 29-Feb-44	$95,657.95	$1,968,321.11
311	01-Mar-44 / 31-Mar-44	$95,657.95	$1,968,321.11
312	01-Apr-44 / 30-Apr-44	$732,327.38	$2,382,497.86
313	01-May-44 / 31-May-44	$95,657.95	$1,968,321.11
314	01-Jun-44 / 30-Jun-44	$95,657.95	$1,968,321.11
315	01-Jul-44 / 31-Jul-44	$732,327.38	$2,382,497.86
316	01-Aug-44 / 31-Aug-44	$95,657.95	$1,968,321.11
317	01-Sep-44 / 30-Sep-44	$95,657.95	$1,968,321.11
318	01-Oct-44 / 31-Oct-44	$732,327.38	$2,382,497.86
319	01-Nov-44 / 30-Nov-44	$95,657.95	$1,968,321.11
320	01-Dec-44 / 31-Dec-44	$95,657.95	$1,968,321.11
321	01-Jan-45 / 31-Jan-45	$1,326,300.42	$3,269,407.56
322	01-Feb-45 / 28-Feb-45	$752,338.85	$2,929,075.20
323	01-Mar-45 / 31-Mar-45	$752,338.85	$2,929,075.20
324	01-Apr-45 / 30-Apr-45	$1,231,941.76	$3,141,922.52
325	01-May-45 / 31-May-45	$752,338.85	$2,929,075.20
326	01-Jun-45 / 30-Jun-45	$752,338.85	$2,929,075.20
327	01-Jul-45 / 31-Jul-45	$1,231,941.76	$3,123,465.96
328	01-Aug-45 / 31-Aug-45	$752,338.85	$2,929,075.20

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COLUMN A	COLUMN B	COLUMN C	COLUMN D
Contract Month *n*	Contract Month *m*	Lifecycle Payment – Stage 1 (in Inflation Base Date prices)	Lifecycle Payment – Stage 2 (in Inflation Base Date prices)
329	01-Sep-45 / 30-Sep-45	$752,338.85	$2,929,075.20
330	01-Oct-45 / 31-Oct-45	$877,535.41	$3,021,393.84
331	01-Nov-45 / 30-Nov-45	$752,338.85	$2,929,075.20
332	01-Dec-45 / 31-Dec-45	$752,338.85	$2,929,075.20
333	01-Jan-46 / 31-Jan-46	$749,188.61	$1,073,454.67
334	01-Feb-46 / 28-Feb-46	$749,188.61	$1,073,454.67
335	01-Mar-46 / 31-Mar-46	$749,188.61	$1,073,454.67
336	01-Apr-46 / 30-Apr-46	$749,188.61	$1,073,454.67
337	01-May-46 / 31-May-46	$749,188.61	$1,073,454.67
338	01-Jun-46 / 30-Jun-46	$749,188.61	$1,073,454.67
339	01-Jul-46 / 31-Jul-46	$749,188.61	$1,073,454.67
340	01-Aug-46 / 31-Aug-46	$749,188.61	$1,073,454.67
341	01-Sep-46 / 30-Sep-46	$749,188.61	$1,073,454.67
342	01-Oct-46 / 31-Oct-46	$749,188.61	$1,073,454.67
343	01-Nov-46 / 30-Nov-46	$749,188.61	$1,073,454.67
344	01-Dec-46 / 31-Dec-46	$749,188.61	$1,073,454.67
345	01-Jan-47 / 31-Jan-47	$1,341,291.69	$1,315,848.28
346	01-Feb-47 / 28-Feb-47	$1,341,291.69	$1,315,848.28
347	01-Mar-47 / 31-Mar-47	$1,341,291.69	$1,315,848.28
348	01-Apr-47 / 30-Apr-47	$1,341,291.69	$1,315,848.28
349	01-May-47 / 31-May-47	$1,341,291.69	$1,315,848.28
350	01-Jun-47 / 30-Jun-47	$1,341,291.69	$1,315,848.28
351	01-Jul-47 / 31-Jul-47	$1,341,291.69	$1,315,848.28
352	01-Aug-47 / 31-Aug-47	$1,341,291.69	$1,315,848.28
353	01-Sep-47 / 30-Sep-47	$1,341,291.69	$1,315,848.28
354	01-Oct-47 / 31-Oct-47	$1,341,291.69	$1,315,848.28
355	01-Nov-47 / 30-Nov-47	$1,341,291.69	$1,315,848.28
356	01-Dec-47 / 31-Dec-47	$1,341,291.69	$1,315,848.28
357	01-Jan-48 / 31-Jan-48	$685,673.24	$301,601.27
358	01-Feb-48 / 29-Feb-48	$685,673.24	$301,601.27
359	01-Mar-48 / 31-Mar-48	$685,673.24	$301,601.27
360	01-Apr-48 / 30-Apr-48	$685,673.24	$301,601.27
361	01-May-48 / 31-May-48	$685,673.24	$301,601.27

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APPENDIX B: DEDUCTION FACTORS

VEHICLE KILOMETRES AVAILABILITY FAILURE DEDUCTION - TABLE 1 (APPLICABLE TO SERVICE LEVELS 1-3A)

Availability Ratio	Deduction Factor	Availability Ratio	Deduction Factor	Availability Ratio	Deduction Factor
100.0%	0%	94.9%	1.55%	89.8%	8.60%
99.9%	0%	94.8%	1.60%	89.7%	8.90%
99.8%	0%	94.7%	1.65%	89.6%	9.20%
99.7%	0%	94.6%	1.70%	89.5%	9.50%
99.6%	0%	94.5%	1.75%	89.4%	9.80%
99.5%	0%	94.4%	1.80%	89.3%	10.10%
99.4%	0%	94.3%	1.85%	89.2%	10.40%
99.3%	0%	94.2%	1.90%	89.1%	10.70%
99.2%	0%	94.1%	1.95%	89.0%	11.00%
99.1%	0%	94.0%	2.00%	88.9%	11.30%
99.0%	0%	93.9%	2.15%	88.8%	11.60%
98.9%	0%	93.8%	2.30%	88.7%	11.90%
98.8%	0%	93.7%	2.45%	88.6%	12.20%
98.7%	0%	93.6%	2.60%	88.5%	12.50%
98.6%	0%	93.5%	2.75%	88.4%	12.80%
98.5%	0%	93.4%	2.90%	88.3%	13.10%
98.4%	0%	93.3%	3.05%	88.2%	13.40%
98.3%	0%	93.2%	3.20%	88.1%	13.70%
98.2%	0%	93.1%	3.35%	88.0%	14.00%
98.1%	0%	93.0%	3.50%	87.9%	14.50%
98.0%	0%	92.9%	3.65%	87.8%	15.00%
97.9%	0.05%	92.8%	3.80%	87.7%	15.50%
97.8%	0.10%	92.7%	3.95%	87.6%	16.00%
97.7%	0.15%	92.6%	4.10%	87.5%	16.50%
97.6%	0.20%	92.5%	4.25%	87.4%	17.00%
97.5%	0.25%	92.4%	4.40%	87.3%	17.50%
97.4%	0.30%	92.3%	4.55%	87.2%	18.00%
97.3%	0.35%	92.2%	4.70%	87.1%	18.50%
97.2%	0.40%	92.1%	4.85%	87.0%	19.00%
97.1%	0.45%	92.0%	5.00%	86.9%	19.50%
97.0%	0.50%	91.9%	5.15%	86.8%	20.00%
96.9%	0.55%	91.8%	5.30%	86.7%	20.50%
96.8%	0.60%	91.7%	5.45%	86.6%	21.00%
96.7%	0.65%	91.6%	5.60%	86.5%	21.50%
96.6%	0.70%	91.5%	5.75%	86.4%	22.00%
96.5%	0.75%	91.4%	5.90%	86.3%	22.50%
96.4%	0.80%	91.3%	6.05%	86.2%	23.00%
96.3%	0.85%	91.2%	6.20%	86.1%	23.50%
96.2%	0.90%	91.1%	6.35%	86.0%	24.00%
96.1%	0.95%	91.0%	6.50%	85.9%	24.50%
96.0%	1.00%	90.9%	6.65%	85.8%	25.00%
95.9%	1.05%	90.8%	6.80%	85.7%	25.50%
95.8%	1.10%	90.7%	6.95%	85.6%	26.00%
95.7%	1.15%	90.6%	7.10%	85.5%	26.50%
95.6%	1.20%	90.5%	7.25%	85.4%	27.00%
95.5%	1.25%	90.4%	7.40%	85.3%	27.50%
95.4%	1.30%	90.3%	7.55%	85.2%	28.00%
95.3%	1.35%	90.2%	7.70%	85.1%	28.50%
95.2%	1.40%	90.1%	7.85%	85.0%	29.00%
95.1%	1.45%	90.0%	8.00%	84.9%	29.50%
95.0%	1.50%	89.9%	8.30%	84.8%	30.00%

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VEHICLE KILOMETRES AVAILABILITY FAILURE DEDUCTION - TABLE 1 (CONT.)

Availability Ratio	Deduction Factor
84.7%	30.50%
84.6%	31.00%
84.5%	31.50%
84.4%	32.00%
84.3%	32.50%
84.2%	33.00%
84.1%	33.50%
84.0%	34.00%
83.9%	34.50%
83.8%	35.00%
83.7%	35.50%
83.6%	36.00%
83.5%	36.50%
83.4%	37.00%
83.3%	37.50%
83.2%	38.00%
83.1%	38.50%
83.0%	39.00%
82.9%	39.50%
82.8%	40.00%
82.7%	40.50%
82.6%	41.00%
82.5%	41.50%
82.4%	42.00%
82.3%	42.50%
82.2%	43.00%
82.1%	43.50%
82.0%	44.00%
81.9%	44.50%
81.8%	45.00%
81.7%	45.50%
81.6%	46.00%
81.5%	46.50%
81.4%	47.00%
81.3%	47.50%
81.2%	48.00%
81.1%	48.50%
81.0%	49.00%
80.9%	49.50%
80.8%	50.00%
80.7%	50.50%
80.6%	51.00%
80.5%	51.50%
80.4%	52.00%
80.3%	52.50%
80.2%	53.00%
80.1%	53.50%
80.0%	54.00%
79.9%	54.50%
79.8%	55.00%
79.7%	55.50%
79.6%	56.00%
79.5%	56.50%
79.4%	57.00%
79.3%	57.50%
79.2%	58.00%
79.1%	58.50%
79.0%	59.00%
78.9%	59.50%
78.8%	60.00%
78.7%	60.50%
78.6%	61.00%
78.5%	61.50%
78.4%	62.00%
78.3%	62.50%
78.2%	63.00%
78.1%	63.50%
78.0%	64.00%
77.9%	64.50%
77.8%	65.00%
77.7%	65.50%
77.6%	66.00%
77.5%	66.50%
77.4%	67.00%
77.3%	67.50%
77.2%	68.00%
77.1%	68.50%
77.0%	69.00%
76.9%	69.50%
76.8%	70.00%
76.7%	70.50%
76.6%	71.00%
76.5%	71.50%
76.4%	72.00%
76.3%	72.50%
76.2%	73.00%
76.1%	73.50%
76.0%	74.00%
75.9%	74.50%
75.8%	75.00%
75.7%	75.50%
75.6%	76.00%
75.5%	76.50%
75.4%	77.00%
75.3%	77.50%
75.2%	78.00%
75.1%	78.50%
75.0%	79.00%
74.9%	79.50%
74.8%	80.00%
74.7%	80.50%
74.6%	81.00%
74.2%	83.00%
74.1%	83.50%
74.0%	84.00%
73.9%	84.50%
73.8%	85.00%
73.7%	85.50%
73.6%	86.00%
73.5%	86.50%
73.4%	87.00%
73.3%	87.50%
73.2%	88.00%
73.1%	88.50%
73.0%	89.00%
72.9%	89.50%
72.8%	90.00%
72.7%	90.50%
72.6%	91.00%
72.5%	91.50%
72.4%	92.00%
72.3%	92.50%
72.2%	93.00%
72.1%	93.50%
72.0%	94.00%
71.9%	94.50%
71.8%	95.00%
71.7%	95.50%
71.6%	96.00%
71.5%	96.50%
71.4%	97.00%
71.3%	97.50%
71.2%	98.00%
71.1%	98.50%
71.0%	99.00%
70.9%	99.50%
70.8% or below	100.00%

TABLE 2 - VEHICLE KILOMETRES AVAILABILITY FAILURE DEDUCTION (APPLICABLE TO SERVICE LEVELS 4-9)

Availability Ratio	Deduction Factor	Availability Ratio	Deduction Factor	Availability Ratio	Deduction Factor
100.0%	0.00%	**94.9%**	1.55%	**89.8%**	8.60%
99.9%	0.00%	**94.8%**	1.60%	**89.7%**	8.90%
99.8%	0.00%	**94.7%**	1.65%	**89.6%**	9.20%
99.7%	0.00%	**94.6%**	1.70%	**89.5%**	9.50%
99.6%	0.00%	**94.5%**	1.75%	**89.4%**	9.80%
99.5%	0.00%	**94.4%**	1.80%	**89.3%**	10.10%
99.4%	0.00%	**94.3%**	1.85%	**89.2%**	10.40%
99.3%	0.00%	**94.2%**	1.90%	**89.1%**	10.70%
99.2%	0.00%	**94.1%**	1.95%	**89.0%**	11.00%
99.1%	0.00%	**94.0%**	2.00%	**88.9%**	11.30%
99.0%	0.00%	**93.9%**	2.15%	**88.8%**	11.60%
98.9%	0.00%	**93.8%**	2.30%	**88.7%**	11.90%
98.8%	0.00%	**93.7%**	2.45%	**88.6%**	12.20%
98.7%	0.00%	**93.6%**	2.60%	**88.5%**	12.50%
98.6%	0.00%	**93.5%**	2.75%	**88.4%**	12.80%
98.5%	0.00%	**93.4%**	2.90%	**88.3%**	13.10%
98.4%	0.00%	**93.3%**	3.05%	**88.2%**	13.40%
98.3%	0.00%	**93.2%**	3.20%	**88.1%**	13.70%
98.2%	0.00%	**93.1%**	3.35%	**88.0%**	14.00%
98.1%	0.00%	**93.0%**	3.50%	**87.9%**	14.50%
98.0%	0.00%	**92.9%**	3.65%	**87.8%**	15.00%
97.9%	0.07%	**92.8%**	3.80%	**87.7%**	15.50%
97.8%	0.14%	**92.7%**	3.95%	**87.6%**	16.00%
97.7%	0.21%	**92.6%**	4.10%	**87.5%**	16.50%
97.6%	0.28%	**92.5%**	4.25%	**87.4%**	17.00%
97.5%	0.35%	**92.4%**	4.40%	**87.3%**	17.50%
97.4%	0.41%	**92.3%**	4.55%	**87.2%**	18.00%
97.3%	0.48%	**92.2%**	4.70%	**87.1%**	18.50%
97.2%	0.55%	**92.1%**	4.85%	**87.0%**	19.00%
97.1%	0.62%	**92.0%**	5.00%	**86.9%**	19.50%
97.0%	0.69%	**91.9%**	5.15%	**86.8%**	20.00%
96.9%	0.76%	**91.8%**	5.30%	**86.7%**	20.50%
96.8%	0.83%	**91.7%**	5.45%	**86.6%**	21.00%
96.7%	0.90%	**91.6%**	5.60%	**86.5%**	21.50%
96.6%	0.97%	**91.5%**	5.75%	**86.4%**	22.00%
96.5%	1.04%	**91.4%**	5.90%	**86.3%**	22.50%
96.4%	1.07%	**91.3%**	6.05%	**86.2%**	23.00%
96.3%	1.10%	**91.2%**	6.20%	**86.1%**	23.50%
96.2%	1.13%	**91.1%**	6.35%	**86.0%**	24.00%
96.1%	1.16%	**91.0%**	6.50%	**85.9%**	24.50%
96.0%	1.19%	**90.9%**	6.65%	**85.8%**	25.00%
95.9%	1.22%	**90.8%**	6.80%	**85.7%**	25.50%
95.8%	1.25%	**90.7%**	6.95%	**85.6%**	26.00%
95.7%	1.28%	**90.6%**	7.10%	**85.5%**	26.50%
95.6%	1.31%	**90.5%**	7.25%	**85.4%**	27.00%
95.5%	1.35%	**90.4%**	7.40%	**85.3%**	27.50%
95.4%	1.38%	**90.3%**	7.55%	**85.2%**	28.00%
95.3%	1.41%	**90.2%**	7.70%	**85.1%**	28.50%
95.2%	1.44%	**90.1%**	7.85%	**85.0%**	29.00%
95.1%	1.47%	**90.0%**	8.00%	**84.9%**	29.50%
95.0%	1.50%	**89.9%**	8.30%	**84.8%**	30.00%

VEHICLE KILOMETRES AVAILABILITY FAILURE DEDUCTION - TABLE 2 (CONT.)

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Availability Ratio	Deduction Factor
84.7%	30.50%
84.6%	31.00%
84.5%	31.50%
84.4%	32.00%
84.3%	32.50%
84.2%	33.00%
84.1%	33.50%
84.0%	34.00%
83.9%	34.50%
83.8%	35.00%
83.7%	35.50%
83.6%	36.00%
83.5%	36.50%
83.4%	37.00%
83.3%	37.50%
83.2%	38.00%
83.1%	38.50%
83.0%	39.00%
82.9%	39.50%
82.8%	40.00%
82.7%	40.50%
82.6%	41.00%
82.5%	41.50%
82.4%	42.00%
82.3%	42.50%
82.2%	43.00%
82.1%	43.50%
82.0%	44.00%
81.9%	44.50%
81.8%	45.00%
81.7%	45.50%
81.6%	46.00%
81.5%	46.50%
81.4%	47.00%
81.3%	47.50%
81.2%	48.00%
81.1%	48.50%
81.0%	49.00%
80.9%	49.50%
80.8%	50.00%
80.7%	50.50%
80.6%	51.00%
80.5%	51.50%
80.4%	52.00%
80.3%	52.50%
80.2%	53.00%
80.1%	53.50%
80.0%	54.00%
79.9%	54.50%
79.8%	55.00%
79.7%	55.50%

Availability Ratio	Deduction Factor
79.6%	56.00%
79.5%	56.50%
79.4%	57.00%
79.3%	57.50%
79.2%	58.00%
79.1%	58.50%
79.0%	59.00%
78.9%	59.50%
78.8%	60.00%
78.7%	60.50%
78.6%	61.00%
78.5%	61.50%
78.4%	62.00%
78.3%	62.50%
78.2%	63.00%
78.1%	63.50%
78.0%	64.00%
77.9%	64.50%
77.8%	65.00%
77.7%	65.50%
77.6%	66.00%
77.5%	66.50%
77.4%	67.00%
77.3%	67.50%
77.2%	68.00%
77.1%	68.50%
77.0%	69.00%
76.9%	69.50%
76.8%	70.00%
76.7%	70.50%
76.6%	71.00%
76.5%	71.50%
76.4%	72.00%
76.3%	72.50%
76.2%	73.00%
76.1%	73.50%
76.0%	74.00%
75.9%	74.50%
75.8%	75.00%
75.7%	75.50%
75.6%	76.00%
75.5%	76.50%
75.4%	77.00%
75.3%	77.50%
75.2%	78.00%
75.1%	78.50%
75.0%	79.00%
74.9%	79.50%
74.8%	80.00%
74.7%	80.50%
74.6%	81.00%

Availability Ratio	Deduction Factor
74.5%	81.50%
74.4%	82.00%
74.3%	82.50%
74.2%	83.00%
74.1%	83.50%
74.0%	84.00%
73.9%	84.50%
73.8%	85.00%
73.7%	85.50%
73.6%	86.00%
73.5%	86.50%
73.4%	87.00%
73.3%	87.50%
73.2%	88.00%
73.1%	88.50%
73.0%	89.00%
72.9%	89.50%
72.8%	90.00%
72.7%	90.50%
72.6%	91.00%
72.5%	91.50%
72.4%	92.00%
72.3%	92.50%
72.2%	93.00%
72.1%	93.50%
72.0%	94.00%
71.9%	94.50%
71.8%	95.00%
71.7%	95.50%
71.6%	96.00%
71.5%	96.50%
71.4%	97.00%
71.3%	97.50%
71.2%	98.00%
71.1%	98.50%
71.0%	99.00%
70.9%	99.50%
70.8% or below	100.00%

TABLE 3 - STATION AVAILABILITY FAILURE DEDUCTION (APPLICABLE TO SERVICE LEVELS 1-3A)

Availability Ratio	Deduction Factor
100.0%	0.00%
99.9%	0.00%
99.8%	0.00%
99.7%	0.00%
99.6%	0.05%
99.5%	0.10%
99.4%	0.15%
99.3%	0.20%
99.2%	0.25%
99.1%	0.30%
99.0%	0.35%
98.9%	0.40%
98.8%	0.45%
98.7%	0.50%
98.6%	0.55%
98.5%	0.60%
98.4%	0.65%
98.3%	0.70%
98.2%	0.75%
98.1%	0.80%
98.0%	0.90%
97.9%	1.00%
97.8%	1.10%
97.7%	1.20%
97.6%	1.30%
97.5%	1.40%
97.4%	1.50%
97.3%	1.60%
97.2%	1.70%
97.1%	1.80%
97.0%	1.90%
96.9%	2.00%
96.8%	2.10%
96.7%	2.20%
96.6%	2.30%
96.5%	2.40%
96.4%	2.50%
96.3%	2.60%
96.2%	2.70%
96.1%	2.80%
96.0%	2.90%
95.9%	3.05%
95.8%	3.20%
95.7%	3.35%
95.6%	3.50%
95.5%	3.65%
95.4%	3.80%
95.3%	3.95%
95.2%	4.10%
95.1%	4.25%
95.0%	4.40%
94.9%	4.55%
94.8%	4.70%
94.7%	4.85%
94.6%	5.00%
94.5%	5.15%
94.4%	5.30%
94.3%	5.45%
94.2%	5.60%
94.1%	5.75%
94.0%	5.90%
93.9%	6.05%
93.8%	6.20%
93.7%	6.35%
93.6%	6.50%
93.5%	6.65%
93.4%	6.80%
93.3%	6.95%
93.2%	7.10%
93.1%	7.25%
93.0%	7.40%
92.9%	7.55%
92.8%	7.70%
92.7%	7.85%
92.6%	8.00%
92.5%	8.15%
92.4%	8.30%
92.3%	8.45%
92.2%	8.60%
92.1%	8.75%
92.0%	8.90%
91.9%	9.05%
91.8%	9.20%
91.7%	9.35%
91.6%	9.50%
91.5%	9.65%
91.4%	9.80%
91.3%	9.95%
91.2%	10.10%
91.1%	10.25%
91.0%	10.40%
90.9%	10.55%
90.8%	10.70%
90.7%	10.85%
90.6%	11.00%
90.5%	11.15%
90.4%	11.30%
90.3%	11.45%
90.2%	11.60%
90.1%	11.75%
90.0%	11.90%
89.9%	12.10%
89.8%	12.30%
89.7%	12.50%
89.6%	12.70%
89.5%	12.90%
89.4%	13.10%
89.3%	13.30%
89.2%	13.50%
89.1%	13.70%
89.0%	13.90%
88.9%	14.10%
88.8%	14.30%
88.7%	14.50%
88.6%	14.70%
88.5%	14.90%
88.4%	15.10%
88.3%	15.30%
88.2%	15.50%
88.1%	15.70%
88.0%	15.90%
87.9%	16.10%
87.8%	16.30%
87.7%	16.50%
87.6%	16.70%
87.5%	16.90%
87.4%	17.10%
87.3%	17.30%
87.2%	17.50%
87.1%	17.70%
87.0%	17.90%
86.9%	18.10%
86.8%	18.30%
86.7%	18.50%
86.6%	18.70%
86.5%	18.90%
86.4%	19.10%
86.3%	19.30%
86.2%	19.50%
86.1%	19.70%
86.0%	19.90%
85.9%	20.10%
85.8%	20.30%
85.7%	20.50%
85.6%	20.70%
85.5%	20.90%
85.4%	21.10%
85.3%	21.30%
85.2%	21.50%
85.1%	21.70%
85.0% or below	21.90%

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TABLE 4 - STATION AVAILABILITY FAILURE DEDUCTION (APPLICABLE TO SERVICE LEVELS 4-9)

Availability Ratio	Deduction Factor
100.0%	0.00%
99.9%	0.00%
99.8%	0.00%
99.7%	0.00%
99.6%	0.07%
99.5%	0.14%
99.4%	0.21%
99.3%	0.28%
99.2%	0.35%
99.1%	0.41%
99.0%	0.48%
98.9%	0.55%
98.8%	0.62%
98.7%	0.69%
98.6%	0.76%
98.5%	0.83%
98.4%	0.90%
98.3%	0.97%
98.2%	1.04%
98.1%	1.11%
98.0%	1.24%
97.9%	1.31%
97.8%	1.38%
97.7%	1.44%
97.6%	1.51%
97.5%	1.57%
97.4%	1.64%
97.3%	1.70%
97.2%	1.77%
97.1%	1.83%
97.0%	1.90%
96.9%	2.00%
96.8%	2.10%
96.7%	2.20%
96.6%	2.30%
96.5%	2.40%
96.4%	2.50%
96.3%	2.60%
96.2%	2.70%
96.1%	2.80%
96.0%	2.90%
95.9%	3.05%
95.8%	3.20%
95.7%	3.35%
95.6%	3.50%
95.5%	3.65%
95.4%	3.80%
95.3%	3.95%
95.2%	4.10%
95.1%	4.25%
95.0%	4.40%
94.9%	4.55%
94.8%	4.70%
94.7%	4.85%
94.6%	5.00%
94.5%	5.15%
94.4%	5.30%
94.3%	5.45%
94.2%	5.60%
94.1%	5.75%
94.0%	5.90%
93.9%	6.05%
93.8%	6.20%
93.7%	6.35%
93.6%	6.50%
93.5%	6.65%
93.4%	6.80%
93.3%	6.95%
93.2%	7.10%
93.1%	7.25%
93.0%	7.40%
92.9%	7.55%
92.8%	7.70%
92.7%	7.85%
92.6%	8.00%
92.5%	8.15%
92.4%	8.30%
92.3%	8.45%
92.2%	8.60%
92.1%	8.75%
92.0%	8.90%
91.9%	9.05%
91.8%	9.20%
91.7%	9.35%
91.6%	9.50%
91.5%	9.65%
91.4%	9.80%
91.3%	9.95%
91.2%	10.10%
91.1%	10.25%
91.0%	10.40%
90.9%	10.55%
90.8%	10.70%
90.7%	10.85%
90.6%	11.00%
90.5%	11.15%
90.4%	11.30%
90.3%	11.45%
90.2%	11.60%
90.1%	11.75%
90.0%	11.90%
89.9%	12.10%
89.8%	12.30%
89.7%	12.50%
89.6%	12.70%
89.5%	12.90%
89.4%	13.10%
89.3%	13.30%
89.2%	13.50%
89.1%	13.70%
89.0%	13.90%
88.9%	14.10%
88.8%	14.30%
88.7%	14.50%
88.6%	14.70%
88.5%	14.90%
88.4%	15.10%
88.3%	15.30%
88.2%	15.50%
88.1%	15.70%
88.0%	15.90%
87.9%	16.10%
87.8%	16.30%
87.7%	16.50%
87.6%	16.70%
87.5%	16.90%
87.4%	17.10%
87.3%	17.30%
87.2%	17.50%
87.1%	17.70%
87.0%	17.90%
86.9%	18.10%
86.8%	18.30%
86.7%	18.50%
86.6%	18.70%
86.5%	18.90%
86.4%	19.10%
86.3%	19.30%
86.2%	19.50%
86.1%	19.70%
86.0%	19.90%
85.9%	20.10%
85.8%	20.30%
85.7%	20.50%
85.6%	20.70%
85.5%	20.90%
85.4%	21.10%
85.3%	21.30%
85.2%	21.50%
85.1%	21.70%
85.0% or below	21.90%

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APPENDIX C: FAILURE POINTS

Section 1. Failure Points Applicable to Vehicle Kilometres Availability Failures

1.1 Failure Points shall be awarded in each Contract Month based on the Aggregate Vehicle Kilometres Availability Ratio calculated for that Contract Month, in accordance with the table, below.

Aggregate Vehicle Kilometres Availability Ratio for Contract Month *n*	Failure Points Awarded for Contract Month *n*
98.0% and above	0
97.0% - 97.9%	10
96.0% - 96.9%	20
95.0% - 95.9%	30
94.0% - 94.9%	50
93.0% - 93.9%	80
92.0% - 92.9%	120
91.0% - 91.9%	160
90.0% - 90.9%	200
89.0% - 89.9%	240
88.0% - 88.9%	280
87.0% - 87.9%	300
86.0% - 86.9%	340
85.0% - 85.9%	380
Below 84.9%%	420

Section 2. Failure Points Applicable to System Events

2.1 Failure Points shall be awarded in each Contract Month based on any System Events occurring during that Contract Month, in accordance with the table, below. The maximum aggregate amount of Failure Points to be awarded in respect of System Events for any one day shall be 195.

System Event	Failure Points Applied
On any single Weekday during a Contract Month, the Aggregate Vehicle Kilometres Availability Ratio for either (a) morning Peak Period service (06:30 to 09:00) or (b) afternoon Peak Period service (14:45 to 18:00) is less than 88%.	65 per occurrence. For clarity, each Peak Period which fails to meet the 88% service standard shall result in awarding 65 Failure Points, such that Project Co could be awarded 65 Failure Points in respect of morning Peak Period service and a further 65 in respect of afternoon Peak Period service.
On any single day during a Contract Month, the Aggregate Vehicle Kilometres Availability Ratio for that day is less than 90%	65 per occurrence.

Section 3. Failure Points Applicable to Station Availability Failures

3.1 Failure Points shall be awarded in each Contract Month based on the Aggregate Station Availability Ratio calculated for that Contract Month, in accordance with the table, below.

Aggregate Station Availability Ratio for Contract Month *n*	Failure Points Awarded for Contract Month *n*
98.0% - 99.0%	30
97.0% - 97.9%	60
96.0% - 96.9%	90
95.0% - 95.9%	120
94.0% - 94.9%	150
93.0% - 93.9%	180
92.0% - 92.9%	210
91.0% - 91.9%	240

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Aggregate Station Availability Ratio for Contract Month *n*	Failure Points Awarded for Contract Month *n*
90.0% - 90.9%	270
89.0% - 89.9%	300
88.0% - 88.9%	330
87.0% - 87.9%	360
86.0% - 86.9%	390
85.0% - 85.9%	420
Below 84.9%%	450

Section 4. Failure Points Applicable to Quality Failures and Service Failures in respect of Service Levels 1-3:

Category	FPs	Application
Minor Quality Failure	0.5	Per Quality Failure
Medium Quality Failure	1	
Major Quality Failure	3	
Minor Service Failure	0.5	Per Service Failure
Medium Service Failure	1	
Major Service Failure	3	

Section 5. Failure Points Applicable to Quality Failures and Service Failures in respect of Service Levels 3a-9:

Table A - General

Category	FPs	Application
Minor Quality Failure	0.25	Per Quality Failure
Medium Quality Failure	0.75	
Major Quality Failure	2.25	
Minor Service Failure	0.25	Per Service Failure
Medium Service Failure	0.50	
Major Service Failure	1.50	

APPENDIX D: STATION GROUPS

Group 1 Stations	Group 2 Stations	Group 3 Stations
• Tunney's Pasture • Downtown West • Downtown East • Rideau Centre • Hurdman • Blair • Lincoln Fields Station • Baseline Station • Bayshore Station • Moodie Station • Place d'Orleans Station • Trim Station	• Bayview • Campus • St. Laurent • Iris Station • Pinecrest Station • Montreal Road Station • Jeanne d'Arc Station	• Lebreton • Lees • Train Station • Cyrville • Westboro Station • Dominion Station • Cleary Station • New Orchard Station • Queensview Station • Orleans Boulevard Station

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SCHEDULE 27

DISPUTE RESOLUTION PROCEDURE

1. GENERAL

1.1 All disputes, controversies, or claims arising out of or relating to any provision of this Project Agreement, or the alleged wrongful exercise or failure to exercise by a Party of a discretion or power given to that Party under this Project Agreement, or the interpretation, enforceability, performance, breach, termination, or validity of this Project Agreement, including, without limitation, this Schedule 27, or any matter referred to for resolution pursuant to this Schedule 27 (collectively and individually, a "**Dispute**") shall be resolved in accordance with the provisions of this Schedule 27.

1.2 The Parties agree that at all times, both during and after the Project Term, each of them will make bona fide efforts to:

(a) resolve by amicable negotiations any and all Disputes arising between them on a without prejudice basis; and

(b) subject to Section 1A.1, have all Disputes resolved at the lowest level of management before engaging the dispute resolution processes described in Sections 2 to 9 of this Schedule 27.

1.3 If the Parties are unable to resolve a Dispute at the lowest level of management pursuant to Section 1.2(b) of this Schedule 27, either Party may deliver to the City Representative or the Project Co Representative, as applicable, a written notice of dispute (the "**Notice of Dispute**"), which Notice of Dispute shall, subject to the terms of this Schedule 27 requiring resolution of a Dispute pursuant to a specific dispute resolution process set forth in this Schedule 27, initiate the dispute resolution process described in Sections 2 to 9 of this Schedule 27, as applicable, as more particularly described in this Schedule 27. To be effective, the Notice of Dispute must expressly state that it is a notice of dispute, set out the particulars of the matter in dispute, describe the remedy or resolution sought by the Party issuing the Notice of Dispute and be signed by the City Representative, if given by the City, or by the Project Co Representative, if given by Project Co.

1.4 Project Co agrees that any Claims made by it against any other contractors of the City, based (in whole or in part) as a result of any acts or omissions of other contractor(s) shall, in the first instance, be submitted to the City. The City shall then, with the assistance of Project Co, present the claim to the other contractor(s) for resolution under the terms of the applicable contract(s). Project Co has the full responsibility for the preparation of such claims and Project Co shall bear the complete expense of preparing and presenting its claim, including legal fees. Project Co agrees that it will not pursue or will stay any legal proceeding relating to the claim(s) with the exception of initiating legal proceedings to assert any statutory right to a lien under the CLA for a reasonable period of time to allow the City to reach a resolution acceptable to Project Co under the terms of the applicable contract. If such resolution has not been achieved within a reasonable period of time, Project Co may then proceed with any legal proceeding against the other

contractor of the City. Project Co shall proceed diligently with its Highway Work under Schedule 40 to the Project Agreement pending resolution of any such claim or dispute when directed to do so by City.

1A. AUTHORITY OF THE CONSULTANT IN RESPECT OF HIGHWAY WORK AND COVENTRY BRIDGE WORK

1A.1 Subject to the limitation set out in Section 8.2(s) of Schedule 40 – Highway Work, differences between the Parties as to the interpretation, application or administration of Schedule 40 – Highway Work or the Coventry Bridge Work or any other disagreement between the Parties including any disagreement as to any decision, finding or determination by the Consultant with respect to the Highway Work or the Coventry Bridge Work which are not resolved to the mutual satisfaction of the Parties in the first instance by findings of the Consultant subject to and as provided in Section 8.2 of Schedule 40 – Highway Work, shall be settled in accordance with the requirements of this Schedule 27.

1A.2 If the matter in dispute is not resolved promptly, the Consultant will give such instructions as in the Consultant's opinion are necessary for the proper performance of the Highway Work or the Coventry Bridge Work. The Parties shall act immediately according to such instructions, subject to Section 1A.3 of this Schedule 27, it being understood that by so doing neither Party will jeopardize any Claim they may have. If it is subsequently determined that such instructions were in error or at variance with the Contract Documents, Project Co shall be entitled to payment for carrying out such instructions as set out in accordance with a Variation issued by the Consultant in accordance with Schedule 22 – Variation Procedure.

1A.3 As time is of the essence, it is essential that performance of the Highway Work or the Coventry Bridge Work continue notwithstanding any Dispute that pertains in whole or in part to the interpretation, application or administration of Schedule 40 – Highway Work or Section 20.13 of the Project Agreement. In the event the Dispute is referred to an Adjudicator pursuant to Section 6, the Parties shall, notwithstanding Section 1A.2, comply with any decision of the Adjudicator including the payment of any amounts the Adjudicator determines are owing. For greater certainty the Parties will comply with the decision of the Adjudicator notwithstanding any referral of the Dispute to arbitration or to the courts in accordance this Schedule 27, until a final determination of the matter is made by any arbitrator or a court, as the case may be.

1A.4 The provisions of this Section 1A only apply to Disputes which relate in whole or in part to the interpretation, application or administration of Schedule 40 – Highway Work or the Coventry Bridge Work and the performance of the Highway Work or the Coventry Bridge Work.

2. AMICABLE RESOLUTION BY PARTY REPRESENTATIVES

2.1 On receipt of a Notice of Dispute, the City Representative and the Project Co Representative (collectively "**Party Representatives**" and individually "**Party**

Representative") shall each promptly and diligently make all reasonable bona fide efforts to resolve the Dispute. Each Party Representative shall provide to the other, on a without prejudice basis, frank, candid and timely disclosure of relevant facts, information and documents (except such documentation that is subject to legal privilege) as may be required or reasonably requested by the other to facilitate the resolution of the Dispute.

3. AMICABLE RESOLUTION BY SENIOR OFFICERS OF EACH PARTY

3.1 If, following the process referred to in Section 2 of this Schedule 27 (or as otherwise agreed to in writing by the Parties pursuant to Section 13.8 of this Schedule 27), a Dispute is not resolved by the Party Representatives within 10 Business Days after receipt by a Party of the applicable Notice of Dispute, or within such longer period of time as the Party Representatives may both expressly agree, then at any time after the expiry of such period of time either Party Representative may, by notice in writing to the other, refer the Dispute to an executive of a Party who:

(a) is in a position of authority above that of the City Representative or the Project Co Representative, as the case may be; and

(b) subject only to approval of the board of directors or similar governing body of the Party, has full authority to resolve and settle the Dispute.

3.2 Once a Dispute is referred to them, the executive of each Party shall promptly and diligently make all reasonable bona fide efforts to resolve the Dispute. All discussions and negotiations, and all documents exchanged, between them related to the Dispute shall be on a without prejudice basis to facilitate the resolution of the Dispute.

4. INDEPENDENT CERTIFIER

4.1 This Section 4 applies to all Disputes that fall within the description of Section 4.2 of this Schedule 27 that cannot be resolved as provided in Sections 2 and 3 of this Schedule 27 or as otherwise agreed to in writing by the Parties pursuant to Section 13.8 of this Schedule 27. For greater certainty, this Section 4 does not apply to any Disputes to the extent they relate to the interpretation, application or administration of Schedule 40 – Highway Work and the performance of the Highway Work or to any Disputes which shall be resolved pursuant to Section 14 of this Schedule 27.

4.2 All Disputes related to the Design and Construction Works and that:

(a) arise prior to, or otherwise in relation to, any Milestone Acceptance, Substantial Completion or Revenue Service Availability;

(b) relate to completion of Minor Deficiencies;

(c) relate to whether any proposed work constitutes a Variation;

(d) relate to a review of Estimates or any other matters relating to Variations as the Independent Certifier is entitled to review and determine pursuant to Section 39 of the Project Agreement;

(e) are referred to in the Project Agreement for determination by the Independent Certifier; or

(f) relate to the Certification Services or any Certification Service Variations (as those terms are defined in the Independent Certifier Agreement);

shall initially be submitted to the Independent Certifier for independent determination by the Independent Certifier within such period as may be specified in this Project Agreement, or if no period is specified, within 10 Business Days after submission to the Independent Certifier.

4.3 Without limiting any obligations of the Parties under the Independent Certifier Agreement, the Parties shall cooperate with the Independent Certifier and provide such information, records and documents as may be required by the Independent Certifier to make the determination within the period referred to in Section 4.2 of this Schedule 27.

4.4 The Independent Certifier's decision to issue or not to issue a particular Milestone Acceptance Certificate or a Revenue Service Availability Certificate shall be final and binding solely in respect of determining the relevant Milestone Payment Date, and the Revenue Service Availability Payment Date and a Dispute in relation to the relevant Milestone Payment Date or the Revenue Service Availability Payment Date shall not be subject to resolution pursuant to this Schedule 27. Save and except as aforesaid, the Independent Certifier's determinations are not binding on the Parties, and all Disputes in relation to the Independent Certifier's decisions shall be resolved pursuant to this Schedule 27, provided however that Sections 5 and 6 of this Schedule 27 shall not apply unless otherwise agreed by the Parties on terms acceptable to the Parties.

5. EXPERT DETERMINATION

5.1 If, following the process referred to in Section 2 and 3 of this Schedule 27 (or as otherwise agreed to in writing by the Parties pursuant to Section 13.8 of this Schedule 27), any Dispute as to:

(a) whether a Liquid Market exists;

(b) whether amendments proposed by potentially Qualifying Tenders to this Project Agreement or other Project Documents are material;

(c) the Adjusted Highest Qualifying Tender Price; or

(d) the determination of the Estimated Fair Value in accordance with Schedule 23 – Compensation on Termination of this Project Agreement,

has not been resolved within 10 Business Days after the date the Dispute was referred to the executives of the Parties for resolution by them, or within such longer period of time as the executives may expressly agree in writing in respect of a specific Dispute to allow them to continue their efforts to resolve the Dispute, then either Party may at any time thereafter, by written notice signed by their Party Representative and delivered to the other Party Representative, require that the Dispute be resolved on an expedited basis by a qualified and experienced expert (the "**Expert**").

5.2 The Expert shall be appointed as follows:

(a) if the Parties agree on the Expert, the Parties shall jointly appoint the Expert as soon as possible and, in any event, within 5 Business Days after delivery of the notice requiring that the Dispute be resolved by an Expert;

(b) if the Parties fail to agree or jointly appoint the Expert within such 5 Business Day period, either Party may apply to the Ontario Superior Court of Justice for appointment of the Expert, in which case the court shall appoint the Expert at the earliest opportunity from the list of potential Experts submitted by the Parties or, if either or both Parties fail to submit their list of potential Experts within 7 Business Days, the court may appoint such person as the Expert who meets the requirements set out in this Schedule 27 for qualifications and experience of the Expert.

5.3 No one shall be nominated or appointed to act as an Expert who is or was in any way interested, financially or otherwise, in the conduct of the Project Scope or in the business affairs of the City, Project Co, or any consultant, subconsultant or subcontractor of any of them.

5.4 Subject to the matters the Expert is authorized to determine pursuant to Section 5.1 of this Schedule 27, the Expert will be appointed on a Dispute by Dispute basis, with each Expert having the qualifications and experience relevant to the issues in the particular Dispute for which the Expert is appointed.

5.5 The Expert shall determine the appropriate process for timely and cost effective resolution of the Dispute and, without limiting the generality of the foregoing, the Expert has discretion to, among other things:

(a) solicit submissions and documents from both Parties, and impose deadlines for the receipt of such submissions;

(b) require some or all of the evidence to be provided by affidavit;

(c) direct either or both Parties to prepare and provide the Expert with such documents, test results or other things as the Expert may require to assist the Expert in the resolution of the Dispute and rendering of a decision;

(d) require either Party to supply or prepare for examination by the Expert and the other Party, any document or information the Expert considers necessary;

(e) inspect the Project Scope, giving reasonable notice to each Party of the time when, and the place where, the Expert intends to conduct any inspections;

(f) convene meetings of the Parties to have the Parties discuss the issues in Dispute in the presence of the Expert; and

(g) take, or require either or both Parties to take and provide to the Expert, such measurements, perform such tests, audit such processes and procedures, and take any and all such other measures and steps as the Expert considers necessary to make a final determination in the Dispute.

5.6 The Expert shall render a decision as soon as possible and, in any event, shall use all reasonable efforts to render a decision no later than 10 Business Days after the date of the appointment of the Expert, or such longer period of time as agreed to in writing by the Parties. The Expert shall give reasons or a summary of reasons for the Expert's decision.

5.7 The Expert shall keep all information about the Dispute confidential and shall not disclose such information to anyone other than the Parties.

5.8 Each Party shall bear its own costs of the process for resolution of the Dispute by the Expert. In addition, the costs of the Expert shall be borne equally by the Parties.

5.9 Subject to a right to require the Dispute to be arbitrated or litigated pursuant to Sections 7, 8 and 9 of this Schedule 27 by giving the required notices to arbitrate or litigate within the time periods specified therein, the Parties agree that the Expert's determination shall be final and binding on both Parties and not subject to appeal, adjudication, arbitration, litigation or any other dispute resolution process, and both Parties expressly waive all rights of appeal in connection with the Expert's determination. For greater certainty, the final determination by the Expert shall not be referred to an Adjudicator (as defined below) for determination under Section 6 of this Schedule 27.

6. ADJUDICATION

6.1 If, the Parties fail to resolve any Dispute through the process referred to in Section 2 and 3 of this Schedule 27 within 15 Business Days following referral of the Dispute to an executive in accordance with Section 3.1 (or such other period as may be agreed or expressly stipulated in respect of the relevant matter), it is not a Dispute referred to in Sections 4.2 and 5.1 of this Schedule 27 or a Dispute referred to arbitration or litigation pursuant to Sections 4.4 or 5.9 of this Schedule 27 (except as otherwise agreed to in writing by the Parties pursuant to Section 13.8 of this Schedule 27) and it is not a Dispute referred to in Section 14 of this Schedule 27, either Party may refer the Dispute to a single adjudicator selected in accordance with Section 6.2 of this Schedule 27 (the "**Adjudicator**").

6.2 The Adjudicator nominated by the Party issuing the Notice of Dispute shall be agreed between the Parties or, failing agreement, shall be determined by the Ontario Superior Court of Justice (following an application thereto by the Party issuing the Notice of Dispute) and shall:

(a) be independent of and at arm's length to Project Co, the City, the Lenders and any other person having an interest in the System, the Highway or any of the Project Documents; and

(b) if the Dispute arises during the Project Term, be familiar with the construction, operation and management of heavy civil transportation projects; and

(c) be a person who has the qualifications and experience with respect to the particular issues in Dispute.

6.3 The Adjudicator shall resolve the Dispute in accordance with the United Kingdom Construction Industry Council's *Model Adjudication Procedure* the terms of which are incorporated herein by reference, subject to the following modifications:

(a) within 7 Business Days of appointment in relation to a particular Dispute, the Adjudicator shall require the Parties to submit in writing their respective arguments; provided that, where necessary, the onus of proving that the System is operating in accordance with all relevant specifications and requirements set forth in the Project Agreement is on Project Co. The Adjudicator shall, in his Discretion, determine the procedure of the adjudication proceedings including without limitation, whether a hearing is necessary in order to resolve the Dispute;

(b) in any event, and subject to Section 6.4 of this Schedule 27, the Adjudicator shall provide to both Parties his written decision on the Dispute, within 10 Business Days of appointment (or within such other period as the Parties may agree after the reference). The Adjudicator shall give detailed reasons for the Adjudicator's decision. The Adjudicator shall be entitled to award compensation to a Party and shall be entitled to state the relief for such Party, which may include deeming the occurrence of any Relief Event, Delay Event, Compensation Event and/or Excusing Cause provided that such determination is, however, without prejudice to the City's rights with respect to the use of the Schedule Cushion. Unless otherwise provided for in this Schedule 27, the Adjudicator's decision shall be binding on the Parties, but not final;

(c) the Adjudicator's costs, including any legal fees, of any reference shall be borne as the Adjudicator shall specify or in default, equally by the Parties. In no circumstances shall the Adjudicator be entitled to order a successful or partially successful Party in an adjudication to pay more than one half of the Adjudicator's fees. Each Party shall bear its own costs arising out of the reference, including legal costs and the costs and expenses of any witnesses;

(d) the Adjudicator shall be deemed not to be an arbitrator but shall render his decision as an expert and the provisions of the *Arbitration Act* (Ontario) and the law relating to arbitration shall not apply to the Adjudicator or his determination or the procedure by which he reached his determination;

(e) the Adjudicator shall act impartially and may take the initiative in ascertaining the facts and the law. Unless otherwise expressly provided in this Project Agreement,

the Adjudicator shall have the power to open up, review and revise any opinion, certificate, instruction, determination or decision of whatever nature given under this Project Agreement. For greater certainty, the Independent Certifier's decision to issue or not to issue a particular Milestone Acceptance Certificate or a Revenue Service Availability Certificate shall be final and binding solely in respect of determining the relevant Milestone Payment Date or the Revenue Service Availability Payment Date, and the Consultant's decision to issue or not to issue the Highway Substantial Completion Certificate shall be final and binding solely in respect of determining the Highway Milestone Payment Date, as applicable, and a Dispute in relation to any Milestone Payment Date, including the Highway Milestone Payment Date, or the Revenue Service Availability Payment Date shall not be subject to resolution pursuant to this Schedule 27;

(f) the Adjudicator shall execute a non-disclosure agreement (the "**Non-Disclosure Agreement**") in a form satisfactory to the Parties, providing that, among other things, all information, data and documentation disclosed or delivered by a Party to the Adjudicator in consequence of or in connection with his appointment as the Adjudicator shall be treated as confidential and without prejudice to any potential litigation proceedings. The Adjudicator shall not, save except as expressly permitted by the Non-Disclosure Agreement, disclose to any person any such information, data or documentation, and all such information, data or documentation shall remain the property of the Party disclosing or delivering the same and all copies shall be returned to such Party on completion of the Adjudicator's mandate with respect to the Dispute; and

(g) the Adjudicator shall not be liable for anything done or omitted to be done in the discharge or purported discharge of his functions as Adjudicator unless the act or omission is in bad faith. Any employee or agent of the Adjudicator is similarly protected from liability.

6.4 Where it is determined by the Adjudicator that:

(a) corrective measures must be taken by Project Co to resolve a Dispute, those measures must be implemented by Project Co as soon as reasonably practical, without payment by the City unless (i) the Adjudicator determines otherwise; or (ii) that determination is subsequently reversed by a binding and final determination made in a court proceeding;

(b) corrective measures are not required to be taken by Project Co to resolve a Dispute, the City may, at its option, require corrective measures to be taken forthwith by Project Co, in which case those measures must be implemented by Project Co as soon as reasonably practical provided that the City undertakes to pay Project Co for Direct Costs, plus reasonable overhead and profit incurred by Project Co as such costs are so incurred; provided that no such costs should exceed the amount Project Co is entitled to receive pursuant to Schedule 22 – Variation Procedure thereby incurred upon completion of those corrective measures, but any such undertaking and payment shall be without prejudice to the

City's right to contest the determination made by the Adjudicator in a subsequent proceeding. The City shall provide Project Co such reasonable extensions of time in respect of Project Co's obligations under this Agreement necessary to allow Project Co to effect the corrective measures and such extension of time may be treated as a Delay Event or an Excusing Cause, as applicable, if so determined by the Adjudicator.

6.5 Subject to a right to require the Dispute to be arbitrated or litigated pursuant to Sections 7, 8 and 9 of this Schedule 27 by giving the required notices to arbitrate or litigate within the time periods specified therein, the Parties agree that the Adjudicator's determination is final and binding and not subject to appeal, arbitration, litigation or any other dispute resolution process, and both Parties expressly waive all rights of appeal in connection with the Adjudicator's determination.

7. REFERRAL OF DISPUTES TO ARBITRATION OR LITIGATION

7.1 If:

(a) the amount awarded by the Expert to a Party pursuant to Section 5 of this Schedule 27 or by the Adjudicator pursuant to Section 6 of this Schedule 27 is more than **$500,000** (index linked) in the aggregate or **$150,000** (index linked) in any one year;

(b) the Dispute involves issues other than monetary claims by one Party against the other Party and which a Party reasonably believes are material and significant to that Party; or

(c) a Notice of Dispute has been issued for a Dispute in relation to the Independent Certifier's decisions for which Section 4.4 of this Schedule 27 provides that Sections 5 and 6 of this Schedule 27 shall not apply to resolve such Dispute,

then, subject to the right of a Party to require litigation of the Dispute pursuant to Section 9.1 of this Schedule 27 or a consolidation of proceedings pursuant to Section 11 of this Schedule 27, either Party may, by written notice signed by their Party Representative, request that the Dispute be resolved by arbitration pursuant to Section 8 of this Schedule 27 upon the written consent of the other Party. Such notice will not be effective unless it indicates it is a notice to arbitrate, is signed by the Party Representative and is delivered to the other Party Representative within 15 Business Days after receipt of the Expert's determination, the Adjudicator's decision or the Notice of Dispute referred to in Section 7.1(c) of this Schedule 27, as applicable, and provided further that such notice expressly identifies the specific Dispute and determination of the Expert, decision of the Adjudicator or the Independent Certifier, or finding of the Consultant, subject to and as provided in Section 8.2 of Schedule 40 – Highway Work, as applicable, that is to be the subject of the arbitration.

7.2 If a Party is entitled to refer a Dispute to which Sections 5 or 6 of this Schedule 27 apply to arbitration or litigation pursuant to Sections 7.1 or 9.1 of this Schedule 27 then, unless the Parties otherwise expressly agree in writing, all information, documents and

submissions prepared by a Party for the Expert or the Adjudicator which are not business records that would otherwise be kept in the normal course of business by the Party for its business purposes, and all decisions and determinations by the Expert or the Adjudicator, shall be confidential and inadmissible in any arbitration or litigation proceeding. For greater certainty, neither the Expert nor the Adjudicator shall be called as a witness by either party in any arbitration or litigation proceeding.

8. RESOLUTION BY ARBITRATION

8.1 Upon the mutual written consent of the Parties,

(a) where the Parties fail to resolve a Dispute through the process set out in Sections 2, 3, 4, 5 and 6 (to the extent required) of this Schedule 27;

(b) all other requirements set out in this Schedule 27 have been satisfied; and

(c) it is not a Dispute to which Section 14 of this Schedule 27 applies,

such Dispute may be referred to arbitration in accordance with the *Arbitration Act, 1991* (Ontario) and this Section.

8.2 Disputes referred to arbitration shall be resolved by a single arbitrator unless one of the Parties, by notice in writing delivered to the other Party within 5 Business Days after a notice to arbitrate pursuant to Section 7.1 of this Schedule 27 has been delivered, expressly requires that the Dispute that is the subject of that notice to arbitrate be resolved by a three person arbitration tribunal, in which case that particular Dispute shall be resolved by a three person arbitration tribunal.

8.3 If the arbitration tribunal is comprised of a single arbitrator, the arbitrator shall be appointed as follows:

(a) if the Parties agree on the arbitrator, the Parties shall jointly appoint the arbitrator as soon as possible and in any event within 5 Business Days after delivery of the notice to arbitrate pursuant to Section 7 of this Schedule 27; and

(b) if the Parties fail to agree or jointly appoint the arbitrator within such 5 Business Day period, either Party may apply to the Ontario Superior Court of Justice for appointment of the arbitrator, in which case the court shall appoint the arbitrator at the earliest opportunity in accordance with the following:

(i) from the lists of potential arbitrators submitted to the court by the Parties, provided that potential arbitrators meeting the necessary qualifications and experience set out in this Schedule 27 are on the list; or

(ii) if one Party fails to submit its list of potential arbitrators to the court within 5 Business Days of a request from the court to submit a list, from the list submitted by the other Party provided that potential arbitrators

meeting the necessary qualifications and experience set out in this Schedule 27 are on the list of that other Party; or

(iii) if no list is submitted by either Party, or if the list or lists submitted do not include potential arbitrators with the necessary qualifications and experience, the court shall be entitled at its Discretion to appoint anyone who meets the requirements set out in this Schedule 27 for the qualifications and experience of the arbitrator.

8.4 If the arbitration tribunal is comprised of three arbitrators:

(a) the arbitrators shall be appointed as follows:

(i) each Party shall appoint one arbitrator no later than 5 Business Days after delivery of the notice to arbitrate pursuant to Section 7 of this Schedule 27;

(ii) if a Party fails to appoint an arbitrator within 5 Business Days after delivery of the notice to arbitrate, the other Party is entitled to apply to the Ontario Superior Court of Justice to appoint that arbitrator, in which case the court shall appoint that arbitrator at the earliest opportunity using a comparable process to that described in Section 8.3(b) of this Schedule 27;

(iii) the arbitrators appointed in accordance with the foregoing shall, within 5 Business Days after their appointment, jointly appoint a third arbitrator who shall also act as the chair of the arbitration tribunal and who, in addition to all other required qualifications, shall have experience in arbitration or judicial processes and procedures; and

(iv) if the two arbitrators appointed by the Parties fail to appoint a third arbitrator within the required time, either of the other two arbitrators may apply to the Ontario Superior Court of Justice for appointment of the third arbitrator, in which case the court shall appoint the third arbitrator at the earliest opportunity using a comparable process to that described in Section 8.3(b) of this Schedule 27; and

(b) the arbitrators appointed by the Parties shall at all times be neutral and act impartially and shall not act as advocates for the interests of the Party who appointed them.

8.5 All arbitrators must have qualifications and experience relevant to the issues in the Dispute and also have qualifications and experience as arbitrators.

8.6 No one shall be nominated or appointed to act as an arbitrator who is or was in any way interested, financially or otherwise, in the conduct of the Project Scope or in the business affairs of the City, Project Co, or any consultant, subconsultant or subcontractor of any of them.

8.7 The arbitrator(s) shall have the jurisdiction and power to:

(a) amend or vary any and all rules under the *Arbitration Act, 1991* (Ontario), including rules relating to time limits, either by express agreement of the Parties or, failing such agreement, as the arbitrator(s) consider appropriate and necessary in the circumstances to resolve the Dispute and render an award;

(b) require some or all of the evidence to be provided by affidavit;

(c) hold a hearing at which evidence and submissions are presented by the Parties;

(d) direct either or both Parties to prepare and provide the arbitrator(s) with such documents, test results or other things as the arbitrator(s) may require to assist them in the resolution of the Dispute and rendering of an award;

(e) require either Party to supply or prepare for examination by the arbitrator(s) and the other Party, any document or information the arbitrator(s) considers necessary;

(f) inspect the Project Scope, giving reasonable notice to each Party of the time when, and the place where, the arbitrator(s) intend(s) to conduct any inspections;

(g) award any remedy or relief that a court or judge of the Ontario Superior Court of Justice could order or grant subject to and in accordance with this Project Agreement, including, without limitation, interim orders, interim and permanent injunctions, and specific performance; and

(h) require either or both Parties to take and provide to the arbitrator(s) such measurements, perform such tests, perform such audits, or take any and all such other measures or steps as the arbitrator(s) consider necessary or desirable to aid them in making a fair and reasonable award.

8.8 The place of arbitration shall be Ottawa, Ontario. The language of the arbitration shall be English.

8.9 The costs of an arbitration are in the discretion of the arbitrator(s) who, in addition to any jurisdiction and authority under Applicable Law to award costs, has the jurisdiction and authority to make an order for costs on such basis as the arbitrator(s) considers appropriate in the circumstances, including to award actual legal fees and disbursements and expert witness fees, and to specify or order any or all of the following:

(a) the Party entitled to costs;

(b) the Party who must pay the costs;

(c) the amount of the costs or how that amount is to be determined; and

(d) how all or part of the costs must be paid.

8.10 In exercising discretion to award costs, however, the arbitrator(s) will take into account the desire of the Parties that costs should generally be awarded to each Party in proportion to the relative success that each Party has in the arbitration.

8.11 The award of the arbitrator(s) shall be final and binding upon both Parties, and both Parties expressly waive all rights of appeal in connection with the award of the arbitrator(s). Judgment may be entered upon the award in accordance with Applicable Law in any court having jurisdiction.

8.12 The Parties agree to and shall co-operate fully with the arbitrator(s) and proceed with the arbitration expeditiously, including in respect of any hearing, in order that an award may be rendered as soon as practicable by the arbitrator(s), given the nature of the Dispute. The arbitrator(s) shall render a decision as soon as possible and, in any event, shall use all reasonable efforts to render a decision no later than 20 Business Days after the date of the hearing, or such longer period of time as agreed to in writing by the Parties. If the arbitration tribunal is comprised of three arbitrators, the decision of a majority of the arbitration tribunal shall be deemed to be the decision of the arbitration tribunal, and where there is no majority decision, the decision of the chair of the arbitration tribunal shall be deemed to be the decision of the arbitration tribunal.

8.13 This Project Agreement, including this Schedule 27, constitutes an agreement to arbitrate that shall be specifically enforceable.

8.14 Any arbitrator appointed pursuant to this Section 8 of this Schedule 27 shall keep all information about the Dispute confidential and shall not disclose such information to anyone other than the Parties.

9. LITIGATION

9.1 Notwithstanding that a notice to arbitrate has been delivered pursuant to Section 7.1 of this Schedule 27, following receipt of the Expert's award or determination pursuant to Section 5 of this Schedule 27, or of the Adjudicator's award or determination pursuant to Section 6 of this Schedule 27, or if applicable a Notice of Dispute has been issued following receipt of a decision of the Independent Certifier if the Dispute is a Dispute in relation to the Independent Certifier's decisions for which Section 4.4 of this Schedule 27 provides that Sections 5 and 6 of this Schedule 27 shall not apply, if one or more of the following apply then either Party may elect, by written notice signed by their Party Representative, to require that the Dispute be referred to and resolved solely by litigation in the Ontario Superior Court of Justice, and both Parties agree to attorn to the exclusive jurisdiction of the courts of the Province of Ontario in respect of the Dispute:

(a) if the actual or potential total value or amount at issue in the Dispute (as determined by adding all claims and counterclaims) is more than **$500,000** (index linked) in the aggregate or **$150,000** (index linked) in any one year;

(b) if the Dispute concerns a Party's right to terminate the Project Agreement pursuant to the provisions of the Project Agreement or the validity of the Project Agreement; however, for greater certainty, any Dispute respecting compensation

arising out of Termination may be resolved by the process set out in Sections 5, 6 or 7 of this Schedule 27, as applicable; and/or

(c) it is not a Dispute to which Section 14 of this Schedule 27 applies.

Such notice will not be effective unless it indicates it is a notice to submit the Dispute to litigation, is signed by the Party Representative and is delivered to the other Party Representative within 15 Business Days after receipt of the Expert's determination, the Adjudicator's determination, or the Notice of Dispute referred to in Section 7.1(c) of this Schedule 27, as applicable, and provided further that such notice expressly identifies the specific Dispute and determination of the Adjudicator, Expert or Independent Certifier, or finding of the Consultant, subject to and as provided in Section 8.2 of Schedule 40 – Highway Work, as applicable, that is to be the subject of the litigation.

9.2 If neither Party delivers a notice of election to resolve a particular Dispute by litigation in the manner and within the time specified in Section 9.1 of this Schedule 27, then:

(a) provided that one Party has, in the manner and within the time period specified in Section 7.1 of this Schedule 27, given notice to the other Party of election to resolve that Dispute by arbitration, and subject to a consolidation of proceedings pursuant to Section 11 of this Schedule 27, that Dispute shall be resolved only by arbitration pursuant to Sections 8.2.2 to 8.14 of this Schedule 27; and

(b) subject to Section 9.2(a), where a Dispute was determined by the Expert, the Expert's determination is final and binding on both Parties and not subject to appeal, arbitration, litigation or any other dispute resolution process.

10. CONSOLIDATION OF PROJECT AGREEMENT ADJUDICATION, ARBITRATION AND LITIGATION

10.1 For all Disputes that arise in respect of any Milestone Acceptance or Substantial Completion prior to Revenue Service Availability or in respect of the entire System prior to Revenue Service Availability, unless:

(a) both Parties otherwise agree; or

(b) the issue in a particular Dispute arises in connection with the Review Procedure; or

(c) the issue in a particular Dispute is such that waiting until after a particular Milestone Acceptance, Substantial Completion or Revenue Service Availability as applicable, to resolve that Dispute will cause irreparable harm to one of the Parties; or

(d) the issue in a particular Dispute arises in connection with requirements of achieving or deficiencies in not achieving any Milestone Acceptance, Substantial Completion or Revenue Service Availability, as applicable; or

(e) in respect to a particular Dispute, the Dispute is consolidated with Third Party Disputes (as hereinafter defined) pursuant to Section 11 of this Schedule 27,

all adjudication, arbitral and litigation proceedings between the Parties prior to any Milestone Acceptance, Substantial Completion or Revenue Service Availability, as applicable, shall be stayed and consolidated into, as applicable, a single adjudication, arbitration and a single litigation proceeding, with the adjudication, arbitration and, if applicable, litigation, proceeding promptly and expeditiously after the applicable Milestone Acceptance, Substantial Completion or Revenue Service Availability, as applicable.

11. CONSOLIDATION WITH THIRD PARTY DISPUTES

11.1 Subject to Section 11.4 of this Schedule 27, if either Party is involved in an arbitration in the Province of Ontario with a third party ("**Third Party Arbitration**"), and if such Third Party Arbitration involves common factual or legal issues (including common issues of damages) which are also the subject of a Dispute between the Parties for which a Notice of Dispute has been given, then any arbitration of the Dispute between the Parties which includes those common factual, legal or damages issues ("**Project Agreement Arbitration**") shall be stayed, consolidated or joined with the Third Party Arbitration(s) but only if the City, Project Co and the other parties all agree or, failing their agreement, if a court in the Province of Ontario on application considers it just and convenient in all the circumstances that the Project Agreement Arbitration should be stayed or consolidated or joined with the Third Party Arbitration.

11.2 Subject to Section 11.4 of this Schedule 27, if either Party is involved in litigation in the Province of Ontario with a third party ("**Third Party Litigation**") and if:

(a) such Third Party Litigation involves common factual or legal issues (including common issues of damages) which are the subject of a Project Agreement Arbitration; and

(b) one of the Parties is brought directly into the Third Party Litigation as a party to that litigation,

then on the application of either Party to the court in the Province of Ontario having jurisdiction the court may, if it determines that it is just and convenient in all the circumstances, order a stay of either or both the Project Agreement Arbitration proceeding and Third Party Litigation, or order a joinder of the Project Agreement Arbitration and the Third Party Litigation. If such joinder is ordered, the Project Agreement Arbitration and the Third Party Litigation ordered to be joined by the court shall be determined by that court or by another court in Ontario such that the Project Agreement Arbitration and the Third Party Litigation shall be resolved in one forum. For purposes of the foregoing, joinder of the Project Agreement Arbitration and the Third Party Litigation shall be construed to include stays and conditional stays of issues in the Project Agreement Arbitration pending the commencement and completion of third party proceedings by one or both of the Parties in the Third Party Litigation.

11.3 In considering whether to order a stay, consolidation or joinder of a Project Agreement Arbitration with a Third Party Arbitration or Third Party Litigation, the court will be entitled to give substantial weight to the desire by the Parties that all Disputes which are related to Third Party Arbitration or Third Party Litigation be resolved in a single forum to avoid multiplicity of proceedings and the potential for contradictory findings of fact, liability and quantum, and to ensure the arbitrator or court has the advantage of obtaining full evidence and disclosure from the Parties and from the other parties, as applicable and as required to resolve the Dispute and to make findings of fact, liability and quantum of damages and awards or judgments binding on the Parties based on all available evidence.

11.4 Sections 11.1 and 11.2 of this Schedule 27 only apply:

(a) if the Dispute between the Parties includes a claim by one Party against the other for contribution or indemnity for that Party's liability or potential liability to the third party where such liability results or will result from an award in the Third Party Arbitration or a judgment in the Third Party Litigation; and

(b) to those specific issues that are common issues in the Project Agreement Arbitration, the Third Party Arbitration and the Third Party Litigation, such that all other issues in the Dispute shall continue to be resolved by Project Agreement Arbitration and shall not be consolidated with the Third Party Arbitration or Third Party Litigation.

12. INTENTIONALLY DELETED

13. MISCELLANEOUS

13.1 Project Co and the City shall diligently carry out their respective obligations under this Project Agreement during the pendency of any Disputes, including, without limitation, adjudication proceedings, arbitration proceedings or litigation proceedings. If during the pendency of any Dispute it is considered necessary by either Party to proceed in respect of the matter that is in Dispute, then without prejudice to Project Co's rights in respect of the Dispute (including in respect of Delay Events, Compensation Events and Variations), Project Co shall proceed in accordance with the direction of the City, and in the event the matter in dispute is determined in favour of Project Co, then, to the extent that such Dispute affects the System, proceeding in accordance with the City's position (i) prior to Revenue Service Availability shall, subject to and in accordance with Section 40 of this Project Agreement, be treated as a Delay Event and, subject to and in accordance with Section 41 of this Project Agreement, be treated as a Compensation Event, and (ii) following Revenue Service Availability shall, subject to and in accordance with Schedule 22 – Variation Procedure, result in a Variation. For greater certainty, in respect of any Dispute relating to the Works referred to in Section 4.2 of this Schedule 27, the Independent Certifier shall be the decision maker of first instance and the Parties shall comply with the initial decision of the Independent Certifier unless and until it is overturned in a subsequent arbitration or litigation proceeding. This Section 13.1 shall not apply to Disputes in respect of the interpretation, application or administration of

Schedule 40 – Highway Work and the performance of the Highway Work and to any Dispute to which Section 14 of this Schedule 27 applies.

13.2 Nothing contained in this Schedule 27 will prevent the Parties from seeking interim protection from the courts of the Province of Ontario, including seeking an interlocutory injunction where available pursuant to Applicable Law, if necessary to prevent irreparable harm to a Party.

13.3 The Parties shall indemnify each other in respect of any damages suffered or incurred on amounts agreed to be paid pursuant to resolution of a Dispute by the Party Representatives or by the executives of the Parties pursuant to Sections 2 and 3 of this Schedule 27 and on the amount of any award or judgment as follows:

(a) for amounts payable by Project Co to the City, Project Co shall indemnify the City as provided for at Section 56.1(e) of this Project Agreement from and against any damages suffered or incurred resulting from any overpayment to Project Co or, as applicable, any underpayment or non-payment by Project Co from the date of any overpayment to Project Co or, as applicable, from the date on which payment was due under this Project Agreement to the City until the date of payment; or

(b) for amounts payable by the City to Project Co, the City shall indemnify Project Co as provided for at Section 56.2(c) of this Project Agreement from and against any damages suffered or incurred resulting from any overpayment to the City or, as applicable, any underpayment or non-payment by the City from the date of any overpayment to the City or, as applicable, from the date on which payment was due under this Project Agreement to Project Co until the date of payment.

13.4 Project Co shall ensure that any and all documents and other information in the possession or control of any Project Co Party that are available to Project Co and that may be necessary for the resolution of a Dispute on an informed basis by the Party Representatives or by the executives of the Parties pursuant to Sections 2 and 3 of this Schedule 27, or by an expert, an adjudicator, an arbitrator or court of competent jurisdiction, are made available in a timely manner to the City and the City Representative.

13.5 The City shall ensure that any and all documents and other information in the possession or control of any the City Party that are available to the City and that may be necessary for the resolution of a Dispute on an informed basis by the Party Representatives or by the executives of the Parties pursuant to Sections 2 and 3 of this Schedule 27, or by an adjudicator, an arbitrator or court of competent jurisdiction, are made available in a timely manner to Project Co and the Project Co Representative.

13.6 This Schedule 27 shall survive the expiration or termination of the Project Agreement for any reason.

13.7 The Parties agree that the *Municipal Arbitration Act* R.S.O. 1990, cM.48 shall have no application to the Project Agreement or this Schedule.

13.8 The Parties can, by written agreement, on a Dispute by Dispute basis:

(a) extend any or all timelines set out in this Schedule 27;

(b) agree to waive or by-pass any one or more of the Dispute resolution processes in Sections 2, 3, 4, 5 and 6 of this Schedule 27 and, instead, proceed directly to resolution of the Dispute by arbitration or litigation pursuant to Sections 7, 8 and 9 of this Schedule 27;

(c) agree to (i) resolve a Dispute by litigation rather than adjudication or arbitration notwithstanding the requirements of Section 6 and Section 8 of this Schedule 27, or (ii) agree to resolve a Dispute by arbitration rather than adjudication or litigation notwithstanding the requirements of Section 6 and Section 9 of this Schedule 27, or (iii) agree to resolve a Dispute by adjudication rather than arbitration or litigation notwithstanding the requirements of Section 8 and Section 9 of this Schedule 27; and

(d) agree to resolve a Dispute relating to the decision of an Expert by adjudication, arbitration or litigation, notwithstanding the provisions of Section 5 of this Schedule 27.

13.9 The Parties agree to copy the Consultant on all notices given hereunder that relate at least in part to the Highway Work or the interpretation, application or administration of Schedule 40 – Highway Work.

14. CANADIAN CONTENT

14.1 If, following the process referred to in Section 2 and 3 of this Schedule 27 (or as otherwise agreed to in writing by the Parties pursuant to Section 13.8 of this Schedule 27), any Dispute as to the interpretation, application or administration the Canadian Content Policy in respect of the Project Agreement has not been resolved, such Dispute shall be subject to this Section 14.

14.2 All Disputes to which this Section 14 applies shall be submitted:

(a) to an executive of the City who is in a position of authority above that of the Person selected in Section 3.1 of this Schedule 27 and, subject only to approval of City Council, if applicable, has full authority to resolve the Dispute; or

(b) if there is no such Person as is identified in Section 14.2(a) of this Schedule 27 either, to the Mayor of the City,

for determination within 30 Business Days after submission to the Person identified in Section 14.2 of this Schedule 27.

14.3 Project Co shall cooperate with the Person identified in Section 14.2 of this Schedule 27 and provide such information, records and documents as may be required by it to make the determination within the period referred to in Section 14.2 of this Schedule 27.

14.4 A determination made by the Person identified in Section 14.2 of this Schedule 27 shall be final and binding and not subject to appeal, adjudication, arbitration, litigation or any other dispute resolution process, and both Parties expressly waive all rights of appeal in connection with the Person's determination.

14.5 Notwithstanding the foregoing, where the Person identified in Section 14.2 of this Schedule 27 determines in its Discretion that it has received clear and unambiguous direction from the MTO in respect of the interpretation, application or administration of the Canadian Content Policy for this Project Agreement on a Dispute under this Section 14, and such direction is received prior to it having made a determination pursuant to this Section 14, then the City shall forthwith implement such direction under this Project Agreement.

This is Exhibit "B" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

Transportation Master Plan



November 2013

Building a Liveable Ottawa 2031

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1. Introduction

Building a Liveable Ottawa 2031 has set out a process to guide the completion of a five-year update of the City's Official Plan, Transportation Master Plan, Infrastructure Master Plan, Cycling Plan and Pedestrian Plan. The process supports Council's vision of a sustainable, resilient and liveable Ottawa. It incorporates the City's goals for economic prosperity, environmental and social well-being, vibrant culture and identity. Transportation is essential to meet these goals because it both accommodates and helps shape growth.

The 2013 Transportation Master Plan (TMP) builds on the work of previous plans carried out in 2003 and 2008. It is the City's blueprint for planning, developing and operating its walking, cycling, transit and road networks over the next two decades. Key areas of focus for the current plan include integrating the concept of complete streets, updating modal share targets, advancing strategies to improve walking and cycling, and supporting transit-oriented development. The plan also identifies a number of modifications to road and transit infrastructure priorities to account for adjustments in growth patterns, emerging issues and strategic opportunities. More so than in previous plans, the current TMP places a strong emphasis on the concept of affordability, including prioritizing projects based on financial criteria and fiscal constraints.

Exhibit 1.1 The City of Ottawa



The TMP identifies transportation facilities and services that will meet the needs of residents and businesses, and support the development policies of the City's *Official Plan*. The actions and policies in the TMP will guide day-to-day transportation programs and provide a basis for future capital and operating budgets; they will remain flexible over time as Council's intentions and priorities evolve. The intention of the TMP is not to address all the details of Ottawa's highly complex transportation system; rather, where possible, it directs readers to supporting plans and strategies, such as the *Ottawa Pedestrian Plan* and *Ottawa Cycling Plan*, that provide additional information on specific functional or geographic areas.

1.1 What's Inside

Chapter 1: Introduction shows how this TMP supports the City's overall principles for growth management, presents a transportation vision for 2031, explains how this Plan should be interpreted and how it will be updated, and comments on the environmental assessment status of its various components.

Chapter 2: Transportation in Ottawa – Today and Tomorrow gives an overview of today's transportation system and the key trends and factors that influence it, then provides facts and figures on expected future changes in land use and demographics, travel behaviour and transportation system performance.

Chapter 3: Create a Supportive Built Environment addresses how the City will shape land use to support its transportation objectives through planning tools, development around rapid transit stations, and parking management.

Chapter 4: Maximize Walkability identifies the City's approach to expanding its pedestrian network in response to evolving travel patterns, thereby creating more supportive environments for walking, improving pedestrian safety and promoting walking.

Chapter 5: Develop a Great Cycling City discusses how the City will strengthen and expand its cycling facility network, make cycling a part of more multimodal trips, expand supportive parking facilities for bicycles, improve cyclist safety and promote cycling.

Chapter 6: Transform Ottawa's Transit System describes how the City will expand Ottawa's rapid transit and transit priority network and more tightly integrate stations into the urban fabric, in order to attract even higher levels of ridership.

Chapter 7: Provide Safe and Efficient Roads addresses the importance of complete streets, identifies how the road network will expand while making it safer and more efficient to move people and goods, and lastly describes ways that the City will work to reduce the impact of roads and traffic on neighbourhoods and the environment.

Chapter 8: Encourage Sustainable Mobility Choices describes how the City will work to help residents make more sustainable travel choices such as active transportation, transit and carpooling, through measures like incentives, promotion and management of public parking.

Chapter 9: Invest Responsibly identifies the affordability framework of this Plan, the overall implementation costs by mode and phase, the City's approach to reducing asset life cycle costs, and a framework for measuring performance.

Annex A: Infrastructure Projects lists the road, rapid transit and transit priority projects that the City requires to fully implement this Plan.

Annex B: Maps contains eleven maps identifying future transportation infrastructure needs for pedestrians, cycling, transit, and roads.

Annex C: Glossary defines key terms.

1.2 Key Themes for 2013 Update

Early in the *Building a Liveable Ottawa 2031* planning process, the City consulted with residents and key stakeholders about a number of critical issues, and about possible policy directions. Each of the following transportation-related issues led this Plan to contain significant differences from the 2008 TMP:

- *Affordability* – This update will focus on the need to limit growth in automobile use, the use of peak period (rather than peak hour) road capacity to plan future infrastructure, the prioritization of capital projects, the use of best practices in establishing capital project estimates, and limiting future investments to those that are reasonably affordable for the City to fund
- *Safe and efficient transportation infrastructure* – The Plan puts emphasis on road safety for all users, transportation system management tools that maximize people-moving rather than vehicle-moving capacity to make better use of transportation infrastructure, and parking management
- *Sustainable transportation* – The 2013 TMP proposes new targets for travel behaviour (e.g. mode shares), and suggests incentives for changing to sustainable modes, and discusses user-pay approaches
- *Complete streets* – The Plan pursues an integrated approach that provides safety, comfort and convenience for all road users throughout the day and not only during the peak hours
- *Active transportation* – This update focuses on future goals and objectives, principles for facility safety and attractiveness, measuring levels of service, sidewalk requirements, and considerations around different types of cycling facilities
- *Public transit* – The plan refines the rapid transit and transit priority networks, and defines operational performance measures for rapid transit and transit priority corridors
- *Transit-oriented development* – This update outlines the benefits of growth near rapid transit stations, and discusses strategies to encourage and guide transit-oriented development

1.3 Building a Liveable Ottawa 2031

Building a Liveable Ottawa 2031 is the process that the City has followed to complete a five-year update of its *Official Plan*, *Transportation Master Plan*, *Infrastructure Master Plan*, *Ottawa Cycling Plan* and *Ottawa Pedestrian Plan*. The process supports Council's vision of a sustainable, resilient and liveable Ottawa, as expressed through a number of goals in the City's *Strategic Plan*. These goals guide planning and decision-making so that they take into account their long-term impacts on Ottawa's economic prosperity, environment, and social well-being, culture and identity. Exhibit 1.2 identifies some ways in which this Plan directly supports those sustainability goals.

Exhibit 1.2 TMP Support for the Sustainability Goals of the City's *Strategic Plan*

Sustainability Goal	TMP Directions
Health and Quality of Life	
All residents enjoy a high quality of life and contribute to community well-being	• Maximizing transportation options for residents of all ages and abilities • Maximizing access to community services and facilities by walking, cycling and transit • Managing traffic volumes and speeds in residential neighbourhoods • Improving road safety
Economic Prosperity	
Economic prosperity supports local people, community well-being, and ecological health	• Supporting a vibrant downtown by preserving transportation access with a focus on walking, cycling and transit • Helping businesses and institutions remain accessible to clients and patrons, including those from outside Ottawa • Helping employers remain competitive by improving travel choices for commuters • Linking community cores and employment areas with rapid transit • Managing public parking to support local businesses • Enabling the efficient movement of goods and services • Reducing public and private costs by promoting efficient modes of transportation

Exhibit 1.2 TMP Support for the Sustainability Goals of the City's *Strategic Plan*

Sustainability Goal	TMP Directions
Culture and Identity	
Cultural vitality and diversity contribute to the City's strong identity	• Acknowledging the different transportation needs of urban and rural areas • Providing a range of travel options to suit different cultures and lifestyles
Biodiversity and Ecosystem Health	
Ecosystems are healthy, protected and support biodiversity	• Reducing impacts of transportation on air, water and land
Governance and Decision-Making	
Decision-making is open, informed and inclusive	• Monitoring progress toward transportation objectives • Consulting with stakeholders in the implementation of projects and programs • Preserving flexibility in actions and policies to reflect changes in Council's intentions and priorities
Climate Change	
The region adapts to a changing climate	• Maintaining guidelines for infrastructure design and operation that reflect best practices
Energy	
Energy is used efficiently and supplied from green, renewable sources	• Maximizing the use of more energy-efficient modes (walking, cycling, public transit and carpooling) • Converting the core rapid transit network to electric propulsion
Connectivity and Mobility	
Walking, cycling and transit are residents' first choices for transportation	• Providing comprehensive, high-quality facilities and services for walking, cycling and public transit • Using transportation demand management and supply management to make travel by walking, cycling and transit more attractive • Promoting active transportation as a component of healthy lifestyles
Materials and Solid Waste	
Waste is reduced towards zero	• Asset management strategies to minimize life cycle costs will reduce waste from construction, operation and renewal

Exhibit 1.2 TMP Support for the Sustainability Goals of the City's *Strategic Plan*

Sustainability Goal	TMP Directions
Water and Wastewater	
Water resources are cherished, conserved and protected	• Recognizing the importance of water resources when planning infrastructure
Housing	
Housing options are green, healthy and meet the needs of the whole community	• Maximizing travel choice in a range of neighbourhoods to support housing choice and aging in place
Food and Agriculture	
The local food system is sustainable and provides residents with healthy and affordable food	• Acknowledging the link between sustainable transportation and other components of a sustainable lifestyle

1.4 Transportation Vision

Ottawa's 2008 Transportation Master Plan included a transportation vision that expressed how a future transportation system would benefit residents. That vision has been maintained in this TMP with a few minor modifications (see Exhibit 1.3). The transportation vision continues to recognize that transportation is a means to an end—namely, the protection and improvement of quality of life for residents. It is intended to be a lasting expression of critical directions and outcomes—what the City wishes to achieve through transportation, and why. The remainder of the Transportation Master Plan details the when, where and how of specific projects or services that are intended to lead toward the vision.

Exhibit 1.3 Transportation Vision

In 2031, Ottawa's transportation system will enhance our quality of life by supporting social, environmental and economic sustainability in an accountable and responsive manner.

Element	Principles
Elements 1 to 6: Support for social, environmental and economic sustainability	
1. Reduce automobile dependence	• Give priority to public transit in accommodating future travel demand • Make walking and cycling more attractive than driving for short trips • Motivate sustainable travel choices through education, promotion, incentives and disincentives • Encourage shorter trips and travel alternatives like telework
2. Meet mobility needs	• Provide an integrated system of multimodal facilities and services • Aim to provide an acceptable level of service for each mode • Balance mobility and accessibility needs in higher and lower density areas • Balance the needs of public transit customers, pedestrians, cyclists and motor vehicle users when resolving conflicts • Provide barrier-free transportation facilities and services
3. Integrate transportation and land use	• Build communities that are accessible by active transportation • Provide rapid transit and other quality transit services to community cores and employment areas • Foster transit-oriented development in transit nodes and corridors • Support intensification where transit, walking and cycling can be made most attractive • Foster a vibrant downtown by improving transit, walking and cycling access • Recognize the distinct transportation needs of rural communities
4. Protect public health and safety	• Give priority to safety and security when planning, designing and operating transportation systems • Promote safe walking, cycling and driving through education, engineering and enforcement • Support active and healthy living by promoting walking, cycling and transit for daily travel • Minimize the community impacts of truck and automobile traffic • Minimize air pollution from transportation sources
5. Protect the environment	• Minimize the need for new infrastructure through transportation demand management programs • Minimize transportation energy use, greenhouse gas emissions and other impacts on air, water and land • Maximize greening within transportation rights of way

Exhibit 1.3 Transportation Vision

In 2031, Ottawa's transportation system will enhance our quality of life by supporting social, environmental and economic sustainability in an accountable and responsive manner.

Element	Principles
6. Enhance the economy	• Maximize access to businesses and institutions by employees, clients and visitors • Support efficient freight movement to, from and within the City • Respect Council's taxation targets
Elements 7 to 12: Accountability and responsiveness	
7. Deliver cost-effective services	• Make the best possible use of existing facilities before adding new infrastructure • Integrate the consideration of life cycle capital and operating costs into decision-making processes • Support appropriate roles for the private sector in delivering infrastructure and services
8. Measure performance	• Identify transportation performance objectives and indicators • Regularly measure and evaluate performance • Integrate performance evaluation results by adapting transportation plans and strategies
9. Protect the public interest	• Encourage public input and informed decision making by reporting on transportation activities and results and providing opportunities for dialogue • Consult with the public when planning budgets, programs and projects
10. Provide adequate and equitable funding	• Seek and/or establish funding sources that are stable and predictable
11. Cooperate with other governments	• Liaise with provincial and federal governments to align plans and policies, and to attract financial, legislative and regulatory assistance • Work with the National Capital Commission, Ontario Ministry of Transportation, Ministère des transports du Québec, City of Gatineau and other adjacent municipalities to develop balanced solutions
12. Lead by example	• Minimize energy use and environmental impacts of City transportation facilities, fleets, operations and services • Foster walking, cycling and transit use by employees and visitors to City facilities • Forge constructive partnerships with the private sector, institutions and community organizations

Exhibit 1.4 summarizes how Chapters 3 through 9 of this Plan (i.e. those that identify guiding policies and future actions) support the 12 elements of the transportation vision, as expressed the previous exhibit.

Exhibit 1.4 TMP Chapters: Support for the Transportation Vision

Transportation Vision Elements	Strength of Support ●Major •Minor						
	Chapter 3: Create a Supportive Built Environment	Chapter 4: Maximize Walkability	Chapter 5: Develop a Great Cycling City	Chapter 6: Transform Ottawa's Transit System	Chapter 7: Provide Safe and Efficient Roads	Chapter 8: Encourage Sustainable Mobility Choices	Chapter 9: Invest Responsibly
Support for social, environmental and economic sustainability							
1. Reduce automobile dependence	●	●	●	●	•	●	•
2. Meet mobility needs	●	●	●	●	●	●	•
3. Integrate transportation and land use	●	●	•	●	●	•	•
4. Protect public health and safety	•	●	●	•	●	•	•
5. Protect the environment	•	•	•	•	●	•	•
6. Enhance the economy	•	•	•	•	●	●	•
Accountability and responsiveness							
7. Deliver cost-effective services	•	•	•	•	●	●	●
8. Measure performance	•	•	•	•	•	•	●
9. Protect the public interest	•	•	•	•	•	•	●
10. Provide adequate and equitable funding	•	•	•	•	•	•	●
11. Cooperate with other governments	•	•	•	•	●	●	●
12. Lead by example	•	•	•	•	•	●	•

1.5 Interpreting and Updating this Plan

This Plan represents Council's stated intentions, and will guide day-to-day transportation decisions. It will come to life through mechanisms such as:

- Development charge by-law studies and updates, and annual budgets that identify priorities and resources for a range of transportation programs
- Strategies and action plans for individual transportation programs that detail undertakings, timeframes and resource needs
- Environmental assessment processes to obtain provincial or federal consent for projects like rapid transit systems, major roads and bridges
- Community design plans and transit-oriented development plans for areas designated in the *Official Plan*
- Guidelines such as those for design specifications or operational procedures

As time passes, changes in the assumptions behind this Plan's policies and actions—such as the pace, location or magnitude of residential, commercial and institutional development—may require adjustments to the plan and its elements, including the nature and timing of transportation facilities and services. It is important to note that the phasing of infrastructure projects recommended in this Plan is structured by time horizons; however, it is population and employment levels and traveller preferences that determine transportation needs, rather than the simple passage of time. The indicated time horizon must therefore be viewed as approximate and subject to change. Other possible external factors that could influence implementation include changes to the City of Gatineau's land use or transportation systems, changes to provincial or federal transportation facilities, ongoing technological advances, changes in travel behaviour, or changes in national or international circumstances.

The City will update this Plan when it undertakes a review of the *Official Plan*, an event required by the Province within five years of an *Official Plan* or comprehensive amendment coming into effect. In the intervening period, Council decisions on transportation issues will effectively amend, override or elaborate some of the TMP's intentions. For this reason, readers must consider this Plan in conjunction with the record of subsequent Council decisions, in order to fully grasp current City transportation policy at any given point in time.

1.6 Environmental Assessment

Environmental assessment (EA) legislation requires the City to identify and mitigate the impacts of transportation construction projects on all aspects of the environment. All projects identified in the TMP are subject to various EA legislation and processes:

- Ontario Environmental Assessment Act, 1990
- Ontario Regulation 231/08 - Transit Project Assessment Process, 2008
- Municipal Engineers Association Municipal Class Environmental Assessment, October 2000 (Class EA) as amended in 2007, 2011 and 2013
- *Canadian Environmental Assessment Act*, 2012 (CEAA)
- National Capital Commission (NCC) Framework for the Harmonization of EAs, which applies to projects affecting Commission lands and fulfills the requirements of both CEAA and the NCC's Environmental Assessment Policy

Provincial legislation requires roadway modification projects to follow the Class EA process. All major road projects remain subject to a requirement to complete a Class EA or Individual EA if one has not yet been completed. Transit infrastructure is subject to the provisions of O.Reg. 231/08 and, if not considered exempt under this regulation, must follow the Transit Project Assessment Process. A transit project may proceed under the Class EA if the City chooses to use this process and provides required notification to the Ontario Ministry of the Environment. However, any project involving federal land is subject to the requirements of the CEAA.

The update of the TMP has followed the Municipal Class EA Master Plan process thereby fulfilling the requirements of Phases I and II of this EA process for roads, which includes the identification of problems and opportunities, and the selection of preferred solutions. Annex A includes a description of the EA status of the identified road and rapid transit infrastructure projects. The TMP and its background technical reports will become supporting documents for future EA work. Projects that have not completed the EA process will require additional work including public and stakeholder consultation before design and construction can proceed. As discussed in Section 7.7, future EA processes will make reference to a study undertaken jointly by the City and NCC on the cumulative effects of transportation infrastructure on the Greenbelt.

2. Transportation in Ottawa – Today and Tomorrow

2.1 Transportation System Overview

The City. The City of Ottawa is the largest municipality in the National Capital Region (NCR). Urban development covers 10% of its 2,760 square kilometres, while the remainder is rural and contains villages, agricultural lands, woodlands, wetlands and valleylands. Ottawa was home to about 923,000 people in 2011, while the City of Gatineau and its surrounding rural area, across the Ottawa River in the Province of Quebec, were home to 314,500 people. The NCR is the fourth-most populous metropolitan area in Canada after Toronto, Montréal and Vancouver.

Jurisdictional scope. Ottawa's transportation system lies within three government jurisdictions, each of which has specific interests with respect to the planning, design, construction and maintenance of its own facilities. Most of the road, transit and pathway networks are owned and maintained by the City, but major intercity highways (Highways 416, 417 and 7) are the responsibility of the provincial government, and the NCC's roads and multi-use pathways as well as five interprovincial road bridges are under federal jurisdiction. The city is also served by a taxi industry, one international airport, three general aviation airports, two passenger railway stations, an intercity bus terminal, two ferries and a freight rail yard.

Transportation features. The City is responsible for a multimodal transportation system with facilities and services for walking, cycling, public transit, roads and parking:

- About 6,000 kilometres of roads, including 1,400 km of arterials, 4,600 km of collectors, local streets and a freeway
- About 1,890 km of sidewalks and 340 km of on-road bicycle lanes;
- City operated off-street parking lots with 2,824 spaces, and 3,965 paid on-street parking spaces
- 936 standard, articulated and double-decker buses, a Transitway system (with 57 stations, 35.4 km of dedicated busway, 4.5 km of arterial road bus lanes, 12.7 km of freeway shoulder bus lanes, and 14 urban park-and-ride lots with 7,254 parking spaces) and the O-Train rail line (8 km long with five stations)

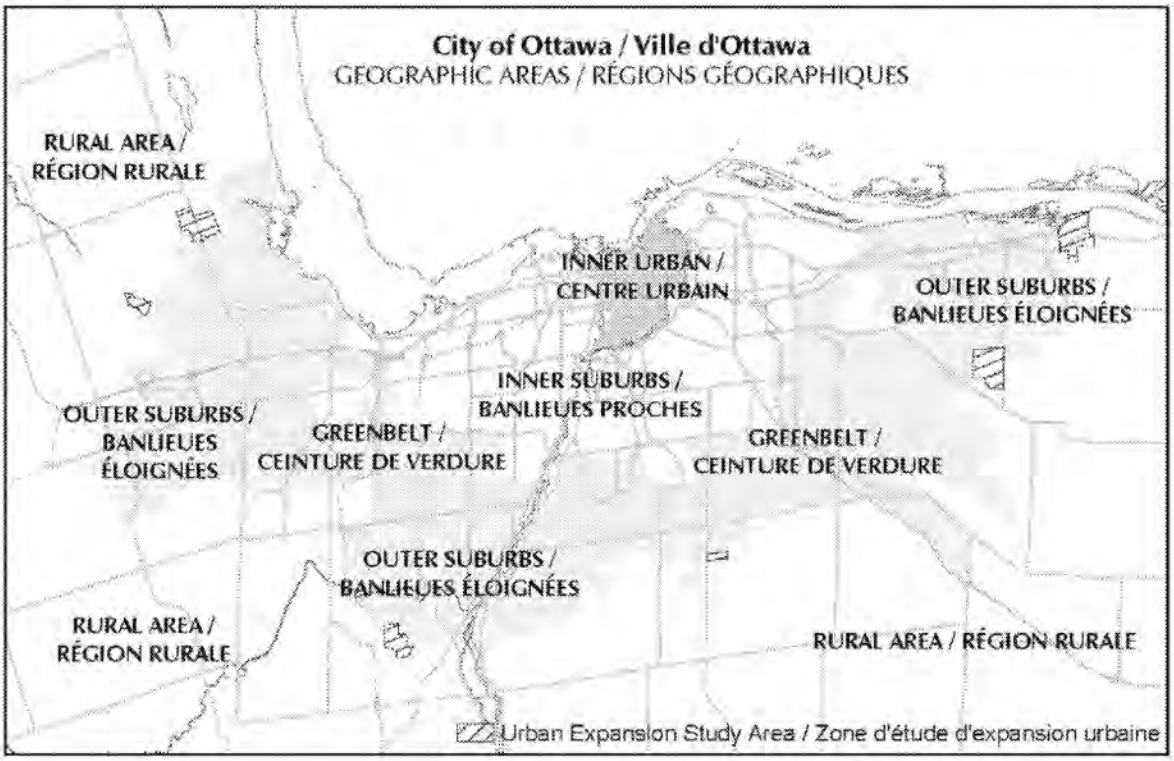
- 89 lift-operated minibuses and 80 contracted taxi vehicles (50 sedans and 30 accessible vans) providing specialized transit service for persons with disabilities

It is worth noting that OC Transpo, Ottawa's transit service, provides some service to and from the City of Gatineau across the Ottawa River, and that the Société de transport de l'Outaouais (STO) as well as other transit services in adjacent Ontario municipalities provide some service to and from Ottawa.

Exhibit 2.1 illustrates some of the key geographic terms used in this chapter, namely:

- *Inner Area* – Ottawa's downtown core and its adjacent neighbourhoods, bounded by the Ottawa River, Rideau River and O-Train line
- *Inner Suburbs* – the remaining urban area inside the Greenbelt, but outside the Inner Area
- *Outer Suburbs* – Ottawa's urban areas lying outside the Greenbelt, including the communities of Kanata/Stittsville, South Nepean, Riverside South/Leitrim, and Orléans

Exhibit 2.1 Location of Inner Area, Inner Suburbs and Outer Suburbs

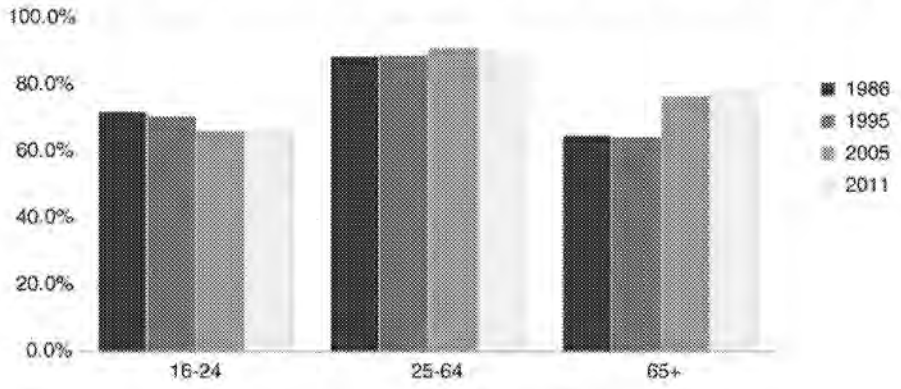


2.2 Key Travel Trends and Influences

Since 1986, four major household travel surveys in the National Capital Region have collected information on residents' daily trips, choice of travel mode, trip origins and destinations, and other information. The latest survey in the fall of 2011 collected data on 153,000 trips from 25,000 households in the region (a 5% sample). These travel surveys help the City understand when, where, why and how National Capital Region residents get around. This section identifies some key trends over the last 25 years.

Personal access to an automobile. Individuals who own a car are far more likely to use it to travel than they are to use another mode. Ottawa residents owned 508,000 vehicles in 2011, up from 482,000 in 2005. However, between 2005 and 2011, the average number of vehicles per household decreased from 1.39 to 1.34, and the proportion of households that owned at least one vehicle decreased from 87% to 84%. Exhibit 2.2 shows that while the overall proportion of residents with a driver's licence has been relatively constant since 1986, the likelihood of having a licence is decreasing among young adults and increasing among seniors.

Exhibit 2.2 Residents Holding a Driver's Licence (% by age)



Travel within suburban communities. Communities that have a good balance between homes, jobs, schools, shopping and recreation typically have high rates of trip internalization—that is, a high proportion of all trips that begin in the community also end there. Exhibit 2.3 shows the rate of trip internalization for suburban communities outside of the Greenbelt in 2005 and 2011 for the AM peak period (6:30–8:59 AM), as

well as the percentage of trips leaving the community and the percentage of those arriving from elsewhere. The data show a marked increase in the rate of trip internalization for all suburban communities, while the rates of trips departing or arriving have decreased. This is indicative of the fact that Ottawa's suburban communities are maturing—they are becoming less reliant on Ottawa's older communities for employment, education, retail service and recreation opportunities.

Exhibit 2.3 Internal, Departing and Arriving Trip Rates (% of all trips to/from the community in the morning peak period)

Community	Trips staying in the community		Trips departing the community		Trips arriving in the community	
	2005	2011	2005	2011	2005	2011
Kanata/Stittsville	36%	42%	37%	36%	28%	22%
South Nepean	25%	36%	61%	51%	14%	13%
Riverside South/Leitrim	5%	26%	68%	52%	27%	22%
Orléans	36%	41%	50%	48%	14%	12%

Trip lengths. Exhibit 2.4 illustrates the number of daily trips of varying lengths that Ottawa residents make using different modes of travel. The average trip lengths are 10.7 km for automobile drivers, 9.1 km for automobile passengers, 13.4 km for transit customers, 5.1 km for cyclists, and 1.3 km for pedestrians. The exhibit shows that many auto driver and passenger trips are shorter than 2 km (which is often cited as a practical distance limit for many walking trips), and that an even more substantial number are shorter than 4 km (i.e. the average length of cycling trips). This confirms that the objective of attracting more pedestrians and cyclists is feasible, assuming that suitable facilities are in place.

Travel by different modes – overall. Ottawa residents' choice of travel mode is one of the most important aspects of travel behaviour. Exhibit 2.5 presents the morning peak period and 24-hour shares of travel using the five main travel modes in Ottawa in 2005 and 2011. During the morning peak period, the sustainable mode share (i.e. walking, cycling, transit and automobile passenger) decreased slightly (from 45.7% to 45.3%) due to declines in walking and automobile passengers. However, on a 24-hour basis the sustainable mode share increased slightly (from 41.5% to 42.1%) due to growing transit and cycling travel.

Exhibit 2.4 Trip Volumes by Length and Mode (2011, morning peak period)

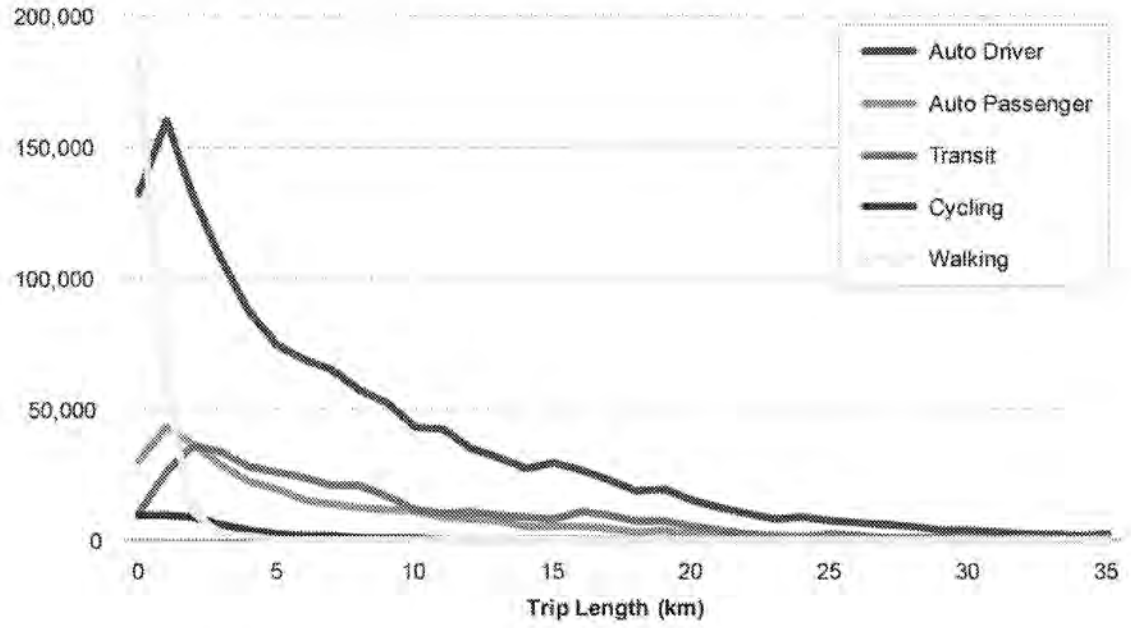
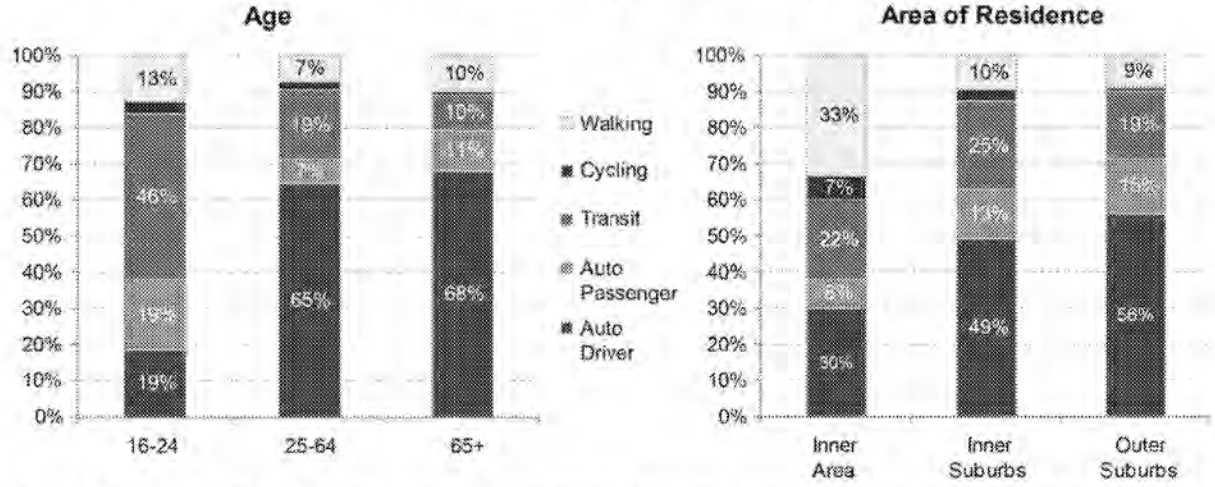


Exhibit 2.5 Mode Shares in 2005 and 2011

Travel mode	Morning peak period		24-hour	
	2005	2011	2005	2011
Walking	9.9%	9.5%	11.4%	11.0%
Cycling	1.9%	2.7%	1.5%	2.0%
Transit	22.4%	22.4%	15.0%	15.5%
Automobile passenger	11.5%	10.7%	13.6%	13.6%
Subtotal	*45.7%*	*45.3%*	*41.5%*	*42.1%*
Automobile driver	54.3%	54.6%	58.6%	57.9%
Total	***100.0%***	***100.0%***	***100.0%***	***100.0%***

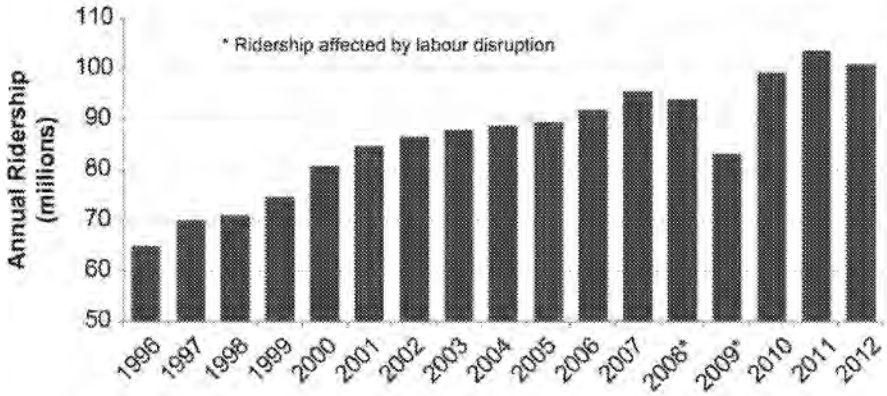
Travel by different modes – by age and area. Exhibit 2.6 shows how mode shares varied by the age and home location of residents in 2011. Younger adults are far less likely than others to drive, possibly because they lack the financial means to own a car, they live in areas where driving is less convenient, or they are more conscious of the environmental impacts of car use. Residents of Ottawa's Inner Area are also much less likely than other residents to travel by car—in fact, they have the same rate of car use (38%) in the morning peak period as young adults aged 16 to 24 across Ottawa.
An interesting note is that residents of Inner Suburbs are more likely to travel by transit than residents of either the Inner Area or the Outer Suburbs.

Exhibit 2.6 Mode Choice by Age and Area of Residence (2011, morning peak period)



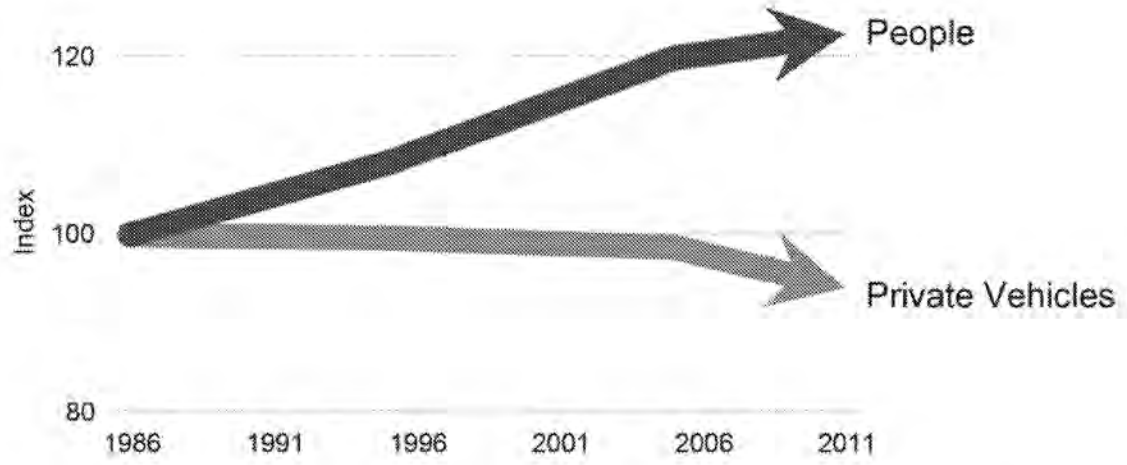
Transit travel. On a typical weekday in 2011, Ottawa residents made 325,000 transit trips, with more than half occurring in the morning and afternoon peak periods (note this figure would be higher if it included Gatineau residents and visitors). The downtown core attracted a significant portion of transit trips because of its high levels of transit service, limited road capacity, and dense concentration of employment. In the morning peak period, about one-third of all transit trips made by Ottawa residents are to the downtown core, and about 50% of all trips arriving downtown are by transit. Except for 2008 and 2009, which were both affected by a labour disruption, transit ridership has increased fairly steadily for more than 15 years (see Exhibit 2.7). In 2012, OC Transpo carried 101 million riders—making its annual average of about 110 rides per capita the highest of any comparably-sized city in North America.

Exhibit 2.7 Annual OC Transpo Ridership



Downtown travel. In 2013, Council approved *Downtown Moves*, an urban design and transportation study of ways to support increasing demand for walking, cycling and transit in the downtown core, and to integrate future light rail stations into the streetscape. This focus on walking, cycling and transit reflects the changing preferences of downtown travellers. Since 1986, the number of cars arriving downtown in the morning peak period has decreased while the number of people arriving downtown has increased (see Exhibit 2.8). For this reason, future planning of the downtown transportation system will focus on improving the capacity and quality of service for people, rather than private vehicles. This goal supports the reallocation of limited rights of way from private vehicles to other uses.

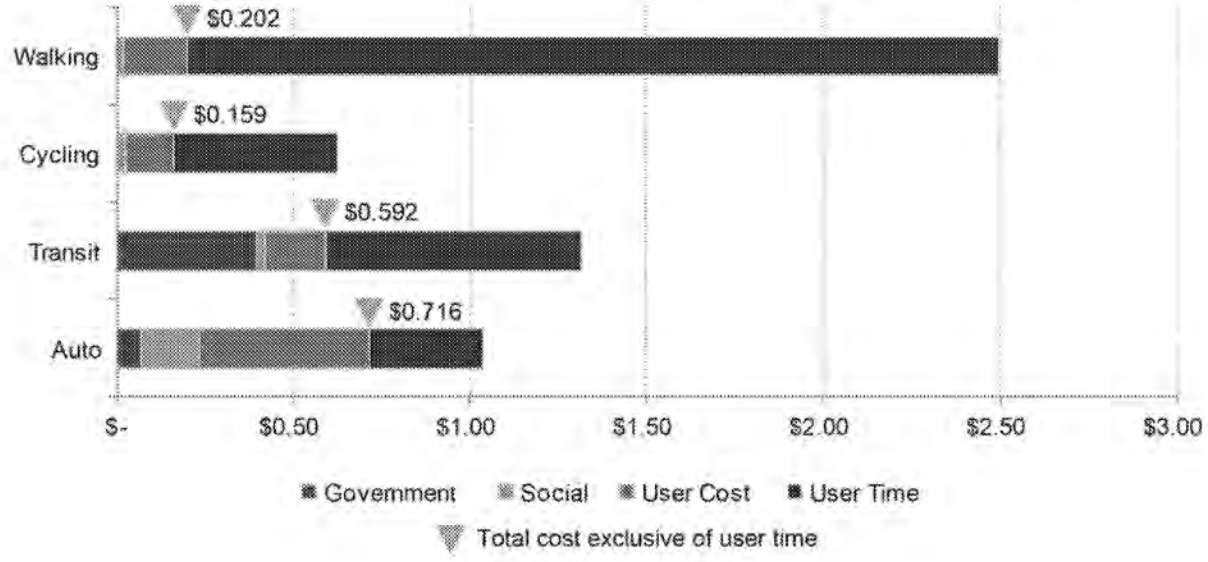
Exhibit 2.8 Trips Entering the Downtown Core (1986-2011, morning peak period, 1986=100)



Walking and cycling travel. Ottawa residents made 296,000 daily walking or cycling trips in 2011, an increase of about 6% from 280,000 in 2005. Most of those trips were made by foot, but the number of daily bicycle trips grew sharply from 30,350 to 43,350 in six years (an increase of 43%). Walking and cycling trips usually cover short distances, with 88% of all trips beginning or ending in the same area of the city. The Inner Area is home to a disproportionate share of walking and cycling, with 44% of all active trips starting and/or ending there.

Cost of travel. A recent update to Ottawa's cost of travel model identified the average cost to carry one person one kilometre by different modes throughout the city (see Exhibit 2.9). It shows that, considering government costs, users' financial costs, and the social costs of collisions and pollution (but excluding the cost of user time), the average cost per person-km is $0.159 for cycling, $0.202 for walking, $0.592 for transit, and $0.716 for cars. Cycling and walking are the most affordable options for moving people if the cost of user time is excluded, and cycling is the cheapest option even if user time is included. For these reasons, and because the affordability of travel is a major concern, it is desirable to minimize growth in automobile use and maximize growth in other modes—particularly walking and cycling, which also offer health benefits. Transit use is also important, because even though it has higher government costs (all levels) than automobile use, it is more affordable for individuals and society as a whole.

Exhibit 2.9 Cost of Travel in Ottawa ($/person-km)

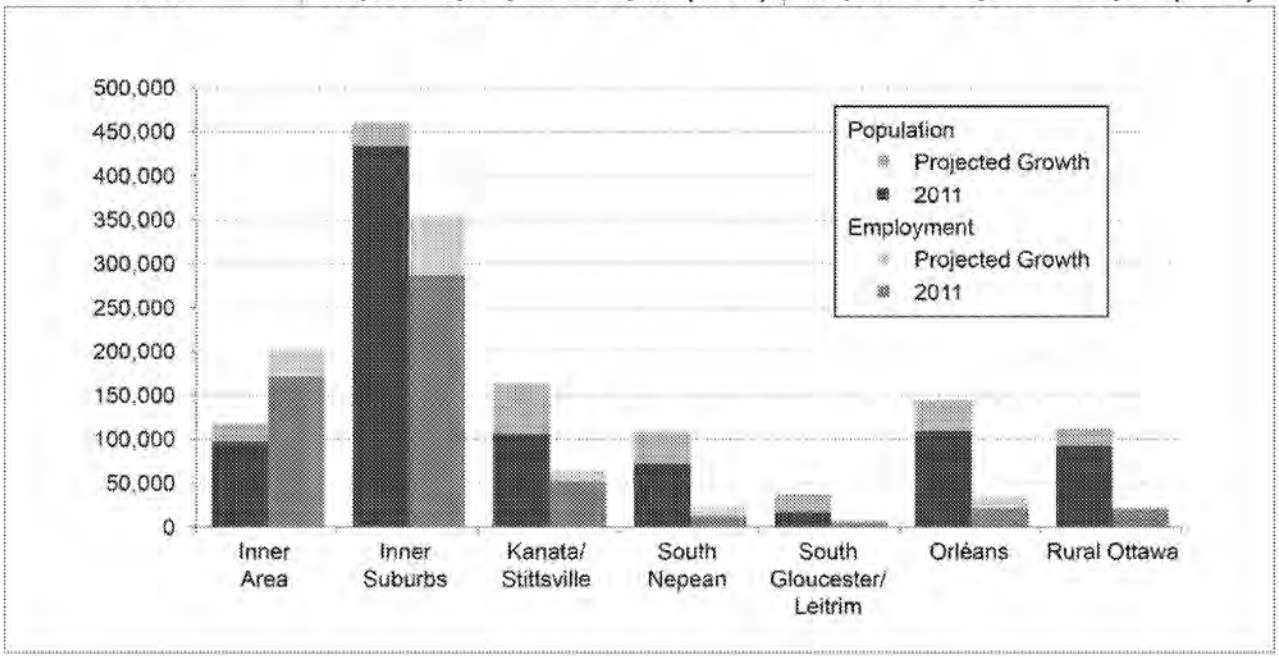


2.3 Population and Employment in 2031

Where growth will occur. The City has prepared population and employment growth projections for the period from 2011 to 2031 (see Exhibit 2.10). The City expects a 23% increase in population from 922,000 to 1.14 million people, and a 24% increase in employment from 565,000 to 703,000 jobs. Although infill development and intensification are forecast to increase the population of Ottawa's Inner Area and Inner Suburbs by about 46,000 people over the next 18 years, most growth (about 168,000 people) will occur in the Outer Suburbs. In contrast, 72% of employment growth will occur inside the Greenbelt.

Exhibit 2.10 Population and Employment: 2011 Actual and 2031 Projections

Area	Population			Employment		
	2011	2031	Growth and distribution	2011	2031	Growth & distribution
Inner Area	97,200	116,400	19,200 (9%)	170,600	201,800	31,200 (23%)
Inner Suburbs	432,500	459,300	26,800 (13%)	287,400	355,300	67,900 (49%)
Kanata/Stittsville	105,200	162,000	56,800 (27%)	51,300	62,500	11,200 (8%)
Barrhaven	71,200	107,400	36,200 (17%)	11,100	21,800	10,700 (8%)
Riverside South/Leitrim	15,900	35,800	19,900 (9%)	4,000	7,800	3,800 (3%)
Orléans	108,200	143,400	35,200 (16%)	20,600	33,000	12,400 (9%)
Rural Ottawa	91,400	111,700	20,300 (9%)	20,000	20,900	900 (1%)
Total	***922,000***	***1,135,900***	***213,900 (100%)***	***564,900***	***703,200***	***138,100 (100%)***



2.4 Travel Demand in 2031

The projections in this section were made using a transportation demand model that estimates how future residents of Ottawa will travel in the morning peak period on a typical weekday, given projected changes in land use, population, employment, transportation infrastructure, transit fares and service levels, and fuel and parking costs. These modelling results help the City identify how to meet the needs of pedestrians, cyclists, transit users, automobile drivers and passengers, and commercial vehicles.

Time-shifting of travel within the peak period. Over recent decades in Ottawa and other major cities, travel demand within peak periods (the busiest two- to three-hour periods each weekday morning and afternoon) has slowly become less concentrated within a single peak hour; this phenomenon is referred to as "peak spreading." Conventional transportation planning and design have accommodated a single peak hour of demand, which does not account for unused capacity in the shoulders of the peak, to the extent that it exists. This practice is both costly and inefficient, and this TMP update is based on a desire for a more efficient, "flattened" peak period travel demand in 2031—that is, for a level of demand that remains more or less constant throughout the morning peak period (7:00 to 9:30 a.m.). This will lead to planning for fewer new or widened roads than would be warranted to serve a single peak hour of more concentrated demand like the one Ottawa has today, but it will also have the effect of encouraging automobile users to travel at less busy times (i.e. a little earlier or later), thus using the transportation network more efficiently. Transportation Demand Management (TDM) programs such as encouraging flexible work hours will help to facilitate this.

Growth in trips. Exhibit 2.11 illustrates the projected growth in travel demand between key areas of Ottawa from 2011 to 2031. It shows that the Inner Area will continue to attract a decreasing proportion of all trips during the morning peak period, following the trend of recent decades as Ottawa's suburbs have added jobs as well as population. Exhibit 2.11 also shows significant growth in travel across the Greenbelt from outer suburban communities, particularly Kanata and Stittsville. Several other key observations can be made:

- The greatest growth in trips occur within the Outer Suburbs (35% of all new trips), then trips from the Outer Suburbs to Inner Suburbs (19% of all new trips) and then from the Outer Suburbs to the Inner Area (9% of all trips)
- The focus of new trip origins will be the Outer Suburbs (67% of new trips), followed by the Inner Suburbs (12% of new trips) and Inner Area (7% of new trips)
- The focus of new trip destinations will be the Outer Suburbs (39% of new trips), followed by the Inner Suburbs (32% of new trips) and Inner Area (21% of new trips)

Based on current assumptions, the Outer Suburbs will be the dominant force behind city-wide travel growth between 2011 and 2031. This poses a challenge to the goal of increasing transit, walking and cycling trips because it is more difficult to provide efficient and cost-effective facilities and services for those modes in lower-density suburban environments.

Travel by mode – city-wide. Mode share is the proportion of all trips that people make using a given mode. In Ottawa in 2011, the share of morning peak period travel by sustainable modes (walking, cycling, transit and automobile passenger) was about 45% (9.5% for walking, 2.7% for cycling, 22.4% for transit, 10.7% for automobile passenger). This updated TMP proposes a 2031 target of 50% (10% for walking, 5% for cycling, 26% for transit, 9% for automobile passenger). Exhibit 2.12 illustrates these changes. The implication is that the proportion of all trips made by automobile drivers will decrease from about 55% in 2011 to 50% in 2031. Because the the total number of trips is projected to grow by 32% over the same period, the total number of driving trips will also increase (by 21%).

There are several important notes on the mode share targets:

- *Walking* – The new target (10%) is the same as in the 2008 TMP
- *Cycling* – The new target (5% city-wide, including a sub-target of 8% within the Greenbelt) is a substantial increase over the 2008 TMP of 3%
- *Transit* – The 26% mode share target is equivalent to the target in the 2008 TMP[1]
- *Automobile passenger and automobile driver* – The 9% automobile passenger and 50% automobile driver targets had no direct precedent in the 2008 TMP, although that plan did project that about 61% of morning peak hour travel demand would be

[1] The 2008 TMP used an equivalent target of 30% of trips by motorized modes, which was the same as 26% of trips by all modes.

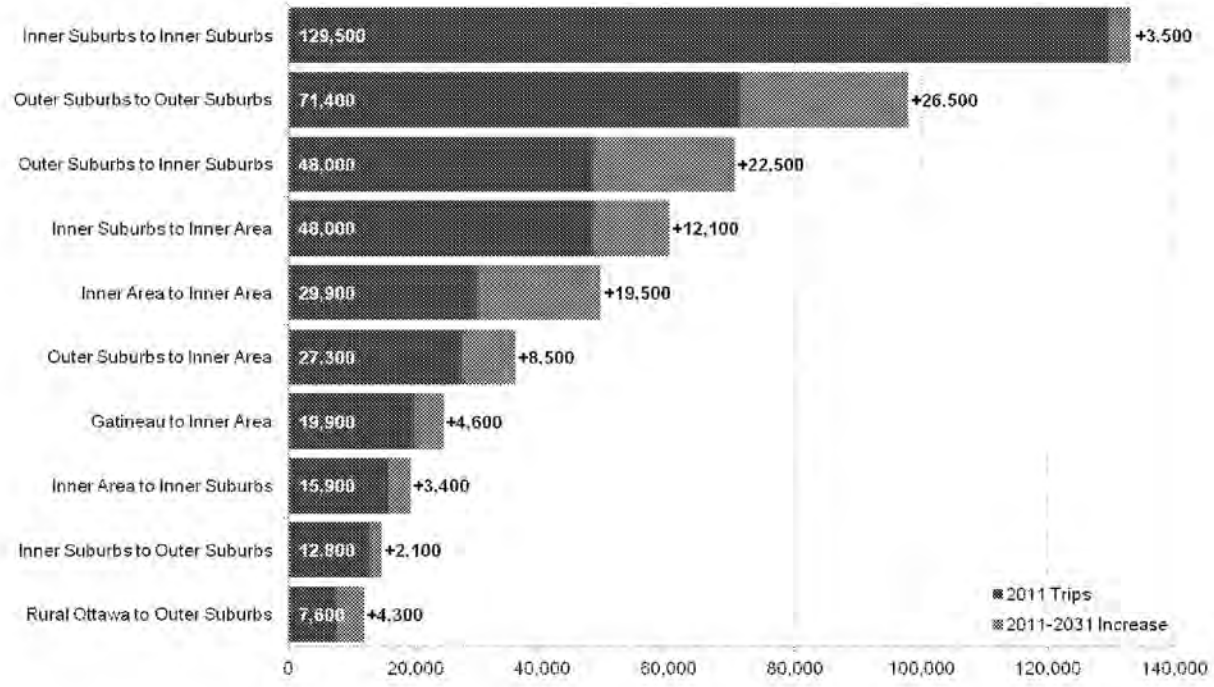
met by automobile (i.e. drivers and passengers, combined). Therefore, the new target represents a more ambitious objective with respect to managing the growth in automobile trips.

- *Seasonality* – The demand for all modes varies from one season to another, and this Plan uses autumn as the baseline for travel demand observations and projections. In the summer, cycling and walking shares rise and transit use drops; in the winter, the reverse is true. Surveys show that 70% of Ottawa's summer cyclists either continue to bicycle in winter (16%) or shift to walking or transit (54%). The aggregation of walking, cycling and transit shares into a single "sustainable mode" target of 50% (versus a 2011 observed level of 45%) is, in part, an attempt to set a target that is relatively independent of season.

Travel by mode – key areas and corridors. The average mode shares shown in Exhibit 2.12 will not apply for trips to and from all areas of Ottawa. The actual transit use in any area will depend on the quality of service, land use densities, and other factors. Some areas will exceed the average, and others will not. Exhibit 2.13 shows how the the overall target transit mode share would vary for trips between different areas in 2031; these diverse transit mode shares will, in total, yield the overall target of 26%. This exhibit clearly highlights the importance of Ottawa's downtown in achieving the overall transit target. With substantial planned improvements to transit service downtown and limited planned increases to road capacity, transit's share of the travel market will continue to increase. High transit ridership to, from and within the inner suburbs is expected to continue.

The share of travel by walking and cycling (with a combined city-wide target of 15%) will also vary across Ottawa. These trips are usually made over shorter distances than automobile and transit trips, so areas of high densities with mixed land uses typically achieve higher mode shares. This is clearly illustrated in Exhibit 2.14, which shows walking and cycling mode shares for internal trips—that is, those that start and end in the same district—in different parts of the city that are consistent with the city-wide targets. It shows, for instance, that the combined walking and cycling mode share in the Inner Area—which includes the downtown core, Centretown, Lowertown, Sandy Hill, and other older neighbourhoods—would be nearly four times higher than in other parts of the city.

Exhibit 2.11 Projected Growth in Key Travel Markets (morning peak period)



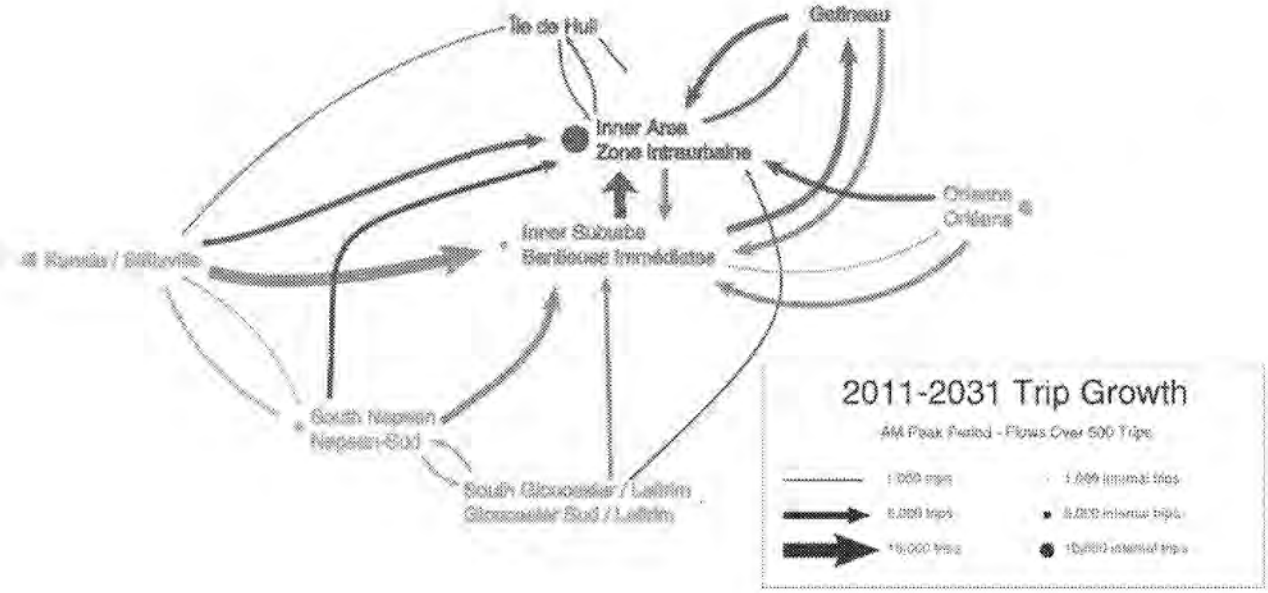


Exhibit 2.12 Mode Shares and Person-trip Volumes: 2011 Observations and 2031 Targets (morning peak period)

Travel mode	Mode share		Person-trips		
	2011	2031	2011	2031	Growth
Walking	9.5%	10.0%	43,200	60,100	39%
Cycling	2.7%	5.0%	12,300	30,100	145%
Transit	22.4%	26.0%	101,900	156,300	53%
Automobile passenger	10.7%	9.0%	48,700	54,100	11%
Automobile driver	54.6%	50.0%	248,400	300,500	21%
Total	***100.0%***	***100.0%***	**455,000**	**601,000**	**32%**

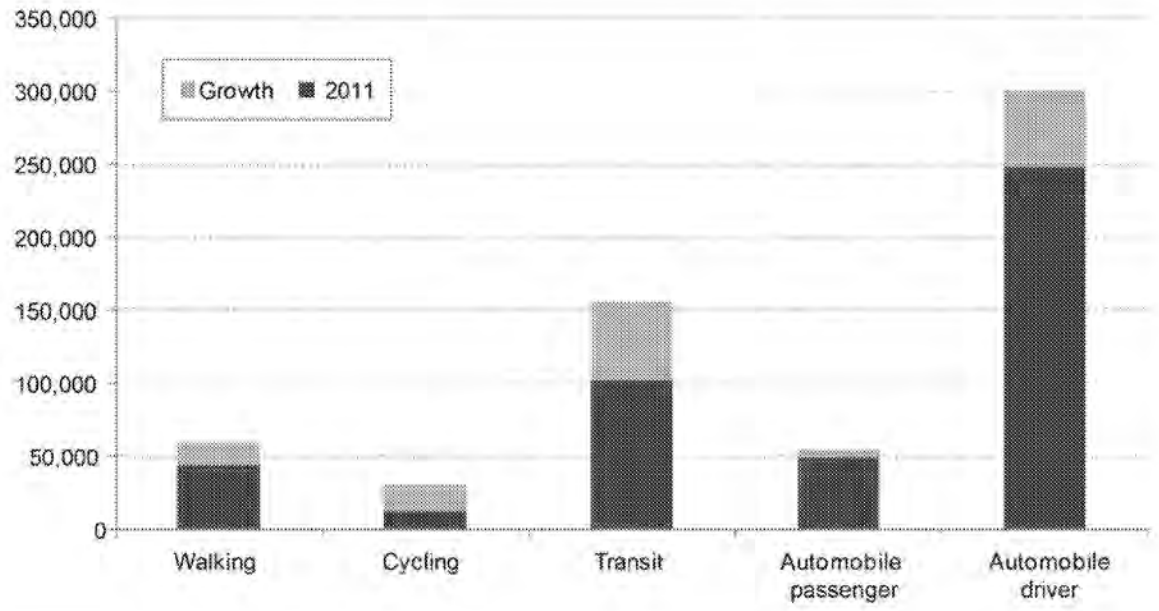


Exhibit 2.13 Transit Mode Shares Within and Between Areas: 2011 Observations and 2031 Targets (morning peak period)

Trips to / Trips from	Inner Area	Inner Suburbs	Orléans	Riverside South/ Leitrim	Barr-haven	Kanata/ Stittsville	Rural Ottawa	Gatineau	*All areas*
	Mode shares for 2011 (top) and 2031 (bottom)								
Inner Area	15% 20%	28% 35%	28% 30%	9% 15%	5% 15%	31% 35%	1% 2%	29% 32%	***20%*** ***22%***
Inner Suburbs	49% 54%	16% 22%	12% 16%	5% 18%	8% 12%	13% 15%	1% 2%	30% 33%	***24%*** ***28%***
Orléans	61% 65%	19% 22%	8% 11%	4% 7%	10% 12%	6% 7%	0% 0%	27% 30%	***24%*** ***26%***
Riverside South/Leitrim	36% 40%	7% 16%	0% 2%	0% 10%	0% 10%	0% 5%	0% 2%	0% 13%	***9%*** ***16%***
Barrhaven	62% 70%	16% 20%	5% 7%	0% 5%	5% 10%	1% 6%	0% 2%	53% 55%	***20%*** ***26%***
Kanata/ Stittsville	53% 56%	12% 20%	6% 6%	0% 4%	3% 4%	5% 10%	2% 2%	36% 40%	***15%*** ***21%***
Rural Ottawa	31% 39%	4% 8%	3% 10%	0% 2%	2% 3%	1% 3%	1% 1%	7% 8%	***6%*** ***11%***
Gatineau	47% 50%	13% 14%	0% 7%	0% 3%	0% 5%	3% 7%	0% 1%	-	***32%*** ***33%***
All areas	***42%*** ***44%***	***16%*** ***21%***	***9%*** ***13%***	***2%*** ***9%***	***6%*** ***11%***	***6%*** ***11%***	***1%*** ***2%***	***31%*** ***32%***	***22%*** ***26%***

Exhibit 2.14 Walking and Cycling Mode Shares for Internal Trips: 2011 Observations and 2031 Targets (morning peak period)

Mode	Mode shares for 2011 (top) and 2031 (bottom)					
	Inner Area	Inner Suburbs	Orléans	Riverside South/Leitrim	Barr-haven	Kanata/ Stittsville
Walking	51% 52%	14% 16%	19% 20%	18% 21%	23% 24%	22% 23%
Cycling	8% 12%	3% 6%	2% 3%	0% 3%	2% 4%	1% 4%
Total	***59%*** ***64%***	***17%*** ***22%***	***21%*** ***23%***	***18%*** ***24%***	***25%*** ***28%***	***23%*** ***27%***

Note: The relatively low walking mode share for internal trips within the Inner Suburbs reflects the large size of that district. Division of the Inner Suburbs into smaller sub-areas would yield a higher walking mode share for each.

Travel by automobile – vehicle-kilometres travelled. Vehicle-kilometres travelled (VKT) is one way to measure motor vehicle use in a given time period. It is important because it is directly correlated to personal travel costs, environmental impacts, social costs and public health. Modelling conducted for the TMP update suggests that, on average, Ottawa residents drove 18.6 km/day/person in 2011, and that the mode share targets for 2031 would yield a lower average driving distance of 17.4 km/day/person (a decrease of 6.5%). When this change was considered with future population growth, the model estimated a 16% increase in total daily VKT between 2011 and 2031, from 17.1 million VKT to 19.8 million VKT.

Performance of 2031 Network Concepts and the Affordable Network. Section 6.1 and Section 7.2 identify two versions of future rapid transit, transit priority and road networks for Ottawa in 2031: the 2031 Network Concepts include the infrastructure that achieves the TMP's targets for travel behaviour and level of service for roads and transit; the Affordable Networks include a strategic subset of the 2031 Network Concept that are affordable. Models of the Affordable Networks showed that, in combination, they would achieve similar overall mode shares as the 2031 Network Concept (although with some differences, such as a higher share of automobile drivers to and from the outer suburbs with the Affordable Networks). The main performance difference between the 2031 Network Concept and the Affordable Network is that the Affordable Network would have slower average speeds for automobile and transit travel (10% slower for automobiles, and 3% slower for transit).

Exhibit 2.15 2031 Mode Shares and Person-trips: Network Concept vs. Affordable Network (morning peak period)

Travel mode	Mode share		Person-trips	
	Network Concept	Affordable Network	Network Concept	Affordable Network
Walking	10.3%	10.2%	62,000	61,000
Cycling	5.0%	4.8%	30,000	29,000
Transit	25.6%	24.6%	154,000	148,000
Automobile passenger	11.2%	12.0%	67,000	72,000
Automobile driver	47.9%	48.4%	288,000	291,000
Total	***100.0%***	***100.0%***	***601,000***	***601,000***

Note: The values presented in this table are the results of network simulations. The values presented in Exhibit 2.12 represent mode share targets for 2031.

Environmental performance – greenhouse gas emissions. Transport Canada's Urban Transportation Emissions Calculator (UTEC) was used to estimate Ottawa's greenhouse gas emissions from automobile and transit travel for 2011, and for 2031 with the Affordable Road and Transit Networks. The UTEC model bases forecasts on vehicle-kilometres of travel, an output of Ottawa's TRANS Mode, and incorporates information on vehicle technologies and fuel types. It is a high-level model and therefore does not explicitly account for congestion at the corridor level. The model estimated that per-capita greenhouse gas emissions per person from transportation would decrease by 14%, from 3.6 tonnes/person/year in 2011 to 3.1 tonnes/person/year in 2031. However, population growth over that period would lead overall emissions to rise by 6%, from 3.3 megatonnes/year to 3.5 megatonnes/year. Even when more efficient technologies are assumed, Ottawa's targeted shift from automobile trips to walking, cycling and transit trips will not compensate for the impact of population growth. It should be noted, however, that the UTEC model includes assumptions about future changes in vehicle and fuel technologies; these assumptions are approximate, and faster improvements could yield significant reductions in both per-capita and total emissions.

3. Create a Supportive Built Environment

Chapter Overview	
Recommended actions	
Section 3.1	**Use planning processes to support sustainable choices**
Action 3-1	Enable walking, cycling and transit through community design plans and development review
Action 3-2	Reduce the impacts of surface parking
Section 3.2	**Foster development to support higher-order transit**
Action 3-3	Motivate supportive development around rapid transit stations and transit priority corridors

The *Official Plan* recognizes that land use and transportation systems strongly influence each other, and emphasizes the development of compact, integrated land uses to encourage a shift from automobile travel to walking, cycling and public transit use. Compact communities and mixed land uses are important because they bring trip origins and destinations closer together, thereby reducing trip lengths and making walking and cycling more practical. Higher densities also enable more efficient transit service, and can attract higher ridership without increasing resources. Furthermore, mixing of land uses adds a vibrancy to communities that simply makes it more enjoyable for people to walk (e.g. along main streets and in the urban core and rural villages). As such, the *Official Plan* targets intensification in the Central Area, as well as designated Town Centres, Mixed Use Centres, and Mainstreets where higher densities of population and employment can be well served by transit. These areas receive design priority and are subject to density targets.

Chapters 4, 5 and 6 of this Plan identify key land use outcomes—in other words, the features or characteristics of future development that will support walking, cycling, and transit. This chapter concisely identifies the most important processes and tools the City will use to achieve those outcomes. The *Official Plan* contains more detailed direction on both desirable land use outcomes and processes, and accordingly that detail is not repeated here.

3.1 Use Planning Processes to Support Sustainable Choices

Action 3-1: Enable walking, cycling and transit through community design plans and development review

Community Design Plans. The development of community design plans (CDPs) for villages and urban communities will provide an opportunity for the City to identify important walking and cycling routes, including linkages to greenway systems, neighbouring communities and transit facilities. CDPs will also identify supportive strategies such as streetscape improvement and traffic management measures to limit vehicular speeds and traffic infiltration, and ensure that developments on transit routes face the street and provide frequent pedestrian linkages to the street.

Development review. One of the City's critical roles in the planning process is to review and approve new proposed site and subdivision developments. The review process is an opportunity to ensure that developments conform to various key planning requirements, including:

- The provision of sidewalks, walking and cycling links to public areas, and on-site bicycle parking required by the City's Zoning By-law
- The provision of a road network in developing communities that offers direct and convenient walking and cycling routes, and that enables efficient transit routes to bring all dwellings within a 400-metre walking distance of a bus stop
- Completion of reports, in accordance with the City's *Transportation Impact Assessment Guidelines*, that identify road and parking needs as well as other desirable features such as shower and change facilities for active commuters, and preferential parking spaces for carpoolers
- The possible need for large commercial buildings, institutional developments and hotels to provide taxi stands on-site to avoid disrupting on-street operations

Particularly in locations where the City wishes to emphasize sustainable travel choices (e.g. downtown, main streets, transit oriented development zones and other areas of intensification), the use of established roadway performance measures (e.g. the ratio of volume to capacity for motor vehicles) will be accompanied by new performance measures for transit, walking and cycling as discussed in Section 7.1.

Action 3-2: Reduce the impacts of surface parking

Parking supply and management. Surface parking is an inefficient use of land. It reduces the effective density of developments, it can challenge or complicate safe and convenient walking routes between buildings or from buildings to transit stops, and when oversupplied it can favour car use over transit, walking and cycling. Through the planning and development review process, the City will seek opportunities for shared parking among land uses (e.g. where peak demands occur at different times), and will encourage the private sector to contain parking in multi-level structures rather than on surface lots. It will also periodically review the Zoning By-law to ensure that minimum and maximum parking requirements for new developments (particularly commercial, retail and multi-unit residential uses) support municipal objectives for compact development and more sustainable travel choices; among other provisions, the By-law already reduces minimum parking requirements by 10% where all on-site parking is underground. Furthermore, the City will discourage the temporary use of vacant lands for all-day parking where zoning does not permit such use, especially in areas where redevelopment and intensification is a priority.

In developing and redeveloping sites, emphasis should be placed on minimizing the number of access points in order to maintain continuity of sidewalks, as well as maximize the length of curb space available for public parking, loading and other purposes.

3.2 Foster Development to Support Higher-order Transit

Action 3-3: Motivate supportive development around rapid transit stations and transit priority corridors

Rapid transit stations. Development around rapid transit stations can provide vital support to transit in several ways. First, the City promotes intensification near most stations, as described in the *Official Plan*. It will establish maximum parking limits and reduced minimum parking requirements for developments within an 800-metre walking distance of rapid transit stations. It will also seek to ensure that developments at transit

stations situate the highest densities nearest the station, provide high-quality pedestrian access to and between buildings and through parking areas, do not situate large parking facilities between the street and building, and provide clear and direct access to transit stops and stations for pedestrians and cyclists. Additional detail on these directions is provided in the City's *Transit-Oriented Development Guidelines* that apply to all developments within 600 metres of rapid transit stations.

Transit-oriented development plans. In anticipation of land development pressure near stations along the Confederation Line, Council established priority areas for the creation of transit-oriented development (TOD) plans. At these locations, Council wishes to foster well-designed, compact neighbourhoods where residents can live, work, shop and play close by, complete daily activities easily, access transit, and support local businesses. Primary goals of the TOD plans include improving pedestrian and cycling access to the stations, and providing opportunities for additional development at transit-supportive densities—for example, apartments, office and/or mixed-use buildings may be added to zoning if they are not currently permitted. Permitted building heights may be increased or decreased depending on proximity to the light rail station and to provide transition to surrounding areas. The TOD will result in changes to the Zoning By-law and/or *Official Plan* to enable implementation. The first three TOD studies for land surrounding the future Tremblay, St. Laurent and Cyrville LRT stations were approved in 2012, and three more are in progress for Lees, Hurdman and Blair stations. The City will also support efforts by the federal government in their review of campus locations at Tunney's Pasture and Confederation Heights.

Transit priority corridors. The *Official Plan* promotes modest intensification in the form of mid-rise buildings in most transit priority corridors, having consideration for compatibility, road classification, mix of uses, and opportunities for redevelopment. The City may also apply maximum parking limits and reduced minimum parking requirements for developments within 400 metres of transit priority corridors, as described in the *Official Plan*.

4. Maximize Walkability

Chapter Overview	
Recommended actions	
Action 4-1	Implement the *Ottawa Pedestrian Plan*
Section 4.1	**Build a continuous, well connected pedestrian network**
Action 4-2	Expand the pedestrian network
Section 4.2	**Create a walkable environment**
Action 4-3	Maximize pedestrian level of service in selected areas
Action 4-4	Provide quality design
Action 4-5	Deliver supportive winter maintenance
Section 4.3	**Improve pedestrian safety and promotion**
Action 4-6	Deliver pedestrian safety programs
Action 4-7	Raise awareness and visibility of walking

The popularity of walking is one indicator of a vibrant, sustainable city. Along with cycling, transit and carpooling, walking conserves natural resources and reduces pressure on the road network while improving health, preserving the environment and supporting economic activity. Key factors that can motivate more people to walk include:

- Suitable distances from trip origins to destinations
- Pleasant, direct and barrier-free walking routes
- Convenient connections to public transit, schools, parks and community facilities
- Safe and frequent opportunities to cross major roads and other barriers
- Outdoor spaces, both public and private, designed with personal security in mind
- Adequate maintenance practices for walking facilities, particularly in winter
- Positive individual attitudes towards walking

An updated version of the *Ottawa Pedestrian Plan* was prepared in concert with this Transportation Master Plan, and addresses improvements in all of these key areas. Readers are referred to it for more comprehensive details on how Ottawa will become a truly walkable city.

Action 4-1: Implement the *Ottawa Pedestrian Plan*

Pedestrian Charter. In 2011, the City of Ottawa signed the *International Charter for Walking*. Using that document as a starting point, the updated *Ottawa Pedestrian Plan* includes a customized City of Ottawa Pedestrian Charter establishing the City's vision, goals and objectives for walking. The Charter articulates a commitment to creating a city where people walk because they want to, and it defines a series of guiding principles to create a supportive urban environment.

Strategies. The *Ottawa Pedestrian Plan* contains a number of policies and actions for the City to implement. These elements represent an integrated, multi-disciplinary approach to increasing the safety, convenience and comfort of walking in Ottawa over the next two decades. They address land use, walking network development, street and pedestrian facility design, maintenance, safety programs, information, promotion, stakeholder engagement, interjurisdictional cooperation, and performance measurement. This chapter focuses on three key elements, namely pedestrian network development (Section 4.1), creation and maintenance of a walkable environment (Section 4.2), and walking safety and promotion (Section 4.3).

Targets. Section 2.4 of this Plan sets a 2031 target for morning peak period walking mode share of 10% across the entire city. This objective represents a marginal increase above current levels, and is the same as the target set in the 2008 TMP. Given that new development in the City is expected to occur primarily in suburban areas outside the Greenbelt, and given the lower rates of walking in those areas, maintaining current levels of walking is considered to be reasonably ambitious, and will require improvements in walking facilities and environments across the city.

4.1 Build a Continuous, Well Connected Pedestrian Network

Action 4-2: Expand the pedestrian network

Approaches to expansion. The City will strategically expand its network of pedestrian facilities using three different approaches:

- As part of *new development* through the development review process, representing about 60% of new sidewalks from 2010 to 2012
- As part of *road construction and reconstruction projects*, representing about 30% of recent new sidewalks
- As *retrofit projects* to fill "missing links" in the existing pedestrian network, representing about 10% of recent new sidewalks

The first two approaches are the most cost-effective, have the least community disruption, and lead to the best overall streetscape. The third approach is an important tool for the City to correct network deficiencies, although it is less efficient and may not be able to meet all design standards where physical constraints exist. The City will regularly identify, evaluate and prioritize candidate retrofit projects (using criteria discussed in the updated Ottawa Pedestrian Plan), and implement them as resources permit.

Pedestrian facilities on roads. During its review of development applications and during road construction projects, the City will require the provision of pedestrian facilities on all existing, new and reconstructed roads, as follows:

- On both sides of arterial and collector roads in the urban area and rural villages
- On at least one side of all arterial and collector roads passing through the Greenbelt if deemed appropriate for the urban context
- On both sides of all roads that carry transit service in the urban area and rural villages
- On local roads that lead directly to transit stations and bus stops, schools, public parks, recreation centres, public buildings and institutions, neighbourhood and regional commercial, retail or employment centres
- Within and between neighbourhoods, and from local roads to arterial and collector roads at sufficient intervals to create permeable walkable communities

- Wherever identified by the Ottawa Pedestrian Plan, Secondary Plan or a Community Design Plan

In road corridors where the context is appropriate, a multiuse pathway may be used in lieu of a sidewalk and should be maintained year-round, subject to winter maintenance policies (See Action 4-5).

Pedestrian facilities accessing transit or linking neighbourhoods. The City will require the provision of pedestrian facilities as follows:

- Direct connections to rapid transit stations (see Section 6.2), bus stops and other major walking destinations
- Multi-use pathways in or adjacent to rapid transit corridors where physical constraints allow, constructed as part of rapid transit projects (see Section 6.1)
- Pedestrian crossings of rapid transit corridors, considering the nature of demand and alternative crossing opportunities (see Section 6.1)
- Pedestrian crossings to link neighbourhoods that are separated by roads or other physical barriers, where safety considerations permit

This Plan does not identify a definitive listing of pedestrian facility projects. Rather, Exhibit 4.1 identifies the capital budget envelopes for several different types of pedestrian projects.

Exhibit 4.1 Pedestrian Projects – Capital Costs by Facility Type ($ millions)

Facility type	Phase 1: 2014-2019	Phase 2: 2020-2025	Phase 3: 2026-2031	*Total*
General community links including links in transit-oriented development areas	8.25	9.0	9.0	***26.3***
Multi-use pathway structures[1]	13.0	13.0	14.0	***40.0***
Total	***21.25***	***22.0***	***23.0***	***66.3***

Note:[1] Includes Rideau River Footbridge, Rideau Canal Footbridge and other major structures. All costs are in 2013 dollars.

4.2 Create a Walkable Environment

The creation of a truly walkable environment is an objective that requires attention in many different activities that the City undertakes such as zoning, development review, Community Design Plans, TOD plans, road designs and streetscaping plans. It also requires attention to many different factors including buildings and public spaces as well as transportation infrastructure. This section discusses some of the most important elements of walkability.

Action 4-3: Maximize pedestrian level of service in selected areas

Maximizing level of service. One major barrier to walking is the distance that pedestrians must travel across signalized intersections. Simply providing a pedestrian crossing may not be sufficient to provide an adequate level of service. Multiple traffic lanes (whether for through, left or right turn movements), free-flowing channelized right-turn lanes, and large curb radii that might be required for large trucks but enable motor vehicles to turn at higher speeds—all of these can impact on the achievement of a walkable, pedestrian-friendly environment. Particularly in locations where the City wishes to emphasize walking (e.g. downtown, main streets, mixed use centres, and other areas of intensification), the use of double left-turn lanes, three or more straight through lanes, separate right-turn lanes, and deceleration/acceleration lanes should be avoided. Plans will seek to improve levels of service in locations where barriers to walking are high.

Level of service indicator. The *Ottawa Pedestrian Plan* recommends a quantitative method for evaluating pedestrian level of service at intersections. This indicator will be a tool for measuring the level of service for walking. It will help to facilitate the decision making process when trade-offs are required, which typically occurs along main streets, downtown, and in transit-oriented development areas, mixed use centres and areas of intensification. Its main objectives are:

- To capture the most important factors that influence the physical design and control of intersections, from the pedestrian's perspective
- To be relatively simple to implement
- To reflect local conditions and expectations

Action 4-4: Provide quality design

Pedestrian-oriented design guidelines. The *Ottawa Pedestrian Plan* recommends the development of new pedestrian-oriented design guidelines for use in designing new walking facilities and road construction or reconstruction projects, reviewing development applications, and preparing community design plans or secondary plans. The guidelines would be applied where demand warrants enhanced design elements. Examples include:

- Facilities – sidewalk width and material, pathway location, intersection geometry and alignment, intersection and mid-block crossings, pedestrian signal priority, pedestrian routes to transit
- Wayfinding – signage, mapping and paving patterns to enable navigation by residents and visitors
- Accessibility – conformance with the City's *Accessibility Design Standards* and consideration of the *Accessibility for Ontarians with Disabilities Act*, to address grades, slopes, surface treatments, gates, bollards, intersection curb ramps and depressions with tactile warnings, and pathway seating
- Lighting – consistency with the City's street, park and pathway lighting policies, and incorporation of the principles of crime prevention through environmental design (CPTED) to support safety and personal security objectives
- Landscape and environment – boulevards between street curbs and sidewalks that permit stormwater infiltration, use of trees and plantings, sunlight penetration
- Amenities and aesthetics – seating, bicycle parking, waste receptacles, views, public art, connections to open space, and site furniture providing year-round comfort and ease of maintenance

Action 4-5: Deliver supportive winter maintenance

Enhanced winter maintenance for key pedestrian linkages. In the City of Ottawa's 2013 Commuter Attitude Survey, snow and ice control on walking facilities emerged as a key concern of residents; 32% of respondents identified snow removal as the pedestrian-related service most in need of improvement. The City's Maintenance Quality Standards set winter maintenance service levels for pedestrian facilities (e.g. minimum snow accumulation to trigger a response, and speed of response from

the end of accumulation). They call for the fastest response (Priority 1) to sidewalks in the downtown core and large employment centres, and give lesser priority to other pedestrian facilities. Section 9.1 of this TMP outlines the allocation of additional funds to cost-effectively increase the winter maintenance priority of pedestrian linkages within 600 metres of rapid transit stations, 200 metres of high-frequency transit corridors, and 300 metres of schools. This enhancement would provide an especially important benefit for customers accessing light rail, Transitway and O-Train services, and for students walking to school.

4.3 Improve Pedestrian Safety and Promotion

This Plan's overall framework for road safety (see Section 7.4) identifies pedestrians as one group of vulnerable road users that warrants special action, and the framework for transportation demand management (see Section 8.1) also considers existing and potential pedestrians as key market segments. Below, this section provides an integrated, holistic review of the ways in which the City will work to promote walking and make it safer.

Action 4-6: Deliver pedestrian safety programs

Road crossings. The City will continue to improve pedestrian crossings at signalized and non-signalized intersections, with the goal of reducing the frequency and severity of preventable collisions involving pedestrians. The current Pedestrian Safety Evaluation Program pilot project enables cost-effective countermeasures.

Audible pedestrian signals and pedestrian countdown signals. The City will continue to implement audible pedestrian signals that help pedestrians with hearing impairments know when they may cross safely in which direction, beyond the more than 640 already in place. The City will also continue to implement pedestrian countdown signals that reduce uncertainty about safe crossing times, beyond the more than 415 currently in place.

Safe Routes to School. In Ottawa, a number of partners work together to promote cycling and other modes of safe, healthy travel to school. The City will continue its support for special events and school travel planning, which is an intensive, multi-disciplinary initiative that collaborates with area schools.

Crossing guards and safety patrols. The City currently has 153 adult crossing guards to help children walk to and from school, and will continue to review requests for adult crossing guards and support their provision, including the installation of signs and pavement markings, where they are warranted and resources permit. The Ottawa Police Service also works with schools to train students for safety patrol duties, with the City installing the necessary signage.

Winter walking safety. The City will continue to deliver programs that make it safer to walk in winter. Currently, these include the Snow Go Program that matches seniors and persons with disabilities (and may provide them with financial assistance) with service providers who will clear snow from private driveways and walkways. They also include the Grit Box Program that locates "do-it-yourself" sidewalk grit boxes near staircases and steep hills, and where there are many pedestrians, especially seniors or persons using mobility devices.

Action 4-7: Raise awareness and visibility of walking

Promotion. Consistent with the discussion of workplace engagement in Section 8.1 of this Plan, the City will continue to promote walking to work through various communication channels and in partnership with employers, schools and community organizations. A key message will continue to be not only the practicality of walking as a mode of transportation, but as its importance as part of a healthy and active lifestyle.

Public health outreach. Ottawa Public Health will continue to promote walking as part of its Healthy Eating, Active Living Strategy. Related initiatives include community outreach, special events, web-based information, promotion of walking groups, support for the Ottawa Public Library pedometer lending program, and direct engagement with workplaces and schools to promote active transportation and other forms of physical activity.

5. Develop A Great Cycling City

Chapter Overview	
Recommended actions	
Action 5-1	Implement the *Ottawa Cycling Plan*
Section 5.1	**Build and maintain a network of quality cycling facilities**
Action 5-2	Implement the Cycling Network by 2031
Action 5-3	Introduce new level of service measures for cycling facilities
Action 5-4	Maintain cycling facilities
Action 5-5	Maintain a basic winter cycling network
Section 5.2	**Offer attractive intermodal connections and trip-end facilities**
Action 5-6	Provide cycling connections to transit
Action 5-7	Provide public bicycle parking
Action 5-8	Require bicycle parking and end-of-trip facilities in new developments
Section 5.3	**Improve cycling safety and promotion**
Action 5-9	Deliver cycling safety programs
Action 5-10	Raise awareness and visibility of cycling

The popularity of cycling is one indicator of a vibrant, sustainable city. Along with walking, transit and carpooling, cycling conserves natural resources and reduces pressure on the road network while improving health, supporting more compact development, preserving the environment and supporting economic activity. It offers speed and convenience for shorter trips, and for many people it can also be attractive for longer trips. Key factors that can motivate more people to cycle include:

- Suitable distances from trip origins to destinations
- Pleasant, direct, safe, well-maintained cycling routes that provide as much separation from traffic as possible
- Convenient, secure bicycle parking, shower and change facilities at destinations
- Convenient, secure connections between cycling and transit facilities
- Individual cycling skills appropriate for the routes available
- Positive social attitudes towards cycling

An updated version of the *Ottawa Cycling Plan* was prepared in concert with this Transportation Master Plan, and addresses improvements in all of these key areas.

Readers are referred to it for more comprehensive details on how Ottawa will become a truly great city for cycling.

Action 5-1: Implement the Ottawa Cycling Plan

Strategies. The *Ottawa Cycling Plan* contains a number of policies and actions for the City to implement. These elements represent an integrated, multi-disciplinary approach to increasing the safety, convenience and comfort of cycling in Ottawa over the next two decades. They address land use, cycling network development, street and cycling facility design, bicycle parking, cycling-transit integration, funding, maintenance, safety programs, wayfinding assistance, information, promotion, stakeholder engagement, inter-jurisdictional cooperation, and performance measurement. This chapter focuses on three key elements, namely cycling facility development and maintenance (Section 5.1), intermodal connections and trip-end facilities (Section 5.2), and cycling safety and promotion (Section 5.3). As future budgets are struck, the City will focus on these fundamental infrastructure and program needs, while also supporting key partners in their initiatives (e.g. the Capital BIXI bike sharing program initiated by the NCC).

Targets. Section 2.4 of this Plan sets a 2031 target for morning peak period cycling mode share of 5% across the entire city, and a more refined target of 8% for travel inside the Greenbelt. These objectives represent significant increases above current levels (i.e. the 2011 city-wide morning peak period mode share of 2.7%) as well as the targets set in the 2008 Transportation Master Plan, and will require a more continuous and connected network of quality cycling routes and programs.

5.1 Build and Maintain a Network of Quality Cycling Facilities

The existence of safe, direct and well maintained facilities for cycling is a major factor in motivating people to ride their bicycles. A range of facility types is available to address different situations. The Cycling Network includes facilities on roads or within road rights of way, as well as off-road multi-use pathway facilities for cycling and walking, for both utilitarian and recreational purposes. Multi-use pathways are generally constructed in rapid transit and arterial road rights of way (primarily in suburban areas), abandoned rail corridors, utility corridors, along rivers and in parks, and they may be surfaced with asphalt or stone dust. Their development is closely coordinated with the NCC's comprehensive network of multi-use pathways.

Action 5-2: Implement the Cycling Network by 2031

The networks. Maps 1 and 2 show the designated routes contained in the Cycling Network. The networks are based on those in the 2008 TMP, as revised and augmented based on additional work such as:

- The *Downtown Moves* study, which identified an extensive future network of quality cycling routes in the urban core
- Community Design Plans, TOD plans and other planning studies
- An analysis, conducted for the *Ottawa Cycling Plan* update, of five large employment nodes that have a high number of short trips

Ongoing changes to the networks shown on Maps 1 and 2 will not require Council approval, provided that any changes maintain continuity in the same general location and preserve access to key destinations. Note that many multi-use pathways are owned and maintained by the NCC.

Cycling route connectivity and quality. The Cycling Network reflects the need for better cycling *connectivity*—the ability of residents to cycle from their homes to work, school, errands, transit and recreational opportunities—across the city, including:

- Where there are gaps (or missing links) in its existing cycling route infrastructure

- In suburban areas and rural villages where there will be a growing number of local trips
- Around future light rail stations, enabling residents to combine cycling and transit in a single convenient trip

However, it is the need to provide routes of higher *quality* that will lead to the most visible changes in Ottawa's cycling routes. The goal of a dramatically higher mode share for cycling means that new types of cycling facilities will be needed to attract novice cyclists and others who are concerned about cycling in mixed traffic. On-street cycling facilities that are separated from vehicular traffic are required to increase cycling safety (both actual and perceived), especially on streets with high traffic volumes and/or speeds. Examples of these types of facilities include Laurier Avenue as well as approved designs for Churchill Avenue and Main Street.

Cycling route types. The Cycling Network shown on Maps 1 and 2 includes several types of routes:

- *Cross-Town Bikeways* are continuous on-road or off-road links over long distances. They serve as major connecting routes between more distant parts of the city, and provide a consistently high level of comfort with cycling-friendly features such as bike boxes, coloured intersection crossings, route signage, and signal timing adjustments. Cross-town bikeways are a priority for both implementation funding and maintenance.
- *Neighbourhood Bikeways* are generally found on low-traffic roads and neighbourhood pathways. They provide quiet, comfortable cycling routes in local communities, giving residents access to institutions, parks, natural areas, historic sites, transit, amenities and businesses. A greenway might have pavement markings to show lane configurations, cycling signage, traffic diverters at intersections that block motor vehicles but not cyclists, traffic calming measures such as road narrowings or curb extensions, and bike/walk-only pathways or bridges that provide continuity.
- *Spine routes* provide access along major road corridors, connecting cross-town bikeways and major multi-use pathways to neighbourhood bikeways and feeder routes. Spine routes will generally provide dedicated on-road cycling space (subject to localized constraints), ideally either a cycling track or a buffered bike lane.

- *Feeder routes* typically provide access from residential streets and shopping areas to the spine routes and cross-town bikeways that serve longer-distance cycling trips. They are typically on-road, and could be either painted bicycle lanes or shared lanes.
- *Multi-use pathways and recreational routes* serve a mix of cyclists and pedestrians, and are typically three- to four-metre wide asphalt paths with a solid yellow line separating two-way traffic. They are ideal in continuous corridors with few intersections, such as in NCC lands along the Rideau River, Ottawa River and Rideau Canal, and through the Central Experimental Farm. Multi-use pathways also exist in more urban settings where they provide short connections between roads, or along rapid transit and hydro transmission corridors, such as the O-Train corridor.

Prioritization and funding of projects. The City will follow a three-phase implementation of projects toward development of the Cycling Network shown on Maps 1 and 2. Exhibit 5.1 summarizes the capital costs of projects for each type of cycling facility, by phase. Total capital costs for each phase fit within this Plan's affordability criteria. Other projects will also be enabled through external sources of funding such as road construction or reconstruction projects, repaving of rural roads, and land developments.

Exhibit 5.1 2031 Cycling Network projects – Capital Costs by Facility Type ($ millions)

Facility type	Phase 1: 2014-2019	Phase 2: 2020-2025	Phase 3: 2026-2031	*Total*
Cross-town bikeways	7.8	11.7	2.0	***21.5***
Transit-oriented development links	1.8	1.5	2.3	***5.6***
Institutional and employment links (outside downtown)	1.9	2.5	0.0	***4.4***
Community links (neighbourhood bikeways, missing links)	9.7	7.5	17.0	***34.2***
Bicycle parking and city-wide enhancements	0.4	0.8	2.8	***4.0***
Recreational links	0.3	0.0	0.0	***0.3***
Total	***22.0***	***24.0***	***24.0***	***70.0***

Note: All costs are in 2013 dollars.

Action 5-3: Introduce new level of service measures for cycling facilities.

Facility pre-selection. As part of the Ottawa Cycling Plan update, the City developed a facility pre-selection tool that, for any combination of average daily traffic volume and 85th percentile traffic speed on a road, will identify a preliminary preferred type of cycling facility for that road: a shared curb lane, a painted bicycle lane, or a separate bicycle facility (such as a buffered bicycle lane or cycle track; and if one of these is preferred but not feasible, then the tool recommends picking an alternate route). The facility pre-selection tool has been used to help estimate the costs summarized in Exhibit 5.1.

Level of service measures for cycling facilities. To assess the quality of different cycling facilities, new level of service performance measures will be introduced. This concept, based on a recent paper from the Mineta Transportation Institute, is related to the safety (both actual and perceived) of different cycling facilities and uses basic road characteristics (e.g. vehicle speed, number of lanes, presence of parking) to determine the level of service. In general, a low level of perceived safety (e.g. cycling next to fast-moving traffic) leads to a high level of traffic stress, and a high level of perceived safety (e.g. cycling in a segregated bike lane) leads to a low level of traffic stress. Four different levels are identified (Levels 1-4) with Level 1 having the lowest level of traffic stress and thus the highest level of service which appeals to the widest range of residents. As a new performance measure, the City will continue to assess and refine this methodology as required.

Action 5-4: Maintain cycling facilities

The importance of maintenance. Proper maintenance of on-road and off-road facilities is fundamental to safe and comfortable cycling. Cyclists are more susceptible than motor vehicles to surface irregularities, and they risk injury from cycling over potholes, road cuts and cracks, and debris. Experience elsewhere has shown that reorganizing existing maintenance priorities, even though it may delay service in other areas or add time and operating costs, can contribute to the safety and popularity of cycling.

As part of the continued updating of maintenance practices, the City will pursue updates to the Maintenance Quality Standards (MQS) to include the new definitions for the cycling route types described in Section 5.2.

Seasonal maintenance activities. The City carries out a spring street clean-up from the end of winter until mid-May, and then continues to sweep roads throughout the summer based on roadway classification. Cyclists are the road users most affected by any delay in spring street sweeping because motor vehicles push road debris—including grit and sand used for winter maintenance—toward the curb, which can adversely affect cyclists. For this reason, the City will endeavour to give greater priority to springtime street sweeping on cross-town bikeways, followed by spine routes. The spring clean-up on key cycling routes should be initiated as early as possible each year, and re-prioritization need not impact operating costs although services in other areas of the City may be delayed.

Action 5-5: Maintain a basic winter cycling network

The network. Because cycling volumes tend to decrease dramatically during winter, the City has not previously designated and maintained a network of winter cycling routes. To support winter cycling, the updated *Ottawa Cycling Plan* identifies a network of cycling routes that are proposed to be maintained to bare pavement throughout the year. In identifying winter routes, consideration was given to feasibility issues such as the type of surface (paved vs. stone dust) and presence of sufficient space for snow storage. The winter cycling network includes 37 km of routes along roads and pathways (including those owned by both the City and the NCC), and is focused in the core area and along the East-West Bikeway where cycling rates are highest. About 21 km of the network routes are on roads or multi-use pathways where no changes to current winter maintenance practice would be required.

Testing and expansion. The winter cycling network is proposed to be implemented in the winter of 2014-2015, and will be reviewed during the next *Ottawa Cycling Plan* update. The network may ultimately be expanded as winter cyclist volumes increase, and as the City builds more separated or buffered cycling facilities to provide winter cyclists with separation from vehicular traffic.

5.2 Offer Attractive Intermodal Connections and Trip-end Facilities

Facilities for the movement of bicycles are a vital component of a cycling-friendly city, but facilities to store bicycles securely at the start and end of trips, and facilities to allow cyclists to transfer conveniently to other modes, are also critical.

Action 5-6: Provide cycling connections to transit

Bike-ride-walk and bike-ride-bike. As light rail is implemented in Ottawa, customer transfers between buses and trains will be common. However, cycling to light rail stations could be more attractive for many transit customers, allowing them to reduce waiting delays and get some daily exercise. The updated *Ottawa Cycling Plan* places a special emphasis on enabling such "bike-ride-walk" trips. It will take advantage of new bicycle parking spaces at light rail stations, comfortable neighbourhood cycling routes to rapid transit stations, and customer promotions. Continued expansion of the Rack and Roll program, which offers bicycle racks on-board OC Transpo buses, will make bike-ride-bike an equally feasible travel option for many transit customers. It is also expected that the City's new light rail line will permit a limited number of bicycles on-board, outside peak periods; bicycles are already welcome on the O-Train.

Action 5-7: Provide public bicycle parking

Short-term public bicycle parking. The City provides 2,000 short-term public bicycle parking spaces in public rights of way through a contractual agreement with an advertising company. Recently over 1,150 parking meters were converted to ring-and-post bicycle parking spaces along with customized art racks as part of streetscaping projects. As recommended in the updated *Ottawa Cycling Plan*, the City will also consider the creation of seasonal bicycle corrals, which convert on-street motor vehicle parking spaces to ten or so bicycle parking spaces in locations where bicycle parking demand cannot be met elsewhere in the public right of way.

Long-term public bicycle parking. In places where cyclists leave their bicycles for longer periods of time, security and weather protection are important. Examples include rapid transit stations and municipal buildings. In the downtown core there may also be sufficient demand to warrant a secure, weather-protected public bicycle parking facility, and the City will investigate the need for and feasibility of such a service.

Action 5-8: Require bicycle parking and end-of-trip facilities in new developments

Zoning and promotion. The City's Zoning By-law currently requires developers to provide a specified capacity of bicycle parking spaces, based on the size and type of land use. To provide more effective guidance, the City endeavour to update the Zoning By-law to identify separate requirements for short-term and long-term bicycle parking, where appropriate. The City will also provide guidance on the location and design of bicycle parking facilities—for example, that they be provided in highly visible and lighted areas, and be sheltered from the weather as much as possible—and promote the inclusion of shower and change facilities for active commuters in new workplace developments. It will encourage owners and managers of existing buildings, especially workplaces and multiple-unit residential buildings, to provide quality bicycle parking and end-of-trip facilities.

5.3 Improve Cycling Safety and Promotion

The City's overall framework for road safety (see Section 7.4) identifies cyclists as one group of vulnerable road users that warrants special action, and the framework for transportation demand management (see Section 8.1) also considers existing and potential cyclists as key market segments. Below, this section provides an integrated, holistic review of the ways in which the City will work to improve cycling safety and promotion.

Action 5-9: Deliver cycling safety programs

New roadway treatments. In coming years, the City pursue new roadway markings and bicycle-specific traffic signals (once approved by the Ministry of Transportation) to support the operation of cycling lanes that are separated from traffic. It will conduct campaigns to inform cyclists and other road users about these treatments.

Fixing problem locations. The City will continue to address road environments that pose hazards to cyclists. Currently, the Cycling Safety Improvement Program (CSIP) applies measures such as signs and pavement markings to improve locations where cycling safety issues are identified through collision records and stakeholder input.

Building skills and awareness. The City will continue to improve safety by directly addressing cyclists and other road users. Currently, elements of the Cycling Safety Awareness Program (CSAP) include safety messaging (e.g. posters, videos, public service announcements, bus boards, new driver training information), cycling skills training (e.g. full and abbreviated CAN-BIKE courses, primary school outreach), workplace outreach, and helmet use promotion for youth.

Safe routes to school. In Ottawa, a number of partners work together to promote cycling and other modes of safe, healthy travel to school. The City will continue its support for special events and school travel planning, which is an intensive, multi-disciplinary initiative that involves a number of area schools.

Action 5-10: Raise awareness and visibility of cycling

Promotion. Consistent with the discussion of workplace engagement in Section 8.1 of this Plan, the City will continue to promote cycling to work through campaigns such as the month-long Bike to Work event, and through targeted promotions in areas around new or improved cycling facilities. As discussed in Section 5.2 of this Plan, the City will promote multimodal cycling-transit trips, both bike-ride-walk and bike-ride-bike. The City will also promote its cycling facilities and services to residents of new developments through channels such as builders' welcome packages.

Route advice and wayfinding. The City will continue to update its cycling network maps, and will pursue an interactive online cycling route planner. It will also develop a policy for the implementation of wayfinding signage to help cyclists identify and follow new cross-town bikeways and neighbourhood bikeways. The Tourism and Public Service Sign Policy (June 2003) will be amended to include wayfinding for cyclists to provide network and route advice for cross-town and neighbourhood bikeways.

6. Transform Ottawa's Transit System

Chapter Overview	
Recommended actions	
Section 6.1	**Expand the rapid transit and transit priority (RTTP) network**
Action 6-1	Implement the Affordable RTTP Network by 2031, while protecting opportunities to develop the 2031 RTTP Network Concept
Section 6.2	**Integrate the rapid transit and transit priority network into the community**
Action 6-2	Provide walking and cycling opportunities within and across rapid transit corridors
Action 6-3	Encourage quality development close to rapid transit stations
Action 6-4	Make rapid transit stations convenient, comfortable and accessible to all users including pedestrians and cyclists
Action 6-5	Meet or exceed municipal, provincial, and federal guidelines and legislation for people with disabilities

Ottawa enjoys a higher level of transit ridership than any other Canadian city of a similar size. OC Transpo's share of travel in the morning peak period was just over 22% in 2011, and this Plan aims to increase that mode share to 26% by 2031. This will require the City to continue making transit more attractive than automobile use for an even greater number of residents. Ongoing efforts to improve the availability, reliability, speed, accessibility and comfort of transit service will improve the transit customer experience and make transit a more viable transportation choice.

In the last five years, City Council made a number of major decisions that have set the stage for an unprecedented transformation of Ottawa's transit system. Council approved construction of the Confederation Line and O-Train expansion, double-decker bus acquisition, PRESTO card implementation, and access to real-time customer information—all of which have either been started or fully implemented as of 2013, and which together constitute a huge positive change for transit customers in a short few years. At the same time, OC Transpo has also maintained a number of shorter-term priorities, including efforts to improve safety and security, engage employees, upgrade transit facilities, replace the Para Transpo fleet, enhance accessibility, strengthen

community partnerships, increase operational efficiencies and improve service reliability.

From a planning perspective, this Plan addresses two major themes of Ottawa's long-term transit system transformation: the expansion of rapid transit and transit priority networks, and the development of rapid transit stations into multimodal hubs integrated with the surrounding community. These subjects are discussed in more detail in the following sections.

6.1 Expand the Rapid Transit and Transit Priority Network

The successful implementation of an expanded rapid transit and transit priority (RTTP) network—which will include light rail transit (LRT), bus rapid transit (BRT) and O-Train facilities plus on-road transit priority measures—will be a critical element in the achievement of the City's transit objectives. Expansion of the RTTP network will significantly increase the ease of mobility and attractiveness of transit use for residents. The City has developed a strategic approach to expanding its RTTP network in response to future transportation needs and towards the goal of achieving an ultimate RTTP network (see Map 3).

Action 6-1: Implement the Affordable RTTP Network by 2031, while protecting opportunities to develop the 2031 RTTP Network Concept

2031 RTTP Network Concept. Chapter 2 identified an expected growth in peak period transit trips by 2031, and a 2031 RTTP Network Concept was developed to both accommodate this growing demand and provide a level of service that will attract it. The 2031 RTTP Network Concept (see Map 4) includes several currently approved and funded projects, and its component projects are listed in Annex A. While the 2031 RTTP Network Concept may not be fully implemented by 2031, it is important for the City to protect lands that would be required for its eventual implementation, such as through the transfer of transit corridor rights of way through planning application approvals, or the purchase of surplus railway rights of way and selected utility corridors (e.g. hydro lines) as they become available.

Affordable RTTP Network. The City recognizes that capital investment must be affordable. For that reason, this Plan recommends the implementation of a subset of the 2031 RTTP Network Concept, called the Affordable RTTP Network (see Map 5), that will provide as many of the 2031 RTTP Network Concept's benefits (e.g. ridership gains, opportunities for land use intensification, operating cost savings) as possible within the City's projected funding envelope. The projects of the Affordable Network were strategically selected to maximize gains in transit ridership within available funds.

Implementation of projects. The Affordable RTTP Network includes LRT, BRT and O-Train projects that are listed (generally in order of declining priority) with their capital construction costs in Exhibit 6.1 and shown on Map 5. It also includes a number of transit priority projects, listed in Exhibit 6.2 and shown on Map 5. Instead of phasing these extensions over time to 2031, a single project, dubbed Stage 2, is proposed that will bring LRT rail west, south and east to Orléans along with resulting operational savings well in advance of the previous schedule proposed in the 2008 TMP.

The prioritization of rapid transit projects resulted from a complex exercise that considered each project using factors such as ridership gains, opportunities for land use intensification, congestion reduction, and operating cost savings. It should be noted that several projects identified in the Affordable RTTP Network are intended to serve growing communities. If those communities do not develop at the pace projected, some of these projects may be required later than expected. Conversely, if communities are developed faster, then some projects may be required sooner. Ongoing monitoring of performance measures that describe transit levels of service in key corridors, as described in Section 7.1, could also identify emerging needs that warrant adjustments to the proposed prioritization. Future updates of the Transportation Master Plan will review and confirm these project priorities.

In the staging of rapid transit corridor development, the City will provide enhanced transit service elements as early as possible. These may take the form of surface transit routes with accelerated frequencies, accompanied by transit priority measures. While the City is protecting the eventual opportunity for complete grade-separation of all elements of the rapid transit network (i.e. intersections where rapid transit corridors intersect with streets, or pedestrian crossings at rapid transit stations), where practical,

it will defer the costs of grade-separation by using transit priority measures that reduce delay and improve service reliability by isolating transit from mixed traffic. Section 1.6 addresses the environmental assessment requirements for new RTTP Network infrastructure, and Section 7.7 identifies objectives and actions to minimize the environmental effects.

Transit priority measures. A majority of Ottawa's transit service is delivered on roads, where traffic congestion increases delay and reduces the reliability and efficiency of transit services. Transit priority can improve the competitiveness of transit by reducing travel times and improving service reliability, while allowing more transit service to be delivered with the same resources. Transit priority measures (e.g. dedicated bus lanes, transit signal priority treatments, bus queue jumps, special bus stop arrangements, and traffic management techniques such as queue relocation) are intended to eliminate delay to transit services caused by congestion, and to minimize delay caused by traffic signals. Equipping road corridors with a set of coordinated transit priority measures can substantially improve the quality of service enjoyed by transit customers without incurring the costs of a fully grade-separated rapid transit corridor. In addition to the transit priority corridors identified as part of the RTTP Network, transit priority measures may be implemented at other locations across the transit network, such as at intersections near rapid transit stations, or intersections of roads with at-grade BRT corridors.

In some locations, transit priority measures can be introduced without significant impacts on other road users, although in many other cases (e.g. busy arterial corridors and other roads with limited rights of way) they will require a decrease in the level of service for other road users. For example, the introduction of a bus-only green phase at a traffic signal may reduce green time for mixed traffic and may reduce the capacity available for other modes. The City will strive to identify and mitigate such impacts; one important tool in this regard is education and promotion, which can build public awareness and a positive attitude toward transit priority measures.

Exhibit 6.1 2031 Affordable RTTP Network Projects – LRT, BRT and O-Train

Type	Project	Description
Currently under construction or funding secured		
LRT	Confederation Line	Conversion of Transitway to light rail between Tunney's Pasture and Blair stations
2014-2031		
BRT	West Transitway: Bayshore Station to west of Moodie Drive	Extension of the Transitway to bypass congestion on Highway 417
LRT/ O-Train	O-Train: Greenboro Station to Bowesville/ Riverside South Station	Extension of the O-Train from Greenboro Station to Bowesville Road, including new stations at Gladstone, Walkley, South Keys and Leitrim
	Western LRT (1): Tunney's to Baseline Stations	Extension of the LRT line now under construction, from its western terminus at Tunney's Station to Baseline Station
	Western LRT (2): Lincoln Fields to Bayshore Stations	Extension of the Western LRT to join the West Transitway (at Bayshore) and the Phase 2 Western LRT extension (at Lincoln Fields)
	Eastern LRT: Blair to Place d'Orléans Stations	Extension of the LRT line now under construction, from its eastern terminus at Blair Station to Place d'Orléans
BRT (at-grade)	Baseline Transit Corridor: Baseline to Heron Stations	New BRT corridor in the road right of way with at-grade intersections, connecting the Southwest and Southeast Transitways
BRT	West Transitway: March Road to Terry Fox Station	New Transitway segment to bypass congestion on Highway 417
BRT (at-grade)	Kanata North Transitway: Corkstown Road to Solandt Road	New BRT corridor following March Road connecting the West Transitway with the Kanata North employment node
Total Infrastructure Costs (2013 dollars)		***$2,267M***

Exhibit 6.2 2031 Affordable RTTP Network Projects – Transit Priority

Project	Limits	Description
Airport Parkway	Hunt Club Road to MacDonald-Cartier Intl. Airport	Peak period bus lanes made available by road widening project
Bank Street	Billings Bridge Station to Wellington Street	Transit signal priority at select intersections
Baseline Road	Baseline Station to Bayshore Station	Transit signal priority and queue jump lanes at select intersections
Blackburn Hamlet Bypass / Brian Coburn Boulevard	Innes Road (west) to Tenth Line Road	Peak period bus lanes made available by new road projects and reallocation of lanes
Beechwood Avenue/ Hemlock Road	St. Laurent Boulevard to Vanier Parkway	Transit signal priority at select intersections
Carling Avenue (1)	Lincoln Fields Station to Carling O-train Station	Exclusive bus lanes made available via reallocation of existing traffic lane
Carling Avenue (2)	Carling O-train Station to Bronson Avenue	Transit signal priority and queue jump lanes at select intersections
Carling Avenue / Richmond Road	Bayshore Station to Lincoln Fields	Transit signal priority and queue jump lanes at select intersections
Chapman Mills / Strandherd / Earl Armstrong	Barrhaven Centre Station to Bowesville/ Riverside South Station	Transit signal priority and queue jump lanes at select intersections
Eagleson Road	Hazeldean Road to Highway 417	Transit signal priority and queue jump lanes at select intersections
Elgin Street	Gladstone Avenue to Wellington	Transit signal priority at select intersections
Fisher Avenue / Holland Avenue	Prince of Wales Drive to the Confederation Line	Transit signal priority at select intersections
Gladstone Avenue	Gladstone O-train Station to Elgin	Transit signal priority at select intersections
Hazeldean Road	Stittsville Main Street to Eagleson Road	Transit signal priority and queue jump lanes at select intersections
Hemlock Road / Codd's Road	St. Laurent Bl to Montreal Road	Exclusive bus lanes made available via new lanes
Hunt Club Road	Albion Road to Uplands Drive	Exclusive bus lanes made available via new lanes
Innes / Blair	Millennium Station to Blair Station	Transit signal priority and queue jump lanes at select intersections

Exhibit 6.2 2031 Affordable RTTP Network Projects – Transit Priority

Project	Limits	Description
Jeanne d'Arc Boulevard	Innes Road to Jeanne d'Arc Station	Transit signal priority and queue jump lanes at select intersections
March Road	Corkstown Road to Solandt Road	Transit signal priority and queue jump lanes at select intersections
Merivale Road	Baseline Road to Carling Avenue	Transit signal priority and queue jump lanes at select intersections
Montreal Road / Blair Road	Blair Station to Rideau Station	Extension of bus-only hours on existing priority lanes and new exclusive lanes east of St. Laurent
Murray Street / St. Patrick Street / Dalhousie Street	Rideau Street to Vanier Parkway	Transit signal priority at select intersections
Orléans Boulevard	Jeanne d'Arc to Orléans Boulevard Station	Transit signal priority and queue jump lanes at select intersections
Richmond Road / Wellington Street W. Somerset Street	Woodroffe Avenue to Bank Street	Transit signal priority and queue jump lanes at select intersections
Robertson Road / Richmond Road	Eagleson Road to Baseline Road	Transit signal priority and queue jump lanes at select intersections
St. Laurent Boulevard	Montreal Road to Innes Road	Transit signal priority and queue jump lanes at select intersections
Stittsville North-South Arterial	Palladium Road to Fernbank Road	Transit signal priority and queue jump lanes at select intersections
Tenth Line Road	Charlemagne Boulevard to Ottawa 174	Transit signal priority and queue jump lanes at select intersections
Total Infrastructure Costs (2013 dollars)		***$199M***

6.2 Integrate the Rapid Transit and Transit Priority Network into the Community

Action 6-2: Provide walking and cycling opportunities along and across rapid transit corridors

Pathways and crossings. The implementation of rapid transit corridors can present both opportunities for, and obstacles to, walking and cycling. To take advantage of long, linear rapid transit corridors that are separated from busy roads, the City will provide multi-use pathways in or adjacent to those corridors where physical constraints allow, and will aim to construct those pathways as part of rapid transit projects. Furthermore, rapid transit station designs will focus on connectivity to pathways in the immediate vicinity. The City will also provide grade-separated opportunities for pedestrians and cyclists to cross rapid transit corridors, where physical constraints allow, considering the nature of demand and the existence of alternative crossing opportunities.

Action 6-3: Encourage quality development close to rapid transit stations

Intensification. Intensifying development around rapid transit stations is the best way to bring as many potential transit riders as possible within easy walking distance of high-quality service. Employment, educational, and commercial densities are more reliable generators of transit ridership than residential density, although they are all beneficial. The City's land use policies, as contained in the *Official Plan* and summarized in Chapter 3, outline strategies to encourage integrated office and commercial developments at selected rapid transit stations. The *Official Plan* also sets out intensification and density targets for key areas, which include many rapid transit stations.

Design. The quality of the built environment around stations is also critical to transit customers arriving from or heading to nearby homes, workplaces, schools, stores and other destinations. Good planning and design practices can help customers reach the station with convenience, safety, security, accessibility and comfort. The City will strive to reduce the impacts of surface parking on pedestrian routes around stations, as discussed in Chapter 3.

Action 6-4: Make rapid transit stations convenient, comfortable and accessible to all users including pedestrians and cyclists

Walking and cycling access. At all rapid transit stations, but particularly those with significant nearby development, the quality of access for pedestrians and cyclists is of the utmost importance. The City will pursue opportunities, alone or in partnership with developers and landowners, to provide and improve pedestrian and cycling connections between rapid transit stations and adjacent developments. The City will limit pedestrian crossing distances at intersections that transit customers must cross. It will also work to improve the quantity, security and weather protection of bicycle parking at rapid transit stations. Sections 4.1 and 5.2 of this Plan also discuss these important measures.

Customer amenities. At rapid transit stations, high customer volumes pass through and also spend time waiting for their bus or rail vehicle to arrive. The experience of customers within all stations should be as comfortable, secure and convenient as possible, and the design of heavily-used transfer stations (such as those at the ends of the light rail and O-Train lines) will provide a superior level of comfort and convenience. Valuable measures will include shelter from the elements, seating, heating, wayfinding signage, accessibility for people with disabilities, natural surveillance for customer safety, and possible convenience retail and service uses. The City will also take steps to enable convenient transfers by transit customers to and from other modes (in addition to walking and cycling, as discussed above) through features such as direct telephone access to taxi companies, taxi loading areas, customer drop-off and pick-up areas, and connections with regional and intercity buses and trains.

Park-and-ride lots. Park-and-ride lots are an important feature at selected rapid transit stations. They serve transit customers arriving by car who live in the urban area and drive to transit in order to meet other needs en route (e.g. childcare, shopping, appointments), as well as customers who live in the rural area. The City will build or expand several park-and-ride lots as part of the 2031 Affordable RTTP Network (see Map 5). New park-and-ride lots will encourage commuters to transfer to transit at the edge of the urban area or at the outer edge of the Greenbelt, thereby minimizing automobile travel across the Greenbelt and towards the centre of Ottawa. The design of park-and-ride lots will provide safe, convenient and comfortable connections for pedestrians and cyclists to travel through them, as needed, to and from the adjacent community.

Intercity passenger terminals. VIA Rail's two stations at Tremblay Road and Fallowfield Road are both co-located with existing Transitway stations, with Tremblay Station currently being upgraded to rail as part of the Confederation Line project. Macdonald-Cartier International Airport is currently served by a Transitway bus route and would be served by a light rail station in the 2031 RTTP Network Concept (see Map 4) and by an improved bus service in the Affordable Network (see Map 5). Only the Greyhound Bus Terminal on Catherine Street in the downtown is not served by a rapid transit bus route. If the terminal is to be moved in future, the City would prefer that it be located at a rapid transit station, especially as sections of the LRT network are completed and put into service.

While there are no formal plans to implement High Speed Rail (HSR) in the Quebec-Windsor corridor, any HSR line in the corridor would need to include Ottawa. Ottawa's station(s), should be connected by rapid transit, subject to land use compatibility of the line with adjacent uses and appropriate setbacks.

Action 6-5: Meet or exceed municipal, provincial, and federal guidelines and legislation for people with disabilities

Accessibility. Over the life of this plan, there will be an increased demand for accessible transit, as Ottawa's population of seniors continues to rise and medical advances increasingly allow persons with disabilities to lead fully independent lives. All Transitway, O-Train and Confederation Line stations have been designed as barrier-free as possible, and all buses are low-floor models able to carry customers who use mobility devices such as wheelchairs.

An important strategic objective of Ottawa's transit service is to continue to offer full accessibility to transit for residents and visitors who have permanent or temporary disabilities, through both specialized services (Para Transpo) and barrier-free conventional services that meet or exceed legislative requirements and guidelines.

7. Provide Safe and Efficient Roads

Chapter Overview	
Recommended actions	
Section 7.1	**Design and build complete streets**
Action 7-1	Adopt a "complete streets" policy for road design, operation and maintenance
Action 7-2	Update road design guidelines, standards and processes to reflect complete street principles
Action 7-3	Use multimodal levels of service to assess road designs and allocate right of way
Section 7.2	**Strategically modify road network**
Action 7-4	Adopt the designated network of roads
Action 7-5	Implement the Affordable Road Network by 2031
Action 7-6	Obtain and protect rights of way required for future road projects
Action 7-7	Collaborate on federal and provincial road projects
Section 7.3	**Maximize road network efficiency**
Action 7-8	Implement the *Transportation System Management Strategy*
Action 7-9	Use advanced traffic management systems (ATMS)
Action 7-10	Offer streamlined and accessible traveller information
Action 7-11	Monitor and adopt useful technologies for data management
Section 7.4	**Maximize road safety for all users**
Action 7-12	Implement the *Strategic Road Safety Action Plan*
Action 7-13	Combat distracted driving
Action 7-14	Protect vulnerable road users
Action 7-15	Reduce aggressive driving
Action 7-16	Target issues affecting population segments by age
Section 7.5	**Enable efficient goods movement**
Action 7-17	Designate truck routes to serve industry and protect neighbourhoods
Action 7-18	Consider freight needs in road planning, design and construction
Action 7-19	Monitor and consult with the freight industry for mutual benefit
Section 7.6	**Protect neighbourhoods from undesirable impacts**
Action 7-20	Use area traffic management to resolve public concerns
Section 7.7	**Minimize environmental effects**
Action 7-21	Minimize effects on land, water and vegetation
Action 7-22	Minimize greenhouse gases and other air emissions
Action 7-23	Control noise levels

7.1 Design and Build Complete Streets

The role of streets. Ottawa's streets are fundamentally important public spaces: they are social places where residents can explore their community, meet friends, or enjoy a sidewalk café, and they also act as entry points to businesses, parks, schools and homes. At the same time, streets are the backbone of Ottawa's transportation system and its economy: they serve pedestrians, cyclists, public transit, trucks, automobiles and emergency services, while also providing space for utilities. Within the realm of road planning, design and operation, the needs of these various users compete for the scarce resources of time, space and money. In managing its road network for the greatest public benefit, the City frequently must make difficult trade-offs.

Action 7-1: Adopt a "complete streets" policy for road design, operation and maintenance

Description of complete streets. The concept of complete streets is a framework for balancing the multiple roles of roads, and ensuring the best possible outcome to their management as a public resource. A complete street accommodates all of its expected functions and serves all of the people who use it throughout the course of a day. Complete streets do not result from "cookie cutter" design, because different streets have different functions, users and contexts. The overriding principle of complete streets is to offer safety, comfort and convenience to all users (i.e. pedestrians, cyclists, transit riders and motorists) regardless of their age or ability. However, the consideration given to different users will vary by location. For example, where the City wishes to emphasize sustainable travel choices (e.g. downtown, main streets, transit oriented development zones and other areas of intensification), the needs of the most vulnerable street users—pedestrians and cyclists—will be considered first, followed by the needs of transit users and motorists. Where high demands from multiple modes exist, the City will seek to balance the needs of all users in a sustainable way. It should be noted that this is not a new concept for the City, and represents an evolution of best practices. Local examples of complete streets that serve all modes of transportation include Sussex Drive in the ByWard Market area, and West Hunt Club Road west of Merivale Road.

Local context. Since the 1990s, Ottawa has been an early adopter of many innovative practices such as traffic calming, on-road bikeways, audible pedestrian signals, pedestrian countdown signals, protected crossings of major roads, pedestrian-friendly streetscapes, and measures to give transit priority over cars. Guidelines such as the *Regional Road Corridor Design Guidelines* (2000) and *Road Corridor Planning and Design Guidelines: Urban and Village Collectors, Rural Arterials and Collectors* (2008) embrace many of the concepts included in complete streets. The City's *Downtown Moves* study, approved by City Council in 2013, also developed a comprehensive suite of complete street designs for a variety of corridors in downtown Ottawa.

A comprehensive view. The design of new or rebuilt streets is just a beginning, though, and the idea of complete streets also requires support from operations and maintenance activities. Similarly, a complete street in isolation is much less effective than a connected network of complete streets that provide freedom of movement to all users by the travel mode of their choice. The successful creation of complete streets is as much a result of effective processes, and an outcome of a community's culture, as it is a product of design standards and engineering tools. This section is a first step towards the creation of a robust framework that will make complete streets an integral part of the City's day-to-day transportation decisions and operations.

Action 7-2: Update road design guidelines, standards and processes to reflect complete street principles

Current guidelines. The City has long intended that each road should reflect its functions and expected users, and its urban or rural setting. While some roads function as scenic routes, parkways, or urban or village mainstreets, others pass through the Greenbelt or heritage districts. Each setting requires a road to perform different functions, and for this reason each road must be sensitive to its immediate context. In that spirit, the City follows guidelines such as its *Regional Road Corridor Design Guidelines* for urban arterial roads and village mainstreets, and *Road Corridor Planning and Design Guidelines: Urban and Village Collectors, Rural Arterials and Collectors* for rural arterial roads and urban, rural and village collector roads. It also has a range of potential design illustrations to be used as a guide for the planning and design of improvements for core area streets from the *Downtown Moves* study.

Scope of update. To more fully reflect the spirit of a complete streets approach to road design, the City will update these existing guideline documents to incorporate recent advances in design for walking and cycling, and to reflect lessons learned through actual design processes and the results of their implementation. The guidelines will integrate current best practices in separated bicycle lanes, low-level lighting, on-street parking, streetscaping, transit amenities and traffic control measures such as traffic calming and roundabouts, and are provided to illustrate ways to rebalance street space distribution within the right of way among the various uses (motor vehicles, transit, pedestrians and cyclists) where demand exists and implementation is practical. They will also identify situations where an exception to the use of complete street design elements might be warranted, and what process would be followed to make a decision in those cases.

Stakeholder engagement. The City will continue to consult with and involve a full range of stakeholders on road design projects, so that their interests are considered in trade-offs that are fundamental to the success of complete streets. Important stakeholders include local community and merchant groups, schools and other institutions, and road users including those who live elsewhere in Ottawa. Emergency responders will also be involved; for example, the ability of Ottawa Fire Services to meet its target response times can be affected by road design changes, and impacts may require mitigation measures such as traffic signal pre-emption systems.

Identification of Opportunities. The focus of implementation of compete streets will be on new construction, renewal projects, on streets where high accident and safety issues remain prominent, and as part of other construction projects (e.g. transit priority/rapid transit). This ensures a cost effective approach to implementation.

Action 7-3: Use multimodal levels of service to assess road designs and allocate right of way

A focus on moving people. In road design, a key element of trade-offs among different objectives is an understanding of how different design choices would affect the journey quality of each user—pedestrian, cyclist, transit customer, motorist or truck driver. Level of service measures for motorized traffic are well established and they have guided many road design decisions for decades. However, level of service

measures for pedestrians, cyclists and transit customers have not been similarly used in street design. The importance of a focus on moving people is illustrated by the fact that a bus can carry many times the number of people that would be in automobiles occupying the same road space; minimizing delay for buses should be a primary concern.

Level of service measures. The City, over time, will integrate into its road planning and design processes the following level of service measures:

- *For pedestrians* – at intersections, quality of service measures will include exposure and delay to pedestrians crossing the street (see Section 4.2)
- *For cyclists* – on roads and at intersections, quality of service measures will reflect the level of traffic stress (see Section 5.1)
- *For transit customers* – along roadway segments and corridors, level of service measures will be based on delay to transit customers/vehicles, with the guiding principle being to minimize signal and congestion delay; and will include the ratio of average transit travel time to average automobile travel time along a given corridor
- For *motor vehicles* –motor vehicle delay and the ratio of motor vehicle volumes to capacity will remain the level of service indicators. Subject to locational context, planning level studies will adopt a peak period analysis approach while operational level studies will continue to rely on peak hour assessments.
- In general, the City will endeavour to integrate into its road design processes the goal of maximizing the transportation system's person capacity

Context. It is expected that these level of service measures would be assigned different weights in different locations and contexts (e.g. urban, suburban, rural). For example, achieving a high level of service for cyclists will be more important on roads that are part of the cycling network (where demand is highest), and achieving a high level of service for pedestrians will be more important in the downtown core and near schools, parks and shopping areas.

Transportation impact assessment. Multimodal levels of service will be reflected in the City's process for requiring, reviewing and approving the transportation impact assessments that are submitted by development applicants. These assessments identify multimodal impacts of new developments on the transportation system at both a site and neighbourhood level, and are the basis for developer-funded measures that the City may require to mitigate negative impacts on pedestrians, cyclists and transit customers as well as automobile users.

7.2 Strategically Modify Road Network

Action 7-4: Adopt the designated network of roads

Road classification. Maps 6, 7, 8 and 9 illustrate the roads (excluding lanes) for which the City will protect rights of way to accommodate expected roadway elements. These roads are classified by their function, as shown in Exhibit 7.1. Roads of a similar function may vary in terms of their physical characteristics, and roads may also be reclassified as land uses and transportation systems change.

Road layout. In development areas, the City will use its powers through the *Official Plan*, Community Design Plan and application review processes to ensure that arterial and collector road alignments permit efficient transit routes, and that local road and pathway layouts minimize the impacts of culs-de-sac and crescents on connectivity and trip lengths for pedestrians and cyclists. The City's objective is for all building sites in the urban area to be within a 400-metre walking distance of a transit stop or station.

Exhibit 7.1 City Road Classification Framework

Classification	Primary function	Secondary function
City freeway	Serve "through" travel between points not accessed directly from the road itself	None — direct access to adjacent lands is prohibited
Arterial road	Serve travel through the city in conjunction with other roads	Provide access to adjacent lands, subject to restrictions
Major collector road	Serve travel between collector and arterial roads	Provide direct access to adjacent lands
Collector road	Serve neighbourhood travel between local and major collector or arterial roads	
Local road	Provide direct access to adjacent lands	Serve neighbourhood travel to and from collector or arterial roads
Lane	Provide secondary access from public road to abutting lot	None

Note: This classification framework refers to the transportation functions of roads only, and only as they pertain to motor vehicles.

Action 7-5: Implement the Affordable Road Network by 2031

The 2031 Road Network Concept. Chapter 2 identified an expected growth in peak period automobile trips by 2031, despite increases in mode shares for walking, cycling and transit use. To accommodate this growth, a 2031 Road Network Concept was developed that would provide 10% spare capacity above projected demand levels on arterial roads in key travel corridors during the morning peak period (i.e. a volume-to-capacity ratio of 0.9, including commercial vehicles; in the urban core of Ottawa a volume-to-capacity ratio of 1.0 was used). The 2031 Road Network Concept, which includes currently approved and funded projects, is shown on Map 10 and specific projects are listed in Annex A.

The Affordable Road Network. Given restrictions to the availability of funds for the construction, operations, and rehabilitation of the road network, the City recognizes that it must be financially prudent in constructing new infrastructure. For that reason, this Plan recommends the implementation of a subset of the 2031 Road Network Concept, referred to as the Affordable Road Network. The Affordable Road Network includes projects that emerged from a complex screening and prioritization exercise. It is shown on Map 11 and the required projects (in three implementation phases) with their capital costs are listed in Exhibit 7.2. Elements of the 2031 Road Network Concept that are not included in the Affordable Road Network are a lesser priority. As well, several projects identified in the Affordable Road Network are intended to give access to new developments; if land is not developed at the pace projected, some of these projects may be required later than expected; conversely, if land is developed faster, then some projects may be required sooner (including projects not currently identified as affordable).

Other possible road modifications. The City's desire to provide sufficient motor vehicle capacity to fully accommodate future demand is constrained not only by social, economic and environmental factors, but by a lack of right of way in locations such as the downtown core, main streets, transit-oriented development zones and other areas of intensification. In those places, where desirable and practical, the City will instead identify roadway modifications that focus on increasing person-capacity, which may result in taking pavement now used by motor vehicles and reallocating it to other modes

with the goal of facilitating alternative transportation choices. In addition to this reallocation of paved surface, the City will continue to identify and assess opportunities for roadway modifications that manage traffic congestion (e.g. at intersection bottlenecks) while avoiding or mitigating any reduction in safety or the quality of service to other modes. New high-quality connections for pedestrians and cyclists will be included where demand is demonstrated.

Exhibit 7.2 2031 Affordable Road Network – Projects by Phase

Sector	Project	Description
Currently under construction or funding secured		
Southeast	Alta Vista Transportation Corridor	New two-lane road between Riverside Drive and the Ottawa Hospital
Southwest	Greenbank Road	Widening from two to four lanes between Malvern Drive and Strandherd Drive
Southeast	Hunt Club Road Extension	Eastward extension of Hunt Club road to Highway 417
East	St. Joseph Boulevard	Widening from two to four lanes between Old Tenth Line Road and Trim Road
Southwest	Strandherd-Earl Armstrong Bridge	New bridge crossing between Strandherd Drive and Earl Armstrong Road
East	Trim Road	Widening from two to four lanes between North Service Road and Innes Road
Phase 1: 2014-2019		
Southeast	Airport Parkway (1)	Widen from two to four lanes between Brookfield Road and Hunt Club Road
East	Blackburn Hamlet Bypass Extension (1)	New four-lane road between Orléans Boulevard and Navan Road
East	Brian Coburn Boulevard Extension	New two-lane road (ultimately four-lane) between Navan Road and Mer Bleue Road
West	Campeau Drive	New four-lane road between Didsbury Road and Huntmar Drive
Rural	Country Club Road	New two-lane road between eastern terminus of Golf Club Way and Jenkinson Road
West	Earl Grey Drive Underpass	New underpass of Terry Fox Drive
Southwest	Greenbank Road Extension	New four-lane road between Cambrian Road and Jockvale Road
West	Old Richmond/West Hunt Club	Widen Old Richmond Road/ West Hunt Club Road from two to four lanes between Hope Side and Highway 416

Exhibit 7.2 2031 Affordable Road Network – Projects by Phase

Sector	Project	Description
Phase 1 (continued)		
West	Stittsville North-South Arterial (1)	New two-lane road between Fernbank Road and Abbott Street
West	Klondike Road	Urbanize existing two-lane rural cross section between March Road and Sandhill Road
East	Mer Bleue Road	Widen from two to four lanes between Brian Coburn Boulevard and Renaud Road
West	Palladium Drive Realignment	Realign in vicinity of Huntmar Road to new north-south arterial
Southwest	Strandherd Drive (1)	Widen from two to four lanes between Fallowfield Road and Maravista Drive
Subtotal – Phase 1 (2013 dollars)		***$240.1M***
Phase 2: 2020-2025		
Southeast	Bank Street	Widen from two to four lanes between Earl Armstrong Road extension and south of Leitrim
East	Blackburn Hamlet Bypass Extension (2)	New four-lane road between Innes Road and Orléans Boulevard
West	Carp Road	Widen from two to four lanes between Highway 417 and Hazeldean Road
Southwest	Chapman Mills Drive	New four-lane road between Strandherd Drive and Longfields Drive
West	Eagleson Road	Widen from two to four lanes between Cadence Gate and Hope Side Road
Southwest	Jockvale Road	Widen from two to four lanes between Cambrian Road and Prince of Wales Drive
West	Kanata Avenue	Widen from two to four lanes between Highway 417 and Campeau Drive
West	Stittsville North-South Arterial (2)	New four-lane road between Palladium Drive (at Huntmar) and Abbott Street
Southeast	Lester Road	Widen from two to four lanes between Airport Parkway and Bank Street
Southwest	Strandherd Drive (2)	Widen from two to four lanes between Maravista Drive and Jockvale Road
East	Tenth Line Road	Widen from two to four lanes between Harvest Valley Road and Wall Road
Subtotal – Phase 2 (2013 dollars)		***$240.1M***

Exhibit 7.2 2031 Affordable Road Network – Projects by Phase		
Sector	**Project**	**Description**
Phase 3: 2026-2031		
Southeast	Airport Parkway (2)	Widen from two to four lanes between Hunt Club Road and MacDonald-Cartier International Airport
Rural	Bank Street (2)	Widen from two to four lanes between Earl Armstrong Road extension and Rideau Road
Outer Urban	Blair Road	Widen from two to four lanes between Meadowbrook Road and Innes Road
Outer Urban	Coventry Road	Widen from two to four lanes between Belfast Road and St. Laurent Centre
Outer Urban	Cyrville Road	Urbanize existing two-lane rural cross-section between Belfast Road and St. Laurent Centre
Southeast	Earl Armstrong Road	Widen from two to four lanes between Limebank Road and Bowesville Road
West	Hope Side Road	Widen from two to four lanes between Eagleson Road and Richmond Road
West	Huntmar Drive	Widen from two to four lanes between Campeau Drive extension and Cyclone Taylor Boulevard; widen from two to four lanes between Palladium Drive and Maple Grove Road
West	Stittsville Main Street Extension	New two-lane road between Palladium Drive and Maple Grove Road
Inner Urban	Preston Street	Extend existing two-lane urban roadway Albert Street to Vimy Place (at John A. McDonald Parkway)
Southwest	Prince of Wales Drive	Widen from two to four lanes between Hunt Club Road and Merivale Road
Outer Urban	Tremblay Road	Widen from two to four lanes between Pickering Place and St. Laurent Boulevard
Subtotal – Phase 3 (2013 dollars)		***$244.5M***
Total – Phases 1 to 3 (2013 dollars)		***$724.7M***

Action 7-6: Obtain and protect rights of way required for future road projects

Protecting road rights of way. The *Official Plan* identifies right of way widths the City will protect for the road network discussed in this section, and identifies the mechanisms for doing so. For example, the City can secure right of way for new roadways or the widening of an existing right of way from adjacent lands as a condition of development approval for a subdivision, severance or site plan. This includes the acquisition of lands required for corner triangles at intersections and railway crossings, for auxiliary lanes (including turn lanes) where warranted by site traffic, and for roundabouts where they are the preferred design solution at intersections. It is important to note that, in some road corridors, the City will protect a right of way wider than strictly required to accommodate the road projects identified in Annex A. In other words, it may protect right of way for a four-lane road when only a two-lane road is identified for 2031; this is because some areas of Ottawa will not have reached "community build-out" status by that time.

Additional right of way for transit. The City may require the exclusive use of a portion of certain road rights of way for transit priority operations, reserved bus lanes or light rail transit. In such cases, right of way requirements may increase and would be identified through future study.

Action 7-7: Collaborate on federal and provincial road projects

Active projects. Provincial highways are a major part of Ottawa's transportation system, and federal roads owned by the NCC also play an important role in Ottawa's transportation system, both from a functional perspective and as key scenic routes and tourist attractions. Exhibit 7.3 identifies several road projects that are being implemented or considered by provincial or federal governments; the City is consulted on such projects, but does not hold decision-making or implementation authority. The future road network discussed in this section was developed under the assumption that currently approved changes will be implemented, and the City may have to revise its analysis if the provincial or federal governments cancel projects, approve additional projects, or undertake new studies. The City will support provincial or federal projects

that improve the overall sustainability of Ottawa's transportation system, such as by enhancing safety or reducing emissions.

Interprovincial bridges. The Ottawa River is spanned by five roadway bridges under federal jurisdiction. This Plan projects a substantial increase in total peak period travel demand across these bridges by 2031. A primary consideration in responding to this increase is as the provision of a new truck route, because restrictions on existing bridges have concentrated trucks on Waller Street, Rideau Street, King Edward Avenue, and the Macdonald-Cartier Bridge, leading to industry inefficiencies, public safety concerns and negative community and environmental impacts along King Edward Avenue and elsewhere in the Central Area.

Toward a new bridge. The federal government, in conjunction with both provincial governments and affected municipalities, undertook a comprehensive evaluation of possible crossing locations but without reaching a consensus recommendation among the partnering agencies. Until a new Ottawa River crossing is built, the City will continue to prohibit development in locations that could hinder the implementation of a potential crossing.

The City will work with provincial and federal governments to develop a transportation system that supports the City's growth management objectives. The City will explore alternative ways to accommodate interprovincial truck travel. Once a safe and efficient alternative to the downtown truck route is found, the City will remove Rideau Street and King Edward Avenue from the City's identified truck route system.

Exhibit 7.3 Key Provincial and Federal Road Projects

Project	Description
Federal (NCC) Projects	
Ottawa River bridge crossing	Location to be determined
Provincial Projects	
Highway 417	Widening from four to six lanes between Highway 7/417 and Palladium Drive
	Widening from four to six lanes plus two HOV lanes between Palladium Drive and Eagleson Road
	Widening from six to eight lanes between Highway 416 and Carling Avenue
	Widening from six to eight lanes between Nicholas Street and Ottawa Road 174
	Widening from four to six lanes between Ottawa Road 174 and the new Hunt Club Road interchange
	Interchange at Hunt Club Road extension

Note: Implementation timing for these projects will depend on the responsible agency.

7.3 Maximize Road Network Efficiency

Action 7-8: Implement the *Transportation System Management Strategy*

The need for efficiency. Although the automobile is currently the dominant mode of travel in many areas of Ottawa, the potential to accommodate future growth in motor vehicle demand (even when maximizing the number of people who choose not to drive) faces real physical, financial and social constraints. In planning and operating transportation infrastructure, the City must focus on using existing right of way and other resources more efficiently. As traffic volumes rise and approach the capacity of roads, action is required to manage congestion while also maximizing the person-carrying capacity of the roadway network. Transportation system management (TSM) strategies optimize the efficiency of existing transportation infrastructure, thereby reducing the need to construct new facilities that can have substantial costs and undesirable impacts. TSM measures can be applied across the entire transportation system, in major corridors, or at individual locations.

The strategy. In 2012 the City adopted a new *TSM Strategy and Action Plan*, a detailed blueprint for actions in several areas over the next decade. It calls for strategies that can reduce delay and emissions, reduce operating costs, and improve safety and community liveability. It aims for durable outcomes including a positive user experience and a high level of customer service, with the goals of improving safety and convenience for pedestrians and cyclists and preserving reliability for transit users. These will lead to smarter travel choices and support the City's mode shift objectives. The City will continue to pursue implementation of the *TSM Strategy and Action Plan*, which reflects three main areas of emphasis as described below.

Action 7-9: Use advanced traffic management systems (ATMS)

Putting technology to work. ATMS applies emerging technologies (e.g. computers, sensors, communications) to improve efficiency, save money, and reduce safety risks and environmental impacts. The City will use these measures to:

- Improve safety and convenience for pedestrians and cyclists through countdown timers, audible signals, and bicycle detection
- Improve transit service reliability through priority measures at traffic signals and congested intersections
- Continue to provide effective traffic management strategies by improving central monitoring, synchronization and real-time adjustment of traffic control signals
- Improve detection of incidents, and timely responses to them
- Improve emergency response times through vehicle pre-emption

Action 7-10: Offer streamlined and accessible traveller information

Enabling better travel decisions. Comprehensive traveller information services allow people to plan trips based on full knowledge of their options and current construction or weather conditions, thereby improving efficiency and safety, and encouraging mode shift where viable options exist. The City will use information tools to:

- Improve communication with travellers through websites, mobile applications, variable message signs and the media

- Offer an interactive, web-based traveller information service addressing multiple modes (e.g. walking, cycling, transit, carpooling, as well as intercity options), and information on weather, incidents, construction projects and emergency detours
- Support an integrated travel information system for the National Capital Region involving municipal, provincial and federal authorities on both sides of the Ottawa River

Action 7-11: Monitor and adopt useful technologies for data management

Innovation and collaboration. The City recognizes the importance of identifying and selecting technologies that are affordable, scalable and proven in real-world applications, with recognized standards and low costs for operation and maintenance. The City will continue to collaborate and partner with academia and the private sector to research and evaluate new technologies, leading to products and services that can benefit users of Ottawa's transportation system.

7.4 Maximize Road Safety for All Users

Action 7-12: Implement the *Strategic Road Safety Action Plan*

Approaches to improving road safety. Maximizing the safety and security of all road users is a fundamental objective of the City. While transportation facilities are initially built to optimize safety, operating environments and user expectations can change over time. Without additional preventative measures, undesirable conditions and behaviours can lead to property damage, injury and death. These risks can be mitigated through multidisciplinary road safety strategies that use infrastructure, operations and services to address road users, road environments and vehicles. Facilities and services for walking, cycling and transit can also be made safer and more secure for users. Outreach can help travellers reduce their exposure to risk by shifting to a safer mode, or by adopting safer behaviour. Perceptions related to safety can influence individuals' choice of travel modes, and safety initiatives can help the City achieve its objectives for walking, cycling and transit use.

The Action Plan. In 2012, the City of Ottawa approved a *Strategic Road Safety Action Plan* developed with key partners including the Public Works Department, Ottawa Public Health, Ottawa Police Service, Ottawa Paramedic Service and Ottawa Fire Services. The action plan identifies key focus areas, initiatives, roles and responsibilities, goals and performance measures. It is based on a "4E" approach to road safety—engineering, education, enforcement and emergency response—and frames the delivery of the City's core road safety programs, namely the Safer Roads Ottawa Program, Pedestrian Safety Evaluation Program, Cycling Safety Improvement Program, Safety Improvement Program, and In-service Safety Reviews. The four primary areas of emphasis of the action plan are discussed in the following sections.

Action 7-13: Combat distracted driving

Inattentive drivers. From 2008 to 2012, 21% of collisions causing serious injury or death in Ottawa were caused by inattentive driving; it is possible that even more were similarly caused but unreported as such. The City includes detailed strategies to reduce non-intersection single vehicle collisions, such as those involving vehicles that simply leave the road.

Action 7-14: Protect vulnerable road users

Pedestrians, cyclists and motorcyclists. From 2008 to 2012, 48% of Ottawa's collisions leading to serious injury or death involved vulnerable road users who lack the protective enclosure and supplemental safety features (e.g. air bags) enjoyed by motor vehicle drivers and passengers. The *Strategic Road Safety Action Plan* includes detailed strategies to enhance the safety of pedestrians, cyclists and motorcyclists.

Action 7-15: Reduce aggressive driving

Proper driver behaviour. From 2008 to 2012, 46% of collisions causing serious injury or death were caused by aggressive driving such as failure to obey traffic controls or yield to other traffic, speeding, or improper passing, turning or lane changing. The action plan includes detailed strategies that target angle collisions, turning movement collisions, speed-related collisions, and rear-end collisions. In addition, the City is supportive of initiatives at the provincial level to reduce the default speed limit from 50km/h to 40km/h.

Action 7-16: Target issues affecting population segments by age

Young drivers, senior drivers and children. From 2008 to 2012, 25% of serious injuries and deaths from collisions involved young drivers aged 16 to 24 years, 6% involved senior drivers, and 2% involved children. The action plan includes detailed strategies for each of those demographic groups.

7.5 Enable Efficient Goods Movement

Trucks are virtually the only mode of local freight transportation in Ottawa, while intercity freight by truck, rail and air helps support the city's economic livelihood and competitiveness.

Action 7-17: Designate truck routes to serve industry and protect neighbourhoods

Truck route designation. Ottawa maintains a comprehensive truck route system that consists of freeways, highways and arterial roads giving access to industrial and commercial areas. These roads can withstand use by heavy trucks, the sizes of which are legislated by the Province of Ontario. The City's designation of truck routes takes into account noise, vibrations, emissions and safety impacts. In general, the City minimizes trucking impacts on residential areas by designating several alternative routes so that impacts are not concentrated in one area. With the addition of new infrastructure, the City will undertake a review of the truck route network as appropriate. The issue of hazardous materials movement will be considered as part of the truck route network review.

Truck route restrictions. Because reduced routing options also increase costs for freight providers, truck restrictions on arterial roads should be considered only where community impacts are significant, where the road in question serves exclusively non-commercial land uses, and where adequate alternative routes are available.

Reducing impacts in the Central Area. As discussed in Section 7.2, the volume of truck traffic passing through Ottawa's downtown to and from the Macdonald-Cartier Bridge has substantial negative impacts on local neighbourhoods and businesses. The City will work with other governments and the private sector to explore ways that through truck traffic in the Central Area, particularly on King Edward Avenue, can be reduced while ensuring the safe and efficient movement of goods. This may include efforts to develop a tunnel solution for connecting the Macdonald-Cartier Bridge with Highway 417, or other measures.

Action 7-18: Consider freight needs in road planning, design and construction

Providing adequate facilities for trucks. When building or rehabilitating roads, the City will consider trucking needs through the use of appropriate design standards and the inclusion of features such as on-street loading areas. The City will also monitor opportunities to enhance the truck route network through road rehabilitation, enabling the adjustment or removal of seasonal weight restrictions.

Action 7-19: Monitor and consult with the freight industry for mutual benefit

Supporting knowledge and innovation. The City will participate in surveys of goods movement on a regular basis to quantify freight demand characteristics, the use of arterial roads by trucks, and the congestion, noise and safety impacts of truck movements. The City will also encourage industry to explore goods movement technologies and practices that can reduce community impacts, improve efficiency and enhance regional competitiveness. These could include intermodal terminals that enable a transfer of freight tonnage from road to rail.

7.6 Protect Neighbourhoods from Undesirable Impacts

Action 7-20: Use area traffic management to resolve public concerns

About area traffic management. Motor vehicle use in neighbourhoods can have undesirable effects including excessive traffic volumes and speeds, aggressive driver behaviour and the creation of hostile conditions for walking and cycling. The City's Area Traffic Management program works to preserve neighbourhood quality of life by mitigating these problems in a way that addresses the needs of residents and businesses, while also respecting the obligations, rights and desires of road users.

Area Traffic Management Guidelines. The City's *Area Traffic Management Guidelines* outline a process for consistently and equitably resolving public concerns about traffic in neighbourhoods. The guidelines discuss the prioritization of study requests, techniques for public consultation, and approaches to analysis and monitoring. The document also offers guidance for applying the City's area traffic management "toolbox" which includes a wide range of options such as road network modifications, traffic control devices, traffic calming measures, streetscaping, enforcement, transportation demand management and public education.

7.7 Minimize Environmental Effects

Ottawa's transportation infrastructure and operations directly influence the quality of our air and water, the integrity of our land, the vitality of our flora and fauna, and the depletion of our resources. Minimizing the environmental effects of growth will be vital to the future quality of life for Ottawa's residents. This section discusses how the City intends to do so; it should also be noted that environmental assessment requirements for transportation projects are discussed in Section 1.6 of this Plan.

Action 7-21: Minimize effects on land, water and vegetation

Land consumption. To minimize the consumption of valuable agricultural and natural resource lands by transportation infrastructure expansion, the City will continue to maximize the efficient operation of existing facilities before adding new ones. It will also work to increase walking, cycling and transit use, which are more space-efficient than motor vehicle use.

Water quality. Pavement prevents water from soaking into the ground, and surface pollutants contaminate the resulting runoff. To improve runoff quality and reduce its volume (thus favouring ground water recharge), the City will support a reduction in paved areas by reducing parking requirements, encouraging shared parking and driveway accesses, promoting permeable surfaces, and following erosion control guidelines for construction. Transportation facilities will provide adequate snow storage, incorporate best practices in stormwater management, and allow surface water runoff to be treated using methods specified by the Ministry of the Environment before it is released into open waterways.

Vegetation. Some trees and plants are removed when transportation infrastructure is built, and others are affected by road use and maintenance. Particulate matter, sulphur dioxide, nitrous oxides and volatile organic compounds emitted by vehicles can harm vegetation, and the use of road salt in winter also impacts plant health. The City is protecting and enhancing urban forests within transportation corridors by reducing road salt use and greening its roadways (e.g. new planting), guided by its *Salt Management Strategy* and *Greening Guidelines*. This Plan's intent to minimize growth in automobile use will moderate future needs for new infrastructure, and limit air emissions.

Cumulative effects on the Greenbelt. The NCC and the City of Ottawa undertook a joint study to assess the cumulative effects of existing, planned and reasonably foreseeable municipal transportation projects on Greenbelt lands. The results of this study along with a list and categorization of 30 projects are documented in a November 27, 2012 staff report to Transportation Committee. A key guiding principle of the study was to examine how transportation infrastructure could be managed while seeking to minimize encroachment and landscape fragmentation. The City will have regard to this study when undertaking environmental assessments for transportation projects in the

Greenbelt and will work with the NCC to implement mutually agreeable environmental mitigation measures for projects crossing the Greenbelt.

Action 7-22: Minimize greenhouse gases and other air emissions

Efficient technologies and behaviours. Despite population and traffic growth, future transportation emissions can be limited through strategies to minimize vehicle-kilometres travelled per person, and through advances in vehicle technologies and low-carbon fuel sources. The City will continue to promote fuel-efficient vehicles and driving techniques, discourage idling, and pursue reductions in carbon emissions from transit and other fleet vehicles. The City's *Air Quality and Climate Change Management Plan* (2004) recommended ways to reduce emissions from transportation, most importantly by reducing private motor vehicle use.

Action 7-23: Control noise levels

Protecting residents. The City aims to protect residents from unacceptable levels of noise from transportation sources including roads, public transit, aircraft and heavy rail. The City's *Environmental Noise Control Guidelines*, which are consistent with regulations and guidelines of the Ontario Ministry of the Environment, identify different noise sources and design criteria, and regulate noise control measures. Readers may refer to the *Official Plan* for policies on acceptable noise levels for land uses including outdoor residential areas.

Noise control measures. The City will implement noise control measures through the planning process for new communities and transportation facilities, emphasizing the use of design and landscaping measures rather than noise attenuation barriers. To ensure conformance with the *Environmental Noise Control Guidelines*, the City will review developments with residential or other noise-sensitive land uses near transportation corridors, and will examine the noise impacts of major modifications to arterial or major collector roads and transit corridors, and identify attenuation, if required. When occupants of developments near roads or rapid transit facilities raise noise concerns, the City follow these guidelines.

8. Encourage Sustainable Mobility Choices

Chapter Overview	
Recommended actions	
Section 8.1	**Offer incentives, promotion and education**
Action 8-1	Implement the *Transportation Demand Management Strategy*
Action 8-2	Improve and promote travel options for City employees
Action 8-3	Use communication and promotion to raise awareness, understanding and motivation
Action 8-4	Build community partnerships to extend the City's reach and resources
Action 8-5	Support the success of related City initiatives
Section 8.2	**Make carpooling more attractive**
Action 8-6	Develop and implement a ridesharing strategy
Action 8-7	Help carpoolers find each other
Action 8-8	Provide and/or promote carpool lanes and parking lots in collaboration with MTO
Section 8.3	**Enhance City parking facilities and services**
Action 8-9	Implement the *Municipal Parking Management Strategy*
Action 8-10	Set off-street and on-street parking rates based on local parking studies and stakeholder consultation
Action 8-11	Conduct parking studies and monitoring in designated local areas
Action 8-12	Provide parking facilities for more sustainable modes of travel

8.1 Offer Incentives, Promotion and Education

Action 8-1: Implement the *Transportation Demand Management Strategy*

About transportation demand management. Transportation demand management (TDM) measures allow communities to shape the economic, social and physical factors behind individuals' travel choices. TDM tools use incentives (monetary and non-monetary), promotion and education to influence whether, why, when, where and how people travel, and can support key goals for changing travel behaviour:

- Mode shift – more people walk, cycle, take transit or carpool
- Trip reductions – more people telework, shop online or conduct business by telephone

- Driving reductions – more drivers make fewer trips by car and to closer destinations
- Time and route shifting – more drivers avoid congestion by changing the time or route of their trip

The Strategy. In 2012 the City adopted a *Transportation Demand Management Strategy* that recognized the importance of TDM in pursuing sustainable transportation goals in general, but also in supporting and building on the impacts of light rail implementation on the travel choices of Ottawa residents. That strategy identified a framework of four long-term goals that are summarized below, a short-term action plan, partner and stakeholder roles, and a performance measurement framework.

Action 8-2: Improve and promote travel options for City employees

Leading by example. The City will act as a role model for other employers in motivating more sustainable travel choices by its employees for both commuting and local business trips. It will do so by enhancing infrastructure, promotion, incentives and monitoring in City workplaces. A recent example of this leadership is the adoption of the WORKshift program, an initiative designed to facilitate flexible work hours and teleworking among employees.

Action 8-3: Use communication and promotion to raise awareness, understanding and motivation

Removing barriers to sustainable choices. The City will develop a strategic communication framework for TDM, building on market research and the TravelWise program identity that has been in use since 2000. A key element of this framework will be a comprehensive, user-friendly Web portal that offers multimodal trip planning tools, access the City's ridematching service, educational materials and social media links. Focused campaigns and special events will help raise awareness, attract partners and community participation, and reward achievements.

Action 8-4: Build community partnerships to extend the City's reach and resources

Engaging workplaces. The City will support and work with employers and post-secondary institutions to offer attractive services and incentives for commuters. In this endeavour there are significant opportunities to support and leverage other City activities, from light rail implementation to cycling skills training and public health outreach.

Engaging schools. The City will continue to champion and support a local school travel planning project, while it works to expand services to schools outside the framework of that particular initiative.

Engaging neighbourhoods. The City is now undertaking a neighbourhood-based personal travel planning pilot project, and will carry lessons forward to future social marketing efforts. There are many other opportunities to partner with groups ranging from festivals to farmers' markets, business groups, community associations and service groups.

Action 8-5: Support the success of related City initiatives

Community services. The City's TDM program will work with other City staff groups to integrate TDM messages and tools into other services and products being delivered to the community. These could include cycling skills training, community grants, and public health or social services.

Other City initiatives. Many things the City does are consistent with the goals of TDM—these include transit fare systems and marketing, traveller information systems, public parking services, development review and approvals, and neighbourhood planning.

8.2 Make Carpooling More Attractive

Demographic shifts and growing personal wealth have led North American automobile occupancies to decline for several decades. In Ottawa, the average automobile occupancy in the morning peak hour has declined from about 1.4 persons per vehicle in the 1960s, to 1.28 persons per vehicle in 1995, to 1.22 persons per vehicle in 2011. Looking more specifically at carpooling by people going to work, the 2011 National Household Survey found an average occupancy of 1.11 workers per car in Ottawa (given that 61.2% of commuters drove and 6.5% were passengers), lower than the average occupancy of 1.13 workers per car in 2006.

In Ottawa's downtown and other areas that enjoy high-quality transit service, ridesharing is unlikely to compete well with transit because it does not offer carpoolers the same independence as transit riders. However, there will continue to be commuters who do not have attractive transit options and who have long commutes for which walking and cycling are impractical. The City will encourage these commuters to carpool rather than drive alone, and they will be the focus of City efforts to improve and promote carpooling.

Action 8-6: Develop and implement a ridesharing strategy

Partnerships. The City will invite the Province of Ontario, Province of Quebec, City of Gatineau and NCC to develop a ridesharing strategy for the National Capital Region. Including the Ontario Ministry of Transportation is suggested because of the Ministry's past investments in carpool parking lots around Ottawa and high-occupancy vehicle (HOV) lanes on parts of Highway 417. Including Quebec agencies would be valuable because of the growing demands on interprovincial bridges (including the Champlain Bridge and Portage Bridge, which already have HOV lanes). Ottawa's other neighbouring municipalities may be interested in participating due to the long distances that many of their residents must travel (almost exclusively by car) to jobs in Ottawa.

Scope. The purpose of a ridesharing strategy would be to jointly identify, coordinate and support ridesharing facilities and services across the region, with a focus on carpooling to workplaces and educational institutions in areas that are less well served

by public transit. A number of measures that could arise from the strategy would be delivered through the City's TDM program (as discussed in Section 8.1) including ridematching services, education, promotion, individualized household marketing, and working with employers and educational institutions to provide incentives such as preferential parking to employees and students. Other measures could include HOV lanes and carpool parking lots, and perhaps vanpooling (in which commuters share a ride in a van that is owned by a third party but driven by one of the vanpool members).

Action 8-7: Help carpoolers find each other

Ridematching service. The City has offered an online public carpool ridematching service at www.ottawaridematch.ca for several years. Integration and promotion of that service with other online trip planning tools (as discussed in Section 8.1) should improve its participation levels and effectiveness. The ability of the ridematching service to provide employers with dedicated sub-sites (where employees can choose to matched only with colleagues) will provide an incentive for employers to work with the City on a wider range of TDM initiatives.

Action 8-8: Provide and/or promote carpool lanes and parking lots in collaboration with MTO

About carpool lanes. Carpool lanes are HOV lanes that are reserved for use by vehicles with a minimum of two or three occupants, as well as buses and (typically) taxis. They may be reserved 24 hours a day, or only at peak hours. They may run the length of a freeway corridor, or (in the case of queue jump lanes) be limited to one short approach to a signalized intersection. There are a few examples of these lanes in Ottawa. For example, the NCC operates a 2+ carpool lane on the Champlain Bridge and a 3+ carpool lane on the Portage Bridge, and the MTO has constructed new 2+ carpool lanes on Highway 417 west of Moodie Drive. However, there are no carpool lanes on City of Ottawa roads with the exception of a short approach to the Portage Bridge on Wellington Street. Development of the recommended ridesharing strategy (discussed previously in this section) could lead to additional carpool lanes on City, MTO or NCC roadways, and to promotional measures that increase their use.

About carpool lots. Carpool lots encourage ridesharing by letting long-distance rural commuters meet and park their vehicles for the day. The City operates one carpool parking lot on Carp Road south of Highway 417, and the Ontario Ministry of Transportation has several in the area:

- Three along Highway 417 – at Panmure Road, Limoges Road, and Upper Dwyer Hill Road
- Three along Highway 416 – at Bankfield Road, Rideau River Road and Shanly Road (near Spencerville)
- Two along Highway 7 – at Dwyer Hill Road and Cemetery Road (near Carleton Place)

Greater use of these lots may be encouraged through more effective promotion, security and other incentives. It should be noted that the City's park-and-ride lots do not permit carpool parking due to high occupancy levels. Development of the recommended ridesharing strategy (discussed previously in this section) could lead to additional carpool lots on City or MTO lands, and to promotional measures that increase their use.

8.3 Enhance City Parking Facilities and Services

Action 8-9: Implement the *Municipal Parking Management Strategy*

About parking. Public parking is a strategic tool for city building. By effectively managing its supply and price, the City can influence how people choose to travel and promote a behavioural shift from driving to walking, cycling and transit. By providing public parking, the needs of stores, services, institutions and tourism destinations where customers and visitors arrive in automobiles can be met in the most efficient manner. Public parking generally uses each parking space more efficiently than private (dedicated) parking because spaces are shared between users, and thus reduces the amount of urban land dedicated to the car. On-street parking supports businesses and helps build vibrant streetscapes.

The Strategy. In 2009 the City adopted a *Municipal Parking Management Strategy* to guide the provision, operation and control of on-street parking and City-owned off-street parking facilities. The strategy recognizes that the City has an important role in public parking provision and enforcement—one that supports the local economy, sustainable

travel choices by individuals, residential intensification, neighbourhood quality of life, and the financial sustainability of current and future parking initiatives themselves. The strategy contains details on financial management, accountabilities and performance measurement, but the issues of greatest relevance to this Plan concern the City's approach to setting municipal parking rates, conducting parking studies and monitoring, and encouraging more sustainable modes of travel, as described below.

Action 8-10: Set off-street and on-street parking rates based on local parking studies and stakeholder consultation

Approval by Council. Council will set rates, hours and locations of on-street and off-street public parking annually, when it approves the parking management program work plan and budget. These decisions will be based on the results of local area parking studies and consultation with stakeholders including business improvement associations, community associations, the local councillor, and places of worship. Where justified, the City may vary the rates and hours of on-street and off-street public parking in different areas.

Adjustments by staff. City staff may still make adjustments to public parking at other times of the year. Changes to on-street parking rates, hours, and locations should be consistent with the *Municipal Parking Management Strategy*, within the range approved by City Council as part of the annual budget, and supported by the local councillor, business improvement association, and community association. Changes to off-street parking rates to reflect seasonal and market adjustments or to encourage more sustainable modes of transportation (e.g. motorcycles, scooters, carshare vehicles) should be consistent with the Municipal Parking Management Strategy, and within the range approved by City Council as part of the annual budget.

Action 8-11: Conduct parking studies and monitoring in designated local areas

Initiating studies. The City will conduct parking studies for different areas within Ottawa based on criteria including on-street parking utilization during peak periods, potential for integration with a Community Design Plan or other local study, stakeholder

requests and readiness to participate, and City funding and resources as established through annual budgets and term of council priorities.

Monitoring. All areas with paid public parking will be monitored annually for utilization, with a demand target of 75% to 85% of capacity. Results will be communicated to stakeholders. If utilization changes unexpectedly, staff and stakeholders may consider adjusting parking rates before the next annual report to Council.

Action 8-12: Provide parking facilities for more sustainable modes of travel

Parking for bicycles and efficient vehicles. The City provides unsecured bicycle parking (e.g. standard racks) at no cost to cyclists and, where prudent and operationally feasible, will provide secured bicycle parking (e.g. cages or lockers) at a price that recovers operational costs. The City will also consider reducing parking rates for vehicles that occupy less than half a regular parking stall or that otherwise reduce the demand for parking, where practical (e.g. carshare vehicles). Furthermore, the City will encourage other parking operators to provide similar incentives bicycles and other efficient vehicles.

9. Invest Responsibly

Chapter Overview	
Recommended actions	
Section 9.1	**Respect the limits of affordability**
Action 9-1	Follow an affordable investment schedule
Action 9-2	Consider additional investments if funds become available
Section 9.2	**Minimize life cycle costs**
Action 9-3	Implement the City's *Comprehensive Asset Management Strategy*
Action 9-4	Recognize the impact of new infrastructure on maintenance activities
Section 9.3	**Measure transportation system performance**
Action 9-5	Monitor and report on progress toward this Plan's objectives

9.1 Respect the Limits of Affordability

Action 9-1: Follow an affordable investment schedule

Affordability parameters. The City defines affordability from the point of view of current and future taxpayers. Not only will current taxpayers be responsible for the capital cost of new infrastructure, but ongoing operational, maintenance, and rehabilitation costs mean that future residents will be paying for transportation projects for many years to come. To contend that a plan is affordable is to demonstrate that there is adequate funding available from identified sources to deliver planned services and infrastructure investments—that is, a funding plan has been identified with reasonable assumptions which also respects established fiscal policies. Ultimately, the City must prioritize and allocate investment among many competing demands.

The consideration of affordability is a financial practice the City has followed since amalgamation through the establishment of Long Range Financial Plans at each term of Council. These have typically been limited to a ten-year horizon but major undertakings such as the Confederation Line, in conjunction with the high levels of investment needed to maintain the City's assets in a state of good repair, mean that the City's master plans require greater consideration of long-term financial issues.

In July 2011, Council was presented with a long-range transit plan that included operating and capital needs for the bus and light rail system to 2048. That plan established that the City could afford to develop and operate the transit system in line with the strategic directions established in the 2008 TMP, including the Confederation Line; this was revisited in December 2012 when the final Confederation Line report and recommendation was put before Council.

The affordability parameters and modelling efforts used in the analysis behind the long-range transit plan have been updated to guide the recommendations of this Plan, and a review of funding sources for roads, cycling, pedestrian facilities, and structures (which are funded through development charges and contributions to capital secured through the annual tax levy) has been conducted. These issues will be documented by the City Treasurer under separate cover.

Implementation costs. The importance of accounting for the lifecycle costs of new transportation infrastructure should not be understated. Protecting existing and future assets with sufficient operations, maintenance and renewal funds as part of the Long Range Financial Plan will ensure that the City can continue to provide essential infrastructure services to residents. As such, the implementation of any service changes proposed as part of this Plan should be considered as part of annual budget cycles.

Exhibit 9.1 summarizes the capital costs of implementing this Plan (with the Affordable RTTP and Road Networks). The total capital cost for all modes is approximately $4 billion. In terms of operating costs, it is estimated that there would be an annual savings of approximately $5 million per year by 2031 as a result of implementing the affordable transit network (this is the incremental cost for new infrastructure only). The net savings largely is a result of the implementation of LRT and the savings in bus costs. Conversely, the implementation of new road, cycling and pedestrian infrastructure will result in modest increases in operating costs.

***Action 9-2:* Consider additional investments if funds become available**

Implementation of projects not included in the Affordable Networks. The assumptions behind projected funding levels will be monitored on a regular basis. For instance, a key assumption is that all major transit projects will be co-funded equally by all levels of government—so if anticipated funding agreements are delayed then major transit investments would need to be reconsidered. Similarly, the unanticipated availability of revenues beyond those reasonably assumed would allow additional investments to be considered.

Exhibit 9.1 Capital Costs of New Infrastructure and Services: Affordable RTTP and Road Networks, Pedestrian Facilities, Cycling Network, ($2013 millions)

Type	Capital cost
LRT+ Vehicles + Maintenance and Storage Facility	2,360
BRT	317
O-Train + Vehicles + Maintenance and Storage Facility	118
Transit priority	200
Road Network plus Intersection Modification	864
Cycling *	70
Pedestrian *	66**
Total	***$3,995M***

* *Road project costs include the costs of integral cycling and pedestrian facilities.*

** *Includes major multi-use pathway structures*

9.2 Affordable Life Cycle Costs

The estimated replacement value of the City's transportation infrastructure—including roads, bridges, walkways and rapid transit facilities—was about $13 billion in 2012. These assets are continuously deteriorating, and will eventually require rehabilitation or replacement. With limited budgets and increasing demands on the transportation network, the City is challenged to manage its assets in a way that minimizes total life cycle costs and sustains expected levels of service.

In addition, the life cycle costing approach adopted for this plan includes the incremental costs of renewing and rehabilitating new transportation infrastructure, which are estimated to be between $70 and $90 million for the period to 2031. The full life cycle costs of new infrastructure have been incorporated into the City's financial model.

Through the adoption of the Comprehensive Asset Management Strategy in October 2012, Council confirmed the required investment levels to keep the City's assets in a state of good repair. In light of this, the funds required to maintain this state were the first priority in the determination of affordable funding envelopes for new infrastructure.

Action 9-3: Implement the City's Comprehensive Asset Management Strategy

About Comprehensive Asset Management. Comprehensive Asset Management (CAM) is the effective management of all tangible capital (physical) assets that the City uses, directly or indirectly, to deliver services to its customers. Key objectives of the City's CAM program include reducing life cycle costs while maintaining assets in a safe condition, improving service to customers, and delivering agreed-upon levels of service. The CAM program will enhance the justification of infrastructure investment decisions, demonstrate the long-term impact of short-term decisions, and link infrastructure decisions to service outcomes.

The Strategy. The City adopted a guiding CAM policy and an implementation-focused *CAM Strategy* in 2012. The CAM policy defines Council's expectations around the management of the City's physical assets, and is expected to remain relatively constant over time. The *CAM Strategy* articulates senior management's commitment to implementing the CAM policy including the necessary resources and timescales for implementation, and will evolve in response to internal and external changes or challenges faced by the City. This CAM approach allows the City to define:

- The inventory and value of the assets needed to support the delivery of services
- The asset condition and expected remaining service life
- The level of service expectations, costs, and what needs to be done to achieve those levels

- The interventions required on the assets, and when these are most appropriate to ensure assets remain safe for sustained the service
- The cost to acquire, operate, maintain and renew while maintaining an acceptable level of risk
- The appropriate investment levels to ensure long-term affordability

In the CAM program's 2012 *State of the Asset Report*, Ottawa's transit assets were assigned a replacement value of $1.95 billion, and were rated as being in good to fair condition overall. Ottawa's roads, bridges, pathways and other transportation facilities were assigned a replacement value of $11.1 billion, and were rated as being in fair condition overall.

Action 9-4: Recognize the impact of new infrastructure on maintenance activities

About maintenance activities. Infrastructure maintenance services reduce life cycle costs while they improve safety, sustain desired levels of service and protect the natural environment. The City delivers maintenance services—asphalt and concrete repairs, winter snow and ice control, and sweeping and litter control—to its paved or surface-treated roads, gravel roads, sidewalks and pathways, bridges and the Transitway. In doing so, it must consider public expectations, budget constraints and best practices in risk management. The City's maintenance service level standards, which define the extent and timing of related activities, are categorized into the following groups:

- *Public safety services and standards* – that impact the safety of pedestrians, cyclists and vehicles. The City's Maintenance Quality Standards are based on the provincial *Minimum Maintenance Standards for Municipal Highways*
- *Infrastructure preservation services and standards* – that reflect the City's need to protect capital assets, and that are financially justified by life cycle cost impacts
- *Quality of life services and standards* – that enhance the quality of life for Ottawa residents and visitors (such as street sweeping, and sidewalk maintenance), and offer some flexibility with regard to performance standards

New infrastructure decisions. The effectiveness and efficiency of maintenance can be helped or hindered by the design of infrastructure, from the structural underpinnings to functional elements like catch basins and decorative elements like public art or heritage-style lighting. Therefore, the City will plan and implement new infrastructure and infrastructure modifications, in a way that recognizes the implications for maintenance service level standards, practices and costs. For example, it will preserve an acceptable right of way (i.e. of sufficient clear width) for maintenance services, wherever possible, when enhancing rights of way with elements like street furniture, lighting, and planters.

9.3 Measure Transportation System Performance

The success of long-range plans depends on the ongoing monitoring of relevant conditions, actions and impacts. The City must remain aware of its progress toward key objectives so that it can add, modify or delete priorities as needed.

Action 9-5: Monitor and report on progress toward this Plan's objectives

Performance measurement framework. The City will develop a framework of performance indicators that reflects the goals and objectives of this Plan and its component strategies. That framework will provide the structure for regular reports on the City's progress.

Benchmarking against other municipalities. Through the Ontario Municipal Benchmarking Initiative, Ottawa will continue to work with 15 other municipalities to measure, compare and analyze performance in transit, road and parking services. Regular reports demonstrate the value that Ottawa residents receive for their tax dollars, and identify areas where improvements may be sought.

ANNEX A: Rapid Transit, Transit Priority, and Road Projects

Table A1 Rapid Transit Projects

Project	General Description	Rationale	EA Status
Light Rail Transit Projects			
North-South LRT (Network Concept)	New LRT right of way between Boulevard Alexandre-Taché in Gatineau and Riverside South Town Centre. Includes airport link	Provides new rapid transit service between Gatineau / downtown Ottawa and the south urban community. Also promotes development in the corridor at Confederation Heights and between Carling Avenue and Bayview Stations.	Partially complete (Riverside South to Bayview)
O-train Extension (Affordable Network)	Extension of existing O-train to Bowesville/Riverside South Station and construction of new stations at Gladstone and Walkley	Provides new rapid transit between downtown Ottawa and the south urban community.	Requires amendment
Eastern LRT (Affordable Network and Network Concept)	**Affordable:** Eastern extension of LRT service following Ottawa Road 174 between Blair Station and Place d'Orléans Station **Concept:** Eastern extension of LRT service following Ottawa Road 174 between Blair Station and Trim Station	Provides fast, reliable service between Place d'Orléans and downtown Ottawa and reduces bus vehicle hours on Ottawa 174	Not started
Western LRT (Affordable Network and Network Concept)	Conversion of the West Transitway to LRT between Tunney's Pasture Station and Baseline Station	Provides fast, reliable service between downtown and communities to the west, including major employment, shopping and educational destinations at Tunney's Pasture, Lincoln Fields and Baseline Stations	In progress
	Construction of new LRT right of way between existing West Transitway and Pinecrest and conversion of West Transitway to LRT from Pinecrest to Bayshore Station	Improves transit service between Kanata and the Inner Area and reduces the number of bus hours along the West Transitway and Highway 174	Requires amendment
Carling LRT (Network Concept)	At-grade LRT corridor between Lincoln Fields Station and Carling O-train Station	Provides enhanced transit service for businesses and residents adjacent to Carling Avenue and promotes redevelopment in the corridor.	Not started

Table A1 Rapid Transit Projects

Project	General Description	Rationale	EA Status
Bus Rapid Transit Projects			
Baseline / Heron / Walkley / St. Laurent (Affordable Network and Network Concept)	**Affordable:** At-grade BRT connecting Baseline Station to Heron Station **Concept:** At-grade BRT connecting Bayshore Station to St. Laurent Station	Provides high quality city-wide transit access to employment, commercial and institutional land uses adjacent to Baseline Road, and fast, reliable service to major rapid transit lines for corridor residents. Also, provides key link between Southwest and Southeast rapid transit network segments and promotes corridor redevelopment particularly at Confederation Heights.	In progress
Cumberland Transitway (Network Concept)	Fully exclusive transitway between Blair Station and Frank Kenny Road	Provides fast, reliable service to/from downtown for south Orléans and Blackburn Hamlet residents.	Complete
Kanata North Transitway (Affordable Network and Network Concept)	**Affordable:** At-grade BRT between Solandt Road and Hwy. 417 **Concept:** At-grade BRT between Maxwell Bridge Road and Highway 417	Provides high quality transit access to major employment area in Kanata North along March Road.	Complete
South Transitway (Network Concept)	At-grade BRT between the Southwest Transitway and Riverside South Town Centre	Provides high quality transit access between town centres of Barrhaven and Riverside South and connects the North-South LRT to the Southwest Transitway	Complete
Southwest Transitway Extension (Network Concept)	Fully exclusive BRT between Baseline Station and Hunt Club Road	Fills the "gap" in the Southwest Transitway, thereby reducing travel time and improving service reliability to South Nepean	Complete
	At-grade BRT following the Greenbank Road extension between Barrhaven Town Centre and Cambrian Road, with the possibility of a future extension to Barnsdale Road	Provides fast, reliable service for South Nepean residents and Woodroffe corridor	In progress (south of Cambrian Road)
West Transitway Extension (Affordable Network and Network Concept)	Fully exclusive BRT between Bayshore Station and west of Moodie Drive	Provides fast, reliable service to/from downtown for Kanata, Stittsville and Bayshore area residents	Complete
	Affordable: Exclusive and at-grade BRT between Terry Fox and Eagleson stations **Concept:** Exclusive BRT between Fernbank Road and Eagleson Station	Provides fast, reliable service to/from downtown for Kanata, Stittsville and Bayshore area residents	Complete

Table A2 Transit Priority Projects[1]

Project	General Description	Rationale
Airport Parkway (Affordable Network only)	Bus / high occupancy vehicle (HOV) lanes between Hunt Club Road and MacDonald-Cartier International Airport. With the widening of the Airport Parkway to 4 lanes, the outside lanes will be used for transit, taxis, and HOV's	In lieu of rapid transit, improves transit access to MacDonald-Cartier International Airport
Alta Vista Drive (Network Concept)	Transit signal priority and queue jump lanes at selected intersections between Smyth Road and Industrial Avenue	Reduces travel time and improves reliability for OC Transpo routes 8 and 86
Alta Vista Transportation Corridor (Network Concept)	Bus / high occupancy vehicle lanes and transit signal priority between Riverside Drive and the Ottawa Health Sciences Centre	Improves transit access to the Ottawa Hospital, CHEO, and the Canadian Forces Health Care Centre. Also improves access between Hurdman Station and Ottawa's south end
	Transit signal priority and queue jump lanes between the Ottawa Health Sciences Centre and Walkley Road	Improves transit access to the Ottawa Hospital, CHEO, the Canadian Forces Health Care Centre and Ottawa's south end
Bank Street (Affordable Network and Network Concept)	**Affordable:** Transit signal priority between Wellington Street and Highway 417. May also include parking lane conversion in the immediate vicinity of selected intersections	Reduces travel time and improves reliability on some of OC Transpo's busiest local routes: 1, 2, 7, 9, and 12
	Affordable: Transit signal priority between Highway 417 and Billings Bridge Station, including limited installation of queue jump lanes (in one direction only) at selected intersections	Reduces travel time and improves reliability on OC Transpo's routes 1 and 7
	Concept: Transit signal priority and queue jump lanes between Billings Bridge Station and Hunt Club Road	Reduces travel time and improves reliability on OC Transpo's route 1
Baseline Road (Affordable Network only)	Transit signal priority and queue jump lanes between Baseline Station and Richmond Road	In lieu of rapid transit, facilitates transit connections between Baseline Station and Kanata, Also reduces travel time and increases reliability on OC Transpo routes 97, 118, and 152.
Beechwood Avenue and Hemlock Road (Affordable Network and Network Concept)	Transit signal priority between St. Laurent Boulevard and Vanier Parkway. May also include parking lane conversion in the immediate vicinity of selected intersections	Accommodates proposed development at the former CFB Rockcliffe and improves service on OC Transpo routes 1, 5, and 7

Table A2 Transit Priority Projects[1]

Project	General Description	Rationale
Belfast Road / Terminal Avenue (Network Concept)	Exclusive bus lanes and transit signal priority between Hurdman Station and St. Laurent Boulevard (provided through road widening)	Facilitates transit travel to and from some of Ottawa's primary industrial areas
Blackburn Hamlet Bypass / Brian Coburn Boulevard (Affordable Network only)	Peak period bus lanes and transit signal priority on the Blackburn Hamlet Bypass between Innes Road and Brian Coburn Boulevard which may include the repurposing of general purpose lanes. Transit signal priority and queue jump lanes on Brian Coburn Boulevard between the Blackburn Hamlet Bypass and Tenth Line Road	In lieu of rapid transit, improves transit service between Orléans South and the Inner Area
Blair Road (Affordable Network only)	Transit signal priority and queue jump lanes between Innes Road and Blair Station	In lieu of rapid transit, improves transit service between Orléans South and the Inner Area
Blair Road (Affordable Network and Network Concept)	Exclusive bus lanes and transit signal priority between Blair Station and Montreal Road. Bus lanes to be provided through a combination of road widening (north of Ogilvie Road) and conversion of existing traffic lanes (south of Ogilvie Road)	Improves transit service between the eastern suburbs and Vanier
Bronson Avenue (Affordable Network and Network Concept)	**Affordable:** Transit signal priority between the Southeast Transitway and Carling Avenue	Reduces travel time and improves reliability on OC Transpo's route 4, thereby enhancing transit access to Carleton University
	Concept: Transit signal priority and queue jump lanes between Carling Avenue and the Confederation Line	Reduces travel time and improves reliability on OC Transpo's route 4
Carling Avenue (Affordable Network only)	Exclusive bus lanes and transit signal priority between Lincoln Fields Station and Carling O-Train Station. Bus lanes to be provided through conversion of existing traffic lanes. Note that some transit signal priority already exists along the corridor	In lieu of at-grade LRT, reduces travel time and improves reliability on existing OC Transpo routes and any future bus service on Carling Avenue
Carling Avenue (Affordable Network and Network Concept)	Transit signal priority and queue jump lanes between Carling O-Train Station and Bronson Avenue	Complements existing bus lanes between Preston Street and Cambridge Street (EB) between Bronson Avenue and Booth Street (WB)

Table A2 Transit Priority Projects[1]

Project	General Description	Rationale
Carling Avenue / Richmond Road (Affordable Network and Network Concept)	Transit signal priority and queue jump lanes between Holly Acres Road and Lincoln Fields Station	Provides connecting line between Bayshore Station and Lincoln Fields Station, improving transit service prior to the completion of the Western LRT.
Catherine Street / Chamberlain Avenue / Isabella Street (Network Concept)	Transit signal priority between Bronson Avenue and Lees Station	Reduces travel time and improves reliability for transit trips bypassing the downtown core
Chapman Mills / Strandherd Drive / Earl Armstrong Road (Affordable Network only)	Transit signal priority and queue jump lanes between Barrhaven Town Centre Station and Bowesville/Riverside South Station. Also includes some road reconstruction to accommodate buses. Partial implementation slated for 2014 (Chapman Mills segment)	In lieu of rapid transit, facilitates transit travel between Barrhaven and Riverside South
Codd's Road (Affordable Network and Network Concept)	Exclusive bus lanes and transit signal priority between Montreal Road and Hemlock Road (provided through road widening)	Accommodates proposed development at the former CFB Rockcliffe
Conroy Road (Network Concept)	Transit signal priority and queue jump lanes between Walkley Road and Hunt Club Road	Improves transit service to new Alta Vista Transportation Corridor, the Ottawa Hospital Campus, and Hurdman Station
Eagleson Road (Affordable Network and Network Concept)	Transit signal priority and queue jump lanes between Hazeldean Road and Eagleson Station	Reduces travel time and improves reliability on OC Transpo routes accessing the West Transitway and the west light rail extension at Bayshore
Elgin Street (Affordable Network and Network Concept)	Transit signal priority between Gladstone Avenue and Wellington Street	Reduces travel time and improves reliability on OC Transpo routes 5, 6, and 14
Fisher Avenue (Affordable Network and Network Concept)	Transit signal priority and queue jump lanes between Prince of Wales Drive and Baseline Road	Reduces travel time and improves reliability on OC Transpo routes 14 and 86
	Transit signal priority and queue jump lanes between Baseline Road and Carling Avenue	Reduces travel time and improves reliability on OC Transpo routes 14 and 86

Table A2 Transit Priority Projects[1]

Project	General Description	Rationale
Gladstone Avenue (Affordable Network and Network Concept)	Transit signal priority between future Gladstone O-Train Station and Elgin Street. May also include parking lane conversion in the immediate vicinity of selected intersections	Reduces travel time and improves reliability on OC Transpo route 14
Hazeldean Road (Affordable Network and Network Concept)	Transit signal priority and queue jump lanes between Stittsville Main Street and Eagleson Road	Reduces travel time and improves reliability on OC Transpo routes 96 and 118 and enhances transit service between Stittsville, Kanata and Bells Corners
Hemlock Road (Affordable Network and Network Concept)	Exclusive bus lanes and transit signal priority between Codd's Road and St. Laurent Boulevard (provided through road widening)	Accommodates proposed development at the former CFB Rockcliffe
Holland Avenue (Affordable Network and Network Concept)	**Affordable:** Transit signal priority between Carling Avenue and Confederation Line. May also include parking lane conversion in the immediate vicinity of selected intersections **Concept:** Exclusive bus lanes and transit signal priority between Carling Avenue and the Confederation Line. Will require removal of existing parking lanes and minor road widening	Reduces travel time and improves reliability on OC Transpo routes 16, 86, 102, and 176
Hunt Club Road (Affordable Network and Network Concept)	**Concept:** Transit signal priority and queue jump lanes at selected intersections between Conroy Road and Albion Road	Provides connecting link between South Keys Station and Alta Vista Transportation Corridor
	Affordable: Road widening to provide exclusive bus lanes and transit signal priority between Albion Road and Uplands Drive. Current budget includes funding for improvements at Bank Street	Reduces travel time and improves reliability over a congested segment of Hunt Club Road
	Concept: Transit signal priority and queue jump lanes at selected intersections between Uplands Drive and Riverside Drive	Reduces travel time and improves reliability on OC Transpo routes 116 and 147

Table A2 Transit Priority Projects[1]

Project	General Description	Rationale
Innes Road / Trim Road (partially implemented) (Affordable Network and Network Concept)	Queue jump lanes between Millennium Station and Jeanne d'Arc Boulevard. Transit signal priority already in place	Reduces travel time and improves reliability between Orléans South and points west
Innes Road (partially implemented) (Affordable Network and Network Concept)	Queue jump lanes between Jeanne d'Arc Boulevard and Blackburn Hamlet Bypass (west). Transit signal priority already in place	Reduces travel time and improves reliability between Orléans South/Blackburn Hamlet and points west
	Affordable (only): Transit signal priority and queue jump lanes between Blackburn Hamlet Bypass (west) and Blair Road (Affordable Network)	Reduces travel time and improves reliability between Orléans South/Blackburn Hamlet and points west
	Concept: Transit signal priority and queue jump lanes between Blair Road and rail corridor east of St. Laurent Boulevard	Facilitates transit travel to and from some of Ottawa's primary industrial areas
Jeanne d'Arc Boulevard (Affordable Network and Network Concept)	**Affordable:** Transit signal priority and queue jump lanes between Innes Road and Ottawa Road 174 **Concept:** Transit signal priority and queue jump lanes between the Cumberland Transitway and Innes Road. Road widening to provide exclusive bus lanes and transit signal priority between Innes Road and Ottawa Road 174.	Provides connecting link between Orléans South and the Orléans LRT extension
King Edward Avenue (Network Concept)	Transit signal priority to complement the existing southbound bus lane between Sussex Drive and Rideau Street.	Accommodates the large number of STO buses preparing to turn onto Rideau Street
March Road (Affordable Network only)	Transit signal priority and queue jump lanes between Maxwell Bridge Road and Carling Avenue. Allows for future conversion to BRT at a later time to connect with planned BRT south of Carling Avenue	In lieu of rapid transit, provides improved transit service to Kanata North
McArthur Avenue / North River Road (Network Concept)	Transit signal priority and queue jump lanes between Montreal Road and St. Laurent Boulevard	Reduces travel time and improves reliability on OC Transpo route 14

Table A2 Transit Priority Projects[1]

Project	General Description	Rationale
Meadowlands Drive / Prince of Wales Drive (Network Concept)	Transit signal priority and queue jump lanes between the Southwest Transitway and Heron Road	Reduces travel time and improves reliability on OC Transpo routes 86 and 111
Merivale Road (Affordable Network and Network Concept)	**Affordable:** Peak period bus lanes (peak direction only) and transit signal priority between Carling Avenue and Baseline Road (achieved by reallocating existing traffic lanes)	Reduces travel time and improves reliability on OC Transpo route 176
	Concept: Road widening to provide exclusive bus lanes and transit signal priority between Baseline Road and Slack Road	Reduces travel time and improves reliability on OC Transpo routes 116, 156, and 176
Montréal Road (Affordable Network and Network Concept)	**Affordable:** Peak period bus lanes with increased time of day coverage in both directions between Cummings Bridge and St. Laurent Boulevard. Also includes transit signal priority along the corridor	Reduces travel time and improves reliability on OC Transpo route 12 and accommodates future development at former CFB Rockcliffe
	Affordable: Road widening to provide exclusive bus lanes and transit signal priority between St. Laurent Boulevard and Blair Road	Reduces travel time and improves reliability on OC Transpo route 12 and accommodates future development at former CFB Rockcliffe
	Concept: Road widening to provide exclusive bus lanes and transit signal priority between Blair Road and Ogilvie Road	Reduces travel time and improves reliability on OC Transpo route 12 and accommodates future development at former CFB Rockcliffe
Murray Street / St. Patrick Street / Dalhousie Street (Affordable Network and Network Concept)	Transit signal priority between Vanier Parkway and Rideau Street. May also include parking lane conversion in the immediate vicinity of selected intersections	Reduces travel time and improves reliability on OC Transpo route 1
Ogilvie Road (Network Concept)	Transit signal priority between Blair Road and St. Laurent Boulevard	Reduces travel time and improves reliability on OC Transpo route 127
Orléans Boulevard (Affordable Network and Network Concept)	Transit signal priority and queue jump lanes between Montreal Road and St. Laurent Boulevard	Improves transit access to the Orléans LRT extension

Table A2 Transit Priority Projects[1]

Project	General Description	Rationale
Richmond Road / Wellington Street West / Somerset Street (Affordable Network and Network Concept)	Transit signal priority between Woodroffe Avenue and Bank Street	Reduces travel time and improves reliability on OC Transpo route 2
Rideau Street (Affordable Network and Network Concept)	All day bus lanes between Sussex Drive and Cumberland Street and peak period bus lanes between Cumberland Street and Charlotte Street, supported by transit signal priority (from Sussex Drive to Cummings Bridge). Bus lanes as described are already in place. Peak periods for which bus lanes are in effect to be extended.	Accommodates increasing congestion on Rideau Street outside of existing peak periods
Riverside Drive (Network Concept)	Transit signal priority and queue jump lanes between Hunt Club Road and Heron Road	Provides new transit link from Ottawa's southern suburbs to the inner area
Robertson Road / Richmond Road (Affordable Network and Network Concept)	Transit signal priority and queue jump lanes between Eagleson Road and Holly Acres Road	Reduces travel time and improves reliability on OC Transpo route 118 and enhances transit service between Kanata and Bells Corners
Smyth Road (Network Concept)	Transit signal priority and queue jump lanes between Alta Vista Transportation Corridor and St. Laurent Boulevard	Reduces travel time and improves reliability on OC Transpo route 106
St. Laurent Boulevard (Affordable Network and Network Concept)	**Concept :** Transit signal priority and queue jump lanes between Hemlock Road and Montreal Road	Reduces travel time and improves reliability on OC Transpo routes 5 and 7
	Affordable: Transit signal priority and queue jump lanes between Montreal Road and St. Laurent Station	Reduces travel time and improves reliability on OC Transpo routes 5, 7, 14, and 18
	Affordable: Transit signal priority and queue jump lanes between St. Laurent Station and Innes Road	Reduces travel time and improves reliability on OC Transpo route 114
	Concept: Transit signal priority and queue jump lanes between Russell Road and Walkley Road	Reduces travel time and improves reliability on OC Transpo routes 114 and 148
Stittsville Main Street (Network Concept)	Transit signal priority and queue jump lanes between Fernbank Road and Hazeldean Road	Improves transit service between Stittsville and future West Transitway

Table A2 Transit Priority Projects[1]

Project	General Description	Rationale
Stittsville North-South Arterial (Affordable Network only)	Transit signal priority and queue jump lanes at select intersections	Improves transit service within the Fernbank community and provides improved access to the future West Transitway
Tenth Line Road (Affordable Network and Network Concept)	Transit signal priority and queue jump lanes between Charlemagne Boulevard and Ottawa 174	Improves transit access to Ottawa 174 and Place d'Orléans Station
Terry Fox Drive (Network Concept)	Transit signal priority between Hazeldean Road and the West Transitway	Improves transit access to the West Transitway
Walkley Road (Network Concept)	Transit signal priority between Heron Road and the Southeast Transitway	Reduces travel time and improves reliability on OC Transpo routes 8 and 41
Wellington Street (Network Concept)	Transit signal priority and queue jump lanes between between Sussex Drive and Bank Street	Accommodates high volume of STO buses on Wellington and reduces travel time for OC Transpo routes 1, 2, 7, 9, and 12
	Transit signal priority and queue jump lanes between Bank Street and the Portage Bridge. Provision of transit priority may be complicated by high traffic flow, frequent instances of vehicles parked in curb lanes, and other factors.	Accommodates high volume of STO buses on Wellington
West Hunt Club Road (Network Concept)	Transit signal priority and queue jump lanes between Woodroffe Avenue and Riverside Drive	Improves transit service for cross-town trips that are bypassing the inner area
Woodroffe Avenue (partially implemented) (Network Concept)	Transit signal priority and queue jump lanes between Carling Avenue and Richmond Road	Provides improved transit service to access Confederation Line Stations
	Transit signal priority and queue jump lanes between Fallowfield Road and Chapman Mills Drive	Improves transit access to the Southwest Transitway

[1] *Note: Environmental assessment processes will apply where the implementation of transit priority measures changes the function or capacity of the roadway. Most projects in this table fall under the Class A+ process.*

Table A3 Road Projects

Project	General Description	Rationale	EA Status
Airport Parkway (Affordable Network and Network Concept)	Widen from two to four lanes between Brookfield Road and Hunt Club Road	Accommodates increasing traffic volumes and improves access to and from MacDonald-Cartier International Airport	Not started
	Widen from two to four lanes between Hunt Club Road and MacDonald-Cartier International Airport, including northern realignment south of Hunt Club Road	Accommodates growth in Riverside South and Leitrim and improves access to and from MacDonald-Cartier International Airport	Not started
Albion Road (Network Concept)	Widen from two to four lanes between Leitrim Road and Lester Road	Accommodates growth in Riverside South and Leitrim and diverts traffic from Albion Road through Blossom Park	Not started
Alta Vista Transportation Corridor (Network Concept)	New four-lane road between Nicholas Street / Highway 417 interchange and Riverside Drive	Addresses the capacity deficiency across the Smyth/Hydro screenline and diverts increasing traffic away from Main Street	Complete
	New four lane road (including two peak-period bus lanes) between the Ottawa Health Sciences Centre and Walkley Road	Addresses the capacity deficiency across the Smyth/Hydro screenline and reduces short-cutting on local streets in Alta Vista and Elmvale	Complete
Bank Street (Affordable Network and Network Concept)	**Affordable:** Widen from two to four lanes between Leitrim Road and Rideau Road	Provides capacity for growth in Leitrim	In progress
	Concept: Widen from two to four lanes between Rideau Road and Parkway Road	Provides capacity for growth in Leitrim and Greely	Not started
Barnsdale Road (Network Concept)	Widen from two to four lanes between Highway 416 and Prince of Wales Drive, requiring a new interchange	Required in conjunction with new Barnsdale Road–Highway 416 interchange (a second Highway 416 interchange to serve growing Barrhaven / Nepean South)	Not started
Belfast Road (Affordable Network and Network Concept)	Widen from two to four lanes between Coventry Road and Tremblay Road	Required to address local capacity issues associated with the implementation of Transit-Oriented Development plans at Train and St. Laurent stations	Not started
Blackburn Hamlet Bypass (Network Concept)	Widen from four to six lanes between Innes Road (west entrance to Blackburn Hamlet) and Navan Road	Addresses capacity deficiencies across the Greens Creek screenline and provides arterial road service for the growth areas in south Orléans	Not Started

Table A3 Road Projects

Project	General Description	Rationale	EA Status
Blackburn Hamlet Bypass Extension (Affordable Network and Network Concept)	New four-lane road between Innes Road and Navan Road	Provides access to development in Orléans south of Innes Road	Complete
Blair Road (Affordable Network and Network Concept)	Widen from two to four lanes between Meadowbrook Road and Innes Road	Accommodates new bus lane and anticipated Transit-Oriented Development in the vicinity of Blair Station	Not started
Brian Coburn Boulevard Extension (Affordable Network and Network Concept)	**Affordable:** New two-lane road (ultimately four-lane) between Navan Road and Mer Bleue Road	Provides access to development in Orléans south of Innes Road	Complete
	Concept: New two-lane road (ultimately four-lane) between Trim Road to Frank Kenny Road	Provides new linkage between Trim Road and Frank Kenny Road	Complete
Cambrian Road (Network Concept)	Widen from two to four lanes between Greenbank Road extension and Jockvale Road	Provides access to development in Barrhaven South	In progress
Campeau Drive (Affordable Network and Network Concept)	**Concept:** Widen from two to four lanes between Didsbury Road and March Road	Provides continuity in the north Kanata area, and addresses capacity and parking needs in the Kanata Town Centre	Complete
	Affordable: New four-lane road between Didsbury Road and new North-South arterial in Stittsville	Accommodates Kanata West development	Complete
Carp Road (Affordable Network and Network Concept)	Widen from two to four lanes between Highway 417 and Hazeldean Road	Provides capacity for growth in Stittsville	In progress
Chapman Mills Drive (Affordable Network and Network Concept)	New four lane road between Longfields Drive and Strandherd Drive	Serves the development of the Barrhaven Town Centre	Complete
Country Club Road (Affordable Network and Network Concept)	New two-lane road between eastern terminus of Golf Club Way and Jenkinson Road	Completes access road on the south side of Highway 7	Complete

Table A3 Road Projects

Project	General Description	Rationale	EA Status
Coventry Road (Affordable Network and Network Concept)	Widen from two to four lanes between Belfast Road and St. Laurent Centre	Continuity through commercial and industrial area between four-lane sections of Coventry Road	Not started
Cyrville Road (Affordable Network and Network Concept)	**Affordable:** Urbanize existing two-lane rural cross section between Star Top Road and St. Laurent Boulevard	Improves environment for pedestrians and cyclists	Not started
	Concept: Widen from two to four lanes between St. Laurent Boulevard and Innes Road.	Accommodates demand anticipated from transit-oriented development in the vicinity of Cyrville Station	Not started
Eagleson Road (Affordable Network and Network Concept)	Widen from two to four lanes between Cadence Gate and Hope Side Road	Provides capacity for additional travel demands from new development areas and continuity from the four-lane Eagleson Road to Hope Side Road	Complete
Earl Armstrong Road (Affordable Network and Network Concept)	**Affordable:** Widen from two to four lanes between Limebank Road and Bowesville Road	Provides capacity for growth in Riverside South	Complete
	Concept: New two-lane road between Albion Road and Bank Street	Provides capacity for growth in Riverside South and completes linkage to Bank Street	Not started
	Concept: New two-lane road between Bank Street and Hawthorne	Continuation of cross-town route between Highway 416 and Highway 417	Not started
Earl Grey Drive Underpass (Affordable Network and Network Concept)	Underpass of Terry Fox Drive	Relieves operational, safety and local development access to/from Kanata Centrum and Stittsville	See Note 1
Fallowfield Road (Network Concept)	Widen from two to four lanes between Woodroffe and Prince of Wales	Provides better access to Prince of Wales from north Barrhaven	Complete
	Widen from two to four lanes between Strandherd Drive and Greenbank Road	Provides capacity to service growth in South Nepean	Complete
Fernbank Road (Network Concept)	Widen from two to four lanes between Stittsville Main Street and Terry Fox Drive	Accommodates increasing population and employment in Stittsville	Not started

Table A3 Road Projects

Project	General Description	Rationale	EA Status
Fisher Avenue (Network Concept)	Widen from two to four lanes between Dynes Road and Baseline Road	Provides network continuity through residential area with associated improvements to streetscaping	Not started
Frank Kenny Road Extension (Network Concept)	New four-lane road between re-aligned Trim Road and south of Innes Road	Provides network continuity and capacity for additional traffic generated by development growth in Orléans	Complete
Goulbourn Forced Road Re-alignment (Network Concept)	Re-aligned and new two-lane road between Terry Fox Drive and Kanata Avenue	Provides capacity for growth in Kanata North	Complete
Greenbank Road Extension (Affordable Network and Network Concept)	**Affordable:** New four lane road between Jockvale Road and Cambrian Road	Accommodates growth within South Nepean	Complete
	Concept: New four-lane arterial road connecting Cambrian to Greenbank	Provides access to new development lands in South Nepean	In progress
Hope Side Road (Affordable Network and Network Concept)	Widen from two to four lanes between Eagleson Road and Richmond Road	Provides capacity and network continuity for growth areas in Kanata	Complete
Hunt Club Road (Network Concept)	Widen from four to six lanes between Riverside Drive and Bank Street	Addresses capacity deficiencies at Rideau River South Manotick Screenlines, in conjunction with the Strandherd/Armstrong river crossing	Not started
Huntmar Drive (Affordable Network and Network Concept)	Widen from two to four lanes between Campeau Drive extension to Cyclone Taylor Boulevard. Widen from two to four lanes between Palladium Drive to Maple Grove Road.	Accommodates Kanata West Development	Not started
Industrial Avenue Extension (Network Concept)	New four-lane road extending westward from Terminal Avenue through the Hurdman TOD lands	Provides access for new development in the Hurdman TOD lands	Not started
Innes-Walkley-Hunt Club Link (Network Concept)	New four-lane road (initial phase two-lanes) between Hunt Club and Innes Road west of Blackburn Hamlet	Bypasses congested section of Innes Road and provides direct connection between Orléans and Hunt Club	Complete
Jockvale Road (Affordable Network and Network Concept)	Widen from two to four lanes between Jock River and Prince of Wales.	Accommodates development access and growth for development within the Nepean South Urban Community	Complete

Table A3 Road Projects

Project	General Description	Rationale	EA Status
Kanata Avenue (Affordable Network and Network Concept)	Widen from two to four lanes between Highway 417 and Campeau Drive	Fulfills urban design initiatives ongoing in the vicinity of Kanata Town Centre	In progress
Klondike Road (Affordable Network and Network Concept)	Urbanize existing two-lane rural cross section between March Road and Sandhill Road	Provides continuity between March Road and new residential development in Kanata North	Not required
Leitrim Road (Network Concept)	Widen from two to four lanes between River Road and Limebank Road	Provides capacity for development in Riverside South	Complete
	New four-lane re-aligned road between Limebank Road and Albion Road	Provides capacity for development in Riverside South	Complete
Lester Road (Affordable Network and Network Concept)	Widen from two to four lanes between Airport Parkway and Bank Street	Accommodates growth in Riverside South and Leitrim and diverts traffic from Albion Road away from Blossom Park	Not started
Limebank Road (Network Concept)	Widen from two to four lanes between Earl Armstrong Road and Mitch Owens Road	Addresses capacity deficiencies across the Leitrim screenline, in conjunction with the widening of Riverside Drive and Bank Street	Not started
Maple Grove Road (Network Concept)	Widen from two to four lanes between Terry Fox Drive and Huntmar Drive	Accommodates Kanata West Development	Complete
March Road (Network Concept)	Widen from two to four lanes between Old Carp Road and Dunrobin Road	Provides additional vehicular capacity to growth areas in north Kanata	Not started
Mer Bleue Road (Affordable Network and Network Concept)	**Affordable:** Widen from two to four lanes between Brian Coburn Boulevard and Renaud Road	Provides capacity for the development areas south of Innes Road	Complete
	Concept: New four-lane re-alignment, west of existing Mer Bleue Road, between Renaud Road and Navan Road	Provides capacity for the development areas south of Innes Road	Complete
Navan Road (Network Concept)	Widen from two to four lanes between Brian Coburn Boulevard and Mer Bleue Road.	Provides capacity for the development areas south of Innes Road	Not started

Table A3 Road Projects

Project	General Description	Rationale	EA Status
Old Montreal Road (Network Concept)	Widen from two to four lanes between Trim Road and the edge of the urban boundary	Provide capacity for the development areas east of Trim Road	Not started
Old Richmond/West Hunt Club (Affordable Network and Network Concept)	Widen Old Richmond Road/ West Hunt Club Road from two to four lanes between Hope Side and Highway 416	Provides capacity and network continuity for growth areas in Kanata	Complete
Ottawa Road 174 (Network Concept)	Widen from four to six lanes between Highway 417 and Trim Road	Addresses local capacity, operational and safety issues	In progress
	Widen from two to four lanes between Trim Road and the city boundary	Addresses local capacity, operational and safety issues	In progress
Perth Street (Network Concept)	Widen to four lanes between Shea Road and Eagleson Road and between Queen Charlotte Street and the village boundary	Provides continuity through Richmond Village and addresses the needs identified in the village's Community Design Plan	Not started
Palladium Drive Realignment (Affordable Network and Network Concept)	Realign in vicinity of Huntmar Road to new North-South arterial	Accommodates Kanata West Development	Complete
Preston Street (Affordable Network and Network Concept)	Extend existing 2 lane urban roadway Albert Street to Vimy Place (at John A. McDonald Parkway)	Provides connection through Lereton Flats including structure crossing of new LRT and existing aqueduct	Not started
Prince of Wales Drive (Affordable Network and Network Concept)	**Concept:** Widen from two to four lanes between Merivale Road and Hunt Club Road **Concept:** Widen from two to four lanes between Strandherd Drive and Fisher Avenue	Addresses capacity deficiencies at CNR West screenline	Complete
Richmond Road (Network Concept)	Widen from two to four lanes between Bayshore Drive and Pinecrest Road	Provides network continuity and improves bus service reliability	Not started
Richmond Village By-Pass (Network Concept)	New two-lane road between Huntley Road and Eagleson Road	Provides access to new development lands north of existing Richmond Village	Not started

Table A3 Road Projects

Project	General Description	Rationale	EA Status
Rideau River Crossing (Network Concept)	New four lane bridge and approaches between Prince of Wales Drive and Limebank Road	Provides for increased capacity across Rideau River screenline.	Not started
Riverside Drive (Network Concept)	Widen from four to six lanes between River Road and Hunt Club Road	Provides capacity for growth in Riverside South	Complete
Strandherd Drive (Affordable Network and Network Concept)	**Affordable:** Widen from two to four lanes between Fallowfield Road and Jockvale Road	Addresses capacity deficiencies at the Rideau River South and Manotick screenlines, in conjunction with a Strandherd-Earl Armstrong Rideau River Bridge and Earl Armstrong Road widening	Complete
	Concept: Widen from four to six lanes between Jockvale Road and Woodroffe Avenue		
Stittsville Main Street Extension (Affordable Network and Network Concept)	New two-lane road between Palladium Drive and Maple Grove Road	Provides capacity for development in Stittsville	Not started
Stittsville North-South Arterial (Affordable Network and Network Concept)	New two-lane road between Palladium Drive and Fernbank Road	Provides capacity for development in Stittsville and provides a bypass for Stittsville Main Street congestion	Complete
Tenth Line Road (Affordable Network and Network Concept)	Widen from two to four lanes between Harvest Valley Drive and the urban boundary	Services growth south of Innes Road	Complete
Terry Fox Drive (Network Concept)	Widen from two to four lanes between Winchester Drive and Eagleson Road	Provides access to adjacent developments	Complete
	Widen from four to six lanes between Campeau Drive and Palladium Drive	Accommodates Kanata West Development	Not started
Tremblay Road (Affordable Network and Network Concept)	Widen from two to four lanes between Pickering Place and St. Laurent Boulevard	Addresses the needs identified by the St. Laurent Station Transit-Oriented Development study and accommodates new employment land at St. Laurent Blvd at Tremblay Road	Not started
West Hunt Club Road (Network Concept)	Widen from four to six lanes between Highway 416 and Prince of Wales Drive	Services on-going development/ redevelopment along corridor and makes full use of Rideau River Bridge	Not started

ANNEX B: Maps

Map 1 Cycling Network – Primary Urban

Map 2 Cycling Network – Primary Rural (with Scenic Entry Routes)

Map 3 Rapid Transit and Transit Priority Network – Ultimate Network

Map 4 Rapid Transit and Transit Priority Network – 2031 Network Concept

Map 5 Rapid Transit and Transit Priority Network – 2031 Affordable Network

Map 6 Road Network – Urban

Map 7 Road Network – Central Area/Inner City

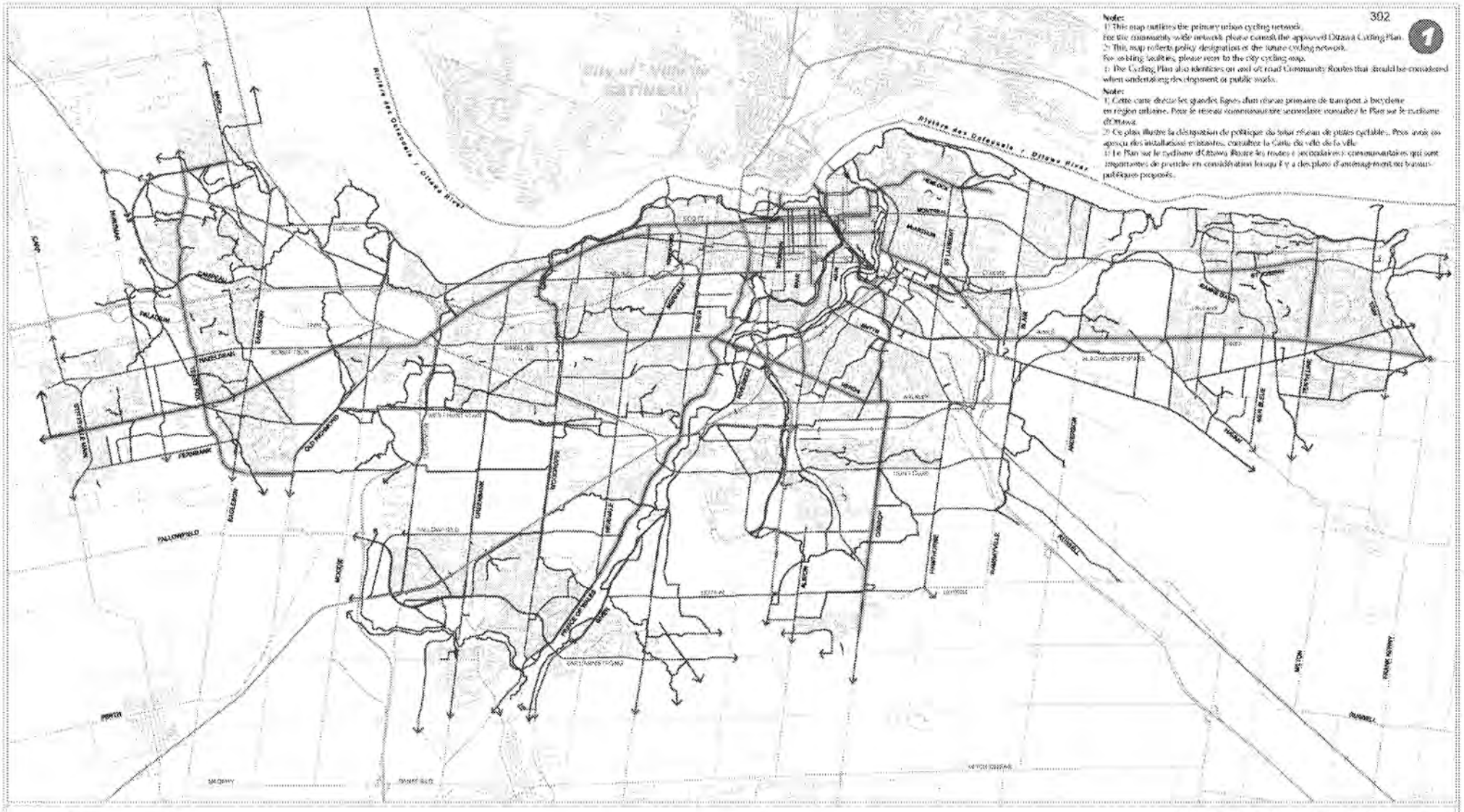
Map 8 Road Network – Rural

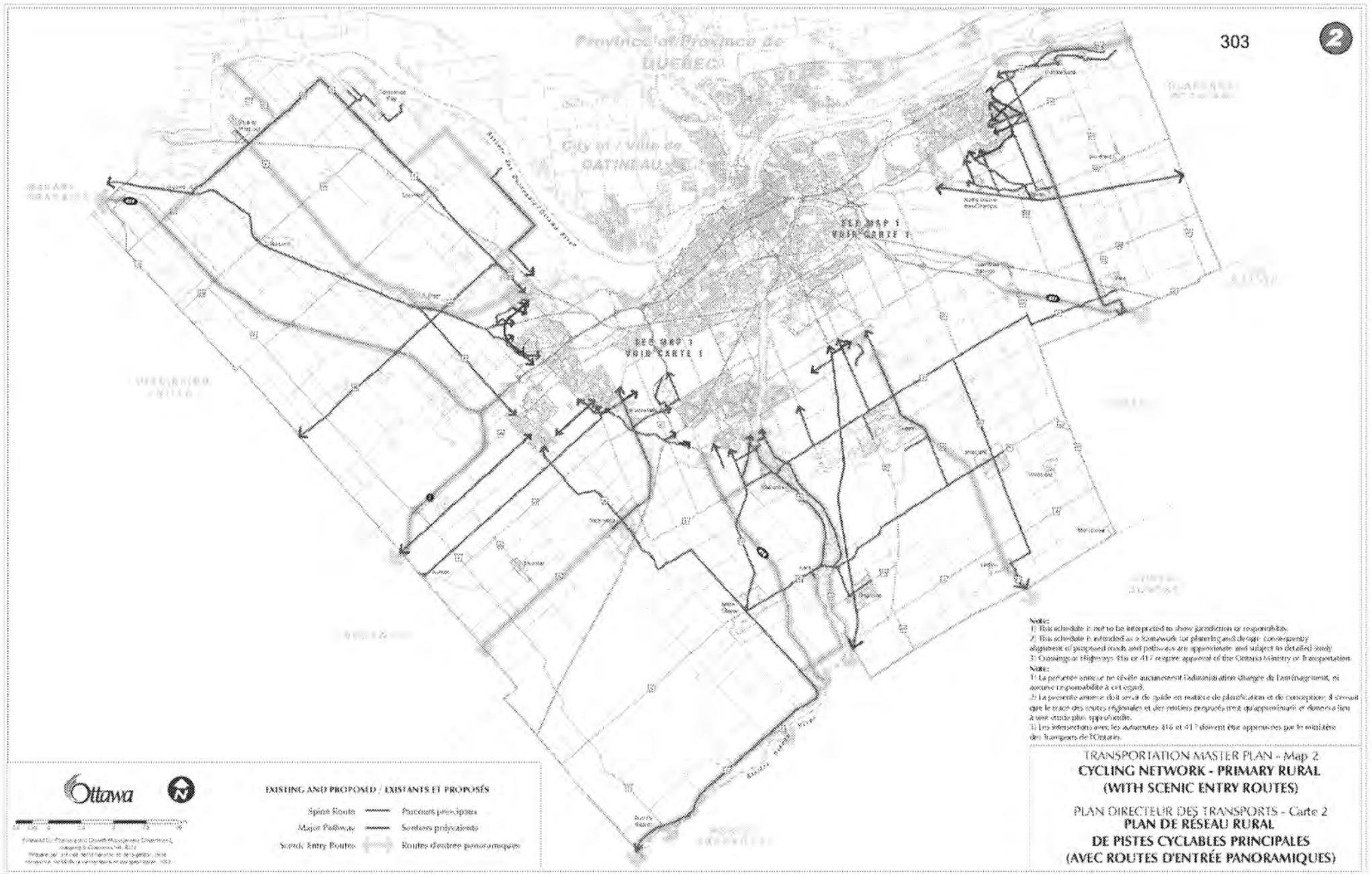
Map 9 Road Network – Select Villages

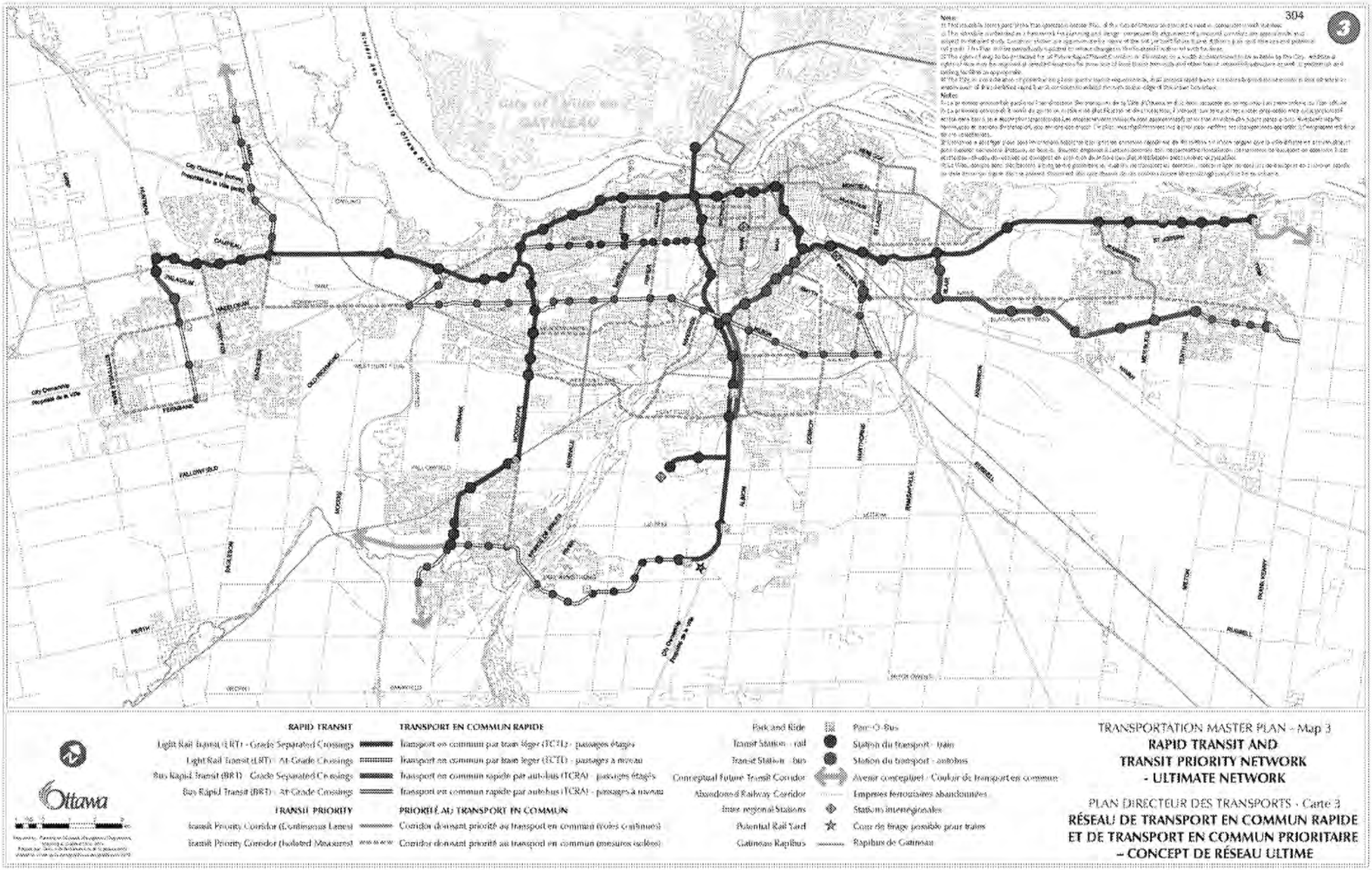
Map 10 Road Network – 2031 Network Concept

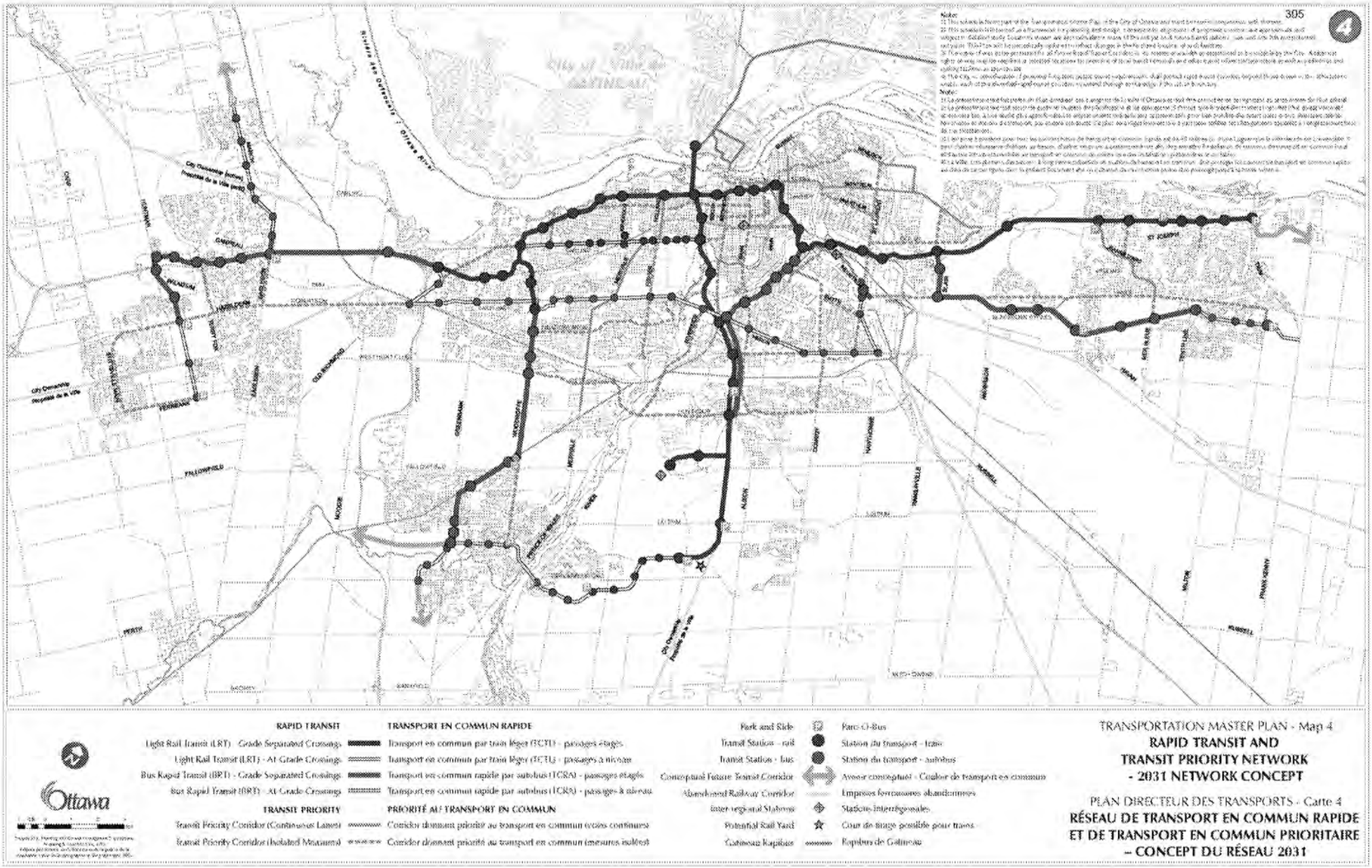
Map 11 Road Network – 2031 Affordable Network

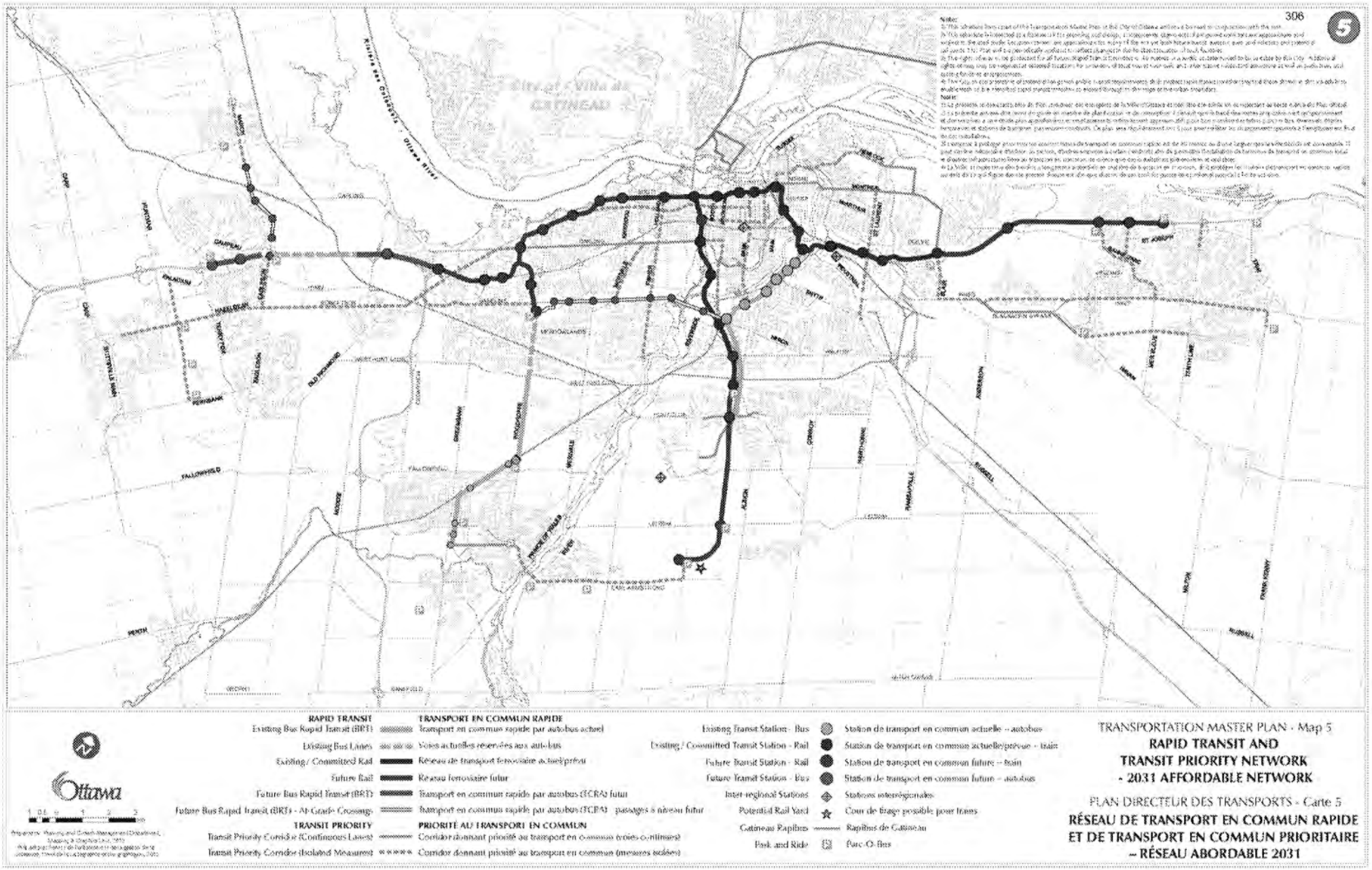
Note: A map of the city-wide pedestrian network is not provided here due to the complexity of presenting such detailed information at the map scales provided. The pedestrian network can be viewed on-line at: http://maps.ottawa.ca/geoOttawa/

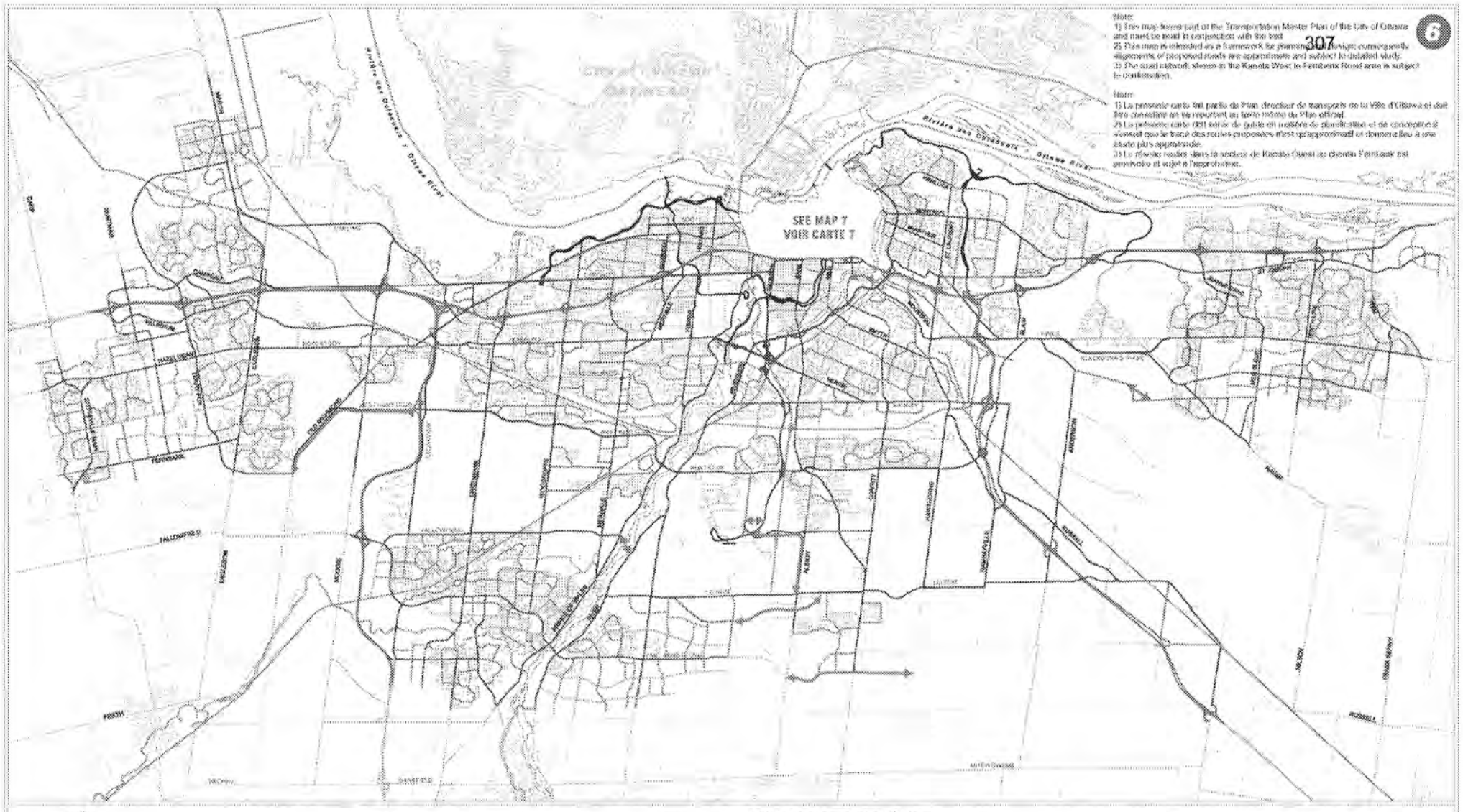

302
Note:
1) This map outlines the primary urban cycling network.
For the community-wide network please consult the approved Ottawa Cycling Plan
2) This map reflects policy designations of the future cycling network.
For existing facilities, please refer to the city cycling map.
3) The Cycling Plan also identifies on and off road Community Routes that should be considered when undertaking development or public works.
Note:
1) Cette carte décrit les grandes lignes d'un réseau primaire de transport à bicyclette en région urbaine. Pour le réseau communautaire semblable consultez le Plan sur le cyclisme d'Ottawa.
2) Ce plan illustre la désignation de politique du futur réseau de pistes cyclable.. Pour avoir un aperçu des installations existantes, consultez la Carte du vélo de la ville
3) Le Plan sur le cyclisme d'Ottawa illustre les routes secondaires communautaires qui sont importantes de prendre en considération lorsqu'il y a des plans d'aménagement ou travaux publiques proposés.
Rivière des Outaouais / Ottawa River
Ottawa
PRIMARY NETWORK
Spine Route
Major Pathway
Cross-town Bikeway
RÉSEAU PRINCIPAL
Circuit principal
Sentier principal
Voie cyclable transurbaine
TRANSPORTATION MASTER PLAN - Map 1
CYCLING NETWORK - PRIMARY URBAN
PLAN DIRECTEUR DES TRANSPORTS - Carte 1
PLAN DU RÉSEAU URBAIN
DE PISTES CYCLABLES PRINCIPALES


303
2
Province of Province de QUEBEC
City of / Ville de GATINEAU
SEE MAP 1 VOIR CARTE 1
SEE MAP 1 VOIR CARTE 1
Ottawa
EXISTING AND PROPOSED / EXISTANTS ET PROPOSÉS
Spine Route
Major Pathway
Scenic Entry Routes
Parcours principaux
Sentiers polyvalents
Routes d'entrée panoramiques
Note:
1) This schedule is not to be interpreted to show jurisdiction or responsibility.
2) This schedule is intended as a framework for planning and design. Consequently alignment of proposed roads and pathways are approximate and subject to detailed study.
3) Crossings of Highways 416 or 417 require approval of the Ontario Ministry of Transportation.
Note:
1) La présente annexe ne révèle aucunement l'administration chargée de l'aménagement, ni aucune responsabilité à cet égard.
2) La présente annexe doit servir de guide en matière de planification et de conception. Il convient que le tracé des routes régionales et des sentiers proposés soit approximatif et donne lieu à une étude plus approfondie.
3) Les intersections avec les autoroutes 416 et 417 doivent être approuvées par le ministère des Transports de l'Ontario.
TRANSPORTATION MASTER PLAN - Map 2
CYCLING NETWORK - PRIMARY RURAL
(WITH SCENIC ENTRY ROUTES)
PLAN DIRECTEUR DES TRANSPORTS - Carte 2
PLAN DE RÉSEAU RURAL
DE PISTES CYCLABLES PRINCIPALES
(AVEC ROUTES D'ENTRÉE PANORAMIQUES)

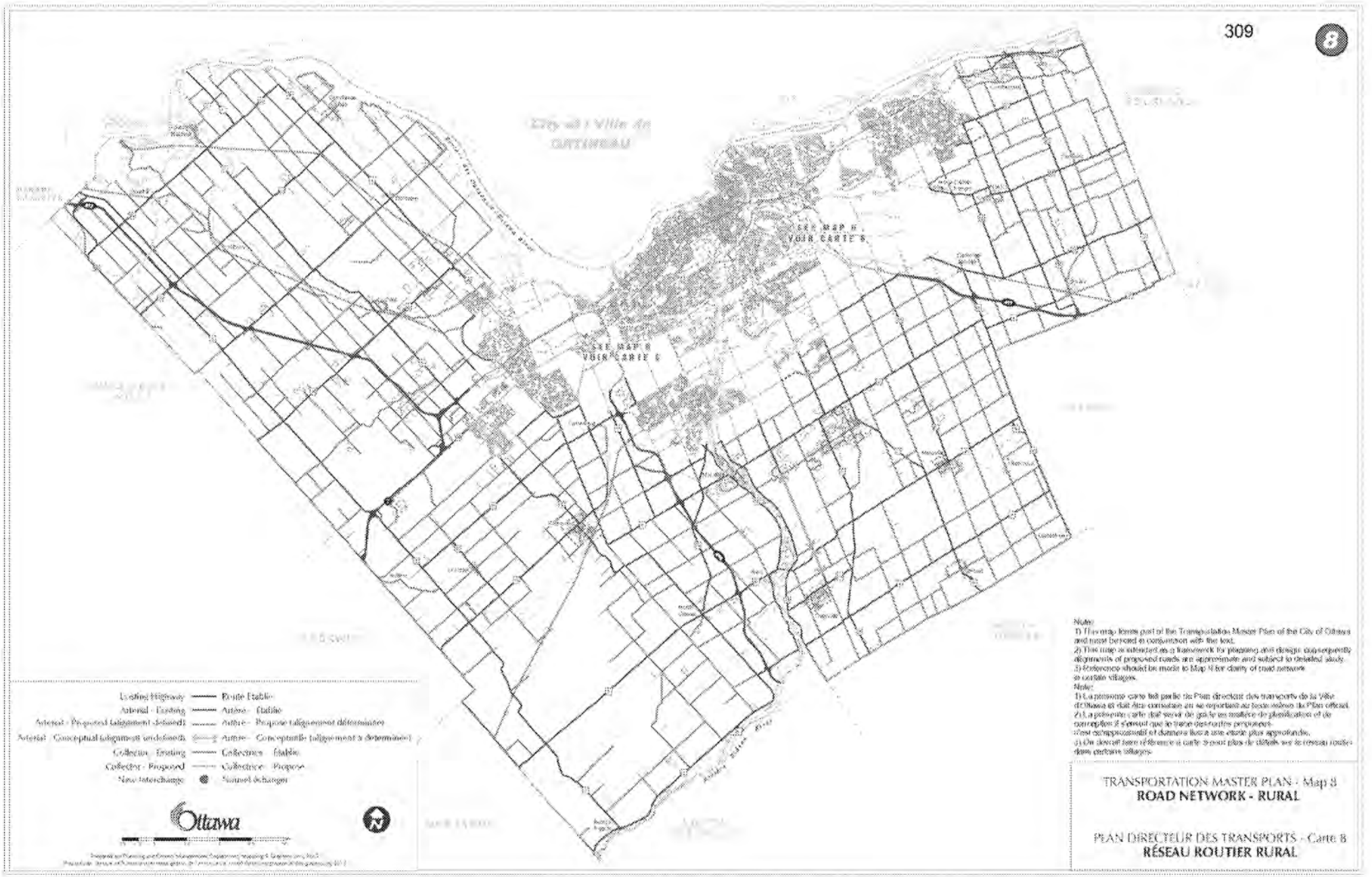

304
3
Notes:
Notes:
RAPID TRANSIT
Light Rail Transit (LRT) - Grade Separated Crossings
Light Rail Transit (LRT) - At-Grade Crossings
Bus Rapid Transit (BRT) - Grade Separated Crossings
Bus Rapid Transit (BRT) - At-Grade Crossings
TRANSIT PRIORITY
Transit Priority Corridor (Continuous Lanes)
Transit Priority Corridor (Isolated Measures)
TRANSPORT EN COMMUN RAPIDE
Transport en commun par tram léger (TCTL) - passages étagés
Transport en commun par tram léger (TCTL) - passages à niveau
Transport en commun rapide par autobus (TCRA) - passages étagés
Transport en commun rapide par autobus (TCRA) - passages à niveau
PRIORITÉ AU TRANSPORT EN COMMUN
Corridor donnant priorité au transport en commun (voies continues)
Corridor donnant priorité au transport en commun (mesures isolées)
Park and Ride
Transit Station - rail
Transit Station - bus
Conceptual Future Transit Corridor
Abandoned Railway Corridor
Inter-regional Stations
Potential Rail Yard
Gatineau Rapibus
Parc-O-Bus
Station du transport - train
Station du transport - autobus
Avenir conceptuel - Couloir de transport en commun
Emprises ferroviaires abandonnées
Stations interrégionales
Cour de triage possible pour trains
Rapibus de Gatineau
Ottawa
TRANSPORTATION MASTER PLAN - Map 3
RAPID TRANSIT AND
TRANSIT PRIORITY NETWORK
- ULTIMATE NETWORK
PLAN DIRECTEUR DES TRANSPORTS - Carte 3
RÉSEAU DE TRANSPORT EN COMMUN RAPIDE
ET DE TRANSPORT EN COMMUN PRIORITAIRE
– CONCEPT DE RÉSEAU ULTIME

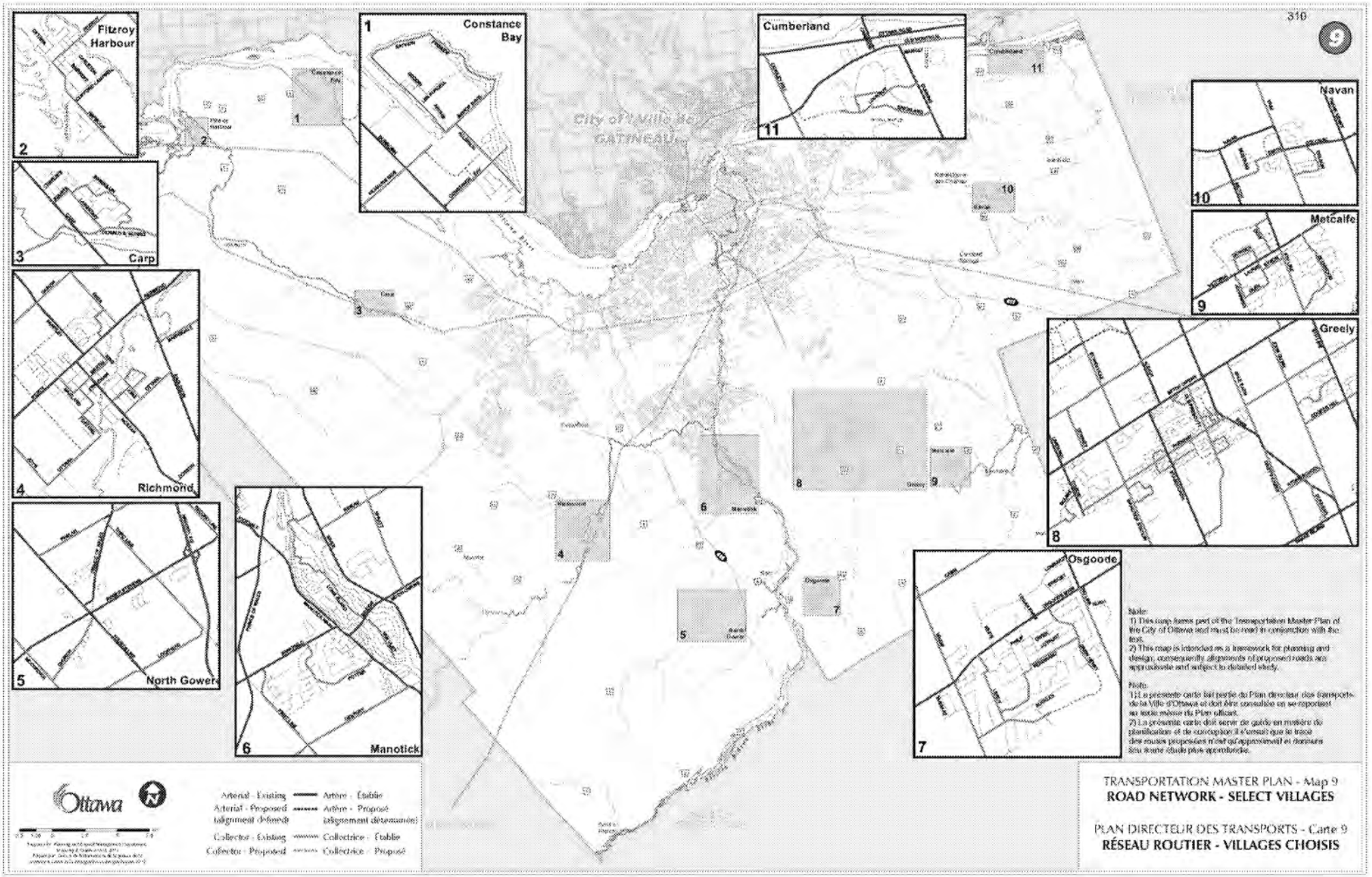

305
4
RAPID TRANSIT
Light Rail Transit (LRT) - Grade Separated Crossings
Light Rail Transit (LRT) - At Grade Crossings
Bus Rapid Transit (BRT) - Grade Separated Crossings
Bus Rapid Transit (BRT) - At Grade Crossings
TRANSIT PRIORITY
Transit Priority Corridor (Continuous Lanes)
Transit Priority Corridor (Isolated Measures)
TRANSPORT EN COMMUN RAPIDE
Transport en commun par train léger (TCTL) - passages étagés
Transport en commun par train léger (TCTL) - passages à niveau
Transport en commun rapide par autobus (TCRA) - passages étagés
Transport en commun rapide par autobus (TCRA) - passages à niveau
PRIORITÉ AU TRANSPORT EN COMMUN
Corridor donnant priorité au transport en commun (voies continues)
Corridor donnant priorité au transport en commun (mesures isolées)
Park and Ride
Transit Station - rail
Transit Station - bus
Conceptual Future Transit Corridor
Abandoned Railway Corridor
Inter-regional Stations
Potential Rail Yard
Gatineau Rapidway
Parc-O-Bus
Station du transport - train
Station du transport - autobus
Avenir conceptuel - Couloir de transport en commun
Emprises ferroviaires abandonnées
Stations interrégionales
Cour de triage possible pour trains
Rapidway de Gatineau
TRANSPORTATION MASTER PLAN - Map 4
RAPID TRANSIT AND TRANSIT PRIORITY NETWORK - 2031 NETWORK CONCEPT
PLAN DIRECTEUR DES TRANSPORTS - Carte 4
RÉSEAU DE TRANSPORT EN COMMUN RAPIDE ET DE TRANSPORT EN COMMUN PRIORITAIRE – CONCEPT DU RÉSEAU 2031

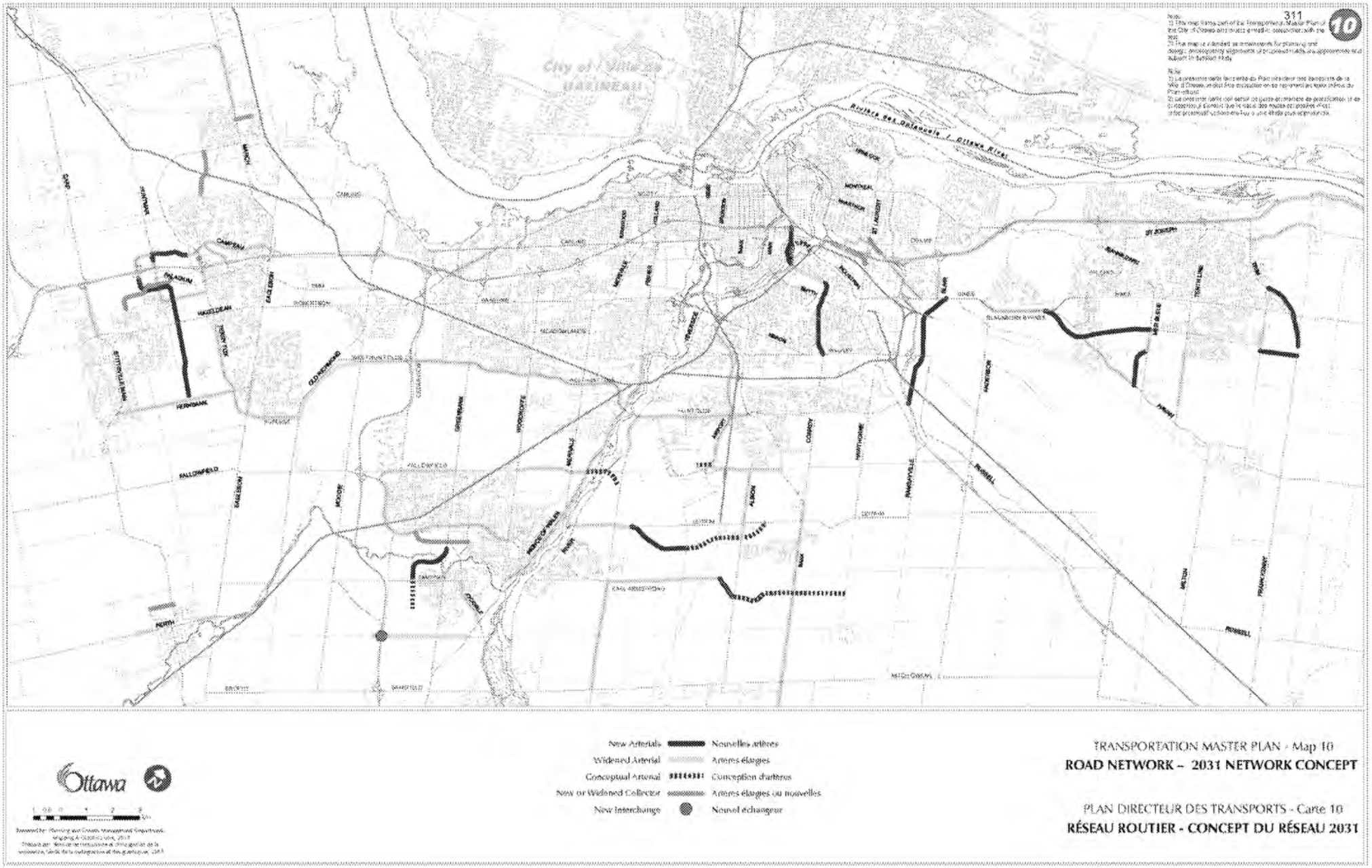

306
5
Note:
Note:
RAPID TRANSIT
Existing Bus Rapid Transit (BRT)
Existing Bus Lanes
Existing / Committed Rail
Future Rail
Future Bus Rapid Transit (BRT)
Future Bus Rapid Transit (BRT) - At-Grade Crossings
TRANSIT PRIORITY
Transit Priority Corridor (Continuous Lanes)
Transit Priority Corridor (Isolated Measures)
TRANSPORT EN COMMUN RAPIDE
Transport en commun rapide par autobus actuel
Voies actuelles réservées aux autobus
Réseau de transport ferroviaire actuel/prévu
Réseau ferroviaire futur
Transport en commun rapide par autobus (TCRA) futur
Transport en commun rapide par autobus (TCRA) - passages à niveau futur
PRIORITÉ AU TRANSPORT EN COMMUN
Couloir donnant priorité au transport en commun (voies continues)
Corridor donnant priorité au transport en commun (mesures isolées)
Existing Transit Station - Bus
Existing / Committed Transit Station - Rail
Future Transit Station - Rail
Future Transit Station - Bus
Inter-regional Stations
Potential Rail Yard
Gatineau Rapibus
Park and Ride
Station de transport en commun actuelle – autobus
Station de transport en commun actuelle/prévue – train
Station de transport en commun future – train
Station de transport en commun future – autobus
Stations interrégionales
Cour de triage possible pour trains
Rapibus de Gatineau
Parc-O-bus
TRANSPORTATION MASTER PLAN - Map 5
RAPID TRANSIT AND TRANSIT PRIORITY NETWORK - 2031 AFFORDABLE NETWORK
PLAN DIRECTEUR DES TRANSPORTS - Carte 5
RÉSEAU DE TRANSPORT EN COMMUN RAPIDE ET DE TRANSPORT EN COMMUN PRIORITAIRE – RÉSEAU ABORDABLE 2031

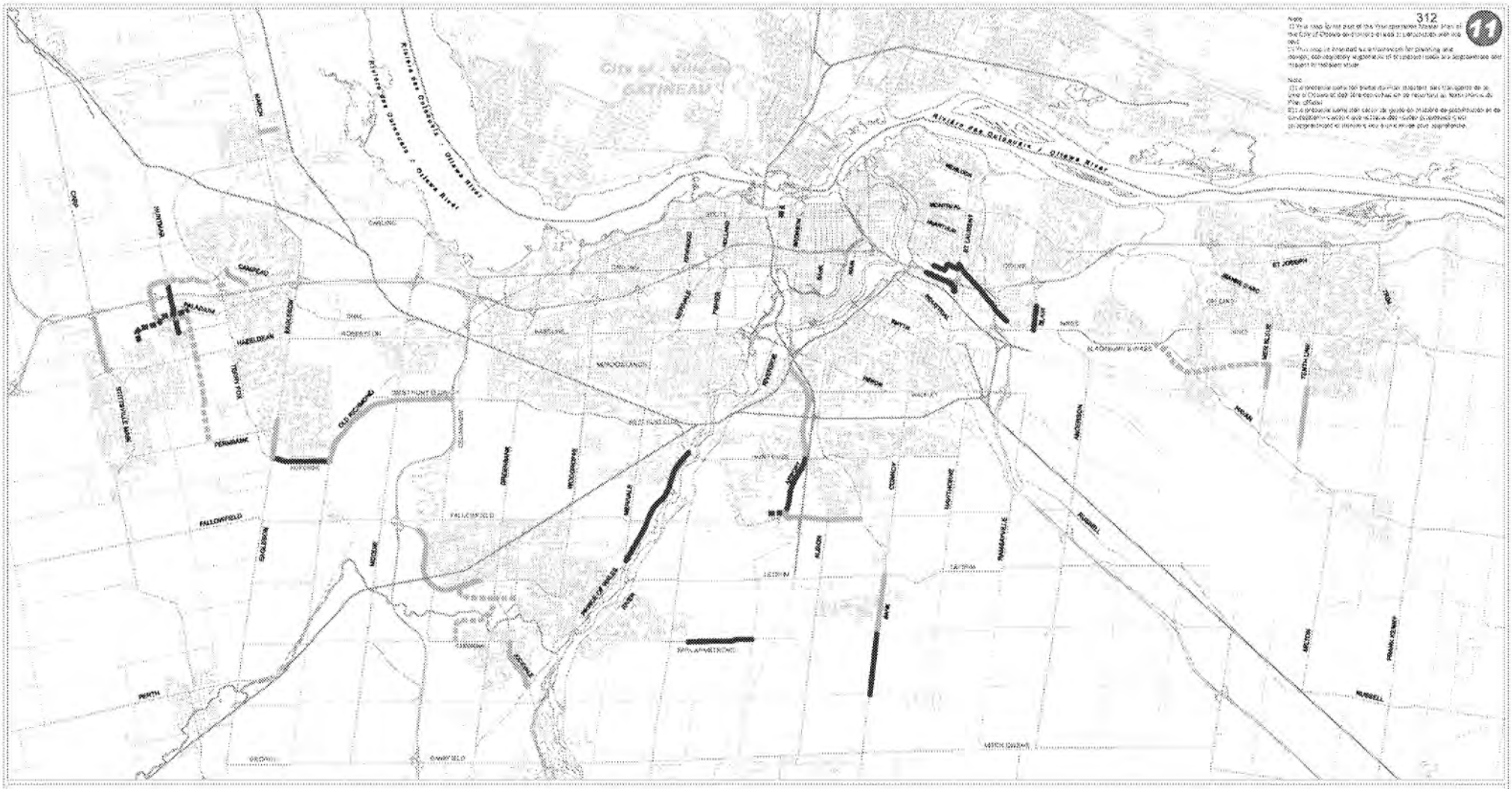

Note:
1) This map forms part of the Transportation Master Plan of the City of Ottawa and must be read in conjunction with the text.
2) This map is intended as a framework for planning purposes; conceptually alignments of proposed roads are approximate and subject to detailed study.
3) The road network shown in the Kanata West to Fernbank Road area is subject to confirmation.
Note:
1) La présente carte fait partie du Plan directeur de transports de la Ville d'Ottawa et doit être consultée en se reportant au texte même du Plan officiel.
2) La présente carte doit servir de guide en matière de planification et de conception. Il s'avère que le tracé des routes proposées n'est qu'approximatif et donnera lieu à une étude plus approfondie.
3) Le réseau routier dans le secteur de Kanata Ouest au chemin Fernbank est provisoire et sujet à l'approbation.
SEE MAP 7
VOIR CARTE 7
Provincial Highway
Federally Owned Road
City Freeway
Chemins de propriété fédérale
Route provinciale
Autoroute de ville
Arterial - Existing
Arterial - Proposed (alignment defined)
Arterial - Conceptual (alignment undefined)
Major Collector - Existing
Major Collector - Proposed
Collector - Existing
Collector - Proposed
New Interchange
Artère - Établie
Artère - Proposé (alignement déterminée)
Artère - Conceptuelle (alignement à déterminer)
Grande collectrice - Établie
Grande collectrice - Proposé
Collectrice - Établie
Collectrice - Proposé
Nouvel échangeur
TRANSPORTATION MASTER PLAN - Map 6
ROAD NETWORK - URBAN
PLAN DIRECTEUR DES TRANSPORTS - Carte 6
RÉSEAU ROUTIER - URBAIN


308
7
Provincial Highway
Federally Owned Road
Arterial - Existing
Arterial - Proposed (alignment defined)
Major Collector - Existing
Collector - Existing
Route provinciale
Chemin de propriété fédérale
Artère - Établie
Artère - Projetée (alignement déterminé)
Grande collectrice - Établie
Collectrice - Établie
TRANSPORTATION MASTER PLAN - Map 7
ROAD NETWORK - CENTRAL AREA / INNER CITY
PLAN DIRECTEUR DES TRANSPORTS - Carte 7
AIRE CENTRALE / RÉSEAU ROUTIER
DE L'HYPERCENTRE


309
8
SEE MAP 9
VOIR CARTE 9
SEE MAP 8
VOIR CARTE 8
Existing Highway — Route Etablie
Arterial - Existing — Artère - Etablie
Arterial - Proposed (alignment defined) — Artère - Projete (alignement déterminée)
Arterial - Conceptual (alignment undefined) — Artère - Conceptuelle (alignement à déterminer)
Collector - Existing — Collectrice - Etablie
Collector - Proposed — Collectrice - Projete
New Interchange — Nouvel échangeur
Ottawa
Note:
1) This map forms part of the Transportation Master Plan of the City of Ottawa and must be read in conjunction with the text.
2) This map is intended as a framework for planning and design purposes and alignments of proposed roads are approximate and subject to detailed study.
3) Reference should be made to Map 9 for clarity of road network in certain villages.
Note:
1) La présente carte fait partie du Plan directeur des transports de la Ville d'Ottawa et doit être consultée en se reportant au texte même du Plan officiel.
2) La présente carte doit servir de guide en matière de planification et de conception il s'ensuit que le tracé des routes projetées
n'est approximatif et donnera lieu à une étude plus approfondie.
3) On devrait faire référence à carte 9 pour plus de détails sur le réseau routier dans certains villages.
TRANSPORTATION MASTER PLAN - Map 8
ROAD NETWORK - RURAL
PLAN DIRECTEUR DES TRANSPORTS - Carte 8
RÉSEAU ROUTIER RURAL


310
9
Fitzroy Harbour
2
1
Constance Bay
Cumberland
11
Navan
10
Carp
3
Metcalfe
9
Richmond
4
Greely
8
North Gower
5
Manotick
6
Osgoode
7
City of / Ville de GATINEAU
Note:
1) This map forms part of the Transportation Master Plan of the City of Ottawa and must be read in conjunction with the text.
2) This map is intended as a framework for planning and design; consequently alignments of proposed roads are approximate and subject to detailed study.
Note:
1) La présente carte fait partie du Plan directeur des transports de la Ville d'Ottawa et doit être consultée en se reportant au texte même du Plan officiel.
2) La présente carte doit servir de guide en matière de planification et de conception; il s'ensuit que le tracé des routes proposées n'est qu'approximatif et demeure sou
Ottawa
Arterial - Existing
Arterial - Proposed (alignment defined)
Collector - Existing
Collector - Proposed
Artère - Établie
Artère - Projeté (alignement déterminé)
Collectrice - Établie
Collectrice - Projeté
TRANSPORTATION MASTER PLAN - Map 9
ROAD NETWORK - SELECT VILLAGES
PLAN DIRECTEUR DES TRANSPORTS - Carte 9
RÉSEAU ROUTIER - VILLAGES CHOISIS


311
10
City of Ville de Gatineau
Rivière des Outaouais / Ottawa River
New Arterials
Nouvelles artères
Widened Arterial
Artères élargies
Conceptual Arterial
Conception d'artères
New or Widened Collector
Artères élargies ou nouvelles
New Interchange
Nouvel échangeur
Ottawa
TRANSPORTATION MASTER PLAN - Map 10
ROAD NETWORK – 2031 NETWORK CONCEPT
PLAN DIRECTEUR DES TRANSPORTS - Carte 10
RÉSEAU ROUTIER - CONCEPT DU RÉSEAU 2031



Phase 1 (2014 - 2019) Widening
Phase 1 (2014 - 2019) New Road
Phase 1 (2014 - 2019) Élargissement
Phase 1 (2014 - 2019) Nouvelle route

Phase 2 (2020 - 2025) Widening
Phase 2 (2020 - 2025) New Road
Phase 2 (2020 - 2025) Élargissement
Phase 2 (2020 - 2025) Nouvelle route

Phase 3 (2026 - 2031) Widening
Phase 3 (2026 - 2031) New Road
Phase 3 (2026 - 2031) Élargissement
Phase 3 (2026 - 2031) Nouvelle route

Ottawa

Prepared by: Planning and Growth Management Department, Mapping & Geophysics Unit, 2013
Préparé par: Service de l'aménagement et de la gestion de la croissance, Unité de la cartographie et des graphiques, 2013

TRANSPORTATION MASTER PLAN - Map 11

ROAD NETWORK – 2031 AFFORDABLE NETWORK

PLAN DIRECTEUR DES TRANSPORTS - Carte 11

RÉSEAU ROUTIER - RÉSEAU ABORDABLE 2031

ANNEX C: Glossary

Affordable: In the context of the current master plan reviews, means that with the use of conservative assumptions that there is adequate funding to deliver the service and provide the related infrastructure from existing sources.

Area traffic management: Processes and techniques to preserve neighbourhood liveability by mitigating undesirable effects of vehicle travel including excessive volumes and speeds, aggressive driver behaviour and the creation of unfavourable conditions for walking and cycling

Asset management: Measures to preserve the physical integrity of infrastructure by managing its condition and determining optimal reinvestment and renewal schedules

Barrier-free: A design characteristic that maximizes accessibility for persons with disabilities

Bus lane: A roadway lane dedicated for use by public transit vehicles that may be open to mixed traffic at some hours of the day or days of the week, and that may also be open to other vehicles such as carpools, taxis or bicycles

Bus rapid transit (BRT): Fast, frequent, limited-stop bus service that operates within an exclusive right of way or with priority measures over mixed traffic in shared corridors

Carpool: A vehicle with two or more occupants who are ridesharing

Carpool lanes: A roadway lane dedicated for use by carpools (i.e. vehicles meeting minimum occupancy criteria, usually two or three persons) and buses, that may be open to mixed traffic at some hours of the day or days of the week, and that may also be open to other vehicles such as taxis or bicycles

Carpool parking lot: A location for carpool participants to park their cars and consolidate into one vehicle, usually located at or beyond the edge of the urban area

Central Area: The area defined in the City's *Official Plan* that includes LeBreton Flats, Parliament Hill and the business district to its immediate south plus the areas around the Rideau Centre and the Byward Market.

Complete Streets: A transportation system that works for everyone by balancing the multiple roles of roads and ensuring the best possible outcome to their management as a public resource. This concept of Complete Streets is a framework that ensures the

needs of all stakeholders – pedestrians, cyclists, transit riders and motor vehicle users – are adequately addressed in the design, construction, maintenance and use of the City's roadways. Different streets have different functions and the principles of Complete Streets can be used to make the City's streets safe, comfortable and convenience to all users regardless of age or ability.

Development charges: A charge levied by the City of Ottawa on new development to help pay for growth-related infrastructure development

Environmental assessment: A planning process that is mandated by provincial and federal legislation, and that requires the systematic identification and mitigation of the effects of transportation projects on all aspects of the environment

Greenbelt: A band of green space 200 square kilometres in size and generally owned by the National Capital Commission, that separates the older urban portions of Ottawa from its newer suburban communities and rural areas

Growth management strategy: A comprehensive strategy identifying long-term objectives for Ottawa's physical, social and economic development, and actions to achieve them

Inner Area: The section of the City bounded by the Ottawa River, the O-Train line, and the Rideau River

Level of service: Indicators of the quality of operating conditions that may be applied to cycling, walking, transit and car travel

Light rail transit (LRT): Rail transit technology capable of operating in a variety of physical environments, ranging from exclusive right of way to mixed traffic environments on public streets, as single vehicles or multiple-vehicle consists

Mode share: The percentage of person-trips made by one travel mode (e.g. walking) relative to the total number of person-trips made by all modes

Multi-use pathways: Off-road facilities for travel by walking, cycling and other modes such as in-line skating, that serve both recreational and utilitarian travel needs

OC Transpo: The identity of the City's public transit system

O-Train: The identity of the existing rail component of the City's public transit system

Para Transpo: Identity of the specialized door-to-door transit service provided for persons with disabilities

Park-and-ride lots: Parking lots, usually located at rapid transit stations, that allow automobile users to transfer to and from transit service in a convenient manner

Peak hour: The hour of greatest person-trip demand within a given peak period

Peak period: A period of high person-trip demand on weekday mornings and afternoons, generally measured as two-and-a-half hours long

Performance measurement: Monitoring of indicators that enable an understanding of conditions, actions and impacts that describe progress towards key objectives

Person-trip: A trip made by one person using any mode of travel

Rapid transit: Fast, frequent, high-capacity transit service provided using either bus or rail technology, operating in an exclusive right of way or otherwise not delayed by mixed traffic in shared corridors

Ridesharing: Shared use of a motor vehicle by two or more persons to make a trip, when they would otherwise travel separately

Screenline: An imaginary line that crosses all major transportation facilities in a corridor, typically drawn along a feature (such as a river or railway) having a limited number of crossing points

Transit priority corridors: Corridors equipped with a set of coordinated priority measures that give transit vehicles preferential treatment over other vehicles. These priority measures may include peak-period transit only lanes, short dedicated lane segments, queue-jumps and traffic signal priority

Transit priority measures: Strategies to increase transit operating speeds and transit travel time reliability in mixed traffic relative to car travel, such as traffic signal priority or queue jumps

Transitway: A rapid transit facility in the form of a roadway designed for the exclusive use of buses and other authorized vehicles

Transportation demand management (TDM): A range of strategies that encourage individuals to reduce the number of trips they make, to travel more often by non-driving alternatives, to travel outside peak periods and to reduce the length of their trips

Transportation system management (TSM): A range of strategies that maximize person-carrying capacity and efficiency of the road system through operational measures and localized infrastructure modifications, for the benefit of all modes of travel

Transportation vision: An expression of what a desirable future transportation system might look like, and how it can benefit residents

Truck route system: A network of designated roadways that have been designed and constructed to permit and withstand use by heavy trucks

Urban Area: The area defined in the *Official Plan* as urban, which includes all lands inside the Greenbelt, the Greenbelt itself, and the three urban communities outside it

This is Exhibit "C" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.

Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

August 30, 2019

Mr. Peter Lauch, CEO
Rideau Transit Group GP
1545 Carling Avenue
Suite 406
Ottawa, ON KIZ 8P9

Your reference: RTG-OTT-00-0-LET- 0877
Our reference: OTT-RTG-RLET- 0524

RE: Revenue Service Availability Notice - City Opinion

Dear Mr. Lauch,

We are writing in response to the Rideau Transit Group's ("**RTG**") letter referenced above, enclosing the letter from the OLRT Constructor of the same date bearing reference OLR-RTG-01-0-LET-1486, (together the "**Letter**") issued pursuant to s.26.2 of the Project Agreement (the "**PA**"), as referenced therein (the "**Revenue Service Availability Notice**").[1]

The City of Ottawa ("**City**") acknowledges receipt of the Revenue Service Availability Notice, and, having carefully reviewed the status of the completion of the Project and based on the agreement between RTG and the City described below, it is the City's opinion that RTG has now satisfied the conditions for issuance of the Revenue Service Availability Certificate.

As a result of discussions between the Parties, the City has agreed to waive the requirement that certain defects, deficiencies, and items of outstanding work will be addressed prior to Revenue Service Availability on the express condition that these items will be completed before and as a pre-condition to Revenue Service commencement scheduled for September 14, 2019. This agreement is set out in:

- RTG's letter bearing reference RTG-OTT-00-0-LET- 0877; and
- the Revenue Service Availability Term Sheet dated Aug 30, 2019 which is attached hereto as Appendix A.

In addition, Appendices B1 to B3 of this letter set out in detail the items which the City requires be completed prior to Revenue Service commencement. The items listed in Appendix B-1 are those carried over from Appendix A to the executed Substantial Completion Agreement dated July 26, 2019.

[1] Capitalized terms not otherwise defined herein shall have the meaning given to them under the PA.

City of Ottawa
O-Train Construction
Transportation Services Department
110 Laurier Avenue West
Ottawa, ON
K1P 1J1

Ville d'Ottawa
Construction de l'O-Train,
Direction générale des transports,
110, avenue Laurier ouest
Ottawa, ON
K1P1J1

The City reserves all of its rights and remedies under the PA and at law.

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc.

Gary Craig, Richard Holder, Claudio Colaiacovo, Lorne Gray, OTC
Matthew Slade, OLRT-C
Monica Sechiari, Altus Group

Enc.
Appendix A Revenue Service Availability Term Sheet (executed).pdf
Appendix B-1
Appendix B-2 Fixed Facilities Pre-RS items.pdf
Appendix B-3 Vehicles and Systems Pre-RS items.pdf

City of Ottawa
O-Train Construction
Transportation Services Department
110 Laurier Avenue West
Ottawa, ON
K1P 1J1

Ville d'Ottawa
Construction de l'O-Train
Direction générale des transports
110, avenue Laurier ouest
Ottawa, ON
K1P1J1

Appendix A – Refer to enclosed document reference Revenue Service Availability Term Sheet (executed).pdf

City of Ottawa
O-Train Construction
Transportation Services Department
110 Laurier Avenue West
Ottawa, ON
K1P 1J1

Ville d'Ottawa
Construction de l'O-Train,
Direction générale des transports,
110, avenue Laurier ouest
Ottawa, ON
K1P1J1

Appendix B-1 – Items carried over from Appendix A to the Substantial Completion Agreement dated July 26, 2019

	Issue	Current Status
1.	Vehicle Cab Doors	Following the City's acceptance of the prototype, RTG has commenced the temporary replacement of the cracked doors. This work is to be complete by September 14, 2019 (pre-RS) RTG will develop a permanent solution acceptable to the City, in its sole discretion, that will ensure that the permanent doors will be ready for installation by early December 2019.
2.	Vehicle Missions/Platform Edge Cameras	Refer to item # 17 in the Revenue Service Availability Term Sheet attached
3.	Onboard public address / passenger information systems	Refer to item # 17 in the Revenue Service Availability Term Sheet attached. Fully functional onboard public address / passenger information systems shall be provided including in relation to both normal operational routes and all diversion and recovery routes by September 14, 2019 (pre-RS).
4.	Safety and Security Certification	RTG shall provide final safety and security certification including a revised Alstom Safety Certificate for passenger service by September 14, 2019 (pre-RS)
5.	All Fixed Facility items listed in Appendix B-2	To be completed by September 14, 2019 (pre-RS)
6.	All Vehicle and Systems items listed in Appendix B-3	To be completed by September 14, 2019 (pre-RS)

Appendix B-2 - Refer to enclosed document reference Appendix B-2 Fixed Facilities Pre-RS items.pdf

City of Ottawa
O-Train Construction
Transportation Services Department
110 Laurier Avenue West
Ottawa, ON
K1P 1J1

Ville d'Ottawa
Construction de l'O-Train,
Direction générale des transports,
110, avenue Laurier ouest
Ottawa, ON
K1P1J1

Appendix B-3 - Refer to enclosed document reference Appendix B-3 Vehicle and Systems Pre-RS items.pdf

City of Ottawa
O-Train Construction
Transportation Services Department
110 Laurier Avenue West
Ottawa, ON
K1P 1J1

Ville d'Ottawa
Construction de l'O-Train,
Direction générale des transports,
110, avenue Laurier ouest
Ottawa, ON
K1P1J1

December 3, 2019

Mr. Peter Lauch, CEO
Rideau Transit Group GP
1545 Carling Avenue
Suite 406
Ottawa, ON K1Z 8P9

Our reference: OTT-RTG-LET-0292

Dear Mr. Lauch:

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("PA") between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG") Increased Monitoring (S. 21.2)

Pursuant to s. 21.2 of the Project Agreement ("**PA**")[1], and without prejudice to any other right or remedy available to the City, we hereby notify RTG of the City's intention to increase the level of monitoring of RTG in respect of the Maintenance Services, including, in relation to RTG's failures to comply with requirements of the PA. This additional monitoring is necessary given RTM's lack of organizational effectiveness and the unreliability of the System at present. For example, and without limitation, RTG has failed to:

- respond/rectify vehicle issues on the mainline in a timely manner leading to a lack of public confidence in the LRT system and considerable erosion the confidence of customer confidence in the reliability of public transit in Ottawa;
- fully coordinate and plan vehicle maintenance activity, vehicle readiness for the morning launch, and vehicle testing requirements to advance the Stage 2 fleet with a view to providing a reliable fleet and a larger fleet (more spares);
- take responsibility for and resolve integration issues between various aspects of the train and train control system, i.e. failures that bridge Thales & Alstom;
- promptly resolve technical issues including open deficiencies with the vehicle;
- have senior level staff or a single, dedicated senior level contact on site to respond immediately and effectively to issues; and
- proactively report on and communicate technical failures to senior City staff.

The City will commence increased monitoring on December 9, 2019. We anticipate that the increased monitoring will constitute the addition of a team selected by the City and consisting of the following personnel: Team Leader, Planning Monitor, Yard/Service Monitor, Commissioning Monitor, Maintenance Monitor, and Engineering Monitor. If required, the City will designate additional monitors as it deems necessary to follow emergent lines of inquiry. The increased

[1] All capitalized terms not defined herein shall bear their meaning as provided in the Project Agreement.

City of Ottawa
O-Train Construction
Transportation Services Department
110 Laurier Avenue West
Ottawa, ON
K1P 1J1

Ville d'Ottawa
Construction de l'O-Train,
Direction générale des transports,
110, avenue Laurier ouest
Ottawa, ON
K1P1J1

monitoring shall continue until such time as the City, acting reasonably, is satisfied that RTG is capable of performing, and will perform, in all material respects, its obligations under the PA.

The City will keep a separate record the costs associated with this increased monitoring. These costs incurred will be to the account of RTG pursuant to Section 21.2 of the PA. For clarity, this increased monitoring is in addition to the increased monitoring in relation to RTG's performance related to Vehicles as part of the Design and Construction Works.

We look forward to your continued cooperation on this matter.

The City continues to reserve all rights and remedies available under the PA or otherwise at law.

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc .

Gary Craig, Richard Holder, Claudio Colaiacovo, Lorne Gray, OTC
Troy Charter, OCT

City of Ottawa
O-Train Construction
Transportation Services Department
110 Laurier Avenue West
Ottawa, ON
K1P 1J1

Ville d'Ottawa
Construction de l'O-Train,
Direction générale des transports,
110, avenue Laurier ouest
Ottawa, ON
K1P1J1

This is Exhibit "D" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

January 24, 2020

Mr. Peter Lauch, CEO
Rideau Transit Group GP
1545 Carling Avenue
Suite 406
Ottawa, ON K1Z 8P9

Our reference: OTT-RTG-LET-0294

Dear Mr. Lauch:

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("PA") between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG") Remedial Rights (S. 32.1(a)(i)(D) and S. 32.1(a)(i)(B)) Reputation and Further Availability Issues

The City hereby provides notice to RTG pursuant to Section 32.1 of the PA in relation to the City's intent to exercise its remedial rights pursuant to Section 32.1(a)(i)(D) and Section 32.1(a)(i)(B). In the circumstances, the breaches of RTG's obligations under the PA and its acts and omissions have and may potentially compromise the reputation or integrity of the City and/or the nature of the City or the Project, so as to negatively affect public perception of the City and/or the Project. As well, and further to the City's letter of December 18, 2019 (OTT-RTG-LET-0293), ongoing and new issues have arisen which have affected the availability of the System to System Users and RTG continues to be in reactive mode in responding to such issues.

RTG's breaches, acts and omissions, as described in the City's letter of December 18, 2019 (OTT-RTG-LET-0293) and the ongoing failures and lack of availability of the System as described below ("**RTG's Failures**") have compromised the reputation and integrity of the City and the Project. Further, RTG's Failures have negatively affected public perception of the City and the Project.

Belated Launch

The System was belatedly launched in September, after RTG's repeated failures to meet Required Revenue Service Availability Dates it committed to meet. RTG did not meet these dates because it could not meet the requirements in the PA to satisfy this Milestone and, most notably, it could not supply an adequate number of functioning Vehicles, as it admitted repeatedly in the year prior to its belated achievement of Revenue Service Availability. The repeated changes in the dates when RTG advised it would be able to launch the System caused damage to the City's reputation and the reputation of the Project. These delays were directly attributable to RTG's failures to perform its design and construction obligations in accordance with the PA.

Given the previous failures of RTG to launch the System when it said it would do so, it was important for RTG, the City and the Project that the System launch was successful following the

City of Ottawa
O-Train Construction
Transportation Services Department
110 Laurier Avenue West
Ottawa, ON
K1P 1J1

Ville d'Ottawa
Construction de l'O-Train,
Direction générale des transports,
110, avenue Laurier ouest
Ottawa, ON
K1P1J1

September 14, 2019 opening so that transit riders would have a positive experience and so that public confidence in the Project and the City would improve.

Public Perceptions of the RTG Failures

The City has faced serious public criticism about the Project. In the months following the launch of the System, RTG failed to provide the Maintenance Services in accordance with the requirements of the PA and failed to ensure the availability of the System for System Users. This has resulted in a barrage of negative coverage by local and national news outlets and social media. The reputation of the Project and the City has suffered as a result.

In order to respond to the lack of availability of the System, the City has had to repeatedly and consistently initiate single tracking and/or replacement bus service to mitigate the impacts to our customers. Due to the regularity of the System failures, the City has had to take mitigative measures in this regard including but not limited to reserving twenty buses dedicated solely to the replacement service. In the three-month period of October through December of 2019, we have records of over fifty events where bus replacement service and/or single tracking were required. These events cause significant stress and frustration for our customers.

Further to the incidents noted above, there have been more recent, well-publicized failures and lack of availability of the System which are attributable to RTG:

- December 31, 2019: A train stopped just west of the University of Ottawa Station just before 6:00 pm and OC Transpo had to run supplementary buses for six hours, resuming service just before midnight;
- January 15, 2020: The overhead catenary system in the St. Laurent tunnel failed after the morning Peak Period and OC Transpo had to run supplementary buses for the remainder of the day, resuming normal service the following morning; and,
- January 17, 18, and 19, 2020: Ongoing and repeated switch failures occurred on the System resulting in major delays in the operation of the System and reducing the availability of the System to System Users.

More recently, the City has learned of a cascading series of serious errors and failures by RTG that resulted in numerous Vehicles being out of service for extended periods during the Peak Periods. Due to System problems which RTG has not rectified, the wheels of the Vehicles have experienced flattening which require repair on a wheel lathe. The City learned that RTG did not have a functioning wheel lathe and was unable to perform a basic wheel repair function in order to correct the issues in a timely fashion.

The widespread media attention for these incidents as well as the cumulative impact of repeatedly and routinely needing to call buses into service during rush hours is degrading the reputation of the City and the Project. The System that RTG has provided is not reliable and, as noted above, public trust in the System, the Project and the City has understandably eroded.

This is a System that, pursuant to the PA, was to operate reliably with significantly higher passenger loads than are currently being experienced. It was to do so from its launch following

the achievement of Revenue Service Availability. It has not done so. The System is simply not operating at the level required by the PA. The City has borne the brunt of public criticism in the media and is saddled with a deficient System that has inconvenienced transit riders in the City to the point where the City's reputation and the reputation of the Project have suffered considerably.

Conclusion

In relation to the matters that are the subject of this Notice under Section 32.1(a)(i)(D), RTG has 5 Business Days to cure its breaches, acts and omissions which have compromised the reputation and integrity of the City and the Project so as to negatively affect public perception of the City and the Project. Should RTG fail to do so, the City will be left with no choice but to consider its rectification rights under Section 32.3 of the PA.

The City reserves all of its rights under the PA and at law.

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc.

Lorne Gray, OTC
Troy Charter, OCT

City of Ottawa
O-Train Construction
Transportation Services Department
110 Laurier Avenue West
Ottawa, ON
K1P 1J1

Ville d'Ottawa
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Direction générale des transports
110, avenue Laurier ouest
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This is Exhibit "E" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

Service back in east end LRT after 'immobilized' train removed

TOM SPEARS (HTTPS://OTTAWACITIZEN.COM/AUTHOR/TOMSPEARS1) Updated: September 18, 2019



A train comes into Blair LRT Station Saturday. TONY CALDWELL / POSTMEDIA

Service has resumed to the eastbound LRT after a "immobilized" train caused a 40-minute outage Tuesday afternoon.

The city's media office sent out an announcement saying: "Full service has been restored with residual delays. We had one immobilized train at Cyrville Station that was diagnosed by a technician. Service continued to operate on

a single track from St-Laurent to Blair Station. Customer volume was low at the time. Full service continued from St-Laurent to Tunney's Pasture Station. The train has been brought in, and customers would have experienced delays."

No further reason was given as to why the train was immobilized.

Transpo first notified riders of the outage between Cyrville and Blair stations at about 1:30 p.m.

https://twitter.com/OC_Transpo/status/1174024666048081922 (https://twitter.com/OC_Transpo/status/1174024666048081922)



Transpo tweeted at about 1:50 p.m. that it expected the delay to last 14 minutes.



25 people are talking about this

In addition, two platforms at other stations were temporarily closed. Passengers were asked to use other platforms.

OC Transpo
@OC_Transpo

Update: The Westbound platform at Cyrville closed. All trains are serving the eastbound platform.
http://184.107.34.24/en/alerts/#alerts-13708

3 12:37 PM - Sep 17, 2019

See OC Transpo's other Tweets

Earlier, the brand-new line had a 15-minute stoppage at the uOttawa Station, apparently because the doors jammed.

tspears@postmedia.com (mailto:tspears@postmedia.com)

twitter.com/TomSpears1 (http://twitter.com/TomSpears1)

ALSO IN THE NEWS

Police arson squad takes over probe of fire at Hunt Club BMW dealership (https://ottawacitizen.com/news/local-news/investigator-on-scene-of-fire-at-hunt-club-bmw-dealership)

Fatal crash closes eastbound 417 at Hunt Club Road (https://ottawacitizen.com/news/local-news/fatal-crash-closes-eastbound-417-at-hunt-club-road)

Trains received positive reaction, bus connections not so much (https://ottawacitizen.com/news/local-news/trains-received-positive-reaction-bus-connections-not-so-much)

TRENDING IN CANADA

Documents show confusion, misinformation during LRT delays

TOM SPEARS (HTTPS://OTTAWACITIZEN.COM/AUTHOR/TOMSPEARS1) Updated: October 24, 2019

Wrong PA announcements.

Wrong information on the overhead signs.

OC Transpo staff who "weren't given enough time to move customers" when an LRT delay occurred.

And somehow, the wrong recorded announcement was able to "override" the correct one on the PA system.

These communications gremlins faced OC Transpo on the Tuesday of its first week of LRT service, during its first significant delay, which slowed the

system for about 40 minutes. Details in an internal "sit rep" (situation report) were released through an access to information request after this newspaper could not get the information about that day's LRT delay through regular channels.



LRT jam-up at Tunneys Pasture. BLAIR CRAWFORD / POSTMEDIA

That first breakdown (when a train had to be hauled away) happened while cross-town buses were still running their old service in parallel with the trains. Breakdowns and delays became more serious after Oct. 6, when buses were taken away and everyone had to take the trains.

Sarah Wright-Gilbert, a citizen member of the city's transit commission, said communication surrounding delays has been a persistent issue for OC Transpo.

"It's not good, to be honest," she said in an interview.

She said it's time for the transit system to work harder at keeping LRT passengers informed whenever things go wrong.

Wright-Gilbert said LRT service is usually "incredible" for her daily commute across the full length of Line 1. But she said passengers are too often left in the dark if there is a delay.

In September she was stuck on a stopped train "with absolutely no information from OC Transpo on Twitter." (Transpo has since beefed up its use of the OCTranspoLive (https://twitter.com/OCTranspoLive) Twitter feed.)



Sarah Wright-Gilbert is an OC Transpo commissioner concerned with the communication of service issues to the commission and the public. October 23, 2019. ERROL MCGIHON / POSTMEDIA

She was delayed again this Monday, and the train operators "were giving only very generic information — 'We are experiencing delays. We should be going in a couple of minutes'." Eventually passengers were told to get off, and no one in Cyrville station could tell her what was happening either.

"And that's my concern, when the rail operator is telling me one thing and then I'm getting zero information from the people who are the face of OC Transpo on the platform ... And it's not his fault. He didn't have the information," she said.

The PA told her there was a delay. The displays said the trains were "held." That was all.

Wright-Gilbert was also disturbed by the contrast between the Sept. 17 "sit rep" and an email that general manager John Manconi wrote to Ottawa

councillors the same day. She says the email "glossed over" problems that commissioners should have been told about.

It says in part: "Day 2 of this amazing new system was solid on multiple fronts ... Overall we are exactly where we need to be, remembering that parallel bus service peels off on Oct. 6 making things even more precise while ensuring our number one priority is covered — our customers.

"On October 7 customers receive their final change and your $5.1 M bus improvement investment city wide which improves bus service along with the anticipated significant bus reliability from not having to run buses through the core/across the city.

"Bus service reliability will improve as planned."



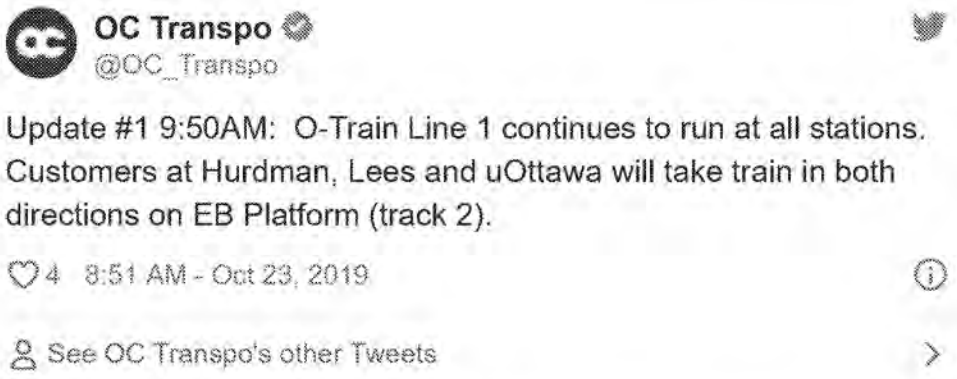
Buses drop of transit users at Blair Station. JEAN LEVAC / POSTMEDIA NEWS

"I'm concerned," Wright-Gilbert said. "We are told as commissioners that it is not our job to worry about operations." But she argues that the commission's role is to promote transit and to hold Transpo to account, which can't happen when Manconi's email "is not reflective of what happened that day. I'm concerned that the information in the email is not

complete. We were not given a complete picture. And it's clear from this sit rep that the communications were a serious issue."

She is also annoyed that October's monthly commission meeting was cancelled for lack of written reports to discuss. She feels it's time to discuss the LRT, as well as bus reliability which many passengers perceive as declining.

On Wednesday of this week, the confusion around a delay continued. The official OC Transpo announcement said service was running, though passengers could only use the eastbound platforms at three stations — Hurdman, Lees and uOttawa.



On social media passengers complained they were not being told what was happening or how long delays would last.



tspears@postmedia.com (mailto:tspears@postmedia.com)

twitter.com/TomSpears1 (http://twitter.com/TomSpears1)

ALSO IN THE NEWS

Egan: 'This is just so wrong' — Ailing parents kept apart for seven months (https://ottawacitizen.com/news/local-news/egan-this-is-just-so-wrong-ailing-

CBC

Ottawa

'We've got to do better': Riders faced 9 hours of train delays last week

OC Transpo reported delays every day from Monday to Friday

Yasmine Mehdi · CBC News · Posted: Oct 27, 2019 4:00 AM ET | Last Updated: October 27



There were delays reported on the Confederation and Trillium lines every workday last week — and that has one transit advocate worried people could forsake the train for their cars. (Christian Milette/Radio-Canada)

comments

Immobilized trains, faulty doors, computer failures and track switch issues: the list of problems with the city's train service seems to be getting longer.

The City of Ottawa wasn't able to provide a list of all the service disruptions, but OC Transpo shared notices of incidents every weekday last week on its Twitter page.

- ANALYSIS **How OC Transpo missed its best chance to get us on board**
- **Riders, councillors question reliability of delay-plagued trains**

On Monday, unknown problems caused the shutdown of the Trillium Line for an hour in the morning and for about two hours in the afternoon. Riders were asked to use the bus.

ADVERTISEMENT



On Tuesday morning, a "communication issue with the track switch" caused a shutdown on the Confederation Line between Blair and St-Laurent stations — and it took more than two hours for service to resume.



On Wednesday, two separate incidents occurred.

First, an immobilized train at uOttawa station halted service on one track between Rideau and Hurdman stations.



Then, a faulty door at St-Laurent station caused delays.

On both Thursday and Friday, there were more delays caused by immobilized trains at Tremblay, Tunney's Pasture and Bayview stations.



Anne-Marie Roy says the LRT is 'missing the mark' and is concerned some riders could switch to driving if the situation doesn't improve. (Yasmine Mehdi/CBC)

Concerns growing among riders

In all, there were nine hours of service disruptions last week on both rail lines. That has public transit advocate Anne-Marie Roy concerned people will end up taking their car instead of braving the network.

"Not everyone can get away with getting to work late and telling your boss, 'Sorry, it was the LRT.' I think it's really important we have a reliable transit system," she said.

OC Transpo should discuss the issues with the Rideau Transit Group (RTG), the consortium that built the Confederation Line, Roy added.

"One of my big concerns is winter is coming," she said. "If we're having all of these issues right now, what is this going to look like when we have our first snowfall?"

'Dreading winter'

Roy isn't the only one worried, however.

"It's not reliable, it's not convenient, I bet you anything it's going to get stuck in the winter," said Jehanal Barakani, as she made her way out of Parliament station.

- **'Unreliable' LRT trains can't handle Ottawa winters, internal reports reveal**

"I'm still dreading winter with the train," added Shari Scott, another rider.





Rideau-Vanier councillor Mathieu Fleury calls the LRT delays 'unacceptable' and is urging OC Transpo to be more transparent about what's causing them. (Yasmine Mehdi/CBC)

'They have every right to be angry'

Ottawa Mayor Jim Watson said Saturday he's expressed his frustration with John Manconi, general manager of OC Transpo.

Watson said that with "every new system, there are obviously new challenges." And while the "vast majority" of riders have had a positive experience, some commuters have had a tougher time, he said.

"They're angry, and they have every right to be angry. And we've got to do better," said Watson.

> **"We want them to give us the confidence ... that this investment was worthwhile."**
>
> *- Mathieu Fleury*

Watson said reprogramming work on the trains — which he expects will be complete by next Saturday — will make the doors less sensitive and should minimize delays.

The councillor for Rideau-Vanier, Mathieu Fleury, is also growing frustrated.

Fleury said OC Transpo should be more forthcoming about "what they are going to do in the short term" to increase reliability .

"We want them to give us the confidence ... that this investment was worthwhile," he said.

OC Transpo should present its next LRT update on Nov. 6 at the city's transit commission meeting.

With files from Hillary Johnstone

CBC Radio-Canada

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Visitez Radio-Canada.ca

LRT nightmare launch exposes bitter divisions on transit commission and city council



An east-bound OTrain pulls in to Rideau Station on the Confederation Line of the Light Rail Transit system in Ottawa, ON.

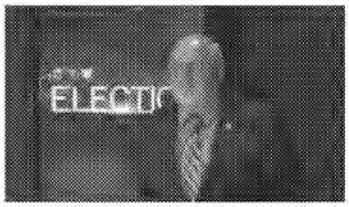
CTVNewsOttawa.ca, Staff
Published Wednesday, October 30, 2019 2:58AM EDT

Ottawa's new and failing LRT system has become an all consuming nightmare for commuters, transit planners and politicians, and there is no end in sight.

On Tuesday alone, the Chair of the Transit Commission Allan Hubley was accused of trying to gag fellow commissioners, Councillor Carol Anne Meehan blasted Mayor Jim Watson on 580 CFRA for being invisible on the most pressing issue the city has faced in years, and Sarah Wright-Gilbert, the citizen Transit Commissioner released a blistering statement saying she would not stay quiet or "toe the party line" as OC Transpo continues to falter.

None of that includes any of the countless complaints that continue to flood in from commuters, about overcrowded, late or stalled buses and trains.

PHOTOS



Hubley began the day with a long and extraordinary email to fellow transit commissioners, scolding them for disparaging the system in public.

"The damage that comments about our employees and the transit system as a whole that are being made in the media and on social media are not helping the situation", Hubley wrote. "We will not subject our employees to a public meeting to be attacked".

Late Tuesday night, the volunteer citizen Commissioner, Wright-Gilbert, released her response, lashing back at Hubley.

"To say that comments made in the media and on social media are destroying ridership confidence in the system is appalling...and personally distressing", she wrote. Wright-Gilbert reminded Hubley her role is to keep OC Transpo accountable and that she won't stay quiet. "I will not sacrifice my personal ideals to toe the party line."

On top of all this, Gloucester-South Nepean Councillor Carol Anne Meehan accused Mayor Jim Watson of being invisible on the issue, speaking on Ottawa Now with Evan Solomon on Newstalk 580CFRA.

"I just want to ask where is Mayor Watson on this", Meehan asked. "He's the first one there when there is good news to share. But Jim has been absent on this issue".

Sarah Gilbert
@sarahmeaghang

My statement regarding the events of today. Please note that I will not be commenting on this matter any further. I have relayed the statement below to the Transit Commission Chair and consider this matter closed.

October 29, 2019

Statement from Sarah Wright-Gilbert, Citizen Transit Commissioner

To say that comments made in the media and on social media are destroying ridership confidence in the system is appalling and, quite frankly, personally distressing. The issues that riders face on a daily basis are the cause, not comments made by Commissioners.

The comments I have made in the media are not meant to attack OC Transpo employees, rather they are intended to draw attention to the issues of our customers, of which I am one. I have also tweeted and said (in interviews) positive comments about the system.

It should also be noted that this isn't the first communication that I have received regarding my public comments, and it likely won't be the last.

I am both a customer and a **volunteer** Citizen Transit Commissioner. As part of my Commissioner role, my job is threefold: promote public transit, hold OC Transpo to account, and represent the interests of riders. My public comments are intended to serve the latter two goals. As for promoting public transit? I can't, in good conscience, do that until there is increased transparency, communication, and reliability. I will not sacrifice my personal ideals to toe the party line.

♡ 1,068 7:19 PM - Oct 29, 2019

♡ 300 people are talking about this >

Kristy Cameron @radioKristy · Oct 29, 2019

"I want the mayor to stand up and be the face of this issue right now," says @MeehanCarolAnne, speaking to @EvanLSolomon about LRT issues.

"Where is he? Where is the mayor on this?" @JimWatsonOttawa #OttNews

Kristy Cameron
@radioKristy

"Where is mayor Watson on this? Where is the mayor? He's the first one there when there's good news to share but Jim has been absent on this issue and he's put Councillor Hubley out in front," @MeehanCarolAnne tells @EvanLSolomon. #OttNews #OttCity

♡ 44 4:33 PM - Oct 29, 2019

♡ 26 people are talking about this >

MOST WATCHED



'Magic of Lights' is open to the public



Bobby Ryan out of lineup



Magic of Lights opens for the holidays

DON'T MISS

CBC

Ottawa

Confederation Line earns failing grade

This is the kind of report card some of us used to hide from our parents

CBC News · Posted: Nov 01, 2019 1:08 PM ET | Last Updated: November 1



A man watches Rideau station whisk by as he rides Ottawa's Confederation LRT line on Sept. 14, 2019, the first day it was in service. (Andrew Lee/CBC)

comments

On Thursday, we asked you to grade your experience with Ottawa's new Confederation Line. You did not hold back.

We received more than 300 comments through our website, social media feeds and email, and they're still rolling in.

The most common grade so far? A big fat F, according to nearly half of you. Many of you didn't feel that was harsh enough, so you awarded the LRT an F minus.

D was the next most common mark.

It probably didn't help that the light rail line experienced three major glitches in the last 24 hours.

A sample of your comments

Here's a taste of what you had to say. Some submissions have been edited for length and clarity.

Phoenix on Wheels. — Cliff

The goal of the LRT was to make moving about the city easier and reduce traffic. Neither of these things have happened. — Elaine (F)

That the trains are crowded during rush hour is actually a sign that the train is being used. If you've been on the Metro in Montreal or the TTC in Toronto, this is normal. All things considered Ottawa transit riders are going through an adaptation process and will, hopefully, appreciate having a LRT network. Now if only the bus network was efficient ... — Mark (C+)

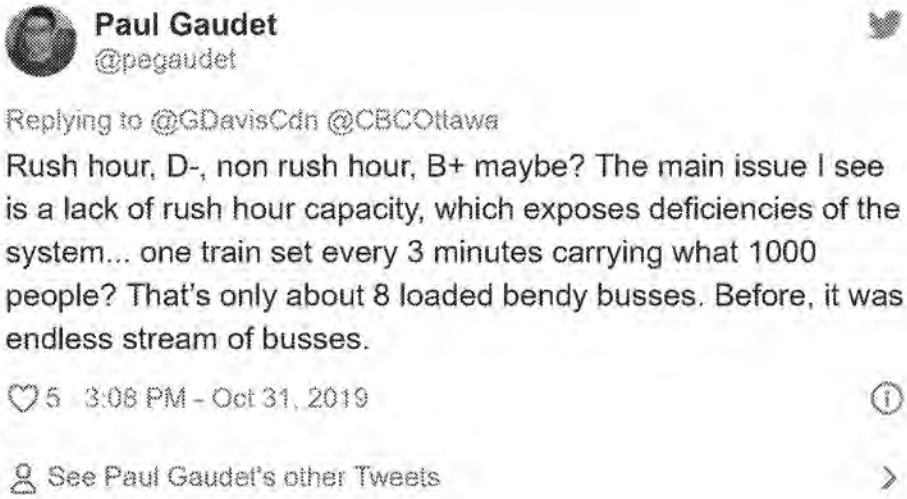


I appreciate other people's experience has been different but I love it. I live in Alta Vista and the new system easily saves me five to 10 minutes commuting time in the morning and 10 to 15

minutes in the afternoon. — Richard (A-)

At Blair station, the old walkway bridge is extremely crowded when a full train unloads. There is no signage indicating people should keep to one side or the other, so I am frequently met with a wall of people coming in the opposite direction. It's like swimming against rapids. Same thing happens at Parliament, where the designers obviously never watched Ghostbusters: as Egon said "It's vitally important not to cross the streams". — Kenneth (B)

I have to say that this is a real win for the LRT, the trains get a solid B+. The lack of better spaced out poles or handles for the folks standing is a head scratcher and keeps them from getting an A. This leads to a jam of people at the doors. — Kevin (C-)



I am a senior and have to use public transit, but this new system is of no use to me. Too many stairs, too great a distance to walk everywhere. On Toronto's GO system I am well served and safe. — Marilyn (F)

I would commend the operators. They are doing their utmost to once again make the best of management's terrible decisions. We should have a driver appreciation event because they are the front line. They take the abuse and the negativity ...Your article will no doubt be negative, but let's recognize the great work of the bus operators! — Katharine (C)



It would be a solid B but, like anyone who's ever done a group assignment, the quality of its teammates (the reorg'ed bus network, the station flaws) brings it down to a C-.

9:11 AM - Nov 1, 2019

See Seanchaidh's other Tweets

I was more than thrilled when on opening day (a weekend) I was able to travel from my Old Ottawa East address (Lees) to my Queen St. desk (door-to-door) in under nine minutes, and comfortably seated! It never happened a second time, and now I feel like I have to abandon my humanity temporarily each and every time I use it. — Vance (F)

My grades are:
A for "A" good idea
B for "Bad" doors and shame for forgetting "Barrhaven"
C for "Crazy" amount of time until launch and huge "Cost" overruns
D for too many "Delays"
E for lack of "Effort" from staff to be honest with the public
F for "Failed" communications!

W for "WAIT until winter"
Y "You aint seen nothing YET"
—John

Others: A+++ (1) F+ (2), F- (16), "what's below an F?" (3) Z- (1)

Answers came from comments on the story, emails, tweets mentioning @CBCOttawa and comments on our Facebook page within 24 hours of the request for grades.

Not everyone who submitted a response included a letter grade.

This is not a scientific poll.

CBC

Ottawa

Reliable trains, not buses, needed to restore faith in LRT: commissioner

40 buses being taken out of retirement to bolster routes that feed the LRT

Matthew Kupfer · CBC News · Posted: Nov 02, 2019 4:00 AM ET | Last Updated: November 2



Sarah Wright-Gilbert, a citizen transit commissioner, says she welcomes the mayor's announcement of an increase in OC Transpo bus service — but adds that won't fix the problem of reliability on the LRT. (Matthew Kupfer/CBC)

comments

One of Ottawa's transit commissioners is welcoming Mayor Jim Watson's promise to increase bus service, but says that's not enough to restore the confidence of frustrated LRT riders.

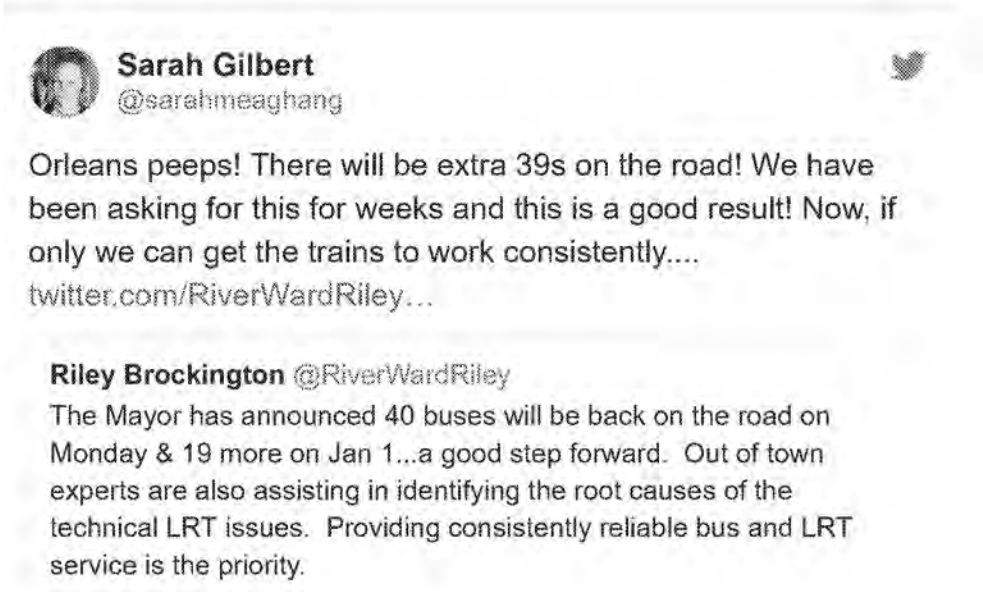
Sarah Wright-Gilbert said she wished public officials had been discussing the ongoing light rail problems more openly, rather than having things culminate with a dramatic response from the mayor after two separate problems snarled Friday morning's commute.

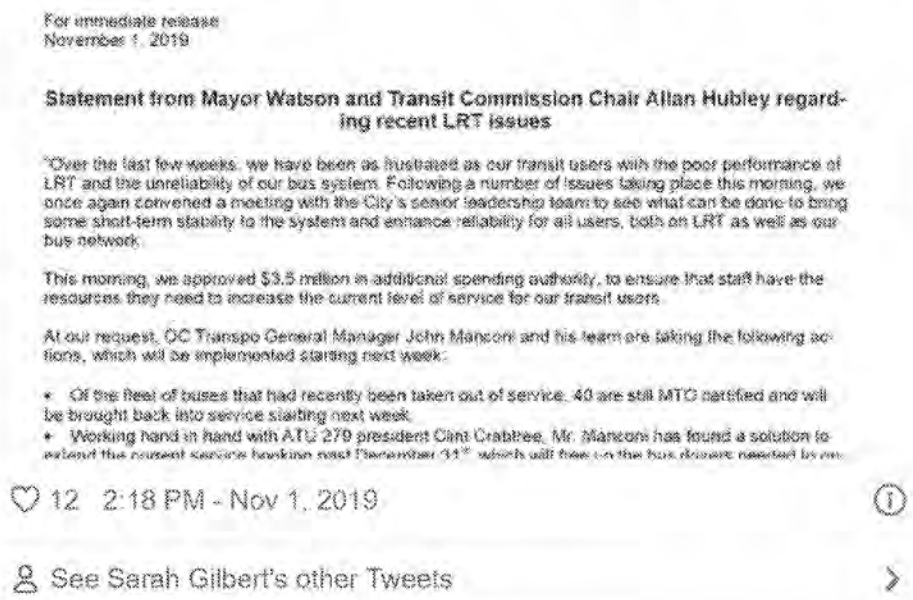
"I wish this step had been taken several weeks ago and that we hadn't gotten to what I think was a breaking point," she told CBC News.

- **'Furious' mayor announces emergency transit fix**
- ANALYSIS **Mayor's fury over LRT comes months too late**

The mayor has announced 40 buses are being taken out of retirement to bolster routes that feed the LRT, including the 39, which Wright-Gilbert said has serious overcrowding problems.

"It doesn't really solve the underlying issue, which is the reliability of the trains," she said. "Until we have reliable trains, the public's confidence is not going to be there in our very expensive multi-modal system."





For immediate release
November 1, 2019

Statement from Mayor Watson and Transit Commission Chair Allan Hubley regarding recent LRT issues

"Over the last few weeks, we have been as frustrated as our transit users with the poor performance of LRT and the unreliability of our bus system. Following a number of issues taking place this morning, we once again convened a meeting with the City's senior leadership team to see what can be done to bring some short-term stability to the system and enhance reliability for all users, both on LRT as well as our bus network.

This morning, we approved $3.5 million in additional spending authority, to ensure that staff have the resources they need to increase the current level of service for our transit users.

At our request, OC Transpo General Manager John Manconi and his team are taking the following actions, which will be implemented starting next week:

- Of the fleet of buses that had recently been taken out of service, 40 are still MTO certified and will be brought back into service starting next week.
- Working hand in hand with ATU 279 president Clint Crabtree, Mr. Manconi has found a solution to extend the current service hooking past December 31st, which will free up the bus drivers needed to op...

♡ 12 2:18 PM - Nov 1, 2019 ⓘ

See Sarah Gilbert's other Tweets ›

Chided for criticism

Wright-Gilbert, an unpaid volunteer on the transit commission, raised issues about the lack of buses, overcrowding and poor communication earlier this week.

Coun. Allan Hubley, the chair of the transit commission, subsequently criticized her for undermining confidence in the system.

Wright-Gilbert told CBC that Hubley's comments were very distressing and made it difficult for her to go on with her work.

"To be made the reason why people have lost confidence in the system ... that comment was not only tone-deaf, it was insulting," she said.

After Watson tweeted that he was "furious" with the LRT problems, he was asked if Wright-Gilbert was owed an apology. The mayor said the transit commissioner was expressing frustration, and that people are free to tweet if they want.

For her part, Wright-Gilbert said she is looking forward to next week's transit commission meeting, when transportation services manager John Manconi is expected to explain the fixes to the issues dogging the Confederation Line.

That meeting — the first since the LRT launched in mid-September — takes place Nov. 6.

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CANADA

OC Transpo can't say when Ottawa's LRT will be stable: 'The system isn't good enough yet'

BY BEATRICE BRITNEFF - GLOBAL NEWS

Posted November 6, 2019 6:59 pm

Updated November 6, 2019 7:54 pm



— An LRT train on OC Transpo's new O-Train Confederation Line departs Lees Station in Ottawa, on Friday, Oct. 11, 2019. *THE CANADIAN PRESS/Justin Tang*

-A A+

Top city officials doled out apologies on Wednesday for Ottawa's problem-plagued light-rail transit (LRT) system, but the head of OC Transpo could not provide timelines for when the biggest issues plaguing the $2.1-billion Confederation Line will be resolved.

The city's transit commission convened a special meeting to get more detailed information about the causes of repeated breakdowns and delays along the east-west train line over the last month, as well as what's being done to fix them.

The problems on the O-Train escalated after Oct. 6, the day OC Transpo flipped the switch on the biggest service change to the public transit system in Ottawa's history.



— Politicians, media ride LRT trains ahead of Confederation Line's handover to city

Asked by Coun. Rawlson King whether OC Transpo has a timeline for

Asked by Coun. Rawlson King whether OC Transpo has a timeline for when "the system will become reliable," OC Transpo general manager John Manconi said he has pressed the group maintaining the Confederation Line for a date, to no avail.

STORY CONTINUES BELOW ADVERTISEMENT

"To be totally candid, they have not given us timelines for the four major issues [causing rail service interruptions]," Manconi told the transit commission.

READ MORE: Ottawa mayor announces extra $3.5M to improve transit as bus, LRT woes continue

OC Transpo says those four issues are: the computer that controls all systems on the train (TCMS); the on-board computer that controls the train's movements (VOBC); the train doors; and the rail switches.

Those issues have frequently occurred during weekday rush hours, leading to stalled service and crowded stations when the largest numbers of commuters are on the move.

OC Transpo officials insisted the issues with the computers, the doors and switches did not come up during a critical testing period of the

Confederation Line in the summer, nor during the first three weeks the

train carried riders along the tracks, before OC Transpo pulled parallel bus service on Oct. 6.

Manconi promised on Wednesday that OC Transpo is listening to riders and is "100 per cent aware" of the issues they're facing.

"We're working relentlessly to make your journey a stress-free journey," he said.

> **"The system isn't good enough yet."**
>
> TWEET THIS

City manager apologizes, blames RTG maintenance group

The manager of the City of Ottawa delivered a profuse apology for the LRT's performance to the transit commission on Wednesday and did not mince words as he pointed his finger at the group contracted to maintain the Confederation Line for 30 years.

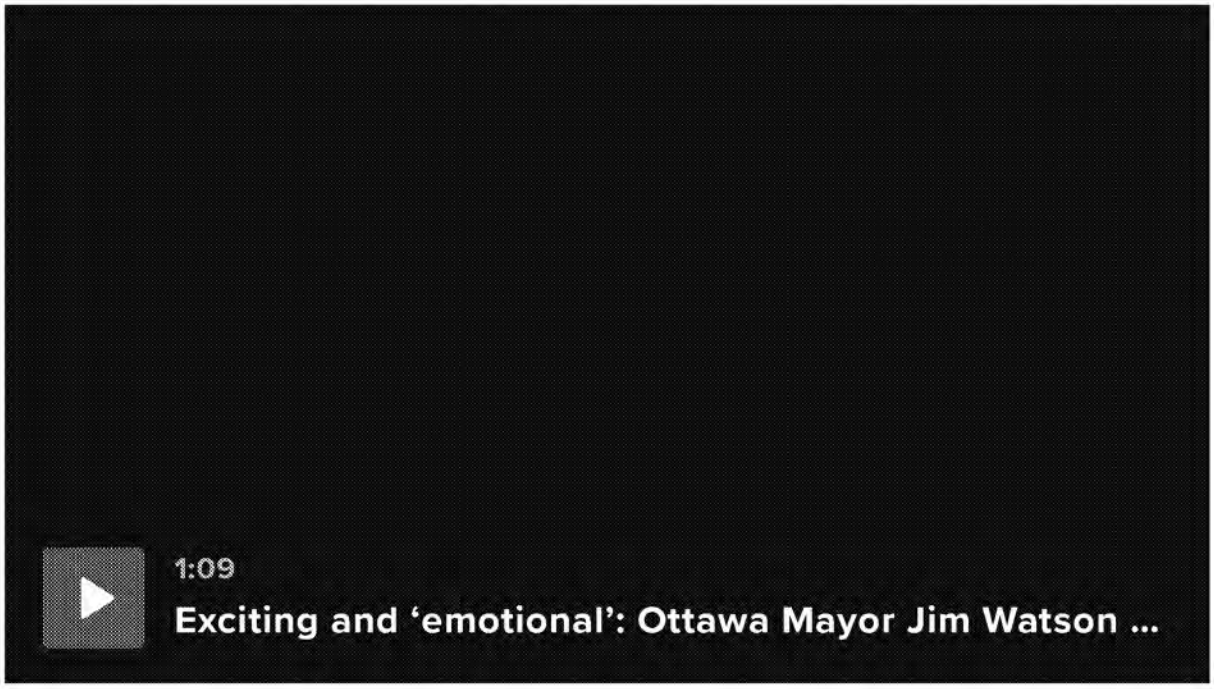
STORY CONTINUES BELOW ADVERTISEMENT

In short: Rideau Transit Maintenance has "failed" to address the LRT's problems quickly enough, Steve Kanellakos argued.

> **"We have not received what we paid for,**

> and I can say that categorically."

TWEET THIS



— Exciting and 'emotional': Ottawa Mayor Jim Watson describes how LRT launch day feels

Rideau Transit Maintenance (RTM) is the maintenance division of Rideau Transit Group, the consortium that built the Confederation Line.

Kanellakos challenged managerial oversight at RTM and accused the group of poor planning, under-resourcing and "a failure to anticipate predictable issues."

The transit commission heard RTM is bringing in engineering experts to investigate the root causes of the computer issues. For the train doors, OC Transpo says dwell times have been adjusted, door sensitivity will be recalibrated and the agency is blasting commuters with messaging about not holding the doors open.

Corrective Action Plan - TCMS

- RTG and RTM have been directed to mobilize a dedicated team of experts to investigate and solve the issue that results in the TCMS errors;
- Experts include TCMS architect/designer, train system engineer, train control engineer, train validation engineer, train systems analyst, and other experts/support personnel;
- This team is actively investigating all potential root causes and is meeting every day; and,
- Actions include:
  - Complete review of all TCMS error occurrences;
  - Identification of all potential root causes;
  - Identification of pre-warning to Controller of potential occurrence;
  - Testing various solutions with out of service trains on the line; and,
  - Develop procedures to expedite response and rectification.

City of Ottawa

— *City of Ottawa*

Corrective Action Plan - VOBC

- Direction has been provided to Thales and Alstom to provide the necessary engineers and work collaboratively to identify root causes and resolve the ongoing issues with their systems;
- Experts include both Thales and Alstom train and systems engineers and other experts/support personnel;
- Teams are actively investigating all potential root causes including communication links, potential connection with TCMS issues and associated hardware; and,
- Actions include:
  - Complete review of all VOBC communication errors;
  - Identification of all potential root causes; and,
  - A review of the software logs and reports has been completed and the data is being analysed.

City of Ottawa

— *City of Ottawa*

Corrective Action Plan - Doors

Since the launch, the following actions have been taken:

1. Enhanced customer communications to "*not hold the doors*";
2. An inspection of all door mechanisms;
3. Voltage inspection of all doors;
4. Modified procedures to permit consistent "door isolation" which enables affected train to return in service;
5. Dwell times have been adjusted at Hurdman, uOttawa, Rideau, Parliament, Lyon Stations as well as other stations as required;
6. Door sensitivity adjustments will be recalibrated;
7. Door default sequencing is being reviewed to prevent additional cycling of doors;
8. All door software has been inspected which enables the shift to manual door operations; and,
9. Signal engineers (Thales) and door supplier (Vapor) are part of the team reviewing and addressing these issues.

City of Ottawa

— *City of Ottawa*

Corrective Action Plan - Switches

- RTG and RTM have been directed to have dedicated guideway technicians assigned at terminus stations during peak periods;
- A complete inspection and review of all switches has also been ordered;
- Switch covers, which were installed to assist with the upcoming winter season, have been removed at Tunney's and Blair Stations, and will be removed at other locations; and,
- Switch maintenance, inspection plans and greasing programs will be revisited to ensure reliability.



City of Ottawa

— *City of Ottawa*

On the rail switches, Manconi insisted OC Transpo has asked RTM to proactively staff technicians at terminus stations during peak periods for the train and ordered a "complete inspection and review of all switches."

With winter on the horizon, OC Transpo staff say RTM has been "clearly" advised that their winter plan has to be "robust" and "anticipatory of Ottawa's winter climate."

Snow-clearing equipment has been installed at the above-ground stations, according to Wednesday's presentation.

STORY CONTINUES BELOW ADVERTISEMENT

The city is paying RTM between $4 million and $5 million a month for maintaining the Confederation Line, Manconi said. He clarified they city deducted $2.8 million from the consortium's September maintenance payment as a penalty and will continue to withhold $4 million per month if it isn't satisfied with RTM's progress.

Meeting held as city promises extra cash for transit in 2020 budget

The transit commission meeting was held the same day the city tabled its draft 2020 budget, which pledged an extra $9.5 million on top of regular transit funding to improve Ottawa's bus service, which has choked with the LRT's bumpy rollout.

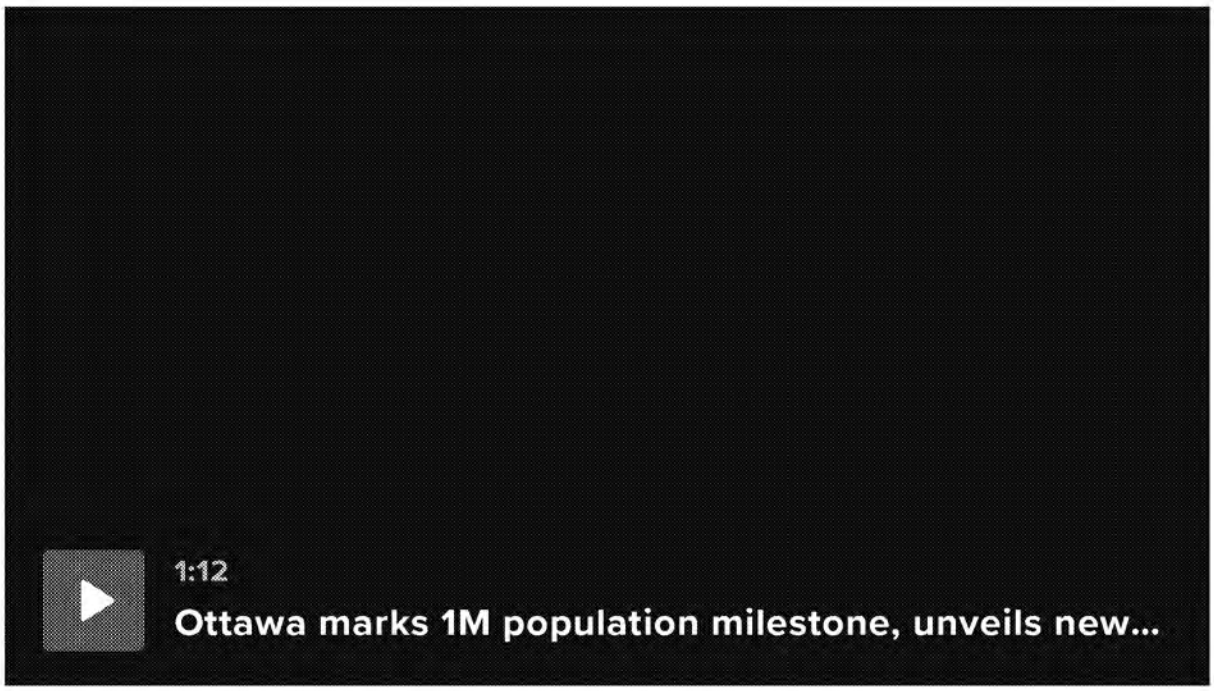
The train problems and delays have stressed the city's bus service, which lost 180 buses in the major service switchover on Oct. 6. The top issues riders have reported are late or missed trips, overloaded buses or problematic connections with the Confederation Line.

READ MORE: Some highlights from the City of Ottawa's draft 2020 budget

The persistent LRT problems and cascading effects on the bus routes prompted a "furious" Mayor Jim Watson to apologize to transit users on Friday. He announced the city would bring back 40 buses that were retired this fall and deploy them on the routes "that have faced chronic issues since the October 6 service change."

The money to pay for that is technically contained in the proposed 2020 budget, which earmarks an extra $7.5 million to improve bus service and reliability on OC Transpo and $2 million more for Para Transpo.

STORY CONTINUES BELOW ADVERTISEMENT



— Ottawa marks 1M population milestone, unveils new slogan

If the 2020 budget is approved, OC Transpo will also purchase 19 new buses for its fleet and implement a 2.5 per cent fare increase on Jan. 1, 2020.

Citizen transit commissioners Sarah Wright-Gilbert and Anthony Carricato said they would rather see fares frozen in January because of the ongoing LRT problems.

"I absolutely believe that fares should be frozen across the board," Wright-Gilbert said. "I'm going to be spending my weekend looking for offsets in the budget to offset the $4.9 million dollars that they say that a fare increase will bring in."

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CBC

Ottawa

Woe-train: Ottawa's LRT troubles, by the numbers

Confederation Line service disruptions add up to 21.5 hours of headaches for commuters

Andrew Foote · CBC News · Posted: Nov 06, 2019 4:00 AM ET | Last Updated: November 6

Since Ottawa's Confederation Line opened to the public, there's been nearly a full day's worth of service disruptions. 0:53

comments

In the seven and a half weeks since Ottawa's Confederation Line opened to the public, there's been nearly a full day's worth of service disruptions — that we know about.

The new light rail line has broken down 31 times in the last 53 days for a total of 21.5 hours out of service, according to OC Transpo alerts.

Add the Trillium Line to the mix, and there have been more than 24 hours and 15 minutes of disruptions since Oct. 6 alone.

Trains on Lines 1 and 2 were halted on 20 of the 31 days since parallel bus service ended and dozens of routes were retired, forcing commuters to transfer onto LRT to complete their rides downtown.

Frustration among riders has boiled over, prompting Mayor Jim Watson to promise $3.5 million to bring back buses that had been put out of service. OC Transpo managers will have more to say at a transit commission meeting today.

- **'Furious' mayor announces emergency transit fix**
- **Transit troubles top concern as city prepares to table budget**

Here's a look at Ottawa's troubled transit system, by the numbers.

How often does the LRT break down?

Longest disruptions since Sept. 14

Most frequent trouble spots

Known causes of O-Train issues

Facts and figures are from OC Transpo, plus city sources whenever possible.

CBC News has asked for more information about nine known incidents where a cause wasn't listed, and 17 incidents where a precise location wasn't given, and was told OC Transpo staff would answer those questions at Wednesday's meeting.

CBC Radio-Canada

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Ottawa Today with Mark Sutcliffe Ottawa Today with Mark Sutcliffe

OTTAWAMATTERS.com powered by 1310 NEWS

'We can't go on like this:' A call for 24/7 OC Transpo communication, other measures

Nov 15, 2019 2:38 PM By: Mike Vlasveld



Ottawa City Councillor Shawn Menard, December 2018. Mike Vlasveld/ OttawaMatters

From broken train doors to bad smells and slippery stairs, Ottawa City Councillors Shawn Menard and Catherine McKenney say problems with OC Transpo's Confederation Line have continued with no improvements made to the city's public transit service.

The two wrote a statement, released Friday afternoon, titled, 'Statement on Ongoing Transit Problems and City Leadership."

In it, they describe aspects of OC Transpo's current level of service, which they deem unacceptable.

"We can't go on like this. It's not fair to our residents and it's having a detrimental impact on the City of Ottawa as a whole," the statement reads. "Residents deserve better. The city needs to be up front with

riders and show leadership."

The councillors are calling on Transit Chair Allan Hubley, Mayor Jim Watson and General Manager John Manconi to implement four measures:

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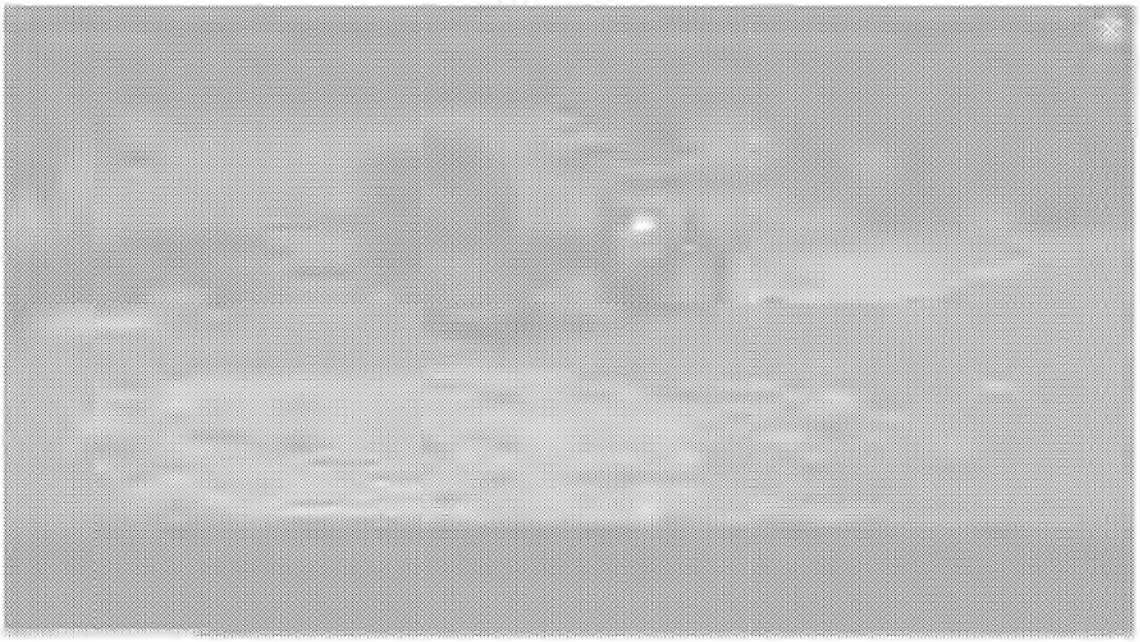

- Appoint communications personnel, dedicated to providing 24/7, up-to-date, transparent information to the public and to City Councillors.
- Accept immediate assistance of external and independent help to solve ongoing mechanical and operational problems with light rail transit.
- City leadership to hold twice-weekly press conferences, as well as provide transparent memos to council.
- An evening public meeting on the issues with bus service that residents are still experiencing after the launch of LRT, with solutions offered by OC Transpo.

Read the full statement below:

"Statement on Ongoing Transit Problems and City Leadership

We are six weeks into the full transition to LRT, and we are seeing no improvements to the service we are providing residents. Problems have persisted from the start and although we have seen some improvement, many issues continue through today.

From broken doors and bad smells, to stalled trains and slippery stairs, and finally to cracked tracks forcing trains to creep along at 10 km/h, this roll-out of LRT has confirmed the worst fears of the P3 procurement undertaken.

We can't go on like this. It's not fair to our residents and it's having a detrimental impact on the City of Ottawa as a whole.

Make no mistake, transit is the future for our city, and light rail will play a key role in that future. The transition to LRT should have been the first step in our transition to a Transit City. Unfortunately, residents are losing faith in OC Transpo.

They aren't being informed regularly. They don't know when the problems will be fixed and what we are doing to fix them. They don't know that they can trust transit anymore. Soon, more and more people will turn to other modes of transportation, furthering congestion on our streets.

Residents deserve better. The city needs to be up front with riders and show leadership.

I am calling on Transit Chair Allan Hubley, Mayor Jim Watson and General Manager John Manconi to provide sustained leadership on LRT and Ottawa's transit system, both on good days and especially on bad days.

My office is calling on them to implement the following four concrete actions:

- *Provide 24/7 coverage by communications personnel dedicated to providing up-to-date, transparent information to the public and to City Councillors.*
- *The immediate assistance of external and independent help to solve the ongoing mechanical and operational problems with LRT.*
- *For city leadership to hold twice-weekly press conferences and providetransparent memos to council.*
- *An evening public meeting on the issues with bus service that residents are still experiencing after the launch of LRT, with solutions offered by OC Transpo.*

The LRT launch and resulting bus service has been a disaster, taking a toll not only on train service, but also our bus system.

Riders have suffered through inadequate service for years, waiting for LRT to finally launch. The city owes it to them to take every step necessary to communicate properly and fix our broken transit system.

I implore the Chair, the Mayor and the General Manager to take up this call."

How did this story make you feel?

Breakdowns, missteps and apologies: LRT and the week that was

TAYLOR BLEWETT (HTTPS://OTTAWACITIZEN.COM/AUTHOR/TBLEWETTPOSTMEDIA) Updated: November 18, 2019



Ottawa's problem-plagued LRT system was the newsmaker of the week. From breakdowns to fix-finding to controversial comments — and apologies — it's safe to say this has not been the finest moment for transit in Ottawa.

Here's a rundown of the week that was, and a look at what to expect going forward.

Service struggles, communicated proactively

Service on the Confederation Line had its ups and downs. Mayor Jim Watson was full of praise for the system Tuesday morning after it sailed through the first storm of the winter, and fare-free commuting to mark Remembrance Day.

The good mood lasted until the afternoon, when a train stuck at Cyrville Station disrupted the system, forcing passengers onto replacement buses, and delaying commuters.

Issues continued throughout the week: a broken rail weld made for slow train travel Wednesday; technical issues plagued Transpo ticket machines, its GPS system, and various webpages; a stopped train meant backup buses Thursday night.

Mid-week, OC Transpo's Twitter account took on a new, proactive communications pattern: providing updates on LRT service at the beginning, end, and throughout the morning and afternoon commute periods. Previously, it would only tweet updates when service issues occurred.



Problem-solving and helping hands

With light-rail service continuing to be less than optimal, talk of ways to tackle its problems – and mollify angry riders – continued throughout the week.

RELATED

Egan: RTG not Ottawa's BFF anymore — not a promising start for coming 30-year relationship (https://ottawacitizen.com/opinion/columnists/ega-rtg-not-our-bff-anymore-a-wee-problem-on-30-year-road-trip)

OC Transpo spreads 40 new buses across system, at LRT choke-points (https://ottawacitizen.com/news/local-news/oc-transpo-spreads-40-new-buses-across-system-at-lrt-choke-points)

Driver sheds OC Transpo logo to protest harassment from frustrated passengers (https://ottawacitizen.com/news/local-news/driver-sheds-oc-transpo-logo-to-protest-harassment-from-frustrated-passengers)

After Tuesday's breakdown, city councillors Catherine McKenney and Jeff Leiper called for the restoration of bus routes that were shut down, post-LRT.



Transit commission chair Coun. Allan Hubley said he's open to looking at bringing back bus service in some capacity. The city would have to find funds for this in the budgets of other city departments, he said. "The transit budget can't afford that on its own."

There's also been an offer of provincial assistance for Ottawa's transit challenges, albeit from an unorthodox source. Lisa MacLeod, Nepean MPP and the minister of heritage, sport, tourism and culture industries, contacted the city about Ontario lending a hand.

The mayor's press secretary said Watson spoke with McLeod, is thankful for the offer, and expects city staff to engage with the province to explore possibilities.

The provincial Ministry of Transportation said it's carefully monitoring "the current situation with the Ottawa LRT" and that transportation minister Caroline Mulroney has directed provincial officials to consult with the city on this.



Lisa MacLeod ✓
@MacLeodLisa

We will look at what is feasible and work with the City to see how we can best make LRT the success we need. My constituents depend on it. Our employers depend on it. The federal government - with the House resuming in a few short weeks - should also join us in finding a fix. twitter.com/grahamctv/stat…

> **Graham Richardson** ✓ @grahamctv
> Province offers help on Ottawa's problem plagued LRT
> CTV News has learned the provincial government has offered to intervene and assist Ottawa as it continues to struggle with the new LRT.
> ottawa.ctvnews.ca/province-offer…

♡ 67 5:14 PM - Nov 14, 2019

31 people are talking about this

On Friday, Capital ward Coun. Shawn Menard released a statement calling out the LRT's myriad issues — "from broken doors to bad smells" — and he demanded the city's transit leaders do four things: dedicate communications staff to 24/7 LRT coverage, immediately source external and independent help to solve the LRT's problems, a twice-weekly press conference and memos to council by senior officials, and a public meeting on bus service issues.

Backlash

Some of the more outspoken voices on the subject of LRT revealed this week that this communication comes with a human cost.

Sarah Wright-Gilbert, one of Ottawa's citizen transit commissioners, took to Twitter to share her struggle with anxiety. Being so vocal about Ottawa's transit challenges has taken a toll on her mental health, she said, while pledging to continue her work.



Sarah Gilbert
@sarahmeaghang

THREAD

This series of posts is long past due. I pride myself on being honest and forthright, and I think it's time to speak out. I am not posting this to get sympathy, or have more people tell me I'm doing a good job.

I am posting this to share my truth.
1/12

♡ 257 8:27 PM - Nov 13, 2019 ⓘ

💬 58 people are talking about this >

Ken Woods, an LRT operator and Twitter transit guru, announced he'd be taking a break from social media. The decision came after he received an email containing a Google Earth photo of his driveway at home, pointing out that he owns a car.

Ken Woods
@drivesincircles

Been getting some pretty hateful emails too.

One had a Google Earth photo of the driveway in front of my home, pointing out to me that I own a car.

It's been great Ottawa.

Taking a break from social media for a bit.

♡ 202 11:46 AM - Nov 13, 2019 ⓘ

💬 186 people are talking about this >

Veteran OC Transpo driver Jamie Bailey told this newspaper (https://ottawacitizen.com/news/local-news/driver-sheds-oc-transpo-logo-to-protest-harassment-from-frustrated-passengers) she's stopped wearing her branded uniform because angry riders are venting their – understandable – transit frustrations on frontline Transpo staff.

Political and physical missteps

Twice this week – that we know of – elected officials have apologized for their LRT-related comments.

The mayor was tardy to a Wednesday night event. "Sorry I was late, I was waiting for the LRT," he quipped.

The next morning he apologized via Twitter for the "self-deprecating comments."

"These were not intended to minimize the significant challenges that commuters have faced since the launch of LRT."



Transit commission vice-chair Coun. Jean Cloutier took to Twitter to criticize Wright-Gilbert, the citizen transit commissioner, for her social and traditional media communications on LRT issues.

"Reflect on your objectives," he wrote. "The serious work has been going on for weeks and the problems are complex. Welcome to the club."

Gilbert tweeted Thursday that she had accepted a "genuine and heartfelt" apology from Cloutier.

And speaking of missteps, a woman was treated for an ankle injury outside the Parliament LRT station Tuesday.

Social media lit up with complaints about slippery floors conditions at this and other stations. Earlier this month, Transpo announced it was installing new mats at station entrances to deal with this issue.

LRT, looking forward

Councillors have pushed the subject of LRT and bus network problems onto the agenda for next Wednesday's transit commission meeting.

Commissioners could clash over a 2020 fare freeze. Hubley and Watson have proposed holding prices for three months, while others want a full-year freeze to compensate customers for the transit troubles they're living with.

So intense is the focus on O-Train Line 1, it's easy to forget that prep for the second stage of LRT is underway. Unless you live near Iris station, where trees have been felled (https://ottawacitizen.com/news/local-news/trees-fall-as-

lrt-construction-surges-west) to make way for the new train tracks. The clearance project is ongoing, and it's been hard for some neighbours to watch.



The next full update on Stage 2 construction will come Dec. 3 at the city's Finance and Economic Development Committee.

ALSO IN THE NEWS

City police have laid 60 charges thanks to school bus stop-arm cameras (https://ottawacitizen.com/news/local-news/city-police-have-laid-60-charges-thanks-to-school-bus-stop-arm-cameras)

Police investigating shooting at Airbnb on Meadowlands (https://ottawacitizen.com/news/local-news/police-investigating-shooting-at-

Stalled train during evening rush creates major LRT backups



A stalled LRT train caused major delays for riders, mostly for those heading east, on Thursday, Nov. 21, 2019. (@stevecoopr/Twitter)

CTVNewsOttawa.ca Staff

Published Thursday, November 21, 2019 5:48PM EST
Last Updated Thursday, November 21, 2019 5:55PM EST

OTTAWA - A mechanical issue on a train at St. Laurent station created delays for thousands of riders Thursday night.

OC Transpo tweeted at 4:22 p.m., customers may experience delays due a stopped train at St. Lauren station.

> **OC Transpo Live**
> @OCTranspoLive
>
> O-Train Line 1 – Customers on O-Train Line 1 may experience delays due to a stopped train at St-Laurent station. Updates to follow.
>
> ♡ 7 4:22 PM - Nov 21, 2019
>
> See OC Transpo Live's other Tweets

Replacement service was then implemented between St. Lauent and Blair station in both directions. OC Transpo tweeted customers may experience delays of up to 15 minutes at stations west of St. Laurent.

> **OC Transpo Live**
> @OCTranspoLive
>
> O-Train Line 1 – Customers on O-Train Line 1 may experience delays due to a stopped train at St-Laurent station. Updates to follow.
>
> ♡ 7 4:22 PM - Nov 21, 2019
>
> See OC Transpo Live's other Tweets

A tweet from OC Transpo 10 minutes later said trains were back running in both directions.

Riders were reporting high volumes of passengers at a number of stations, with major crowding on platforms, as well as on trains.

Occasional Transport @OccTranspo

31h

Just look at that carnage. @OC_Transpo you done well. You done well. #OttawaLRT

You're worried about people losing faith in a system. I love public transit. But humans don't love being pushed like cattle in unsafe environments - and here we are. twitter.com/RachelParent2/...

Rachel Parent @RachelParent2

@OccTranspo st. Laurent platform waiting for R1 bus



Kim H
@indsaink3

This is Parliament station right now. We can't even get to the platform

15 4:56 PM - Nov 21, 2019

See Kim H's other Tweets

Evan E
@Esquared77

Parliament station west to Tunny's is backed up from the platform up the stairs into the upper level. @sarahmeaghang @OccTranspo @OCTranspoLive



♡ 15 4:59 PM - Nov 21, 2019

See Evan E's other Tweets

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CBC

Ottawa

'I was actually scared': Visually impaired LRT users share frustrations

Overcrowded platforms, impatient commuters all add to stress levels

Hillary Johnstone · CBC News · Posted: Nov 23, 2019 4:41 PM ET | Last Updated: November 23



Lorne Neufeldt says he and his guide dog Herbie have been verbally abused by fellow LRT riders, particularly when he uses the accessible fare gates at stations along the Confederation Line. (Matthew Kupfer/CBC)

comments

It was another chaotic week for commuters on the LRT, a frustrating challenge for anyone — but especially for people who are visually impaired.

Lorne Neufeldt, who uses a guide dog named Herbie to get around, said his anxiety levels have gone through the roof since Ottawa's Confederation Line started to roll.

- **Transit riders don't want excuses — they want system that works: Manconi**
- **LRT service halted between Blair, St-Laurent stations**

While overcrowding on platforms and out-of-service elevators are causing Neufeldt daily stress, he told CBC News that other commuters are also hassling him and Herbie during "scary" interactions at fare gates.

"I've had ... probably five to seven interactions with people where they haven't been very positive at all," said Neufeldt.

'Extreme aggressiveness' at stations

Neufeldt said Herbie will often guide him through the wider, accessible wheelchair gates at LRT stations, and he won't realize that another commuter has tapped their card and paid to come through.





Lorne Neufeldt poses with Herbie, his guide dog. In addition to 'extremely aggressive' interactions at fare gates, Neufeldt also says platform overcrowding and malfunctioning elevators cause him daily stress. (Hillary Johnstone/CBC)

As soon as they pass through the gates, the other commuter will be frozen out and unable to tap their card again.

"Some of them have been almost borderline extreme aggressiveness, to the point where I was actually scared," Neufeldt said.

"[There was] one guy that was screaming at me, telling me I had to pay for him to go through the gate now because I screwed it up."

OC Transpo driver helps woman and guide dog

Lourdes Rojas is also visually impaired, although she does have some vision.

She said she and her guide dog, Truffle, had a heart-stopping moment outside Parliament station Monday.

Rojas said she became disoriented leaving the station, since she doesn't usually get off at Parliament, and realized she and Truffle were standing in the middle of traffic.

She said she commanded the dog to bring them to safety, but due to construction on Queen Street, there was nowhere for them to go.

"Two, three cars went by and they were very close to me. And then I saw an OC Transpo bus. And I'm like, 'Oh my God, this is really going to be ugly,'" Rojas told CBC.

"I don't know where I can go — like. I don't know if there is enough room for the car, the bus, myself, my dog."

To Rojas's relief, the bus stopped, and the driver opened the door.

"He said, 'Hey, are you OK?' and I said, 'No, I'm not OK! I'm kind of lost.'"





Lourdes Rojas and her service dog, Truffle, take the LRT daily. (Hillary Johnstone/CBC)

LRT line overwhelming, says Rojas

Rojas said the driver let her and Truffle board the bus and safely dropped them off at a stop nearby.

"I was ... very, very thankful because he didn't have to. He went above and beyond what he needed to do."

Rojas said she doesn't think enough thought has gone into ensuring the Confederation Line doesn't overwhelm people who are visually impaired.

- **LRT riders with disabilities share pros, cons of new Confederation Line**
- **Give blind LRT riders enough time to prepare, advocates urge**

"At least [it would help] if they could divide the 'in' and 'out' traffic, almost like a street," Rojas said. "This way people go in, and this way people go out. At least you will be going with the flow [that way]."

Lorne Neufeldt, who has low vision and travels with a guide dog named Herbie, says the LRT leaves a lot to be desired when it comes to accessibility. 1:24

OC Transpo open to suggestions

In a statement, Pat Scrimgeour, director of transit customer systems and planning at OC Transpo, said they welcome "all accessibility-related feedback" and encourage riders to share their suggestions.

Scrimgeour said any riders who wish to organize a session with OC Transpo to "get familiar with the train and station layouts" are encouraged to contact the transit agency.

"We recognize that some customers might need extra time to feel comfortable riding the new train and using the stations," he said.

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This is Exhibit "F" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

December 10, 2019

Mr. Peter Lauch, CEO
Rideau Transit Group GP
1545 Carling Avenue, Suite 406
Ottawa, ON KIZ 8P9

Your reference: RTG-OTT-00-0-LET-0895

Our reference: OTT-RTG-RLET-0531

RE: Audit of Performance and Payment/General Audit of RTG Records

Dear Mr. Lauch,

We acknowledge receipt of your letter dated December 3, 2019 in response to the City's letter advising of its intention to exercise its rights of audit. We also thank RTG for meeting with us on December 10, 2019 to discuss the details of the audit (the "**Meeting**").

We appreciate your acknowledgement of the City's rights of audit under the Project Agreement. In relation to the conduct of the audit and as discussed at the Meeting the City clarified that:

- The audit is not intended to distract RTG and the Project Co parties from the proper performance of the Maintenance Services;
- The scope of the audit is an operational review (i.e. it is not an accounting audit) of financial and contractual matters needed for the City to fulfil its due diligence requirements to the City's taxpayers to support its administration of the Project Agreement; and
- the audit is necessary for the City to obtain a fulsome understanding of performance issues encountered by RTG in respect of RTG's delivery of the Maintenance Services.

In respect of your reference to the City's public acknowledgement of the quality of the performance of the LRT System, it is this very lack of performance that served as the impetus for the audit, which has been compounded by the inadequate answers provided by RTG in relation to its poor performance and RTG's repeated commitments to improve its performance which have not been borne out by its results. RTG has not provided "strong performance," contrary to the assertion in your letter and as is clear from the metrics provided by RTG over the past several months.

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The City does not intend to defer the proposed exercise of the audit rights because the City needs to understand the causes of RTG's current failures to perform which will, in part, assist the City in determining its next steps in a situation that we agree is critical.

At the Meeting, we discussed information requirements needed for the audit, and we also acknowledged that the City is very flexible with the process to collect this information, and proposed the following course of action:

1. RTG will review the information request discussed at the Meeting (a copy of which is attached as Attachment 1 for ease of reference) and raise any questions or concerns to the City;
2. The City and RTG will work collaboratively to prioritize the provision of the information;
3. The City and RTG will work collaboratively to identify a process to identify any Sensitive Information that would need to be redacted (recognizing that the City reserves its rights under the PA in respect of such redactions);
4. The City and RTG will work collaboratively to discuss a document exchange protocol to ensure that all information is handled with appropriate confidentiality; and
5. The City and RTG will develop a schedule for the audit to ensure that RTG's focus on the improvement of Maintenance Services is not impacted.

With respect to your reference to "certain costs" being recoverable by RTG, we note that section 37.2 of the Project Agreement limits the City's costs to reasonable costs associated with copying documents in certain limited circumstances. We intend to ask for electronic copies such that no RTG costs would arise. The City reserves all of its rights under the PA and at law.

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc .

Gary Craig, Richard Holder, Claudio Colaiacovo, Lorne Gray, OTC

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Attachment 1:

Operational Review Meeting with RTG of December 10, 2019

Information Request

Performance and Payment Audit:

1. Records, reports, information, documents and data relating to RTG's performance and payments (including, but not limited to, detail behind the Payment Adjustment Reports) to verify accuracy, correctness and completeness for the period August 31 up to and including October 31, 2019.

General Audit:

1. Contractual and employment information related to Maintenance Services, such as :
   i. All contracts and sub-contracts including all schedules, appendices, change orders, and any related claims.
2. Accounts payable and receivables related to the delivery of the Maintenance Services.
3. Any and all information related to insurance including coverage, insurers and the related agreements.
4. Details on the corporate / partnership structure of RTG and all is its affiliates, including:
   i. All partnership agreements;
   ii. Governance policies including membership of boards of directors;
   iii. Business and other strategic plans;
   iv. Minutes to all board meetings; and
   v. The organizational structure and reporting relationship, including all permanent or temporary employees.
5. Assets or Liabilities:
   i. Provide details on all assets and liabilities owned by RTG and any of its affiliates;
   ii. Any / other liabilities and debt;
   iii. Recent quarterly financial statements; and
   iv. Any relevant correspondence between Alstom and RTG/OLRT-C in relation to claims or disputes.

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December 18, 2019

Mr. Peter Lauch, CEO
Rideau Transit Group GP
1545 Carling Avenue
Suite 406
Ottawa, ON K1Z 8P9

Our reference: OTT-RTG-LET-0293

Dear Mr. Lauch:

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("PA") between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG") Remedial Rights (S. 32.1(a)(i)(B) and 32.1(a)(ii)) – Interruption and Availability Impact and Failure Points Exceedance

The City hereby provides notice pursuant to Section 32.1 of the PA to RTG of the City's intent to exercise its remedial rights in relation to Sections 32.1(a)(i)(B) and 32.1(a)(ii). In particular, RTG has:

a) Breached its obligations under the PA and/or its acts or omissions have or can reasonably be expected to result in a materially adverse interruption in the Maintenance Services or the availability of the System to System Users (the "**Interruption and Availability Impact**"); and/or

b) Accrued Failure Points in its performance of the Maintenance Services over the threshold contained within Section 32.1(a)(ii) of the PA ("**Failure Point Exceedance**").

Interruption and Availability Impact

Since the launch of the System, RTG has generally failed to rectify ongoing issues with vehicle performance including with the TCMS and door subsystems and with infrastructure performance due to switch failures. In addition to these and other technical failures, RTG continues to struggle operationally with delivery of vehicles to meet service levels including the availability of hot standby or spare vehicles. This situation persists despite the agreed upon reduction to thirteen vehicles for morning peak service. Broadly, RTG has failed to respond to and rectify ongoing vehicle issues and/or issues that occur on the mainline in a timely manner.

Due to these breaches, acts and omissions, there has been a material adverse interruption in the Maintenance Services. As well, there has been a material adverse interruption in the availability of the System to System Users.

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Failure Point Allocation Exceedance

Pursuant to Section 32.1(a)(ii), the City is entitled to exercise its remedial rights in the event that Project Co accrues, in any Contract Month, more than:

(A) 300 Failure Points in respect of Vehicle and System Availability Failures;
(B) 300 Failure Points in respect of Station Availability Failures; or
(C) 150 Failure Points in respect of Quality Failures and Service Failures, combined.

Based on the data RTG has provided in its own reports, RTG has exceeded the above thresholds by significant orders of magnitude since the commencement of the Maintenance Term. Specifically, RTG has accrued the following Failure Points for vehicle and system availability:

Failure Point Category, Contract Month	Sep-19	Oct-19	Nov-19
Vehicle and System Availability Failures	1575	1395	1265

As well, RTG has failed to provide appropriate responses to quality failures leading to the accumulation of Failure Points for Quality Failures and Service Failures as follows:

Failure Point Category, Contract Month	Sep-19	Oct-19	Nov-19
Quality Failures and Service Failures, combined	86,779.50	10,809.50	8,241.00

Conclusion

Based on the foregoing, the City is currently reviewing its rights of rectification under Section 32.3 in anticipation of delivering a rectification notice. The City will be seeking reimbursement from RTG for all reasonable costs and expenses incurred in relation to the exercise of its rights pursuant to Section 32 of the PA.

The City reserves all of its rights under the PA and at law.

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc.

Lorne Gray, OTC
Troy Charter, OCT

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January 9, 2020

Mr. Peter Lauch, CEO
Rideau Transit Group GP
1545 Carling Avenue
Suite 406
Ottawa, ON K1Z 8P9

Your reference: RTG-OTT-00-0-LET-0898

Our reference: OTT-RTG-RLET-0532

Dear Mr. Lauch:

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("Project Agreement") between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG") Remedial Rights (S. 32.1(a)(i)(B) and 32.1(a)(ii)) – Interruption and Availability Impact and Failure Points Exceedance

We write in response to RTG's letter of December 19, 2019, as referenced above, in relation to the City's December 18, 2019 notice of its exercise of remedial rights bearing reference OTT-RTG-LET-0293.

The City rejects the assertions made by RTG in its letter. In particular and without limiting the generality of the foregoing, given the poor performance of the System since the handover date, the City maintains its position that RTG has breached its obligations under the Project Agreement and that its acts and omissions have or could reasonably be expected to result in a materially adverse interruption in the Maintenance Services or the availability of the System to System Users. In fact, there have already been significant interruptions.

By way of recent example, there was a material adverse interruption in the availability of the System caused by extensive service disruptions and delays on December 31, 2019. In particular, but without limitation:

- a Train stopped at Cyrville Station with an issue that RTM failed to respond to in a timely manner. The City later discovered that the issue was caused by the neglect of duties by an RTM technician;
- a Train was stranded near uOttawa Station and was not recovered by RTM in a timely way or in accordance with the Project Agreement due to RTM's lack of, among other things, Standard Operating Procedures for dealing with such circumstances and a lack of leadership from RTM's team; and

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- RTG failed to make additional spare Vehicles available for peak service by December 31, 2019 contrary to the agreement between the City and RTG. Accordingly, RTG is unable to provide the service level set out under the Project Agreement and as such, the availability of the System is and continues to be compromised.

Based on the City's preliminary assessment of the events of December 31, the root cause appears to be related to the long term buildup of metallic dust on the Vehicle rooftops leading to activation of the Vehicles' safety protections. For a low floor vehicle with the majority of its equipment located on the roof, there must be regular and ongoing maintenance activity on that rooftop as part of inspections and other maintenance activity. To the extent that the buildup of debris was allowed to accumulate over an extended period of time, it is unclear how this condition has gone unchecked by the RTM maintenance team. Absent timely intervention on this issue, we have to attribute this recent failure to a failure by RTG to deliver Maintenance Services.

The City continues to see a pattern of performance by RTG that falls well below the standards set out in the Project Agreement and therefore requires intervention. In reviewing the launch records for November 2019, we note that a late Vehicle launch occurred on ten separate days (November 4, 7, 9, 10, 12, 19, 20, 22, 28, and 30). More concerning is that in the same month we had to initiate replacement bus service on seven different occasions (November 8, 12, 19, 20, 21, 22, and 29). This pattern of inadequate RTG performance has persisted since the handover date and is unsustainable.

In addition to the technical examples described above and other technical issues experienced on the System to date, RTG has also failed to provide accurate Daily Operating Reports, Payment Adjustment Reports, Performance Monitoring Reports, and monthly payment invoices to the City in a timely manner as required under the Project Agreement. This information is critical to understanding System performance in order to assess RTG's performance failures under the Project Agreement including, but not limited to, Failure Points.

Based on RTG's obligations under the Project Agreement, and expected best practices, the parties should be able to rely on a performance reporting system to provide an objective and transparent methodology for assessing performance factors; however, RTG has resorted to manual manipulation of the data and manual adjustments of the reports. Furthermore, to the extent that RTG has provided performance information as part of daily reviews with City staff, we have relied on those meetings to assess performance factors and Failure Points.

RTG's failure in adequately meeting the demands of the System as well as its demonstrated inability to properly perform the Maintenance Services demonstrates a

clear failure to meet the requirements of the PA. Furthermore, RTG's acts and omissions have clearly resulted in a material adverse interruption to both the Maintenance Services and the availability of the System to System Users, thus confirming the City's entitlement to exercise its remedial rights.

The City has and will continue to work collaboratively with RTG with respect to its significant ongoing performance failures in relation to the System and maintenance; however, the severity of RTG's failures has put the City in the position of having to exercise its remedial rights. As such, and as noted in our previous letter, the City will evaluate the necessary rectification mechanisms and deliver a rectification notice in relation to the above-noted failures.

The City reserves all of its rights under the Project Agreement and at law.

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc.

Lorne Gray, OTC
Troy Charter, OCT

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January 14, 2020

Mr. Peter Lauch, CEO
Rideau Transit Group GP
1545 Carling Avenue
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Your reference: RTG-OTT-00-0-LET-0897 / RTG-OTT-00-0-LET-0895

Our reference: OTT-RTG-RLET-0533 (OTT-RTG-RLET-0531 / OTT-RTG-LET-0289)

Dear Mr. Lauch:

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("PA") between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG") - City letter dated December 3, 2019 ("City Audit Letter"); RTG response dated December 6, 2019 ("RTG Response"); City response dated December 10, 2019 ("City Response") and RTG's second response dated December 19, 2019 ("RTG's 2nd Response")
Direction in respect of Audit of Performance and Payment / General Audit of RTG Records

Pursuant to the City Audit Letter and the subsequent City Response, RTG was notified that the City is exercising its rights of audit pursuant to Sections 34.15 and 37.2 and Schedule 15-3 of the PA (the "**Audit**").

The City and RTG had a productive meeting on December 18, 2019 to review the scope of the Audit, as a follow up to a preliminary meeting between the parties about the Audit which took place on December 10, 2019. The City appreciates RTG's agreement to move forward with the Audit and as noted in the City Response, the City does not intend that the Audit will distract RTG from its proper performance of the Maintenance Services and the City has, to date, accommodated RTG in relation to the Audit so as not to impose an undue burden on RTG as it works on improving its performance of the Maintenance Services. However, the City notes that it has yet to receive a single document from RTG, over a month after delivery of the City Audit Letter.

In relation to Schedule A to the RTG 2nd Response the City notes as follows:

Performance and Payment Audit:

RTG has not yet provided the documents agreed to be provided in relation to this category of documents requested. The City expects that such documents be provided by no later than January 31, 2020

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General Audit

The City had asked in the City Audit Letter that RTG bring the contracts and subcontracts related to the Maintenance Services (the "**Contracts**") to the December 10, 2019 meeting. This did not occur, nor did the City receive these contracts at the meeting of December 18, 2019. The City requires all Contracts and Subcontracts including all schedules, appendices, change orders and any related claims as it relates to the Maintenance Services. The City will arrange for a secure site to transfer the files from RTG to the City. Please provide the contact details of the RTG individual with whom we can co-ordinate the set-up of the file transfer site via email.

Item 1 - RTG has not yet provided copies of the Amended and Restated Maintenance Contract and the Amended and Restated Interface Agreement. The City expects that such documents be provided by no later than January 31, 2020.

In relation to the refusal to provide copies of the maintenance Subcontracts entered into by RTM, the City rejects RTG's assertion that these Subcontracts somehow constitute Sensitive Information under the PA.

Under the PA, Sensitive Information is defined as including "financial or commercial information which would, if disclosed to a competitor of Project Co or any Project Co Party, give that competitor a competitive advantage over Project Co or such Project Co Party and thereby prejudice the business of Project Co or such Project Co Party". The City disagrees that the entirety of these subcontracts constitute Sensitive Information. As discussed in the meeting of December 10, 2019 and confirmed in the City Response, RTG and the City were to work collaboratively to identify a process for redaction of Sensitive Information. To simply reject production of all of these Subcontracts is unacceptable and contrary to the PA.

Item 2 - The City takes the same position in relation to accounts payable and receivables. This request does not relate to information that could reasonably be expected to give a competitor a competitive advantage over Project Co or such Project Co Party.

Item 3 - RTG has not yet provided certified copies of insurance policies. The City expects that such documents be provided by no later than January 31, 2019.

Item 4 - RTG has not yet provided copies of the partnership agreements for each of RTG and RTM or the corporate and employee organization charts for each. Nor has RTG provided copies of the lists of dates on which RTG and RTM executive meetings took place in 2019. The City expects that such documents be provided by no later than January 31, 2019.

Item 5 - RTG has not yet provided copies of its most recent quarterly financial statements, which set out in general terms RTG's assets and liabilities. The City expects that such

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documents be provided by no later than January 31, 2019. The City further disagrees that correspondence between Alstom and RTG/OLRTC constitutes Sensitive Information.

The City hereby directs RTG to promptly provide copies of items that RTG has agreed to provide in Schedule A to the RTG 2nd Response by January 31, 2019. As well, the City requests that RTG reconsider the items that it has refused to provide in relation to the Audit that RTG is entitled to under the PA.

The City looks forward to RTG's full cooperation with the City's Audit. The City reserves its rights under the PA in relation to any failure or refusal of RTG to follow the City's directions and failure to cooperate with the Audit.

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc .

Gary Craig, Richard Holder, Claudio Colaiacovo, Lorne Gray, OTC

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January 24, 2020

Mr. Peter Lauch, CEO
Rideau Transit Group GP
1545 Carling Avenue
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Ottawa, ON K1Z 8P9

Our reference: OTT-RTG-LET-0294

Dear Mr. Lauch:

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("PA") between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG") Remedial Rights (S. 32.1(a)(i)(D) and S. 32.1(a)(i)(B)) Reputation and Further Availability Issues

The City hereby provides notice to RTG pursuant to Section 32.1 of the PA in relation to the City's intent to exercise its remedial rights pursuant to Section 32.1(a)(i)(D) and Section 32.1(a)(i)(B). In the circumstances, the breaches of RTG's obligations under the PA and its acts and omissions have and may potentially compromise the reputation or integrity of the City and/or the nature of the City or the Project, so as to negatively affect public perception of the City and/or the Project. As well, and further to the City's letter of December 18, 2019 (OTT-RTG-LET-0293), ongoing and new issues have arisen which have affected the availability of the System to System Users and RTG continues to be in reactive mode in responding to such issues.

RTG's breaches, acts and omissions, as described in the City's letter of December 18, 2019 (OTT-RTG-LET-0293) and the ongoing failures and lack of availability of the System as described below ("**RTG's Failures**") have compromised the reputation and integrity of the City and the Project. Further, RTG's Failures have negatively affected public perception of the City and the Project.

Belated Launch

The System was belatedly launched in September, after RTG's repeated failures to meet Required Revenue Service Availability Dates it committed to meet. RTG did not meet these dates because it could not meet the requirements in the PA to satisfy this Milestone and, most notably, it could not supply an adequate number of functioning Vehicles, as it admitted repeatedly in the year prior to its belated achievement of Revenue Service Availability. The repeated changes in the dates when RTG advised it would be able to launch the System caused damage to the City's reputation and the reputation of the Project. These delays were directly attributable to RTG's failures to perform its design and construction obligations in accordance with the PA.

Given the previous failures of RTG to launch the System when it said it would do so, it was important for RTG, the City and the Project that the System launch was successful following the

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September 14, 2019 opening so that transit riders would have a positive experience and so that public confidence in the Project and the City would improve.

Public Perceptions of the RTG Failures

The City has faced serious public criticism about the Project. In the months following the launch of the System, RTG failed to provide the Maintenance Services in accordance with the requirements of the PA and failed to ensure the availability of the System for System Users. This has resulted in a barrage of negative coverage by local and national news outlets and social media. The reputation of the Project and the City has suffered as a result.

In order to respond to the lack of availability of the System, the City has had to repeatedly and consistently initiate single tracking and/or replacement bus service to mitigate the impacts to our customers. Due to the regularity of the System failures, the City has had to take mitigative measures in this regard including but not limited to reserving twenty buses dedicated solely to the replacement service. In the three-month period of October through December of 2019, we have records of over fifty events where bus replacement service and/or single tracking were required. These events cause significant stress and frustration for our customers.

Further to the incidents noted above, there have been more recent, well-publicized failures and lack of availability of the System which are attributable to RTG:

- December 31, 2019: A train stopped just west of the University of Ottawa Station just before 6:00 pm and OC Transpo had to run supplementary buses for six hours, resuming service just before midnight;
- January 15, 2020: The overhead catenary system in the St. Laurent tunnel failed after the morning Peak Period and OC Transpo had to run supplementary buses for the remainder of the day, resuming normal service the following morning; and,
- January 17, 18, and 19, 2020: Ongoing and repeated switch failures occurred on the System resulting in major delays in the operation of the System and reducing the availability of the System to System Users.

More recently, the City has learned of a cascading series of serious errors and failures by RTG that resulted in numerous Vehicles being out of service for extended periods during the Peak Periods. Due to System problems which RTG has not rectified, the wheels of the Vehicles have experienced flattening which require repair on a wheel lathe. The City learned that RTG did not have a functioning wheel lathe and was unable to perform a basic wheel repair function in order to correct the issues in a timely fashion.

The widespread media attention for these incidents as well as the cumulative impact of repeatedly and routinely needing to call buses into service during rush hours is degrading the reputation of the City and the Project. The System that RTG has provided is not reliable and, as noted above, public trust in the System, the Project and the City has understandably eroded.

This is a System that, pursuant to the PA, was to operate reliably with significantly higher passenger loads than are currently being experienced. It was to do so from its launch following

the achievement of Revenue Service Availability. It has not done so. The System is simply not operating at the level required by the PA. The City has borne the brunt of public criticism in the media and is saddled with a deficient System that has inconvenienced transit riders in the City to the point where the City's reputation and the reputation of the Project have suffered considerably.

Conclusion

In relation to the matters that are the subject of this Notice under Section 32.1(a)(i)(D), RTG has 5 Business Days to cure its breaches, acts and omissions which have compromised the reputation and integrity of the City and the Project so as to negatively affect public perception of the City and the Project. Should RTG fail to do so, the City will be left with no choice but to consider its rectification rights under Section 32.3 of the PA.

The City reserves all of its rights under the PA and at law.

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc.

Lorne Gray, OTC
Troy Charter, OCT

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January 24, 2020

Mr. Peter Lauch, CEO
Rideau Transit Group GP
1545 Carling Avenue
Suite 406
Ottawa, ON K1Z 8P9

Our reference: OTT-RTG-LET-0300

Dear Mr. Lauch:

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("PA") between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG") Payment and Performance Working Group

Further to our letter regarding RTG's Performance Monitoring Reports for September and October, 2019, bearing reference OTT-RTG-LET-0298 and our letter regarding RTG's IMIRS System bearing reference OTT-RTG-LET-0296, the City would like to hold a workshop with RTG to discuss the problems with its current reporting and the lack of Standard Operating Procedures so that the situation can improve on the go-forward. In particular, this operations workshop would discuss the following issues:

1. **Quality and Service Failures**

   The goal of the workshop would be to work collaboratively to agree upon and set out an administrative process on the go-forward in relation to addressing the categorization, response times, work order process, and other administration associated with Quality and Service Failures. The objective will be to improve accuracy, transparency and consistency in the assessment and reporting of quality and service issues and the resulting Failure Points.

2. **IMIRS**

   The goal of the workshop would be to work collaboratively to progress the implementation of the IMIRS as set out in the Project Agreement given the current flaws in the IMIRS as described in the City's letter OTT-RTG-LET-0296 and the attached report.

The City notes that this workshop will not have a retroactive effect in relation to the Dispute raised by the City, in our letter bearing reference OTT-RTG-LET-0299, in respect to RTG's Payment Adjustment Reports for contract months September and October, 2019 and the dispute in relation to the IMIRS System. Such matters will continue to be addressed in accordance with the PA. The City still awaits RTG's responses to the above-referenced notices/letters so that the parties can work towards a resolution in accordance with the dispute resolution process.

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Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc.

Lorne Gray, OTC
Troy Charter, OCT

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Transportation Services Department
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This is Exhibit "G" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.

Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

July 21, 2020

Mr. Nicolas Truchon, CEO
Rideau Transit Group GP
805 Belfast Road,
Ottawa, ON
K1G 0Z4

Our reference: OTT-RTG-LET-0319

Dear Mr. Truchon:

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("PA") between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG")

OTT-RTG-LET-0314 (June 22, 2020); OTT-RTG-LET-0316 (June 24, 2020) (the "City Letters") – Wheel Cracking and Availability of the System – Section 21.2 - Increased Monitoring Notice

The City writes in relation to the recently discovered cracks in the wheels of the Vehicles which are currently being investigated by RTG, and is currently being assessed by Canada's Transportation Safety Board ("TSB").

The City views the safety of the public as paramount and any ongoing issues with Safety on the System must be resolved as soon as possible and in accordance with the PA requirements. We will continue to work collaboratively with RTG as we have done since this issue was identified.

We appreciate that the investigation into the root cause is underway and require that RTG provide updates as the situation evolves including in relation to the inspection regime, root cause analysis, and implementation of repairs. We trust that for the time that inspections of each Vehicle are required, RTG will adopt processes to ensure that such inspections are conducted efficiently and will employ necessary resources to do so.

As a result of this incident and the uncertainty around the root cause, the City hereby serves notice of its intent to exercise its right to increased monitoring pursuant to s.21.2 of the PA. The City will employ a small team from its consultant Capital Transit Partners. Your cooperation is expected and access arrangements shall be made through the usual channels.

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In addition, during the period of the investigation and the resulting remedial action period, RTG is hereby advised that any consequential reduction to service will not constitute a Service Level Decrease, as defined in the PA, to the current service level as set out in the City Letters.

Notwithstanding the above, the City appreciates RTG's efforts to promptly investigate the issues related to the cracked wheels and we look forward to a swift resolution of this issue. The City remains available to RTG and the TSB in relation to any necessary investigations.

The City reserves all of its rights under the PA and at law.

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc.

Lorne Gray, Troy Charter, Duane Duquette, City of Ottawa
James Messel, RTM

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407

May 07, 2021

Mr. Nicolas Truchon, CEO
Rideau Transit Group GP
805 Belfast Road,
Ottawa, ON, K1G 0Z4

Our Reference: OTT-RTG-LET-0362

Your Reference:

RE: Cracked Wheels Replacement

Dear Mr. Truchon,

Please find enclosed, for your information and/or action as applicable, a letter from City Transit Operations.

Should you have any questions, concerns, or require additional information please do not hesitate to contact Mr. Troy Charter, Director, Transit Operations.

Regards,

Michael Morgan
Director, Rail Construction Program

cc. Duane Duquette, Matt Pieters, Sabrina Pasian Connie Gleason – City
Mario Guerra, James Messel – RTM

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April 28, 2021

Mr. Nicolas Truchon, CEO
Rideau Transit Group GP
805 Belfast Road
Ottawa, ON
K1G 0Z4

Our reference: OTT-RTG-LET-0362

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("PA" or "Project Agreement") between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG")

Cracked Wheels Replacement

Dear Mr. Truchon,

The presence of cracked Lucchini resilient wheels on certain Vehicles (the "Wheel Crack Issue") was observed on July 2, 2020. Ten months later, the problem is still not resolved and RTG has not provided clarity on the timeline for, nor has it met its past commitments in respect of, its inspection and replacement plan for both the impacted wheels on the existing fleet and those in production at the Revenue Vehicle manufacturer's production facilities. This matter requires RTG's immediate attention and the City requires a detailed wheel replacement schedule ("Schedule") from RTG, as outlined below, and for RTG to then comply with that Schedule.

As you know, this situation is being monitored by not just OC Transpo but also by rail transit regulatory officials, including the City Manager's Office (CMO) with the assistance of the Regulatory Monitor and Compliance Officer (RMCO). The City is concerned about your compliance with the recommendations of the Transportation Safety Board (TSB) which commenced its own investigation and presented their initial findings by letter on November 4, 2020, *Rail Safety Advisory Letter 08/20, Cracked wheel on Ottawa Light Rail Transit Vehicles*. The TSB was clear in its request that RTG and the Revenue Vehicle manufacturer expedite the inspection and removal of all impacted Lucchini resilient wheels installed on the OLRT LRV Fleet and equipped with jacking screws.

In response the Revenue Vehicle manufacturer provided the City and the TSB with a wheel replacement schedule stating that it would be expediting the inspection and replacement of the impacted wheels. At that time, the CMO and TSB were informed by the Revenue Vehicle manufacturer that the wheel inspection replacement program would be completed by the end of Q1 2021. The City relied on these representations and commitments made by the Revenue Vehicle manufacturer.

Further, on January 4, 2021, at Transport Canada's (TC) request OC Transpo representatives met with TC officials to provide an overview and current status of the situation. This included the Revenue Vehicle manufacturer's Q1 2021 inspection and replacement schedule. The plan information and schedule were also provided by the City to the Transit Commission on December 16, 2020.

In February 2021, the Revenue Vehicle manufacturer provided OC Transpo with a revised schedule that indicated they were unable to expedite the inspection and replacement of the impacted wheels and that completion by end of Q1 2021 would not achievable. The Revenue Vehicle manufacturer advised that as a best-case scenario, if operating an eleven (11) train service, the wheel replacement could be achieved by the end of May 2021 or at the latest August 2021. No reasonable or detailed explanation was provided at that time for the change in plans.

Recently, on April 16, 2021, RTG representatives provided a verbal update to OC Transpo indicating that twenty-two (22) vehicles have been retrofitted with replacement wheels to date. It is the City's understanding that as of May 5, 2021, there are now twenty-three (23) vehicles which have been retrofitted with replacement wheels.

The City has not yet received an updated Schedule outlining the details of the replacement program to the end of August 2021. This is unacceptable. Failure to provide the balance of the replacement wheels promptly has and will increase the level regulatory scrutiny given the extent of the delays by RTG in resolving this issue.

This issue is having or will have a material adverse effect on the availability of the System to System Users.

Contrary to Section 9.2(a)(ii) of the Project Agreement, RTG has failed to perform all activities within the Project Scope in accordance with Good Industry Practice (Works) and in accordance with the terms of the Project Agreement. As well, RTG has breached its obligations under the Project Agreement including in relation to Sections 20.1 (a) and (b), 20.2, 27.1, and 28.5. As noted above, the City considers these breaches to pose a risk to the availability of the System to System Users.

Therefore, the City considers RTG's failure to address the cracked wheels issue and replacement of all Lucchini wheels (along with related issues) in a timely way a breach of its obligations under the Project Agreement that constitutes a Project Co Event of Default to Section 45.1(a)(v) of the Project Agreement.

It also represents a failure by RTG to perform Maintenance Service in accordance with the PA for the availability of the System to System Users contrary to Section 45.1(a)(vii).

As well, given RTG's representation that it had extensive experience and was knowledgeable in the maintenance of LRT projects as well as the representation that it possessed the requisite skill and capacity to perform the activities within the Project Scope in a timely and professional manner, this failure to resolve the issue is contrary to Section 45.1(a)(iv) given that the issue threatens to compromise the reputation of the City and the Project so as to negatively affect public perception of both.

Based on the above, the City requires that RTG provide a Schedule as soon as possible, but no later than seven (7) days of receipt of this correspondence, which includes:

(a) confirmation of the wheel replacement schedule to the end of May 2021;
(b) the steps it is taking to expedite the inspection and replacement of the remaining wheels; and
(c) a committed final completion date for this work.

The City will assess RTG's performance as against this detailed replacement plan. Any failure to provide the Schedule or any subsequent failure to comply with the schedule commitments set out therein, will result in the City having no choice but to issue a further Notice of Default pursuant to Section 45(a)(vi), (v) and (vii) of the PA.

Please contact the undersigned if any of the foregoing requires discussion.

Sincerely,

Troy Charter
Director
Transit Operations

Brandon Richards
Chief Safety Officer
Safety, Regulatory, Training and Development

c.c .

Duane Duquette, Matt Pieters, Sabrina Pasian, Connie Gleason -City
Mario Guerra, James Messel - RTM

411

August 06, 2021

Mr. Nicolas Truchon, CEO
Rideau Transit Group GP
805 Belfast Road,
Ottawa, ON, K1G 0Z4

Our Reference: OTT-RTG-RLET-0605

RE: Stage 1 & 2 – Cracked Wheels Replacement

Dear Mr. Truchon,

Please find enclosed, for your information and/or action as applicable, a letter from City Transit Operations.

Should you have any questions, concerns, or require additional information please do not hesitate to contact Mr. Troy Charter, Director, Transit Operations.

Regards,

Michael Morgan
Director, Rail Construction Program

cc.

Troy Charter, Matt Pieters, Sabrina Pasian, Connie Gleason – City
Mario Guerra, James Messel – RTM

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August 06, 2021

Mr. Nicolas Truchon, CEO
Rideau Transit Group GP
805 Belfast Road
Ottawa, ON K1Z 0Z4

Our reference: OTT-RTG-RLET-0605

Dear Mr. Truchon:

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("PA") between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG")

OTT-RTG-LET-0319 (July 21, 2020) – Wheel Cracking – Increased Monitoring; OTT-RTG-LET-0362 (May 7, 2021) - Cracked Wheels Replacement ("**City Letters**")

Stage 1 & 2 – Cracked Wheels Replacement

The City writes in response to RTG's letters of May 13, 2021 and June 3, 2021 (designated RTG-OTT-58-0-LET-1164 and RTG-OTT-58-0-LET-1174, respectively) (the "**RTG Letters**") regarding the delayed replacement of the wheels on the existing Confederation Line LRV Fleet following the wheel cracking incident in July 2020 (the "**Wheel Cracking Incident**"). This is further to the ongoing dialogue between OC Transpo and RTM at the weekly meetings, which includes the wheel replacement program, where there have been very few updates.

As previously expressed in the City Letters, RTG's failure to replace the cracked Lucchini resilient wheels in a timely fashion is inconsistent with RTG's obligations under the PA resulting in a Project Co Event of Default pursuant to Sections 45.1(a)(vi), (v) and (vii) of the PA.

As a consequence of this default the City required RTG to provide by May 14, 2021 a schedule and description of the steps RTG is taking to expedite the inspection and replacement of the defective wheels. This schedule was not provided until several weeks later on June 3, 2021 and we note that: (a) you unreasonably delayed requesting a schedule from Alstom until May 13, 2021; and (b) we still await your explanation of the steps you are taking to expedite the inspection and testing of the wheels still requiring replacement.

RTG is not responding to and rectifying this situation to the City's satisfaction and as required under the Project Agreement. Amongst other concerns, we note that RTG has put forward an unsubstantiated and high level 'schedule' and provided inadequate explanations from Alstom regarding the rectification and replacement steps. We are observing a very distinct lack of urgency in diligently resolving this significant safety issue.

Despite over a year having passed since the Wheel Cracking Incident, RTG has still not provided a substantiated and meaningful explanation as to why these issues have not been resolved in a timely way.

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In addition to the Wheel Cracking Incident, the City is also concerned about the quality of work applied by RTG and its contractors to remedy the situation. There have been numerous instances where we have observed and been informed of unsatisfactory workmanship that has resulted in further delays in properly addressing the issue.

By way of illustration, recently, 11 LRVs underwent the retrofit program to replace the "red" wheels with wheels pressed in Ottawa. During a preventative maintenance task, it was discovered that one of the newly replaced wheels had torque seal cracks on a couple of bolts on the wheel. Upon discovery, RTG (Alstom) then investigated all LRV's that had been retrofitted with the wheel press, as the remaining 21 vehicles that had gone through the program had brand new wheels. Alstom then recognized an immediate need to investigate all remaining 11 LRV's which had been retrofitted with the wheel press. This investigation illustrated that Alstom must now re-torque and mark all wheels in the 11 LRV's that had been retrofitted with the wheel press.

Previously, it was also discovered (October 2020) in Sorel-Tracy that one wheel was not torqued on a bogie which resulted in a fleet wide check for all revenue vehicles in Ottawa and a visual inspection of all stage 2 vehicles in Brampton. This was also confirmed as a workmanship issue by RTG (Alstom).

As a further illustration of how unsatisfactory the RTG response has been in addressing this serious situation, the graph below illustrates the actual program delivery of stress-free wheels versus RTG's proposed schedule to OC Transpo and the Transportation Safety Board back in November 2020.

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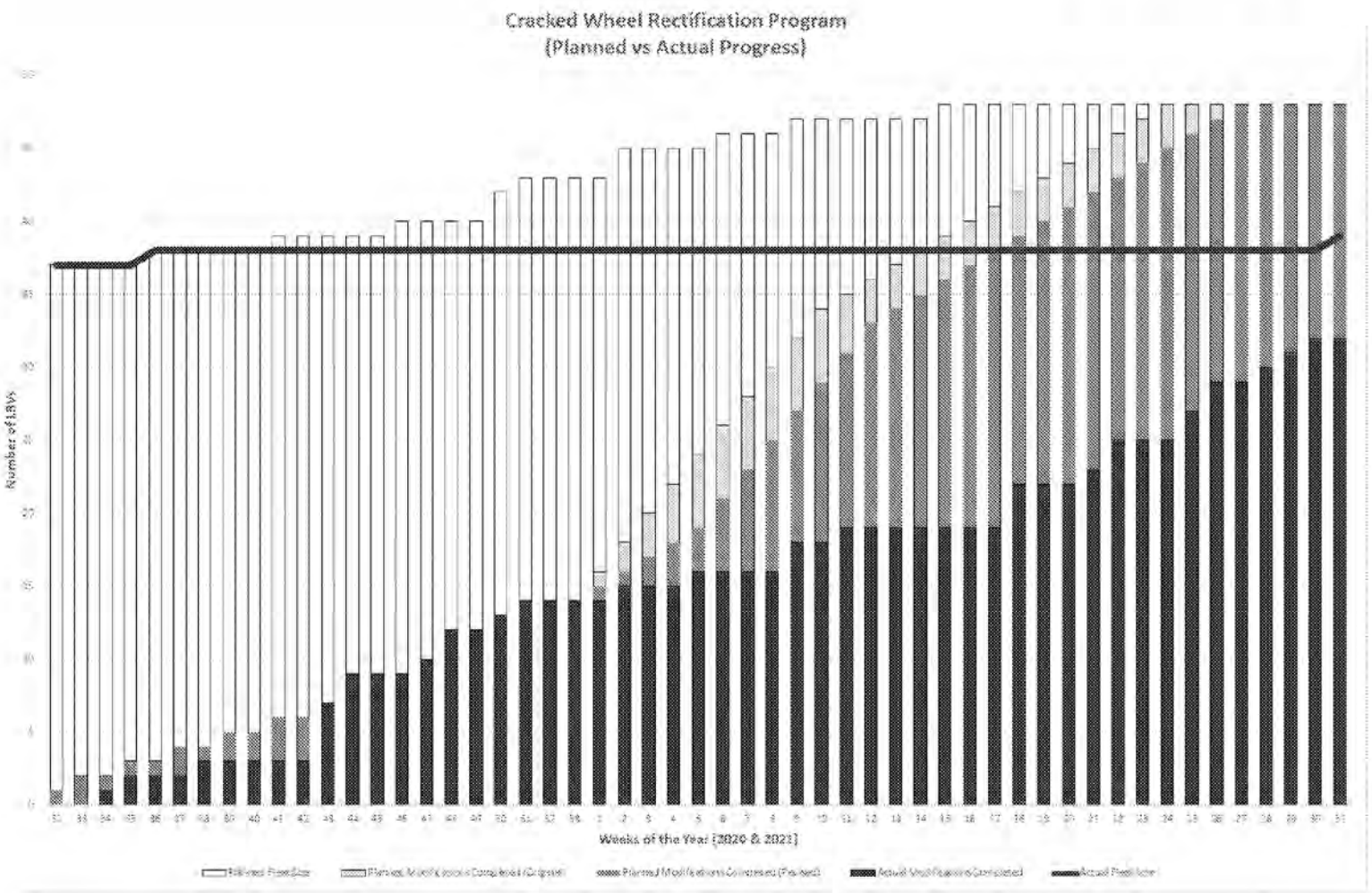

At this time the City requires the following:

- (as previously requested,) an updated schedule to reflect a firm completion of the wheel replacement program;
- verification that the City's concerns regarding quality of work has been addressed and resolved;
- a detailed explanation for the delay in completing the wheel replacement work with clear substantiated evidence that supports RTG's rationale for the process used;
- a detailed explanation for the steps taken to ensure the workmanship issues will be rectified moving forwards; and,
- confirmation from RTG that once the wheel retrofit process has been completed, the wheels will operate without further stress or incident in relation to this replacement program.

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The City requires RTG to respond to this letter and direction by August 23rd, 2021. Failure to respond as directed may result in another Project Co Default and could lead to further regulatory intervention by rail regulatory authorities, including the TSB.

The City reserves all of its rights under the PA and at law.

Sincerely,

Duane Duquette
Director
Rail Operations

Brandon Richards
Chief Safety Officer
Safety, Regulatory, Training and Development

cc.

Troy Charter, Matt Pieters, Sabrina Pasian, Connie Gleason – City
Mario Guerra, James Messel – RTM

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December 22, 2021

Mr. Nicolas Truchon, CEO
Rideau Transit Group GP
805 Belfast Road,
Ottawa, ON, K1G 0Z4

Our Reference: OTT-RTG-RLET-0635

RE: Green Wheels for Service

Dear Mr. Truchon,

Please find enclosed, for your information and/or action as applicable, a letter from City Transit Operations.

Should you have any questions, concerns, or require additional information please do not hesitate to contact Mr. Troy Charter, Director, Transit Operations.

Regards,

Michael Morgan
Director, Rail Construction Program

cc. Duane Duquette, Connie Gleason, Matt Pieters, Erin Tate – City
Mario Guerra, James Messel – RTM

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December 22, 2021

Nicolas Truchon CEO
Rideau Transit Group
805 Belfast Road
Ottawa ON
K1G 0Z4

Our Reference: OTT-RTG-RLET-0635

Your Reference: RTG-OTT-58-0-LET-1357

RE: Green Wheels for Service

Dear Mr. Truchon,

The City writes in response to RTG-OTT-58-0-LET-1357 (the "Letter") in which RTG asked for further clarification regarding the City's decision to allow Vehicles into revenue service only after the completion of the wheel replacement program (referred to in the Letter as the "wheels retrofit program"). The City's decision to only allow Vehicles into revenue service after the completion of the wheel replacement program is a direct result of RTG's continued failures to replace the cracked wheels promptly and in light of the safety concerns detailed below. The City views this decision as necessary given the current state of the wheel replacement program.

As RTG is aware, the initial observation and presence of cracked Lucchini resilient wheels on certain Vehicles (the "Wheel Crack Issue") was observed on July 2, 2020. Now, more than seventeen (17) months later, RTG has failed to deliver on its commitments to complete the wheel replacement program, including but not limited to failing to meet the following dates it committed to meet:

- by the end of Q1 2021;
- by the end of May 2021;
- by mid-August 2021; and
- by the end of October 2021.

As of the date of this letter, the Wheel Crack Issue has yet to be fully rectified by RTG and its Subcontractors. RTG's inability to deliver on its commitments has put the City in a difficult position with federal agencies and RTG's continued failures to meet the deadlines it has put forward to the City calls into question its commitment to addressing the Wheel Crack Issue. It is in this context that the City has taken the decision to only allow Vehicles into revenue service once the wheel replacement has been completed.

With regards to the ongoing delays on RTG's part, the City notes that Alstom has again revised the timelines to complete the wheel replacement (as set out in RTG-OTT-58-0-LET-1361, enclosing ALS-OLRT-04102). Under this new timeline, Alstom advises that the wheel replacement for five Vehicles will be completed by the end of January 2022. The City will not tolerate any delays to this further revised timeline and expects all cracked wheels to be fully replaced by the end of January 2022.

With regards to the City's ongoing concerns regarding the quality of the work performed by RTG and its Subcontractors in relation to the wheel replacement program, the City notes that on August 6, 2021, the City wrote to RTG regarding the delayed replacement of the cracked wheels (OTT-RTG-RLET-0605). In this letter, the City outlined its dissatisfaction with actions taken by RTG at that time and expressed concerns regarding the quality of the work performed by RTG and its Subcontractors. By way of example, the City noted that there had been numerous instances where the City had observed or had been informed of unsatisfactory workmanship resulting in further delays to the wheel replacement program. As of the date of this letter, RTG still has not demonstrated any change in its approach regarding the wheel replacement program, and the City's concerns regarding the quality of the work remain.

Moreover, given the two derailments in August and September 2021, the City and its consultant TRA, have reexamined the Vehicle maintenance and retrofit activities to ensure the safety of the System, staff, and the public, and systemic issues have been noted which provides context to the City's concerns about the program to replace the cracked wheels.

In addition, it appears that RTG (and its Subcontractors) do not have adequate resources in place to address the long outstanding Wheel Crack Issues at the same time as determining the root cause of the August derailment (which determination remains outstanding as of the date of this letter).

As such, the apparent lack of oversight by RTG, as well as inadequate staffing levels, appear to have contributed to the ongoing inability to complete the wheel replacement program in a timely manner. In fact, the City continues to request that RTG provide a substantive plan to address the deficiencies within its current organizational structure so as to address the clearly inadequate levels of staffing and oversight which appear to be causing, among other issues, the delays and quality failures with the wheel replacement program.

Based on these concerns, the Chief Safety Officer (CSO) has determined that the previously agreed upon inspection of the wheels is no longer an acceptable risk. This decision is not lightly taken but is necessary given RTG's continued failures to deliver the wheel replacement program, largely contributed to by RTG's inability adequately staff on the short and long-term and oversee the work in relation to the wheel replacement program. Among other things, the CSO is concerned about the extent of the daily quality

failures which are an indicator that RTG and its Subcontractors are not properly performing the stressed wheel inspection

To reiterate, RTG and its Subcontractors have demonstrated an inability to adhere to quality standards which has directly resulted in multiple failures (including the derailments referenced above). Furthermore, RTG has consistently demonstrated that it does not have sufficient oversight over its own Subcontractors, as demonstrated by, among other things, the lack of quality checks and standards. The City is deeply concerned about RTG and its Subcontractors' ability to perform the previously agreed upon stressed wheel inspections as a mitigation for the Wheel Crack Issue, while at the same time performing all other safety-critical activities for required for daily revenue service. This concern has led to the conclusion that the risks associated with the stressed wheel inspections are no longer acceptable to the City.

RTG is solely responsible if there is an inability to meet the daily Vehicle Availability targets. The severity of the Wheel Crack Issue has been communicated to RTG numerous times via formal correspondence and the failure to fully rectify the issue is solely the responsibility of RTG and its Subcontractors. The City expects that the wheel replacement program will be completed without further quality failures and within the deadlines communicated by RTG, namely by the end of January 2022

The City reserves its rights under the Project Agreement and at law.

Yours Truly,

Troy Charter
Director
Transit Operations

Brandon Richards
Chief Safety Officer
Safety, Regulatory, Training and Development

cc. Duane Duquette, Connie Gleason, Matt Pieters, Erin Tate – City
Mario Guerra, James Messel – RTM

January 13, 2022

Mr. Nicolas Truchon, CEO
Rideau Transit Group GP
805 Belfast Road,
Ottawa, ON, K1G 0Z4

Our Reference: OTT-RTG-LET-0640

Your Reference: RTG-OTT-58-0-LET-1387

RE: LRV 25 – Green Wheels Certificate

Dear Mr. Truchon,

Please find enclosed, for your information and/or action as applicable, a letter from City Transit Operations.

Should you have any questions, concerns, or require additional information please do not hesitate to contact Mr. Troy Charter, Director, Transit Operations.

Regards,

Michael Morgan
Director, Rail Construction Program

cc. Brandon Richards, Duane Duquette, Connie Gleason, Matt Pieters – City
Mario Guerra, James Messel – RTM

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January 13, 2022

Nicolas Truchon CEO
Rideau Transit Group
805 Belfast Road
Ottawa ON
K1G 0Z4

Our Reference: OTT-RTG-RLET-0640

Your Reference: RTG-OTT-58-0-LET-1387

RE: LRV 25 – Green Wheels Certificate

Dear Mr. Truchon,

The City writes in response to RTG-OTT-58-0-LET-1387 (the 'Letter') in which documentation was provided to the City regarding the inspection and retrofit work carried out to address the Wheel Crack issue, specifically on Light Rail Vehicle (LRV) 25.

After reviewing the provided documentation, the City notes a major discrepancy with the dates as found at the bottom of the certificate. The Date Dismounted is showing as January 1, 2022, however the Date Mounted is showing as December 9, 2021. As RTG is aware, LRVs cannot be mounted prior to dismounting.

As the certificate provided is not accurate, LRV 25 cannot enter onto the mainline to perform the required two (2) loop test until such time that the certificate has been corrected with accurate information and provided to the City for review and response.

The severity of the Wheel Crack issue has been communicated to RTG through various correspondence and meetings, and as discussed, the City continues to have concerns regarding the oversight and quality of the documentation being submitted. The continued presence of errors, as described in this letter, is troublesome and raises further questions about the quality control processes in place within RTG and their various Subcontractors.

If you have any further questions, please contact the undersigned directly.

Yours Truly,

Troy Charter
Director
Transit Operations

cc. Brandon Richards, Duane Duquette, Connie Gleason, Matt Pieters – City
Mario Guerra, James Messel – RTM

This is Exhibit "H" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

January 9, 2020

Mr. Peter Lauch, CEO
Rideau Transit Group GP
1545 Carling Avenue
Suite 406
Ottawa, ON K1Z 8P9

Your reference: RTG-OTT-00-0-LET-0898

Our reference: OTT-RTG-RLET-0532

Dear Mr. Lauch:

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("Project Agreement") between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG") Remedial Rights (S. 32.1(a)(i)(B) and 32.1(a)(ii)) – Interruption and Availability Impact and Failure Points Exceedance

We write in response to RTG's letter of December 19, 2019, as referenced above, in relation to the City's December 18, 2019 notice of its exercise of remedial rights bearing reference OTT-RTG-LET-0293.

The City rejects the assertions made by RTG in its letter. In particular and without limiting the generality of the foregoing, given the poor performance of the System since the handover date, the City maintains its position that RTG has breached its obligations under the Project Agreement and that its acts and omissions have or could reasonably be expected to result in a materially adverse interruption in the Maintenance Services or the availability of the System to System Users. In fact, there have already been significant interruptions.

By way of recent example, there was a material adverse interruption in the availability of the System caused by extensive service disruptions and delays on December 31, 2019. In particular, but without limitation:

- a Train stopped at Cyrville Station with an issue that RTM failed to respond to in a timely manner. The City later discovered that the issue was caused by the neglect of duties by an RTM technician;
- a Train was stranded near uOttawa Station and was not recovered by RTM in a timely way or in accordance with the Project Agreement due to RTM's lack of, among other things, Standard Operating Procedures for dealing with such circumstances and a lack of leadership from RTM's team; and

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- RTG failed to make additional spare Vehicles available for peak service by December 31, 2019 contrary to the agreement between the City and RTG. Accordingly, RTG is unable to provide the service level set out under the Project Agreement and as such, the availability of the System is and continues to be compromised.

Based on the City's preliminary assessment of the events of December 31, the root cause appears to be related to the long term buildup of metallic dust on the Vehicle rooftops leading to activation of the Vehicles' safety protections. For a low floor vehicle with the majority of its equipment located on the roof, there must be regular and ongoing maintenance activity on that rooftop as part of inspections and other maintenance activity. To the extent that the buildup of debris was allowed to accumulate over an extended period of time, it is unclear how this condition has gone unchecked by the RTM maintenance team. Absent timely intervention on this issue, we have to attribute this recent failure to a failure by RTG to deliver Maintenance Services.

The City continues to see a pattern of performance by RTG that falls well below the standards set out in the Project Agreement and therefore requires intervention. In reviewing the launch records for November 2019, we note that a late Vehicle launch occurred on ten separate days (November 4, 7, 9, 10, 12, 19, 20, 22, 28, and 30). More concerning is that in the same month we had to initiate replacement bus service on seven different occasions (November 8, 12, 19, 20, 21, 22, and 29). This pattern of inadequate RTG performance has persisted since the handover date and is unsustainable.

In addition to the technical examples described above and other technical issues experienced on the System to date, RTG has also failed to provide accurate Daily Operating Reports, Payment Adjustment Reports, Performance Monitoring Reports, and monthly payment invoices to the City in a timely manner as required under the Project Agreement. This information is critical to understanding System performance in order to assess RTG's performance failures under the Project Agreement including, but not limited to, Failure Points.

Based on RTG's obligations under the Project Agreement, and expected best practices, the parties should be able to rely on a performance reporting system to provide an objective and transparent methodology for assessing performance factors; however, RTG has resorted to manual manipulation of the data and manual adjustments of the reports. Furthermore, to the extent that RTG has provided performance information as part of daily reviews with City staff, we have relied on those meetings to assess performance factors and Failure Points.

RTG's failure in adequately meeting the demands of the System as well as its demonstrated inability to properly perform the Maintenance Services demonstrates a

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clear failure to meet the requirements of the PA. Furthermore, RTG's acts and omissions have clearly resulted in a material adverse interruption to both the Maintenance Services and the availability of the System to System Users, thus confirming the City's entitlement to exercise its remedial rights.

The City has and will continue to work collaboratively with RTG with respect to its significant ongoing performance failures in relation to the System and maintenance; however, the severity of RTG's failures has put the City in the position of having to exercise its remedial rights. As such, and as noted in our previous letter, the City will evaluate the necessary rectification mechanisms and deliver a rectification notice in relation to the above-noted failures.

The City reserves all of its rights under the Project Agreement and at law.

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc.

Lorne Gray, OTC
Troy Charter, OCT

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This is Exhibit "I" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

December 18, 2019

Mr. Peter Lauch, CEO
Rideau Transit Group GP
1545 Carling Avenue
Suite 406
Ottawa, ON K1Z 8P9

Our reference: OTT-RTG-LET-0293

Dear Mr. Lauch:

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("PA") between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG") Remedial Rights (S. 32.1(a)(i)(B) and 32.1(a)(ii)) – Interruption and Availability Impact and Failure Points Exceedance

The City hereby provides notice pursuant to Section 32.1 of the PA to RTG of the City's intent to exercise its remedial rights in relation to Sections 32.1(a)(i)(B) and 32.1(a)(ii). In particular, RTG has:

a) Breached its obligations under the PA and/or its acts or omissions have or can reasonably be expected to result in a materially adverse interruption in the Maintenance Services or the availability of the System to System Users (the "**Interruption and Availability Impact**"); and/or

b) Accrued Failure Points in its performance of the Maintenance Services over the threshold contained within Section 32.1(a)(ii) of the PA ("**Failure Point Exceedance**").

Interruption and Availability Impact

Since the launch of the System, RTG has generally failed to rectify ongoing issues with vehicle performance including with the TCMS and door subsystems and with infrastructure performance due to switch failures. In addition to these and other technical failures, RTG continues to struggle operationally with delivery of vehicles to meet service levels including the availability of hot standby or spare vehicles. This situation persists despite the agreed upon reduction to thirteen vehicles for morning peak service. Broadly, RTG has failed to respond to and rectify ongoing vehicle issues and/or issues that occur on the mainline in a timely manner.

Due to these breaches, acts and omissions, there has been a material adverse interruption in the Maintenance Services. As well, there has been a material adverse interruption in the availability of the System to System Users.

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Failure Point Allocation Exceedance

Pursuant to Section 32.1(a)(ii), the City is entitled to exercise its remedial rights in the event that Project Co accrues, in any Contract Month, more than:

(A) 300 Failure Points in respect of Vehicle and System Availability Failures;
(B) 300 Failure Points in respect of Station Availability Failures; or
(C) 150 Failure Points in respect of Quality Failures and Service Failures, combined.

Based on the data RTG has provided in its own reports, RTG has exceeded the above thresholds by significant orders of magnitude since the commencement of the Maintenance Term. Specifically, RTG has accrued the following Failure Points for vehicle and system availability:

Failure Point Category, Contract Month	Sep-19	Oct-19	Nov-19
Vehicle and System Availability Failures	1575	1395	1265

As well, RTG has failed to provide appropriate responses to quality failures leading to the accumulation of Failure Points for Quality Failures and Service Failures as follows:

Failure Point Category, Contract Month	Sep-19	Oct-19	Nov-19
Quality Failures and Service Failures, combined	86,779.50	10,809.50	8,241.00

Conclusion

Based on the foregoing, the City is currently reviewing its rights of rectification under Section 32.3 in anticipation of delivering a rectification notice. The City will be seeking reimbursement from RTG for all reasonable costs and expenses incurred in relation to the exercise of its rights pursuant to Section 32 of the PA.

The City reserves all of its rights under the PA and at law.

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc.

Lorne Gray, OTC
Troy Charter, OCT

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This is Exhibit "J" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

March 10, 2020

Mr. Peter Lauch, CEO
Rideau Transit Group GP
1545 Carling Avenue
Suite 406
Ottawa, ON K1Z 8P9

Our reference: OTT-RTG-LET-0307

Dear Mr. Lauch:

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("PA" or "Project Agreement")[1] between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG")
S. 45.1 – Notice of Project Co Event of Default

The City hereby notifies RTG that Project Co Events of Default have occurred. In particular, Project Co Events of Default (individually each a "Default" and collectively the "Defaults") have arisen pursuant to Sections 45.1(a)(iv), (v), (x), (xi), and (xii) of the Project Agreement. Each Default is described briefly below. RTG is aware of the details of its ongoing failure to design, build and maintain a reliable System and the ongoing nature of each of its Defaults in relation to the System, given, for example, the Project record correspondence on each of these issues, as well as the various meetings and discussions that have taken place to date.

Simply put, the System that RTG has supplied is not performing consistently or reliably. RTG is required to provide a System that can reliably support immediate transit ridership of 10,000 people per hour per direction and growing to 23,000 people per hour per direction over time. RTG has struggled and continues to struggle to complete many of the activities within the Project Scope including its notable struggle to commission the System. Following the belated launch of the System, when RTG insisted its System was ready for service to commence, a myriad of technical and Vehicle issues have arisen, resulting in an ongoing failure of performance and reliability that has reached, and significantly exceeded, the level of Default, as described below. It is RTG's responsibility to address these Defaults.

Without limiting the generality of the foregoing, under the Project Agreement, it is RTG that is the single point of responsibility for its Subcontractors and the City will not accept any attempt by RTG to avoid its own responsibility by blaming others further down the contractual chain, such as OLRT-C or Alstom. RTG is responsible for designing, building, financing, and maintaining the System and in respect of issues related to both Design and Construction Works and Maintenance Services, these are RTG's issues to resolve and the City requires that the partners that make up RTG bring the necessary resources to bear to collectively address these serious failures so as to meet the performance standards set out in the Project Agreement.

[1] All capitalized terms not defined herein shall bear their meanings as defined in the Project Agreement

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1) Failure Points

Failure Points are allocated to RTG in respect of the occurrence of Availability Failures, System Events, Service Failures and Quality Failures as determined by Schedule 20 to the Project Agreement.

The City is entitled to make Deductions from Monthly Service Payments to RTG based on Quality Failures, Service Failures, and Availability Failures in accordance with Schedule 20 of the Project Agreement.

In addition, the accumulation of Failure Points triggers the exercise of important City rights under the Project Agreement if specified thresholds are met. In other words, Failure Points discipline performance that is so far below the contracted threshold that financial penalties no longer suffice.

As explained in the City's letter of December 18, 2019 (OTT-RTG-LET-0293), as at that date RTG had exceeded the Failure Point thresholds for the exercise of the City's remedial rights. Since that time, the Failure Points have continued to escalate. At this point, the System has been operating for more than six months and the City has observed unacceptable levels of poor performance such that escalated measures are warranted. RTG has exceeded the threshold for a full year in respect of Default in just six months.

Further, RTG has been making inappropriate adjustments to its Daily Operating Reports and Performance Monitoring Reports, including as described in the City's letters of January 14, 2020 (OTT-RTG-LET-0298 and OTT-RTG-LET-0299). These adjustments to RTG's own data appear to be an attempt by RTG to evade its accountability. The City has disputed RTG's adjustments. For example, the City does not accept RTG's bald assertions that there are no Key Performance Metrics ("KPMs") associated with certain recorded failures. RTG has taken a very narrow view of the KPMs including taking the view that KPMs cannot overlap with each other or as between System Events and Vehicle Availability, which is simply incorrect. RTG also wrongly asserts that there was no impact to service in relation to certain failures that did in fact have an impact. In addition, RTG has attempted to characterize some items as relating to the Minor Deficiency List but this characterization is not valid. As a result of RTG's failure to put in place proper Standard Operating Procedures, work orders are not properly tracked so as to confirm how and when items are resolved. This issue is RTG's responsibility to resolve given RTG's obligation to develop and maintain a proper data collection system (the IMIRS System). In summary, the adjustments made by RTG are improper and have been rejected by the City.

Even with the RTG data available, and taking the most conservative view, the System does not come remotely close to the level of reliability required under the Project Agreement. The performance level is so poor that the Default level has been reached.

In particular, pursuant to s. 45.1(a)(x) to (xii) of the Project Agreement, a Default occurs if RTG is awarded a total of:

- 1,300 or more Failure Points in any three (3) rolling Contract Months
- 1,600 or more Failure Points in any six (6) rolling Contract Months

- 2,000 or more Failure Points in any twelve (12) rolling Contract Months

Without adjustments, the Failure Points presently exceed 130,000, based on the data drawn directly from RTG's own IMIRS System. The totals from the IMIRS System for all failure types are as follows:

Type	Month						Totals
	Sept'19	Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	
TOTAL	89,110	12,310	6,175	17,242	4,155	2,484	131,474

Even focusing only on major failures, as described below, the Default level has been exceeded by more than 300%.

In particular, the City has assessed RTG's Failure Points as shown in the IMIRS System in respect of only Vehicle Availability, Station Availability, and System Failures as follows:

Type	Month						Totals
	Sept'19	Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	
Vehicle Availability	80	30	30	10	300	240	690
Station Availability	30	30	90	30	0	0	180
System Event	715	325	390	195	1,885	1430	4,940
TOTAL	825	385	510	235	2,185	1,670	5,810

3-Month Accumulations	
Sept'19 to Nov'19	1720
Oct'19 to Dec'19	1130
Nov'19 to Jan'20	2930
Dec'19 to Feb'20	4090

6 - Month Accumulation	
Sept'19 to Feb'20	5,810

Therefore, even based on the conservative assessment of only considering Failure Points for Vehicle Availability, Station Availability, and System Events, RTG has dramatically exceeded the three month allowable total in each rolling three Contract Month period since the beginning of the Maintenance Term and has also exceeded the total allowable Failure Points for the six Contract Month rolling period. In fact, and as noted above, RTG has exceeded the threshold for Default for the twelve-month period in only six months.

Accordingly, a Default has occurred under each of Section 45.1(a)(x), (xi), and (xii). While the City recognizes that RTG takes a different position as a result of its manual adjustments of the Failure Points, the City does not accept these adjustments as described above and in prior correspondence dated January 14, 2020 (OTT-RTG-LET-0298 and OTT-RTG-LET-0299).

Under the Project Agreement, RTG is not entitled to any remedy for this Default as Section 45.4 of the Project Agreement specifically omits Sections 45.1(a)(x) to (xii). However, the City is prepared to allow RTG a reasonable period of time to remedy this Default, as with the other Defaults, as described below.

2) Unavailability of the System

Pursuant to s. 45.1(a)(v), RTG has breached its obligations under the Project Agreement to provide sufficient Vehicles to meet the required service levels and to rectify issues with the Vehicles and/or System.

Contrary to Section 9.2(a)(ii) of the Project Agreement, RTG has failed to perform all activities within the Project Scope so as to satisfy the Output Specifications,[2] in accordance with Good Industry Practice (Works) and in accordance with the terms of the Project Agreement. As well, RTG has breached its obligations under the Project Agreement including in relation to Sections 20.1(a) and (b), 20.2, 20.8, 20.9 and 28.5.

Since the commencement of revenue service, as detailed in the City's remedial rights letters dated December 18, 2019 (OTT-RTG-LET-0293) and January 9, 2020 (OTT-RTG-LET-0532), RTG has repeatedly failed to provide sufficient Vehicles in order to ensure that service levels are provided in accordance with the Project Agreement. Furthermore, RTG has repeatedly failed to rectify ongoing problems with the Vehicles and/or issues arising in relation to the System in a timely or meaningful way. It is unacceptable for RTG to continue to place commercial internal disputes among various partners and suppliers before its obligations under the Project Agreement.

RTG's breaches of its obligation under the Project Agreement relate not only to the performance of the Maintenance Services, but also to RTG's performance of the Design and Construction Works.

RTG's failures during the Maintenance Term have resulted and are expected to continue to result in materially adverse effect on the availability of the System to the System Users.

In fact, as noted in our letter of January 9, 2020 (OTT-RTG-RLET-0532), in November alone there was a late Vehicle launch on ten separate occasions and in that same month the City had to initiate replacement bus service on seven separate occasions. Significant and troubling issues have continued to affect System availability and service. We have not seen any improvements in service and in fact service appears to have deteriorated further since the end of 2019. The following are a few specific examples which demonstrate how poor the current service delivery has become:

[2] In relation to the Output Specifications requirements, and by way of example only, see Schedule 15-2 (e.g. Schedule 15-2, Part 4 – Design and Construction Requirements – Vehicles and Systems), and Schedule 15-3 (Maintenance and Rehabilitation Requirements).

- For 25 consecutive weekday rush hour periods between January 16, 2020 and February 03, 2020, RTG failed to deliver the required number of trains at peak service and was only able to provide between eight (8) and twelve (12) trains. The average number of trains provided during this critical period of our service was just over 10 trains (against a requirement of 13 trains); and,
- Subsequent to the performance at the end of January, RTG failed to provide the required number of trains on February 7, 10, 14, 17, 18, 19, 20, 21, 24, 26, 27, and 28. The level of service delivery from RTG is so inconsistent that OC Transpo has had to introduce a new S1 service to accommodate customers.

In addition to the continuing and persistent failure to deliver the correct number of Vehicles during peak weekday service, RTG's lack of standard or effective maintenance practices appears to be increasingly affecting the service. Recent concerns regarding maintenance practices include the following, by way of example:

- On February 14, 2020, vehicle parts came loose while in service which damaged transponders on the western end of the alignment and caused service interruptions;
- On February 20, 2020, RTG operated a reduced fleet of Vehicles apparently as a result of brake faults although there was also a fire reported inside the Maintenance Storage Facility the previous evening;
- On February 22, 2020, there were three separate Vehicle failure incidents that caused delays to System Users while RTG attempted to address the issues;
- On February 26, 2020, a failure of the overhead catenary system caused the catenary wire to drop. This event required passengers of two stopped trains to be evacuated and the System suffered significant delays while passengers were forced onto support buses. This issue continues to be a known failure mode on the system to which, it appears, RTG has not corrected;
- Despite a relatively mild winter, cold temperatures required the addition of supplementary heat to the vehicle driver cabs and the switch heater performance has required the addition of significant resources to the field;
- Material availability and spare parts appears to be hampering RTG's ability to deliver the required number of trains. This issue is particularly concerning because the parts availability appears relate to both complex part failures (inductors and CVS units) as well as common parts such as smoke detectors; and
- Despite having made assurances regarding the preparedness of the maintenance team for service, standard practices such as electrical lockout procedures for vehicle roof maintenance and/or the equipment to support such practices are still being updated and other critical items such as wheel lathe operation and maintenance have not been put in place.

The City's confidence in RTG's ability to deliver the Maintenance Services has been eroded. The list above is not exhaustive and there are ongoing concerns with a number of other areas including Vehicle brake system performance, vehicle sander and vehicle sand selection, and correct operation of the guideway intrusion detection system during winter events, just to name a few.

Given these conditions, among others, the City is concerned about RTG's ability and capacity to plan and prepare for issues that will require attention during spring/summer (ultrasonic testing, continuously welded rail issues during high temperatures, vehicle HVAC performance, etc.) and is further concerned that there are other maintenance issues that are being ignored or overlooked as they have not manifested themselves with service impacts as of yet.

These failures have in no way been a consequence of a breach by the City of its obligations under the Project Agreement. Accordingly, a Default has occurred.

RTG has not lived up to its obligations to design, construct and maintain a highly reliable transit system. RTG is required to remedy these breaches, pursuant to Section 45.1(a)(v)(A), by immediately commencing and diligently continuing to remedy its breaches, mitigating any adverse effects on the availability of the System to System Users, providing a reasonable plan and schedule for remedying the breach within 5 Business Days of receiving notice, and performing its obligations to achieve its plan and schedule within the time for the performance of its obligations under that plan and schedule.

3) Misrepresentation

Pursuant to s. 45.1(a)(iv), a Default occurs in circumstances where RTG has made a representation or warranty under the Project Agreement that was false or misleading when it was made and that, among other things, has or will have a material adverse effect on the availability of the System to System Users, or that may compromise the City's reputation or integrity or the nature of the City or the Project.

Pursuant to s. 5.1(a)(iv) RTG represented that it had extensive experience and was knowledgeable in relation to the maintenance of LRT projects and that it possessed the requisite skill and capacity to perform the activities within the Project Scope in a timely and professional manner as set out in the Project Agreement.

Revenue Service Availability was to be achieved by May 24, 2018 pursuant to the Project Agreement. It was not achieved until August 30, 2019, over a year late. When, in August 2019, RTG insisted that it had achieved Revenue Service Availability, it represented that the System as a whole was ready to meet the reliability standards set out in the Project Agreement. Clearly it was not.

Based on the well documented inability of RTG to meet the reliability thresholds in the Project Agreement, the City has been deprived of the result it contracted to obtain. It is clear to the City that RTG materially misrepresented its experience, knowledge, skill and capacity under Section 5.1(a)(iv) of the Project Agreement. As a result, and as described to RTG in the City's remedial rights letters, the availability of the System to System Users and the reputation of the City and Project have been compromised (see, for example, the remedial rights letters on December 18, 2019, January 9, 2020 and January 24, 2020). The City's January 24, 2020 letter (OTT-RTG-LET-0294) specifically references the compromise to the City's reputation and negative public perception of the City and the Project.

Following receipt of the remedial rights letters, including its letter of January 24, 2020 (OTT-RTG-LET-0294), RTG has failed to make any measurable improvements in the performance of the Maintenance Services.

Pursuant to Section 45.4 of the Project Agreement, RTG is required to provide, within 5 Business Days, a reasonable plan and schedule to diligently remedy, in the event that RTG is capable of remedying, this Default. The plan and schedule are to specify, in reasonable detail, the manner in, and the latest date by which, the Defaults are proposed to be remedied.

Plan and Schedule to Remedy Defaults

Given the nature and extent of the Defaults described above and given the City's desire that RTG create a detailed and achievable plan and schedule that addresses RTG's collective failures and breaches of its obligations under the Project Agreement, the City is prepared to provide RTG until **March 31, 2020** to deliver its plan and schedule to remedy all of its Defaults as described herein. The City will then evaluate that plan and schedule and consider its next steps.

As well, pursuant to Section 45.6 the City puts RTG on notice that the City will require RTG to reimburse the City for all reasonable costs (including all legal and professional fees) properly incurred by the City in exercising its rights under Section 45. The City will take commercially reasonable steps to mitigate such costs.

The City reserves all of its rights under the Project Agreement and at law.

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc

Lorne Gray, OTC
Troy Charter, OCT

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This is Exhibit "K" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.

Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

Rideau Transit Group
805 Belfast Road
Ottawa, ON K1G 0Z4

31 March 2020

City of Ottawa
110 Laurier Avenue West
Ottawa, ON K1P 1J1

Our Reference:	RTG-OTT-00-0-LET-0925
City Reference:	OTT-RTG-LET-0307 OTT-RTG-LET-0308
Project Agreement Reference:	Section 32.3

Attention: **Michael Morgan**
Director, Rail Construction Program

Subject: **Ottawa LRT Project – Project Agreement, dated February 12, 2013 ("Project Agreement")[1], between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG")**

OTT-RTG-LET-0308 – Section 45.1 – Further Requirements Regarding OTT-RTG-LET-0307 and Section 32.3 Rectification Notice ("City Letter")

RTG-OTT-00-0-LET-0922 ("RTG March 17 Letter")

RTG-OTT-00-0-LET-0924 ("RTG March 24 Letter")

RTG Plan

Dear Mr. Morgan:

Please find attached RTG's plan (the "**Plan**") addressing the matters contained in the City Letter. RTG has worked tirelessly over the last 3 weeks to develop the Plan with significant input from major subcontractors and suppliers, as well as from the City.

RTG reiterates that it strongly denies any allegation in the City Letter that a Project Co Event of Default has occurred. Despite this, and without prejudice to its position, RTG embraced the opportunity to develop the Plan and welcomes the opportunity to execute the Plan in concert with the City to provide the commuters of Ottawa with a high quality of service.

[1] All capitalized terms in this letter not defined herein have the meanings ascribed to them in the Project Agreement

The Plan reflects the best efforts of RTG and its subcontractors to address the alleged issues outlined in the City Letter. As well, it incorporates a unified approach to identifying, remedying and monitoring such issues, as well as any new ones which may arise. Please find enclosed an Executive Summary of the Plan, which includes a brief summary of our approach to the plan schedule and each of the matters addressed in the Plan.

As requested, RTG has made every effort to be comprehensive and definitive with its solutions. However, due to the significance and unpredictability of the recent COVID-19 pandemic, which was developing and worsening as we created the Plan, we were unable to commit to specific commencement dates for certain actions and tasks. As such we have concluded that the implementation of the Plan will be adversely impacted by COVID-19, as was anticipated and previously notified to the City in the RTG March 17 Letter and the RTG March 24 Letter.

Nevertheless, we reiterate that RTG remains fully committed to using commercially reasonable efforts to mitigate such impacts and to use every opportunity to advance the implementation of the Plan in the most efficient and effective manner, achieving desired outcomes as soon as practicable. We look forward to working collaboratively with the City to implement the Plan.

The purpose of this letter is to (i) advise the City of these adverse impacts, (ii) describe the key impacts as they are known to RTG today and (iii) describe the key mitigation efforts that RTG and its subcontractors are undertaking to minimize the impacts. This letter is being delivered in an effort to be transparent with the City. The impacts noted in this letter are non-exhaustive and RTG anticipates that additional COVID-19 impacts on the implementation of the Plan will arise in the future.

As noted directly in the Plan, due to the significance and unpredictability of the COVID-19 pandemic, the total impacts are not known at this time. Given this, and the specific impacts noted below, the most significant consequence of COVID-19 on the implementation of the Plan is that we are not in a position to commit to specific start dates for certain elements of the Plan. The schedules provided in the Plan are valid durations; however, a fixed schedule can only be determined once the delays attributed to COVID-19 are determined.

Beyond schedule uncertainty, the two biggest COVID-19 impacts that are known today are supply chain issues and human resourcing issues.

In terms of supply chain impacts, Alstom suppliers are spread throughout the world, primarily in Europe (France, Italy and Germany), with others located in China, the United States, the Philippines and Morocco. These supply chains have been severely disrupted. Many of these key vehicle supply plants have completely shut down indefinitely due to COVID-19, and others are currently operating at a reduced production level.

In addition to supplier production closures, some of Alstom's own key plants have closed indefinitely due to the pandemic, including the car manufacturing plant in Brampton, Ontario and the bogie manufacturing plant in Sorel-Tracy, Quebec. These supply chain disruptions will have an adverse impact on our ability to address some of the elements of the Plan within a definitive timeline.

We also note that most of the required suppliers which are integral to the implementation of the Plan are named original equipment manufacturers, such that alternate supply solutions are not

a viable option. To the extent that alternative suppliers for certain components could be sourced, the time required to go through an engineering alternate component solution that involves re-engineering, prototype testing, validation and implementation is extensive.
The delivery of supplies is also being adversely impacted by restrictions on international flights. RTG and its subcontractors are attempting to mitigate this by seeking alternate delivery methods, principally by ship. However, ports are backlogged due to higher demand for shipping services, which has resulted in considerably longer delivery times.

In terms of human resourcing issues, the primary impacts include reduced availability of on-site expertise, travel restrictions imposed by Canada and other countries and the challenge of complying with health and safety directions from public health authorities, including social distancing and self-isolation.

Restrictions on both domestic and international travel imposed by governments will have an adverse impact on the ability of RTG and its subcontractors to bring key personnel and experts to Ottawa for work that must be performed on site. Even if an individual was able to come to Ottawa from outside of Canada despite the travel restrictions that have been imposed, they may be required to self-isolate for a minimum of 14 days. The impact of these impediments to getting subcontractors to the site to deliver key elements of the Plan is significant.

RTG and subcontractor employees who have COVID-19 symptoms must self-isolate and cannot attend the work site. If any employee tests positive for COVID-19, that employee would not be available to work on the project for a sustained period of time. In addition, areas in which that employee worked would need to be shut down temporarily and all employees who were in contact with that employee would be required to self-isolate for a minimum of 14 days. While RTG has adhered to best practices and has prioritized the health and safety of all RTG and subcontractor staff and the public, any positive tests of RTG or subcontractor staff could have significant adverse impacts.

Social distancing requirements also have a negative impact on RTG team interfacing and interactions throughout the Project site. We have already implemented rotational staffing plans to support social distancing. These impacts cannot be overstated, as the successful performance of our obligations often requires teamwork and in-person coordination. For example, repairs to be executed by two or more individuals working in close proximity are suddenly challenging and may require new approaches.

As the COVID-19 pandemic worsens, we are growing concerned about employee stress and anxiety, particularly for those employees who are required to work on site and interact with other workers. There is an increased risk of absenteeism due to stress, the display of any symptoms or pending the results of any COVID-19 tests (which has affected at 3 employees to date).

All of these restrictions have a cumulative effect of impeding our preferred "all hands on deck" approach to implementing the Plan.

To help mitigate some of these human resourcing impacts, RTG has initiated the Pandemic Contingency and Continuity Plan, which is currently at LEVEL 3. This plan, which is aligned with Ottawa Public Health, Public Health Ontario, and Center for Disease Control (CDC) guidelines, incudes the rotational staffing plan, critical front-line staff rotations, YCC lock down procedures, MSF visitation restrictions and MSF area restrictions and closures. The plan also

addresses the enhanced cleaning programs requested by the City for the MSF, the Vehicles and the Stations.

As notified to the City in the RTG March 24 Letter, the COVID-19 crisis is impacting our ability to perform our Project Agreement obligations generally, and is not limited to the implementation of the Plan. RTG acknowledges its obligation to continue to take commercially reasonable steps to mitigate the potential adverse effects of the impact of COVID-19 on the implementation of the Plan. Please be assured that RTG will attempt every reasonable effort to so mitigate.

Further to our recent correspondence, we acknowledge that the reduction of the in-service fleet recently announced by the City due to COVID-19 will provide RTG with an increased window to perform vehicle maintenance. We will of course take all appropriate steps to maximize any opportunity the reduced service level presents, and the Plan reflects this opportunity and assumes a sustained period with the lower service level.

We will provide you with further details regarding COVID-19 impacts as we continue to monitor and evaluate the various matters identified in this letter and as other impacts emerge. We look forward to working reasonably and cooperatively with the City to both implement the Plan and to address any actual or potential impacts of COVID-19 on the implementation of the Plan.

This documentation will be posted to e-Builder for future reference and retention.

Should you have any questions, concerns, or require additional information please do not hesitate to contact us.

Regards,



Peter Lauch, P. Eng.
CEO
Rideau Transit Group General Partnership

cc.:	OTC:	Gary Craig, Lorne Gray, Troy Charter, and Richard Holder
	RTG:	Maxime Olivier
	OLRT-C:	Matthew Slade and Document Control
	RTM:	James Messel and Document Control

This is Exhibit "L" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

April 07, 2020

Mr. Peter Lauch, CEO
Rideau Transit Group GP
1545 Carling Avenue
Suite 406
Ottawa, ON K1Z 8P9

Your reference: RTG-OTT-00-0-LET-0925

Our reference: OTT-RTG-LET-0543

Dear Mr. Lauch:

RE: Ottawa LRT Project – Project Agreement[1] dated February 12, 2013 ("PA") between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG")

OTT-RTG-LET-0307 – s. 45.1- Notice of Project Co Event of Default and OTT-RTG-LET-0308 Section 45.1 – Further Requirements and Section 32.3 Rectification Notice ("City Letters")

The City writes in response to RTG's letter of March 31, 2020, as referenced above (the "**RTG Letter**") enclosing RTG's plan and schedule addressing the matters contained in the City Letters referenced above (the "**Plan**").

The City would like to express its appreciation of RTG's efforts in preparing its Plan within the timeline requested. The Plan contains considerable detail and it is clear that RTG made good use of the additional time allowed by the City, beyond the 5 Business Day timeline that is set out in the Project Agreement, to prepare the Plan and that significant effort went into the preparation of it.

The City also appreciates that RTG has committed to executing the Plan in concert with the City, as noted in the RTG Letter, to provide Ottawa commuters with a high level of service. The City's goal is to ensure that Ottawa commuters have reliable and consistent service.

We understand that at the same time RTG was preparing this Plan, the City of Ottawa and RTG were dealing with issues associated with the COVID-19 pandemic. As noted in previous correspondence, the City and RTG share an interest in ensuring the health and safety of their respective workers and residents and complying with their respective legal obligations and other contractual and statutory health and safety obligations. As well, and as stated previously, the City acknowledges that the implementation of the Plan may be affected as a result of COVID-19 given health and safety concerns.

[1] All capitalized terms not defined herein shall bear their meanings as defined in the Project Agreement or the City Letters.

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Unfortunately, as summarized below and noted in more detail in Appendix A, based on its review of the Plan, the City is not able, at this juncture, to accept the Plan. The City is not able to notify RTG that it accepts the "longer period" beyond that articulated in the Project Agreement[2] for RTG to implement its Plan.

In addition, the Plan, as presented, does not satisfy RTG's obligations pursuant to Section 32.3 of the Project Agreement.

The City reaches these decisions based on its objective and detailed review of RTG's Plan, as described below and in Appendix A.

Schedule

The schedule information that RTG has provided is not adequate. In relation to the Remedy/Rectification Activity Schedules, many of these Schedules extend into 2021 and some into 2022 without clear supporting rationale or justification for these timelines. While the City appreciates that some of the problems RTG is experiencing will take time to address, it is not clear to the City that with a higher level of resources applied, that these issues could be resolved more quickly. It is RTG that is in the best position to determine which of these activities could be advanced more quickly and what the effect on service would be.

A review of the Plan does not *collectively* present a picture of when service will improve such that (i) there will not be a material adverse impact on the availability of the System to System Users; (ii) the rate at which new Failure Points are accruing will be reduced, such that contractual thresholds are no longer exceeded; and (iii) the City's reputation and the reputation of the Project are no longer compromised. In summary, from a review of the Plan, it is not clear to the City exactly when RTG's Defaults will be remedied nor is it clear how each of the individual activities contribute to the overall required performance improvement. The City requires clarification in this regard.

While RTG is best placed to manage its obligations under the Project Agreement, the City's view is that service must be reliable as soon as possible. We expect that all of these actions will continue and that a proper Plan to obtain this result will be swiftly furnished to the City. As is noted below, we ask that you submit a revised Plan within 10 Business Days (i.e. by April 24, 2020).

A review of the Plan indicates that the schedule information that RTG has provided is not adequate. A review of the RTG Plan Master Schedule (the "**Master Schedule**") shows many activities extending into 2021 and a number of activities extending into 2022 without clear

[2] See for example the 30-day period referenced in s. 45.4(c)) and the 60 day period referenced in s. 45.1(a)(v) of the Project Agreement

supporting rationale or justification for these timelines. This is simply not an acceptable timeline. The City, and commuters in Ottawa, should not have to wait for another year or two before the current problems are resolved. While the City appreciates that some of the problems RTG is experiencing will take some time to address, it is clear to the City that with a higher level of resources applied that these issues could be resolved far more quickly.

Also, from a review of the Schedules provided, it is not clear how the potential consequences of COVID-19 have been taken into account. The RTG Letter indicates that RTG is unable to commit to "specific commencement dates for certain actions and tasks" and concludes that the implementation of the Plan will be adversely affected by COVID-19 but in the RTG Letter and in the body of the Plan, these potential impacts are not articulated in adequate detail in relation to specific activities, to the extent known at present and to the extent these impacts can be forecasted. Furthermore, it would be helpful for RTG to provide, on a weekly basis, a summary and status of known COVID-19 impacts to resources, supply chain, and other issues in order to transparently report on these issues such that the City can report out appropriately on these matters. This level of detail and transparency is necessary to assess RTG's plan moving forward.

The Master Schedule includes a note that states that total impacts are not known at this time and that RTG is not "in a position to commit to specific start dates." Therefore, it is not clear whether and to what extent COVID-19 impacts have been taken into account. It is not good enough to identify COVID-19 as a general impact to RTG's Plan, but rather RTG needs to explain how it will carry out the Plan and rectification program in light of COVID-19. Health and safety are paramount for both the City and RTG, the consequences of the pandemic are reality now for all of us, it is incumbent upon both parties to figure out how to move things forward while following public health guidelines and provincial and federal law. The City requests that RTG provide at least two versions of the Master Schedule that articulate (ii) a non-COVID-19 scenario; and (ii) one or more alternative scenarios that show specific COVID-19 impacts.

Resources

RTG refers to its approach as an "all hands on deck" approach (which it describes as being impeded by COVID-19), but in reviewing the Plan, the City does not see an articulation of this step change in bringing the necessary leadership skills and increased resources to bear to solve the current problems.

The City expected to see appropriate changes in staffing so that RTG could demonstrate that it has brought the necessary expertise and qualified resources to this Project to lead the process of ensuring the successful implementation of the Plan. As well, a corresponding plan that details additional equipment requirements such as additional hi-rail equipment or other specialized rail borne equipment would demonstrate a greater level of detailed planning. This will entail more effort more quickly aimed at dealing with the range of flaws and issues that have been experienced during the Maintenance Term with the infrastructure RTG has designed and constructed. It will also involve the filling of key leadership positions with the caliber of experienced and skill individuals required in the PA. The Plan is virtually silent on these key aspects of setting the operation right and providing reliability of service.

In relation to resourcing generally, the Plan contains few references to the level of staffing increases. RTG notes that Alstom increased its staffing from 105 to 170 since September 2019, but based on RTG's performance, this has not resulted in adequate improvement. The City wants to understand exactly what RTG intends to do about staffing levels and its general reference to improving Manager and Supervisor level staffing is insufficient.

The notion of a merger of OLRTC resources under RTG as "one unified team" is an interesting one, but the Plan advises only that RTG is reviewing this as an option with no detail provided as to whether and how this will be implemented. We note that the City is entitled to, but has not to date received, this sort of integrated approach from the various subcomponents of RTG. Many of the problems currently being encountered relate to performance of the Design and Construction Works and the City appreciates that RTG will work to remedy these issues, but more detail is required as to how RTG intends to apply and deploy the necessary resources.

The City requires a resource loaded schedule which details requirements for specialists/experts, vehicle technicians, power technicians and other staffing resources and that is based on the work to be performed in the Plan, reflecting current backlogs, and reflecting that new and emerging issues will arise over the course of the Plan's delivery.

Remediation/Rectification of Specific Issues

In addition to the above and in general, the City is concerned that the Plan does not describe in a holistic way how RTG will achieve a reliable service. The details of particular elements of the Plan are addressed in Appendix A, but the City would highlight the following areas of key concern (noting that the list below is not exhaustive):

a) **CVS (auxiliary power) Failures**

The availability of CVS units is a problem that has been critically hampering RTG's ability to meet service level requirements. This failure has eroded all of RTG's flexibility in managing the fleet and has likely contributed in a significant way to the poor performance of the System. As we trust you are aware, there is a critical need for RTG to identify and resolve the root cause of these failures, repair the backlog of failed units, and restore the fleet in a timely manner. For the CVS units, the Plan is not clear in identifying when or how this issue will be resolved.

b) **OCS Wire Parafil Failures**

The failure mode where the OCS wire is drooping/failing is highly concerning given that this is a known issue. The Plan identifies some of the potential failure modes but does not

identify a clear timeline for identifying a definitive root cause. The Plan identifies some possible mitigations but is not definitive on which mitigations will be implemented and by when. Further, the extent and scope of the replacements is unclear such it is difficult to assess if the timeline is appropriate. At present, it appears that there is still a risk of these failures and we would expect RTG to mobilize multiple hi-rail crews to be able to expedite replacements and expedite inspections.

c) Pantograph Wear

Similar to the Parafil failures, the root cause for abnormal pantograph wear (grooving) is only partially identified, no mitigations appear to be in place, and the extent of permanent repairs required are not defined in order to be able to assess the schedule and timing of the work. We would expect RTG to mobilize multiple hi-rail crews to be able to expedite replacements and expedite inspections.

d) Switch Heaters

The current solutions will not improve the performance in a meaningful way as it does not appear to increase the heating output. We have experienced two winters of service where poor performance of the heaters along with assigned field staff have resulted in numerous switch outages (Blair switches: 11 events in 2019-2020 winter alone despite a mild winter). The strategy of low power heaters combined with field staff has not worked and has clearly undermined the overall performance of the system. The City maintains its position that the system is not compliant with the Project Agreement.

A full location-based analysis of the performance of the heaters needs to be undertaken to identify and prioritized critical locations for upgrades. Limitations with existing cabling and existing units is not a reasonable rationale for leaving the units as-is. The plan needs to clearly identify root cause through analysis, identify solutions for increasing the heating capacity, detail the scope and extents of the changes, and provide a detailed schedule for implementation.

e) Vehicle HVAC

The City notes that RTG has recognized that the system is not compliant with the Project Agreement. Requiring the use of supplementary heaters and fans for another cycle of seasons is not appropriate. If capacity of cooling and heating is insufficient and the current design is not compliant as stated, a more in-depth plan is appropriate. This plan will likely

require confirmation of the available kW capacity available and identifying the upgrades required to increase capacity of the system.

f) IMIRS

The City had provided an independent report prepared by Deloitte (the "Deloitte Report") which summarized a view of all of RTG's System Infrastructure as it related to the Payment Mechanism and the corresponding data and reporting requirements documented in the Output Specifications, including the Information Management Incident Reporting System ("IMIRS"). The City's view is that RTG has selectively chosen deficiencies and non-conformances identified in the Deloitte Report and that the Plan is incomplete in addressing the report's findings. The City requests that RTG provide a detailed response to each deficiency identified in the Deloitte report to indicate that RTG either: i) agrees with the finding and provides a detailed action plan to rectify; or ii) does not agree with the finding and describes the reasons why.

g) Guideway Intrusion Detection System

There is no information presented root cause, failure frequency, frequency of GIDS alert / false alerts, no detailed testing plan, no specific performance target for false positives, and no linkage to the overall performance of the system. We are concerned that the root cause is only partially identified, that a pattern of behavior exists wherein the final solution is always one more software upgrade or one more operational restriction and that additional maintenance has generally not been an effective solution. It is unclear to what extent this system is hindering overall system performance and to what extent these changes will reduce the nuisance alarms and unnecessary vehicle emergency braking.

h) VOBC

In its Plan, the root cause is only partially identified by RTG. The effectiveness of the proposed solution needs to be evaluated

i) Sanding

In its Plan, the root cause is only partially identified by RTG. The effectiveness of the proposed solution needs to be evaluated.

j) **Air Compressor**

In its Plan, the root cause is only partially identified by RTG. No timeline is given for the repair.

k) **Spare Parts**

A detailed examination and review of the current and forecasted RAMS needs to be performed to adequately determine inventory levels of necessary parts and materials. This would need to be an ongoing, long term activity which takes into consideration reliability of the fleet and required performance levels. Vehicles have been held out of service for items as simple as smoke detectors and now for units as complicated as auxiliary power units – a material supply issue should not be causing major fleet outages.

l) **Yard operations**

The root cause is not entirely clear and RTG's over-reliance on training to resolve issues is unacceptable. RTG has not presented any immediate technical solutions.

m) **Hurdman Track Noise**

In its Plan, RTG has not identified the root cause. Mitigations are not in place and permanent repairs are not identified.

n) **Track Neutral**

Ongoing track interventions are required and RTG's Plan does not address required work.

o) **Winter Operations**

Despite 2 years of operation in winter, RTM's adverse weather protocol plan is still under development - this is unacceptable. Performance failures during winter have added significantly to the reliability issues faced by RTG and have eroded the reputation of the project and project teams. An aggressive overarching strategy, likely with a dedicated and fully resourced team, needs to be in place to bring operational, technical, training, and maintenance issues to a resolution so that the light rail service can meet expectations during winter months.

Conclusion

The City is open to engaging in a collaborative dialogue with RTG as it addresses the above issues and those articulated in Appendix A so that a revised Plan submitted by RTG can be accepted by the City.

The City requires that RTG submit a revised Plan within 10 Business Days (i.e. by April 24, 2020).

In the interim, RTG is expected to continue to perform its obligations under the PA, to work on rectifying its Defaults, and to comply with the current guidelines of government and health authorities in respect of COVID-19.

The City reserves all of its rights under the Project Agreement and at law.

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc.

Lorne Gray, OTC
Troy Charter, OC

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This is Exhibit "M" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

Rideau Transit Group
805 Belfast Road
Ottawa, ON K1G 0Z4

25 April 2020

Delivered via Email

City of Ottawa
110 Laurier Avenue West
Ottawa, ON K1P 1J1

Our Reference:	RTG-OTT-00-0-LET-0938
City Reference:	OTT-RTG-LET-0543
Project Agreement Reference:	N/A

Attention: **Michael Morgan**
Director, Rail Construction Program

Subject: **RTG Revised Plan**

Ottawa LRT Project – Project Agreement, dated February 12, 2013 ("Project Agreement")[1], between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG")

OTT-RTG-LET-0543 ("City April 7 Letter")

OTT-RTG-RLET-0545 ("City April 20 Letter")

RTG-OTT-00-0-LET-0925 ("RTG March 31 Letter")

RTG Plan dated March 31 (the "Original Plan")

Dear Mr. Morgan:

Please find attached RTG's updated plan (the "**Plan**") addressing the comments to the Original Plan contained in the City April 7 Letter. In RTG's view, the Original Plan was robust and responsive to the requests of the City in the City letters with reference numbers OTT-RTG-LET-0307 and OTT-RTG-LET-0308. Nonetheless, we have further refined and updated the Original Plan to address the new and additional requests contained in the City April 7 Letter. The Plan contains further significant input from major subcontractors and suppliers and we believe that it

[1] All capitalized terms in this letter not defined herein have the meanings ascribed to them in the Project Agreement

reflects a comprehensive and holistic approach to achieving the objectives of the City, which we share. We look forward to an open, collaborative dialogue with the City regarding the implementation of the Plan.

We share the City's goal of ensuring that Ottawa commuters have reliable and consistent service. We refer you to the master schedule included in the Plan, which reflects our good faith estimates of when each individual item within the Plan will be addressed. The system is complex and as such requires a specific approach (including scheduling) to individual items contained in the Plan. We have provided timeline rationales and mitigation strategies for each item in the Plan, and we believe that the Plan collectively demonstrates how increased reliability will be achieved.

RTG was surprised and disappointed by the negative tone in the City April 20 Letter. We strongly reject the accusation in the letter that the Original Plan was deeply flawed and lacked a sense of urgency. Those statements directly contradict statements made by the City itself in the City April 7 Letter, including that the City appreciated RTG's significant efforts in preparing the Original Plan and commended RTG for the considerable detail contained in that the Original Plan. RTG's ability to meet the timing expectations for the Plan imposed by the City while at the same time dealing with the impacts of COVID-19 clearly demonstrates our sense of urgency and our commitment to the Project.

The City April 20 Letter also stated that the System and the service must be "reliable" by no later than August 4, 2020. The letter does not state what the City means by "reliable". Further, no such date was included in the City letters requesting the Original Plan nor in the City April 7 Letter. Imposing this date days before the submission date of the Plan is not fair or reasonable. We acknowledge and appreciate the importance of increased performance reliability. RTG is fully committed to implementing the Plan and achieving increasing system-wide reliability based on the timelines included in the Plan. We are working as fast as possible, and doing so in light of the very challenging circumstances presented by COVID-19.

As detailed in the RTG March 31 Letter and acknowledged by the City in the City April 7 Letter, COVID-19 is and will have a significant impact on the Project and the implementation of the Plan. Unfortunately, given the uncertainty over the duration of social distancing and other measures imposed by governments and the corresponding uncertainty over subcontractor and expert availability, material and parts supply chains, human resourcing and staffing, among other impacts, we do not know exactly how COVID-19 will affect the implementation of the Plan.

However, it is clear that COVID-19 is and will continue to have significant impacts on the Project that both RTG and the City will need to address, and those impacts extend well beyond just health and safety matters. RTG is committed to keeping the City informed on a going forward basis of impacts of COVID-19 on the Project and on the implementation of the Plan. We also acknowledge our obligation to continue to take commercially reasonable steps to mitigate the potential adverse effects of the impact of COVID-19 on the implementation of the Plan and reaffirm our commitment to do so.

Please note that our Plan's schedule is based on full-service hours and does not reflect any reduced train service hours or enhanced access to the system. In light of the City's recent offer, RTG wishes to highlight its interest in continuing discussions with the City to explore ways to advance and accelerate some of the items in the Plan by having targeted enhanced access to the system without train service.

RTG has previously stated our position in respect of the City's renewed allegations in the City April 20 Letter regarding the delay in achieving Substantial Completion and Revenue Service and that RTG is in Default, and we simply reiterate here that we dispute those allegations and that good faith Disputes are underway.

We look forward to working cooperatively with the City to both implement the Plan and to address any actual or potential impacts of COVID-19 on the implementation of the Plan.

Regards,

Peter Lauch, P. Eng.
CEO
Rideau Transit Group General Partnership

cc.:	City:	Gary Craig, Lorne Gray, Troy Charter, and Richard Holder
	RTG:	Maxime Olivier
	OLRT-C:	Matthew Slade
	RTM:	James Messel

Attachments:

- Letter Response - Technical (24Apr2020)
- Confederation Line Major Issue Plan 20200424
- RTG Plan 31March2020 R1 24Apr20
- 20200424-OLRT-REMEDY_RECTIFICATION DRAFT MASTER SCHEDULE Mar.31-2020_Rev.4
- IMIRS Performance Report by Deloitte - RTM Response - Apr22

This is Exhibit "N" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

May 4, 2020

Mr. Peter Lauch, CEO
Rideau Transit Group GP
1545 Carling Avenue
Suite 406
Ottawa, ON K1Z 8P9

Your reference: RTG-OTT-00-0-LET-0938

Our reference: OTT-RTG-RLET-0547

Dear Mr. Lauch:

RE: Ottawa LRT Project – Project Agreement[1] dated February 12, 2013 ("Project Agreement") between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG")

OTT-RTG-LET-0307 (March 10, 2020) – s. 45.1- Notice of Project Co Event(s) of Default and OTT-RTG-LET-0308 (March 11, 2020), OTT-RTG-RLET-0538 (March 23, 2020), OTT-RTG-LET-0543 (April 7, 2020) and OTT-RTG-RLET-0545 (April 20, 2020) ("City Letters")

The City writes further to the City Letters and in response to RTG's letter of April 25, 2020 (RTG-OTT-00-0-LET-0938) (the "**RTG Letter**") enclosing RTG's revised plan and schedule (the "**Revised Plan**").

The City disagrees that its April 7, 2020 letter contained "new and additional requests." Rather, the letter identified significant flaws and gaps in the plan and schedule provided by RTG on March 31, 2020 (the "**Original Plan**"). As you are aware, it is RTG's clear contractual obligation to put forward a reasonable plan and schedule for diligently remedying any Project Co Events of Default. The Original Plan did not meet that requirement in respect of the Project Co Events of Default outlined in the City's letter of March 10, 2020 (the "**Defaults**"), nor unfortunately does the Revised Plan.

The Project Agreement provides that RTG is to remedy its Defaults within 30 or 60 days from the Notice of Default and provides for no remedy period in respect of a Failure Points default[2]. The City has reasonably considered a longer period of time to remedy the Defaults, and has provided an opportunity to remedy the Failure Points Default, in its assessment of the Original Plan and the Revised Plan. However, as noted in its April 7, 2020 letter, the City had, and still has, grave concerns about RTG's level of effort and approach to resolving these Defaults. The City does understand and acknowledge that that certain remedial actions may extend beyond August 4, 2020. However, it is expected that the dominant causes of the ongoing unreliability, and high level

[1] All capitalized terms not defined herein shall bear their meanings as defined in the Project Agreement or the City Letters.
[2] 30 days as set out at s. 45.4(a) or 60 days as set out at s. 45.1(a)(v) and s. 45.1(a) (x)-(xii) are not referenced in s. 45.4(a)

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of failures will be at least mitigated to the point where the service meets the level or reliability required in the Project Agreement, as described below.

It is troubling that RTG asserts that it is not clear what the term "reliable" means. The City requires the level of reliability set out in the Project Agreement, the level of reliability that RTG assured the City it was ready to deliver at Substantial Completion and Revenue Service Availability. The present Defaults will not be cured until the System can operate without 1) Failure Points amassing at the thresholds articulated in respect of the Warning Notice and Default thresholds; and 2) frequent serious breakdowns and system events that affect customers. Specifically, as noted in the City's April 7, 2020 letter, the City expects that:

(i) there is no longer a material adverse impact on the availability of the System to System Users;
(ii) the rate at which new Failure Points are accruing will be reduced, such that the contractual thresholds are no longer exceeded; and
(iii) the City's reputation and the reputation of the Project are no longer compromised.

Unfortunately, even the Revised Plan does not provide a date indicating when these Defaults will be remedied, nor does it provide the City with confidence that RTG is capable of remedying these Defaults by a reasonable date. The City's suggestion of August 4, 2020 for achieving reliability of the System is certainly reasonable given that is almost five months following delivery of the Notice of Default. It is also over a year after Substantial Completion and nearly a year after RTG claimed the ability to provide a reliable service at Revenue Service Availability. Requiring that the System be functioning reliably as the City approaches the first anniversary of its opening is not only reasonable but is also a considerable concession to give RTG additional time to rectify the Defaults. In this regard, RTG is expected to achieve reliability of the System by August 4, 2020, and this reliability needs to be demonstrated by RTG achieving the following minimum requirements for a period of six months following August 4, 2020:

a) the accumulation of Failure Points remains below the Event of Default thresholds set out in the Project Agreement; and
b) the accumulation of Failure Points falls below the Warning Notice threshold for each Contract Month from six months following August 2020.

In addition, and in relation to the reputation issue, RTG's rapid accumulation of Failure Points stemming from a high frequency of System Events has contributed significantly to the erosion of the City and the Project's reputation. The poor performance during winter months and the particularly abysmal performance of January and February of 2020 cannot be repeated and should be a clear indicator to RTG of the failings of the System and its failures to perform in accordance with the requirements of the Project Agreement. Contrary to RTG's assertions, the poor performance of the System during this period was not isolated to Vehicles. The poor performance is also linked to infrastructure and integration issues. RTG needs to demonstrate a clear commitment to a step change in performance, including winter performance, and clear commitment to undertake the changes that are necessary to remedy the Defaults and prevent future Project Co Events of Default. There can be no good faith assertion that RTG is not in default and we intend to pursue confirmation of this in short order.

The City appreciates that the effects of COVID-19 create uncertainty in relation to availability of resources and supply chain issues. The City suggested in our letter of April 7, 2020 that RTG provide two versions of the master schedule that articulate a (i) non-COVID scenario; and (ii) one or more alternative scenarios that show specific COVID impacts. Instead, the City notes that RTG has not developed its analysis of the effects of COVID-19 and that the same comment appears that was found in the Original Plan which is that RTG is "not in a position to commit to specific start dates." This is not an adequate response as it is necessary to determine how the Revised Plan has been and will be advanced during the pandemic as noted in the City's April 7, 2020 letter. It should be noted that the City has stepped down service to provide RTG with larger maintenance windows and has stopped weekend service altogether where RTG has shown it is ready to take advantage of longer shutdowns. Unfortunately, RTG's efforts continue to be disappointing and there appears to be no willingness to deploy the required resources necessary to remedy the situation with urgency.

Based on the foregoing and for the reasons set out in relation to the specific items reviewed in Schedule A, the City is still unable to accept RTG's Revised Plan. Without limiting the generality of the foregoing, the City highlights the following issues with the Revised Plan that cause considerable concern:

- An integrated reliability growth plan for the complete system including a plan for train kilometer availability improvement needs to be implemented and updated on an ongoing basis. An exacting continuous improvement program will be required to drive a sustained improvement in performance and to properly address new emerging issues.
- The details and clarity provided on additional resourcing are a start; however, absent a detailed time-based analysis of the Maintenance Services requirements of the System including the backlog of deficiencies, modifications, repairs and reliability improvement programs, it is difficult to assess if the resource levels proposed by RTG are sufficient to achieve swift rectification to restore the required level of reliability.

The City remains open to engaging in a collaborative dialogue with RTG on technical issues as it addresses the above issues and those articulated in Schedule A so that a revised Plan submitted by RTG can be accepted by the City, but such dialogue does not constitute direction by the City in relation to the Plan and does not detract from RTG's obligation to continue to advance its holistic Plan. The City does not propose to continue provide additional rounds of forbearance, assessing a stream of plans which do not show a clear and prompt rectification of the situation and a timeline for achieving reliability.

At this point it appears that RTG is choosing not to respond, or is unable to respond, with a rectification plan that fully addresses the reliability failures. The Project Agreement affords RTG 5 Business Days to provide at least a clear path to curing the Defaults. The City has provided several months, opened more room for RTG to work with more maintenance time, and has been flexible in setting a reasonable time frame, beyond the 30 and 60 day time periods provided in the Project Agreement, where, with the right plan in place, it is willing to refrain from moving forward with further remedies under the Project Agreement.

The City reminds RTG that it has received a Notice of Default and the Defaults persist and have not been remedied and Project Co must comply with its resulting obligations to provide a plan and

schedule that is acceptable to the City and perform its obligations to achieve all elements of such plan and schedule. The City will continue to be open to receiving and reasonably considering the adequacy of any revised plan and schedule that RTG may offer. However, at this time given the failure of RTG to provide an acceptable plan and schedule, the City will begin to explore making other arrangements to establish the reliability it is entitled to under the Project Agreement including taking such steps as the City considers appropriate, either itself or by engaging others. We urge RTG to now step up with the appropriate response or the City will be forced to secure alternate arrangements, recovering the costs of doing so from RTG and its security in due course.

In the interim, RTG is required to implement its Revised Plan and to continue to perform its obligations under the Project Agreement.

The City reserves all of its rights under the Project Agreement and at law.

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc.

Lorne Gray, OTC
Troy Charter, OCT

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This is Exhibit "O" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

October 13, 2020

Mr. Nicolas Truchon, CEO
Rideau Transit Group GP
805 Belfast Road,
Ottawa, ON K1G 0Z4

Our reference: OTT-RTG-LET-0329

Dear Mr. Truchon:

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 (the "PA" or "Project Agreement")[1] between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG")

OTT-RT-LET-0307 (March 10, 2020) – s. 45.1 – Notice of Project Co Event(s) of Default, OTT-RTG-LET-0308 (March 22, 2020), OTT-RTG-RLET-0538 (March 23, 2020), OTT-RTG-LET-0543 (April 7, 2020), OTT-RTG-RLET-0545 (April 2020), OTT-RTG-RLET-0547 (May 4, 2020), and OTT-RTG-RLET-0552 (June 4, 2020) , OTT-RTG-LET-0323 (August 20, 2020) ("City Letters")

Status of System Reliability

The City appreciates RTG's ongoing efforts to date to attempt to remedy the Project Co Events of Default (the "**Defaults**"). Now that RTG has, as of September 8, 2020, brought 15 trains into service (during the morning Peak period) the City is writing, further to the City Letters, to confirm the City's expectations in relation to the criteria the City will be using to determine whether or not RTG has successfully remedied its Defaults. This fall and winter period will be a critical period of assessment as the City expects that RTG has had sufficient time and sufficient access[2] to the infrastructure and vehicles to implement its rectification plan such that performance improvements can be demonstrated and that the System is functioning reliably.

As you will recall and as described in the City's letter of May 4, 2020 (RLET-0547), reliability will be achieved when the following occurs:

1) There is no longer a material adverse impact on the availability of the System to System Users;
2) The rate at which new Failure Points are accruing will be reduced, such that the contractual thresholds are no longer exceeded (as discussed below); and
3) The City's reputation and the reputation of the Project are no longer compromised.

With respect to item 2, and as set out in the City's Letter OTT-RTG-RLET-0547 (May 4, 2020), RTG needs to demonstrate to the City that the following minimum standards will be achieved for a period of six consecutive months from September 8, 2020:

[1] All capitalized terms not defined herein shall bear their meanings as defined in the PA.
[2] The City approved a series of shutdowns to assist RTG in accelerating and advance works as quickly as possible.

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a) the accumulation of Failure Points remains below the Event of Default thresholds set out in Section 45.1(a)(ix) and (x) of the PA (i.e. not exceeding a total of 1300 or more Failure Points in any rolling 3 Contract Months or 1600 or more Failure Points in respect of any rolling 6 Contract Months, respectively); and

b) the accumulation of Failure Points falls below the Warning Notice threshold under Section 31.3 of the PA for **each** Contract Month (i.e. not exceeding 120 Failure Points in respect of Vehicle and System Availability Failures, 120 Failure Points in respect of Station Availability Failures or 50 Failure Points in respect of Quality Failures and Service Failures, combined).

For greater clarity in respect of this reliability assessment, should RTG fail to maintain the above noted requirements during each or any of the six consecutive months beginning September 8, 2020, the City reserves its right to proceed through the default process initiated on March 10, 2020 or alternatively, in the City's sole discretion, re-start the assessment period for a further consecutive six months or take action if in any one month the Failure Points threshold is significantly exceeded.

As well, as RTG implements its rectification plan, the City will be assessing whether it is succeeding in doing so in the context of remedying its defaults in respects of items (1) and (3) above. We note that RTG's efforts in this regard have been assisted by the fact that RTG has had significantly lower ridership and demand on the System as a result of the slow return to work in the City of Ottawa following the COVID-19 pandemic.

It is the City's hope that through these measures, and continued collaboration and cooperation, RTG can improve its service and resolve the issues with the System while providing the City with the reliable System it is entitled to receive under the PA.

The City reserves at rights at law and under the PA.

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc.

Lorne Gray, Troy Charter, City
Mario Guerra, RTM

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This is Exhibit "P" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

April 01, 2021

Mr. Nicolas Truchon, CEO
Rideau Transit Group GP
805 Belfast Road
Ottawa, ON K1Z 0Z4

Our reference: OTT-RTG-LET-0358

Dear Mr. Truchon:

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("PA") between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG");
OTT-RTG-LET-0307(March 10, 2020) (the "Notice of Default");
OTT-RTG-LET-0329 (October 13, 2020) (the "City Letter")

Extended Monitoring of RTG Default

The City writes further to its Notice of Default and the City Letter, specifically with respect to the status of the reliability of the System and the monitoring period referenced in the City Letter in respect of the assessment of RTG's attempts to remedy its defaults.
Since the City Letter was issued, RTG has failed to demonstrate an ability to meet the minimum standard of performance in respect of Warning Notice thresholds for Vehicle and System Availability Failures alone, without even taking into account other categories of Failure Points. By way of example only, in February 2021, RTG incurred the following:

- System Availability Failure Points – 260

This is above the thresholds set out in the City Letter. As a result, the monitoring period noted in the City Letter will be extended by six months starting March 1, 2021 (the "Extended Monitoring Period").

During this Extended Monitoring Period, as was the case previously, the City will measure the achievement of reliability on the following bases:

1) There is no longer a material adverse impact on the availability of the System to System Users;

2) The rate at which new Failure Points are accruing will be reduced, such that the contractual thresholds are no longer exceeded (as discussed below); and

3) The City's reputation and the reputation of the Project are no longer compromised.

To the extent that RTG disagrees with or otherwise disputes the Extended Monitoring Period, please advise, and the City will then need to consider its other options, including but not limited to, issuing a further Notice of Default given RTG's recent and ongoing performance issues.

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With respect to item 2, as set out in previous correspondence but repeated for clarity, the City requires that RTG demonstrate that the following minimum standards will be achieved:

a) the accumulation of Failure Points remains below the Event of Default thresholds set out in Section 45.1(a)(ix) and (x) of the PA (i.e. not exceeding a total of 1300 or more Failure Points in any rolling 3 Contract Months or 1600 or more Failure Points in respect of any rolling 6 Contract Months, respectively); and

b) the accumulation of Failure Points falls below the Warning Notice threshold under Section 31.3 of the PA for **each** Contract Month (i.e. not exceeding 120 Failure Points in respect of Vehicle and System Availability Failures, 120 Failure Points in respect of Station Availability Failures or 50 Failure Points in respect of Quality Failures and Service Failures, combined).

Should RTG fail to maintain the above noted requirements during the Contract Months within the Extended Monitoring Period, the City reserves its right to proceed through the default process initiated on March 10, 2020 or alternatively, in the City's sole discretion, re-start the assessment period again for a further period of six (6) Contract Months or take action if in any one month the Failure Points threshold is significantly exceeded.

Whilst we have some seen improvements from RTG's rectification plan, the City continues to be flummoxed by RTG's inability to meet the basic obligations for availability of the System and its related reliability obligations. A sample of key events and availability over the last several months is as follows:

- As of end of February 2021, the condition of the Vehicle fleet was in varying states of disrepair including one Vehicle, LRV 07, that has been out of service since September 13, 2020 and just recently returned to service on March 21, 2021. and another which has been out of service since November 18, 2020;
- Systematic technical issues persist affecting fleet availability including on February 26, 2021 where nine (9) Vehicles were out of service due to an APS & battery charger issue.
- Fleet availability issues continued with numerous wheel flats that required wheel truing and reliability of the wheel lathe.
- Fleet availability continues to be impacted by the wheel crack issue and despite prior assurances on this matter, the work has been delayed by several months; and,
- Ongoing fleet vehicle maintenance concerns, including numerous vehicles not in service due to mileage tolerance on the 200k inspection. As of March 26, there are six (6) vehicles out of service for mileage tolerance and 1 vehicle in the 200K inspection.
- Most concerningly, due to either poor design, design integration, maintenance, or yard operations, another vehicle was derailed on March 12, 2021 in the yard.

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The City plans to continue to cooperate with RTG to create opportunities for RTG to be successful; however, the number of issues continues to grow, and RTG still does not appear to have control over the basic elements such as equipment maintenance and yard operations.

Finally, we note that over the past year we have had many meetings and discussions about RTG's default but RTG has refused to formally consider such meetings to be the Level 2 meeting required under Schedule 27. This is not acceptable. The Party Representatives have spoken at length about the issues relevant to RTG's dispute of the City's Notice of Default such that the City considers the requirements of Section 2 satisfied. Accordingly, the City plans to deliver a notice to organize a Level 3 – Senior Officer meeting in short order.

The City reserves all of its rights under the PA and at law.

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc.

Lorne Gray, Troy Charter, Duane Duquette, City of Ottawa
Mario Guerra, James Messel, RTM

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This is Exhibit "Q" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

Rideau Transit Group
805 Belfast Road
Ottawa, ON K1G 0Z4

13 March 2020

City of Ottawa
110 Laurier Avenue West
Ottawa, ON K1P 1J1

Our Reference:	RTG-OTT-00-0-LET-0920
City Reference:	OTT-RTG-LET-0307
Project Agreement Reference:	Section 45.1

Attention: **Michael Morgan**
Director, Rail Construction Program

Subject: **Ottawa LRT Project – Project Agreement, dated February 12, 2013 ("Project Agreement"), between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG")**

OTT-RTG-LET-0307 – Section 45.1 – Notice of Project Co Event of Default ("City Notice")

Notice of Dispute

Dear Mr. Morgan:

RTG acknowledges receipt of the City Notice.

RTG denies that any Project Co Event of Default has occurred, including those specified in the City Notice. RTG continues to meet its contractual obligations. As the City has acknowledged publicly, RTG is made up of a world-class consortium of Canadian and international companies. It was expressly selected in a highly competitive process based on the strength of the group's design, construction and financial proposal, as well as the consortium's track record of successfully delivering major transportation projects throughout the world. The City specifically approved Alstom and the selected Vehicle during this competitive process. The suggestion that RTG misrepresented its experience and skill is without foundation.

All capitalized terms in this letter not defined herein have the meanings ascribed to them in the Project Agreement.

As the City acknowledges, RTG has already disputed the City's allegations and the Project Agreement provides a dispute resolution procedure that must be followed.

Notwithstanding the ongoing disputes, RTG has taken significant steps to address concerns the City has raised in the past, including many of the issues in the City Notice. Delivering a successful transit system to commuters in the City of Ottawa is RTG's only priority. RTG welcomes the opportunity to develop a plan in concert with the City to address any issues arising from the implementation of this transit system for the benefit of the City, and, most importantly, its commuting public.

RTG recognizes that there have been issues, some of which disrupted service on the LRT line. As the City has acknowledged, most of those issues relate to the Vehicles. RTG continues to work diligently with Alstom to find ways to resolve these issues and the City can be assured that RTG is using all of the tools available to RTG to address these issues.

As the City is aware, the pool of available manufacturers and maintainers of light rail vehicles and systems, and the pool of suppliers, is small and shrinking due to market consolidation. In order to address the existing issues, we must work cooperatively – RTG, RTM, Alstom and the City. Unfortunately, in making the unfounded assertion that RTG has placed internal disputes before our obligations under the Project Agreement, the City has rejected this approach.

To the extent that RTG has previously responded to and disputed the specific allegations in the City Notice, we do not intend to repeat those responses here. However, it bears repeating that RTG rejects any allegation that it has made inappropriate adjustments of the Daily Operating Reports and Performance Monitoring Reports.

Four matters with respect to the City's responsibilities require a response.

First, the City bears significant responsibility for many of the issues experienced with the system. This includes the City's role in improperly entering tens of thousands of work orders during the first several months after service commencement, which resulted in many "phantom" issues that should not have been allocated Failure Points and Deductions. These phantom issues distracted all parties from identifying legitimate matters requiring attention. The City also often improperly entered work orders in large batches, instead of when issues actually arose, which made it impossible for RTG to be responsive within the Project Agreement timelines.

Second, while the City's assessment of approximately 89,000 Failure Points in September 2019 is dramatic, the City does not acknowledge in its letter that the majority of these Failure Points had no impact on the public as they were incurred, if at all, before September 14, 2019. Prior to that date, the City was using the system solely for training purposes and the system was not carrying passengers. RTG and the City had agreed that no Failure Points or

Deductions would be incurred during that period. Moreover, many such alleged Failure Points stem from work orders by City staff which were improperly classified. To be clear, RTG vigorously disputes that analysis, which will have to be resolved by the parties consensually or through the appropriate Dispute Resolution Process.

Third, the City repeatedly alleges that RTG "insisted" operations commence on August 30, 2019. The implication that RTG misrepresented the condition of the System or insisted that operations commence on August 30, 2019 is false. Up to that date, the City actively participated in trial running and graded RTG's daily performance. On August 30, 2019 the City confirmed that it had carefully reviewed the status of the Project and agreed that RTG had satisfied the conditions of Revenue Service Availability. The City played a central role in the decision to commence operations. In fact, operations could not have commenced without the City's full and unequivocal agreement and support, pursuant to the Project Agreement requirements.

Further, the City ignored a recommendation from RTG and the City's own consultants to begin operations with a "soft opening". The City was aware that a soft opening is common practice when commencing service on a new transit line such as the Ottawa LRT. Instead, the City chose to announce the opening of the System publicly and operate as many trains as it could without regard to its own lack of operating experience or the advice of the experts.

The City Notice also states that RTG misrepresented its capacity to perform the Project Scope in a timely manner because Revenue Service Availability was achieved "over a year late". As the City is well aware, RTG provided the City with notice of several Delay Events during construction, which are now the subject of active disputes pursuant to the Dispute Resolution Procedure. The City has refused to acknowledge these notices or meaningfully advance the resolution of the disputes, thereby delaying any determination related to them.

Fourth, there are a large number of discrete issues for which the City has failed to take public or contractual responsibility and which have had a negative impact on the use and perception of the Ottawa transit system. The City has compromised its own reputation and ability to conduct its affairs, so as to negatively affect public perception of the City, RTG and the Project. A non-exhaustive list of examples includes:

- the City's responsibility for the open concept design of the stations, leaving commuters exposed to inclement weather conditions on the platforms;

- the use of the Confederation Line terminus stations as transit hubs when they were not designed for such purpose (which has led to significant station crowding and public discontent);

- insufficient City operator preparation prior to the launch of the system and the general inexperience of City operators, which has led to a learning curve that has impacted customer experience negatively; and

- the inadequate period of parallel bus service at the commencement of Revenue Service, contrary to industry best practices.

As the City appears to acknowledge, the best path forward for commuters is for the parties to work cooperatively, and avoid raising the spectre of termination. We are confident the City understands that purporting to terminate the Project Agreement, or taking other drastic steps under the Project Agreement, is both an unrealistic and impractical option that is not permitted by the Project Agreement. Perhaps more importantly for the City and its commuting public, termination of the Project Agreement, or the City exercising any other rights that interfere with RTG's contractual relationships with its subcontractors, would have a highly disruptive impact on City transit services. Such decisions would also force RTG to intensify its engagement in a formal dispute process. Litigation will only distract from the parties' shared priority: delivering quality transit and optimal service to the people of Ottawa. The City is also no doubt aware of the impact such an approach would have on its ability to build transit and other infrastructure in the future.

In addition to the plan and schedule, as we move forward together, appropriately addressing the public perception of the system is vital, as is managing the expectations of commuters. The City's public communications regarding the Project, RTG and its team members have frequently been in direct breach of the Project Agreement and the Project's communications plan. To date, RTG has not responded publicly to the City's public statements that have damaged our reputation and questioned our integrity. RTG has instead been acting as a good partner, and we expect the City to act similarly.

As the City is aware, a project of this scale and complexity will inevitably face hurdles in the months following the commencement of operations. These types of hurdles are part of a natural "bedding in" period experienced by new transit systems. Many of the issues faced by the system are isolated rather than system-wide issues. RTG has worked diligently to investigate, mitigate and resolve these issues promptly in accordance with industry best practices. In our view, all parties are better served when we also speak publicly about the progress that is being made and in recognizing publicly that the system is improving steadily, rather than continuing to respond with negative reports and public scoldings which seek to find blame.

We want to work productively with the City, including on future public responses when and if issues arise, in order to ensure greater public understanding of the issues, as well as the plans and procedures in place to address them. A shared strategy will better serve the public. RTG and its members remain highly committed to delivering a successful project for the City and its residents. We take our contractual responsibilities seriously and we are working

diligently and in good faith to remedy any issues with the system. RTG, its members and its subcontractors have devoted considerable and increasing resources to the project despite not being paid by the City for almost six months.

We look forward to discussing these matters further with you, and to an ongoing productive relationship. RTG reserves all of its right under the Project Agreement and at law.

Peter Lauch, P. Eng.
CEO
Rideau Transit Group General Partnership

cc.	OTC:	Gary Craig, Lorne Gray, Troy Charter, and Richard Holder
	RTG:	Maxime Olivier
	OLRT-C:	Matthew Slade
	RTM:	James Messel

This is Exhibit "R" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

June 04, 2020

Mr. Peter Lauch, CEO
Rideau Transit Group GP
1545 Carling Avenue
Suite 406
Ottawa, ON K1Z 8P9

Your reference: RTG-OTT-00-LET-0920
Our reference: OTT-RTG-RLET-0551

Dear Mr. Lauch:

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("PA" or "Project Agreement")[1] between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG")

OTT-RTG-LET-0307 (March 10, 2020) - s. 45.1- Notice of Project Co Event(s) of Default and OTT-RTG-LET-0308 (March 11, 2020), OTT-RTG-RLET-0538 (March 23, 2020), OTT-RTG-LET-0543 (April 7, 2020), OTT-RTG-RLET -0545 (April 20, 2020), and OTT-RTG-RLET-0457 (May 4, 2020) ("City Letters")

Notice of Dispute - Project Co Event of Default – Next Steps under Schedule 27

The City writes further to RTG's letter of March 13, 2020 as referenced above (the "**Notice of Dispute**") and the City Letters in respect of RTG's Defaults.

The City acknowledges that RTG has asserted that a Dispute has arisen in respect of the Default Notice and writes in respect of the Dispute Resolution Procedure under Schedule 27.

As RTG has disputed the Notice of Default, the City is willing to progress through the Dispute Resolution Procedure in respect of the issues outlined in the Notice of Dispute.

Accordingly, the City requests that RTG agree to participate in a Level 2 negotiation during the week of June 8, 2020. Alternatively, the City would be prepared to consider bypassing the Level 2 and Level 3 negotiations given the extent and nature of the discussions that have taken place about the Failure Points and proceed to have the matter resolved expeditiously.

Should RTG fail to respond or fail to meet with the City, the City will proceed with the next steps of the Dispute Resolution Procedure as it is entitled to Schedule 27.

The City reserves all of its rights under the PA and at law.

[1] All capitalized terms not defined herein shall bear their meanings as defined in the Project Agreement or as defined in the Notice of Default.

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Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc.

Lorne Gray, OTC
Troy Charter, OCT
James Messel, RTM

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This is Exhibit "S" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

Payment Adjustment Report - Detailed Calculation 8/1/2021 12:00:00 AM TO 9/1/2021 12:00:00 AM

10/4/2021 2:08:00 PM

Revenue Vehicle Kms Availability Adjustment

Vehicle Kilometres

	Peak	Off-Peak	Aggregate
Scheduled Revenue Service Kms for Period	95,126.21	255,548.79	350,675.00
Revenue Vehicle Service Kms for Period	60,349.91	201,093.44	261,443.35
Revenue Vehicle Km's Missed due to Non-Project Co. Cause (NPCCKm)	239.94	1,217.53	1,457.47
Availability Ratio (AR)	**63.7%**	**79.2%**	
Deduction Factor (DF)	**100.00%**	**58.00%**	

Vehicle Kms Availability Failure Deduction (VAFD Peak) = (DF, Peak) * (UASP, month) * 0.70 = 100.00% *5,213,727.01 * 0.70 = **$3,649,608.91**

Vehicle Kms Availability Failure Deduction (VAFD Off-Peak) = (DF, Off-Peak) * (UASP, month) * 0.30 = 58.00% *5,213,727.01 * 0.30 = **$907,188.50**

Detailed calculation of (UASP,month):

UASPn=	ASPn/12	+		VP			+	Average Monthly Lifecycle	
=	49,985,574.36 /12	+	Tkmn	* PPkmn	* ESCn		+	AMLP	* ESCn
=	4,165,464.53	+	265,623.59	* 1.1126	* 1.1474		+	618,065.31	1.1474
=	4,165,464.53	+	339,094.34				+	709,168.14	
=	5,213,727.01								

Summary of System Events and Deductions

Date & Time	System Event Type (Single Day, Morning Peak, Afternoon Peak)	AR	Base Deduction		ESCn	Deduction Amt
8-9-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	$56,323.15
8-9-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	$56,323.15
8-9-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	$0.00
8-10-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	$56,323.15
8-10-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	$56,323.15
8-10-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	$0.00
8-11-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	$56,323.15
8-11-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	$56,323.15
8-11-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	$0.00
8-12-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	$56,323.15
8-12-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	$56,323.15
8-12-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	$0.00
8-13-2021 12:00:00 AM	Friday Morning Peak	0.00%	52,500.00	*	1.1474	$56,323.15
8-13-2021 12:00:00 AM	Friday Afternoon Peak	0.00%	52,500.00	*	1.1474	$56,323.15
8-13-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	$0.00
8-14-2021 12:00:00 AM	Day Aggregate	66.23%	52,500.00	*	1.1474	$56,323.15
8-16-2021 12:00:00 AM	Morning Peak	79.66%	52,500.00	*	1.1474	$56,323.15
8-17-2021 12:00:00 AM	Morning Peak	83.10%	52,500.00	*	1.1474	$56,323.15
8-18-2021 12:00:00 AM	Morning Peak	60.08%	52,500.00	*	1.1474	$56,323.15
8-18-2021 12:00:00 AM	Afternoon Peak	83.74%	52,500.00	*	1.1474	$56,323.15
8-18-2021 12:00:00 AM	Day Aggregate	84.97%	0.00	*	1.1474	$0.00
8-19-2021 12:00:00 AM	Morning Peak	69.20%	52,500.00	*	1.1474	$56,323.15
8-20-2021 12:00:00 AM	Friday Afternoon Peak	70.04%	52,500.00	*	1.1474	$56,323.15
8-20-2021 12:00:00 AM	Day Aggregate	88.73%	52,500.00	*	1.1474	$56,323.15
8-23-2021 12:00:00 AM	Morning Peak	77.74%	52,500.00	*	1.1474	$56,323.15
8-24-2021 12:00:00 AM	Morning Peak	79.09%	52,500.00	*	1.1474	$56,323.15
8-25-2021 12:00:00 AM	Morning Peak	78.78%	52,500.00	*	1.1474	$56,323.15
8-26-2021 12:00:00 AM	Morning Peak	61.43%	52,500.00	*	1.1474	$56,323.15
8-26-2021 12:00:00 AM	Afternoon Peak	78.28%	52,500.00	*	1.1474	$56,323.15
8-26-2021 12:00:00 AM	Day Aggregate	82.73%	0.00	*	1.1474	$0.00
8-27-2021 12:00:00 AM	Friday Morning Peak	66.35%	52,500.00	*	1.1474	$56,323.15
8-27-2021 12:00:00 AM	Friday Afternoon Peak	86.48%	52,500.00	*	1.1474	$56,323.15
8-27-2021 12:00:00 AM	Day Aggregate	88.39%	0.00	*	1.1474	$0.00
8-30-2021 12:00:00 AM	Morning Peak	64.63%	52,500.00	*	1.1474	$56,323.15
8-30-2021 12:00:00 AM	Afternoon Peak	81.87%	52,500.00	*	1.1474	$56,323.15
8-30-2021 12:00:00 AM	Day Aggregate	87.05%	0.00	*	1.1474	$0.00
8-31-2021 12:00:00 AM	Morning Peak	65.70%	52,500.00	*	1.1474	$56,323.15

Total System Event Deductions (EvD) **$1,577,048.20**

Vehicle Availability Failure Deduction for month = (VAFD Peak) + (VAFD Off-Peak) + (EvD) = 3,649,608.91+1,577,048.20+907,188.50 = **$6,133,845.61**

Station Availability Adjustment

	1		2		3		Aggregate	
	Peak	Off -	Peak	Off -	Peak	Off -	Peak	Off -
Station Scheduled Hours	621.00	2,629.70	310.50	1,314.55	414.00	1,751.18	1,345.50	5,695.43
Station Availability Failure Hours	0.00	1.93	0.00	0.00	0.00	0.00	0.00	1.93
Station Availability Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Station Deduction Factor							0.00	0.00

Station Availability Failure Deduction for month = (St.DF-Peak) * (UASP, month) * 0.70 + (St.DF-Off-Pk) * (UASP, month) * 0.30 = $0.00 + $0.00 = **$0.00**

Detailed calculation of (UASP,month):

UASPn=	ASPn/12	+	VP			+	Average Monthly Lifecycle		
=	49,985,574.36 /12	+	Tkmn	*	PPkmn * ESCn	+	AMLP	*	ESCn
=	4,165,464.53	+	265,623.59	*	1.1126 * 1.1474	+	618,065.31		1.1474
=	4,165,464.53	+	339,094.34			+	709,168.14		
=	5,213,727.01								

Quality and Service Failure Deductions

Summary of Service Failure Events

Work Order	Date & Time	Classification	Service Event Description	No. Failures	Base Deduction		ESCn		Applied SF Deduction
00108131	8-5-2021 8:51:16 AM	Major	Good morning	2	530.00	*	1.1474	=	1,216.24
00108213	8-6-2021 6:01:13 AM	Major	STNPAR CAM-48096	3	530.00	*	1.1474	=	1,824.37
00108122	8-6-2021 11:43:03 AM	Major	TOCC Console 1	3	530.00	*	1.1474	=	1,824.37
00089497	8-13-2021 6:59:17 PM	Minor	Hurdman Station, in	11	105.00	*	1.1474	=	1,325.25
00109321	8-14-2021 2:23:59 PM	Major	Door C at St Laurent	1	530.00	*	1.1474	=	608.12
00109340	8-14-2021 4:59:39 PM	Major	PAR station camera	4	530.00	*	1.1474	=	2,432.49
00109387	8-15-2021 5:53:42 AM	Major	Please check lock	1	530.00	*	1.1474	=	608.12
00110543	8-23-2021 5:58:10 AM	Major	While preforming	8	530.00	*	1.1474	=	608.12
00107057	8-27-2021 6:00:06 AM	Medium	Graffitti was found	28	265.00	*	1.1474	=	8,513.71
00111278	8-28-2021 10:10:29 AM	Major	RID TICP panel,	1	530.00	*	1.1474	=	608.12
00111848	8-31-2021 10:40:46 PM	Medium	PIDS at BLA on	1	265.00	*	1.1474	=	304.06

		No. Events	Deductions	
Service Failures	Minor	1	$1,325.25	
	Medium	2	$8,817.77	
	Major	8	$9,729.95	
	Total	11	$19,872.97	**$19,872.97**

Summary of Quality Failure Events

Work Order	Date & Time	Classification	Quality Event Description	No. Failures	Base Deduction		ESCn		Applied QF Deduction
00094085	8-25-2021 3:26:27 PM	Medium	WO for John	4	1,050.00	*	1.1474	=	4,222.43
00098746	8-25-2021 3:34:19 PM	Medium	WO for Peter	1	530.00	*	1.1474	=	608.12
00104360	8-25-2021 3:35:06 PM	Medium	WO for Peter	1	530.00	*	1.1474	=	608.12
00104370	8-25-2021 3:35:32 PM	Medium	WO for Peter	1	530.00	*	1.1474	=	608.12
00109620	8-25-2021 3:37:16 PM	Medium	WO for John	1	530.00	*	1.1474	=	608.12

		No. Events	Deductions	
Quality Failures	Minor	0	$0.00	
	Medium	5	$6,654.91	
	Major	0	$0.00	
	Total	5	$6,654.91	**$6,654.91**

Gainshare or Painshare Adjustment

Gainshare (+ve), Painshare (-ve) Adjustment =

Note:

All formulas and referenced factors are as reflected in Project Agreement Schedule 20.

NOTE: RTG disputes the application of Failure Points for this Contract Month. This invoice Month is part of an ongoing dispute between RTG and the City regarding the application of the Payment Mechanism and the Failure Points and Deductions thereunder. RTG has requested a formal review of Schedule 20 pursuant to Part F of Schedule 20. RTG has also formally disputed that the City has a right to carry forward Deductions incurred in one Contract Month to a subsequent Contract Month, and does not accept that the City has the right to do so.

This is Exhibit "T" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.

Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

Performance Monitoring Report-Detailed Calculation: 8/1/2021 12:00:00 AM TO 9/1/2021 12:00:00 AM 481

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Revenue Vehicle Kilometres Availability Performance

Vehicle Kilometres

	Peak	Off-Peak	Aggregate
Scheduled Revenue Service Kms for Period	95,126.21	255,548.79	350,675.00
Revenue Vehicle Service Kms for Period	60,349.91	201,093.44	261,443.35
Total Vehicle Kms for Period (includes Training, Pull-in, Pull-out)			264,166.12
Revenue Vehicle Km's Missed due to Non-Project Co. Cause	239.94	1217.53	1457.47
Availability Ratio (AR)	**0.637**	**0.792**	

Vehicle Kms Availability Failure Deduction (VAFD Peak) = (DF, Peak) * (UASP, month) * 0.70 = 100.00% * 5,213,727.01 * 0.70 = **$3,649,608.91**

Vehicle Kms Availability Failure Deduction (VAFD Off-Peak) = (DF, Off-Peak) * (UASP, month) * 0.30 = 58.00%* 5,213,727.01 * 0.30 = **$907,188.50**

Detailed calculation of (UASP,month):

UASPn=	ASPn/12	+	VP					+	Average Monthly Lifecycle		
=	49,985,574.36 /12	+	Tkmn	*	PPkmn	*	ESCn	+	AMLP	*	ESCn
=	4,165,464.53	+	265,623.59	*	1.1126	*	1.1474	+	618,065.31		1.1474
=	4,165,464.53	+	339,094.34					+	709,168.14		
=	5,213,727.01										

Summary of System Events and Failure Points and Deductions

Date & Time	System Event Type (Sgl Day, Mng Peak, Aft Peak)	AR	Base Deduction		ESCn		Applied Deduction	IMIRS Failure points
8-9-2021 12:00:00 AM	Monday Morning Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
8-9-2021 12:00:00 AM	Monday Afternoon Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
8-9-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	=	0.00	65
8-10-2021 12:00:00 AM	Tuesday Morning Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
8-10-2021 12:00:00 AM	Tuesday Afternoon Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
8-10-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	=	0.00	65
8-11-2021 12:00:00 AM	Wednesday Morning	0.00%	52,500.00	*	1.1474	=	56,323.15	65
8-11-2021 12:00:00 AM	Wednesday Afternoon	0.00%	52,500.00	*	1.1474	=	56,323.15	65
8-11-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	=	0.00	65
8-12-2021 12:00:00 AM	Thursday Morning Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
8-12-2021 12:00:00 AM	Thursday Afternoon Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
8-12-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	=	0.00	65
8-13-2021 12:00:00 AM	Friday Morning Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
8-13-2021 12:00:00 AM	Friday Afternoon Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
8-13-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	=	0.00	65
8-14-2021 12:00:00 AM	Day Aggregate	66.23%	52,500.00	*	1.1474	=	56,323.15	65
8-16-2021 12:00:00 AM	Morning Peak	79.66%	52,500.00	*	1.1474	=	56,323.15	65

Performance Monitoring Report-Detailed Calculation: 8/1/2021 12:00:00 AM TO 9/1/2021 12:00:00 AM 482

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8-17-2021 12:00:00 AM	Morning Peak	83.10%	52,500.00	*	1.1474	=	56,323.15	65
8-18-2021 12:00:00 AM	Morning Peak	60.08%	52,500.00	*	1.1474	=	56,323.15	65
8-18-2021 12:00:00 AM	Afternoon Peak	83.74%	52,500.00	*	1.1474	=	56,323.15	65
8-18-2021 12:00:00 AM	Day Aggregate	84.97%	0.00	*	1.1474	=	0.00	65
8-19-2021 12:00:00 AM	Morning Peak	69.20%	52,500.00	*	1.1474	=	56,323.15	65
8-20-2021 12:00:00 AM	Friday Afternoon Peak	70.04%	52,500.00	*	1.1474	=	56,323.15	65
8-20-2021 12:00:00 AM	Day Aggregate	88.73%	52,500.00	*	1.1474	=	56,323.15	65
8-23-2021 12:00:00 AM	Morning Peak	77.74%	52,500.00	*	1.1474	=	56,323.15	65
8-24-2021 12:00:00 AM	Morning Peak	79.09%	52,500.00	*	1.1474	=	56,323.15	65
8-25-2021 12:00:00 AM	Morning Peak	78.78%	52,500.00	*	1.1474	=	56,323.15	65
8-26-2021 12:00:00 AM	Morning Peak	61.43%	52,500.00	*	1.1474	=	56,323.15	65
8-26-2021 12:00:00 AM	Afternoon Peak	78.28%	52,500.00	*	1.1474	=	56,323.15	65
8-26-2021 12:00:00 AM	Day Aggregate	82.73%	0.00	*	1.1474	=	0.00	65
8-27-2021 12:00:00 AM	Friday Morning Peak	66.35%	52,500.00	*	1.1474	=	56,323.15	65
8-27-2021 12:00:00 AM	Friday Afternoon Peak	86.48%	52,500.00	*	1.1474	=	56,323.15	65
8-27-2021 12:00:00 AM	Day Aggregate	88.39%	0.00	*	1.1474	=	0.00	65
8-30-2021 12:00:00 AM	Morning Peak	64.63%	52,500.00	*	1.1474	=	56,323.15	65
8-30-2021 12:00:00 AM	Afternoon Peak	81.87%	52,500.00	*	1.1474	=	56,323.15	65
8-30-2021 12:00:00 AM	Day Aggregate	87.05%	0.00	*	1.1474	=	0.00	65
8-31-2021 12:00:00 AM	Morning Peak	65.70%	52,500.00	*	1.1474	=	56,323.15	65
Total System Event Deductions, Failure Points							1,577,048.20	2,405.00

	Availability Ratio	IMIRS Failure Points
Aggregate Veh Kms Availability FP	74.97%	420

NOTE: RTG disputes the application of Failure Points for this Contract Month. This invoice Month is part of an ongoing dispute between RTG and the City regarding the application of the Payment Mechanism and the Failure Points and Deductions thereunder. RTG has requested a formal review of Schedule 20 pursuant to Part F of Schedule 20. RTG has also formally disputed that the City has a right to carry forward Deductions incurred in one Contract Month to a subsequent Contract Month, and does not accept that the City has the right to do so.

Performance Monitoring Report-Detailed Calculation: 8/1/2021 12:00:00 AM TO 9/1/2021 12:00:00 AM 483

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Station Availability Performance

Station Hours By Group

		Group 1													
		Tunney's Pasture		Lyon		Parliament		Rideau		Hurdman		Blair		Aggregate	
		Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak
Scheduled Station Hours for Period	Peak	103.50		103.50		103.50		103.50		103.50		103.50		621.00	
	Off-Peak		441.39		437.61		437.05		436.33		436.45		440.88		2,629.70
Station Availability Failure Hours for Period	Peak	0.00		0.00		0.00		0.00		0.00		0.00		0.00	
	Off-Peak		0.00		0.00		0.40		0.00		0.00		1.53		1.93

		Group 2							
		Bayview		uOttawa		St. Laurent		Aggregate	
		Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak
Scheduled Station Hours for Period	Peak	103.50		103.50		103.50		310.50	
	Off-Peak		440.25		435.55		438.75		1,314.5
Station Availability Failure Hours for Period	Peak	0.00		0.00		0.00		0.00	
	Off-Peak		0.00		0.00		0.00		0.00

		Group 3									
		Pimisi		Lees		Tremblay		Cyrville		Aggregate	
		Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak
Scheduled Station Hours for Period	Peak	103.50		103.50		103.50		103.50		414.00	
	Off-Peak		438.48		435.38		438.18		439.13		1,751.1
Station Availability Failure Hours for Period	Peak	0.00		0.00		0.00		0.00		0.00	
	Off-Peak		0.00		0.00		0.00		0.00		0.00

		1		2		3		Aggregate	
		Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak
Availability Ratio	Peak	1.00		1.00		1.00		1.00	
	Off-Peak		1.00		1.00		1.00		1.00

Station Availability Failure Deduction for month =	(St.DF-Peak) * (UASP, month) * 0.70 + (St.DF-Off-Pk) * (UASP, month) * 0.30	= $0.00 + $0.00	=	**$0.00**

Detailed calculation of (UASP,month):

UASPn=	ASPn/12	+	VP					+	Average Monthly Lifecycle Payment	
=	49,985,574.36 /12	+	Tkmn	*	PPkmn	*	ESCn	+	AMLP *	ESCn
=	4,165,464.53	+	265,623.59	*	1.1126	*	1.1474	+	618,065.31	1.1474
=	4,165,464.53	+	339,094.34					+	709,168.14	
=	5,213,727.01									

Station Availability Failure Points

	Availability Ratio	IMIRS Failure Points
Aggregate Ratio for Period	100.0%	0

NOTE: RTG disputes the application of Failure Points for this Contract Month. This invoice Month is part of an ongoing dispute between RTG and the City regarding the application of the Payment Mechanism and the Failure Points and Deductions thereunder. RTG has requested a formal review of Schedule 20 pursuant to Part F of Schedule 20. RTG has also formally disputed that the City has a right to carry forward Deductions incurred in one Contract Month to a subsequent Contract Month, and does not accept that the City has the right to do so.

Service Failures

Summary of Service Failure Events

Work Order	Date & Time	Classification	Service Event Description	IMIRS Failure Points	No. Failures	Base Deduction		ESCn		Applied SF Deduction	RTM Disputed Deductions
00107301	8-2-2021 7:49:30 AM	Major	Multiple alarms on	204.00	68	530.00	*	1.1474	=	41,352.29	41,352.29
00106703	8-2-2021 4:46:48 PM	Major	Door 01-104 went	231.00	77	530.00	*	1.1474	=	46,825.39	46,825.39
00106702	8-2-2021 5:50:14 PM	Major	Door 01-105 went	231.00	77	530.00	*	1.1474	=	46,825.39	46,825.39
00108131	8-5-2021 8:51:16 AM	Major	Good morning	6.00	2	530.00	*	1.1474	=	1,216.24	0.00
00108213	8-6-2021 6:01:13 AM	Major	STNPAR CAM-	9.00	3	530.00	*	1.1474	=	1,824.37	0.00
00108122	8-6-2021 11:43:03 AM	Major	TOCC Console 1	9.00	3	530.00	*	1.1474	=	1,824.37	0.00
00107983	8-6-2021 4:18:33 PM	Major	PT Kendall advised	207.00	69	530.00	*	1.1474	=	41,960.41	41,960.41
00106897	8-7-2021 5:09:29 AM	Major	Door 05-100 E IN	174.00	58	530.00	*	1.1474	=	35,271.08	35,271.08
00103890	8-9-2021 5:55:30 AM	Major	Temporary work	681.00	227	530.00	*	1.1474	=	138,043.70	138,043.70
00108712	8-9-2021 6:04:01 AM	Major	Door is showing as	12.00	4	530.00	*	1.1474	=	2,432.49	2,432.49
00108006	8-10-2021 8:26:18 PM	Major	RID east	111.00	37	530.00	*	1.1474	=	22,500.51	22,500.51
00103361	8-11-2021 11:19:21 AM	Major	TEMPORARY	603.00	201	530.00	*	1.1474	=	122,232.52	122,232.52
00103701	8-11-2021 1:34:48 PM	Major	Temp WO for	87.00	29	530.00	*	1.1474	=	17,635.54	17,635.54
00103360	8-11-2021 2:42:13 PM	Major	TEMPORARY	606.00	202	530.00	*	1.1474	=	122,840.64	122,840.64
00105945	8-11-2021 2:44:20 PM	Major	Temporay repair:	102.00	34	530.00	*	1.1474	=	20,676.15	20,676.15
00105882	8-12-2021 10:07:51 AM	Medium	Elevator 1 has	20.00	20	265.00	*	1.1474	=	6,081.22	6,081.22
00107969	8-12-2021 3:42:02 PM	Major	St Laurent FACP	555.00	185	530.00	*	1.1474	=	112,502.57	112,502.57
00108212	8-13-2021 2:51:48 AM	Major	STNBAY CAM-	132.00	44	530.00	*	1.1474	=	26,757.37	26,757.37
00089497	8-13-2021 6:59:17 PM	Minor	Hurdman Station,	5.50	11	105.00	*	1.1474	=	1,325.25	0.00
00109248	8-14-2021 8:09:09 AM	Major	ETEL alarm from	36.00	12	530.00	*	1.1474	=	7,297.46	7,297.46
00109321	8-14-2021 2:23:59 PM	Major	Door C at St	3.00	1	530.00	*	1.1474	=	608.12	0.00
00109341	8-14-2021 4:14:15 PM	Major	TRE station CCTV	12.00	4	530.00	*	1.1474	=	2,432.49	2,432.49
00109340	8-14-2021 4:59:39 PM	Major	PAR station	12.00	4	530.00	*	1.1474	=	2,432.49	0.00
00109387	8-15-2021 5:53:42 AM	Major	Please check lock	3.00	1	530.00	*	1.1474	=	608.12	0.00
00109371	8-15-2021 9:03:50 AM	Major	Zone Controller 05	15.00	5	530.00	*	1.1474	=	3,040.61	3,040.61
00104066	8-16-2021 5:50:48 AM	Medium	PID's not showing	35.00	35	265.00	*	1.1474	=	10,642.14	10,642.14
00104983	8-16-2021 1:53:23 PM	Major	TEMPORARY	720.00	240	530.00	*	1.1474	=	145,949.28	145,949.28
00097301	8-16-2021 2:03:18 PM	Major	*****TEMPORARY	684.00	228	530.00	*	1.1474	=	138,651.82	138,651.82
00105107	8-18-2021 9:47:22 AM	Major	SCADA Alarms	558.00	186	530.00	*	1.1474	=	113,110.69	113,110.69
00110032	8-20-2021 4:48:12 AM	Major	CYR east end GIDs	12.00	4	530.00	*	1.1474	=	2,432.49	2,432.49
00110084	8-20-2021 11:32:42 AM	Major	Multiple APC and	12.00	4	530.00	*	1.1474	=	2,432.49	2,432.49
00110543	8-23-2021 5:58:10 AM	Major	While preforming	3.00	8	530.00	*	1.1474	=	608.12	0.00
00110500	8-23-2021 4:32:15 PM	Major	SCADA received	18.00	6	530.00	*	1.1474	=	3,648.73	3,648.73
00110690	8-24-2021 7:16:19 AM	Major	Multiple comms	36.00	12	530.00	*	1.1474	=	7,297.46	7,297.46
00111009	8-25-2021 8:35:22 PM	Major	UOT-E track 2	24.00	8	530.00	*	1.1474	=	4,864.98	4,864.98
00110491	8-25-2021 9:40:39 PM	Major	SCADA is showing	57.00	19	530.00	*	1.1474	=	11,554.32	11,554.32
00110502	8-25-2021 9:41:24 PM	Major	Power status	60.00	20	530.00	*	1.1474	=	12,162.44	12,162.44
00110857	8-26-2021 4:58:54 PM	Major	PIM ETEL #03 is	75.00	25	530.00	*	1.1474	=	15,203.05	15,203.05
00110993	8-26-2021 5:01:03 PM	Major	10:40 am ETEL/	18.00	6	530.00	*	1.1474	=	3,648.73	3,648.73
00110995	8-26-2021 5:03:18 PM	Major	10:46 am ETEL 2 :	21.00	7	530.00	*	1.1474	=	4,256.85	4,256.85
00110996	8-26-2021 5:07:39 PM	Major	10:49 am ETEL 3 :	18.00	6	530.00	*	1.1474	=	3,648.73	3,648.73
00110994	8-26-2021 5:26:29 PM	Major	10:43 am ETEL 5 :	18.00	6	530.00	*	1.1474	=	3,648.73	3,648.73
00107057	8-27-2021 6:00:06 AM	Medium	Graffitti was found	28.00	28	265.00	*	1.1474	=	8,513.71	0.00
00111352	8-28-2021 8:47:40 AM	Major	Priority 2-	3.00	1	530.00	*	1.1474	=	608.12	608.12
00111278	8-28-2021 10:10:29 AM	Major	RID TICP panel,	3.00	1	530.00	*	1.1474	=	608.12	0.00
00111511	8-30-2021 8:06:40 AM	Major	LSRS 1 is down	18.00	6	530.00	*	1.1474	=	3,648.73	3,648.73

Total: $1,304,117.61

		No. Events	IMIRS Failure Points	IMIRS Deductions	RTM Accepted Deductions
Service Failures	Minor	5	5.50	$1,325.25	$1,325.25
	Medium	39	83.00	$25,237.07	$8,513.71
	Major	183	6,399.00	$1,297,124.20	$9,729.95
	Total	227	6,487.50	$1,323,686.52	$19,568.91

NOTE: RTG disputes the application of Failure Points for this Contract Month. This invoice Month is part of an ongoing dispute between RTG and the City regarding the application of the Payment Mechanism and the Failure Points and Deductions thereunder. RTG has requested a formal review of Schedule 20 pursuant to Part F of Schedule 20. RTG has also formally disputed that the City has a right to carry forward Deductions incurred in one Contract Month to a subsequent Contract Month, and does not accept that the City has the right to do so.

Performance Monitoring Report-Detailed Calculation: 8/1/2021 12:00:00 AM TO 9/1/2021 12:00:00 AM 487

Revision 2 - October 19, 2021

Quality Failures

Summary of Quality Failure Events

Work Order	Date & Time	Classification	Quality Event Description	IMIRS Failure Points	No. Failures	Base Deduction		ESCn		Applied QF Deduction
00094085	8-25-2021 3:26:27 PM	Medium	WO for John Potts/Peter	10.00	4	1,050.00	*	1.1474	=	4,222.43
00098746	8-25-2021 3:34:19 PM	Medium	WO for Peter Stainforth/John	1.00	1	530.00	*	1.1474	=	608.12
00104360	8-25-2021 3:35:06 PM	Medium	WO for Peter Stainforth/John	1.00	1	530.00	*	1.1474	=	608.12
00104370	8-25-2021 3:35:32 PM	Medium	WO for Peter Stainforth/John	1.00	1	530.00	*	1.1474	=	608.12
00109620	8-25-2021 3:37:16 PM	Medium	WO for John Potts/Peter	1.00	1	530.00	*	1.1474	=	608.12

		No. Events	IMIRS Failure Points	Deductions
Quality Failures	Minor	0	0.00	$0.00
	Medium	5	8.00	$6,654.91
	Major	0	0.00	$0.00
	Total	5	8.00	$6,654.91

NOTE: RTG disputes the application of Failure Points for this Contract Month. This invoice Month is part of an ongoing dispute between RTG and the City regarding the application of the Payment Mechanism and the Failure Points and Deductions thereunder. RTG has requested a formal review of Schedule 20 pursuant to Part F of Schedule 20. RTG has also formally disputed that the City has a right to carry forward Deductions incurred in one Contract Month to a subsequent Contract Month, and does not accept that the City has the right to do so.

This is Exhibit "U" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.

Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

September 24, 2021

Mr. Nicolas Truchon, CEO
Rideau Transit Group GP
805 Belfast Road
Ottawa, ON KIZ 0Z4

Our reference: OTT-RTG-LET-0403

Dear Mr. Truchon:

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("PA" or "Project Agreement")[1] between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG")

S. 45.1 – Notice of Project Co Event of Default

The City hereby notifies RTG that Project Co Events of Default have occurred as result of the following recent derailments of Vehicles on the System:

1. The derailment on August 8, 2019 which resulted in the full grounding of the fleet until August 14, 2021 (the "**August Derailment**"); and
2. The derailment, just six weeks later, on September 19, 2021 which has again resulted in a full grounding of the fleet with a return to full service not expected for three weeks by RTG's Subcontractor Rideau Transit Maintenance (the "**September Derailment**").[2] (collectively the "**Derailments**")

September Derailment

To address the most recent derailment first, the City wishes to express, in the strongest possible terms, its shock and disappointment in relation to the September Derailment, which occurred while thirteen System Users were on board, and which clearly raises safety concerns. A train left the tracks west of Tremblay Station when two axles on the train's second car became dislodged from the rail. The derailment caused significant damage to the train, the track, and a switch box, as is demonstrated by the following images[3]:

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1 All capitalized terms not defined herein shall bear their meanings as defined in the Project Agreement.

2 CTV News, Ottawa, September 21, 2021: "Full O-Train service could be shut down for three weeks after LRT train derailment: RTM" (https://ottawa.ctvnews.ca/full-o-train-service-could-be-shut-down-for-three-weeks-after-lrt-train-derailment-rtm-1.5592357).

3 Ottawa Citizen, September 20, 2021: " More LRT problems as train derails; city doesn't think incident related to Aug. 8 derailment" (https://ottawacitizen.com/news/local-news/apparent-lrt-derailment-near-tremblay-station-r1-bus-service-running) and CBC, September 19, 2021: " LRT shut down again after 2nd train derailment since August" (https://www.cbc.ca/news/canada/ottawa/lrt-derailed-west-of-tremblay-1.6181707).

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Given the seriousness of the derailment, Ottawa Fire Services was required to assist with evacuating the System Users and remained at the scene of the derailment to ensure that the train would not require stabilization. Transportation Safety Board ("**TSB**") investigators were also present.

RTG's response to date has been disappointing since the September Derailment, causing the City to seriously question both RTG's commitment and frankly, its capability, to solve its current issues. Just one example is the fact that RTG was more than three hours late at the site, leaving the City and TSB, among others, waiting.

August Derailment

In relation to the August Derailment, an out-of-service train derailed at Tunney's Pasture Station when an axle broke causing the wheel on one of the train cars to derail. RTG has advised that a loose bolt in the axle bearing assembly caused movement within the assembly, which caused damage to the bearings inside the assembly as well as the wheel, which in turn led to the wheel and axle derailing.

This August Derailment occurred over six weeks ago, yet the City still does not have a root cause analysis, has not received adequate responses to its queries, and the fleet had not returned to full reliable service prior to the September Derailment.[4] Rideau Transit Management ("**RTM**") has recently advised that it requires an extension until September 27, 2021 to provide responses to the City's initial questions asked more than a month prior.[5]

The wholly inadequate response to the City's concerns regarding the August Derailment sent by RTG on behalf of RTM attempts to portray the RTG and RTM response as sufficient, when it is clearly not, particularly as RTM acknowledges that its investigation and remedy of the root cause

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4 City Letter dated August 17, 2021 (OTT-RTG-LET-0386) and City Letter Dated August 31, 2021 (OTT-RTG-LET-0388).

5 RTG letter dated September 10, 2021 (RTG-OTT-00-0-LET-1267), enclosing RTM letter dated September 10, 2021 (RTM-RTG-00-0-LET-0149).

of the August Derailment remains outstanding.[6] For example, to simply forward a response from Alstom that indicates, among other things, that "[m]anagement of track design with respect to all allowable tolerances is the responsibility of OLRTC as track designer" constitutes a completely unacceptable abdication of responsibility by RTG. RTG is intended to be the single point of responsibility and in particular is responsible for all of its Subcontractors including RTM and Alstom.[7] Casting blame on Subcontractors and passing through efforts by Subcontractors to blame other Subcontractors is not going to solve the current issues. To be clear, RTG bears responsibility for all of its Subcontractors. This is RTG's problem to solve and if RTG continues to abdicate its responsibilities the City will need to take the strongest possible actions under the Project Agreement and at law. At present, the City does not have confidence in RTG's Subcontractors or RTG's ability to properly manage and lead an appropriate response to the current serious situation which has safety implications.

The Derailments Collectively

The Derailments have caused severe reputational harm to the City and to the System. The Derailments are affecting ridership and have seriously undermined the public's confidence in the System.[8] RTG does not appear to appreciate the gravity of the current situation given its refusal and/or inability to implement swift and appropriate actions with an adequate level of resourcing.

The fleet remains out of service as of the date of this letter, a fact which is particularly disconcerting given that RTG was to return to operating 15 Revenue Service Vehicles as of August 16, 2021.[9]

Having considered the matter carefully, the City has concluded that the Derailments have resulted in the occurrence of certain new Project Co Events of Default, as described in further detail below. These new Project Co Events of Default are **in addition to** the Project Co Event of Default described in the City's letter of March 10, 2020, in relation to which RTG has not cured its defaults and continues to be in a state of extended monitoring as described in City Letters.[10]

In particular, the following new Project Co Events of Default (individually each a "**Default**" and collectively the "**Defaults**") have arisen pursuant to Sections 45.1(a)(v), (x), (xi), and (xii) of the Project Agreement.

1) Default Pursuant to Section 45.1(a)(v) - Unavailability of the System

The Derailments each separately constitute a serious breach of RTG's obligations under the Project Agreement. Without limiting the generality of the foregoing, as a result of the Derailments, RTG is in breach of its obligations to:

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6 RTG Letter dated September 3, 2021 (RTG-OTT-00-0-LET-1260), enclosing RTM Letter dated September 3, 2021 (RTM-RTG-00-0-LET-0143).

7 Section 9.3, PA.

8 The City made this concern clear to RTG with respect to the August Derailment in City Letter dated August 16, 2021 (OTT-RTG-LET-0383).

9 As contemplated pursuant to the Term Sheet for a Temporary Service Level Decrease dated March 10, 2021 and the First Amending Agreement to the Term Sheet dated as of April 23, 2021.

10 City Letter dated April 1, 2021 (OTT-RTG-LET-0358); City Letter dated August 16, 2021 (OTT-RTG-LET-0383).

a) provide sufficient Vehicles to meet the required service levels;

b) rectify issues with the Vehicles and/or System;

c) perform all activities within the Project Scope so as to satisfy the Output Specifications,[11] in accordance with Good Industry Practice (Works), and in accordance with the terms of the Project Agreement; and

d) comply with Sections 20.1(a), 20.2, 20.8 and 20.9 of the Project Agreement.

These breaches have had a material adverse effect on the availability of the System to System Users, as they resulted in, among other things:

- a full grounding of the fleet from August 8 until August 14, 2021, and continued subsequent reduction in available Vehicles; and
- a second full grounding of the fleet following the Second Derailment which remains in place as of the date of this letter.

As such, these events constitute Project Co Event of Defaults pursuant to Section 45.1(a)(v) of the Project Agreement.

The Derailments and their significant and ongoing impacts on the availability of the System are the most serious example to date of RTG's egregious failures to ensure that service levels are provided in accordance with the Project Agreement and to provide sufficient Vehicles as required under the Project Agreement. The City has repeatedly cited these failures, including in the City's remedial rights letters dated December 18, 2019 (OTT-RTG-LET-0293) and January 9, 2020 (OTT-RTG-LET-0532), as well as the City's Notice of Project Co Event of Default dated March 10, 2020 (OTT-RTG-LET-0307), which has not been cured or rectified as of the date of this letter.

RTG's breaches of its obligations under the Project Agreement as a result of the Derailments relate not only to the performance of the Maintenance Services, but also to RTG's performance of the Design and Construction Works. Given the breadth of these breaches, the City's confidence in RTG's ability to deliver the Maintenance Services has been seriously eroded.

RTG's failures have in no way been a consequence of a breach by the City of its obligations under the Project Agreement. Accordingly, Defaults have occurred.

Given these Defaults, RTG is required to remedy these breaches, pursuant to Section 45.1(a)(v)(A), by immediately commencing and diligently continuing to remedy its breaches, mitigating any adverse effects on the availability of the System to System Users, providing a reasonable plan and schedule for remedying the breach within **5 Business Days** of receiving notice, and performing its obligations to achieve its plan and schedule within the time for the performance of its obligations under that plan and schedule.

[11] In relation to the Output Specifications requirements, and by way of example only, see Schedule 15-2 (e.g. Schedule 15-2, Part 4 – Design and Construction Requirements – Vehicles and Systems), and Schedule 15-3 (Maintenance and Rehabilitation Requirements).

2) Defaults Pursuant to Sections 45.1(a)(x) to (xii) of the Project Agreement – Failure Points

The accumulation of Failure Points triggers the exercise of important City rights under the Project Agreement if specified thresholds are met, including Project Co Events of Default. As the City has previously noted to RTG, Failure Points discipline performance that is so far below the contracted threshold that financial penalties alone no longer suffice. It is unacceptable to the City that the Failure Points incurred by RTG have yet again far exceeded the Default thresholds set out in s. 45.1(a)(x) to (xii) of the Project Agreement which reference the following thresholds:

- 1,300 or more Failure Points in any three (3) rolling Contract Months
- 1,600 or more Failure Points in any six (6) rolling Contract Months
- 2,000 or more Failure Points in any twelve (12) rolling Contract Months

The Failure Points accrued by RTG in the month of August **alone** exceed the twelve month threshold for Default based on only **two** categories of Failure Points. In particular, as a result of the First Derailment RTG's Failure Points for August 2021 alone as shown in the Integrated Management Information Reporting System (**"IMIRS"**)[12] are:

- 2405 Failure Points for System Events
- 420 Failure Points for Vehicle Availability

Therefore, in relation to these indisputable Failure Points in the month of August 2021 RTG incurred 2825 Failure Points.

Based on these Failure Points, a Default has occurred under each of Section 45.1(a)(x), (xi), and (xii) with regards to the First Derailment.

Moreover, the City expects that the September Failure Points for Vehicle Availability and System Events will be comparable to the extraordinarily high points for August, given that RTM is reported as stating that it may be three weeks before full service resumes.[13] As such, the City fully expects that the Second Derailment will also constitute a default pursuant to Sections 45.1(a)(x) to (xii), and reserves its right to update this Notice of Default after the reporting of the September Failure Points.

Under the Project Agreement, RTG is not entitled to any remedy for this Default as Section 45.4 of the Project Agreement specifically omits Sections 45.1(a)(x) to (xii). However, provided that RTG acknowledges this Default, the City is prepared to allow RTG the same opportunity to provide a plan and schedule to remedy this Default, as with the other Defaults, as described below.

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[12] The IMIRS System is a system that RTG created and monitors.

[13] CTV News, Ottawa, September 21, 2021: "Full O-Train service could be shut down for three weeks after LRT train derailment: RTM" (https://ottawa.ctvnews.ca/full-o-train-service-could-be-shut-down-for-three-weeks-after-lrt-train-derailment-rtm-1.5592357).

Plan and Schedule to Remedy Defaults

The City requires that RTG provide a detailed plan and schedule to remedy its Defaults (as described herein) by October 1, 2021. The City will then evaluate that plan and schedule and consider its next steps and, to be clear, the City is investigating all of its options under the Project Agreement and at law and this Notice of Default is not the City's sole remedy in this current situation, as noted below.

The City has been more than patient in allowing RTG time to remedy its outstanding Defaults as set out in the March 10, 2020 Notice of Default. RTG's effort to remedy those Defaults is incomplete, as confirmed by the Mott MacDonald Report dated August 14, 2020.

The City's patience is at an end given the Derailments. On this occasion the City sees no reason to extend the date for RTG to provide a plan and schedule given RTG's past performance and its lack of urgency in addressing pressing issues.

Other Remedies

The other remedies the City will be implementing include:

- Increased monitoring at RTG's expense; and
- Replacement of Key Personnel.

These measures will be addressed under separate cover. In addition, the City is exploring other remedies available to it, including, but not limited to, its remedial rights under Section 32 of the Project Agreement, its remedial rights under Schedule 15-3, and the remedies available to it as lender under the Lending Agreement.

City Recovery of Costs

Pursuant to Section 45.6 the City puts RTG on notice that the City will require RTG to reimburse the City for all reasonable costs (including all legal and professional fees) properly incurred by the City in exercising its rights under Section 45. The City will take commercially reasonable steps to mitigate such costs. Similarly, should the City be required to take any other remedial action, it will also pursue recovery of its costs pursuant to the relevant provisions of the Project Agreement.

Finally, the City requires that RTG keep the City informed of all inspections, investigations and findings in relation to the Derailments, and provide the City with unfettered access to all inspections, investigations and other activities regarding the Derailments.

The City reserves all of its rights under the Project Agreement and at law.

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Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc

Lorne Gray, OTC
Troy Charter, OCT
Mario Guerra, RTM

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This is Exhibit "V" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.

Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

Payment Adjustment Report - Detailed Calculation 9/1/2021 12:00:00 AM TO 10/1/2021 12:00:00 AM

11/2/2021 2:41:00 PM

Revenue Vehicle Kms Availability Adjustment

Vehicle Kilometres

	Peak	Off-Peak	Aggregate
Scheduled Revenue Service Kms for Period	89,247.00	242,053.00	331,300.00
Revenue Vehicle Service Kms for Period	47,591.14	148,107.55	195,698.70
Revenue Vehicle Km's Missed due to Non-Project Co. Cause (NPCCKm)	189.45	636.39	825.84
Availability Ratio (AR)	**53.5%**	**61.5%**	
Deduction Factor (DF)	**100.00%**	**100.00%**	

Vehicle Kms Availability Failure Deduction (VAFD Peak) =	(DF, Peak) * (UASP, month) * 0.70 =	100.00% * 5,128,251.33 * 0.70 =	**$3,589,775.93**
Vehicle Kms Availability Failure Deduction (VAFD Off-Peak) =	(DF, Off-Peak) * (UASP, month) * 0.30 =	100.00% * 5,128,251.33 * 0.30 =	**$1,538,475.40**

Detailed calculation of (UASP,month):

UASPn=	ASPn/12	+	VP					+	Average Monthly Lifecycle		
=	49,985,574.36 /12	+	Tkmn	*	PPkmn	*	ESCn	+	AMLP	*	ESCn
=	4,165,464.53	+	198,667.72	*	1.1126	*	1.1474	+	618,065.31		1.1474
=	4,165,464.53	+	253,618.66					+	709,168.14		
=	5,128,251.33										

Summary of System Events and Deductions

Date & Time	System Event Type (Single Day, Morning Peak, Afternoon Peak)	AR	Base Deduction		ESCn	Deduction Amt
9-1-2021 12:00:00 AM	Morning Peak	80.53%	52,500.00	*	1.1474	$56,323.15
9-2-2021 12:00:00 AM	Morning Peak	85.39%	52,500.00	*	1.1474	$56,323.15
9-3-2021 12:00:00 AM	Friday Morning Peak	85.36%	52,500.00	*	1.1474	$56,323.15
9-7-2021 12:00:00 AM	Morning Peak	85.22%	52,500.00	*	1.1474	$56,323.15
9-8-2021 12:00:00 AM	Morning Peak	85.29%	52,500.00	*	1.1474	$56,323.15
9-13-2021 12:00:00 AM	Morning Peak	85.40%	52,500.00	*	1.1474	$56,323.15
9-14-2021 12:00:00 AM	Morning Peak	85.51%	52,500.00	*	1.1474	$56,323.15
9-17-2021 12:00:00 AM	Friday Morning Peak	87.23%	52,500.00	*	1.1474	$56,323.15
9-19-2021 12:00:00 AM	Day Aggregate	31.42%	52,500.00	*	1.1474	$56,323.15
9-20-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	$56,323.15
9-20-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	$56,323.15
9-20-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	$0.00
9-21-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	$56,323.15
9-21-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	$56,323.15
9-21-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	$0.00
9-22-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	$56,323.15
9-22-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	$56,323.15

9-22-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	$0.00
9-23-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	$56,323.15
9-23-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	$56,323.15
9-23-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	$0.00
9-24-2021 12:00:00 AM	Friday Morning Peak	0.00%	52,500.00	*	1.1474	$56,323.15
9-24-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	$56,323.15
9-24-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	$0.00
9-25-2021 12:00:00 AM	Day Aggregate	0.00%	52,500.00	*	1.1474	$56,323.15
9-26-2021 12:00:00 AM	Day Aggregate	0.00%	52,500.00	*	1.1474	$56,323.15
9-27-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	$56,323.15
9-27-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	$56,323.15
9-27-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	$0.00
9-28-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	$56,323.15
9-28-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	$56,323.15
9-28-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	$0.00
9-29-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	$56,323.15
9-29-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	$56,323.15
9-29-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	$0.00
9-30-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	$56,323.15
9-30-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	$56,323.15
9-30-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	$0.00

Total System Event Deductions (EvD) **$1,633,371.38**

Vehicle Availability Failure Deduction for month = (VAFD Peak) + (VAFD Off-Peak) + (EvD) = $3589775.93 + $1538475.40 + $1633371.38 = **$6,761,622.71**

Station Availability Adjustment

	1		2		3		Aggregate	
	Peak	Off -	Peak	Off -	Peak	Off -	Peak	Off -
Station Scheduled Hours	414.00	1,874.22	207.00	930.81	276.00	1,241.41	897.00	4,046.43
Station Availability Failure Hours	0.20	0.00	0.40	0.04	0.00	0.00	0.60	0.04
Station Availability Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Station Deduction Factor							0.00	0.00

Station Availability Failure Deduction for month = (St.DF-Peak) * (UASP, month) * 0.70 + (St.DF-Off-Pk) * (UASP, month) * 0.30 = $0.00 + $0.00 = **$0.00**

Detailed calculation of (UASP,month):

UASPn=	ASPn/12		+		VP			+	Average Monthly Lifecycle		
=	49,985,574.36	/12	+	Tkmn	*	PPkmn	*	ESCn	+	AMLP	* ESCn
=	4,165,464.53		+	198,667.72	*	1.1126	*	1.1474	+	618,065.31	1.1474
=	4,165,464.53		+	253,618.66					+	709,168.14	
=	5,128,251.33										

Payment Adjustment Report - Detailed Calculation 9/1/2021 12:00:00 AM TO 10/1/2021 12:00:00 AM

11/2/2021 2:41:00 PM

Quality and Service Failure Deductions

Summary of Service Failure Events

Work Order	Date & Time	Classification	Service Event Description	No. Failures	Base Deduction		ESCn		Applied SF Deduction
00112081	9-1-2021 6:29:00 PM	Major	Blood on bench	1	530.00	*	1.1474	=	608.12
00112086	9-4-2021 5:53:34 PM	Medium	Elevator 4, RID	3	265.00	*	1.1474	=	912.18
00113742	9-12-2021 9:26:21 AM	Major	DESK #2 and DESK #3	2	530.00	*	1.1474	=	1,216.24
00113487	9-13-2021 11:58:49 AM	Major	CCTV cameras inside	19	530.00	*	1.1474	=	11,554.32
00114187	9-15-2021 7:29:54 AM	Major	West entrance street	1	530.00	*	1.1474	=	608.12
00115107	9-22-2021 10:27:13 AM	Major	TPSS 6 High Rail	4	530.00	*	1.1474	=	608.12

		No. Events	Deductions	
Service Failures	Minor	0	$0.00	
	Medium	1	$912.18	
	Major	5	$14,594.92	
	Total	6	$15,507.10	**$15,507.10**

Summary of Quality Failure Events

Work Order	Date & Time	Classification	Quality Event Description	No. Failures	Base Deduction	ESCn	Applied QF Deduction

		No. Events	Deductions	
Quality Failures	Minor	0	$0.00	
	Medium	0	$0.00	
	Major	0	$0.00	
	Total	0	$0.00	**$0.00**

Gainshare or Painshare Adjustment

Gainshare (+ve), Painshare (-ve) Adjustment =

Note:

All formulas and referenced factors are as reflected in Project Agreement Schedule 20.

NOTE: RTG disputes the application of Failure Points for this Contract Month. This invoice Month is part of an ongoing dispute between RTG and the City regarding the application of the Payment Mechanism and the Failure Points and Deductions thereunder. RTG has requested a formal review of Schedule 20 pursuant to Part F of Schedule 20. RTG has also formally disputed that the City has a right to carry forward Deductions incurred in one Contract Month to a subsequent Contract Month, and does not accept that the City has the right to do so.

This is Exhibit "W" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

Performance Monitoring Report-Detailed Calculation: 9/1/2021 12:00:00 AM TO 10/1/2021 12:00:00 AM

10/1/2021 1:26:00 PM

Revenue Vehicle Kilometres Availability Performance

Vehicle Kilometres

	Peak	Off-Peak	Aggregate
Scheduled Revenue Service Kms for Period	89,196.93	242,103.07	331,300.00
Revenue Vehicle Service Kms for Period	47,591.14	148,107.55	195,698.70
Total Vehicle Kms for Period (includes Training, Pull-in, Pull-out)			198,667.72
Revenue Vehicle Km's Missed due to Non-Project Co. Cause	189.45	636.39	825.84
Availability Ratio (AR)	**0.538**	**0.614**	

Vehicle Kms Availability Failure Deduction (VAFD Peak) = (DF, Peak) * (UASP, month) * 0.70 = 100.00% * 5,128,251.33 * 0.70 = **$3,589,775.93**

Vehicle Kms Availability Failure Deduction (VAFD Off-Peak) = (DF, Off-Peak) * (UASP, month) * 0.30 = 100.00% * 5,128,251.33 * 0.30 = **$1,538,475.40**

Detailed calculation of (UASP,month):

UASPn=	ASPn/12	+	Tkmn	*	VP PPkmn	*	ESCn	+	Average Monthly Lifecycle AMLP	*	ESCn
=	49,985,574.36 /12	+						+			
=	4,165,464.53	+	198,667.72	*	1.1126	*	1.1474	+	618,065.31		1.1474
=	4,165,464.53	+	253,618.66					+	709,168.14		
=	5,128,251.33										

Summary of System Events and Failure Points and Deductions

Date & Time	System Event Type (3pl Day, Mng Peak, Aft Peak)	AR	Base Deduction		ESCn		Applied Deduction	IMIRS Failure points
9-1-2021 12:00:00 AM	Morning Peak	80.53%	52,500.00	*	1.1474	=	56,323.15	65
9-2-2021 12:00:00 AM	Morning Peak	85.40%	52,500.00	*	1.1474	=	56,323.15	65
9-3-2021 12:00:00 AM	Friday Morning Peak	85.36%	52,500.00	*	1.1474	=	56,323.15	65
9-7-2021 12:00:00 AM	Morning Peak	85.22%	52,500.00	*	1.1474	=	56,323.15	65
9-8-2021 12:00:00 AM	Morning Peak	85.29%	52,500.00	*	1.1474	=	56,323.15	65
9-13-2021 12:00:00 AM	Morning Peak	85.40%	52,500.00	*	1.1474	=	56,323.15	65
9-14-2021 12:00:00 AM	Morning Peak	85.51%	52,500.00	*	1.1474	=	56,323.15	65
9-17-2021 12:00:00 AM	Friday Morning Peak	87.23%	52,500.00	*	1.1474	=	56,323.15	65
9-19-2021 12:00:00 AM	Day Aggregate	31.42%	52,500.00	*	1.1474	=	56,323.15	65
9-20-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
9-20-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
9-20-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	=	0.00	65
9-21-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
9-21-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
9-21-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	=	0.00	65
9-22-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
9-22-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
9-22-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	=	0.00	65
9-23-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
9-23-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
9-23-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	=	0.00	65
9-24-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
9-24-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
9-24-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	=	0.00	65
9-25-2021 12:00:00 AM	Day Aggregate	0.00%	52,500.00	*	1.1474	=	56,323.15	65
9-26-2021 12:00:00 AM	Day Aggregate	0.00%	52,500.00	*	1.1474	=	56,323.15	65
9-27-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
9-27-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
9-27-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	=	0.00	65
9-28-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
9-28-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
9-28-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	=	0.00	65
9-29-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
9-29-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
9-29-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	=	0.00	65
9-30-2021 12:00:00 AM	Morning Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
9-30-2021 12:00:00 AM	Afternoon Peak	0.00%	52,500.00	*	1.1474	=	56,323.15	65
9-30-2021 12:00:00 AM	Day Aggregate	0.00%	0.00	*	1.1474	=	0.00	65
Total System Event Deductions, Failure Points							1,633,371.35	2470

	Availability Ratio	IMIRS Failure Points
Aggregate Veh Kms Availability FP	59.32%	420

NOTE: RTG disputes the application of Failure Points for this Contract Month. This invoice Month is part of an ongoing dispute between RTG and the City regarding the application of the Payment Mechanism and the Failure Points and Deductions thereunder. RTG has requested a formal review of Schedule 20 pursuant to Part F of Schedule 20. RTG has also formally disputed that the City has a right to carry forward Deductions incurred in one Contract Month to a subsequent Contract Month, and does not accept that the City has the right to do so.

This is Exhibit "X" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

November 1, 2021

Mr. Nicolas Truchon, CEO
Rideau Transit Group GP
805 Belfast Road
Ottawa, ON K1Z 0Z4

Our reference: OTT-RTG-LET-0424

Dear Mr. Truchon:

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("PA" or "Project Agreement")[1] between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG")

S. 45.1 – Notice of Project Co Event of Default - Updated

Further to the City's Notice of Default dated September 24, 2021 (OTT-RTG-LET-0403) (the "Notice of Default"), the City hereby provides an updated Notice of Default to include Failure Points accrued in September 2021, now that RTG's Performance Monitoring Report for the Contract Month of September has been delivered by RTG.

As set out in the Notice of Default, the Failure Points accrued by RTG during the month of August 2021 as shown in the IMIRS are:

- 2,405 Failure Points for System Events
- 420 Failure Points for Vehicle Availability

The City notes that in its Performance Monitoring Report RTG slightly adjusted the above points, which adjustments the City rejects, but in any event the Failure Points totals, even as adjusted, far exceed the thresholds for default set out in Section 45.1(a)(x)-(xii).

The City has now reviewed the Failure Points accrued by RTG in the month of September 2021 as shown in the IMIRS and notes that the Failure Points in relation to System Events and Vehicle Availability only accrued by RTG during the month of September 2021 are:

- 2,470 Failure Points for System Events
- 420 Failure Points for Vehicle Availability

Cumulatively, in the months of August and September 2021, RTG has accrued a total of 5,715 Failure Points in two service categories alone, exceeding the thresholds set out under Sections 45.1(a)(x)-(xii) of the Project Agreement and accordingly, constitute Project Co Events of Default pursuant to these Sections of the Project Agreement.

The City reserves all of its rights under the Project Agreement and at law.

---

[1] All capitalized terms not defined herein shall bear their meanings as defined in the Project Agreement and the Notice of Project Co Event of Default dated September 24, 2021 (OTT-RTG-LET-0403).

City of Ottawa
O-Train Construction
Transportation Services Department
110 Laurier Avenue West
Ottawa, ON
K1P 1J1

Ville d'Ottawa
Construction de l'O-Train,
Direction générale des transports,
110, avenue Laurier ouest
Ottawa, ON
K1P1J1

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc

Lorne Gray, OTC
Troy Charter, OCT
Mario Guerra, RTM

City of Ottawa
O-Train Construction
Transportation Services Department
110 Laurier Avenue West
Ottawa, ON
K1P 1J1

Ville d'Ottawa
Construction de l'O-Train,
Direction générale des transports,
110, avenue Laurier ouest
Ottawa, ON
K1P1J1

This is Exhibit "Y" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.

Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

December 7, 2021

Mr. Nicolas Truchon, CEO
Rideau Transit Group GP
805 Belfast Road
Ottawa, ON KIZ 0Z4

Our reference: OTT-RTG-LET-0438

Dear Mr. Truchon:

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("PA" or "Project Agreement")[1] between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG")

S. 45.1 – Notice of Project Co Event of Default – Further Update

Further to the City's Notice of Default dated September 24, 2021 (OTT-RTG-LET-0403) and the subsequent update dated November 1, 2021 (OTT-RTG-LET-0424) (collectively, the "**Notice of Default**"), the City hereby provides a Further Notice of Default to include Failure Points accrued in October 2021, now that RTG's Performance Monitoring Report for the Contract Month of October has been delivered by RTG.

As set out in the Notice of Default, in August and September, the Failure Points accrued by RTG as shown in the IMIRS are:

Failure Points Category	August 2021	September 2021
System Events	2,405	2,470
Vehicle Availability	420	420
Total	2,825	2,890

RTG's October Performance Adjustment Report reflects the above Failure Points. These totals significantly exceed the thresholds for default set out in Section 45.1(a)(x)-(xii).

The City has now reviewed the Failure Points accrued by RTG in the month of October 2021 as shown in the IMIRS and notes that the Failure Points in relation to the same two categories being System Events and Vehicle Availability only accrued by RTG during the month of October 2021 are:

- 4,615 Failure Points for System Events
- 420 Failure Points for Vehicle Availability

[1] All capitalized terms not defined herein shall bear their meanings as defined in the Project Agreement and the Notice of Project Co Event of Default dated September 24, 2021 (OTT-RTG-LET-0403).

City of Ottawa
O-Train Construction
Transportation Services Department
110 Laurier Avenue West
Ottawa, ON
K1P 1J1

Ville d'Ottawa
Construction de l'O-Train,
Direction générale des transports,
110, avenue Laurier ouest
Ottawa, ON
K1P1J1

Cumulatively, in the months of August, September and October 2021, RTG has accrued a total of **10,750** Failure Points in two categories alone, exceeding the thresholds set out under Sections 45.1(a)(x)-(xii) of the Project Agreement and accordingly, constitute Project Co Events of Default pursuant to these Sections of the Project Agreement.

The City reserves all of its rights under the Project Agreement and at law.

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc

Lorne Gray, OTC
Troy Charter, OCT

City of Ottawa
O-Train Construction
Transportation Services Department
110 Laurier Avenue West
Ottawa, ON
K1P 1J1

Ville d'Ottawa
Construction de l'O-Train
Direction générale des transports
110, avenue Laurier ouest
Ottawa, ON
K1P1J1

This is Exhibit "Z" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

Rideau Transit Group
805 Belfast Road
Ottawa, ON K1G 0Z4

3 October 2021

City of Ottawa
110 Laurier Avenue West
Ottawa, ON K1P 1J1

Our Reference:	RTG-OTT-58-0-LET-1285
RTM Reference:	RTM-RTG-00-0-LET-0167
City Reference:	OTT-RTG-RLET-0403
Project Agreement Reference:	N/A

Attention: **Michael Morgan**
Director, Rail Construction Program

Subject: **Notice of Default – RTG Return to Service Action Plan**

Dear Mr. Morgan:

We write in response to your letter OTT-RTG-RLET-0403 (the "**City Letter**"). RTG understands the City's concerns caused by the recent Derailments (as defined in the City Letter). However, RTG is disheartened by and disagrees with the way its commitment to the Project is portrayed in the City Letter. Following each Derailment, RTG and its subcontractors immediately commenced remedial measures and implemented mitigation strategies to limit the adverse effects of the Derailments on the City and its riders.

RTG is currently reviewing the City's default determinations which RTG disputes. The City's determination that RTG is in default is at the very least premature. At the moment, the full details surrounding the Derailments are unknown, including the impact of all mitigating circumstances which the City ignored in its assessment. Attached to this letter is correspondence from Rideau Transit Maintenance ("RTM") that addresses several of the concerns raised in the City Letter about its response and the steps that have been taken to respond to each incident. RTG takes the recent Derailments very seriously and has taken immediate action to mobilize its subcontractors to assist with a timely return to service for the System.

In the spirit of collaboration and without prejudice to RTG's position on the alleged default, RTG has initiated the development of a series plans to remedy the impacts from the Derailments, re-instate Revenue Service when deemed safe to do so as well as address issues of concern that have been raised by the City that predate the Derailments.

The attached correspondence also includes a Return to Service Action Plan that has been developed by RTM and its main subcontractor, Alstom Maintenance. The plan focuses on the immediate activities

that will be required for the System to return to service as well as longer term initiatives associated to operational improvements to the Maintenance Activities under their respective scope.

This is the first of a series of plans that RTG will be developing over the coming weeks once the Return to Service Action Plan is underway. These plans will address the priorities communicated by the City on August 26, 2021 and will also include the development of a detailed response to the observations/recommendations in the Mott MacDonald report resulting from the implementation of our last Remedial Plan. These plans will be adjusted based on recommendations from the Independent Experts retained by the City to exercise Increased Monitoring. Collectively, RTG will integrate these individual plans into the new Remedial Plan that has been requested by the City in its letter of September 24, 2021.

In addition to the Return to Service Action Plan, the City will receive the following additional plans from RTG in the coming weeks:

- **Maintenance Sustainability Plan:** This plan will focus on the day-to-day performance of Maintenance Activities under the scope of RTM and its subcontractors. The plan will address both Infrastructure and Vehicles and will be geared at enhancing the planning, scheduling, performance, and monitoring of Maintenance Activities. The plan will specifically address staffing levels, competence as well as training.

- **Vehicle Reliability Growth Plan:** This plan will be led by OLRTC, working with Alstom under the Vehicle Supply subcontract. The plan will address issues around vehicle defects which will be corrected under warranty. Focus will be on planning and execution for the modifications campaign to be deployed in the short term (i.e. spline issue, etc.) as well as on resolving other known vehicle defects for which a permanent solution still needs to be identified (i.e. CVS, Axle Bearing Assembly, Couplers, HVAC, etc..). This plan will map out a better approach to vehicle retrofits including possibly doing more off site to minimize the impact on MSF Operations.

- **Infrastructure Reliability Growth Plan:** This plan will be led by RTM working with Alstom under the Maintenance subcontract. The plan will be built from the detailed response to the findings from the Mott MacDonald report and specifically address how RTM intends to manage Infrastructure issues such as track movements, rail corrugation, noise and vibration, TSR's, arcing, etc. The plan will also address network issues and cybersecurity enhancements.

- **Construction Closeout Plan:** This plan will be led by OLRTC. The plan will address current outstanding elements of the scope which impact the performance of the System and the Maintenance activities. The plan will address the missing equipment at the MSF (i.e. the UTO) as well as the deployment of PACIS, Driver Cab CCTV Platform Edge View, etc.)

In addition to the above plans, RTG will also be working with OLRTC and Alstom under the Vehicle Supply subcontract to develop a plan to address current issues associated with the Stage 2 Vehicle delivery.

In executing and achieving all the elements of the above plans, RTG will continue to focus on what is most important to all parties: delivering safe and reliable transit service to the citizens of Ottawa.

RTG reserves all of its rights under the Project Agreement, at law and in equity.

Should you have any questions, concerns, or require additional information please do not hesitate to contact us.

Regards,



Nicolas Truchon, CFA, MBA
CEO
Rideau Transit Group General Partnership

cc.: City: Lorne Gray and Troy Charter
RTG: Bruno Tremblay

Attachments: 1) RTM-RTG-00-0-LET-0167 - Notice of Default - Return to Service Action Plan

RTM

Rideau Transit Maintenance
805 Belfast Road
Ottawa, ON K1G 0Z4

October 3, 2021

VIA EMAIL TO
Mr. Nicolas Truchon
Chief Executive Officer
Rideau Transit Group
805 Belfast Road
Ottawa, ON K1G 0ZA

RTM Letter No:	RTM-RTG-00-0-LET-0167
Replying To:	RTG-RTM-58-0-LET-0218
Reference:	OTT-RTG-LET-0403 Ottawa Light Rail Transit Project Amended & Restated Maintenance Contract dated September 16, 2019, between Rideau Transit Group General Partnership, a general partnership established under the laws of Ontario ("**RTG**" and/or "**Project Co**") and Rideau Transit Maintenance General Partnership, a general partnership established under the laws of Ontario ("**RTM**" and/or the "**Maintenance Contractor**"), the "**Maintenance Contract**".
Action Required:	

Subject: Notice of Default – Return to Service Action Plan

Dear Mr. Truchon,

We write in response to your letter RTG-RTM-58-0-LET-0218 enclosing letter OTT-RTG-LET-0403 from the City ("**City Letter**"). RTM understands the City's concerns caused by the recent Derailments (as defined in the City Letter). However, RTM is disheartened by and disagrees with the way its commitment to the Project is portrayed in the City Letter. Following each Derailment, RTM immediately commenced remedial measures and implemented mitigation strategies to limit the adverse effects of the Derailments on the City and its riders.

September Derailment (as defined in the City Letter)

RTM's immediate attendance at the scene of the September Derailment demonstrates the seriousness in which these unfortunate incidents are regarded by RTM. Contrary to the City's letter, RTM personnel (S. Nadon, T. Pate and T. Lévesque) were on the scene within 30 minutes of the incident occurring. However, the Ottawa Police prevented anyone from accessing the site until 15h00 causing the delay. As soon as

RTM

access to the site was permitted by the Ottawa Police, RTM, Alstom, the City, and the TSB jointly walked the tracks to inspect the scene of the September Derailment.

Further, the timeliness of RTM's responses to detailed information requests from the City demonstrates RTM's commitment to addressing the September Derailment. Several detailed information requests were sent by the City in relation to the September Derailment and were responded to within the timelines reflected below:

- URGENT REQUEST: FW: R21H0121 - OLRT Tremblay Station - TSB Request for Information (3) from the City (B Richards) to RTM (M Guerra) was responded to on September 24th, 2021, letter RTM-RTG-00-0-LET-0160 (Derailment of LRV1121 - Requested Documentation (Request #2)).

- FW: R21H0121 - OLRT MTTD at Tremblay Station 19 September 2021 - TSB Request for Info (2) was responded to on September 24th, e-mail from RTM (T Lévesque) to the City dated September 24th, 2021, formal response detailed in letter RTM-RTG-00-0-LET-0161.

- FW: TSB File R21H0121 - OLRT MTTD at Tremblay Station 19 September 2021 - OLRT Initial Request for Info (1) from the TSB (R Johnston) to S Nadon was responded to on September 24th, 2021, letter RTM-RTG-00-0-LET-0159 (Derailment of LRV1121 – Requested Documentation (Request #1)).

<u>August Derailment (as defined in the City Letter)</u>

RTM received an initial list of 18 questions on August 17th, 2021, requiring preliminary responses by August 19th, 2021. RTM sent a detailed preliminary response to letter OTT-RTG-LET-0386 via e-mail to the City (Troy Charter and Michael Morgan) on Friday, August 20th, 2021, followed by a formal response on September 3, 2021 (RTM-RTG-00-0-LET-0147).

The City sent a further 32 questions under letter OTT-RTG-LET-0388 on August 31st, 2021. The City permitted initial responses by September 10th *with subsequent answers to follow.* As several responses were related, RTM did not want to respond on a piecemeal basis and requested an extension to September 27th, 2021, to which the City did not object. RTM sent its formal response to these additional questions on September 27th, 2021 (RTM-RTG-00-0-LET-0162).

In addition to the responses, RTM sent both a Safety Risk Assessment as well as a Risk Assessment of the Track Damage to the City on August 18th, 2021.

<u>Return to Service Action Plan and Other Measures Implemented</u>

While RTM supports RTG in its dispute of the City's default determination, without prejudice to that position, RTM submits, prior to the expiry of the required five Business Days, (Thursday September 30th,

RTM

not being a Business Day), the attached *Return to Service Action Plan* ("**Plan**") for remedying and mitigating the effects of the Derailments prepared by the Maintenance Subcontractor, Alstom Transport Canada Inc ("**Alstom**"). The Plan focuses on the immediate activities that will be required for the System to return to service as well as longer term initiatives associated with operational improvements to the Maintenance Activities.

A detailed infrastructure repair Gantt Chart, referenced in the Plan, was sent to the City by e-mail on October 1st, 2021, and is again attached to this letter for reference (*LRV 21 Derailment - Infrastructure repairs*). Despite various assurances from Alstom, the Vehicle return to service plan and the proposed execution thereof has not been finalised. Alstom has undertaken to provide this document by no later than October 8th, 2021. RTM will work with Alstom to ensure that this document is delivered next week and properly executed.

RTM undertakes to support Alstom in the execution of the Plan. To ensure its execution, RTM has, in addition to all other contractual rights available to it which are currently under consideration, placed Alstom under increased monitoring. This increased monitoring shall be undertaken both by an independent third party as well as additional resources seconded to RTM from its various partner companies for this purpose. For the duration of the increased monitoring, the safe return to Service as well as the City's historic concerns, as detailed below, will be addressed.

Maintenance Period Technical Matters
D1: Wheel Rail Interface Study and Corrective Action Plan (vehicle steering, flange wear, noise & vibration) *Note: Need full study completed and appropriate mitigations to be agreed: custom rail grinding; vehicle modifications; flange lubrication; friction modifiers; track geometry (superelevation), and other corrections as required to reduce noise and reduce onboard vibrations.*
D2: Track Performance Correction (sun kinking) and Elimination of Long Term Speed Reductions (TSRs) *Note: Need permanent repairs to minimize annual maintenance obligations and track speed impacts*
D3: Vehicle Reliability Growth Plan: Monthly Reporting & Key Actions to Improve Performance *Note: Need full transparency on monthly analyses and action plans to correct vehicle issues*
D4: Cracked Wheel Replacement Program - Complete Remaining Vehicles
D5: Fast Track Repair Program for Axle Defects (premature spline wear)
D6: Maintenance Sustainability: Monthly Reporting & Key Actions to Prevent Backlog *Note: Need process to ensure level loading of effort and to prevent future backlogs of maintenance work*
D7: Infrastructure Reliability Growth Plan: Monthly Reporting & Key Actions to Improve Performance *Note: Need to establish monitoring and growth plan for infrastructure reliability, e.g. TPSS06 alarming, network failures, wayside CCTV failures, wayside PIDS failures, etc...*
D8: Fast Track Repair Program for August 2021 Axle/Bearing/Wheel Failure

In executing and achieving all the elements of the Plan, RTM will continue to focus on what is most important to all parties the provision of a safe and reliable System.

Save as otherwise specified, all capitalized terms not defined herein shall bear the meanings ascribed to them in the Maintenance Contract. RTM reserves all its rights under contract, at law and in equity.

RTM

Sincerely,
Rideau Transit Maintenance General Partnership

Mario Guerra, General Manager

Attachments: Return to Service Action Plan
LRV 21 Derailment - Infrastructure repairs

Cc.: Meaghan Walser, Bruno Tremblay – RTG
James Messel, Steve Nadon, Tania Seely – RTM

ALSTOM	Return to Service Action Plan			Train
		ACTIONS	PIC/OWNER*	ACTIONS DUE DATE
1. Organisational Alignment	1.1	Review of current organisational set up and skills set - develop return-to-service plan (including a shift pattern alignment, supervisory coverage, etc. To optimize efficiencies and synergies.)	Jeff Gaffney	2021-10-06
	1.2	Plan for identification/injection of additional resources to drive return-to-service plan		2021-11-01
	1.3	Reassess structural alignment with RTM		2021-11-01
2. Return to Service Plan	2.1	Provide infrastructure repair Plan on damaged section of the track	Neil Stainke	Submitted
	2.2	Define and agree with RTM on the repair scope for return to safe service	Neil Stainke	2021-10-08
	2.3	Mobilise required resources, facilities and tools to achieve return to service plan	Neil Stanke	2021-10-15
	2.4	Deploy a plan for industrialisation and execution per vehicle (Backlog, CM, PM and fleet check)	Neil Steinke	2021-10-15
	2.5	Plan to accelerate "vehicle long term hold" reduction to ensure vehicle availability	Carlos Lamoureux	2021-10-08
	2.6	Notification to RTM to ensure delivery of required equipment within their scope - vehicle mover, jacks, bogie table, stands at right place	Richard France	2021-10-01
	2.7	Continue QA / QC Governance and associated Quality gates around vehicle return to service plan and execution	Jean-Francois Plante	2021-10-08
3. Quality control & maintenance methods (including processes)	3.1	Develop a plan for return of experience and global best practices in respect of performance management process, governance, tools and KPIs tools - shop floor, supplier, management, project and other stakeholders	Steve Smith	2021-10-08
	3.2	Reassess the management of yard flow and throughput	Pierre-Louis Denis	2021-11-15
	3.3	Maintenance plan optimisation including reviewing content, periodicity, workload balancing and translation from design intent through to shop floor instruction	Rene Meuser	Q1 2022
	3.4	Review accuracy of work instructions against design intent	Yang Liu	2021-11-30
	3.5	In order to support Return To Service plan, ensure the coordination with Sourcing and supplier team, including QA/QC team	Genoveva Bonora	2021-11-30
	3.6	Assess and optimise strategy for on-site materials management, warehousing / logistics and demand planning	Sean McCarty	2021-11-30
	3.7	Re-validate current QA/QC processes, quality gates, culture, tools and training	Jean-Francois Plante	2021-11-30
	4.1	Align with RTM to improve quality and responsiveness of required reporting - PA, regulatory and ad-hoc requests	Jeff Gaffney	2021-10-31
	4.2	Develop and Implement Rules of Engagement and communication protocols with RTM (and other key stakeholders) including workload planning, governance and escalation	Jeff Gaffney	2021-10-31

LRV 21 Derailment - Infrastructure repairs

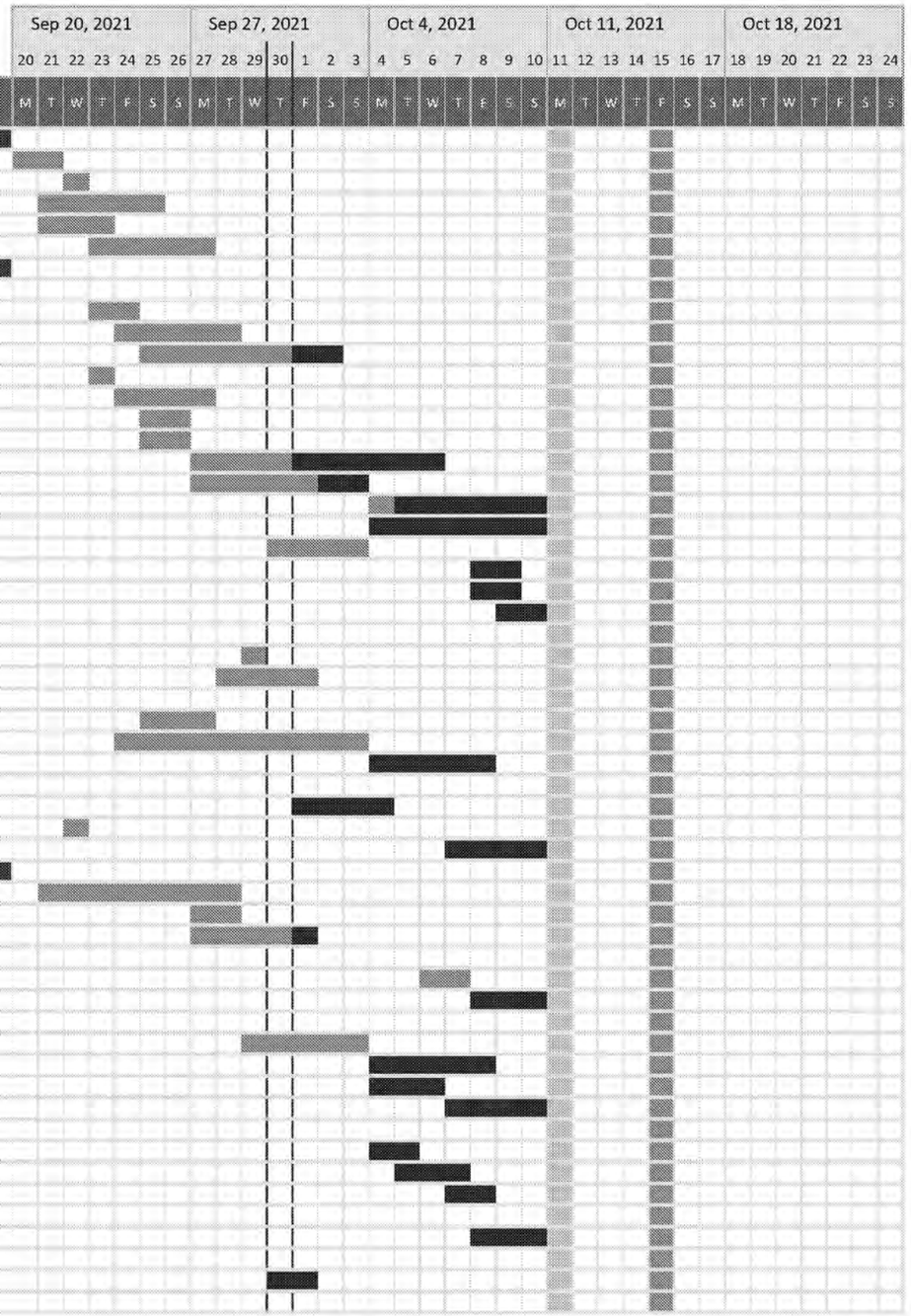
Alstom

Infrastructure

Mon, 9/20/2021

1

TASK	PIC	PROGRESS	START	END
Preparation				
Count all defective parts on Track		100%	9/20/21	9/21/21
LRV 21 Rerailing		100%	9/22/21	9/22/21
Pick up all LRV parts throughout the guideway		100%	9/21/21	9/25/21
Produce list of parts		100%	9/21/21	9/23/21
Find all parts or have an ETA for each of them		100%	9/23/21	9/27/21
Track repairs				
Tremblay Station				
Remcan to send a work plan	Remcan	100%	9/23/21	9/24/21
Validation of the work plan	Alstom	100%	9/24/21	9/28/21
Get all the parts on site	Alstom/Remcan	75%	9/25/21	10/2/21
Order ballast - 400MT	Alstom	100%	9/23/21	9/23/21
Mobilization of contractor	Remcan	100%	9/24/21	9/27/21
Prep work at Tremblay Station - Bring all materials on site (Crew of 6 people / Backhoe / 12h a day)	Remcan	100%	9/25/21	9/26/21
Unclipping and Removal of jordan rail/restraining rail (Crew of 6 people / Backhoe / 12h a day)	Remcan	100%	9/25/21	9/26/21
Tie replacement at Tremblay Station (Crew of 5-6 people / Backhoe / 14h a day)	Remcan	40%	9/27/21	10/6/21
Work plan for fence removal and contact Cavanagh	Alstom	75%	9/27/21	10/3/21
Glass panel removal at Blair/Cyrville/St Laurent/Tremblay	RTM	25%	10/4/21	10/10/21
Outside fence removal at Blair for Mark IV	Remcan	0%	10/4/21	10/10/21
Preparation work at Blair (Bump stop removal, Temporary crossing, Inner fence removal)	Remcan	100%	9/30/21	10/3/21
Track Alignment at Tremblay Station with Mark IV	Remcan	0%	10/8/21	10/9/21
Ballast Shoulder to be done with Ballast Regulator	Remcan	0%	10/8/21	10/9/21
Gauge survey of the track from SW318 to SW315	Alstom	0%	10/9/21	10/10/21
Switch 315				
Grind frog	Alstom	100%	9/29/21	9/29/21
Special Trackworks - Replace damaged hardware	Alstom	100%	9/28/21	10/1/21
Track				
Replace damaged jordan rail ties	Remcan	100%	9/25/21	9/27/21
Replacing Pandrol clips	Alstom	100%	9/24/21	10/3/21
Around 400 ties to be patched with grout repair	Alstom	10%	10/4/21	10/8/21
~~Snow fence in place between Track 1 and Track 2~~	RTM			
Jordan rail joint bars fasteners to be replaced	Alstom/Remcan	0%	10/1/21	10/4/21
Rail buckle west of SW315 to be replaced	Remcan	100%	9/22/21	9/22/21
Replace damaged transponders	Alstom	20%	10/7/21	10/10/21
Wayside repairs				
Assess the cable damage with ZEC	ZEC	100%	9/21/21	9/28/21
Clean the area	ZEC/Alstom	100%	9/27/21	9/28/21
Source the parts and cable to start the repair	ZEC	80%	9/27/21	10/1/21
Switch Machine				
Replace switch machine and switch rods	Alstom/ZEC	100%	10/6/21	10/7/21
DPICO testing of switch machine	Thales or Alstom?	0%	10/8/21	10/10/21
Switch heater				
Replace the duct work and switch heater	Alstom	100%	9/29/21	10/3/21
Repair electrical cables (Crew of 4 people / 8h a day+overtime if required)	ZEC	0%	10/4/21	10/8/21
Repair 600V panel and Heat trace control panel	ZEC/Alstom	0%	10/4/21	10/6/21
Switch heater functionality test	ZEC/Alstom	0%	10/7/21	10/10/21
Signal light				
Repair pole foundation	ZEC	0%	10/4/21	10/5/21
Replace pole	ZEC	0%	10/5/21	10/7/21
Replace jumper cables	ZEC	0%	10/7/21	10/8/21
~~Pull new wires if required~~	ZEC	0%		
DPICO testing of signal light	Thales or Alstom?	0%	10/8/21	10/10/21
Manhole				
Place the manhole cover back in place to prevent falling hazards	Alstom/ZEC	0%	9/30/21	10/1/21
Replace the damaged manhole cover	ZEC	0%		



This is Exhibit "AA" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.

Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

519

October 6, 2021

Nicolas Truchon, CEO
Rideau Transit Group GP
1545 Carling Avenue
Suite 406
Ottawa, ON K1Z 8P9

Our reference: OTT-RTG-LET-0412

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("PA" or "Project Agreement")[1] between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG")

Notice of Dispute pursuant to Section 1.3 of Schedule 27 to the PA in relation to the City's s. 45.1 Notice of Project Co Event of Default dated September 24, 2021 (OTT-RTG-LET-0403) ("Notice of Default")

RTG Letter to the City regarding the Notice of Default dated October 3, 2021 (RTG-OTT-58-0-LET-1285) ("RTG Response")

Dear Mr. Truchon:

The City hereby provides RTG with a Notice of Dispute pursuant to Section 1.3 of Schedule 27 to the Project Agreement in relation to a Dispute that has arisen following the City's issuance of the Notice of Default related to RTG's defaults under the Project Agreement. The RTG Response acknowledges that a dispute has arisen. The particulars of the matters in dispute as well as the remedy/resolution sought by the City, are set out below.

As a preliminary point, the City notes that in the time period following the delivery of the Notice of Default on September 24, 2021, the parties have had various discussions about the Notice of Default, the Events of Default and RTG's efforts to address issues arising out of the Derailments. To date, we have not been able to resolve our disagreements on these issues at the lowest level of management.

[1] All capitalized terms not defined herein shall bear their meanings as defined in the Project Agreement.

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Transportation Services Department
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Ville d'Ottawa
Construction de l'O-Train,
Direction générale des transports,
110, avenue Laurier ouest
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Relevant Context of the Dispute - The Derailments

As RTG is well aware, there were two derailments of Vehicles on the System within a six-week period:

1. The derailment on August 8, 2021 which resulted in the full grounding of the fleet until August 14, 2021 (the "**August Derailment**"); and

2. The derailment on September 19, 2021 which has again resulted in a full grounding of the fleet which remains in effect as of the date of this letter (the "**September Derailment**", collectively the "**Derailments**").

Given that RTG has acknowledged the serious nature of the Derailments in the RTG Response, the timely issuance of the Notice of Default is incontrovertible.

Any allegation that the Notice of Default is premature is entirely without merit in view of the lack of availability of the System and the Failure Point accumulation, as described below.

In any event, it is clear from the RTG Response that RTG and the City disagree about whether a Project Co Event of Default exists in respect of 1) Section 45.1(a)(v); and 2) Sections 45.1(a)(x)-(xii) of the Project Agreement such that a Dispute has arisen.

Project Co Events of Default pursuant to section 45.1(a)(v) of the Project Agreement

As set out in the City Notice of Default, the Derailments each constitute a serious breach of RTG's obligations under the Project Agreement, including RTG's failures to:

a) provide sufficient Vehicles to meet the required service levels;

b) rectify issues with the Vehicles and/or System;

c) perform all activities within the Project Scope so as to satisfy the Output Specifications,[2] in accordance with Good Industry Practice (Works), and in accordance with the terms of the Project Agreement; and

d) comply with Sections 20.1(a), 20.2, 20.8 and 20.9 of the Project Agreement.

[2] In relation to the Output Specifications requirements, and by way of example only, see Schedule 15-2, Part 4 – Design and Construction Requirements – Vehicles and Systems, and Schedule 15-3 - Maintenance and Rehabilitation Requirements.

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Pursuant to section 45.1(a)(v) of the Project Agreement, a Project Co Event of Default occurs where RTG commits a breach of its obligations under the Project Agreement which has a material adverse effect on the availability of the System to System Users.

It is indisputable that the Derailments caused a complete grounding of the fleet on two occasions, thereby rendering the System unavailable and constituting a Project Co Event of Default pursuant to section 45.1(a)(v).

Furthermore, the RTG Response is not only disappointing, but reflects the continued general abdication of responsibility that RTG has demonstrated repeatedly, including after each of the Derailments.

Project Co Events of Default pursuant to section 45.1(a)(x) to (xii) of the Project Agreement

As set out in the City Notice of Default, Project Co Events of Default under sections 45.1(a)(x) to (xii) of the Project Agreement have clearly also arisen.

Sections 45.1(a)(x) to (xii) are clear, metric-based thresholds, whereby if RTG is assessed Failure Points over a certain amount, an Event of Default has occurred. Specifically, where RTG has accrued Failure Points over the following thresholds, an Event of Default occurs:

- 1,300 or more Failure Points in any three (3) rolling Contract Months
- 1,600 or more Failure Points in any six (6) rolling Contract Months
- 2,000 or more Failure Points in any twelve (12) rolling Contract Months

As noted in the City Notice of Default, the Failure Points accrued by RTG in the month of August alone exceed the twelve-month threshold for Default based on only two categories of Failure Points; RTG accrued a total of 2825 Failure Points: (i) System Events (2405); and (ii) Vehicle Availability Kilometres (420). These Failure Points are assessed based on RTG's own data as produced by its IMIRS. There is no subjectivity to the accumulation of Failure Points particularly in relation to these two categories. RTG has simply accrued Failure Points over and above the empirical threshold that is a Project Co Event of Default. Thus, for RTG to state in the RTG Response that the Notice of Default is premature on this ground is not credible.

Similarly, as a result of the September Derailment, RTG has also accumulated significant failure points which clearly exceed the thresholds for System Events and Vehicle Availability Kilometres, as will be formally reported shortly and will be the subject of an update to the Notice of Default.

RTG has raised no grounds in the RTG Response to dispute the accumulation of Failure Points over the Project Agreement thresholds for August 2021. The City is surprised at RTG's failure to acknowledge these patently obvious Project Co Events of Default, and as a result, provides this Notice of Dispute.

RTG's Purported Plans

Pursuant to section 45.1(a)(v)(A), RTG was required to provide a reasonable plan and schedule to remedy the breaches within 5 Business Days (the "**Plan and Schedule**"). RTG has not done so in breach of its obligations under the Project Agreement.

RTG has utterly failed to deliver a compliant or adequate Plan and Schedule. In fact, at best, RTG has delivered a schedule for a series of plans to be developed "over the coming weeks", which will then be integrated into the "new Remedial Plan that has been requested by the City" in the Notice of Default. This is unacceptable.

RTG's approach to the purported Plan and Schedule does not conform to the requirements under the Project Agreement, and the City does not accept that the documents produced by RTG in the RTG Response constitute a Plan and Schedule in accordance with section 45.1(a)(v)(A) of the Project Agreement.

Remedy/Resolution Sought

The City seeks RTG's acknowledgement of the validity of the Project Co Events of Default and described herein and in its Notice of Default.

Next Steps

The City requests that RTG agree to participate in a negotiation meeting in respect of this Dispute on one of the following dates and times:

- Afternoon of October 8, 2021; or
- Morning of October 12, 2021.

As the writer is presently filling the role of both Director Rail Construction Program and acting General Manager of OC Transpo, we suggest that a single meeting be held to satisfy the requirements of both Level 2 and Level 3 of Schedule 27. If RTG disagrees with this proposal, we are prepared to have another Senior Officer attend one of the two meetings.

Alternatively, the City would be prepared to consider bypassing Level 2 and Level 3 negotiations given the clear nature of this Dispute and in order to have the matter resolved expeditiously.

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Should RTG fail to respond or fail to meet with the City, the City will proceed with the next steps of the Dispute Resolution Procedure as it is entitled to do under Schedule 27.

In conclusion and to be clear, any implication or inference that the City's exercise of its rights under the Project Agreement somehow does not focus on the delivery of safe and reliable transit service to the citizens of Ottawa, as appears to be the case from reading of the RTG Response, is completely inappropriate.

RTG's performance has caused transit riders significant concerns in Ottawa. It bears repeating that the September Derailment occurred while passengers were travelling on the vehicle. It is fortunate that everyone involved is safe. However, the City cannot and will not tolerate safety risks resulting from RTG's performance issues.

The City reserves its rights under the PA and the law.

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc Lorne Gray, OTC
Troy Charter, OCT
Mario Guerra, RTM

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This is Exhibit "BB" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

Rideau Transit Group
805 Belfast Road
Ottawa, ON K1G 0Z4

October 7, 2021

City of Ottawa
110 Laurier Avenue West
Ottawa, ON K1P 1J1

Our Reference:	RTG-OTT-00-0-LET-1292
RTM Reference:	RTM-RTG-00-0-LET-0169
Project Agreement Reference:	N/A

Attention: **Michael Morgan**
Director, Rail Construction Program

Subject: **Notice of Dispute – RTM Response**

Dear Mr. Morgan:

Please refer to the attached correspondence from RTM in response to the City's letter "OTT-RTG-LET-0412" dated October 6, 2021. RTG agrees with RTM's position as detailed in the attached letter.

We wish to reiterate that a safe return to Service is of paramount priority at this time. We agree with RTM that until such a time that Service has been re-established, any Notice of Dispute meetings should be postponed. This will allow us to focus our efforts on the repairs and root cause investigations on the Confederation Line.

Should you have any questions, concerns, or require additional information please do not hesitate to contact us.

Regards,

Nicolas Truchon, CFA, MBA
Chief Executive Officer
Rideau Transit Group General Partnership

cc.: City: Lorne Gray, Troy Charter
RTG: Bruno Tremblay
RTM: Mario Guerra

Attachments: *1) RTM-RTG-00-0-LET-0169 - Notice of Dispute*

RTM

Rideau Transit Maintenance
805 Belfast Road
Ottawa, ON K1G 0Z4

October 7, 2021

VIA EMAIL TO
Mr. Nicolas Truchon
Chief Executive Officer
Rideau Transit Group
805 Belfast Road
Ottawa, ON K1G 0ZA

RTM Letter No:	RTM-RTG-00-0-LET-0169
Replying To:	RTG-RTM-58-0-LET-0231
Reference:	OTT-RTG-LET-0412 Ottawa Light Rail Transit Project Amended & Restated Maintenance Contract dated September 16, 2019, between Rideau Transit Group General Partnership, a general partnership established under the laws of Ontario ("**RTG**" and/or "**Project Co**") and Rideau Transit Maintenance General Partnership, a general partnership established under the laws of Ontario ("**RTM**" and/or the "**Maintenance Contractor**"), the "**Maintenance Contract**".
Action Required:	

Subject: Notice of Dispute

Dear Mr. Truchon,

We write in response to your letter RTG-RTM-58-0-LET-0231 enclosing letter OTT-RTG-LET-0412 from the City ("**City Letter**"), RTM does not, at this time, intend to respond to the City Letter in detail, and no inference should be drawn by its failure to do so.

As correctly pointed out by the City, the Notice of Default was delivered on September 24th, 2021, RTM's response to both the Notice of Default and the Events of Default was circulated on October 3rd, 2021, followed by the City's Notice of Dispute two days later. As the Parties' respective positions were only articulated within a short time frame of one another, RTM disagrees that there have been any meaningful discussions among lower management to resolve disagreements relating to the Notice of Default and respective Events of Default alluded to by the City. In fact, in terms of the City Letter the Dispute only arose in the response to the Notice of Default, no meaningful discussions have taken place, in relation to the Dispute, between October 3rd, 2021, and October 6th, 2021. The delivery of the Notice of Dispute is premature, and the City is requested to provide information relating to:

- the dates the purported discussions took place;

RTM

- the parties in attendance;
- the agenda; and
- minutes of each discussion,

to substantiate that the Parties have been unable to resolve the Dispute at the lowest level of management.

RTM's sole priority and focus now is the safe return to Service in the shortest possible time, as such, RTM is unable to meet the City on either of the dates proposed for a Level 1 meeting to discuss and attempt to resolve the Dispute. Once Service has been re-established RTM will meet with RTG and the City for the purposes of such a meeting.

Should such a Level 1 meeting be unsuccessful, and a Notice of Dispute be properly issued, please be advised that RTM will not consent to the combination of both a Level 2 and Level 3 meeting, the City will have to follow the procedures dictated by Project Agreement to ensure that the Dispute Resolution Procedure is correctly exhausted.

RTM reserves all its rights under contract, at law and in equity.

Sincerely,
Rideau Transit Maintenance General Partnership

Mario Guerra, General Manager

Attachments: None

Cc.: Meaghan Walser, Bruno Tremblay – RTG
James Messel, Steve Nadon, Tania Seely – RTM

This is Exhibit "CC" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

October 8, 2021

Nicolas Truchon, CEO
Rideau Transit Group GP
1545 Carling Avenue
Suite 406
Ottawa, ON K1Z 8P9

Our reference: OTT-RTG-RLET-0617

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("PA" or "Project Agreement")[1] between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG")

Notice of Dispute pursuant to Section 1.3 of Schedule 27 to the PA in relation to the City's s. 45.1 Notice of Project Co Event of Default dated October 6, 2021 (OTT-RTG-LET-412) ("Notice of Dispute")

RTM Response (RTG-OTT-00-0-LET-1292)

Dear Mr. Truchon:

We write further to RTG's letter dated October 7, 2021 (RTG-OTT-00-0-LET-1292), enclosing a letter from RTM also dated October 7, 2021 (RTM-RTG-00-0-LET-0169) (collectively, the "**RTM Response**"), and further to the City's Notice of Dispute.

As a preliminary point, we again note that any implication that the City's exercise of its contractual rights somehow conflicts with or is inconsistent with the safe return to Service is entirely without merit. We would appreciate if RTG would refrain from further such incorrect and rhetorical commentary.

Further, we disagree that Notice of Dispute meetings in any way detract from focus on the repairs and analysis of the root cause investigations on the Confederation Line. This is particularly the case given that the proposed meetings largely involve a review of empirical Failure Point data which, in the City's view, is incontrovertible as it is derived directly from RTG's own IMIRS. RTG has not presented substantive reasons as to why it asserts that Project Co Events of Default have not occurred.

The City also disagrees with the assertion that "no meaningful discussions have taken place." In fact, the City engaged in numerous discussions with RTG between September 24, 2021 (when the Notice of Default was delivered) and October 6, 2021 (when the

[1] All capitalized terms not defined herein shall bear their meanings as defined in the Project Agreement.

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Notice of Dispute was delivered) about the Project Co Events of Default. To be clear, the Dispute is not being issued solely as a result of the delivery of RTM's plan and schedule. As the City noted in its Notice of Default, its willingness to permit RTG an opportunity to remedy the Failure Points-related Project Co Events of Default was conditional on Project Co's acceptance of the validity of that default, which Project Co has not done. Under the Project Agreement there is no entitlement to a cure period for the Failure Points-related Project Co Events of Default.

Further, under the Project Agreement the City is not required to "substantiate that the Parties have been unable to resolve the Dispute at the lowest level of management" as proposed by RTG, and certainly not with any purported requirement to provide agendas or minutes. RTG misunderstands the purpose of that portion of Schedule 27 and in particular as it relates to this Dispute. Accordingly, the City disagrees with RTG's assertion that a Level 1 meeting is still required.

In any event and with an explicit reservation of rights in respect of the lowest level of management discussions that have already taken place and on the understanding that a new Notice of Dispute will not be issued, in good faith and in order to advance the Dispute, the City is willing to meet on Tuesday October 12, 2021 to discuss the Dispute with members of the lowest level of management present.

Should RTG refuse to make such members of its lowest level of management available for such a meeting on Tuesday, or shortly thereafter, the City will proceed to Level 2 negotiations without further notice to RTG. Any attempts by RTG to delay such meetings will be viewed by the City as a bad faith attempt to delay the Dispute Resolution Process, and the City will take all necessary steps in response.

The City reserves its rights under the PA and the law.

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc Lorne Gray, OTC
Troy Charter, OCT
Mario Guerra, RTM

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This is Exhibit "DD" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

Subject: FW: Notice of Project Co Event of Default - Level 1 Dispute Resolution

From: Mario Guerra <Mario.Guerra@rtmgp.ca>
Sent: October 8, 2021 3:06 PM
To: Gray, Lorne <Lorne.Gray@ottawa.ca>
Cc: Nicolas Truchon <Nicolas.Truchon@rideautransitgroup.ca>
Subject: RE: Notice of Project Co Event of Default - Level 1 Dispute Resolution

CAUTION: This email originated from an External Sender. Please do not click links or open attachments unless you recognize the source.

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"Dear Lorne

As detailed in our prior correspondence (RTG-OTT-00-0-LET-1292 - Notice of Dispute - RTM Response) once safe and reliable service has been returned, we will arrange that a meeting take place. We anticipate being able to schedule such a meeting in the coming weeks.

Regards, Mario"

From: Gray, Lorne <Lorne.Gray@ottawa.ca>
Sent: October 8, 2021 9:22 AM
To: Nicolas Truchon <Nicolas.Truchon@rideautransitgroup.ca>; Mario Guerra <Mario.Guerra@rtmgp.ca>
Subject: Notice of Project Co Event of Default - Level 1 Dispute Resolution

EXTERNAL EMAIL: This message was sent from OUTSIDE the organization. Please exercise caution.

Nic/Mario

Further to your letter RTG-OTT-00-0-LET-1292 received yesterday, I am prepared to meet you on Tuesday October 12 any time between 8am and 2pm in an effort to resolve the dispute that has arisen over the issue of the City's recent notice of a Project Co Event of Default. Please let me know if you have availability during this time and I will set up the meeting. If Tuesday does not work, please provide other options.

thanks

Lorne

Lorne Gray - Contractor
Contract Manager
Rail Program Management
OTrain Construction
Transportation Services Department

City of Ottawa | Ville d'Ottawa
D: 613-580-2424, ext. 16642
C: 613-809-3728
Lorne.Gray@ottawa.ca

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-SRDisclaimer-

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Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

October 15, 2021

Nicolas Truchon, CEO
Rideau Transit Group GP
1545 Carling Avenue
Suite 406
Ottawa, ON K1Z 8P9

Our reference: OTT-RTG-LET-0414

RE: Ottawa LRT Project – Project Agreement dated February 12, 2013 ("PA" or "Project Agreement")[1] between the City of Ottawa (the "City") and Rideau Transit Group Partnership ("RTG")

Notice of Dispute pursuant to Section 1.3 of Schedule 27 to the PA in relation to the City's s. 45.1 Notice of Project Co Event of Default dated October 6, 2021 (OTT-RTG-LET-412) ("Notice of Dispute"); OTT-RTG-RLET-0617 RTM Response (October 8, 2021)

Confirmation of Default – Level 2 Meeting

Dear Mr. Truchon:

We write further to the City's letter of October 8, 2021 (designated OTT-RTG-RLET-0617) and RTG's response email dated October 11, 2021 refusing to participate in a meeting at lowest level of management as proposed to be held on October 12, 2021.

The City is disappointed at RTG's response. RTG's lack of willingness to meet promptly is frustrating particularly given that several meetings and discussions between the City and RTG have already taken place since the Notice of Default was delivered such that the requirement of meeting at the lowest level of management had already been satisfied as noted in the City's previous correspondence. The City was prepared to offer the further meeting given RTG's refusal to acknowledge these prior meetings, but RTG's current efforts to avoid this further meeting is indicative of an effort to frustrate the Dispute Resolution Procedure.

Despite noting in the e-mail response that RTG would coordinate "diaries and schedules for a suitable time to meet", the City has still not heard back despite the passage of several business days. Given the gravity of the situation, the City expected that RTG would

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promptly schedule the lowest level of management meeting that it is requesting take place.

Given RTG's failure to cooperate, the City views any meeting obligations at the lowest level of management as having been satisfied and/or waived by RTG based on its failure to produce such representatives following the City's reasonable request. The City therefore confirms its intent to proceed in Level 2 negotiations with RTG.

I am able to participate in the Level 2 negotiation meetings in respect of this Dispute between the hours of 1pm and 5pm on one of the following dates:

- October 18, 2021
- October 19, 2021

In the alternative and as noted in the City's Notice of Dispute, the City would be willing to bypass Level 2 and 3 negotiations in order to have the matter resolved expeditiously.

The City reserves its rights under the PA and the law.

Yours Truly,

Michael Morgan
Director, Rail Construction Program

cc Lorne Gray, OTC
Troy Charter, OCT
Mario Guerra, RTM

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This is Exhibit "FF" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

Rideau Transit Group
805 Belfast Road
Ottawa, ON K1G 0Z4

October 18, 2021

City of Ottawa
110 Laurier Avenue West
Ottawa, ON K1P 1J1

Our Reference:	RTG-OTT-00-0-LET-1303
City Reference:	OTT-RTG-LET-0414
Project Agreement Reference:	Schedule 27

Attention: **Michael Morgan**
Director, Rail Construction Program

Subject: **Level 1 and 2 Meetings**

Dear Mr. Morgan:

We are in receipt of the City's letter of October 15, 2021 (OTT-RTG-0414).

The City has no authority to depart unilaterally from the agreed upon terms of the Project Agreement or Schedule 27. These require that the City make bona fide efforts to resolve all disputes by amicable negotiations at the lowest level of management before engaging the dispute resolution processes.

To date, the most that can be said is that the parties have been in contact to advance their shared goal of returning safe and reliable service to the people of Ottawa. There have been no efforts made by the City or meetings held to resolve the Notice of Default amicably or at the lowest level of management, which is what Schedule 27 requires. In this regard, we note that in RTG-OTT-00-0-LET-1292 we asked the City to provide particulars of the meetings or discussions which it alleges satisfied the requirements of Level 1 of the Dispute Resolution Procedure and it has not. Nor is there any waiver that satisfies the requirements of the Project Agreement.

RTG and its Subcontractors remain singularly focused and fully engaged on our primary objective: returning to safe and reliable service. We note that the Dispute Resolution Procedure does not stipulate any deadlines within which a Level 1 meeting must take place. In the context of the work which needs to be done to return safe and reliable service, it is not at all helpful for the City to be insisting on arbitrarily expedited deadlines for meetings at a handful of times unilaterally chosen by the City. It leaves the unfortunate impression that the City is more interested in advancing its commercial interests and contractual rights unrelated to the return of service, rather than focus on the real issue at hand.

Given the City's desire to forego all stages of amicable negotiations prescribed by the Dispute Resolution Procedure (a position with which RTG disagrees), it also appears that the City has forgotten that the Dispute Resolution Procedure is premised on amicable negotiations. Even if the City believes it is right (we disagree), that is no reason to avoid steps the parties agreed to in order to foster partnership and good working relations between the City and RTG.

The suggestion that RTG is frustrating the Dispute Resolution Procedure in this context is baseless. Even assuming the dispute was ripe for negotiation (and RTG believes, as it has frequently stated, this dispute is premature as the investigation is ongoing, not only to determine the root cause of the derailments but also the impact of other potential contributing factors like the systems' response or even the possibility of driver error), the facts do not demonstrate any attempt to frustrate the Dispute Resolution Procedure by RTG. The suggestion that the fact that RTG could not accommodate a meeting the next business day following receipt of the City's letter on October 8, 2021, or the fact that a Level 1 meeting has occurred within 7 business days of receipt of the City's purported Notice of Dispute does not come close to rising to that level.

RTG maintains its position with respect to the prematurity and inconvenience of the meeting given the more important tasks at hand. Therefore, RTG proposes to hold off on this dispute process while we jointly with the City focus on the return to service and clarify the circumstances associated with the derailments. That said, if the City still insists on proceeding with the Dispute Resolution Process despite the above, RTG is prepared to hold a Level 1 meeting on one of the following dates:

- Monday, November 1, 2021 at 3:00 PM
- Tuesday, November 2, 2021 at 3:00 PM

RTG reserves all of its rights under the Project Agreement, at law and in equity.

Nicolas Truchon, CFA, MBA
Chief Executive Officer
Rideau Transit Group General Partnership

cc.: City: *none per City request*
RTG: Bruno Tremblay

Attachments: *none*

This is Exhibit "GG" referred to in the Affidavit of Michael Morgan, sworn by Michael Morgan at the City of Toronto, in the Province of Ontario, before me via videoconference at the Town of Ajax on February 8, 2022 in accordance with O/ Reg. 431/20, Administering Oath or Declaration Remotely.



Commissioner for Taking Affidavits (or as may be)

CATHERINE GLEASON-MERCIER

Rideau Transit Group
805 Belfast Road
Ottawa, ON K1G 0Z4

November 5, 2021

City of Ottawa
110 Laurier Avenue West
Ottawa, ON K1P 1J1

Our Reference:	RTG-OTT-00-0-LET-1326
RTM Reference:	N/A
City Reference:	OTT-RTG-LET-0423
Project Agreement Reference:	Section 1.3 of Schedule 27 and Section 45.1 of the PA

Attention: **Michael Morgan**
Director, Rail Construction Program

Subject: **Senior Officer Meeting**

Dear Mr. Morgan:

We write in response to OTT-RTG-LET-0423 (the "**City Letter**"). Capitalized but undefined terms used in this letter have the meanings provided in the City Letter. We acknowledge the occurrence of a Level 2 Negotiation on October 27, 2021 in respect of the Notice of Dispute and we agree that the disputes that are the subject matter of the Notice of Dispute were not resolved in the Level 2 Negotiation.

RTG is amenable to proceeding with a Level 3 Negotiation to attempt to resolve the disputes that are the subject matter of the Notice of Dispute and is available for such a meeting on Tuesday, November 9 at 4:00pm. The Senior Officers that we propose to attend for RTG are Mario Guerra, Ramon Villaamil and Jody Becker. Please confirm your availability for this time and please confirm the names of the Senior Officers who will attend on behalf of the City.

Lastly, RTG expects that this Level 3 Negotiation meeting will also constitute a meeting between Senior Officers pursuant to Section 3.1 of Schedule 27 to attempt to resolve other long-standing Disputes that are critical to RTG but which the City has not advanced. Specifically, we would like the meeting of Senior Officers on November 9 to include the following other Disputes in the agenda:

1. The Dispute in respect of the City's right to carry forward Deductions. This Dispute has already proceeded through an unsuccessful Level 3 Negotiation but we would like to use the meeting to see if there is any opportunity to advance the settlement of this Dispute or alternatively to agree on the path forward to resolving this important dispute in a timely manner.

2. The Dispute in respect of the impact of a delayed Substantial Completion Date on Lifecycle Payments. This Dispute has already proceeded through an unsuccessful Level 2 Negotiation and we would like to attempt to resolve this dispute through a meeting of Senior Officers.

RTG reserves all of its rights under the Project Agreement, at law and in equity. Should you have any questions, concerns, or require additional information please do not hesitate to contact us.

Regards,



Nicolas Truchon, CFA, MBA
Chief Executive Officer
Rideau Transit Group General Partnership

cc.: City: Lorne Gray, Troy Charter
RTG: Bruno Tremblay
RTM: Mario Guerra

Attachments: *None*

CITY OF OTTAWA Applicant -and- **RIDEAU TRANSIT GROUP GENERAL PARTNERSHIP *et al.*** Respondent

Court File No. CV-21-88145-0000

ONTARIO
SUPERIOR COURT OF JUSTICE

Proceeding commenced at **OTTAWA**

AFFIDAVIT OF MICHAEL MORGAN
(SWORN FEBRUARY 8, 2022)

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Lawyers for the Applicant

CITY OF OTTAWA -and- **RIDEAU TRANSIT GROUP GENERAL PARTNERSHIP, et al.**
Applicant Respondents

Court File No: CV-21-88145-0000

ONTARIO
SUPERIOR COURT OF JUSTICE

Proceeding commenced at **OTTAWA**

APPLICATION RECORD

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