

Region of Waterloo
Stage 1 Light Rail Transit Project

Maintenance and Rehabilitation Specifications

Article 1

Maintenance & Rehabilitation Requirements

TABLE OF CONTENTS

1.1	RESPONSIBILITY FOR MAINTENANCE AND REHABILITATION	1-1
1.2	GENERAL MAINTENANCE AND REHABILITATION OBLIGATIONS.....	1-2
1.3	MAINTENANCE AND REHABILITATION PERFORMANCE MEASURE SYSTEM FRAMEWORK.....	1-3
1.4	AVAILABILITY OF MANAGER OF MAINTENANCE OR SUBSTITUTE.....	1-4
1.5	CONSTRUCTION ACTIVITIES DURING MAINTENANCE PERIOD	1-4
1.6	CONDITION OF SYSTEM.....	1-4
1.7	MAINTENANCE OF SYSTEM	1-4
1.8	PROJECT CO TO MAINTAIN.....	1-5
1.9	SCOPE OF MAINTENANCE.....	1-5
1.10	MAINTENANCE AND REHABILITATION PLAN.....	1-14
1.11	COMPLIANCE.....	1-15
1.12	ACCESS TO MAINTENANCE RECORDS	1-16
1.13	RECORDS AND REPORTING	1-17
1.14	CHANGES REQUIRED BY THE REGION TO MAINTAIN REGION ASSETS	1-19
1.15	UTILITIES.....	1-20
1.16	MAINTENANCE AND PERFORMANCE STANDARDS	1-20
1.17	QUALITY PERFORMANCE CRITERIA.....	1-20
1.18	SPECIFIC REGION RESPONSIBILITIES	1-20
1.19	TECHNICAL CAPACITY	1-21
EXHIBIT A	MAINTENANCE AND REHABILITATION PLAN.....	A1
EXHIBIT B	SYSTEMS MAINTENANCE SERVICES	B1
EXHIBIT C	TRACK MAINTENANCE SERVICES.....	C1
EXHIBIT D	VEHICLE MAINTENANCE SERVICES	D1
EXHIBIT E	FACILITIES MAINTENANCE SERVICES	E1
EXHIBIT F	LRT STOP MAINTENANCE SERVICES	F1
EXHIBIT G	STRUCTURE MAINTENANCE SERVICES	G1
EXHIBIT H	ALIGNMENT MAINTENANCE SERVICES.....	H1
EXHIBIT I	MAINTENANCE RECORDS AND REPORTING.....	I1
EXHIBIT J	MAINTENANCE ACTIVITIES AND COORDINATION.....	J1
EXHIBIT K	VANDALISM AND GRAFFITI.....	K1

ARTICLE 1 MAINTENANCE AND REHABILITATION REQUIREMENTS

1.1 Responsibility for Maintenance and Rehabilitation

- (a) Throughout the Maintenance Term, Project Co shall carry out and be fully responsible for the Maintenance Services in accordance with the terms of this Project Agreement and in such a manner as to comply with and ensure satisfaction of the requirements of this Schedule and all other applicable Project Agreement requirements.
 - (i) This Schedule has three (3) Appendices that are interrelated and collectively outline the scope of the Maintenance Services along with this Article:
 - A. Appendix A (Asset Preservation) defines the requirements and performance measures for preserving and maintaining the System’s integrity with a view of proactive asset preservation practices during the Maintenance Term;
 - B. Appendix B (Expiry Date Requirements) defines the condition of System and their remaining service life before it is turned back to the Region on the Expiry Date.
 - C. Appendix C (Maintenance Responsibilities Table) defines the Maintenance Responsibilities of Project Co and the Region.
 - (ii) Table 1.1 below sets out a summary list of activities comprising the Maintenance and Rehabilitation with reference to the relevant Appendix of this Schedule 15-3.

Activity	Exhibit/Appendix
Maintenance and Rehabilitation Plan (to be provided by Project Co)	Exhibit A
Systems Maintenance Services	Exhibit B
Track Maintenance Services	Exhibit C
Vehicle Maintenance Services	Exhibit D
Facilities Maintenance Services	Exhibit E
LRT Stop Maintenance Services	Exhibit F
Structure Maintenance Services	Exhibit G
Alignment Maintenance Services	Exhibit H
Maintenance Records and Reporting	Exhibit I
Maintenance Activities and Coordination	Exhibit J
Vandalism and Graffiti	Exhibit K

Activity	Exhibit/Appendix
Asset Preservation	Appendix A
Expiry Date Requirements	Appendix B
Maintenance Responsibilities Table	Appendix C

- (b) The geographical boundaries within which Project Co shall carry out the Maintenance Services include all areas within the Lands and outside of the Lands to the extent that certain Maintenance Services relate to a portion of the systems and facilities constructed by Project Co. With the exception of the Operations, Maintenance and Service Facility (OMSF) and the Test Track, the performance of the Maintenance Services in respect of the System shall begin no later than the date of Substantial Completion or as deemed necessary by Project Co to ensure that the requirements of the Project Agreement are met. As noted in the Project Agreement, Project Co shall commence maintenance services on the OMSF and Test Track immediately following the OMSF and Test Track Readiness Date.

1.2 General Maintenance and Rehabilitation Obligations

- (a) Project Co is responsible for all maintenance, and construction means, methods and techniques used to undertake the Maintenance Services and must provide all aspects (including labour, plant, equipment and materials) necessary for the performance of the Maintenance Services. Project Co shall in a timely and professional manner and in accordance with the requirements of this Project Agreement:
 - (i) execute the Maintenance Services diligently, expeditiously and in a thorough and worker-like manner consistent with Schedule 11 – Quality Management;
 - (ii) execute the Maintenance Services diligently, expeditiously and in a thorough and worker-like manner consistent with Schedule 17 – Environmental Obligations;
 - (iii) ensure that no works other than the Maintenance Services under this Project Agreement are performed on the Lands by Project Co or any person for whom Project Co is responsible at law;
 - (iv) use plant, equipment, and materials that:
 - are of a kind that are consistent with the Output Specifications, and for further certainty:
 - A. where technological advancement and/or upgrades are necessary, the replacing or re-specifying of the system, subsystem or component shall be with one that is equal or better in form, fit and function when compared with the original Output Specification requirement; and
 - B. notwithstanding the requirements of Appendix C, when obsolescence of system components occurs, replacement of the system components shall only be necessary where the system component fails to comply with the Output Specification requirements and not simply by virtue of the system component becoming obsolete, or as may be otherwise agreed by the Region.

- C. are new, of good quality, and are used, handled, stored, and installed in accordance with Applicable Law and Good Industry Practice with respect to health and safety so as not to be hazardous or dangerous; and
 - D. where they differ from the Output Specifications, have been substituted with the Regions's prior written consent in accordance with the Project Agreement.
- (v) Project Co shall operate the System so as to equalize, to the greatest extent possible, the use of all resources of the system. In particular, the vehicles shall be utilized in such a manner so that no one vehicle accumulates substantially more or less than the average number for the entire fleet of either operational hours or miles per vehicle. Notwithstanding this requirement, the Region acknowledges that there may be benefit to Project Co exercising a number of LRVs more frequently than others. Provided that overall fleet accumulation is balanced over the life of the vehicles, the Region will allow Project Co discretion in this area.
- (b) Project Co shall appoint a Manager of Maintenance who shall, throughout the Maintenance Term and irrespective of such person's other responsibilities, have defined authority and full responsibility for ensuring, in respect of all Maintenance Services, compliance with all requirements of Schedule 15-3.
- (c) Without limiting the generality of the foregoing, the job specification and responsibilities of the Manager of Maintenance shall include the following:
- (i) directing all aspects of the Maintenance Services;
 - (ii) ensuring Maintenance Services issues and obligations are addressed and requirements are met in accordance with this Project Agreement;
 - (iii) establishing and maintaining professional working relationships with the Region and the Cities;
 - (iv) liaising with the Region and Cities (through the Region) as required and acting as the single point representative for Project Co on all matters relating to the Maintenance Services;
 - (v) coordinate with the appropriate parties with respect to the preparation and submission to the Region of all reports required under the Environmental Approvals and other Permits, Licences and Approvals;
 - (vi) directing the preparation and submission to the Region of any additional reports that may be required under the terms of the Project Agreement.

1.3 Maintenance and Rehabilitation Performance Measure System Framework

- (a) The performance measures for Maintenance Services are structured as described below:
- (i) Performance measures and requirements stating the minimum criteria and measures for requirements relating to the Maintenance Services to be met by Project Co, which consist of the following:
 - A. Maintenance performance measures that define the minimum performance criteria for Asset Classes and System management requirements reflecting the expectations of System Users with respect to day-to-day serviceability (including condition and response times), as specified in the Exhibits to this Schedule.

- B. Asset Preservation Performance Measures (APPMs) that define the minimum asset preservation criteria during the Maintenance Term to achieve the desired levels of service and to limit the extent of asset consumption, as specified in Appendix A to this Schedule.
 - C. Expiry Date requirements define the remaining service life and condition of System before it is turned over to the Region, as specified in Appendix B to this Schedule.
- (ii) The submission of reports on a regular basis in an auditable format with sufficient detail of Project Co's activities and how the Project objectives are being met, as specified in Appendix A, B and C of this Schedule.

1.4 Availability of Manager of Maintenance or Substitute

- (a) Project Co shall ensure that:
- (i) the Manager of Maintenance; or
 - (ii) in the case of any temporary absence or unavailability of the Manager of Maintenance, one or more suitable substitutes, each with the qualifications and authority to act in the place and instead of the Manager of Maintenance during such absence or unavailability;
 - (iii) is at all times during the Maintenance Term available by telephone, email, and facsimile transmission or other appropriate means of communication, 24 hours per day, seven (7) days a week to respond on behalf of Project Co to any matters relating to the Maintenance Services. It is understood that Project Co may establish a communications protocol within the Central Control Facility (CCF) which may best determine the most suitable person to respond to maintenance issues.

1.5 Construction Activities during Maintenance Period

- (a) The Project Agreement requirements relating to design and construction, including the Design and Construction Specifications apply to any design and Construction Activities carried out as part of the Maintenance Services by Project Co during the Maintenance Term. For greater clarity, this requirement applies to the specifications for the performance requirements/standards of the design and construction work as outlined in Schedule 15-2 – Design and Construction, Articles 1 through 18.

1.6 Condition of System

- (a) Project Co, at its expense, shall ensure that upon the Expiry Date, each element of the System will:
- (i) comply in all respects with the applicable requirements set out in Appendices A, B, and C to this Schedule; and
 - (ii) meet all other Project Agreement requirements, as applicable.
- (b) If the Project Agreement is terminated prior to the Expiry Date, the System must meet the requirements of Appendices A and B to this Schedule 15-3 at the relevant Termination Date.

1.7 Maintenance of System

- (a) The specifications in this Schedule 15-3 apply to the Maintenance of the System.
- (b) Project Agreement

- (i) Any capitalized term used in this Schedule 15-3 but not defined herein has the meaning given to it in the Project Agreement.
- (ii) Each reference in this Schedule 15-3 to “Section”, “Article”, “Appendices” and “Schedule” is a reference to a Section of, an Article of, an Appendix to or a Schedule to this Schedule 15-3, except where expressly stated otherwise.

1.8 Project Co to Maintain

- (a) Project Co will have complete control of (subject to the rights and obligations of the Region pursuant to the Project Agreement) and responsibility for the Maintenance of the System during the Maintenance Term.
- (b) Project Co shall, in addition to and without derogation from its Maintenance obligations set out in Schedule 15-3 Article 1 Section 1.2(a), perform the Maintenance Services in accordance within this Schedule and otherwise in accordance with terms of the Project Agreement, to the extent that it provides for Project Co’s performance of Maintenance Services that are not set out in this Schedule 15-3.
 - (i) So long as the Project Agreement remains in effect and has not been terminated in accordance with its terms and conditions, Project Co shall be unconditionally obligated to perform the Maintenance Services throughout and diligently at all times during the Maintenance Term in accordance with the Project Agreement, notwithstanding the existence of any Dispute, including any Dispute respecting Payments. For further certainty, in no event shall the existence of a Dispute or the fact that a Party has invoked the Maintenance Dispute Resolution Procedure exempt Project Co, for any period of time during the Maintenance Term, from the fulfillment of its obligations to perform the Maintenance Services pursuant to the Project Agreement. For further certainty, Project Co’s obligation to perform the Maintenance Services shall be subject to any Time Relief granted to Project Co by the provisions of the Project Agreement (including the Maintenance and Rehabilitation Requirements) following the occurrence of a Relief Event.

1.9 Scope of Maintenance

- (a) General
 - (i) Project Co shall conduct all Maintenance, on and for the System, as and when required, so as to meet and maintain the Service Standard.
 - (ii) Project Co shall perform or cause to be performed all inspection and testing on and for the System, as and when required, so as to meet and maintain the Standard.
- (b) Fixed and Vehicle Component Maintenance Requirements
 - (i) In performing the Maintenance Project Co shall provide all Maintenance with respect to the System including, but not limited to, all required Preventive Maintenance, Corrective Maintenance, Custodial Maintenance and Handover Maintenance for the System.
- (c) Custodial Maintenance
 - (i) Project Co will provide Custodial Maintenance within and for the Custodial Maintenance Areas.

- (ii) Project Co shall provide Custodial Maintenance for the Custodial Maintenance Areas, in accordance with the Standards set out in the Exhibits to this Article.
- (d) Corrective Maintenance
 - (i) If at any time during the Maintenance Term:
 - A. a Defect or a Deficiency in any design or construction of the System undertaken during the Maintenance Term, is discovered; or
 - B. for any reason any element of the System requires Corrective Maintenance, Project Co will undertake Corrective Maintenance in a timely way, in accordance with the requirements of the Project Agreement.
 - (ii) Project Co shall perform the Corrective Maintenance in a manner that minimizes:
 - A. the interference to or adverse effect on the Passengers; and
 - B. interference which prevents compliance with Operations Service.
- (e) Preventive Maintenance
 - (i) Project Co shall perform Preventive Maintenance for the System.
 - (ii) Project Co shall provide Preventive Maintenance pursuant to the Annual Preventive Maintenance Plan as described in Schedule 15-3 Article 1 Section 1.3 (a)(i).
- (f) Allocation of Maintenance Services
 - (i) Project Co is responsible for Maintenance of the System and for ensuring that the Maintenance of the System is sufficient to permit the Operation of the System in accordance with the Operation Requirements and Specifications. Project Co is responsible for all elements of Maintenance on the System, excepting any element of maintenance which is expressly identified by the Project Agreement as the responsibility of the Region or other Person (“**Person**” for purposes of this Schedule 15-3 Article 1 Section 1.3(f) shall exclude the Parties). For further certainty, any element of Maintenance for the System which is not expressly provided for by the Project Agreement shall be the obligation of Project Co.
- (g) Training
 - (i) Project Co shall be responsible for providing training services for personnel carrying out Maintenance Services including:
 - A. preparing, revising, coordinating and scheduling Maintenance training programs as required;
 - B. providing training to newly-hired Maintenance Employees and providing ongoing re-certification training to existing Employees as required;
 - C. providing ongoing staff development training;
 - D. providing training to Service Providers employed by Project Co to carry out Maintenance Services on the System;
 - E. maintaining up to date training records on all Maintenance Employees; and

- F. maintaining up to date training manuals for Operation for the Operations Term and Maintenance Services during the Maintenance and Rehabilitation Term.
 - G. Project Co shall ensure that all Maintenance personnel classifications required to provide Central Control Facility (CCF) oversight and supervision are fully trained in its Standard Operating Procedures (SOPs) and Light Rail Operators Rule Book.
- (ii) Project Co shall be responsible for all training required to the Region and third parties the Region considers necessary, acting reasonably, as a result of any changes to the System.
- (h) Central Control Facility (CCF)
- (i) System Operating Criteria and normal hours of operations for the System shall be as set forth in the Project Agreement. Refer to the Baseline Service Plans found in Schedule 15-3, Appendix D for train schedules. Due to railroad operations on the Waterloo Spur, Project Co shall not operate revenue service LRT trains on the track section occupied by freight railroad trains after 1:00 am and before 5:00 am on weekdays. For greater clarity, Project Co may operate test or maintenance trains (for snow and ice clearing) between 1:00 AM and 5:00 PM provided there is no freight trains occupying the tracks. Project Co shall single track or control train movements on up to four designated week days that permit this freight railroad movement.
 - (ii) Project Co shall ensure that the Central Control Facility is staffed on a 24 hour daily basis, 7 days per week and for all days during the year. Central Control Facility (CCF) personnel shall be fully trained in its Standard Operating Procedures (SOPs) and Light Rail Operators Rule Book.
 - (iii) System Assurance Monitoring
 - A. Project Co shall undertake a program of operational data collection and analysis as contained in the System Assurance Monitoring Plan. This System Assurance Monitoring Plan, prepared by Project Co, shall be submitted in accordance to Schedule 10 – Review Procedure. These data are intended to show the actual performance of the system in revenue service, to verify required service and equipment availability and verify other system assurance requirements, such as safety and security and configuration control for the Operations Term. Project Co shall submit for review monthly System Assurance Monitoring Reports that include these data and system availability data as outlined in the Project Agreement.
 - B. If, as a result of the system assurance monitoring, Project Co determines that redesign and/or replacement of system components is necessary or desirable, the proposed method of accomplishing such replacement shall be submitted to the Region in accordance with Schedule 10 – Review Procedure. Replacement shall not interfere with operating normal service levels.
 - C. Under no circumstances shall Project Co withdraw the system or any system component from revenue service for such purposes without prior written authorization from the Region.

(i) Operator Interface Protocol

(i) Project Co shall follow the protocol below in the performance of its responsibilities as outlined in the Project Agreement. The terms of this section shall apply throughout the Operations Services Term as well as the Maintenance and Rehabilitation Services Term, even in the event that the Region opts to provide the Operations Services with a third-party or itself. For greater clarity, the following provisions will apply even if the Region decides to transition the Operations Services to another entity in accordance with the Project Agreement. The Region will ensure that any third-party operator follows the Operator Interface Protocol. Project Co shall assist and cooperate in facilitating the Operator Interface Protocol with the Region and any potential third-party operator as well as develop, implement and administer the appropriate access procedures to the System and OMSF for potential third party operator personnel.

A. Standard Operating Procedures and Rule Book Adherence – All operations employees will be required to adhere to the provisions of the Rule Book and Standard Operating Procedures (SOPs).

B. Train Operators must complete a pre-trip inspection of the light rail vehicles (LRVs) prior to entering revenue service operations or leaving the yard. The pre-trip inspection will be outlined in the Standard Operating Procedures (SOPs). Train Operators will be required to make note of any and all defects or damage to the LRVs and immediately notify the Central Control Facility (CCF). The determination of whether the LRV enters revenue service shall be governed by established procedures and policies. Train Operators must also follow the LRV troubleshooting procedures and protocols that are established between Project Co and the railcar manufacturer. Train operators must also complete a post revenue service check-in of the LRV, detailing any on board items requiring attention by Project Co maintenance staff. This must be completed even if there are no on board items requiring attention.

C. Train Operators and On-Route Supervisors must follow and obey the instructions, radio communications directions, service bulletins, train orders and special orders issued from the Central Control Facility. While the On-Route Supervisors will act as on scene coordinators during incidents, special events or emergencies, the Central Control Facility will determine all actions, responses and contingency operations. Train Operators and On-Route Supervisors must immediately notify the Central Control Facility (CC) of any defects to the LRVs, systems and facilities. Route Supervisors must interview operators as required and provide completed incident reports to the CCF for all service delays and incidents on route.

(j) Bus/Rail Integration

(i) Project Co Responsibilities

A. Service Coordination and Planning with Grand River Transit (GRT) - Project Co shall participate in Bus/Rail Integration Meetings with the Region to coordinate

activities with Grand River Transit (GRT) as it relates to service operations, planning and scheduling. The purpose of these meetings is to ensure that the overall coordination of services results in a seamless system for the Region's transit customers.

- B. Project Co will work cooperatively with Grand River Transit to develop a Bus Bridge Plan to identify the appropriate protocols and operational responses to both planned and un-planned service interruptions which may require support in the form of Bus Bridging from Grand River Transit. The Bus Bridge Plan will identify the responsibilities, communication protocols and exercise drills that will be simulated during the commissioning period and prior to Substantial Completion.

(ii) Service Coordination – Un-Planned Service Interruptions

- A. Project Co shall include in its Standard Operating Procedures (SOPs) all of the protocols and communication requirements necessary to ensure the safe and expeditious resumption of service operations. Project Co's SOPs should clearly identify the roles and responsibilities of Central Control Center (CCF) personnel as it relates to coordination with the Region's Traffic Operations Center and Grand River Transit. Project Co will identify and request the number of buses required, anticipated length of delay and the required support necessary from the Region's Traffic Operations Center, Grand River Transit and Police Services.

(iii) Service Coordination – Planned Service Interruptions

- A. Project Co shall provide the Region with as much advance notice of Planned Service Interruptions. At a minimum, Project Co shall provide fourteen (14) calendar days notice for all scheduled maintenance services and prepare the Scheduled Service Plans to reflect these activities. Project Co shall make every effort to minimize the impact to regularly scheduled service operations by utilizing single track operations to maintain basic service levels. If required, Project Co shall identify and request the number of buses necessary to support the service interruption, clearly identify the duration of the Planned Service Interruption as well as the anticipated support required from the Region's Traffic Operations Center, Grand River Transit and Police Services.

(k) Maintenance Coordination

(i) General

- A. Subject to this Article 1, Project Co shall coordinate the Operations Services and Maintenance and Rehabilitation Services so that:
 - 1. at no time shall Operations be adversely affected by Maintenance Services; and
 - 2. Project Co uses best/commercially reasonable efforts to prevent any complete or partial shutdowns of the System.

(ii) Quarterly Performance Review

- A. The Region shall, on a quarterly basis during each Contract Year, conduct a formal review of Project Co's performance of the Operations Services as well as the coordination between Project Co's operational scope of responsibility and Project Co's scope of maintenance responsibility (the "Quarterly Performance Review"). The Quarterly Performance Review shall include a written report drafted by the Region ("Quarterly Performance Report") which includes an assessment of:
 - B. Review of data collected pursuant to the Project Agreement respecting Project Co's performance of the Operations Services, including but not limited to the Performance Monitoring Reports and Daily Operating Reports for the relevant quarter;
 - C. Specific incidents or failures to meet the service standards set out in Schedule 15-3 occurring during the relevant quarter, in particular repeated incidents or failures;
 - D. Logistical, scheduling, and/or coordination issues occurring during the relevant quarter;
 - E. Follow-up and progress reporting on Action Plans previously issued and implemented by Project Co; and,
 - F. Other issues relevant to the performance of the Operations Services in accordance with the standards set out in Schedule 15-3.
- (iii) The Region and Project Co shall meet to review the Quarterly Performance Report ("Quarterly Performance Review Meeting"). The Region shall provide Project Co with a draft copy of the Quarterly Performance Report at least five (5) Business Days in advance of the meeting. Project Co shall have the opportunity to respond, both during the meeting and in writing following the meeting, concerning any identified performance issues.
- (iv) The Region shall provide a finalized Quarterly Performance Report no later than ten (10) days following the performance review meeting between the Region and Project Co. The Region may, as part of such Quarterly Performance Report, issue a directive to Project Co to provide an Action Plan to address any identified issues in Project Co's performance of the Operations Services, provided that any such identified performance issues shall be limited to:
- A. Repeated or systemic failures to provide the Operations Services in accordance with the standards set out in Schedule 15-3;
 - B. Coordination issues between the Region and Project Co; or
 - C. Levels of performance which have triggered, during the relevant quarter, the issuance of a Warning Notice, Monitoring Notice, exercise of the Region's Remedial Rights, or an Event of Default, under the terms of the Project Agreement.

- (v) If so required by the Region, Project Co shall provide such Action Plan for the Region's review and approval within twenty-one (21) days of the Region's written request. The Action Plan shall include:
 - A. A clear statement of the performance issues to be addressed;
 - B. A clear statement of the methodology to address each issue;
 - C. A timeline for implementing the methodology;
 - D. Clear performance measures and performance targets for each identified issue; and
 - E. An expected timeline for when the methodology will yield the identified performance improvement targets.
- (vi) The Region shall review the Action Plan within five (5) days of receipt and shall, acting reasonably, approve the Action Plan or decline to approve the Action Plan, providing details and a date for resubmission.
- (vii) Coordination of Maintenance Services
 - A. Project Co shall coordinate Preventive Maintenance and Corrective Maintenance activities with the Central Control Facility:
 - 1. All employees of Project Co performing Maintenance on the areas between or adjacent to the tracks shall be governed by the LRT Rules and the Standard Operating Procedures developed by Project Co;
 - 2. All employees of Project Co performing Maintenance on the areas between or adjacent to the tracks shall be certified in LRT Rules and Standard Operating Procedures;
 - B. In addition to the requirements of this Schedule 15-3 pertaining to the development of LRT Rules and Standard Operating Procedures, Project Co shall develop policies and procedures associated with weather related events and/or natural disasters, including but not limited to:
 - A. winter snow and / or freezing rain;
 - B. severe wind;
 - C. extreme rainfalls and / or hail;
 - D. lightning;
 - E. earthquakes;
 - F. extreme hot or cold temperatures; and

- G. flooding.
 - C. Project Co shall, in coordination with the Region, define roles and responsibilities of the Parties, communication / reporting protocols, resources available and / or contingent dependent on the severity of the event, standard operating procedures, prior to, during and after the event, and procedures for recovery of System or System components which are partially or completely not functional as a result of the event.
 - B. Emergency and Safety Procedures and Investigations shall be in accordance with Schedule 15-3 Article 2 and Project Co's Standard Operating Procedures (SOPs).
- (iv) Traffic and Transit Management
- A. Project Co is responsible for traffic management in accordance with the Ontario Traffic Manual and any Applicable Law relating to the protection of the safety of the Existing Provincial Highways, Existing Major Municipal Roadways, Existing Transitway, Minor Municipal Roadways and Other Affected Municipal and Federal Roadways Users, Project Co Parties and Other Contractors.
 - B. Project Co is responsible for transit management to the extent required by Project Co to perform its maintenance activities.
 - C. Project Co shall coordinate with the Region and Cities when planning and developing Traffic and Transit Management Plans.
 - D. Project Co's Traffic and Transit Management Plans shall include but are not limited to the following:
 - 1. Maintenance and Rehabilitation Services affecting traffic and / or transit services;
 - 2. Anticipated duration of the Maintenance and Rehabilitation Services;
 - 3. Planned lane closures, full closures, lane shifts, detour routes and diversions;
 - 4. Key Individuals responsible for implementation and management of Traffic and Transit Management Plan;
 - 5. Provisions for Permits and / or Approvals required by the Region and Cities, including permitted times for lane closures, full closures, lane shifts, detour routes and diversions, and detouring and / or mitigation measures to maintain transit services; and
 - 6. Coordination with Others that may be required as a result of the implementation of Project Co's Traffic and Transit Management Plans.

- E. Prior to implementation of Traffic and Transit Management Plans, Project Co shall obtain all required permits and approvals from the Region and Cities.
- F. During implementation of Traffic and Transit Management Plans, Project Co shall:
 - 1. Coordinate with the Region and Cities on all closures, full closures, detour routes, lane shifts and diversions on roads that intersect or cross Major Municipal Roadways, Transitway and Minor Municipal Roadways.
 - 2. Obtain all required closure permits or approvals.
 - 3. Notify the Region and Cities immediately of any changes to a closure, full closure, detour route, lane shift and diversion, or anticipated problems that may delay the opening time / removal of the traffic control measures and / or removal of detouring and / or mitigation measures to maintain transit services, stating the closure / permit notification number and details of the changes to and/or problems with the closure, full closure, detour route, lane shift and diversion.

(1.) Costs Incurred by Project Co

- (i) The Region shall not reimburse Project Co for costs incurred by Project Co as a result of any Maintenance Emergency.
- (ii) The Region shall reimburse Project Co for costs incurred by Project Co as a direct result of performing its obligations in response to a Non-Maintenance Emergency on the System (the “Emergency Costs”), in accordance with the procedure set out in Schedule 22 – Variation Procedure.
- (iii) In the event that an Emergency is confirmed or determined by the Region to be a Non-Maintenance Emergency, the Region shall promptly so notify Project Co. Within 10 Business Days following the Region’s notification with respect to a Non-Maintenance Emergency, Project Co shall submit to the Region an invoice for its Emergency Costs determined in accordance with Schedule 22 – Variation Procedure, with the changes necessitated by context.
- (iv) Upon receipt of an invoice from Project Co pursuant to Schedule 22 – Variation Procedure, the Region shall evaluate the invoiced amount of the Emergency Costs to Project Co on the basis of the Region’s record of the actions taken by Project Co in response to the Non-Maintenance Emergency. The Region shall pay all amounts it determines to be due and payable as Emergency Costs.
- (v) In the event that the Region’s evaluation of the Emergency Costs differs from the invoiced amount, Project Co may refer the matter to the Dispute Resolution Procedure.

1.10 Maintenance and Rehabilitation Plan

- (a) Project Co shall develop and submit pursuant to Schedule 10 – Review Procedure a Maintenance and Rehabilitation Plan which includes but is not limited to the requirements of this schedule. The Maintenance and Rehabilitation Plan shall be submitted 90 days prior to the Commissioning phase as prescribed in Schedule 14 of the Project Agreement.
- (i) The Maintenance and Rehabilitation Plan shall, without limitation and at all times during the Maintenance Term, include the following for the System:
- A. a Custodial Maintenance Plan;
 - B. a Corrective Maintenance Plan; and
 - C. a Preventive Maintenance Plan.
- (ii) Starting the Contract Year following Revenue Service, Project Co shall provide an Annual Preventive Maintenance Plan for each Contract Year which shall comply with the Maintenance and Rehabilitation Plan. The Annual Preventive Maintenance Plan shall be submitted to the Region at least 60 days prior to the commencement of the Contract Year to which the Annual Preventive Maintenance Plan applies. The Region shall be entitled to review the Annual Preventive Maintenance Plan in accordance with Schedule 10 – Review Procedure.
- (b) Project Co shall ensure that it has sufficient staff, equipment and materials, and that there shall be proper procedures and processes in place to fulfill its obligations to perform Custodial Maintenance, Preventive Maintenance and Corrective Maintenance. Project Co shall ensure that Project Co and Contractors employed in the execution of the Maintenance Services implement policies, processes and procedures to remedy any defects in a timely and effective manner in order to maintain Project Co's obligations to provide the Scheduled Revenue Service Vehicles and in accordance with the Vehicle Maintenance Requirements and Standards in Exhibit D.
- (c) Compliance with Maintenance Plans
- (i) Project Co shall perform Maintenance in accordance with and implement the Maintenance and Rehabilitation Plan.
- (d) Revision of M&R Plan
- (i) Project Co may at any time during the Maintenance Term, propose a revision to the Maintenance and Rehabilitation Plan, which Project Co shall propose in accordance with Schedule 10.
- A. In the event that a proposed revision pursuant to Schedule 15-3 Article 1 Section 1.10(d):
 - 1. results in increased costs to the Region in any Contract Year of the Maintenance Term; or
 - 2. results in any adverse change to Operations;
- the proposed revision shall constitute a variation and the provisions of Schedule 22 shall apply. For further certainty, in the event that a proposed revision constitutes a Variation pursuant to this Schedule 15-3 Article 1 Section 1.10(d), the Maintenance and Rehabilitation Plan shall not be amended except in accordance with Schedule 22.

- (ii) In the event that a proposed revision does not constitute a Variation pursuant to Schedule 15-3 Article 1 Section 1.4(d), should the Region determine that it disagrees with the proposed revisions, the Region may refer the matter to Schedule 27 of the Project Agreement (Dispute Resolution Procedure) for a resolution.
- (iii) The Region may at any time during the Maintenance Term, in its Discretion, propose a revision to the Maintenance and Rehabilitation Plan, and the provisions of Schedule 22. In the event that the proposed revision does not constitute a Variation pursuant to Schedule 15-3 Article 1, Section 1.4(d), should Project Co determine that the proposed revisions are unnecessary, Project Co may refer the matter to Schedule 27 of the Project Agreement – Dispute Resolution Procedure for resolution.
- (iv) In the event that the proposed revision does not constitute a Variation, subject to Schedule 15-3 Article 1 Section 1.10 (d)(v), the Maintenance and Rehabilitation Plan shall be deemed to have been amended in accordance with a proposed revision pursuant to Schedule 10, failing which the Maintenance and Rehabilitation Plan shall not be amended except as mutually agreed between the Parties or in accordance with the Schedule 27.
- (v) Notwithstanding Schedule 15-3 Article 1 Section 1.10 (d)(iv), the Maintenance and Rehabilitation Plan shall be deemed to be amended pursuant to Schedule 22.

1.11 Compliance

- (a) Inspection and Right of Access
 - (i) In addition to the rights stated elsewhere in the Project Agreement, the Region shall have all rights with respect to oversight and monitoring of Project Co’s performance, to inspect and audit the System including the Vehicles in order to provide assurance that Project Co is performing its obligations under the Project Agreement.
 - (ii) The Region shall ensure that any interference with the performance of the Maintenance Services which may be caused by any inspection conducted or authorized by the Region is limited to the minimum interference necessary to conduct such inspection.
 - (iii) Where the Region exercises its right to inspect or audit, a representative of Project Co shall be present during such inspection or audit. In no event shall the Region’s exercise of its right to inspect or audit or the presence or absence of a representative of Project Co during any such inspection or audit relieve Project Co of any of its obligations under this Schedule 15-3. The Region’s right to inspect and audit the records and reports required to be kept under the Project Agreement shall be subject to the right of Project Co to withhold financial information unrelated to information the Region would reasonably require to exercise to the Region’s rights and obligations under the Project Agreement.
 - (iv) The Region has a right, at all reasonable times during the Maintenance Term, subject to Schedule 15-3 Article 1 Section 1.11(a)(vi), to access and inspect the System (including carrying out sample checks) and any work Project Co undertakes on the System, so as to confirm:
 - A. the adequacy of the supervision by Project Co for any Maintenance; and
 - B. that the System is being maintained in accordance with the terms of the Project Agreement.

- (v) The Region may at any time appoint an agent for the purposes of carrying out any inspection or audit pursuant to the Project Agreement. The Region will in a timely way advise Project Co of any requirement for Corrective Maintenance or Custodial Maintenance of which it becomes aware.
 - (vi) The Region may at any time advise Project Co that it requires access to the Maintenance and Storage Facility or other facility controlled by Project Co for the purposes of inspecting Vehicles or other elements of the System. The Region shall provide notice to Project Co two (2) Business Days in advance of any planned inspection or audit for which it or its agents require access to the Maintenance and Storage Facility.
 - (vii) Upon the Region's request, acting reasonably, Project Co shall grant the Region access to the Operations, Maintenance and Storage Facility (OMSF) for the purpose of conducting educational tours of the System for the public and other interested Persons, provided that the Region shall give Project Co five (5) business days notice of any planned tour of the Maintenance and Storage Facility and provided that the Region's conduct of any such tour shall not impede performance of the Maintenance Services.
- (b) Safety Audit
- (i) Without limitation of the rights of the Region pursuant to Schedule 15-3 Article 1 Section 1.11(a) and otherwise provided in this Agreement, the Region shall be entitled at any time during the Maintenance Term to inspect and audit the System (including the Maintenance and Storage Facility) and the records and reports required to be kept under the Project Agreement, including without limitation records of work orders respecting the Maintenance Services, for the purpose of conducting a Safety Audit.
 - (ii) Project Co shall cooperate with the Region to facilitate any Safety Audit. Project Co shall grant to the Region and its agents, upon the Region's request, access to the Maintenance and Storage Facility and all Vehicles located therein for purposes of conducting a Safety Audit.
- (c) Review of Performance
- (i) Project Co shall comply with the requirements of the ISO 9001: 2008 standards for quality management systems, as amended from time to time. For further certainty, Project Co shall conduct regularly scheduled reviews of its performance in meeting these standards and provide to the Region a written report on such performance. Project Co shall participate in consultations with the Region regarding Project Co's performance.

1.12 Access to Maintenance Records

- (a) The Region's Right to Information
- (i) Without derogation from any of the other rights of the Region under the Project Agreement including this Schedule 15-3, the Region shall have the right to obtain from Project Co, and Project Co shall deliver to the Region as soon as possible and in no event later than seven (7) days following a written request by the Region, any reasonable information which is in the possession of or available to Project Co and which is directly related to the Maintenance Services or the System. Notwithstanding any provisions in this Schedule 15-3 which entitle the Region to obtain access to or require production of information which is in the possession of or available to Project Co, Project Co shall not be required to deliver any business records which are legally privileged (save for reports

prepared by environmental consultants other than in contemplation of litigation) or contain confidential financial information which confidential information is not reasonably required by the Region for its purposes.

(b) Audits and Inspections

- (i) The Region may, upon prior written notice of one (1) week to Project Co, inspect and audit the records and reports required to be kept under the Project Agreement, including financial records respecting the Maintenance Services. The Region's right to inspect and audit the records and reports required to be kept under the Project Agreement shall be subject to the right of Project Co to withhold financial information unrelated to information the Region would reasonably require for its purposes related to the Region's rights and obligations under the Project Agreement. The Region shall be entitled to make copies or take extracts of Project Co's documents subject to providing Project Co with a list of the documents or extracts that have been taken. Such inspection and/or audit may take place at any reasonable time during Project Co's regular business hours at Project Co's place of business in the Operations, Maintenance and Storage Facility or such other location where such records are regularly kept. Such inspection and audit shall be at the Region's cost.
- (ii) Prior to any inspection or audit by the Region, Project Co may require the Region and its auditors to execute confidentiality agreements acceptable to Project Co, acting reasonably, in respect of the subject matter of the audit or inspection, subject to requirements of Law where information or portions thereof cannot be kept confidential.

1.13 Records and Reporting

(a) Records and Reporting Obligations

- (i) Project Co will record and retain for review and audit by the Region, upon the Region's request, the following information:
 - A. Comprehensive Custodial Maintenance, Preventive Maintenance, Corrective Maintenance, Handover Maintenance and other Maintenance records for the System including without limitation all Defects and Deficiencies identified, the date and time of the Maintenance activity undertaken in response, detailed work orders, the scope of the activity including the labour and materials used an indication of compliance or non-compliance with the Maintenance and Rehabilitation Plan;
 - B. records of all purchases, supplier invoices and transactions related to Non-Maintenance Emergency repairs;
 - C. automatically collected comprehensive electronic records of all train movements including actual arrival and departure times at all Stations in the format described in Schedule 15-3 to the Project Agreement;
 - D. automatically collected electronic Passenger counts;
 - E. automatically collected electronic records of all security alarms, equipment status or failure indicators, including the nature of the indicator, the date and time of occurrence and the date and time of the indicator clearance;

- F. automatically or manually recorded descriptions of the actions initiated to respond to the incidents reported in the Exhibits;
 - G. automatically or manually recorded information regarding incidents involving Passenger and employee Security or Safety, including the date and time of occurrence and the response taken;
 - H. automatically or manually recorded incidents involving damage to or Deficiencies existing in the System affecting Passengers, including date and time of occurrence and response taken;
 - I. automatically recorded Vehicle time and distance operated information for each Vehicle for the life of the Vehicle;
 - J. maintenance activities undertaken in response to a Non-Maintenance Emergency repair and the costs of such activities;
 - K. the records in respect of Events of Vandalism and associated Vandalism Repair Costs required by Exhibit J to this Schedule 15-3; and
 - L. all such other reports, records and information regarding the System which the Region may reasonably require from time to time.
- (ii) Project Co shall prepare monthly status reports identifying all Maintenance performed on the System within the last month of each Contract Year (the “**Monthly Activity Report**”), and shall submit the Monthly Activity Reports to the Region for review within seven (7) business days after each completed month.
- (iii) Project Co shall use an electronic asset management system (the “**Maintenance Management System**”) to track Maintenance activities performed on all major components of the System, including all information which Project Co is required to record pursuant to Schedule 15-3 Article 1 Section 1.12. Project Co shall prepare monthly summary reports of such Maintenance activities, which shall be submitted to the Region as part of the Monthly Activity Report. The Region shall have access to the Maintenance Management System at all times for purposes of review, and for further certainty including remote access by a secured web based software for sharing information.
- (iv) The “**Maintenance Management System**” shall include reliability and maintainability monitoring and reporting capabilities. Project Co shall produce monthly reliability and maintainability reports including a two year moving history for all major systems and subsystems, including but not limited to:
- A. Light Rail Vehicles;
 - B. Train Control and Signaling;
 - C. Track and Maintenance of Way;
 - D. Substations and Overhead Catenary;
 - E. Structures;
 - F. Facilities including LRT Stops and the Operations, Maintenance & Storage Facility;

- G. Shop Equipment; and
- H. Maintenance of Way Equipment.
- (v) Project Co shall produce reliability and maintainability reports utilizing key performance indicators including but not limited to:
 - A. Mean Distance Between Maintenance Failures;
 - B. Mean Distance Between All Failures;
 - C. Mean Time Between Maintenance Failures;
 - D. Mean Time Between All Failures;
 - E. LRV Fleet Availability;
 - F. Backlog of Deferred Maintenance; and
 - G. Campaign/Modifications Programs
- (vi) As part of the Maintenance Management System as described in Schedule 15-3 Article 1 Section 1.13, Project Co shall prepare and submit to the Region a daily report (the “**Daily Report**”), in accordance with Appendix A, which shall include, but not be limited to:
 - A. Deficiencies of which Project Co has become aware;
 - B. Maintenance Services which has been undertaken or completed in respect of Deficiencies;
- (vii) Reports
 - A. Project Co shall prepare all reports related to the Maintenance Services, to be submitted by the Region to any federal, provincial or municipal governmental agency, railways and any other third party. Project Co shall also promptly furnish to the Region copies of any citations or complaints issued to Project Co by an enforcement or regulatory body which affect the Maintenance Services or the Vehicles. Project Co will advise the Region and the disposition of such citations or complaints will be coordinated through the Region.
- (b) Licence, Certificate and Permit Records
 - (i) Project Co shall be responsible for completing or cause to be completed all regulatory inspections and testing necessary for the licences, certificates and permits associated with the System during the Operations Term and Maintenance and Rehabilitation Term.
 - (ii) Project Co shall maintain and furnish to the Region records of all licences, certificates, and permits required to be obtained for the performance of the Maintenance Services and Operation of the System.
- (c) Environmental Records, Samplings, and Reports, Project Co shall comply with Schedule 17 – Environmental Obligations.

1.14 Changes Required by the Region to Maintain Region Assets

Without limiting the definition or scope of a “Variation” in Schedule 22, the Region may, without invalidating the Project Agreement, require a Variation from time to time during the Maintenance Term to:

The Region of Waterloo Stage 1 Light Rail Project

- (a) Inspect assets to be maintained by the Region including but not limited to various existing retaining wall and/or bridge structures.
- (b) To effect repairs to assets to be maintained by the Region using Region resources or resources contracted to the Region.
- (c) To contract with Project Co for repairs to Region assets in the event that Project Co prices to perform the work are considered reasonable and commercially acceptable.

1.15 Utilities

- (a) The Region shall be responsible for all regular monthly service charges associated with the operation of the System throughout the Maintenance Term.

1.16 Maintenance and Performance Standards

- (a) Applicable Standards
 - (i) Project Co shall at all times and in all respects undertake the Maintenance required:
 - A. to meet the Design and Construction Performance Requirements for the System;
 - B. in accordance with Law;
 - C. in accordance with the Safety Management System;
 - D. in accordance with the Security Management System;
 - E. to permit the Operation of the System to meet all of the requirements as outlined in Schedule 15-4 – Operations Requirements; and,
 - F. to meet or exceed the Maintenance and Service requirements including for further certainty the Exhibits to this Schedule.

1.17 Quality Performance Criteria

- (a) Project Co shall comply with the requirements set out in this Schedule and the Project Agreement.

1.18 Specific Region Responsibilities

- (a) The Region shall be responsible for the following maintenance obligations with respect to the System.
 - (i) existing retaining walls that are within the Lands which have not been modified or altered or improved in any manner by Project Co, and for further certainty as identified in the Maintenance Responsibility Table in Appendix C of this Schedule 15-3;
 - (ii) Fare enforcement and maintenance/servicing of the Ticket Vending Machines (TVMs).
 - (iii) Security services, including policing and by-law enforcement.
 - (iv) existing bridges that are within the Lands which have not been modified or altered or improved by Project Co in any manner as part of Project Co's Work, and for further certainty as identified in the Maintenance Responsibility Table in Appendix C of this Schedule 15-3;
 - (v) communications systems (to the extent of the obligations identified as Region responsibilities in the Maintenance Responsibility Table);

- (vi) existing watermains that fall within the Lands, and for further certainty are not contemplated as part of the New Municipal Infrastructure;
 - (vii) existing sewers, that fall within the Lands, and for further certainty are not contemplated as part of the New Municipal Infrastructure;
 - (viii) existing street lights and illumination that fall within the Lands which have not been modified or altered or improved in any manner by Project Co;
 - (ix) traffic signals that are within the Lands;
 - (x) existing utilities that are within the Lands; and
- (b) If existing Infrastructure that falls within the Lands is modified or altered or improved by Project Co, Project Co shall be responsible for the existing Infrastructure which modifications, alterations, or improvements have adversely or are considered detrimental to the life cycle or asset preservation requirements and Project Co using all applicable regulations, codes, and specifications and applying engineering principles and Good Industry Practices cannot demonstrate to the Region, with the Region acting reasonably, that the modifications or alterations or improvements are not detrimental to the existing Infrastructure.

1.19 Technical Capacity

- (a) Project Co shall ensure that, as a result of Project Contracts and Sub-Contracts into which it has entered in accordance with the Project Agreement, it has the necessary professional capabilities, qualifications, licences, skilled personnel, experience, expertise and financial resources, and that it shall provide the necessary tools, equipment and materials, to perform the Maintenance Services in an efficient, professional and timely manner in accordance with the terms and conditions of the Project Agreement.
- (b) Project Co shall ensure that the management assigned to the Maintenance Services, including the management of Project Co, Project Contractors and the Sub-Contractors, as applicable, shall have knowledge and expertise in the area of maintenance of LRT systems, and all components thereof including LRVs, sufficient to fulfill Project Co's obligations under the Project Agreement, and additionally that such management shall have authority to make decisions concerning the daily functions and management of the Maintenance Services consistent with the Project Agreement.
- (c) **Technical Support**
- (i) In addition to the requirements of Schedule 14 and notwithstanding Project Co's obligations included in this schedule, Project Co shall provide sufficient technical support and capacity during the Maintenance Term. In fulfilling this requirement, Project Co shall:
 - A. coordinate with the Region for the most efficient and least disruptive effect on the Operation of the System, when the Operation of the System is impaired as a result of any Maintenance Service deficiency;
 - B. coordinate Project Co service providers and deploy Corrective Maintenance Plans required to address any Maintenance Service deficiency; and
 - C. consider lessons learned during this period and propose any improvements to the Maintenance and Rehabilitation Plan, LRT Rules and Procedures, and Standard Operating Procedures.

EXHIBIT A MAINTENANCE AND REHABILITATION PLAN

Project Co shall prepare and submit the Maintenance and Rehabilitation Plan to be attached as Exhibit A in accordance with this Schedule.

EXHIBIT B SYSTEMS MAINTENANCE SERVICES**B1 Scope of Services**

- (a) Project Co shall be responsible for the Custodial, Preventive, and Corrective Maintenance activities on all of the systems assets, including but not limited to:
- (i) traction power system, including substations and overhead contact system;
 - (ii) train control system, including the Central Control Facility and control system components supplied by Project Co; and
 - (iii) communications systems for safety and security, and public information.

B2 Service Requirements

- (i) In general, Project Co shall maintain all systems assets in accordance with its Maintenance and Rehabilitation Plan to ensure that the service levels outlined in the Operating Service Plan can be provided at all times and that the System Service Availability Requirements and Performance Requirements as noted in Schedule 15-3 Article 3 and the Fixed Component Availability Standards are met.
 - (ii) Notwithstanding Project Co's obligations to ensure that Traction Power is available, Project Co is not obliged to pay for or supply electricity to the System during the Maintenance Term.
 - (iii) Project Co shall maintain the Traction Power System in a state of good repair and working order in requirements of the Fixed Component Availability Standard and in accordance with the approved Corrective and Preventive Maintenance Plans.
 - (iv) Project Co shall immediately respond to and repair any failure of any element of the Traction Power System (substation, power distribution, overhead contact system, etc.).
- (a) Train Control
- (i) Train Controls/Signals
 - A. Project Co shall maintain the Train Control systems in a state of good repair and working order in accordance with the approved Corrective and Preventive Maintenance Plans.
 - B. Project Co shall immediately respond to and repair any failure of any element of the Train Control systems.
 - C. Project Co shall maintain strict version control of all software on all train control and signal systems. Version control records shall be made available for inspection by the Region or by regulatory agencies upon request.
 - D. Project Co shall perform all periodic and corrective maintenance required by the System Safety Plan described in Schedule 15-3 Article 2.
 - E. Project Co shall maintain records of all preventive and corrective maintenance performed on the Train Control systems. These records shall be made available to the Region and to regulatory agencies upon request.
 - F. Project Co shall monitor the security of the Train Control network and shall take counter measures against intrusion attempts. All intrusion attempts shall be reported to the Region.

- (ii) Central Control Facility (CCF)
 - A. Project Co shall test and troubleshoot all transit monitoring, operation and control equipment, including computers, software, electronic devices and communication equipment, supplied for the CCF by Project Co as part of the System.
 - B. Project Co shall ensure the hardware and software for the System is kept up to date, in accordance with the manufacture's recommendations and latest revisions. Project Co shall complete prepare Cyber Assessment Plan of the system's information technology network to assess and mitigate potential threats 90 days prior to Substantial Completion. The Cyber Assessment Plan shall be updated annually and submitted in accordance with Schedule 10 – Review Procedure.
 - C. In the event of a failure of any element of the CCF, Project Co shall immediately respond and repair the deficiency.
- (b) Communications
 - (i) Radio Communications
 - A. Project Co shall work with the Region to ensure that radio transmission and reception via the Region wide radio network meets the expected Radio system reliability necessary to achieve operational and maintenance performance targets for the Region of Waterloo Light Rail Transit System.
 - B. On discovery of a radio Fault Project Co shall implement special operational procedures record and notify the Region of the failure condition.
 - (ii) Safety and Security Systems
 - A. Project Co shall maintain all Safety and Security systems elements in a state of good repair and working order in accordance with the approved Corrective and Preventive Maintenance Plans.
 - B. Project Co shall maintain all Safety and Security systems elements and its
 - C. Project Co shall immediately respond to and repair any failure of any element of the Safety and Security systems.
 - (iii) Passenger Information Systems
 - A. Project Co shall maintain the Passenger information systems at the Stations and on the Vehicles under the Project Agreement in accordance with its Maintenance and Rehabilitation Plan to ensure that the service levels outlined in the Operating Service Plan can be provided at all times and that the System Service Availability Requirements and Performance Requirements as noted in Schedule 15-3 Article 3 and the Fixed Component Availability Standards are met.
 - B. Passenger information systems refers to the Passenger information systems located at Stations that display train arrival/departure times, delay information, cancellation information, destination, general announcements, news or advertising displays.
- (b) Project Co shall ensure compliance with Schedule 17- Environmental Obligations.
- (c) Project Co's performance with respect to vandalism and graffiti shall be in accordance with:
 - (i) Exhibit K – Vandalism and Graffiti.

B3 Service Standards

- (a) Fixed Component Availability Standard
 - (i) Any Fixed Component in the System (including train control, traction power, communications, etc.) is considered to not meet the Standard if any Defect or Deficiency is identified in that Fixed Component that:
 - A. affects the Safety of the public, Passengers or Driver in a manner contrary to the Safety Management System;
 - B. adversely affects Operations such that the System does not meet the Operational Requirements and Specifications.
- (b) Passenger Information Systems Standard
 - (i) A component of the Passenger information system (at a station or on a Vehicle) will fail to meet the Standard in the event any of the following failures occur:
 - A. If visual system information does not display on display unit;
 - B. If the display unit is not readable (poor picture quality) from 3m away;
 - C. If the audio system is not audible and intelligible, in whole or in part; or
 - D. If the system is not performing according to requirements (missing or wrong information).

B4 Quality Monitoring and Reporting

- (a) Periodically, the Region will audit Project Co's Systems Maintenance documentation and reporting. Failures to maintain documentation and report on Systems Maintenance activities will result in penalties being assessed as described in Schedule 15-3.
- (b) Maintenance Plans
 - (i) Project Co shall at all times maintain complete and updated versions of the Custodial Maintenance Plan, the Corrective Maintenance Plan, and the Preventive Maintenance Plan.
 - (ii) Project Co shall follow the requirements set out in Schedule 15-3 Article 1 Section 1.10 with regard to the drafting, approval, and revisions process for these Maintenance and Rehabilitation Plans.
- (c) Maintenance Reporting
 - (i) Project Co shall report on the status and completion of various Systems Maintenance activities.
 - (ii) Project Co shall follow the maintenance reporting requirements set out in Schedule 15-3 Article 1 Section 1.13 with regard to reporting procedures and the Daily, Monthly, and Annual submittals that are required.

EXHIBIT C TRACK MAINTENANCE SERVICES**C1 Scope of Services**

- (a) Project Co shall be responsible for the Custodial, Preventive, and Corrective Maintenance activities of all Track infrastructure on the System including but not limited to:
 - (i) All mainline, yard lead, and storage yard Track;
 - (ii) All switches and crossovers; and
 - (iii) Railbed and other supporting portions of the Track infrastructure.

C2 Service Requirements

- (a) Project Co shall maintain all Track components (including track, switching gear, and rail related components) in a state of good repair and working order in accordance with the approved Maintenance and Rehabilitation Plan.
- (b) Project Co shall conduct maintenance activities to ensure that all Track meets the Fixed Component Availability Standard.
- (c) Project Co shall provide vegetation control on the Alignment and Custodial Maintenance for the Tracks in accordance with the Standards described in Exhibit H – Alignment Maintenance Services.
- (d) In case of breakdowns and failures, Project Co shall have procedures in place to dispatch forthwith the appropriate resources necessary to Repair the problems.
- (e) Project Co shall ensure compliance with Schedule 17- Environmental Obligations.
- (f) Project Co's performance with respect to vandalism and graffiti shall be in accordance with:
 - (i) Exhibit K – Vandalism and Graffiti.

C3 Service Standards

- (a) Track Maintenance Standard
 - (i) All track components shall be in a state of good repair and functioning in accordance with the Design and Construction Requirements and the approved Maintenance and Rehabilitation Plan.
- (b) Fixed Component Availability Standard
 - (i) Any Fixed Component in the System (including track and related track components) is considered to not meet the Standard if any Defect or Deficiency is identified in that Fixed Component that:
 - A. affects the Safety of the public, Passengers or Driver in a manner contrary to the Safety Management System; or
 - B. adversely affects Operations such that the System does not meet the Operations Requirements and Specifications.

C4 Quality Monitoring and Reporting

- (a) Periodically, the Region will audit Project Co's Track Maintenance documentation and reporting. Failures to maintain documentation and report on Systems Maintenance activities will result in penalties being assessed as described in Schedule 15-3.
- (b) Maintenance Plans

- (i) Project Co shall at all times maintain complete and updated versions of the Custodial Maintenance Plan, the Corrective Maintenance Plan, and the Preventive Maintenance Plan.
 - (ii) Project Co shall follow the requirements set out in Schedule 15-3 Article 1 Section 1.10 with regard to the drafting, approval, and revisions process for these Maintenance and Rehabilitation Plans.
- (c) Maintenance Reporting
- (i) Project Co shall report on the status and completion of various Track Maintenance activities.
 - (ii) Project Co shall follow the maintenance reporting requirements set out in Schedule 15-3 Article 1 Section 1.13 with regard to reporting procedures and the Daily, Monthly, and Annual submittals that are required.

EXHIBIT D VEHICLE MAINTENANCE SERVICES**D1 Scope of Services**

- (a) Project Co shall be responsible for the Custodial, Preventive, and Corrective Maintenance activities for the following Vehicle Maintenance Services activities including but not limited to:
- (i) Vehicle Cleaning;
 - A. Daily Vehicle Inspection and Cleaning; and
 - B. Regular Heavy Vehicle Cleaning;
 - (ii) Vehicle Maintenance;

D2 Service Requirements

- (a) Vehicle Cleaning
- (i) Project Co shall maintain the Vehicles in a condition which is physically clean and suitable to be placed into Revenue Service.
 - (ii) Project Co shall develop vehicle cleaning procedures and plans that will be incorporated into the Custodial Maintenance Plan.
- (b) Vehicle Maintenance
- (i) General
 - A. In general, Project Co shall maintain all systems assets in accordance with its Maintenance and Rehabilitation Plan to ensure that the service levels outlined in the Operating Service Plan can be provided at all times and that the System Service Availability Requirements and Performance Requirements as noted in Schedule 15-3 Article 3 and the Fixed Component Availability Standards are met.
 - B. Project Co shall perform Preventive and Corrective Maintenance in accordance with the maintenance plan requirements and the requirements of Schedule 15-3.
 - C. Project Co shall ensure that all Vehicle Components affecting passenger safety and/or the safe operation of the vehicle are in accordance with the Safety Management System.
 - D. Project Co shall ensure that all Vehicle Components that do not affect passenger safety and/or the safe operation of the vehicle are fully functional, materially undamaged, and in good condition, subject to normal wear and tear.
 - E. Project Co shall develop a Corrective Maintenance Plan, based on industry best practices and manufacturer's recommendations for the selected Vehicle type, to ensure that damage to or failures of all Vehicles and Vehicle components are addressed and corrected in accordance with the requirements of this Article.
 - F. Project Co shall develop a Preventive Maintenance Plan, based on industry best practices and manufacturer's recommendations for the selected Vehicle type, to ensure that the fleet is maintained in a state of good repair.
 - (ii) Daily Activities – Inspection and Corrective Maintenance
 - A. Project Co shall ensure that all Vehicles comprising a Train consist are inspected prior to entering Revenue Service and meet the Vehicle Maintenance Standard. The inspection shall include all matters on an inspection checklist.

- (iii) Regular Preventive Maintenance Activities
 - A. Project Co shall conduct regular preventive maintenance activities on Vehicles in accordance with best practices and manufacturer's recommendations as laid out in the Preventive Maintenance Plan.
 - (i) Project Co shall conduct additional rehabilitation activities on the Vehicle Fleet as necessary in accordance with the asset preservation requirements, as described in Appendix B.
- (b) Project Co shall ensure compliance with Schedule 17 – Environmental Obligations.
- (c) Project Co's performance with respect to vandalism and graffiti shall be in accordance with:
 - (i) Exhibit K – Vandalism and Graffiti.

D3 Service Standards

- (a) Vehicle Cleaning Standards
 - (i) Daily Inspection and Cleaning Standard
 - A. Vehicles shall meet the following standard daily before entering Revenue Service:
 - i Clean Driver's cab including floor, seat, dashboard and windshield;
 - ii Clean interior windows;
 - iii Vehicle clean of all litter, spills, bodily fluids, personal accidents, unsanitary conditions and garbage;
 - iv Vehicle clean after Vehicle maintenance operations;
 - v Clean seats;
 - vi Seat covers are not damaged or torn;
 - vii Gum has been removed from seat covers, handrails and seat backs;
 - viii Graffiti marks have been removed;
 - ix Any loose floor mats/fittings have been repaired;
 - x Floor has been cleaned if soiled including vacuum and mopping;
 - xi Working CCTV;
 - xii Working Passenger information systems;
 - xiii Lights are not burnt out or flickering;
 - xiv Vehicle lights, lenses, windshield, windows, mirrors and wipers are clean and functional; and
 - xv Vehicle exterior is clean and has been washed at least once in the last three (3) days, provided the temperature has remained about 3 degrees celcius over the last three days.
 - (ii) Weekly and Heavy Cleaning Standard
 - A. Vehicles shall meet the Weekly and Heavy Cleaning Standard if Project Co completes the following cleaning activities and repairs on a weekly basis or more often as required:

- i Deep cleaning of the vehicle including vacuuming, mopping and washing;
 - ii Scuff and burn marks have been removed;
 - iii Gum has been removed from floors;
 - iv Graffiti damage has been repaired;
 - v Loose/rattling panels, fixtures and screws have been repaired;
 - vi Loose/rattling doors have been repaired;
 - vii Damaged seats, handrails and fixtures have been replaced;
 - viii Paint/wrap surface damage has been repaired;
 - ix Ceiling damage has been repaired; and
 - x Exterior surface elements, including glass, panels, trim, paint/wrap and finishing details have been inspected and repaired as required.
- (b) Vehicle Maintenance Standards
- (i) Train Scheduled for Revenue Service
 - A. A Train scheduled for Revenue Service shall not meet the Vehicle Maintenance Standard if any Vehicle in the Train consist meets any of the following:
 - i Any condition that affects Passenger or Driver Safety in a manner contrary to the Safety Management System;
 - ii Malfunction of Driver control elements or Driver seat;
 - iii The failure of brakes to meet the Design and Construction Performance Requirements;
 - iv Any Deficiency in Vehicle operation such that the Vehicle cannot maintain the schedule required by the Operations Service Plan;
 - v Broken or damaged Vehicle furniture;
 - vi Broken windshield, glass elements, mirrors, wipers, closed circuit television, etc.;
 - vii Malfunctioning or broken regulatory Vehicle elements, including brake lights, turn signals and headlights;
 - viii Malfunctioning doors;
 - ix Malfunction of Vehicle Passenger information systems;
 - x Malfunctioning communication equipment;
 - xi Malfunctioning interior illumination;
 - xii Malfunctioning heating, ventilating and air conditioning systems; A malfunctioning heating system shall be defined as a system that is not capable of maintaining an interior temperature of at least +15°C with the door(s) closed when the outside air temperature is colder than minus -18°C. A malfunctioning air conditioning system shall be defined as a system not capable of maintaining an interior temperature of less

than +27°C with the door(s) closed when the outside air temperature is in excess of +27°C, but not greater than +35°C;

- xiii Any failure of any Vehicle Component to perform its intended purpose; and
- xiv Damage to Vehicle or Vehicle components as a result of vandalism or graffiti.

(ii) Vehicles In Revenue Service

A. A Train in Revenue Service shall not meet the Vehicle Maintenance Standard if any Vehicle in the Train consist meets any of the following:

- i Any unsafe condition that may affect Passenger or Driver Safety, or safe Vehicle operation (including suspension failure and on board CCTV failure) in a manner contrary to the Safety Management System;
- ii Any Deficiency in Vehicle operation such that the Train cannot maintain the scheduled Headway, including the loss of traction drive on one bogie;
- iii Malfunction of Driver control elements and Driver seat;
- iv Brake failure on any single axle or dragging brake and/or inconsistent and deteriorated brake operation;
- v Broken windshield, glass elements, mirrors or wipers that pose an immediate Safety hazard in a manner contrary to the Safety Management System;
- vi Regulatory Vehicle elements, such as brake lights and headlights, that pose an immediate Safety hazard in a manner contrary to the Safety Management System;
- vii Malfunctioning doors (such that more than one door is locked off);
- viii Malfunctioning heating system when outside temperature is below 0°C;
- ix Malfunctioning air conditioning and ventilation system when outside temperature is above 25°C;
- x Malfunctioning radio communication equipment;
- xi Malfunctioning illumination where Safety is compromised (in a manner contrary to the Safety Management System);
- xii Broken/damaged Vehicle furniture elements where Safety is compromised (in a manner contrary to the Safety Management System);
- xiii If there is graffiti on Vehicles or Vehicle components , and results in non-compliance to the vandalism and graffiti standard as described in Exhibit J; and
- xiv Vandalism on Vehicles or Vehicle components, and results in a non-compliance to the Safe operation of the Train and / or Schedule 17 – Environmental Obligations.

- (c) Vehicle Availability Standards
 - (i) Vehicles Entering Revenue Service
 - A. A Train shall not be considered available and shall not be permitted to be entered into Revenue Service if any of the Vehicles in the Train consist fails to meet:
 - i The Vehicle Cleaning Standard set out in Section 3.0 (a), or
 - ii The Vehicle Maintenance Standard for Vehicles entering Revenue Service set out in Section 3.0 (b). For greater clarity, a Vehicle status while in revenue service shall only be considered unavailable due to in-service events that are within the control of Project Co.
 - B. Notwithstanding the foregoing, in no event shall the Region permit a Vehicle to enter Revenue Service as part of a Train consist if an identified Deficiency in the Vehicle results in the Vehicle's failure to meet the requirements of the Safety Management System, affects Passenger Safety or comfort, or otherwise prevents the safe operation of the Train.
 - (ii) Vehicles In Revenue Service
 - A. A Train already in Revenue Service shall no longer be considered available if any of the Vehicles in the Train consist fails to meet:
 - i the Vehicle Maintenance Standard for Vehicles in Revenue Service set out in Section 3.0(b). For greater clarity, a Vehicle status while in revenue service shall only be considered unavailable due to in-service events that are within the control of Project Co.

D4 Quality Monitoring and Reporting

- (a) Periodically, the Region will audit the Project Co's Vehicle Cleaning and Maintenance documentation and reporting. Failures to maintain documentation and report on Vehicle Cleaning and Maintenance activities will result in penalties being assessed as described in Schedule 15-3.
- (b) Maintenance Plans
 - (i) Project Co shall at all times maintain complete and updated versions of the Custodial Maintenance Plan, the Corrective Maintenance Plan, and the Preventive Maintenance Plan.
 - (ii) Project Co shall follow the requirements set out in Schedule 15-3 Article 1 Section 1.10 with regard to the drafting, approval, and revisions process for these Maintenance and Rehabilitation Plans.
- (c) Maintenance Reporting
 - (i) Project Co shall report on the status and completion of various Vehicle Maintenance activities.
 - (ii) Project Co shall follow the maintenance reporting requirements set out in Schedule 15-3 Article 1 Section 1.13 with regard to reporting procedures and the Daily, Monthly, and Annual submittals that are required.

EXHIBIT E FACILITIES MAINTENANCE SERVICES**E1 Scope of Services**

- (a) Project Co shall be responsible for the Custodial, Preventive, and Corrective Maintenance activities in the major buildings and facilities of the System, including but not limited to:
- (i) Operations, Maintenance and Storage Facility
 - A. Maintenance Building;
 - B. Storage Yard; and
 - C. Operations Crew Facility.
 - (ii) Central Control Facility

E2 Service Requirements

- (a) Custodial Maintenance Requirements
- (i) Project Co shall conduct all physical removal of dirt, soot, stains, marks, liquids and materials that come in contact with floors, walls, doors, windows, furniture and other building components.
 - (ii) Project Co shall repair any broken or malfunctioning floors, walls, doors, windows, furniture and other building components.
 - (iii) Project Co shall be responsible for identifying the defect and performing remedial actions in accordance with the Custodial Maintenance Standard and the timeframes established in the Performance Criteria. Notwithstanding the defect, timelines and remedial actions identified, prevailing legislation and Region by-laws at the time of bid submission shall take precedence if they are more restrictive.
 - (iv) Project Co shall place particular attention on the Cleaning and Maintenance of washroom facilities, locker rooms, cafeteria, offices and general areas frequented by people.
 - (v) Project Co shall immediately clean or repair any defect that affects the Safety of the public or the Employees of Project Co and the Region in accordance with the Custodial Maintenance Standard.
 - (vi) Project Co shall conduct daily debris removal and general cleaning of frequented areas in accordance with the Daily Custodial Maintenance Standard.
 - (vii) Project Co shall conduct weekly heavy cleaning of interior and frequented areas in accordance with the Weekly Custodial Maintenance Standard.
 - (viii) Project Co shall conduct seasonal cleaning and maintenance of exterior surfaces and surface treatments in accordance with the Seasonal Custodial Maintenance Standard.
 - (ix) Project Co shall conduct bi-annual heavy cleaning of floor surfaces in accordance with the Bi-Annual Custodial Maintenance Standard. For greater clarity, bi-annual means twice per year. For greater clarity, bi-annual means twice per year.
- (b) Corrective and Preventive Maintenance Requirements
- (i) Maintenance Building
 - A. Project Co shall maintain the Maintenance Building.

- B. Project Co shall provide all necessary trade fixtures, shop tools, heavy lifts, washers, equipment, vehicles and furniture as may be necessary in the Maintenance Building to undertake the Maintenance activities.
 - C. Project Co shall provide all security for the Maintenance Building. Project Co shall ensure the security of the Maintenance Building perimeter is maintained and immediately repaired if it is breached.
 - D. Project Co shall maintain the Maintenance Building and associated Vehicle Maintenance equipment in a state of good repair and working order in accordance with the approved Maintenance and Rehabilitation Plan.
 - E. Project Co shall provide Corrective Maintenance for:
 - i all interior Maintenance Building services (including but not limited to cleaning, heating, ventilation, air conditioning, sewage, potable water, painting, lighting and electrical services); and
 - ii the exterior of the Maintenance Building including lighting.
 - F. Project Co shall Repair damage and vandalism as may be required.
- (ii) Storage Yard
- A. Project Co shall maintain the Storage Yard.
 - B. Project Co shall be responsible and will have the authority for operations, Security and Safety within the Storage Yard.
 - C. Project Co shall maintain the Storage Yard in a state of good repair and working order in accordance with the approved Maintenance and Rehabilitation Plan.
 - D. Project Co shall provide Preventive Maintenance, Corrective Maintenance and Custodial Maintenance for the Storage Yard in accordance with the Standards established for the following other Maintenance types:
 - i Alignment Maintenance Services; and
 - ii Track Maintenance Services.
- (iii) Operations Crew Facility
- A. Project Co shall provide all Security for the Operations Crew Facility.
 - B. Project Co shall ensure the Security of the Operations Crew perimeter is maintained and immediately repaired if it is breached.
 - C. Project Co shall maintain the Operations Crew Facility, including the CCF, in a state of good repair and working order in accordance with the approved Maintenance and Rehabilitation Plan.
 - D. Project Co shall provide Corrective Maintenance for:
 - i all interior Operations Crew Facility services (including but not limited to cleaning, heating, ventilation, air conditioning, sewage, potable water, painting, lighting and electrical services); and
 - ii the exterior of the Operations Crew Facility including lighting.
- (iv) Project Co shall provide Custodial Maintenance for the Operations Crew Facility, including the CCF, in accordance with the Custodial Maintenance Standard.

- (c) Project Co shall ensure compliance with Schedule 17 – Environmental Obligations.
- (d) Project Co’s performance with respect to vandalism and graffiti shall be in accordance with:
 - (i) Exhibit K – Vandalism and Graffiti.

E3 Service Standards

(a) Custodial Maintenance Standard

- (i) The buildings and facilities within the Scope of Facilities Maintenance Services shall fail to meet the Custodial Maintenance Standard if:
 - A. Any condition exists that impacts Public Safety or the Safety of the Employees of Project Co and the Region or fails to comply with the Safety Management System, including:
 - i any accidental spills or bodily fluids;
 - ii floor treatments that represent a tripping hazard;
 - iii any unsafe accumulation of ice and snow, and for clarity accumulation of ice and snow shall be deemed to be “unsafe” if not in compliance with the Snow and Ice Clearing Standard including safe access to all areas of the buildings and facilities; and
 - iv illumination and / or lighting levels are not in compliance with Schedule 15-2; or benchmarking levels as otherwise determined prior to Revenue Service.
 - B. Any damage as a result of vandalism and/or graffiti has not been repaired as required and specified elsewhere.
 - C. Any of the subsequent time-dependent standards are violated:

(ii) Daily Custodial Maintenance Standard

- A. Buildings and facilities under Project Co’s responsibility shall meet the Daily Custodial Maintenance Standard if the following conditions exist after daily cleaning activities:
 - i All debris has been removed and disposed of; and
 - ii General cleaning of frequented areas (including offices, washrooms, locker rooms, and cafeteria) has occurred. These general cleaning activities include washing floors, cleaning toilets, cleaning urinals, restocking supplies, and cleaning counters, basins, cooking surfaces, and mirrors.

(iii) Weekly Custodial Maintenance Standard

- A. Buildings and facilities under Project Co’s responsibility shall meet the Weekly Custodial Maintenance Standard if the following conditions exist after heavy cleaning activities have occurred weekly (or more frequently as required):
 - i hard floors are washed;
 - ii carpets are vacuumed;
 - iii surfaces dusted;

- iv gum, scuff marks and other similar semi-permanent markings have been removed by use of scrapping, abrasives and/or chemical removal;
 - v inside windows are clean; and
 - vi non-slip carpets used during inclement weather are clean.
- (iv) Seasonal Custodial Maintenance Standard
- A. Buildings and facilities under Project Co's responsibility shall meet the Seasonal Custodial Maintenance Standard if the following conditions exist after seasonal cleaning activities have occurred:
- i Windows and exterior surfaces are thoroughly cleaned; and
 - ii Damaged surface treatments have been painted, repaired, or replaced as needed.
- (v) Bi-Annual Custodial Maintenance Standard
- A. Buildings and facilities under Project Co's responsibility shall meet the Bi-Annual Custodial Maintenance Standard if the following conditions exist after bi-annual cleaning activities have occurred:
- i Carpets are steam cleaned; and
 - ii All linoleum floors are burnished.

E4 Quality Monitoring and Reporting

- (a) Periodically, the Region will audit the Project Co's Facilities Maintenance documentation and reporting. Failures to maintain documentation and report on Facilities Maintenance activities will result in penalties being assessed as described in Schedule 15.3.
- (b) Maintenance Plans
- (i) Project Co shall at all times maintain complete and updated versions of the Custodial Maintenance Plan, the Corrective Maintenance Plan, and the Preventive Maintenance Plan.
 - (ii) Project Co shall follow the requirements set out in Schedule 15-3 Article 1 Section 1.10 with regard to the drafting, approval, and revisions process for these Maintenance Plans.
- (c) Maintenance Reporting
- (i) Project Co shall report on the status and completion of various Facilities Maintenance activities.
 - (ii) Project Co shall follow the maintenance reporting requirements set out in Schedule 15-3 Article 1 Section 1.13 with regard to reporting procedures and the Daily, Monthly, and Annual submittals that are required.

EXHIBIT F LRT STOP MAINTENANCE SERVICES**F1 Scope of Services**

- (a) Project Co shall be responsible for the Custodial, Preventive, and Corrective Maintenance activities on all LRT Stops including but not limited to:
- (i) Electrical, mechanical and other infrastructure;
 - (ii) LRT Stop structural elements;
 - (iii) landscape within the Lands; and
 - (iv) integrated architectural elements, including Artwork.

F2 Service Requirements

- (a) Custodial Maintenance Requirements
- (i) Project Co shall conduct all physical removal of dirt, soot, stains, marks, liquids and materials that come in contact with floors, walls, doors, windows, furniture and other LRT Stop components.
 - (ii) Project Co shall repair any broken floors, glass, furniture and other LRT Stop components.
 - (iii) Project Co shall be responsible for identifying the defect and performing remedial actions in accordance with the Custodial Maintenance Standard. Notwithstanding, the defect, timelines and remedial actions identified, prevailing legislation and Region by-laws at the time of bid submission shall take precedence if they are more restrictive.
 - (iv) Project Co shall immediately clean or repair any LRT Stop defect that affects the Safety of the public or the Employees of Project Co and the Region in accordance with the Custodial Maintenance Standard.
 - (v) Project Co shall conduct daily trash removal and general cleaning of frequented areas in accordance with the Daily Custodial Maintenance Standard.
 - (vi) Project Co shall conduct weekly heavy cleaning of interior and frequented areas in accordance with the Custodial Maintenance Standard.
 - (vii) Project Co shall conduct bi-annual heavy cleaning in accordance with the Bi-Annual Custodial Maintenance Standard.
- (b) Maintenance Requirements
- (i) Project Co shall maintain all LRT Stops in the System and all LRT Stop components in a good state of repair and working order in accordance with the approved Corrective and Preventive Maintenance Plans.
 - (ii) Project Co shall maintain all LRT Stops in the System and all LRT Stop components in accordance with the LRT Stop Access Standard.
- (c) Project Co's shall ensure compliance with Schedule 17 – Environmental Obligations.
- (d) Project Co's performance with respect to vandalism and graffiti shall be in accordance with:
- (i) Exhibit K – Vandalism and Graffiti.

F3 Service Standards

- (a) Custodial Maintenance Standard

- (i) LRT Stops shall fail to meet the Custodial Maintenance Standard if:
 - A. Any condition exists that impacts Public Safety or the Safety of the Employees of Project Co and the Region or fails to comply with the Safety Management System, including:
 - i any accidental spills or bodily fluids;
 - ii floor treatments that represent a tripping hazard;
 - iii free from any unsafe accumulation of ice and snow, and for clarity accumulation of ice and snow shall be deemed to be “unsafe” if not in compliance with the Snow and Ice Clearing Standard pursuant to Exhibit H of this Schedule, including safe access to all areas of the buildings and facilities;
 - iv illumination and / or lighting levels are not in compliance with Schedule 15-2; or benchmarking levels as otherwise determined prior to Revenue Service; and
 - B. Any damage as a result of vandalism and/or graffiti has not been repaired as required and specified elsewhere.
 - C. Any of the subsequent time-dependent standards are violated.
- (ii) Daily Custodial Maintenance Standard
 - A. LRT Stops under Project Co’s responsibility shall meet the Custodial Maintenance Standard if the following conditions exist after daily cleaning activities:
 - i All trash and debris has been removed and disposed of; and
 - ii General cleaning of high passenger frequented areas has occurred. These general cleaning activities include washing floors and cleaning station furniture as needed.
- (iii) Weekly Custodial Maintenance Standard
 - A. LRT Stops under Project Co’s responsibility shall meet the Weekly Custodial Maintenance Standard if the following conditions exist after heavy cleaning activities have occurred weekly (or more frequently as required):
 - i station floors are washed;
 - ii all station surfaces are dusted and cleaned; and
 - iii gum, scuff marks and other similar semi-permanent markings have been removed inside windows are clean.
- (iv) Bi-Annual Custodial Maintenance Standard
 - A. Buildings and facilities under Project Co’s responsibility shall meet the Bi-Annual Custodial Maintenance Standard if the following conditions exist after bi-annual cleaning activities have occurred:
 - i Windows, floors and exterior surfaces are thoroughly cleaned; and
 - ii Damaged surface treatments have been painted, repaired, or replaced as needed.

- (b) LRT Stop Access Standard and Hours of Operation
 - (i) LRT Stops must be open 15 minutes before the first scheduled Revenue Service train, and closed within 15 minutes after the last scheduled Revenue Service train (“Scheduled Station Hours”) or as otherwise directed from time to time by the Region Representative.
 - (ii) A LRT Stop is considered open when:
 - A. The LRT Stop is free from any unsafe accumulation of ice and snow, and for clarity accumulation of ice and snow shall be deemed to be “unsafe” only if: (1) the Station is not in compliance with the Snow and Ice Clearing Standard pursuant to Exhibit H of this Schedule, and (2) safe access to Trains for all passengers, including mobility impaired passengers, is compromised;
 - B. The LRT Stop is free from any other hazard or event that results in passengers, including mobility impaired passengers, being unable to safely enter and leave the Station for purposes of accessing Trains, for example, failures with fire life safety systems; and
 - C. During any period of time when a Station does not meet the Station Access Standard due to non-compliance with one or more of the standards listed above in subsections (ii)(A) to (ii)(B), Project Co shall make best efforts to mitigate the effects of such non-compliance and to provide, where possible, safe access to Trains for as many passengers as possible.

F4 Quality Monitoring and Reporting

- (a) Periodically, the Region will audit the Project Co’s LRT Stop Maintenance documentation and reporting. Failures to maintain documentation and report on LRT Stop Maintenance activities will result in penalties being assessed as described in the Schedule 15-3.
- (b) Maintenance Plans
 - (i) Project Co shall at all times maintain complete and updated versions of the Custodial Maintenance Plan, the Corrective Maintenance Plan, and the Preventive Maintenance Plan.
 - (ii) Project Co shall follow the requirements set out in 1.10 with regard to the drafting, approval, and revisions process for these Maintenance Plans.
- (c) Maintenance Reporting
 - (i) Project Co shall report on the status and completion of various LRT Stop Cleaning and Maintenance activities, including Daily Inspection and Cleaning, Weekly and Bi-Annual Custodial, Corrective Maintenance, and Preventive Maintenance.
 - (ii) Project Co shall follow the maintenance reporting requirements set out in Schedule 15-3 Article 1 Section 1.13 with regard to reporting procedures and the Daily, Monthly, and Bi-Annual submittals that are required.

EXHIBIT G STRUCTURE MAINTENANCE SERVICES**G1 Scope of Services**

- (a) Project Co shall be responsible for maintaining all structures as except as identified below.
- (i) MTO Highway 85 Northfield Drive Flyover – Responsible for the design and construction modifications only. Project Co would be responsible for maintenance of the guideway over the bridge, any signaling and communication, and catenary and OCS poles. MTO or Region would own and maintain superstructure and substructure elements and appurtenances.
 - (ii) Weber Street Flyover – Responsible for the design and construction modifications only. Project Co would be responsible for the maintenance of the at grade guideway elements and appurtenances beneath the bridge to the property limits. Region would own and maintain Bridge superstructure and substructure elements and appurtenances.
 - (iii) Culverts at Caroline Street with Erb Street and King Street within Uptown Waterloo Loop – Responsible for the design and construction modifications only. Project Co would maintain the at grade guideway elements and appurtenances over the culvert structures. Region would own and maintain all below grade structure elements.
 - (iv) CN Guelph Subdivision Line King Street Grade Separation Flyover – Responsible for design and construction. CN or Region would own and maintain bridge superstructure and substructure elements and appurtenances. Project Co would maintain the adjacent and adjoining walls and appurtenances.
 - (v) Borden Street and Ottawa Street Schneider Creek Bridges – Responsible for design and construction replacement/modifications only. Region would own and maintain bridge superstructure and substructure elements and appurtenances. Project Co would maintain the at grade guideway elements and appurtenances only over the bridge/culvert.
 - (vi) MTO Highway 7/8 Conestoga Parkway Flyover – MTO design and construction in cooperation with the Region. MTO will maintain superstructure and substructure elements and appurtenances. Project Co will design, construct and maintain the at grade guideway elements and appurtenances within the property limits beneath the Flyover.
 - (vii) CN Guelph Subdivision Line Huron Spur Schneider Creek Bridge – Responsible for design and construction of the CN Flyover only. CN would own and maintain bridge superstructure and substructure elements and appurtenances.
 - (viii) Block Line Road/Bridge Interface – Responsible for the design and construction upgrades or modifications only to the bridge/road interface, as required. Region would own and maintain the upgrades or modifications to the Block Line Road Bridge and Road Interface elements. Project Co would maintain the at grade guideway elements and appurtenances through the intersection only.
 - (ix) Courtland Avenue Montgomery Creek Flyover – Responsible for the design and construction of the existing bridge/culvert upgrades and modifications only. Region would own and maintain superstructure and substructure elements and appurtenances. Project Co would maintain the at grade guideway elements and appurtenances over the bridge/culvert.
- (b) Project Co's obligation for Maintenance of the Fixed Facilities includes, without limitation, all structural elements, including bridges, retaining walls, drainage outlets, culverts and other fixed

structures in such a manner as to meet the minimum Bridge Condition Index as prescribed in Appendix B, and ensuring the structures integrity and durability is not compromised.

G2 Service Requirements

- (a) Project Co shall maintain all bridges and structures within Project Co's responsibility in a state of good repair and working order in accordance with the approved Preventive and Corrective Maintenance Plans.
- (b) Project Co shall prepare and implement plans and procedures for Structural maintenance in the Preventive Maintenance Plan that includes an annual inspection program that ensures the Safety and integrity of the structures.
- (c) Project Co shall maintain all bridges and structures to meet the Fixed Component Availability Standard.
- (d) Project Co shall conduct inspections of structures which shall include but not be limited to:
 - (i) Detailed visual survey of all support and sub-structure structures;
 - (ii) Detailed tactile inspection of all support and sub-structure structures;
 - (iii) Underwater inspection; and
 - (iv) Destructive and / or non-destructive testing to determine the condition of the structural component.
- (e) Project Co's shall ensure compliance with Schedule 17 – Environmental Obligations.
- (f) Project Co's performance with respect to vandalism and graffiti shall be in accordance with:
 - (i) Exhibit K – Vandalism and Graffiti.

G3 Service Standards

- (a) Any Fixed Component in the System (including bridges and structures) is considered to not meet the Standard if any Defect or Deficiency is identified in that Fixed Component that:
 - (i) affects the Safety of the public, Passengers or Driver in a manner contrary to the Safety Management System;
 - (ii) adversely affects Operations such that the System does not meet the Operation Requirements and Specifications;
 - (iii) free from any unsafe accumulation of ice and snow, and for clarity accumulation of ice and snow shall be deemed to be "unsafe" if not in compliance with the Snow and Ice Clearing Standard including safe access to all areas of the buildings and facilities;
 - (iv) illumination and / or lighting levels are not in compliance with Schedule 15-2; or benchmarking levels as otherwise determined prior to Revenue Service; or
 - (v) any damage as a result of vandalism and / or graffiti has not been repaired as required and specified elsewhere.

G4 Quality Monitoring and Reporting

- (a) Periodically, the Region will audit the Project Co's Structure Maintenance documentation and reporting. Failures to maintain documentation and report on Structure Maintenance activities will result in penalties being assessed as described in the Performance Criteria section.
- (b) Maintenance Plans

- (i) Project Co shall at all times maintain complete and updated versions of the Custodial Maintenance Plan, the Corrective Maintenance Plan, and the Preventive Maintenance Plan.
 - (ii) Project Co shall follow the requirements set out in Schedule 15-3 Article 1 Section 1.10 with regard to the drafting, approval, and revisions process for these Maintenance Plans.
- (c) Maintenance Reporting
 - (i) Project Co shall report on the status and completion of various Structure Maintenance activities.
 - (ii) Project Co shall follow the maintenance reporting requirements set out in Schedule 15-3 Article 1 Section with regard to reporting procedures and the Daily, Monthly, and Annual submittals that are required.

EXHIBIT H ALIGNMENT MAINTENANCE SERVICES**H1 Scope of Services**

- (a) Project Co shall be responsible for the Custodial, Preventive, and Corrective Maintenance activities for the Alignment Maintenance activities including but not limited to:
- (i) Vegetation Control, including Grass, Weed, and Tree and Shrub Control, including Green roof Station(s);
 - (ii) Debris Collection and Removal;
 - (iii) Drainage Control;
 - (iv) Vandalism and Graffiti Repair, including and as indicated in Exhibits C to I;
 - (v) Maintenance of Fencing; and
 - (vi) Snow and Ice Removal.

H2 Service Requirements

- (a) Project Co shall conduct all Custodial, Corrective, and Preventive Maintenance activities along the System Alignment unless assigned to others in the Maintenance Responsibility Table.
- (b) The following sections provide details about Project Co's responsibilities for specific maintenance types.
- (c) Vegetation Control
- (i) Project Co shall perform Grass and Weed Control in order to:
 - A. maintain the condition of the ballast;
 - B. ensure sight distances;
 - C. provide unobstructed view;
 - D. control noxious weeds (The Weed Control Act and Regulations);
 - E. reduce drainage impairment; and
 - F. improve landscape and overall aesthetics.
 - (ii) Grass Control
 - A. Project Co shall conduct mowing or trimming operations to control grass growth in accordance with the Vegetation Control Standard.
 - B. Project Co shall conduct seeding, sodding, or planting to control erosion in accordance with the Vegetation Control Standard.
 - C. Project Co shall be responsible for identifying the defect and performing remedial actions in accordance with the Vegetation Control Standard. Notwithstanding, the defect, timelines and remedial actions identified, prevailing legislation and Region by-laws at the time of bid submission shall take precedence if they are more restrictive.
 - D. Project Co shall perform inspections during growing seasons to ensure compliance included herein, Schedule 15-2, and the Project Agreement.

- (iii) Weed Control
 - A. Project Co shall conduct weed control operations to eradicate or control undesirable herbaceous vegetation (including grass) using integrated management techniques.
 - B. Project Co shall remove, by mechanical mowing or chemical spraying (in accordance with prevailing legislation and Region by-laws at the time of bid submission), deficient weed growth in accordance with the Vegetation Control Standard.
 - C. Project Co shall be responsible for identifying the defect and performing remedial actions in accordance with the Vegetation Control Standard. Notwithstanding, the defect, timelines and remedial actions identified, prevailing legislation and Region by-laws at the time of bid submission shall take precedence if they are more restrictive.
 - D. Project Co shall perform inspections during growing seasons to ensure compliance with the requirements included herein, Schedule 15-2, and the Project Agreement.
- (iv) Tree and Shrub Maintenance and Control
 - A. Project Co shall perform Tree and Shrub Control in order to:
 - i maintain a safe environment;
 - ii maintain the condition of the ballast;
 - iii prevent fires;
 - iv ensure sight distances;
 - v prevent encroachment into track clearance envelope;
 - vi maintain clearance to overhead catenary system;
 - vii provide unobstructed view; and
 - viii improve landscape and overall aesthetics.
 - B. Project Co shall conduct tree and shrub maintenance consisting of various activities including, but not limited to, trimming, fertilizing and watering, as required to keep trees and shrubs healthy and in control and in accordance with:
 - i the Vegetation Control Standard; and
 - ii accepted horticultural and arboricultural standards.
 - C. Project Co shall conduct ongoing Preventive Maintenance on trees and shrubs during the Maintenance Term.
 - D. Project Co shall be responsible for identifying the defect and performing remedial actions in accordance with the Vegetation Control Standard. Notwithstanding, the defect, timelines and remedial actions identified, prevailing legislation and Region by-laws at the time of bid submission shall take precedence if they are more restrictive.
 - E. Project Co shall perform inspections which shall be carried out by a qualified professional with the knowledge of tree and shrub maintenance practices and identification and diagnosis of diseases and defects. The qualified professional

must have a minimum of three year's experience in the field of tree and shrub maintenance.

(d) Debris Collection and Disposal

- (i) Project Co shall conduct all debris collection and disposal in order to:
 - A. prevent damage to vehicles;
 - B. equipment and property;
 - C. manage environmental, commercial, residential and tourism concerns; and
 - D. maintain the image of the LRT and the landscape aesthetics.
- (ii) Project Co shall collect and dispose of objectionable items such as rubbish (garbage, cans, bottles, paper, plastic products, etc.), dead animals, batteries, tires, metal products, containers, rocks, building materials, etc., in accordance with the Debris Collection and Disposal Standard Exhibit H, H(c).
- (iii) Project Co shall perform all debris collection and disposal activities in accordance with local, provincial, and national Health and Safety regulations and at least on a weekly basis. In the case of a dead animal carcass, Project Co shall remove within 24 hours of becoming aware of such debris.
- (iv) Project Co shall ensure that debris is promptly removed from the Custodial Maintenance Areas.
- (v) Project Co shall immediately notify CCF and the police of any suspicious items that may have been placed with the specific intent to cause public harm or property damage.
- (vi) Project Co shall be responsible for identifying the defect and performing remedial actions in accordance with the Debris Collection and Disposal Standard. Notwithstanding, the defect, timelines and remedial actions identified, prevailing legislation and Region by-laws at the time of bid submission shall take precedence if they are more restrictive.

(e) Fences

- (i) Project Co shall provide and maintain perimeter security fencing, rectify Safety Deficiencies and perform Custodial Maintenance with respect to the Alignment in accordance with the Fencing Standard.
- (ii) Project Co shall maintain all of the fencing including physical barriers made of chain link fence, farm fence, wooden materials, metal panels, composite materials, concrete, brick and various types of Noise walls owned by the Region within the Alignment and Operations, Maintenance and Storage Facility and constructed as part of this Project under the Project Agreement (including Schedule 15-3).
- (iii) Project Co shall be responsible for identifying the defect and performing remedial actions in accordance with the Fencing Standard.
- (iv) Project Co shall immediately take temporary and / or permanent measures if considered a Security or Safety concern. Notwithstanding, the defect, timelines and remedial actions identified, prevailing legislation and Region by-laws at the time of bid submission shall take precedence if they are more restrictive.

(f) Vandalism and graffiti repair

- (i) Project Co shall remove all graffiti and repair all vandalism to promote the LRT image and ensure the safe operation of the LRT.
 - (ii) Project Co shall remedy graffiti and vandalism on the System in accordance with the Vandalism and Graffiti Standard.
 - (iii) Project Co shall cover or remove offensive material and graffiti by painting over, cleaning, or mechanical removal in accordance with the Vandalism and Graffiti Standard.
 - (iv) Project Co shall repair any infrastructure or components damaged by vandalism in accordance with the Vandalism and Graffiti Standard. Notwithstanding the requirements provided in Exhibit K – Vandalism and Graffiti, Project Co shall present proposals to the Region for approval or repair or replacement of equipment or parts damaged by vandalism to LRT infrastructure, equipment, or landscaping before proceeding with repairs.
 - (v) Project Co shall be responsible for identifying the defect and/or upon becoming aware performing remedial actions in accordance with the Vandalism and Graffiti. Notwithstanding, the defect, timelines and remedial actions identified, prevailing legislation and Region by-laws at the time of bid submission shall take precedence if they are more restrictive.
- (g) Drainage Control
- (i) Project Co will inspect and clean all drainage culverts, outlets and ditches to ensure they are not blocked and functioning as intended in accordance with the Drainage Control Standard.
 - (ii) Project Co will remove any vegetation impeding proper drainage in accordance with the Drainage Control Standard.
 - (iii) Project Co shall conduct efforts to eliminate ponding and/or standing water, in accordance with:
 - A. the Drainage Control Standard.
 - (iv) Project Co shall undertake formal drainage design and construction treatments in persistent problem areas to eliminate the water ponding/standing concerns, in accordance with Project Agreement including Schedules 15-2 and this Schedule 15-3.
- (h) Snow and Ice Clearing, Sanding, De-Icing and Removal
- (i) Project Co shall perform all ice and snow clearing and removal services for the System in accordance with the Snow and Ice Removal Standard.
 - (ii) Project Co shall perform all snow and ice clearing, de-icing and removal (including the application of other ice melt products and / or use of other means and methods for meeting the Snow and Ice Removal Standard) in order to:
 - A. ensure the Safety of Driver, passengers and pedestrians throughout the System, except in the areas as otherwise identified in the Maintenance Responsibility Table;
 - B. permit the safe operation of Vehicles on the System in accordance with the Safety Management System, designated emergency evacuation routes, and the Operational Requirements and Specifications. This includes the clearing and removal of snow and ice on the Tracks, turnouts, and switches and Overhead Catenary System as may be required to ensure safe operation of the Vehicles; and

- C. permit safe access to the System by Drivers, Passengers and pedestrians, and for further certainty to ensure compliance with the Station Access Standard.
- (iii) Project Co shall coordinate with the Region when operations outside of Revenue Hours are necessary to prevent the accumulation of snow on the Tracks and ice on the Overhead Catenary System.
- (iv) Project Co shall have available equipment for plowing / clearing the Tracks when necessary.
- (v) At the daily meeting prior to an anticipated weather event, Project Co shall review with the Region, Project Co's weather event policies and procedures, including but not limited to:
 - A. Forecasted severity of the weather event;
 - B. Project Co's resources allocated to address the weather event and in maintaining compliance with the Standard along with the Safe operation of the System;
 - C. Project Co's designated Employee(s) responsible for reporting the progress of performance prior to, during, and after the weather event; and
 - D. Project Co shall be responsible to coordinate with the Region and other third party service providers.
- (vi) At the daily meeting following the storm event, Project Co shall review with the Region, Project Co's performance in meeting the Standard.
- (i) Project Co's shall ensure compliance with Schedule 17 – Environmental Obligations.

H3 Service Standards

(a) Custodial Maintenance Standard

- (i) The Alignment Maintenance Services shall fail to meet the Custodial Maintenance Standard if:
 - A. Any condition exists that impacts Public Safety or the Safety of the Employees of Project Co and the Region or fails to comply with the Safety Management System, including:
 - i any unsafe accumulation of ice and snow, and for clarity accumulation of ice and snow shall be deemed to be "unsafe" if not in compliance with the Snow and Ice Clearing Standard including safe access to all areas of the Alignment designated for emergency evacuation routes; and
 - ii illumination and / or lighting levels are not in compliance with Schedule 15-2; or benchmarking levels as otherwise determined prior to Revenue Service.

(b) Vegetation Control Standard

(i) Grass Control Standard

- A. The following areas and heights of grass growth shall constitute a grass control deficiency to be corrected by Project Co:
 - i Any grass growing along Tracks within ballast and shoulder areas and between pavement or concrete cracks;

- ii Any grass in urban areas, areas adjacent to residential homes or manicured lawns and at the Maintenance and Storage Facility, exceeding 100mm in height;
 - iii Any grass outside of urban areas, areas away from residential homes and manicured lawns exceeding 300mm in height; or
 - iv Locations where lack of vegetation is causing erosion.
- (ii) Weed Control Standard
 - A. The following areas of weed growth shall constitute a weed control deficiency to be corrected by Project Co:
 - i Weeds growing along Tracks within ballast and shoulder areas and between pavement or concrete cracks;
 - ii Noxious weeds that are identified through a weed control order or by-law;
 - iii Noxious weeds that are identified to pose a negative economic impact to horticultural, agricultural and residential land uses; or
 - iv Weeds impeding drainage or contributing to erosion by destroying desirable groundcovers.
- (iii) Tree and Shrub Control Standard
 - A. The following types of tree and shrub growth shall constitute a tree and shrub control deficiency to be corrected by Project Co:
 - i dead trees and shrubs;
 - ii evidence of disease or pests;
 - iii any broken and damaged trees, limbs or branches;
 - iv limbs or branches encroaching on track clearance envelope;
 - v limbs or branches encroaching on overhead catenary system; or
 - vi any uncontrolled areas of growth such as wild brush areas, or growth encroaching on public areas.
- (c) Debris Collection and Disposal Standard
 - (i) The presence of any of the following shall constitute a debris collection deficiency to be corrected by Project Co:
 - A. any debris within the Alignment that remains after one week from when Project Co becomes aware of the presence of the debris:
 - i all debris along Tracks within ballast, shoulder areas, in the Alignment and at Operations, Maintenance and Storage Facility;
 - ii any debris along Tracks within ballast and shoulder areas that may affect the Safety or operation of the LRT; or
 - iii any debris that may present a public Safety concern, environmental or property damage.
 - B. any dead animal carcasses within the System Alignment that are not removed within 24 hours of becoming aware.

- (d) Fencing Standard
- (i) Any of the following shall constitute a fencing deficiency to be corrected by Project Co:
 - A. any damaged fence not owned by the Region;
 - B. any damage to fence owned by the Region; or
 - C. damaged or defective personnel access gates or locks.
- (e) Vandalism and Graffiti Standard
- (i) All vandalism and graffiti must be covered or removed by painting over, cleaning, or mechanical removal within 24 hours of Project Co identifying and / or becoming aware of the defect.
 - (ii) If permanent repairs cannot be completed with the initial response time, any infrastructure or components damaged by vandalism and graffiti must be repaired within the Remedial Period (time required to complete permanent repairs as proposed by Project Co, acting reasonably and based on the nature and extent of the damage, with the time being determined from when Project Co identified and / or became aware of the defect until such time that permanent repairs are complete), and notwithstanding the requirements of Exhibit K – Vandalism and Graffiti, after Region approval of the proposed remedy.
 - (iii) In all cases, if public Safety or the continued operation of the System at the prescribed service levels is a concern, temporary repairs shall be made immediately.
- (f) Drainage Control Standard
- (i) Any of the following conditions shall constitute a Drainage Control Deficiency to be corrected by Project Co:
 - A. Any vegetation growth impeding drainage;
 - B. Any debris blocking a drainage culvert, outlet, or ditch; or
 - C. Any ponding and/or standing water during the Spring and Summer months.
- (g) Snow and Ice Removal Standard
- (i) During the weather event, the following shall constitute snow and ice deficiencies on the System to be corrected by Project Co:
 - A. any accumulation in excess of trace amounts at the LRT Stops, public areas (where Project Co is responsible for surface maintenance);
 - B. any snow and ice accumulation that impairs the operation of the System, including but not limited to the following:
 - i on the Tracks;
 - ii turnouts and switches;
 - iii Overhead Catenary System;
 - iv OMSF; or
 - v as may be required to ensure safe operation of the System.
 - (ii) Prior to the start of the next Revenue Service day after the weather event has ended, the following shall constitute snow and ice deficiencies on the System:

- A. any accumulation in excess of trace amounts at the Station Platforms, public areas (where Project Co is responsible for surface maintenance), and;
- B. any snow and ice accumulation along the Tracks, Guideway, and OMSF that impairs the operation of the System.

H4 Quality Monitoring and Reporting

- (a) Periodically, the Region will audit the Project Co's Alignment Maintenance documentation and reporting. Failures to maintain documentation and report on Alignment Maintenance activities will result in penalties being assessed as described in the Performance Criteria section.
- (b) Maintenance Plans
 - (i) Project Co shall at all times maintain complete and updated versions of the Custodial Maintenance Plan, the Corrective Maintenance Plan, and the Preventive Maintenance Plan.
 - (ii) Project Co shall follow the requirements set out in Schedule 15-3 Article 1 Section 1.10 with regard to the drafting, approval, and revisions process for these Maintenance Plans.
- (c) Maintenance Reporting
 - (i) Project Co shall report on the status and completion of various Alignment Maintenance activities.
 - (ii) Project Co shall follow the maintenance reporting requirements set out in Schedule 15-3 Article 1 Section 1.13 with regard to reporting procedures and the Daily, Monthly, and Annual submittals that are required.

EXHIBIT I MAINTENANCE RECORDS AND REPORTING**II Maintenance Records and Reporting**

- (a) Pursuant to Schedule 15-3 Article 1 Section 1.11, periodically, the Region will audit the Project Co's Maintenance records and reporting. Failures to maintain records and report on Maintenance activities will result in penalties being assessed as described in the Performance Criteria section.
- (b) Maintenance Plans
 - (i) Project Co shall follow the requirements set out in Schedule 15-3 Article 1 Section 1.10 with regard to the drafting, approval, and revisions process for the Maintenance and Rehabilitation Plan.
 - (ii) Project Co shall at all times maintain complete and updated versions of the Maintenance and Rehabilitation Plan, along with the sub plans described as the Custodial Maintenance Plan, the Corrective Maintenance Plan, and the Preventive Maintenance Plan. The performance requirements associated with the Asset Management Plan and the Handover Maintenance Plan are included in Appendices B and C respectively.
- (c) Maintenance Reporting
 - (i) Project Co shall report on the status and completion of various Maintenance activities.
 - (ii) Project Co shall follow the maintenance reporting requirements set out in Schedule 15-3 Article 1 Section 1.13 with regard to maintenance reporting procedures and the Daily, Monthly, and Annual submittals that are required.

EXHIBIT J MAINTENANCE ACTIVITIES AND COORDINATION**J1 Maintenance Activities and Coordination**

- (a) Pursuant to Schedule 15-3 Article 1 Section 1.17, when performing the Maintenance Services, Project Co shall provide all maintenance activities, as defined in whole or in part as part by the Maintenance and Rehabilitation plan, and maintenance coordination, as defined in whole or in part by Appendix A of this schedule and for further clarity including the LRT Rules and Procedures, in accordance with the performance requirements described throughout Schedule 15-3 and diligently at all times during the Maintenance Term in accordance with the Project Agreement, notwithstanding Project Co's rights and entitlements as provided elsewhere in the Project Agreement.
- (b) Performance Requirements
- A. General
 - B. Project Co shall ensure all Employees performing Maintenance on the System are governed by the LRT Rules and the Standard Operating Procedures.
 - C. Project Co shall ensure all Employees performing Maintenance on the System receive clearance from the CCF to enter and perform Maintenance Services when so required by the LRT Rules and Standard Operation Procedures.
 - D. Project Co shall ensure all employees performing Maintenance on the System are certified and trained on the LRT Rules and Standard Operating Procedures.
 - E. Project Co shall ensure that all Non Revenue Vehicles and equipment are operated in accordance with the LRT Rules and Standard Operating Procedures and Good Industry Practice, and for further certainty may require prior approval for use on the System by the CCF.
- (ii) Deficiencies
- A. Upon receiving notification of the Deficiency in accordance with Article 1.16 Project Co shall promptly take steps to remedy the Deficiency as follows:
 - i in the event that the Deficiency constitutes an issue with respect to the Safety Management System;
 - ii Project Co shall remedy the Deficiency immediately if possible, but at least within 24 hours of the Region's notice, notwithstanding more stringent response and / or rectification times as may be prescribed in the Exhibits to Schedule 15-3; and
 - iii in the event that that the Deficiency does not contravene the Safety Management System, Project Co shall take corrective action to remedy the Deficiency, and / or shall submit an acceptable remediation plan to the Region in respect of the Deficiency, including a deadline for rectification of the Deficiency.

EXHIBIT K VANDALISM AND GRAFFITI**1.0 General**

(a) This Exhibit K sets out the Parties' respective roles and responsibilities in respect of response to and rectification of incidents of Vandalism.

(b) .

2.0 Definitions

(a) The following capitalized terms shall have the meanings ascribed to them below:

- (i) **“Event of Vandalism”** means any incident of Vandalism occurring on the System.
- (ii) **“Graffiti”** means the visual or physical defacement of any component of the System by drawing, painting, spraying, scratching or inscribing.
- (iii) **“Physical Damage”** means damage deliberately caused to the structure or physical integrity of any component of the System that requires repair or replacement, and includes breakage and cracking, indentations, impacts to a structure which disable the functionality of a component, dislocation of a component, or other similar forms of harm which would commonly be understood as physical damage.
- (iv) **“Vandalism”** means the deliberate destruction, defacement, or damage of any component of the System, and includes Graffiti, Physical Damage, and any other form of deliberate destruction, defacement, or damage.
- (v) **“Vandalism Matrix”** means the responsibility matrix defining specific categories of Vandalism, set out in Section 6.0 of this Exhibit.
- (vi) **“Vandalism Repair Costs”** are determined in accordance with Section 4.0 of this Exhibit.

3.0 Response and Rectification of Vandalism

(a) Project Co shall be solely responsible for all response and rectification in respect of all Events of Vandalism occurring on the System at all times and in accordance with the requirements of Schedule 15-3.

4.0 Determination of Vandalism Repair Costs and Excusing Causes

(a) Project Co.'s Vandalism Repair Costs shall be limited to the following items:

- (i) Project Co.'s Direct Costs (as such term is defined in Appendix A of Schedule 22 to the Project Agreement) for response and rectification of any Event of Vandalism; and
- (ii) Project Co.'s Applicable Margins, determined in accordance with Appendix B of Schedule 22 to the Project Agreement.

(b) Project Co.'s Vandalism Repair Costs shall be exclusive of any insurance proceeds due to Project Co, or to which Project Co would have been entitled had insurance been

maintained in accordance with the requirements of the Project Agreement, which are payable in respect of the relevant Event of Vandalism. For clarity, any such insurance proceeds shall be subtracted from the amount calculated in Section 4.0(a), above, to determine the total Vandalism Repair Costs.

- (c) Without prejudice to the operation of Section 4.2 - Excusing Causes, Project Co's Vandalism Repair Costs shall not include any Deductions applied under the Payment Mechanism in relation to an Event of Vandalism.
- (d) An Excusing Cause shall apply as a result of any Event of Vandalism to the extent shown under the column titled "Excusing Cause under this Exhibit K" in the Vandalism Matrix. Nothing in the Vandalism Matrix shall affect Project Co's rights as a result of any other Excusing Cause, Relief Event or event of Force Majeure that may exist by virtue of any other provision in the Project Agreement.

5.0 Responsibility for Vandalism Repair Costs

- (a) Project Co shall be wholly responsible for all Vandalism Repair Costs, as well as any other associated costs, which result from an Event of Vandalism that is denoted as "Project Co Cost" under the column titled "Cost Risk" in the Vandalism Matrix. For clarity, all such costs are not subject to the Vandalism Repair Costs Cap set out in Section 7.0.
- 6.0 Subject to the Vandalism Repair Costs Cap set out in Section 7.0, Project Co shall be responsible for all Vandalism Repair Costs, as well as any other associated costs, which result from an Event of Vandalism that is denoted as "Project Co Cost - Capped" under the column titled "Cost Risk" in the Vandalism Matrix.

7.0 **Vandalism Matrix**

Project Period	Description of Vandalism Event	Responsibility for Response/ Rectification	Excusing Cause under this Exhibit K	Cost Risk	Application Guidance
Pre-Substantial Completion Date	Vandalism in respect of any part of the Works. The other provisions of the Project Agreement, including Section 30, 41, 43 and 44 shall continue to apply.	Project Co	N/A	Project Co Cost	N/A
Post-Substantial Completion Date	Graffiti – interior or exterior of Vehicles	Project Co	No	Project Co Cost - Capped	N/A
Post- Substantial Completion Date	Graffiti –Stations and Alignment	Project Co	No	Project Co Cost - Capped	N/A
Post- Substantial Completion Date	Graffiti – interior or exterior of OMSF	Project Co	No	Project Co Cost	N/A

Project Period	Description of Vandalism Event	Responsibility for Response/ Rectification	Excusing Cause under this Exhibit K	Cost Risk	Application Guidance
Post-Substantial Completion Date	Physical Damage to Vehicle, or Graffiti on Vehicles that necessitates structural repairs. Applies to vehicles vandalized while in service.	Project Co	Yes An Excusing Cause is applicable where Vandalism is severe enough that Vehicle is taken out of service as a result. The Excusing Cause shall be limited to losses of service caused by the requirement to remove the affected Vehicle from service and enter spare Vehicle into service.	Project Co Cost - Capped	Vandalism must occur while Vehicle is in service. Project Co maintenance records (pre-service and end-of-service inspection) may be relied upon to demonstrate timing of Vandalism. Example: Project Co pre-departure inspection records show no vandalism, following return from service Project Co maintenance records show that vandalism is noted/reported.

Project Period	Description of Vandalism Event	Responsibility for Response/ Rectification	Excusing Cause under this Exhibit K	Cost Risk	Application Guidance
Post-Substantial Completion Date	Physical Damage to Vehicles, or Graffiti that necessitates structural repairs. Applies to vehicles vandalized while out of service, i.e. stored at the Operations, Maintenance and Storage Facility.	Project Co	No.	Project Co Cost	N/A
Post-Substantial Completion Date	Physical Damage to System (other than Vehicles or OMSF)	Project Co	Yes. An Excusing Cause shall apply where Vandalism is severe enough that it affects the operation of the Vehicles or the safe use of the LRT Stops	Project Co Cost - Capped	N/A
Post-Substantial Completion Date	All Physical Damage to the OMSF facility	Project Co	No	Project Co Cost	N/A

8.0 Vandalism Repair Costs Cap

- (a) Project Co's responsibility for uninsured Vandalism Repair Costs which result from an Event of Vandalism that is denoted as Project Co Cost – Capped, under the column titled "Cost Risk" in the Vandalism Matrix, shall be limited to a maximum of \$120,000 (escalated in accordance with Section 8.0 (b) below) per calendar year ("Vandalism Cost Repair Cap"). For clarity, in the case of any Event of Vandalism which is categorized as Project Co Cost – Capped, Project Co shall pay all Vandalism Repair Costs until the Vandalism Cost Repair Cap is reached in a calendar year, after which the Region shall reimburse Project Co, in accordance with Section 8.0, for any further Vandalism Repair Costs resulting from an Event of Vandalism occurring in that calendar year which is categorized as Project Co Cost – Capped.
- (b) The Vandalism Cost Repair Cap (and the lower thresholds set out in Section 9.0(b) below) shall be pro-rated in any partial year, and shall be escalated by applying the Maintenance Escalation Factor set out in Section 4.1 of Part B of Schedule 20 to the Project Agreement.
- (c) The Region shall not be obliged to meet any Vandalism Repair Costs, nor shall Project Co be entitled to an Excusing Cause under this Exhibit K, to the extent that the Event of Vandalism or its consequences were caused or contributed to by any breach on the part of Project Co of any obligations in the Project Agreement (including, in particular, any breach of its obligations under Section 9.6 - Protest and Trespass of the Project Agreement).

9.0 Administrative Matters

- (a) Project Co shall maintain accurate and complete records of its response and rectification of all Events of Vandalism which it applies to the running total of Project Co Costs - Capped that count against the Vandalism Repair Cost Cap, including:
 - (i) The nature of each Event of Vandalism, location, date, and time of occurrence;
 - (ii) Associated Vandalism Repair Costs; and
 - (iii) Appropriate documentation to support the Vandalism Repair Costs incurred, which shall include at a minimum:
 - A. A work order evidencing the application of time and materials in response to and rectification of the Event of Vandalism;
 - B. Photographs of the actual Physical Damage and/or Graffiti before and after it has been repaired, and;
 - C. Calculation of margins in accordance with Appendix B of Schedule 22 to the Project Agreement.
 - (iv) A running total of Vandalism Repair Costs by calendar year, including a breakout by Project Co Costs and Project Co Costs – Capped.
- (b) Project Co shall promptly notify the Region if the running total of Project Co Costs – Capped in a calendar year reaches \$80,000 (as escalated), shall again promptly notify the Region if such running total reaches \$115,000 (as escalated), and shall again promptly notify the Region if such running total reaches \$120,000 (as escalated).

In the event that Project Co requires reimbursement from the Region for an Event of Vandalism, due to Vandalism Repair Costs in excess of the Vandalism Cost Repair Cap, in accordance with Section 7.0(a), Project Co shall submit to the Region, no more than once per month, a consolidated request for reimbursement of Vandalism Repair Costs. The request for reimbursement shall include, for each Event of Vandalism subject to reimbursement, the information set out in Section 8.0(a)(i) to (iv), above, as well as disclosure of any insurance proceeds that have been paid or are payable in relation to the Event of Vandalism. The Vandalism Repair Costs claimed for reimbursement shall be calculated in accordance with Section 4.0.

- (d) The Region will notify Project Co of any issues or disputes in respect of Project Co's calculation of the Vandalism Repair Costs within 10 Business Days of receipt of the request for reimbursement. If the Region does not dispute Project Co's claimed Vandalism Repair Costs, then the Region shall confirm its acceptance. The Region's failure to respond within 10 Business Days shall constitute acceptance.
- (e) If the Region and Project Co are unable to resolve such issues or disputes within a further 10 Business Days, then either Party may refer the issue or dispute for resolution pursuant to the Dispute Resolution Procedure. Where the dispute involves only a portion of the claimed Vandalism Repair Costs, then the undisputed portion shall be deemed to be accepted and eligible for payment in accordance with 8.0(f), below.
- (f) Upon the Region's acceptance of the Vandalism Repair Costs set out in Project Co's request for reimbursement, Project Co shall be entitled to include the claimed Vandalism Repair Costs as part of the next invoice issued to the Region, in accordance with Section 34.6 of the Project Agreement. Project Co shall append the final approved request for reimbursement in respect of the Vandalism Repair Cost. The Region shall make payment in accordance with Section 34 of the Project Agreement.