

## SCHEDULE 4

### OPERATION AND MAINTENANCE REQUIREMENTS AND SPECIFICATIONS

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**APPENDIX A** **SERVICE PLAN**

**APPENDIX B** **INITIAL SERVICE PLAN**

**APPENDIX C** **TOTAL NUMBER OF VEHICLES REQUIRED: 16 (32)**

**STAFFING PLAN**

## SCHEDULE 4

### OPERATION AND MAINTENANCE REQUIREMENTS AND SPECIFICATIONS

#### 1. INTRODUCTION

##### 1.1 Introduction

The specifications in this Schedule apply to the Operation and Maintenance of the System.

##### 1.2 Objectives

The Concessionaire and RAVCO acknowledge the following mutual objectives in relation to the Operation and Maintenance of the System:

- 1.2.1 Passenger focused – to consider and meet the needs of Passengers;
- 1.2.2 Quality Service – to provide a reliable clean efficient and courteous service for Passengers;
- 1.2.3 Security - the System will provide an environment that promotes personal security;
- 1.2.4 Community Acceptance - the Concessionaire will be a good neighbour and will consult with, and keep the communities informed during the Term;
- 1.2.5 Accessibility – the System will be accessible to persons with disabilities;
- 1.2.6 Safety - the System will be operated and maintained in a manner which places safety as the principal objective;
- 1.2.7 Partnering – the System will be operated as part of GVTA's regional transportation network and the Concessionaire will co-operate with RAVCO and GVTA in relation to the promotion of integrated transport and ticketing;
- 1.2.8 Asset Integrity – to maintain the integrity and functionality of the System through a program of inspection, maintenance and renewal consistent with specified design lives of the components of the System.

#### 2. OPERATION AND MAINTENANCE

##### 2.1 Concessionaire to Operate and Maintain

- 2.1.1 Other than the obligations to be performed by RAVCO or GVTA pursuant to Section 8 and Section 9 of this Schedule and the maintenance activities, if any, to be performed by third parties pursuant to the terms of the Real Property Interests, the Concessionaire will have control and responsibility for all operation and maintenance of the System during the Operating Period (the "**Operation and Maintenance**") and will perform its obligations:

- 2.1.1.1 in compliance with these Operation and Maintenance Requirements and Specifications;
- 2.1.1.2 generally in accordance with the Proposal Extracts relating to Operations and Maintenance to the extent such Proposal Extracts are not inconsistent with the provisions of this Schedule; and
- 2.1.1.3 in accordance with the terms of this Agreement.

2.1.2 The obligations in Sections 2.1.1.1, 2.1.1.2 and 2.1.1.3 of this Schedule are independent obligations. In particular:

- 2.1.2.1 the fact that Concessionaire has satisfied the Operation and Maintenance Requirements and Specifications will not be a defence to an allegation that Concessionaire has failed to comply with Section 2.1.1.2 of this Schedule or the terms of this Agreement; and
- 2.1.2.2 the fact that Concessionaire has complied with Section 2.1.1.2 of this Schedule will not be a defence to an allegation that Concessionaire has not satisfied the Operation and Maintenance Requirements and Specifications or complied with the terms of this Agreement.

2.1.3 For greater certainty, the Concessionaire will not be required to perform the Operation and Maintenance of:

- 2.1.3.1 the "Bridgeport Park-and-Ride Facility" described in Appendix 4 to Schedule 3 (Design and Construction Specifications) of the Concession Agreement;
- 2.1.3.2 the off-street transit exchanges at Richmond Centre, Bridgeport and Marine Drive Stations described in Section 9.5.3.1 of Schedule 3 (Design and Construction Specifications); or
- 2.1.3.3 that portion of System bridge crossing the North Arm of the Fraser River to be used by bicycle and pedestrians as more particularly described in Schedule 6 (Proposal Extracts).

### 3. STANDARD OF PERFORMANCE

#### 3.1 Applicable Standards

Notwithstanding any other provision of this Agreement, the Concessionaire will undertake the Operation and Maintenance:

- 3.1.1 to the same operating and maintenance standards that an experienced, prudent, and knowledgeable operator of a transit system comparable in size, nature and age would employ; and

3.1.2 so that the design life of those assets comprised in the System which have a specified design life (exceeding the Term) is capable of being realised if the asset continues to be maintained in an appropriate manner after termination or expiration.

### **3.2 Published Standards**

Any reference to a published standard in this Schedule will be deemed to be a reference to the latest edition, from time to time, of such standard. It is acknowledged that those standards applying to an asset at the Closing Date will continue to apply until such time as that asset is life expired, unless such asset is replaced during the Term following which the standards applicable at the replacement date will apply.

## **4. MINIMUM SERVICE REQUIREMENTS**

### **4.1 Configuration**

The Concessionaire will configure and operate the System with the objective of meeting or exceeding the minimum service requirements for the System specified in this Section 4.

### **4.2 Operating Hours**

4.2.1 All Passenger facilities will be available for use by Passengers from 15 minutes prior to the departure of the first scheduled Vehicle from that Station until all Passengers have exited such facilities following disembarkation from the last scheduled Vehicle from that Station.

4.2.2 The Concessionaire will operate the System continuously between the hours set out in Table 4.2 below for first arrivals and last departures from each of the Terminal Stations.

4.2.3 The last departure from Waterfront Station will complete its journey to Richmond Centre Station and vice-versa. The last departure from Airport Terminal Station will complete its journey to Waterfront Station.

4.2.4 The first arrivals at Richmond Centre Station or the Airport Terminal Station will commence their respective journeys at Waterfront Station.

4.2.5 The first arrival at Waterfront Station will commence its journey at either Richmond Centre Station or Airport Terminal Station.

Table 4.2

## FIRST AND LAST TRAIN TIMES

	Monday to Friday	Saturday	Sunday and Holidays
<b>Waterfront Station</b>			
First Train arrives:	5:45 A.M.	5:45 A.M.	5:45 A.M.
Last Train leaves:	1:15 A.M.	1:15 A.M.	1:15 A.M.
<b>Richmond Centre Station</b>			
First Train arrives:	5:45 A.M.	5:45 A.M.	5:45 A.M.
Last Train Leaves:	12:45 A.M.	12:45 A.M.	12:45 A.M.
<b>Airport Terminal Station</b>			
First Train arrives:	5:15 A.M.	5:15 A.M.	5:15 A.M.
Last Train leaves:	12:45 A.M.	12:45 A.M.	12:45 A.M.

## 4.3 Travel Times

4.3.1 In the Working Timetable, Terminal Station-to-Terminal Station travel times for all Trains will not exceed:

- 4.3.1.1 25 minutes between Waterfront Station and Richmond Centre Station; and
- 4.3.1.2 26 minutes between Waterfront Station and Airport Terminal Station.

4.3.2 The travel times described in the Working Timetable commence from the time of departure at the originating Terminal Station and end at the time of arrival at the destination Terminal Station including all Station Dwell Times. The travel times do not include the dwell times at the originating and destination Terminal Stations.

## 4.4 Station Dwell Times

4.4.1 The Working Timetable will incorporate a minimum Dwell Time of 10 seconds at each Station provided that in circumstances where the automatic Train Control System regulates Trains such that the minimum Dwell Time at any Station is less than 10 seconds, the Concessionaire will be deemed to be compliant with the provisions of this section if the System respects a minimum Dwell Time of:

- 4.4.1.1 5 seconds at each Station, other than those set out in Section 4.4.1.2 of this Schedule; and
- 4.4.1.2 10 seconds at each Terminal Station and at each Station which is a major transit system transfer point, including Broadway Station and Marine Drive.

4.4.2 Subject to Section 4.4.1.2 of this Schedule, Dwell Times at Terminal Stations will be such as to meet the particular requirements of the technology employed in the System.

## 5. OPERATION AND MAINTENANCE PLANS

### 5.1 Service Plans

Attached as Appendix A to this Schedule is the Concessionaire's Service Plan for the System which:

5.1.1 includes:

- 5.1.1.1 hours of operation;
- 5.1.1.2 travel times;
- 5.1.1.3 operating Headway;
- 5.1.1.4 total number of Vehicles required to implement the Service Plan; and
- 5.1.1.5 the Concessionaire's staffing plan for the Service Plan as set out in Appendix C of this Schedule (the "Staffing Plan");

5.1.2 clearly identifies service frequencies throughout the day on the following line segments:

- 5.1.2.1 Bridgeport Station to Waterfront Station;
- 5.1.2.2 Waterfront Station to Bridgeport Station;
- 5.1.2.3 Bridgeport Station to Airport Terminal Station;
- 5.1.2.4 Airport Terminal Station to Bridgeport Station;
- 5.1.2.5 Bridgeport Station to Richmond Centre Station; and
- 5.1.2.6 Richmond Centre Station to Bridgeport Station.

### 5.2 Service Commencement and Startup Plans

The Concessionaire will, not less than two months prior to the projected Service Commencement Date, establish a service commencement and startup plan ("Service Commencement and Startup Plan") incorporating the following:

- 5.2.1 a detailed organization and staffing plan for the Concessionaire;
- 5.2.2 a schedule identifying the tasks to be completed prior to Service Commencement Date and the targeted completion dates of such tasks;
- 5.2.3 a detailed plan for the trial running to be undertaken and successfully completed as the basis for conditional and final System Acceptance;

- 5.2.4 the Initial Service Plan attached to this Schedule as Appendix B which includes the information described in Section 5.1 of this Schedule (the "Initial Service Plan"); and
- 5.2.5 an Environmental Management Plan (Operations).

### 5.3 Transition between Service Plans

The Concessionaire will:

- 5.3.1 implement the Initial Service Plan on the Service Commencement Date; and
- 5.3.2 terminate the Initial Service Plan no later than 24 months after the Service Commencement Date and implement the Service Plan.

### 5.4 Working Timetable

- 5.4.1 The Concessionaire will make available to RAVCO the Working Timetable (in electronic format) for the:

- 5.4.1.1 Initial Service Plan, no later than 30 days before the Scheduled Service Commencement Date; and
  - 5.4.1.2 Service Plan, no later than 30 days before implementing such plan.

- 5.4.2 The Working Timetable will provide direct service between:

- 5.4.2.1 Waterfront Station and Airport Terminal Station; and
  - 5.4.2.2 Waterfront Station and Richmond Centre Station,

such that Passengers travelling between such Stations will not be required to transfer Trains other than during periods of Planned Works Interruptions when the Concessionaire is operating a Substitute Service pursuant to Schedule 11 (Payments) or during periods when an Adjusted Service Plan is in effect.

- 5.4.3 At any time when the System is operating on a scheduled Headway of greater than 15 minutes, the Concessionaire will use reasonable commercial efforts to ensure that Trains do not depart from each Station before, or more than five minutes later than, their respective scheduled departure time on the Working Timetable.

### 5.5 Adjusted Service Plan

The Concessionaire may temporarily adjust the Service Plan (the "Adjusted Service Plan") by adjusting the definitions of Route Segment and Terminal Stations to allow for the short turn back of a Train (or Trains) provided that:

- 5.5.1 such adjustment is necessary to mitigate against disruption to Passengers during periods of partial System failure; and

5.5.2 the steps taken by the Concessionaire are those which a prudent operator would reasonably be expected to have taken in respect of such failure.

## 5.6 Five Year Operation and Maintenance Plans

The Concessionaire will establish five year Operation and Maintenance plans ("Five Year Operation and Maintenance Plans") as follows:

5.6.1 Initial Plan: not later than three months prior to Service Commencement, the Concessionaire will, based on the material described in Section 5.2 and 5.3 of this Schedule (excluding those elements specific to Service Commencement), establish a Five Year Operation and Maintenance Plan for the first five years of the Operating Period (or portion thereof in the case of the first Contract Year); and

5.6.2 Annual Review and Update: before the end of each Contract Year, the Concessionaire will review the existing Five Year Operation and Maintenance Plan and, considering "life cycle" issues, cost of operating, structural inspections and assessments under Section 12.2.3 of this Schedule, improvements to the System as may be recommended under Section 16.1 of this Schedule, or Renovations that may be considered under Section 16.2 of this Schedule, establish an up-dated Five Year Operation and Maintenance Plan for the ensuing five Contract Year period. To assist proper planning and continuity, in the last five Contract Years the Five Year Operation and Maintenance Plan will continue to include the ensuing five years, which will include periods of time after the completion of the Term.

## 5.7 Preparation of Annual Operation and Maintenance Plan

The Concessionaire will establish an annual Operation and Maintenance plan ("Annual Operation and Maintenance Plan") as follows:

5.7.1 prior to the Service Commencement Date, the Concessionaire will establish the Annual Operation and Maintenance Plan covering the balance of the Contract Year in which the Service Commencement Date occurs as well as the next ensuing Contract Year, based on the Service Plan then in effect as described in Section 5.2 and 5.3 of this Schedule; and

5.7.2 thereafter, in the last quarter of each Contract Year the Concessionaire will establish the Annual Operation and Maintenance Plan for the next Contract Year, taking account of the then current Five Year Operation and Maintenance Plan and any circumstances in the System that require attention.

## 5.8 Amendments and Replacements of Plans

The Concessionaire will from time to time, and prior to their implementation, submit to RAVCO each of the plans (including any proposed replacements or material amendments of any such plans) described in Sections 5.2, 5.4 and 5.7 of this Schedule ("Plans"). RAVCO will review the Plans and may (but will not be obliged to) provide comments to the Concessionaire proposing changes that RAVCO considers desirable or necessary. The Concessionaire will have due

regard to any comments which RAVCO may have in relation to the Plans and will attend such meetings as RAVCO may reasonably require in order to discuss RAVCO's comments and proposals provided that:

- (a) it will remain the Concessionaire's responsibility to ensure that its obligations in relation to the Operation and Maintenance of the System are carried out in accordance with this Agreement; and
- (b) no comments or lack of comments will impose any liability on RAVCO or in any way relieve the Concessionaire of its obligations under this Agreement.

Should RAVCO fail to provide comment to the Concessionaire within 15 Business Days of receipt of the Plans, the Concessionaire will be entitled to implement the Plans without further reference to RAVCO.

Notwithstanding anything to the contrary contained in this Section 5, RAVCO acknowledges that the minimum staffing levels contained in the Staffing Plan for fare checking, fare evasion and average response times proposed by the Concessionaire as at the date of this Agreement have been agreed with RAVCO as being sufficient for the purposes of Section 8.4 and the Concessionaire will not reduce such staffing levels without the prior written approval of RAVCO.

## 6. OPERATIONS

### 6.1 General

The Concessionaire will:

#### 6.1.1 operate and maintain the System:

6.1.1.1 so as to protect the safety of all persons on or about the System;

6.1.1.2 in accordance with:

- (a) the Initial Service Plan between the Service Commencement Date and the date the Initial Service Plan is terminated in accordance with Section 5.3 of this Schedule;

- (b) the Service Plan from the date on which the Initial Service Plan is terminated for the remainder of the Operating Period;

- (c) the Environmental Management Plan (Operations),

and materially in accordance with:

- (d) the Annual Operation and Maintenance Plan then in effect on the System; and

- (e) the Five Year Operation and Maintenance Plan then in effect on the System;

- 6.1.2 comply with all applicable Laws including:
  - 6.1.2.1 *Railway Act (British Columbia);*
  - 6.1.2.2 *Railway Safety Act (British Columbia),*
  - 6.1.2.3 *Railway Safety Code – Part 4 – Railway Operating Standards;*
  - 6.1.2.4 *TransLink Regional Transit System Tariff;*
  - 6.1.2.5 *TransLink Regional Transit System Rules;*
- 6.1.3 comply with the Concessionaire's Rule Book, policies and procedures;
- 6.1.4 have regard to concerns raised by RAVCO and any Relevant Authority;
- 6.1.5 monitor and report quarterly to RAVCO on System operations performance compared to service level specifications in the Service, Operation and Maintenance Plans for the System in addition to the Periodic Reports made pursuant to Schedule 11 (Payments);
- 6.1.6 comply with Schedule 15 (Reports & Records) in relation to records and reports for the System;
- 6.1.7 as part of the preparation of the future Annual Operations and Maintenance Plan analyze and report to RAVCO on historical operating performance trends and identify potential service adjustments which may be required to meet the changing needs of Passengers;
- 6.1.8 identify service adjustments which may result in better service to Passengers;
- 6.1.9 administer and reply to Passenger complaints and suggestions received directly or referred through RAVCO within a reasonable period of time having regard to the nature of the complaint and in any event provide an initial response within a period of 6 Business Days from receipt;
- 6.1.10 provide RAVCO with access to all reasonably requested operations and performance measurement and report data;
- 6.1.11 respond to all reasonable inquiries of RAVCO regarding System performance;
- 6.1.12 provide GVTA with service information for marketing purposes;
- 6.1.13 establish and maintain accurate and up to date operations documentation including the Concessionaire's Rule Book, Central Control manual, field operations manual, and Train control manual;
- 6.1.14 establish and maintain from time to time (to reflect asset changes) Reliability, Availability and Maintainability data for the System;

- 6.1.15 communicate, and where reasonably practicable, co-operate with YVR, GVTA, the Bus Service Provider(s), B.C. Rapid Transit Company, West Coast Express and other transportation service providers on joint service concerns; and
- 6.1.16 maintain minimum staffing levels no less than those set out in the Staffing Plan.

## **6.2 Vehicles and Stations**

The Concessionaire will:

- 6.2.1 under normal day to day operational conditions, respond to customer service requests, requests for assistance and reports of incidents on the System made by Passengers in an average response time not exceeding the greater of:
  - 6.2.1.1 four minutes; and
  - 6.2.1.2 one-half of the average Headway on the Working Timetable in effect at the time the response is required plus 63 seconds;
- 6.2.2 respond to calls from emergency system alarms and provide communication links to Central Control;
- 6.2.3 perform crowd control duties on the System as and when the Concessionaire, acting reasonably, considers such control is required;
- 6.2.4 conduct daily Station inspections and report safety related deficiencies to RAVCO in each Periodic Report;
- 6.2.5 close and secure Stations at the end of each day; and
- 6.2.6 activate and deactivate Station escalators and elevators as required for Passenger service.

## **6.3 Operations Control**

The Concessionaire will:

- 6.3.1 oversee, monitor and control all Vehicles;
- 6.3.2 oversee and monitor Passenger movements;
- 6.3.3 monitor and promptly respond to passenger intercom, emergency telephone and emergency assistance alarms;
- 6.3.4 monitor the performance of Vehicles and E&M Systems within the System and perform appropriate Corrective Maintenance;
- 6.3.5 in the event of service disruptions, direct changes to Vehicle operations and/ or Stations as required in order to, as far as reasonably possible in the prevailing circumstances, maintain service to Passengers;

- 6.3.6 co-ordinate communications on the System;
- 6.3.7 organize and direct responses to failures and emergencies;
- 6.3.8 communicate and co-ordinate with police, fire, ambulance and other emergency services response personnel in relation to incidents and/or emergencies on the System;
- 6.3.9 communicate with, and where relevant keep informed, YVR, GVTA, the Bus Service Provider(s), B.C. Rapid Transit Company, West Coast Express and other transportation service providers during service disruptions;
- 6.3.10 monitor and operate the traction power supply and distribution systems;
- 6.3.11 monitor and operate the SCADA for safety and security systems;
- 6.3.12 provide service information to passengers in normal operations, failures and emergencies;
- 6.3.13 support Vehicle operation training activities;
- 6.3.14 support planned Preventive, Corrective and Overhaul Maintenance and emergency maintenance activities;
- 6.3.15 monitor, log and record anomalies to normal System operation; and
- 6.3.16 co-ordinate activities to enable the System to open on time for Passenger service each day.

#### **6.4 Failure Management**

- 6.4.1 The Concessionaire will develop and apply failure management plans designed to deal with incidents, emergencies, accidents or other interruptions to service no matter how caused.
- 6.4.2 The failure management plans will illustrate how, for certain failure scenarios, a reasonable level of limited alternate service could be maintained for the System through a combination of:
  - 6.4.2.1 strategic placement of qualified operations staff to assist with safety, crowd control and provision of information to affected Passengers and an appropriate re-assignment of the Passenger service;
  - 6.4.2.2 provision of taxi or bus shuttle service suitable for use by Passengers with disabilities;
  - 6.4.2.3 single track operation;
  - 6.4.2.4 turnback of Vehicles; and

6.4.2.5 subject to locations affected, introduction of an appropriate alternate bus service in conjunction with other existing public transport facilities to bridge gaps where Passenger service is totally disrupted.

## 6.5 Training

The Concessionaire will be responsible for providing training services for personnel carrying out the Operation and Maintenance Services including:

- 6.5.1 preparing, revising, coordinating and scheduling Operation and Maintenance training programs as required;
- 6.5.2 providing training to newly-hired Operation and Maintenance employees and providing ongoing re-certification training to existing employees as required;
- 6.5.3 providing ongoing staff development training;
- 6.5.4 providing training to Service Providers employed by the Concessionaire to carry out work on the System;
- 6.5.5 providing training to System user groups, at the request and expense of RAVCO, including Passengers with disabilities;
- 6.5.6 providing such safety training as may be necessary for the following to access the System to perform inspection, monitoring and policing activities under this Agreement:
  - 6.5.6.1 during the period prior to Service Commencement while the Concessionaire is providing training to its own staff, as many RAVCO personnel and DPUOs as RAVCO, acting reasonably, determines require such safety training; and
  - 6.5.6.2 after Service Commencement:
    - (a) DPUOs procured by RAVCO for deployment on the System up to a maximum of 24 per annum;
    - (b) TVM and Ticket Validator technicians up to a maximum of two per annum; and
    - (c) such other personnel as RAVCO may designate up to a maximum of four persons per annum;
- 6.5.7 maintaining up to date training records on all Operation and Maintenance employees; and
- 6.5.8 maintaining up to date training manuals for Operation and Maintenance Services.

## 6.6 Lost and Found

The Concessionaire will:

- 6.6.1 maintain a record of all lost property found on the System by the Concessionaire or handed to the Concessionaire, and reports of all lost property received from the public; and
- 6.6.2 deliver all lost property and associated reports to GVTA's central lost property office within two Business Days.

## 6.7 Bicycles

- 6.7.1 Before Service Commencement, the Concessionaire will make application to the BCSA and any other Relevant Authority having jurisdiction to permit the carriage of bicycles on the System at all times. The Concessionaire will accept any reasonable requirements imposed by the BCSA or such Relevant Authority as a condition of granting such permission provided that if such condition requires the Concessionaire to provide additional staff at Stations or on Trains as a consequence of carrying bicycles during Peak Periods, RAVCO will pay the additional costs incurred by the Concessionaire for such staff.
- 6.7.2 Upon receipt of any permission required pursuant to Section 6.7.1 of this Schedule, the Concessionaire will permit bicycles to be carried on the System at all times subject to:
  - 6.7.2.1 availability of sufficient space on Trains; and
  - 6.7.2.2 any direction from RAVCO that bicycle carriage is not required.

For greater certainty, the Concessionaire will not be required to permit more than two bicycles on a Train at any time.

## 7. PASSENGER INFORMATION SYSTEM

### 7.1 General

- 7.1.1 The Concessionaire will operate and maintain Passenger information systems and facilities throughout the System such that the information provided to Passengers is:
  - 7.1.1.1 pertinent and current, readily accessible to Passengers and clearly visible and legible in artificial and natural light; and
  - 7.1.1.2 available audibly and in Braille or embossed lettering (to the extent required pursuant to the Design and Construction Specifications) for visually impaired Passengers, so that visually impaired passengers are presented with consistent information throughout the System.

7.1.2 The Concessionaire will implement and operate the following minimum systems to provide information to Passengers and prospective Passengers:

7.1.2.1 Telephone Information Service

- (a) A 24 hour automated telephone information service for all general enquiries and complaints.
- (b) A complaint log showing the time of the call, the nature of the complaint and the action taken.

7.1.2.2 Internet Information Service

- (a) A website to provide information about the Concessionaire and the service provided.
- (b) Current fare and schedule information will be provided through a link to GVTA's website.

7.1.2.3 Passenger Schedules

The Concessionaire will:

- (a) distribute, free of charge, hand-held Passenger schedules provided by GVTA for transit systems under its control, covering the service provision on each route of the System;
- (b) provide to RAVCO all scheduling and other information regarding the System reasonably required for inclusion in such Passenger schedules;
- (c) ensure that such Passenger schedules are readily available at Stations, subject to timely replenishment of stock by GVTA; and
- (d) distribute at Stations, materials provided by GVTA related to bus and other services that will interface with the System.

**7.2 Information at Stations**

7.2.1 The Concessionaire will operate and maintain the following at Stations:

7.2.1.1 Dynamic Visual Displays

The dynamic visual displays installed at each Station platform will be used by the Concessionaire to provide the following minimum information to Passengers:

- (a) destination of next two Trains;
- (b) time to arrival of next two Trains;

- (c) the existence of, and reason for, delay to Passenger service when the length of delay is greater than the service route Headway in off-peak hours or twice the service route Headway for peak hours;
- (d) relevant System information e.g. elevators/escalators out of service, maintenance work;
- (e) Special Event Information; and
- (f) current time.

#### 7.2.1.2 Public Address System

The public address system will be used to provide, as a minimum, reasonably frequent information (as required in the circumstances) on interruptions to scheduled services.

#### 7.2.1.3 Fixed (Poster Type Information and Signs)

The Concessionaire will maintain fixed information display panels at each Station and will display current versions of all GVTA regional transit system Passenger information as provided by GVTA (free of charge) to the Concessionaire.

### 7.3 Information on Vehicles

#### 7.3.1 External

The Concessionaire will operate and maintain:

- 7.3.1.1 an exterior display on each end and side of each Train which displays the Terminal Station destination for that Train;
- 7.3.1.2 a public address system which announces, on arrival at each Station at levels audible to Passengers on the platform, the destination of the Train; and
- 7.3.1.3 decals and other appropriate displays showing the System identity, as determined by GVTA, GVTA's regional transportation system identity, the identity of the Contributing Agencies and the Concessionaire's trade name or identity.

#### 7.3.2 Internal

The Concessionaire will operate and maintain:

- 7.3.2.1 dynamic displays providing next station arrival;

- 7.3.2.2 public address system providing next station arrival, other customer information and, at the Concessionaire's discretion, acting reasonably, advertising; and
- 7.3.2.3 fixed poster displays over doorways and other locations displaying System route maps, public safety information and related regional transit system information provided by others.

## 8. FARE COLLECTION

### 8.1 Fare Collection Requirements

RAVCO will be solely responsible for:

- 8.1.1 operating and maintaining all TVMs and Validators;
- 8.1.2 stocking, and keeping stocked, each TVM with tickets;
- 8.1.3 collecting cash from, and maintaining cash floats in, all such equipment; and
- 8.1.4 all aspects of TVM credit card or debit card transactions.

### 8.2 TVM Access

In addition to any other rights of access to the System granted to RAVCO under this Agreement, at all reasonable times the Concessionaire will provide RAVCO, GVTA and their respective employees, agents or contractors with access to the System for the purpose of:

- 8.2.1 carrying out any of the activities described in Section 8.1;
- 8.2.2 installing, replacing, upgrading or repairing TVMs and Validators (and such other fare collection equipment as RAVCO may require from time to time) and any related infrastructure not provided by the Concessionaire pursuant to Schedule 3 (Design and Construction Specifications); and
- 8.2.3 installing or upgrading TVM and Ticket Validator hardware or software.

### 8.3 Equipment in Need Of Service

The Concessionaire will advise RAVCO as soon as is reasonably practicable after the Concessionaire has become aware of a TVM or Validator which is in need of service or repair.

### 8.4 Fare Checking and Evasion

The Concessionaire will:

- 8.4.1 provide manual fare checking to serve as the first level of fare payment control in a manner consistent with the Staffing Plan;

- 8.4.2 conduct Station and on-board fare inspections in a manner consistent with the Staffing Plan; and
- 8.4.3 monitor fare payment compliance on the System and report to RAVCO quarterly on fare payment compliance.

#### **8.5 Audits by GVTA**

The Concessionaire will permit GVTA, at GVTA's cost, to conduct fare profile surveys and fare audits on the System in accordance with GVTA's periodic Fare Audits at such intervals as GVTA may require but no more than once every three month period. RAVCO will make the results of such audits available to the Concessionaire.

#### **8.6 Establishing Fares and Policies**

The parties acknowledge that GVTA will be responsible for setting fares, establishing fare policies, off-site ticket and pass sales, the selection and supply of TVMs, Validators and other fare collection equipment, revenue collection from Stations, all aspects of credit card and debit card transactions, providing tickets, and updating TVM software.

#### **8.7 Performance of RAVCO Obligations**

RAVCO will perform its obligations under this Section 8 (and as between the parties be responsible for ensuring that GVTA performs its obligations under this Section 8) in a manner which:

- 8.7.1 avoids inconvenience to Passengers and unnecessary maintenance by the Concessionaire;
- 8.7.2 at all times complies with all safety and security measures, policies, guidelines and requirements put in place by the Concessionaire for the safety and security of the System; and
- 8.7.3 does not cause the Concessionaire to be in breach of this Agreement.

### **9. SPECIAL EVENTS**

#### **9.1 Additional Trains**

If RAVCO gives the Concessionaire 14 days' notice (or such longer period as may reasonably be required under the circumstances of a particular Special Event) of a Special Event, the Concessionaire will provide that number of additional Trains as is reasonably anticipated by RAVCO to reasonably satisfy the additional ridership demand on the System before, during and following the Special Event, subject to the fleet size and availability of Vehicles.

#### **9.2 Services**

If RAVCO has given notice of a Special Event, the Concessionaire will provide such additional staff as the Concessionaire, acting reasonably and having regard for the nature, magnitude and

duration of the Special Event, determines are necessary for such Special Event. In connection with any such Special Event, the Concessionaire will, as and when required:

- 9.2.1 issue tickets provided by GVTA;
- 9.2.2 monitor fare payment in fare collection boxes provided by RAVCO, provided that the Concessionaire's staff will not be required directly to handle cash;
- 9.2.3 keep fare collection boxes in a secure place at the Stations where they were used until collected by RAVCO or GVTA provided that:
  - 9.2.3.1 RAVCO or GVTA collects such boxes from Stations during Operating Hours; and
  - 9.2.3.2 the Concessionaire will not be responsible for the loss or theft of any fares or fare boxes unless such loss or theft was a direct result of the negligent act or omission of the Concessionaire or the Persons for whom the Concessionaire is responsible pursuant to Section 4.3 of the Agreement; and
- 9.2.4 provide crowd control.

### 9.3 Planning

The Concessionaire and RAVCO will meet and review planning for Special Events as and when required but not less than once per Contract Year at the time the Concessionaire submits its Annual Operations and Maintenance Plan to RAVCO.

## 10. SECURITY

### 10.1 General Security Requirements

Subject to Section 10.2 of this Schedule, the Concessionaire will provide safety and security for the System including:

- 10.1.1 monitoring the performance of the Operator and all Subcontractors and their respective employees to ensure the highest priority is given to the safety of Passengers and employees;
- 10.1.2 implementing CPTED principles insofar as these apply to the Operations and Maintenance activities having regard to the System as at Service Commencement Date and as at System Acceptance Date;
- 10.1.3 maintaining an up to date safety policy and procedures manual;
- 10.1.4 maintaining an up to date Concessionaire's Rule Book;
- 10.1.5 ensuring that all Operation and Maintenance Services are conducted in compliance with all Laws;

- 10.1.6 accompanying Relevant Authorities on any inspections of the System required by Law;
- 10.1.7 maintaining relationships and communicating regularly with police and emergency response agencies and, where the Concessionaire, acting reasonably, considers it necessary, appropriate Relevant Authorities;
- 10.1.8 maintaining an active employee health and safety (in the workplace) committee and program of regular dialogue;
- 10.1.9 conducting workplace safety audits and operations safety audits to identify hazards for correction and tracking those hazards to resolution;
- 10.1.10 assembling and analyzing statistics to measure System safety performance;
- 10.1.11 conducting investigations into accidents and incidents on the System when required;
- 10.1.12 advising RAVCO of all reportable accidents and incidents; and
- 10.1.13 notifying RAVCO and Relevant Authorities in the event that the Concessionaire becomes aware of activities or proposed activities of third parties on land adjacent to the System pose a threat to the safety and security of the System and/or the safe operation of the System,

provided that the Concessionaire will not be required to provide any DPUOs or services similar to those described in Section 10.2 of this Schedule .

## 10.2 Policing

*s.15(1)(L)*

At all times that the System is open to Passengers, RAVCO will provide not less than and *s.15(1)(L)* to patrol and police the System in order to: *s.15(1)(L)* *s.17(1)(e)*

- 10.2.1 promote a safe and secure System;
- 10.2.2 ensure the personal safety and security of persons on or about the System; and
- 10.2.3 enforce payment of fares on the System (and provide a deterrent to fare evasion),

provided that at all times the will only be required to act in their capacity of law enforcement officers. *s.15(1)(L)*

## 10.3 CCTV

- 10.3.1 Where CCTV is provided the Concessionaire will cause the System to be continuously recorded at a rate of not less than ("fps"), either locally or at Central Control.

*s.15(1)(L)*

*S.15(1)(c)*

20

10.3.2 All images will be recorded (at the fps above) and the recording retained for a minimum of in order to provide a record of incidents where the incident occurred within CCTV coverage.

**10.4 Designated Waiting Areas**

10.4.1 Designated Waiting Areas will be maintained at each Station.

10.4.2 The Concessionaire will provide sufficient operators and facilities designed to handle up to so as to provide a from the receipt of a call from a Designated Waiting Area. *S.15(1)(c)*  
*S.21*

10.4.3 The Concessionaire will ensure that the CCTV system configuration is maintained such that

*S.15(1)(c)*  
*S.21*

**11. MAINTENANCE**

**11.1 General**

The Concessionaire will conduct Preventive Maintenance, Corrective Maintenance and Overhaul Maintenance on those parts of the System as designed, constructed and supplied by the Concessionaire, as and when required and in accordance with Sections 6.1.1.2(d) and 6.1.1.2(e) of this Schedule. In performing its maintenance obligations the Concessionaire will have regard to the following aims:

- 11.1.1 encouraging use of the System;
- 11.1.2 minimizing operating costs;
- 11.1.3 minimizing life cycle maintenance costs;
- 11.1.4 optimizing System availability;
- 11.1.5 optimizing System reliability;
- 11.1.6 the need to achieve or exceed design life;
- 11.1.7 the need to preserve functionality in terms of operability and safety; and
- 11.1.8 the need to preserve warranties provided or given by specialist suppliers / sub-contractors.

**11.2 Maintenance Requirements**

11.2.1

11.2.2

S.17(1)(d)  
S.17(1)(e)  
S.21

11.2.3

11.2.4

S.17(1)(d)  
S.17(1)(e)  
S.21

11.2.

11.2.6

S.17(1)(d)  
S.17(1)(e)  
S.21

11.2.7

s.17(1)(d)  
s.17(1)(e)  
s.21

### 11.3 Corrections and Repairs

The Concessionaire will undertake Repairs and Corrections of the System such that:

- (a) the System is kept functional and in good structural condition with no undue wear and no diminution in passenger or public safety;
- (b) those assets which have a specified design life can reasonably be expected to achieve that specified design life and that all other assets comprised in the System are kept in good and substantial repair.

12.

12.1

12.1.1

5.17(d)  
17(e)  
5.21

12.1.1

12.1.3

5.17(i)(d)  
5.17(i)(e)  
5.21

12.2

12.2.

12.2

12.2.3

5.17(1)(d)  
17(1)(e)  
5.21

12.2.4

12.2.5

12.2.6

12.2.1

5.17(1)(d)  
17(1)(e)  
5.21

12.2.8

12.2.9

12.3

12.3.1

5.17(1)(d)  
17(1)(e)  
5.21

12.3.1

S 17(1)(d) <sup>12.3.3</sup>  
S 17(1)(e)  
S.21 12.3.4

12.3.5

(c) During revenue service Vehicles must be checked at regular intervals to ensure that as far as reasonably practicable they are free of accumulated litter and liquid spills. When liquid spills are discovered prompt remedial action is required to avoid payment penalties.

12.3.5.2 General Cleaning-Exterior

(a) The exterior of the Vehicles must be cleaned at intervals no greater than every 72 hours to remove dirt accumulated during normal operating conditions.

(b) Dirt or soil that accumulates due to extraordinary conditions must be removed on a daily basis within 24 hours of being reported.

**13. ELECTRICAL AND MECHANICAL SYSTEMS**

**13.1 Monitoring and Reporting**

13.1.1 To verify the performance of the stray current protection measures incorporated into the System, the Concessionaire will periodically monitor the test points determined pursuant to the comprehensive stray current analysis described in Section 11.12.2 of Schedule 3 (Design and Construction Specifications).

13.1.2 The Concessionaire will maintain and update as necessary throughout the Operating Period (and will provide copies of all updates thereof to RAVCO) an electrical protection engineering report. The electrical protection engineering report will identify the risks associated with electrical safety requirements how these can be appropriately managed including, where relevant, by:

13.1.2.1 identification of all potential electrical hazards in the operational environment of the System;

13.1.2.2 risk management throughout the Operating Period. This will include the confirmation of the verification or demonstration requirements of the electrical safety systems and Equipment/plant level that were established during testing and commissioning; and

13.1.2.3 identification and implementation of the management organisation and resources needed to control, plan and maintain electrical safety.

**14. ADVERTISING AND RETAIL**

**14.1 Advertising**

14.1.1 Subject to section 14.1.4 of this Schedule, the Concessionaire will have overall responsibility for all third party advertising on the Main Line and on the Vehicles ("RAV Advertising") and the Concessionaire will be solely entitled to receive all revenues from such advertising.

14.1.2 Subject to 14.1.3 of this Schedule, advertising at the Airport Connector Stations will be managed by YVR and YVR will be entitled to receive all net revenues from such advertising.

14.1.3 The Concessionaire will ensure that:

- 14.1.3.1 advertising on the System does not in any way impair the safety of the System;
- 14.1.3.2 the content of all RAV Advertising complies with GVTA's Transit Advertising Policy as at the date of this Agreement; and
- 14.1.3.3 all contracts for RAV Advertising are fully assignable to RAVCO on the Termination Date.

14.1.4 The Concessionaire will co-operate with RAVCO to procure a licensee to place all RAV Advertising as follows:

- 14.1.4.1 the Concessionaire will request RAVCO to seek a proposal from GVTA's licensee of fleet and property advertising, provided that such licensee was selected through a competitive process and that its licence is for substantially all fleet and property advertising on the transportation system for which GVTA is responsible;
- 14.1.4.2 if the Concessionaire, acting reasonably, determines that such proposal is not acceptable, the Concessionaire will request RAVCO to seek additional proposals through a competitive process, on terms acceptable to the Concessionaire and RAVCO, each acting reasonably, for selecting a licensee for RAV Advertising and the Concessionaire will select such licensee based on the Concessionaire's evaluation of the proposals received provided that the accepted proposal complies, in all material respects, with the terms agreed between the Concessionaire and RAVCO; and
- 14.1.4.3 on the expiry or termination of any licence for RAV Advertising, the Concessionaire will follow the procedure described in this Section 14.1.4 to select a new licensee.

14.1.5 The Concessionaire will pay the reasonable out-of-pocket expenses incurred by RAVCO (excluding any internal costs) in connection with the procurement of an advertising licensee as described in Section 14.1.4 of this Schedule.

**14.2 Retail**

14.2.1 The Concessionaire may provide retail space at the Stations on the Main Line.

14.2.2 The Concessionaire will be responsible for managing all aspects of the retail operations at the Main Line Stations.

- 14.2.3 The Concessionaire will receive all revenue from retail operations at the Main Line Stations.
- 14.2.4 The Concessionaire will ensure that all leases with retail tenants are fully assignable to RAVCO on the Termination Date.
- 14.2.5 The Concessionaire has neither rights nor obligations to provide, operate or maintain retail facilities or to create space for such facilities within or at Airport Connector Stations. Retail facilities and operations at Airport Connector Stations, if any, will be provided, managed and maintained by YVR at no cost to Concessionaire, and YVR will receive all revenues from such operations provided that such retail operations do not in the Concessionaire's reasonable opinion:
  - 14.2.5.1 impair the safety of the System or Passengers; or
  - 14.2.5.2 materially interfere with the operations of the System.

## **15. ADMINISTRATIVE AND SUPPORT SERVICES**

### **15.1 General**

Without limiting any other provision in this Agreement, the Concessionaire will supply and perform all administrative and support services required by the Concessionaire to Operate and Maintain the System during the Operating Period in accordance with this Agreement, including materials management, technical support and general administration.

## **16. CHANGES TO THE SYSTEM**

### **16.1 System Improvements**

The Concessionaire will, throughout the Operating Period, undertake a review of the objectives set out in Section 1.2 of this Schedule to offer suggestions for improvements to the efficient use of the System, considering experiences and practices of other similar projects.

### **16.2 Renovations**

Any Renovations undertaken during the Operating Period will be undertaken by the Concessionaire, in consultation with RAVCO, and will comply with this Agreement. If necessary for any Renovations, any provision of the Design and Construction Requirements or Design and Construction Specifications may be modified with the written approval of both the Concessionaire and RAVCO, such approval not to be unreasonably withheld by either party. Except in the case of a RAVCO Change, payment for any Renovation will be the responsibility of the Concessionaire unless otherwise agreed to by RAVCO at the time of approving the Renovation.

## 17. COMPLIANCE

### 17.1 RAVCO's Right of Access

17.1.1 RAVCO may at all reasonable times, without notice, during the Operating Period access and inspect the System (including carrying out sample checks) and any work the Concessionaire undertakes on the System, so as to confirm:

- 17.1.1.1 the adequacy of the supervision by the Concessionaire of any Operation and Maintenance; and
- 17.1.1.2 that the System is being operated and maintained in accordance with the terms of this Agreement,

provided that:

- 17.1.1.3 RAVCO does not unreasonably interfere with the performance by the Concessionaire of its obligations under this Agreement; and
- 17.1.1.4 RAVCO complies with the Concessionaire's safety and security regulations, providing that the Concessionaire has delivered copies of such regulations to RAVCO and such regulations do not unreasonably impair or limit RAVCO's ability to access the System.

17.1.2 RAVCO may at any time appoint an agent or contractor for the purposes of carrying out any such inspection. RAVCO will in a timely way advise the Concessionaire of the need for any Correction or Repair of which it becomes aware.

### 17.2 Deficiency Notice

If the Concessionaire:

- 17.2.1 fails to comply with the Operation and Maintenance Requirements and Specifications and such failure has a material adverse effect on safety and the Concessionaire, upon becoming aware of such failure, does not promptly correct the failure or successfully take appropriate action to prevent injury to employees or the public or damage to property;
- 17.2.2 fails to comply with the requirements of an applicable Annual Operation and Maintenance Plan or Five Year Operation and Maintenance Plan where such failure would cause material damage to any part of the System or materially prevent the design life of any part of the System from being achieved, and such failure is not cured (including rectification of any damage that has occurred as a result of such failure) within 10 Business Days (or such further period as is reasonable in all the circumstances) of notice of such failure by RAVCO to the Concessionaire; or
- 17.2.3 persistently or repeatedly fails to respond to or remedy a condition with respect to Vehicles or Stations within the time specified in Appendix B to Schedule 11

(Payments) and such failures have cumulatively had, or will have if left unremedied, a material adverse effect on the Operation and Maintenance Services,

RAVCO's Representative may give the Concessionaire's Representative a notice (a "Deficiency Notice") describing the failure or breach.

### 17.3 Concessionaire to Correct

The Concessionaire will promptly implement corrective action to remedy the failure or breach set out in the Deficiency Notice, or, except in an emergency, within 2 Business Days deliver to RAVCO's Representative a written objection to the Deficiency Notice. Any dispute will immediately be referred to the Referee for consideration, but if the manner of dealing with the issue described in the Deficiency Notice is not agreed to within 15 Business Days of receipt of the Deficiency Notice then either party may refer the matter to be settled pursuant to the Dispute Resolution Procedure.

### 17.4 RAVCO Remedial Action

Notwithstanding the provisions of Section 17.3 of this Schedule, and without prejudice to any other express rights of RAVCO under this Agreement or otherwise, if in RAVCO's reasonable opinion remedial action is required immediately because:

- 17.4.1 there is an emergency and delay would risk material damage to the System, the Real Property Interests, adjacent lands or personal property; or
- 17.4.2 there is a public safety concern and delay could result in serious personal injury or death,

then RAVCO may give a further notice to the Concessionaire that RAVCO will take or cause to be taken such action without any requirement for further notice or delay. The Concessionaire may inspect any such remedial action undertaken by RAVCO during the performance of the remedial action.

### 17.5 Payment for RAVCO Remedial Action

*s.17(1)(e)*

The Concessionaire will pay RAVCO an amount equal to \_\_\_\_\_ of the reasonable cost incurred by RAVCO to complete any remedial action and RAVCO will invoice the Concessionaire for any and all amounts due to RAVCO under this Section. RAVCO will be entitled to set off such amounts against amounts owing by RAVCO under this Agreement. Any dispute related to this Section will be settled pursuant to the Dispute Resolution Procedure.

**APPENDIX A**  
**SERVICE PLAN**

**PART 1 - FOR BUSINESS DAYS**

**Peak Service Headway of 6 Minutes and 20 Seconds**

SERVICE PLAN: BUSINESS DAYS		Route					
Time Period		#1: Bridgeport to Water-front	#2: Water-front to Bridgeport	#3: Bridgeport to YVR	#4: YVR to Bridgeport	#5: Bridgeport to Richmond	#6: Richmond to Bridgeport
First Trip	First Train Arrival Time:	0536	0508	0515	0524	0544	0518
Early Morning	Scheduled arrival times: from start of service up to...0700						
	Scheduled headway (minutes)	6	6	12	12	12	12
	Number of scheduled arrivals	17	17	10	10	7	9
	Number of scheduled vehicle arrivals	34	34	20	20	14	18
	Maximum travel time (min)	18	18	7	7	7	7
AM Peak Period	Scheduled arrival times: from last Early Morning arrival time up to 0900...						
	Scheduled headway (minutes)	3:10	3:10	6:20	6:20	6:20	6:20
	Number of scheduled arrivals	38	38	18	19	20	19
	Number of scheduled vehicle arrivals	76	76	36	38	40	38
	Maximum travel time (min)	18	18	7	7	7	7
Mid-Day	Scheduled arrival times: from last AM Peak Period arrival time up to...1500						
	Scheduled headway (minutes)	3:10	3:10	6:20	6:20	6:20	6:20
	Number of scheduled arrivals	116	114	58	57	58	58
	Number of scheduled vehicle arrivals	232	228	116	114	116	116
	Maximum travel time (min)	18	18	7	7	7	7
PM Peak Period	Scheduled arrival times: from last Mid-Day arrival time up to...1800						
	Scheduled headway (minutes)	3:10	3:10	6:20	6:20	6:20	6:20
	Number of scheduled arrivals	58	57	29	28	29	29
	Number of scheduled vehicle arrivals	116	114	58	56	58	58
	Maximum travel time (min)	18	18	7	7	7	7

SERVICE PLAN: BUSINESS DAYS		Route					
Time Period		#1: Bridgeport to Water-front	#2: Water-front to Bridgeport	#3: Bridgeport to YVR	#4: YVR to Bridgeport	#5: Bridgeport to Richmond	#6: Richmond to Bridgeport
Evening	Scheduled arrival times: from last PM Peak Period arrival time up to...2300						
	Scheduled headway (minutes)	6	6	12	12	12	12
	Number of scheduled arrivals	53	54	27	25	27	26
	Number of scheduled vehicle arrivals	106	108	54	50	54	52
	Maximum travel time (min)	18	18	7	7	7	7
Late Night	Scheduled arrival times: from last Evening arrival time up to last daily trip arrival time at end...						
	Scheduled headway (minutes)	10	10	20	20	20	20
	Number of scheduled arrivals	15	15	8	7	8	7
	Number of scheduled vehicle arrivals	30	30	16	14	16	14
	Maximum travel time (min)	18	18	7	7	7	7

Total Number of Vehicles Required: 18 (36)

**APPENDIX A**  
**SERVICE PLAN**  
**PART 2 - FOR SATURDAYS**

**Peak Service Headway of 6 Minutes and 20 Seconds**

SERVICE PLAN : SATURDAYS		Route					
Time Period		#1: Bridgeport to Waterfront	#2: Waterfront to Bridgeport	#3: Bridgeport to YVR	#4: YVR to Bridgeport	#5: Bridgeport to Richmond	#6: Richmond to Bridgeport
First Trip	First Train Arrival Time:	0536	0508	0515	0524	0544	0518
Early Morning	Scheduled arrival times: from start of service up to...0900						
	Scheduled headway (minutes)	6	6	12	12	12	12
	Number of scheduled arrivals	40	41	20	19	17	19
	Number of scheduled vehicle arrivals	80	82	40	38	34	38
	Maximum travel time (min)	18	18	7	7	7	7
Mid-Day	Scheduled arrival times: from last Early Morning arrival time up to...1800						
	Scheduled headway (minutes)	3:10	3:10	6:20	6:20	6:20	6:20
	Number of scheduled arrivals	169	171	84	84	85	86
	Number of scheduled vehicle arrivals	338	342	168	168	170	172
	Maximum travel time (min)	18	18	7	7	7	7
Evening	Scheduled arrival times: from last Mid-Day arrival time up to 2300						
	Scheduled headway (minutes)	6	6	12	12	12	12
	Number of scheduled arrivals	50	51	27	26	27	27
	Number of scheduled vehicle arrivals	100	102	54	52	54	54
	Maximum travel time (min)	18	18	7	7	7	7
Late Night	Scheduled arrival times: from last Evening arrival time up to last daily trip arrival time at ...						
	Scheduled headway (minutes)	10	10	20	20	20	20
	Number of scheduled arrivals	13	14	8	12	8	7
	Number of scheduled vehicle arrivals	26	28	16	24	16	14
	Maximum travel time (min)	18	18	7	7	7	7

Total Number of Vehicles Required: 18 (36)

## APPENDIX A

## SERVICE PLAN

## PART 3 - FOR SUNDAYS

## Peak Service Headway of 6 Minutes and 20

SERVICE PLAN [•]: SATURDAYS		Route					
Time Period		#1: Bridge-port to Waterfront	#2: Waterfront to Bridgeport	#3: Bridge-port to YVR	#4: YVR to Bridgeport	#5: Bridgeport to Richmond	#6: Richmond to Bridgeport
First Trip	First Train Arrival Time:	0536	0508	0515	0524	0544	0518
Early Morning	Scheduled arrival times: from start of service up to...0900						
	Scheduled headway (minutes)	6	6	12	12	12	12
	Number of scheduled arrivals	40	41	20	19	17	19
	Number of scheduled vehicle arrivals	80	82	40	38	34	38
Mid-Day	Maximum travel time (min)	18	18	7	7	7	7
	Scheduled arrival times: from last Early Morning arrival time up to...1800						
	Scheduled headway (minutes)	3:10	3:10	6:20	6:20	6:20	6:20
	Number of scheduled arrivals	169	171	84	84	85	86
Evening	Number of scheduled vehicle arrivals	338	342	168	168	170	172
	Maximum travel time (min)	18	18	7	7	7	7
	Scheduled arrival times: from last Mid-Day arrival time up to 2300						
	Scheduled headway (minutes)	6	6	12	12	12	12
Late Night	Number of scheduled arrivals	50	51	27	26	27	27
	Number of scheduled vehicle arrivals	100	102	54	52	54	54
	Maximum travel time (min)	18	18	7	7	7	7
	Scheduled arrival times: from last Evening arrival time up to last daily trip arrival time at ...						
	Scheduled headway (minutes)	10	10	20	20	20	20
	Number of scheduled arrivals	13	14	8	12	8	7
	Number of scheduled vehicle arrivals	26	28	16	24	16	14
	Maximum travel time (min)	18	18	7	7	7	7

Total Number of Vehicles Required: 18 (36)

**APPENDIX B**  
**INITIAL SERVICE PLAN**

**PART 1 - FOR BUSINESS DAYS**  
**7.5 Minute Service**

SERVICE PLAN: BUSINESS DAYS		Route					
Time Period		#1: Bridgeport to Water-front	#2: Water-front to Bridgeport	#3: Bridgeport to YVR	#4: YVR to Bridgeport	#5: Bridgeport to Richmond	#6: Richmond to Bridgeport
First Trip	First Train Arrival Time:	0536	0508	0515	0524	0544	0518
Early Morning	Scheduled arrival times: from start of service up to...0700						
	Scheduled headway (minutes)	6	6	12	12	12	12
	Number of scheduled arrivals	17	17	10	9	7	9
	Number of scheduled vehicle arrivals	34	34	20	18	14	18
	Maximum travel time (min)	18	18	7	7	7	7
AM Peak Period	Scheduled arrival times: from last Early Morning arrival time up to 0900...						
	Scheduled headway (minutes)	3.75	3.75	7.5	7.5	7.5	7.5
	Number of scheduled arrivals	32	32	16	16	16	16
	Number of scheduled vehicle arrivals	64	64	32	32	32	32
	Maximum travel time (min)	18	18	7	7	7	7
Mid-Day	Scheduled arrival times: from last AM Peak Period arrival time up to...1500						
	Scheduled headway (minutes)	3.75	3.75	7.5	7.5	7.5	7.5
	Number of scheduled arrivals	96	96	48	48	48	48
	Number of scheduled vehicle arrivals	192	192	96	96	96	96
	Maximum travel time (min)	18	18	7	7	7	7
PM Peak Period	Scheduled arrival times: from last Mid-Day arrival time up to...1800						
	Scheduled headway (minutes)	3.75	3.75	7.5	7.5	7.5	7.5
	Number of scheduled arrivals	48	48	24	24	24	24
	Number of scheduled vehicle arrivals	96	96	48	48	48	48
	Maximum travel time (min)	18	18	7	7	7	7

SERVICE PLAN: BUSINESS DAYS		Route					
Time Period		#1: Bridgeport to Water-front	#2: Water-front to Bridgeport	#3: Bridgeport to YVR	#4: YVR to Bridgeport	#5: Bridgeport to Richmond	#6: Richmond to Bridgeport
Evening	Scheduled arrival times: from last PM Peak Period arrival time up to...2300						
	Scheduled headway (minutes)	6	6	12	12	12	12
	Number of scheduled arrivals	51	52	26	25	27	26
	Number of scheduled vehicle arrivals	102	104	52	50	53	52
	Maximum travel time (min)	18	18	7	7	7	7
Late Night	Scheduled arrival times: from last Evening arrival time up to last daily trip arrival time at end...						
	Scheduled headway (minutes)	10	10	20	20	20	20
	Number of scheduled arrivals	14	17	8	7	8	7
	Number of scheduled vehicle arrivals	28	34	16	14	16	14
	Maximum travel time (min)	18	18	7	7	7	7

Total Number of Vehicles Required: 16 (32)

**APPENDIX B**  
**INITIAL SERVICE PLAN**  
**PART 2 - FOR SATURDAYS**

**7.5 Minute Service**

SERVICE PLAN: SATURDAYS		Route					
Time Period		#1: Bridgeport to Waterfront	#2: Waterfront to Bridgeport	#3: Bridgeport to YVR	#4: YVR to Bridgeport	#5: Bridgeport to Richmond	#6: Richmond to Bridgeport
First Trip	First Train Arrival Time:	0536	0508	0515	0524	0544	0518
Early Morning	Scheduled arrival times: from start of service up to...0900						
	Scheduled headway (minutes)	6	6	12	12	12	12
	Number of scheduled arrivals	20	37	20	19	17	19
	Number of scheduled vehicle arrivals	40	74	40	38	34	38
	Maximum travel time (min)	18	18	7	7	7	7
Mid-Day	Scheduled arrival times: from last Early Morning arrival time up to...1800						
	Scheduled headway (minutes)	3.75	3.75	7.5	7.5	7.5	7.5
	Number of scheduled arrivals	140	140	71	71	71	71
	Number of scheduled vehicle arrivals	280	280	142	142	142	142
	Maximum travel time (min)	18	18	7	7	7	7
Evening	Scheduled arrival times: from last Mid-Day arrival time up to 2300						
	Scheduled headway (minutes)	6	6	12	12	12	12
	Number of scheduled arrivals	50	50	25	25	25	25
	Number of scheduled vehicle arrivals	100	100	50	50	50	50
	Maximum travel time (min)	18	18	7	7	7	7
Late Night	Scheduled arrival times: from last Evening arrival time up to last daily trip arrival time at ...						
	Scheduled headway (minutes)	10	10	20	20	20	20
	Number of scheduled arrivals	15	17	8	8	9	7
	Number of scheduled vehicle arrivals	30	34	16	16	18	14
	Maximum travel time (min)	18	18	7	7	7	7

Total Number of Vehicles Required: 16 (32)

**APPENDIX B**  
**INITIAL SERVICE PLAN**  
**PART 3 - FOR SUNDAYS**  
**7.5 Minute Service**

SERVICE PLAN: SUNDAYS		Route					
Time Period		#1: Bridge-port to Waterfront	#2: Waterfront to Bridgeport	#3: Bridge-port to YVR	#4: YVR to Bridgeport	#5: Bridgeport to Richmond	#6: Richmond to Bridgeport
First Trip	First Train Arrival Time:	0536	0508	0515	0524	0544	0518
Early Morning	Scheduled arrival times: from start of service up to...1000						
	Scheduled headway (minutes)	6	6	12	12	12	12
	Number of scheduled arrivals	47	47	25	19	22	19
	Number of scheduled vehicle arrivals	94	94	50	38	44	38
	Maximum travel time (min)	18	18	7	7	7	7
Mid-Day	Scheduled arrival times: from last Early Morning arrival time up to...1800						
	Scheduled headway (minutes)	3.75	3.75	7.5	7.5	7.5	7.5
	Number of scheduled arrivals	130	130	65	65	65	65
	Number of scheduled vehicle arrivals	260	260	130	130	130	130
	Maximum travel time (min)	18	18	7	7	7	7
Evening	Scheduled arrival times: from last Mid-Day arrival time up to 2300						
	Scheduled headway (minutes)	6	6	12	12	12	12
	Number of scheduled arrivals	50	50	25	25	25	25
	Number of scheduled vehicle arrivals	100	100	50	50	50	50
	Maximum travel time (min)	18	18	7	7	7	7
Late Night	Scheduled arrival times: from last Evening arrival time up to last daily trip arrival time at ...						
	Scheduled headway (minutes)	10	10	20	20	20	20
	Number of scheduled arrivals	15	17	8	8	9	7
	Number of scheduled vehicle arrivals	30	34	16	16	18	14
	Maximum travel time (min)	18	18	7	7	7	7

Total Number of Vehicles Required: 16 (32)

**APPENDIX C**  
**STAFFING PLAN**

**Staffing Plan and Ticket Inspection**

5.17(1)(e)  
5.21

S.17(1)(e)  
S.21

5.17(1)  
5.24

Ticket Inspection

5.17(1)(e)

5.21

S.17(i)(e)  
S.21