



**Coquitlam Optical Network Corporation**

**Optical Fibre Installation & Maintenance  
and Co-Location Facilities Access**

**OPERATING MANUAL**

**Version 7**

**April 6<sup>th</sup>, 2016**

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**Version Control**

<b>Version</b>	<b>Date</b>	<b>Changes</b>
<b>2C</b>	<b>March 2009</b>	<b>Initial version</b>
<b>3</b>	<b>March 2011</b>	<b>Poirier Co-location facility added</b>
<b>4</b>	<b>May 2012</b>	<b>Poirier Access protocol, Change and Maintenance process</b>
<b>5</b>	<b>May 2013</b>	<b>Phone outage notification change</b>
<b>6</b>	<b>November 2014</b>	<b>Contact Personnel, PSLC Access Procedures, Minor Edits</b>
<b>7</b>	<b>April 2016</b>	<b>Minor Edits</b>

This Operating Manual is subject to the terms and conditions specified in the QNet Optical Fibre Lease Agreement and/or the QNet Equipment Cabinet Lease Agreement.

## **1 CONTACTS**

### **1.1 Hours of Operation**

The QNet optical fibre network is supported 24 hours per day, 7 days per week, year round.

Normal business hours for QNet are: 8:30 AM to 5:00 PM, Monday through Friday except for statutory and government holidays.

### **1.2 QNet Contacts**

Problem Reporting (24 X 7):

**Emergency Service Line: 604-927-3600, option 3 after hours**

After Hours Access to City Hall Co-location Facility:

**Emergency Service Line: 604-927-3600, option 3**

Documentation & Reporting for Problem Resolution:

**Emergency Email Address:** **outage@qnetbc.net**

**All Other Operational Communications:**

QNet Director of Operations: Scott Jamieson

Office: 604-927-3626

Mobile: 604-760-0108

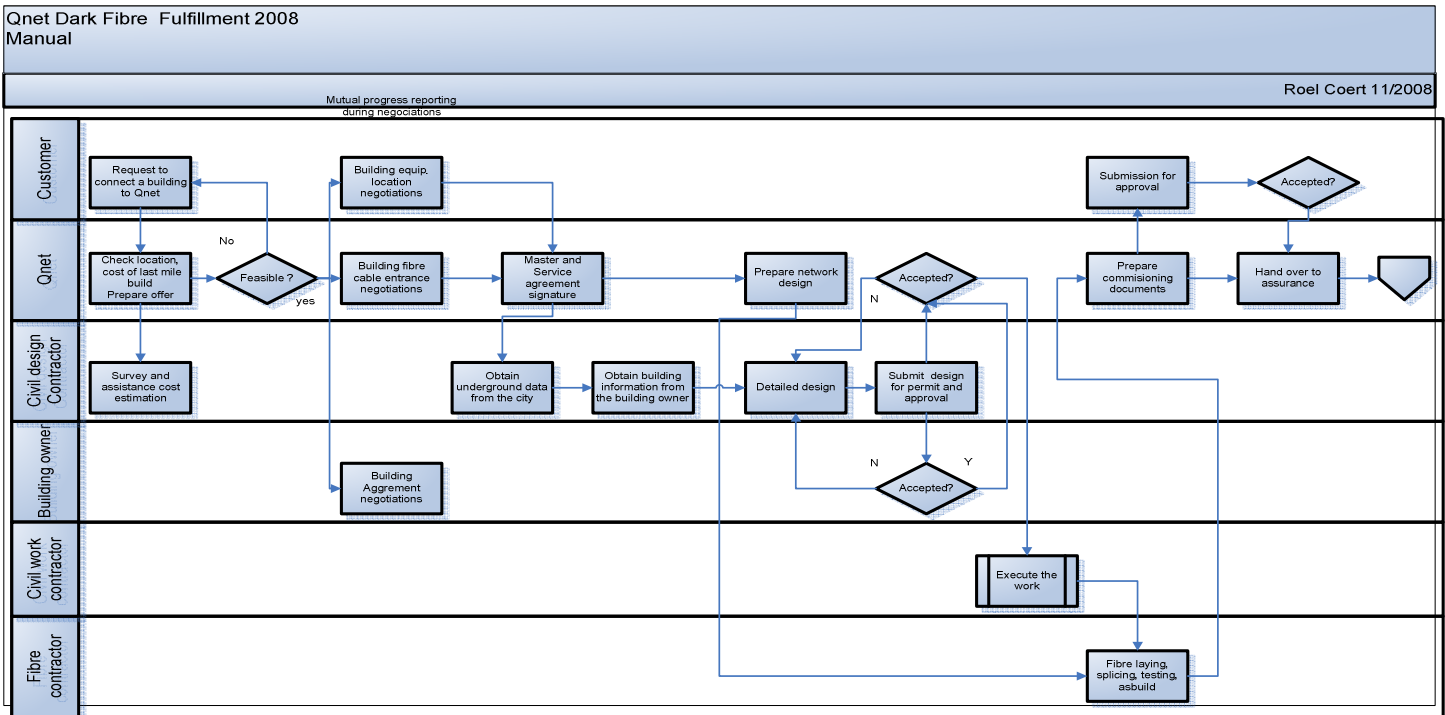
Email: [scott.jamieson@qnetbc.net](mailto:scott.jamieson@qnetbc.net) or [scott.jamieson@coquitlam.ca](mailto:scott.jamieson@coquitlam.ca)

### **1.3 Client Contacts**

QNet maintains a comprehensive database on all fibre strands, splices and client allocations. In order to respond to any events related to the leased fibre strands, QNet clients should ensure that QNet has current Client contact information including:

- 24 X 7 Emergency Contact Telephone Numbers
- Email Address used to communicate Operations and Repair Reports
- Normal (Business Hour) Non-Emergency Contact
- Client Normal Business Hours
- Circuit IDs for utilized fibre strand routes per Service Order

## 2 COMMENCEMENT OF THE DARK FIBRE LEASE



**Figure 1 - Dark Fibre Fulfillment Process**

The flowchart in figure 1 above defines the QNet process for connecting new premises to the QNet optical fibre network. Prior to entering into any formal commitments in terms of a Service Order or engineering design work, both QNet and the Client should have executed Building Access Agreements with the property manager, building owner or strata council (“Premises Owner”) as the case may be.

**Note: Failure of the Client to execute a Building Access Agreement with the premises owner does not constitute a valid reason for termination of a Service Order under the terms and conditions of the QNet Optical Fibre Lease Agreement.**

Once the Client has committed to the fibre lease by executing a Service Order with QNet, QNet will install the fibre to the designated demarcation point in the premises as per the process in Figure 1 within 90 days of the order date. QNet will endeavour to install the fibre as quickly as possible within the 90 day period and will provide the Client with updates on the status of the installation on request.

QNet will notify the Client when the fibre is ready for use as per the procedures defined in Section 3. The Client may at that point perform their own tests and take possession of the leased strands for their own use.

## 3 HANDOVER AND ACCEPTANCE OF DARK FIBRE

### 3.1 Handover Procedure

The handover of the leased optical fibre (“Service”) commences with an end-to-end measurement done by QNet. The measurement consists of an insertion loss measurement and an OTDR measurement.

All measurements will be performed and documented in accordance with the prevailing QNet measurement specifications using calibrated measuring equipment certified by QNet. For further explanation, see Sections 3.2 and 3.3.

Upon completion of the measurement tests, QNet will draw up a measurement certificate and delivered it to the Client according to the example in Appendix 3.

### 3.2 Insertion Loss Measurement

The insertion loss measurement is carried out bi-directionally for each optical fibre segment. An average is calculated from the individual data. This measurement is performed for standard single mode fibres (ITU-G.652) at wavelengths 1310 nm and 1550 nm. The test results are supplied in hard copy and/or on electronic media.

### 3.3 OTDR Measurement

A bidirectional OTDR measurement is performed for each optical fibre segment. All recordings are supplied in hard copy and/or on electronic media. This measurement is performed for standard single mode fibres (ITU-G.652) at the wavelength of 1550 nm.

### 3.4 Technical Specifications

The optical fibre route provided by QNet consists of a number of segments which are connected by splicing or patching. The patch panels and the Client interface (CTP) use as standard LC/UPC. QNet provides patch cords LC/UPC to the active components of the Client unless otherwise specified.

Fibre type	Splice Method	Splice Loss (dB)
Standard SM	Single fibre splice	0.10 dB

**Table 1: Loss for Splices**

Parameter	Criteria
Connector type	LC/UPC
Connector loss	</= 0.5 dB
Reflection	< -65 dB

**Table 2: Connector Loss and Reflection**



If the average loss of a splice is exceeded, QNet will execute at least three attempts to reduce this value.

<b>Fibre type</b>	<b>Standard single mode</b>
Splice method	Single fibre splice
Acceptance criteria	0.10dB
After 3 attempts	0.20 dB
After 2 further attempts <sup>1</sup>	0.30 dB

**Table 3: Acceptance Criteria for Repeat Splices**

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<sup>1</sup> A total of 5 attempts

## 4 SERVICE AVAILABILITY OF DARK FIBRE

### 4.1 General

Scheduled maintenance (“Planned Work”) is not counted in calculating availability targets. The measurement period for availability is one year and only applies to the Service provided by QNet (i.e. dark optical fibre and COLO operations). Annual availability is calculated as follows:

Annual Availability Formula =  $((525600 - \text{“Outage Period in Minutes”})/525600)*100\%$

Target Period	Location	Configuration	Availability Target
Annual	From QNet COLO to Demarcation Points Serving Customer Sites	Non-ringed Segments	99.726%

**Table 4 - Availability Targets**

#### 4.1.1 Outage

Outage is the complete interruption of communication between two Client locations due to physical damage, breakage or other failures in the optical fibre.

#### 4.1.2 Complaint

Complaint is a QNet classification of a trouble report made by the Client to the QNet contact point before the cause of the trouble report has been found. If the cause of the trouble report is under QNet responsibility the classification of the trouble report will become a fault.

#### 4.1.3 Fault

Fault is the QNet classification of a trouble report made by the Client to the QNet contact point which has a cause that falls under the QNet responsibility to rectify.

**Note: Outages caused by the Client do not constitute an outage as defined in this Operating Manual.**

### 4.2 Planned Work

Planned work is defined as activities and measures involving network components (i.e. optical fibres, closures, connectors, etc.) which are scheduled in advance.

### 4.3 Downtime

Downtime is the interval between the start time and end time of an outage.

#### **4.3.1 Start of Downtime**

The downtime starts from the time of reception of the complaint from Client at the QNet contact point as per Section 7.

#### **4.3.2 End of Downtime**

The downtime ends when the Client has been notified that the service has been restored as per Section 3, unless the Client informs QNet that the outage has not been cured in which case QNet will resume the repair works and the downtime will continue.

If repair work is hindered by action or inaction for which the Client is responsible, the downtime is shortened correspondingly.

## 5 ASSURANCE PROCESS FOR DARK FIBRE LEASES

QNet is committed to providing clients maximum availability of the dark optical fibre network. In order to minimize possible interruptions in service, Clients are encouraged to lease ringed segments whenever possible.

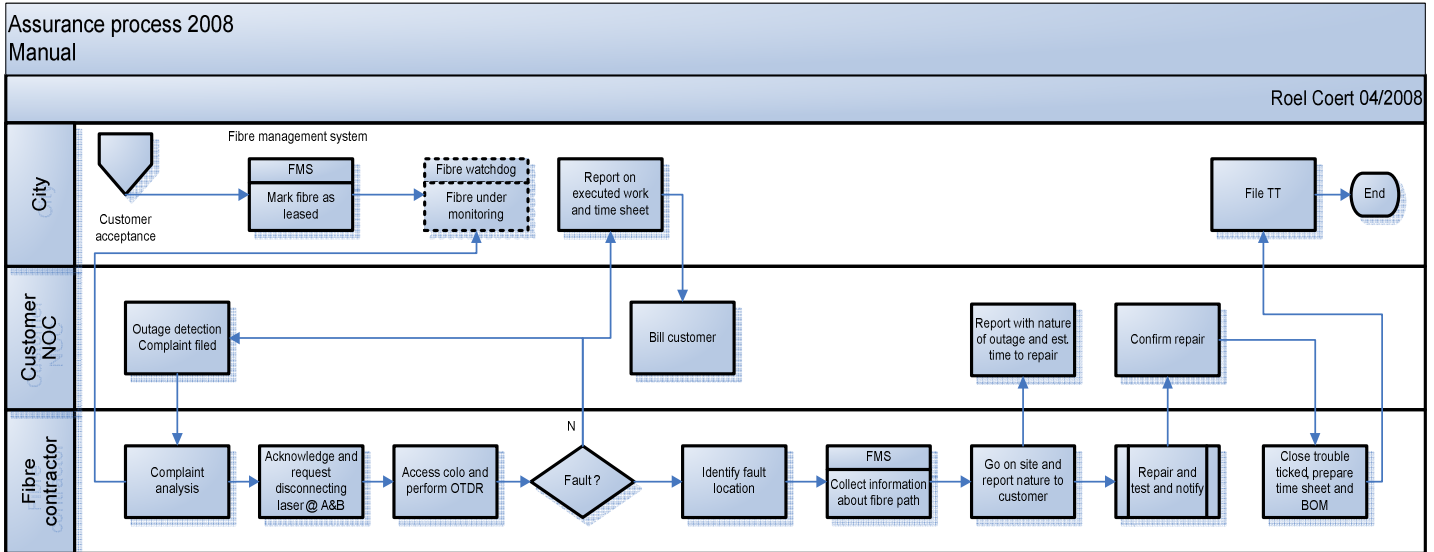


Figure 2 - Assurance Process

### 5.1 Response and Repair Time Targets

QNet considers all interruptions in service as urgent priority. Response and repair time targets are as set out in the table below.

Response and Repair Time Targets					
Hours/Days of Coverage		Response Time		Repair Time *	
		Mean Time to Respond**	Maximum Time to Respond	Mean Time to Repair**	Maximum Time to Repair***
24 x 7 x 365		1 Hours	1.5 Hour	2.5 Hours	3.5 Hours

Table 5: Response and Repair Time Targets

\* Time to repair is measured from the time a fault is reported to QNet until the fault is corrected

\*\* Mean time to respond/repair is calculated as the average response/repair time over a one year period

\*\*\* Maximum time to repair does not include cut or broken arterial fibre segments

## 6 MAINTENANCE AND REPAIR OF DARK FIBRE

### 6.1 Corrective Maintenance

Corrective maintenance includes any work performed on the leased optical fibre due to a current or immanent failure of Service. Whenever possible, QNet will strive to limit Service interruptions due to corrective maintenance to four (4) hours downtime in duration.

Delays in restoring service caused by actions or inactions for which the Client is responsible as defined in this Operating Manual will not be taken into account when calculating the duration of the service interruption.

**Note: It is the responsibility of the Client to ensure that the lasers for the fibres affected by the corrective maintenance are switched off and disconnected from the fibres as OTDR measurements can damage the receivers on these laser cards. Only upon clear instruction of QNet may the lasers be reconnected again and switched on.**

QNet will notify the Client as soon as the service has been restored as per Section 3.

### 6.2 Preventive Maintenance

QNet is permitted to suspend the use of the service for eight (8) hours per year downtime for planned work such as preventative maintenance and network enhancements. The time used for planned work is not counted when calculating service availability as per Section 5.1.

Clients will be provided with at least fifteen (15) days' notice of any planned work that will result in an interruption of service. QNet will coordinate the work to be performed with the Client. The Client must agree to allow the work to be done at a date no later than thirty days (30) after notice has been given and must provide QNet with any assistance required to complete the work.

Delays in restoring service caused by actions or inactions for which the Client is responsible as defined in this Operating Manual will not be taken into account when calculating the duration of the service interruption.

**Note: It is the responsibility of the Client to ensure that the lasers for the fibres affected by the preventative maintenance are switched off and disconnected from the fibres as OTDR measurements can damage the receivers on these laser cards. Only upon clear instruction of QNet may the lasers be reconnected again and switched on.**

QNet will notify the Client as soon as the service has been restored as per Section 3.

### **6.3 Temporary Restoration of Service**

QNet may be able to provisionally maintain service by using other free fibres until normal service can be restored. In such cases, the time involved will not be calculated as downtime.

When provisional service is provided, QNet will notify the Client that the service has been restored via a temporary solution. Final repair is then carried out as planned work and the time used is not counted when calculating service availability as per Section 5.1. Reassignment of the fibres after the repairs of the original fibres have been completed is then also carried out as planned work as per Section 6.2.

## 7 PROCEDURES IN THE EVENT OF DARK FIBRE FAILURE

To report a failure with the optical fibre network the Client representative will call the QNet 24X7 Emergency Service Line listed below.

### 7.1 QNet Emergency Contact

**Emergency Service Line:** 604-927-3600, option 3 after hours

**Email Documentation & Reporting:** outage@qnetbc.net

The QNet Emergency Service Line is available 24 hours a day, 365 days a year. The Email Reporting address is used to file reports and exchange information related to the incident. The business language of QNet and its agents is English.

In the event the Client identifies a possible failure of QNet service, it will report this using the circuit ID provided in the handover package by phone/email and file a complaint with the QNet contact point.

In the event QNet identifies changes in the service which could result in a deterioration of service, QNet will notify the Client without delay and will take immediate measures to ensure that the service will meet the agreed upon specifications as described in Section 3.4.

For each complaint reported by the Client, QNet will generate a trouble ticket which logs the trouble correction process (see example in Appendix 1).

In the event that the complaint is caused by malfunction of the QNet network or its cause falls under QNet responsibility, the complaint shall be classified as a fault and handled as per Section 7.2.

### 7.2 Fault Location and Correction

QNet will search for the cause of the fault by checking the measurement log of the optical transmission equipment and/or carrying out OTDR measurements on the defective network element. If the cause of a fault is identified as a QNet responsibility, it will be corrected by an authorized QNet technician. If the cause of the fault is a cable failure, QNet will take reasonable measures to reroute all optical fibres affected while the cable is repaired as per Section 6.3.

After successful Fault correction and possibly during the correction the Client will receive a phone call and a corresponding interim or final report via email. The content of the final email will match the format of a trouble report and will contain the following additional information:

- End of Fault: date, time
- Established cause of Fault

- Work performed

The client should verify that the Fault has been corrected and confirm this with QNet or alternatively, notify QNet of any remaining Faults or Complaints.

### 7.3 Procedure for Faults Identified by QNet

The following procedure applies to faults identified by QNet:

Failure report to the Client	<p>QNet provides the following data to the Client by telephone and Email:</p> <ul style="list-style-type: none"> <li>- name of the person reporting the fault</li> <li>- contact for further reports and information on fault correction</li> <li>- QNet circuit ID for the defective optical fibre pair, location addresses of the endpoints</li> <li>- date and time of the failure</li> <li>- nature of the failure [probable] cause of the failure</li> <li>- [probable] duration of failure</li> </ul>
Confirmation of receipt by Client	<p>The Client confirms receipt of the trouble report by phone and/or Email with the following additional information if applicable:</p> <ul style="list-style-type: none"> <li>- name and phone number of the Client contact who will assist with the repair</li> <li>- client fault or tracking number</li> <li>- names and phone numbers of contacts at affected locations</li> </ul>
Fault correction	<p>QNet technicians repair the fault with the assistance of the Client as required.</p>
Interim reporting	<p>Depending on the duration of the Downtime, QNet provides the Client with progress reports every two hours approximately:</p> <ul style="list-style-type: none"> <li>- nature of fault</li> <li>- [probable] cause of failure</li> <li>- [probable] duration of failure</li> </ul>
Final report	<p>After successful correction of the fault, the Client will be notified by telephone and email. The content of the email matches the trouble report and contains the following additional information:</p> <ul style="list-style-type: none"> <li>- date, time of Service restoration</li> <li>- established cause of failure</li> </ul>



	- work performed
Certification	The client checks that the failure has been corrected and if not, notifies the QNet technician of any remaining faults. If QNet is not notified that the failure has been corrected (or not corrected) within 30 minutes of the Final report being filed, the trouble ticket will be closed.

**Table 6: Fault Identification by QNet**

### 7.4 Procedure for Faults Identified by Clients

The following procedure applies to Faults identified by Clients:

Complaint report by Client	Call the Emergency Service Number with name and contact number of the Client representative reporting the Complaint. Also provide the following via email: <ul style="list-style-type: none"> <li>- Client contact person</li> <li>- QNet circuit ID for the defective optical fibre pair, location addresses of the endpoints</li> <li>- names and phone numbers of contacts at affected locations</li> <li>- date and time of the failure</li> <li>- nature and probable cause of fault</li> <li>- any other relevant information</li> </ul>
Confirmation of receipt by QNet	QNet confirms receipt of the Complaint report by phone and email and provides the following additional information: <ul style="list-style-type: none"> <li>- name and contact number of the QNet technician responding</li> <li>- trouble ticket tracking number</li> </ul>
Complaint classification	The QNet will investigate the Complaint (with the assistance of the Client) to determine if there is a Fault in the Service. If no Fault is found in the Service, the Client will be notified by telephone and email and the trouble ticket will be closed.
Fault correction	QNet technicians repair the fault with the assistance of the Client as required.
Interim reporting	Depending on the duration of the Downtime, QNet provides the Client with progress reports every two hours

	<p>approximately:</p> <ul style="list-style-type: none"> <li>- nature of fault</li> <li>- [probable] cause of failure</li> <li>- [probable] duration of failure</li> </ul>
Final report	<p>After successful correction of the fault, the Client will be notified by telephone and email. The content of the email matches the trouble report and contains the following additional information:</p> <ul style="list-style-type: none"> <li>- date, time of Service restoration</li> <li>- established cause of failure</li> <li>- work performed</li> </ul>
Certification	<p>The client checks that the failure has been corrected and if not, notifies the QNet technician of any remaining faults. If QNet is not notified that the failure has been corrected (or not corrected) within 30 minutes of the Final report being filed, the trouble ticket will be closed.</p>

**Table 7: Fault Identification by Client**

## **7.5 Access to Consumer Premises, Rights-of-Way and Telecom Rooms**

In such cases where the Client controls access to a right-of-way, telecom room, service vault or any such structure where the fibre terminates, the Client may be requested to provide QNet with access. QNet will follow any reasonable access policies and procedures required by the Client. Any refusal of access that creates or prolongs a failure in service will be handled as per Section 8.

## **7.6 Faults Caused by the Client**

If a fault is caused by any action or inaction by the Client, its employees or representatives or a fault is caused by, or results from, any Client equipment or fittings used in connection with the optical fibres, the Client shall reimburse QNet for any costs and disbursements incurred by QNet in correcting or attempting to correct the fault. The Client must settle QNet’s invoice for these costs and disbursements within thirty (30) days of receipt.

## **7.7 General Assistance**

In the event that the cause of a complaint is outside the responsibility of QNet as described in this Operating Manual, the failure is not classified as a fault and therefore it shall not be QNet’s responsibility to repair the cause of the complaint. In such an event should the Client request the assistance of QNet to help solve the complaint, such assistance will only be provided if:

- the Client indemnifies QNet and its agents against any liability that may be associated with the work being performed; and
- the Client agrees to pay QNet such fees for service as may be agreed in advance of the work being performed.

## 8 ESCALATION, DARK FIBRE OUTAGE

If a QNet Client is not receiving services as per the procedures and commitments provided in the Operating Manual, the Client may escalate contact with QNet.

### 8.1 Escalation and Notification

Level	Notification Point	Escalation Point
1 <sup>st</sup> Level	QNet Emergency Contact	Scott Jamieson (604 760 0108)
2 <sup>nd</sup> Level	Scott Jamieson (604 760 0108)	James Andrusiw (604 927 3602)

**Table 8: Escalation and Notification**

## 9 ACCESS TO CITY HALL CO-LOCATION FACILITY

The purpose of this chapter is to set forth the QNet policy for client access to the QNet Co-location Facility (“COLO”) at Coquitlam City Hall, 3000 Guildford Way in Coquitlam, as well as removal of client equipment from the COLO. To ensure the security of the COLO, all Client representatives and agents must follow these procedures.

### 9.1 Client Authorization and Identification

Individuals seeking access to QNet co-location facilities must:

- Provide on request a government-issued picture ID (e.g. Drivers License)
- Must be one of Client’s authorized and registered contacts

Authorized contacts may be changed by the Client by notifying the QNet Director of Operations. Only a person registered with QNet specifically with the title “Primary Contact” or “Authorized Contact” can authorize an individual’s access to the COLO.

The security regulations and other house rules of QNet must be complied with. Details of a location or operating area within the COLO will be provided to the Client by QNet.

### 9.2 Access Requests

#### 9.2.1 Regular Access

Authorized Client representatives may access the COLO, without providing prior notice, from 7:30 a.m. to 5:00 PM PST, Monday through Friday, excluding statutory and government holidays (“Regular Business Hours”).

Individuals accessing the COLO must:

- Report to the ICT Help Desk on arrival
- Sign in and out of the Data Center Access Log as directed by the QNet and Information and Communications Technology (“ICT”) staff at City Hall
- Comply with any other reasonable requests by QNet and ICT staff necessary to maintain the security of the Data Center

#### 9.2.2 Scheduled After-Hours Access

Scheduled after-hours access means any scheduled (i.e. non-emergency) access outside of regular business hours.

To gain after-hours access to the COLO, the Client must provide at least twenty-four (24) hours’ notice prior to the desired access time. The notice must include:

- The expected time of the Client representative’s arrival

- The estimated duration of the Client’s stay
- The contact number (i.e. mobile telephone or pager) of the Client representative

This notice should be directed to the QNet Director of Operations.

The QNet staff representative who may also be a member of staff of Plan Group or the City’s ICT department will meet the Client representative at Coquitlam City Hall at the North entrance door of the ground level parking lot at Coquitlam City Hall at the appointed time. If the Client representative does not arrive at the appointed time, the QNet staff representative will attempt to contact the Client representative via the contact numbers provided.

If the Client representative does not arrive within thirty (30) minutes of the appointment time, the Client will need to reschedule the appointment for another day. In this case, the Client will be charged a \$300 fee to cover QNet costs.

Individuals accessing the COLO must:

- Sign in and out of the Data Center Access Log as directed by the QNet representative at City Hall
- Comply with any other reasonable requests by the QNet representative necessary to maintain the security of the Data Center

### **9.2.3 Emergency After-Hours Access**

For purposes of this section, an emergency situation means any of following events:

- Total system failure
- Total application failure (i.e. the application is not functioning or the server is no longer responding to HTTP requests)
- Loss of power to equipment
- Loss of access to bandwidth (e.g. no network access to external provider)

To obtain emergency access to the COLO the Client representative will call the QNet 24X7 Emergency Service Line listed below:

**Emergency Service Line:        604-927-3600, option 3**

The QNet staff representative (may also be Plan Group or City ICT staff) will meet the Client representative at Coquitlam City Hall at the North entrance door of the ground level parking lot at Coquitlam City Hall at the appointed time. If the Client representative is not at City Hall when the QNet staff representative arrives, the QNet staff representative will attempt to contact the Client representative via the contact numbers provided.

If the Client representative does not arrive within thirty (30) minutes of the appointment time, the trouble ticket will be closed and the Client will need to open a new trouble ticket to

reschedule the appointment by placing another call to the Emergency Service Line. In this case, the Client will be charged a \$300 fee to cover QNet costs.

Individuals accessing the COLO must:

- Sign in and out of the Data Center Access Log as directed by the QNet representative at City Hall

Comply with any other reasonable requests by the QNet representative necessary to maintain the security of the Data Center

### **9.3 Removal of Equipment**

#### **9.3.1 Removal by Client**

Prior to Client's removal of any equipment located at the COLO, the Client's representative should notify the QNet Director of Operations via email or otherwise in writing. Clients removing equipment from the COLO without notice may be challenged by QNet or ICT staff or in the case of after hour's removal, members of the Coquitlam RCMP.

It is recommended that Clients only remove equipment from the Coquitlam City Hall COLO during normal business hours.

#### **9.3.2 Removal by a Third Party**

Clients are required to provide notification via email or otherwise in writing to QNet at least twenty-four hours in advance of the scheduled pickup. Clients must provide a clear indication of who will be accessing the COLO and when they will be arriving as per the procedures outlined in this section.

Third party agents accessing the COLO must:

- Sign in and out of the Data Center Access Log as directed by QNet staff and ICT staff at City Hall
- Comply with any other reasonable requests by QNet and ICT staff necessary to maintain the security of the Data Center

### **9.4 Monitoring**

QNet reserves the right to monitor all activities occurring in the COLO facility including the use of electronic surveillance devices.

## 10 ACCESS TO PSLC CO-LOCATION FACILITY & CABINETS

The purpose of this chapter is to set forth the QNet policy for client access to the QNet Co-location Facility (“COLO”) at Poirier Sport & Leisure Complex (“PSLC”), 633 Poirier Street in Coquitlam and for equipment cabinet hand-over and access procedures. To ensure the security of the COLO, all Client representatives and agents must follow these procedures.

### 10.1 Equipment Cabinet Hand-over Procedure

A cabinet is handed over when the customer has received the room access card and the cabinet door key FOB and palm scan are registered with the credentials as outlined in Appendix 4.

### 10.2 Power

Each cabinet is equipped with two vertically mounted PDUs providing 24 amps over 208 V via 21 outlets C13 (12 amps) and 3 outlets C19 (16 amps). The PDUs collect power usage data which is used for billing. In case of failed metering, the power usage data of the previous month will be used for billing purposes.

### 10.3 KVM Access and PDU Socket Control

On request access can be given to the KVM (if installed) and the PDU socket control. An account and a password will then be created and assigned.

### 10.4 Access to the PSLC COLO

#### 10.4.1 General

The datacentre and the cabinets are accessed with a card reader, palm scan, and a key FOB. Cameras capture the movements in and out of the room on a 24 X 7 basis. Individuals in possession of the RFID cards have 24 x 7 access to the facility and their equipment. When a cabinet is forced open without the proper card, an alarm shall trigger security measures.

#### 10.4.2 Data Centre Access

The entrance to the PSLC datacentre is located at the rear of 633 Poirier Street at the south east corner of the complex. One uniquely numbered proximity card is issued per rented cabinet. The card is associated with one person (designated by Client) who will be physically accessing the room.

A palm scanner is located in the staging area, controlling access to the data centre. Customer palm scans and credentials are filed along with a portrait photo (see Appendix 4).

**Note: An Access Log is located at the entrance and it is mandatory for each individual accessing the datacentre to sign in and sign out of the Access Log.**



#### **10.4.3 Cabinet Access**

All cabinets are numbered and key FOBs are used to access the cabinets. The FOB ID is noted on the personal files of the individuals designated by the renting company who have access to the data centre.

#### **10.4.4 Card or Key FOB Loss**

A loss of an access card or key FOB should be immediately reported to QNet. The card and key FOB will be disabled in the access system and a new card and key FOB will be issued on request.

#### **10.4.5 Card Transfer**

Cards are issued on an individual basis and are not transferable for security reasons. When a new person is assigned by the customer to access the room, she/he has to create a new file with QNet and obtain a new card or be registered with the existing customer card.

#### **10.4.6 Wire Line Telephone**

A “local calls only” telephone is available in the datacentre as the cell coverage from certain wireless providers is poor. The phone number is: 604 927 6115.

#### **10.4.7 Intercom**

To the right of the main door, beside the card reader is an intercom which can be used (during business hours) to attempt to contact the ICT Support Desk for data centre access issues. On an exception basis and only after 100% identification of the person requesting access (matching with the person information and picture on file), ICT might grant access to the data centre. The ICT Support Desk has the right to refuse entrance to any individual. Both customer and QNet management will be notified and arrangements will have to be made to avoid such events in the future.

### **10.5 Preventative Maintenance**

From time to time maintenance has to be performed to the various systems in the COLO. All critical systems are N+1, however during maintenance only one unit will operate. QNet will provide a written notification to the customers, indicating the system under maintenance and the expected duration.

### **10.6 Corrective Maintenance**

When corrective maintenance is required, QNet will (as soon as practically possible depending on the nature of the event) provide a written notification to the customers, indicating the system and the expected duration.

### **10.7 COLO Access or Other Related Issues Support**

In case of failure of the access system or any other issue requiring the presence of a QNet technician, call the emergency service line: 604-927-3600 (select option 3 outside of business hours). QNet representatives have the right to refuse entry to any persons not properly registered with QNet (see Appendix 4). If the access request or support call was not QNet systems related, the customer may be charged \$300 for the onsite support.

## APPENDIX 1: TROUBLE TICKET FOR DARK FIBRE FAULTS

### QNet Trouble Ticket No.

<i>To:</i> QNET CONTACT POINT  Tel: 604-927-3600, option 3 after hours	<i>From</i> Client  <i>Admin:</i> <b>Tel:</b>
---	---

*MANDATORY INFORMATION*

<i>QNet Circuit ID</i>	
<b>Location LOS – Loss of Signal (A):</b>	

*Failure Time:*

<i>Date:</i>	<i>Time:</i>
--------------	--------------

*Failure only in direction A ⇔ B*   
*Failure only in direction B ⇔ A*   
*Failure in both directions*

*Description*

--

*Laser turned off* Yes  No   
*Access granted* Yes  No   
*Client technician on site (name & cellphone no.)*

*Failure description–works carried out*

--

	<i>Failure report</i>	<i>Acknowledgement</i>	<i>Final reply</i>	<i>Acknowledgement</i>
<i>Date</i>				
<i>Time</i>				
<i>Admin</i>				

## APPENDIX 2: DARK FIBRE PLANNED WORK REPORT

Work Order No. ....

to: <client>	From: QNet
Tel. no. of QNet contact:	

<i>Fibre Route Section (SPAN)</i>	
Endpoint A:	Endpoint B:
QNet Circuit ID	
Cable IDs affected:	
Fibre/bundle affected:	

<i>Client response for planned work</i>	
agreed <input type="checkbox"/>	please confirm <input type="checkbox"/>
Administrator client	tel:

Down time

Start		End	
	Date      Time		/Date      Time

Malfunction only in Direction A → B	<input type="checkbox"/>
Malfunction only in Direction B → A	<input type="checkbox"/>
Malfunction in both Directions	<input type="checkbox"/>

Description	
<b>Laser turned off:</b> Yes <input type="checkbox"/> No <input type="checkbox"/>	
<i>Failure Report Acknowledgement</i>	
<b>Text:</b>	Date      Time
Administrator:	

<input type="checkbox"/> Intermediate Reply		
<input type="checkbox"/> /Final Reply		
<b>Text:</b>	Date      Time	
Administrator:		

## APPENDIX 3: DARK FIBRE HANDOVER DOCUMENTATION

QNet will produce and supply the following documentation with the optical fibre:

### Optical Power Loss Results

Client nr _____	Span Nr: _____
Client name: _____	System Nr: _____
Address A: _____	Address B: _____
City: _____	City: _____
Level: _____	Level: _____
Room nr _____	Room nr _____
Cabinet nr _____	Cabinet nr _____
Tray: _____	Tray _____

Test date: \_\_\_\_\_

Circuit ID	From A to B			From B to A			Average	
	Termination port #	1310 Rec. Loss	1550 Rec loss	Termination port #	1310 Rec. Loss	1550 Rec loss	1310 loss	1550 loss
3456-09	1				5			
3456-10	2				6			
3456-11	3				7			

Contractor _____	Address A Reference loss 1330 nm: _____ 1550 nm: _____ Operator: _____	Address B Reference loss 1330 nm: _____ 1550 nm: _____ Operator: _____
Test Set: _____		

### Other information:

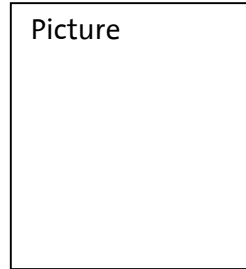
Civil drawings are available on request  
Circuit route diagram are available on request

## APPENDIX 4: PSLC COLO ACCESS CREDENTIALS FORM

Company Name: \_\_\_\_\_

Company address: \_\_\_\_\_

Supervisor Name: \_\_\_\_\_ Tel: \_\_\_\_\_ Email: \_\_\_\_\_



Access Card Holder First Name: \_\_\_\_\_

Access Card Holder Last Name: \_\_\_\_\_

Access card Holder Driving License Number: \_\_\_\_\_

Access Card Holder Tel: \_\_\_\_\_

Access Card Holder Email: \_\_\_\_\_

Card information:

Access card nr: \_\_\_\_\_

Cabinet Nr: \_\_\_\_\_

Cabinet FOB Code: \_\_\_\_\_

## **APPENDIX 5: ABBREVIATIONS**

QNet	Coquitlam Optical Network Corporation
COLO	Co-location Facility
SM	Single mode fibre
PMD	Polarisation mode dispersion
OF	Optical fibre
CTP	Client termination point
OTDR	Optical time domain reflectometer
NOC	Network Operations Centre
POP	Point of presence
SC/UPC	Single mode connector- ultra polished cut
S-LGX	Smart LGX Cable monitoring system (Lucent product name)
ITU	International Telecommunications Union
CMD	Chromatic mode dispersion
PDU	Power distribution unit
KVM	Keyboard, video and mouse emulator