

# ORDINANCE EXHIBIT-A

185005

**COMCAST OF ILLINOIS/OHIO/OREGON, LLC  
and  
COMCAST OF OREGON II, INC.  
AGREEMENT TO  
PROVIDE INSTITUTIONAL NETWORK (I-Net) SERVICE  
to  
THE CITY OF PORTLAND**

**1. Purpose.**

This Agreement is made between the City of Portland, Oregon, a municipal corporation, (Customer) and Comcast of Illinois/Ohio/Oregon, LLC and Comcast of Oregon II, Inc. (referred to collectively as Company) for the provision of services on the Institutional Network (I-Net) and the interconnection of the Integrated Regional Network Enterprise (IRNE) to the I-Net. This Agreement will be managed by the City's Bureau of Technology Services. The total not-to-exceed value of this Agreement shall be \$7,500,000 for the initial five-year term, and an additional \$12,500,000 for the five year renewal term.

For good and valuable consideration, the adequacy and sufficiency of which is hereby acknowledged by the Parties, Company shall provide Customer with a Managed Core Network Service (MCNS), from which optical connectivity shall be provided to Customer-supplied equipment at Customer locations, in the manner more particularly described herein below.

**2. Definitions.**

- 2.1** "Agreement" refers to this document from the title page through signature line, including all Appendixes. This Agreement contains the following: Appendixes A-E.
- 2.2.** "Company" refers to Comcast of Illinois/Ohio/Oregon, LLC and Comcast of Oregon II, Inc., the cable services provider that holds a Franchise Agreement with the City of Portland (effective January 1, 2012).
- 2.3.** "Company Premises" refers to Company's Hubs; all buildings or structures owned, leased, or otherwise controlled by Company that house its network facilities; all structures that house Company facilities on public rights-of-way, including but not limited to vaults containing drop concentrators or similar structures; and all land owned, leased, or otherwise controlled by Company that is adjacent to these Hubs, buildings and structures.

- 2.4. "Core Demarcation Point" ("CDP") is a port on Core Network equipment at Company's Hub, from which data traffic may connect between the Core Network and Distribution Network.
- 2.5. "Core Network" ("CN") is the section of the I-Net, operated and fully-managed by Company, that provides Layer One and Layer Two Ethernet data communications transport between Company Premises in which Core Network equipment is housed.
- 2.6. "Customer" refers to the City of Portland, Oregon.
- 2.7. "Customer Premises" are the I-Net Institution sites for which Customer is responsible for IRNE Distribution Network Service delivery.
- 2.8. "Customer Premise Equipment" refers to electronic and optronic equipment, owned by or otherwise in the control of Customer, that is on Customer's side of the DDP.
- 2.9. "Distribution Demarcation Point" ("DDP") is the point at Customer Premises at which an optical termination panel shall be provided, and to which Customer shall connect Customer-provided, and Company approved, single-mode optical patch jumper. All equipment and cabling from the network DDP to and through any equipment at Customer's Premises shall be the responsibility of Customer.
- 2.10. "Distribution Network" ("DN") is the section of the I-Net that provides a Layer One and Layer Two path for Customer-managed transport between the Core Network and Customer Premises.
- 2.11. "Ethernet" is the local area/wide area data communications network protocol employed by the Company and the Customer for provisioning of services on the I-Net.
- 2.12. "Franchise Agreement(s)" is the contract, or set of contracts, under which Company operates cable systems, binding between Company and the cities of Portland, Gresham, Fairview, Troutdale and Wood Village and Multnomah County, Oregon.
- 2.13. "Hub" is the building or structure, or spaces within these, that serve as aggregation points on Company's CN, where transmission facilities are connected or switched.
- 2.14. "I-Net" or "Institutional Network" is the communications network owned and operated by Company, in accordance with the Franchise Agreements.

- 2.15.** "I-Net Institution" means any public primary and secondary school and community colleges, which have received the appropriate accreditation from the State of Oregon; public libraries; Designated Access Providers; and any agency of local government, excluding state or federal governments, except that the Oregon Judicial Department and Oregon Department of Justice shall be included as I-Net Institutions.
- 2.16.** "Integrated Regional Network Enterprise" ("IRNE") is a communications network owned and operated by Customer, and for which Customer contracts with Company to provide interconnection for IDNS.
- 2.17.** "IRNE Distribution Network Service" ("IDNS") is the service that Customer provides over I-Net, with connections to Customer Premises provided by Company's DN.
- 2.18.** "Layer One" refers to the physical layer of the Open Systems Interconnect (OSI) model.
- 2.19.** "Layer Two" refers to the data link layer of the Open Systems Interconnect (OSI) model.
- 2.20.** "Managed Core Network Service" ("MCNS") is the managed Layer One and Layer Two Ethernet data communications transport services between Company's Core Network facilities and between the Core Network and the two Customer interconnect locations.
- 2.21.** "Party" means either Company or Customer and "Parties" means Company and Customer.
- 2.22.** "Planned Maintenance" is predicted and communicated instances when Company anticipates the need for preventive actions such as, but not limited to, upgrading hardware components or software.
- 2.23.** "Port" means an Ethernet connection point on a Core Network device. It does not include switch features.
- 2.24.** "Service Action Form" ("SAR") is the form Customer shall use to order new services, or upgrade, downgrade, otherwise change, or terminate service.
- 2.25.** "Service Interruption" means an interruption in transmission that renders the service provided by Company to Customer at the DDP or interconnection to the IRNE unusable or a total loss of signal for the service.

2.26. "Simple Network Management Protocol" ("SNMP") is a common method by which a network management station can query a network management agent using a supported management information base.

3. **Term of Agreement.**

3.1. This Agreement shall become effective January 1, 2012, and shall expire on December 31, 2016.

3.2. This Agreement shall automatically renew on December 31, 2016 for an additional five years

4. **Service Description.** Company shall provide I-Net transport to Customer over the I-Net facilities as described below.

4.1. **Managed Core Network Service.** On fiber optic facilities owned by Company, Company shall provide a MCNS offering, a single switched Ethernet transport channel between each Hub on the I-Net at a Gigabit rate based on the maximum capability of the fiber optic interfaces installed on the Core Network switches. The MCNS shall be provisioned via an optical connection to individual Ports (CDP's) at Company's premises, and shall be implemented and provisioned consistent with the specifications in Appendix E. The MCNS shall provide an interconnection to the IRNE at two (2) Customer locations. The IRNE/I-Net interconnection shall consist of fiber transport between the Gateway Hub and the Portland Communications Center, and fiber transport between the West Portland Hub and the Portland Building. IRNE/I-Net interconnection shall be terminated on a fiber distribution panel by Company at Customer's locations at a physical location to be mutually agreed upon by both Parties. The IRNE/I-Net interconnection shall extend the MCNS to Customer's location through a Company provisioned service at a Gigabit rate based on the maximum capability of the fiber optic interfaces installed on the Core Network switches. The I-Net/IRNE interconnection shall be configured as indicated in Appendix E.

4.2. **IRNE Distribution Network Service.** IDNS shall be provisioned from an optical interface originating from a single Ethernet Port on a CDP at a Company Hub utilizing an optical wavelength designated by Company and terminating on a Company provided fiber distribution panel at a Customer Premises. Each IDNS connection shall provide at a minimum an Ethernet transfer rate capability of one (1) Gbps. IDNS shall be configured as indicated in Appendix E.

5. **Future Network Growth and Planning.** Company and customer shall hold regularly scheduled meetings (either once every six (6) months or as otherwise mutually agreed upon by Company and Customer for intervals greater than six

(6) months) to exchange key elements of, and forecasts for, future I-Net demand in order to review the provision of services under this Agreement. If any changes to the architecture of the I-Net or the services described in this Agreement are proposed at such meetings, Company and Customer shall cooperatively work with each other on any such proposal or proposals. Any such proposal mutually agreed upon by Company and Customer shall be set forth in writing.

**6. Network Rights of Ownership and Operation.**

- 6.1. All facilities and equipment in the CN and DN, up to and including the fiber cables, connectors, termination panels, conduits and all other necessary hardware required in provisioning the services required by this Agreement, that are on Company side of Company demarcation points as defined by this Agreement are the exclusive property of Company.
- 6.2. Company is not required to offer to Customer any physical facilities in addition to the services specified in this Agreement, such as space, power or any other accommodation in, on and/or around its CN facilities, buildings and property, which include all Hub sites.
- 6.3. This Agreement shall not restrict, limit, or prohibit Company from offering other services to Customer, I-Net Institutions, and any other person, including services over the I-Net, except to the extent such offering(s) would materially impair, in any way, the provision of services to Customer or to any Customer Premises.
- 6.4. Customer shall cooperate with Company to facilitate Company's access to Company facilities in use by Customer for IDNS to allow Company to provision a Company service to a third party if Company and Customer agree that such access shall not impede, degrade or materially impair in any way Customer's IDNS provided under this Agreement. Such consent by Customer shall not be unreasonably withheld. Any cost associated with this section shall be Company's responsibility.
- 6.5. Company shall not restrict, limit or prohibit Customer from using services purchased under this Agreement for aggregation of traffic between multiple I-Net Institutions, except to the extent such usage would materially impair, in any way, the provisioning of services requested by a Customer.
- 6.6. Customer is expressly permitted under this Agreement to resell I-NET services provided by Company to I-Net Institutions in accordance with the Franchise Agreement.

- 6.7. Company's rights as owner of the I-Net are not restricted by this Agreement. Company has provided to Customer only the rights described in this Agreement and Company retains all other rights to control the I-Net.

7. **Company's Network Facilities.**

- 7.1. Company shall own, provide and be responsible for operation, maintenance, performance and configuration of all Core Network equipment and facilities at Company's Hub facilities.
- 7.2. Company shall provide monthly, or upon request by Customer, statistics and network management information on the performance, network availability and utilization of Customer's services provided under this Agreement. These shall include such statistics as: Network utilization per site; network utilization on Company Core Network links that are used by Customer; Service Interruptions per site, including scheduled and non-scheduled downtime; and documentation of I-Net service call reports including a breakdown of reasons and resolutions. Company and Customer may agree in writing subsequent to the execution of this Agreement on additional network transport measurement statistics.
- 7.3. The I-Net demarcation at the Customer Premise DDP shall consist of an optical termination panel, specified and provided by the Company, to which the Customer shall connect a Customer-provided, and Company approved, single-mode optical patch jumper. All equipment and cabling from the DDP to and through any equipment at Customer's Premises shall be the responsibility of Customer.
- 7.4. Company's CDP's shall provide Core Network connectivity to the Distribution Network via Gigabit Ethernet Ports to Distribution Network optical fiber. All equipment and cabling at these facilities shall be provided, and owned, by Company.

8. **I-Net Service Activation.**

- 8.1. As long as an I-Net site has a completed connection under the Franchise Agreement, Company shall activate new service to Customer under this Agreement according to the following parameters:
- 8.1.1. Customer shall provide Company with a SAR to initiate any order for IDNS. Within two (2) weeks, Company shall provide Customer with an activation date for the IDSN at a Customer Premise. The activation date assigned shall be no longer than 30 days from receipt of the order.

- 8.1.2. Company and Customer shall cooperatively develop a plan to activate, test and accept a large volume of site orders.
- 8.1.3. If it becomes apparent to Company that circumstances outside the control of Company may or shall impede or hinder progress, Company agrees to notify Customer, in writing, on the cause and offer new dates for activation. In the case of Force Majeure, in accordance with Section 36, Customer agrees to be flexible on the adjusted site activation schedule.
- 8.1.4. Customer agrees to support and assist Company with the coordination of any necessary construction efforts at Customer Premises and to coordinate ingress and egress on Customer Premises requesting service.
- 8.1.5. Company shall report in writing that the Customer Premises is ready for activation and shall coordinate with Customer the activation of the site. Company shall be on site when Customer Premises is first activated to proof the fiber connection and to run final test measurements between the site and its HUB location.

8.2. Company shall provide Customer, in writing, the projected construction schedule for any new I-Net site connections, and provide regular updates through completion.

9. **Networking Equipment at Customer Premises.**

- 9.1. Customer-Owned Equipment. Customer shall be responsible for all equipment on Customer side of Distribution Demarcation Point at Customer sites.
- 9.2. Company-Owned Equipment. Customer shall provide space in an easily accessible, OSHA workplace safe and secure location having non-contaminated environmental conditions.
- 9.3. All Customer Premises wiring on Customer side of Company Distribution Demarcation Point shall be the responsibility of Customer.

10. **Pricing and Price Changes.** Pricing for services provided to Customer under this Agreement is provided in Appendix B.

11. **Payments - Monthly Recurring Charges.**

- 11.1. Service Acceptance. At such time as Company activates a new Customer Premises, Company shall provide Customer with a readiness notification. When Customer is satisfied that service is being provided as described in

this Agreement, Customer shall acknowledge service acceptance by email to Company. The date upon which Customer has acknowledged the readiness notification shall be the "Service Date."

**11.1.1** Billing for new sites will commence on the First day of the month following the Service Date.

**11.2.** Monthly Payments. Company shall mail an invoice each month for one month's service to Customer at the beginning of the first full week of the calendar month in which service is to be provided. Pursuant to this monthly invoice rendered in advance by Company, Customer shall pay Company monthly. The monthly charge for fractions of a calendar month shall be computed at the rate of one-thirtieth (1/30) of a stated monthly rate for each day, or fraction of a day. The monthly charge shall be payable upon receipt; however interest charges shall not be assessed unless, after the fifth day of the second calendar month after the service is provided, said invoice has not been paid. Payments received after the fifth day of the second calendar month after the service is provided shall be assessed an interest charge at an annual rate of current prime plus two (2%) percent, but not less than twelve percent (12%) APR for the time the payment is in arrears. Failure of Customer to pay within 120 days of receipt of an invoice shall constitute a Default of this Agreement by Customer.

**11.3.** Billing Disputes. Should Customer dispute any portion of the monthly billing under this Agreement, Customer shall notify Company in writing within thirty (30) calendar days of the receipt of such billing, identifying the amount, reason and rationale of such dispute. Both Parties agree to expedite the investigation of any disputed amounts in an effort to resolve and settle the dispute prior to initiating any other rights or remedies.

**11.3.1.** If the disputed charge is determined to be charged to Customer in error, Company shall apply a credit of the full amount of the disputed charge and any additional charges or penalties related to the disputed amount, plus interest, to the next regularly scheduled invoice.

**11.3.2.** If the disputed charge is determined to be correctly billed to Customer, Customer shall remit the disputed amount within thirty (30) days of the resolution of the dispute. If the resolved amount is not paid by Customer within thirty (30) days of the resolution of the dispute, the resolved amount plus interest from the date of resolution shall be applied to the next regularly scheduled invoice.

**11.3.3.** The amount of interest shall be at an annual rate of current prime plus two (2%) percent, but not less than twelve percent (12%) APR for the time the payment is in arrears.



**12. Taxes and Franchise Fees.**

12.1. Company is a regulated entity and has the right to charge all federal, state or local taxes to Customer if Customer is required by law to pay taxes.

12.2. Customer is a tax-exempt municipal corporation.

**13. Network Service Level Agreement.**

13.1. Overall Network Availability. Network availability for all services provided to Customer shall be equal to or better than 99.965% (no more than 184 annual minutes of network Service Interruptions total) as measured over any twelve (12) month period.

13.2. Exemptions to Network Availability. Service Interruptions shall not include intervals of Planned Maintenance in accordance with Section 16 and Service Interruptions caused by Force Majeure in accordance with Section 36, or plant re-locations required by law but impossible to accommodate under Planned Maintenance windows.

**14. Interruptions and Service Credits.**

14.1. Company agrees to the following liquidated damages for failure to conform to network availability under Section 13. Liquidated damages shall be credited to Customer according to the following formula: Upon failing to meet the 99.965% network availability requirement for an affected Customer Premise, the monthly rate for each service at that Customer Premise shall be prorated by one twenty-fourth (1/24th) for every hour or portion of one (1) hour of Service Interruption and credited to Customer on the next scheduled invoice. If multiple service sites under this Agreement have been affected by the same Service Interruption, the credit shall accrue to Customer for each individual service site charge. Said credit shall appear on the subsequent month's invoice.

14.1.1. Any non-Force Majeure Service Interruption (or related series of non-Force Majeure events that can be connected as having a single set of causes) lasting longer than twenty four (24) consecutive hours shall be credited to Customer one hundred and fifty percent (150%) of the monthly rate for service per site affected. If multiple service sites have been affected by the same Service Interruption, the credit shall accrue to Customer for each individual service site charge. Said credit shall appear on the subsequent month's invoice.

14.2. For a Service Interruption to a DDP where the cause originates between

the CDP and the DDP the start of the Service Interruption for liquidated damages calculation contained in Section 14.1 shall commence when Company and Customer arrive at the location, gain access to the facility and jointly determine that the cause of the Service Interruption is on the Company's side of the DDP. This may include on-site access and troubleshooting by Company and Customer. Company shall respond to Service Interruptions in accordance with Appendix C, Sections C.3 and C.4.

- 14.3.** For a Service Interruption to DDPs or INET/IRNE interconnections where the cause originates on the Core Network, the start of the Service Interruption for liquidated damages calculations contained in Section 14.1 shall commence when a trouble ticket is opened with the Company by the Customer and the root cause of the Service Interruption is the Core Network.

**15. Notifications and Claims.**

- 15.1.** Upon identification of a Service Interruptions by Customer to Company, Company shall issue a trouble ticket and correct the problem according to the requirements of Appendix C.
- 15.2.** Company shall accurately and automatically process the service credit for Customer.
- 15.3** Customer shall provide Company with a claim for service credit within thirty (30) business days of the closing date of the trouble ticket issued on a Service Interruption. Customer's designated contract representative shall file the following information and the claim shall include the following information:
- 1) Name of Customer contract representative;
  - 2) Date and beginning/end time of claimed Service Interruption;
  - 3) Site address(es) where Service Interruption occurred; and
  - 4) Description of Service Interruption.

Claim Process: Customer shall submit the required information to:

Comcast  
Attention: Institutional Networks/Engineering  
9605 SW Nimbus Ave.  
Beaverton, Or 97008

- 15.4.** Company shall acknowledge all claims within five (5) business days of receipt of claim and shall review all claims within fifteen (15) business days of receipt. If Company fails to respond to an acknowledged claim

within fifteen (15) days of receipt of claim, claim is deemed to be granted by Company and appropriate service credits shall be due.

**15.5.** Company shall inform Customer in writing whether the appropriate service credit claim has been rejected. Company may only reject a claim if no Service Interruption occurred, or if Customer caused the Service Interruption. If rejected, the notification shall specify the basis for the rejection.

**15.6.** Credit Process. Company shall apply service credits to Customer's monthly invoice for the month immediately following the date on which the credit claim was granted.

**16. Planned Maintenance.**

**16.1.** Company shall have the right to interrupt IDNS provided by Customer during Planned Maintenance windows. Company and Customer shall conduct Planned Maintenance in accordance with Appendix C.

**16.2.** Maintenance activities conducted by the Company that interrupt IDNS availability and are outside of the requirements of Appendix C shall be considered Service Interruptions, and shall be subject to Section 14.

**17. Early Termination Of Agreement.**

**17.1.** Customer and Company, by mutual written agreement, may terminate this Agreement at any time.

**17.2.** Either Customer or Company may terminate this Agreement in the event of a Default of the Agreement by the other, consistent with Section 48.

**18. Payment On Early Termination.** In the event of termination under Section 17, Customer shall pay Company for work performed and accepted in accordance with the Agreement prior to the termination date.

**19. Service Cancellation.** Except as provided in Appendix B, Customer shall not be subject to any early service cancellation penalty or liabilities for any services that Customer cancels during the term of this Agreement.

**20. Remedies.**

**20.1.** In the event of Default of this Agreement by Customer, then Company's remedy shall be termination of the Agreement as provided in Section 17.2 and receipt of payment as provided in Section 19.

**20.2.** In the event of Default of this Agreement by Company, then Customer's

remedy shall be termination of this Agreement as provided in Section 17.2, and payments that would otherwise be required under Section 19 shall not apply.

- 20.3. The remedies for a Default of this Agreement shall not be exclusive. The Parties also shall be entitled to any other equitable and legal remedies that are available.

**21. Compliance With Applicable Law.**

- 21.1. In connection with its activities under this Agreement, Company and Customer shall comply with all applicable federal, state and local laws and regulations.
- 21.2. All statutory, charter and ordinance provisions applicable to public contracts in Portland and the State of Oregon shall be followed with respect to this Agreement as evidenced by but not limited to the provisions of Appendix A.

**22. Insurance.**

- 22.1. Proof of Coverage. Work shall not commence until all insurance requirements listed below have been met and certificates have been approved by the City Attorney and filed with the City Auditor. All required insurance must be issued by companies or financial institutions that are financially rated A or better and duly licensed, admitted and authorized to do business in the State of Oregon. Failure to maintain insurance shall be cause for Default of this Agreement by Company.
- 22.2. Public Liability and Property Damage. Company shall secure and maintain Commercial General Liability Insurance that protects both Company and Customer and their officers, agents and employees from any and all claims, demands, actions and suits for bodily injury, property damage, products and completed operations, contractual liability, personal injury, fire legal liability, owned and non-owned auto liability, employee-related claims, broad form property damage and any vicarious liability, arising from Company's work under this Agreement, including operations of subcontractors. The insurance shall provide coverage by a single limit policy of not less than \$2 million. The insurance shall name as additional insureds the Customer and its officers, agents and employees. Except with respect to the limits of insurance, the insurance shall apply as if each named insured were the only named insured on the policy. Company's insurance shall be primary insurance and not excess insurance. In the event other insurance exists, Company's insurance shall be solely liable and contribution by equal shares or other methods of insurance sharing

shall not apply. The coverage shall apply as to claims between insureds on the policy. For any of the insurance policies indentifying the Customer and its officers, agents and employees as additional insured, the Company shall notify the City Auditor within five (5) business days of any notice of non-renewal, any cancelation, or any material adverse change in coverage. If the insurance is canceled or terminated prior to completion of this Agreement, Company shall provide a new policy with the same terms. Company agrees to maintain continuous, uninterrupted coverage for the duration of this Agreement. Contractor's insurance shall cover damages excluded from any limitation of liability to the extent of its policy limits indicated in this Section 22.2.

23. **Workers' Compensation Insurance.** Prior to the performance of any work under this Agreement, Company shall comply with the workers' compensation law, ORS Chapter 656, as it may be amended, and if workers' compensation insurance is required by ORS Chapter 656, Company shall maintain coverage for all subject workers as defined by ORS Chapter 656 and shall maintain a current, valid certificate of workers' compensation insurance on file with the City Auditor for the entire period during which work is performed under this Agreement.
24. **Independent Contractor Status.**
- 24.1. Company is engaged as an independent contractor and shall be responsible for any federal, state and local taxes and fees applicable to payments from the Customer hereunder.
- 24.2. Company, its subcontractors and their employees are not employees of the Customer and are not eligible for any benefits through the Customer including, without limitation, federal social security, health benefits, workers' compensation, unemployment compensation and retirement benefits.
25. **Indemnification.**
- 25.1 Company agrees to indemnify, defend, protect and hold harmless Customer and its employees, officers and directors, from and against, and assumes liability for: (1) any injury, loss or damage to any person, tangible property or facilities of any Person (including reasonable attorneys' fees and costs) to the extent arising out of or resulting from the negligence or willful misconduct of Company, its officers, employees, servants, affiliates, agents, contractors, licensees, invitees and vendors in connection with the performance by Company of its obligations or the exercise by Company of its rights under this Agreement; and (2) any claims, liabilities or damages arising out of any violation by Company of any regulation, rule, statute or court order of any governmental authority in connection with the

performance by Company of its obligations or the exercise by Company of its rights under this Agreement.

- 25.2** Subject to the limitations of Oregon law and the provisions of Article XI, Section 9, of the Oregon Constitution, Customer agrees to indemnify, defend, protect and hold harmless Company, and its employees, officers and directors, from and against, and assumes liability for: (1) any injury, loss or damage to any Person, tangible property or facilities of any Person (including reasonable attorneys' fees and costs) to the extent arising out of or resulting from the negligence or willful misconduct of Customer, its officers, employees, servants, affiliates, agents, contractors, licensees, invitees and vendors in connection with the performance by Customer of its obligations or the exercise by Customer of its rights under this Agreement; and (2) any claims, liabilities or damages arising out of any violation by Customer of any regulation, rule, statute or court order of any governmental authority in connection with the performance by Customer of its obligations or the exercise by Customer of its rights under this Agreement.
- 25.3** Company and Customer agree to promptly provide each other with notice of any claim which may result in an indemnification obligation hereunder. The indemnifying party may defend such claim with counsel of its own choosing provided that no settlement or compromise of any such claim shall occur without the consent of the indemnified party, which consent shall not be unreasonably withheld or delayed.
- 25.4** The indemnification obligations contained in this Section 25 shall survive the expiration or other termination of this Agreement.
- 25.5** For purposes of this Section 25, "person" shall mean any natural person, corporation, partnership, limited liability company, business trust, joint venture, association, company or governmental authority.
- 26.** **Governing Law.** The provisions of this Agreement shall be construed in accordance with the provisions of the laws of the State of Oregon, notwithstanding any choice of law rules that might otherwise make the law of some other jurisdiction applicable. Any action or suits involving any question arising under this Agreement shall be brought in the appropriate court in Multnomah County, Oregon.
- 27.** **Payment To Subcontractors.** Company shall pay timely all vendors, subcontractors, and consultants providing service and carrying out its obligations under this Agreement. Company shall not take or fail to take any action in a manner that causes any service that Company provides hereunder to be subject to any claim or lien of any person without Customer's prior written consent.

28. **Proprietary and Confidential Information.** The Oregon Public Records Law, ORS 192.410 *et seq.*, strictly governs Customer's treatment of requests for public records pertinent to this Agreement. This section supersedes any other provision of this Agreement with respect to any language concerning proprietary, confidential or private information. Notwithstanding the foregoing, the Company may designate any information requested by the Customer, including, but not limited to, data, maps, and documents as confidential and proprietary.
29. **Business License.** Company shall maintain a City of Portland business license as required by Portland City Code Section 7.02.030.
30. **Nondiscrimination.** Company agrees to comply with all applicable requirements of federal and state civil rights and rehabilitation statutes, rules, and regulations, including without limitation the Americans With Disabilities Act of 1990 as it may be amended, ORS 659.425, and all regulations and administrative rules established pursuant to those laws.
31. **Successors in Interest.**
- 31.1. The provisions of this Agreement shall be binding upon and shall inure to the benefit of the parties hereto, and their respective successors and approved assigns
- 31.2 Upon a permitted assignment under terms specified in Section 43, or upon a transfer of control of the Franchise Agreement, all rights and obligations of Company under this Agreement shall pass in total without modification to any successor regardless of the manner in which the succession may occur.
32. **Severability.** In the event that a court, government agency, or regulatory agency with proper jurisdiction determines that this Agreement, or any provision of this Agreement, is unlawful, this Agreement, or that provision of the Agreement to the extent it is unlawful, shall terminate. If a provision of this Agreement is so terminated but the parties can legally, commercially, and practicably continue without the terminated provision, the remainder of this Agreement shall continue in effect.
33. **Prohibited Interest.**
- 33.1. No City of Portland officer or employee during his or her tenure or for one year thereafter shall have any interest, direct or indirect, in this Agreement or the proceeds thereof.
- 33.2. No City of Portland officer or employee who participated in the award of this Agreement shall be employed by Company during the period of the

Agreement unless specifically authorized in advance by the Portland City Council.

34. **Coordination with Others.** Company shall cooperate fully with other contractors and Customer employees providing systems or support to Customer during installation, operation, or maintenance of the service. This may include planning for and integration of the system provided under this Agreement with those provided by others. Further, Company shall make every reasonable effort to cooperate with Customer to minimize and/or prevent any degradation of the telecommunications services of Customer by the installation, operation, or maintenance of the service.
35. **Time Is of the Essence.** Time shall be of the essence in this Agreement.
36. **Force Majeure.** A Party shall not be held responsible for failure to perform if it is prevented by unforeseeable acts or events beyond the Party's reasonable control including, but not limited to: acts of God; fire, flood, earthquakes or other catastrophes; strikes or other labor unrest; power failures, electrical power surges or current fluctuations; nuclear or other civil or military emergencies; or acts of legislative, judicial, executive, or administrative authorities; or any other circumstances which are not within its reasonable control. This provision, as it relates to strikes, shall apply only to failure to perform or delay installation of the service, and does not relieve Company from making every reasonable effort to maintain, repair, or restore service; and as it relates to Customer, any strike does not relieve Customer from remitting payment to Company as required in this Agreement.
37. **Survival of Obligation.** The respective obligations of the Customer and Company under these terms and conditions, which by their nature would continue beyond the termination, cancellation, or expiration hereof, shall survive termination, cancellation, or expiration hereof.
38. **Certifications by Company.** Company hereby certifies that it is not knowingly in violation of any Oregon tax laws; hereby certifies that it is certified as an Equal Employment Opportunity Affirmative Action Employer as prescribed by Chapter 3.100 of Code of the City of Portland; and hereby certifies it is an independent contractor as defined in ORS 670.600.
39. **Notices.** Except as otherwise stated in this Agreement, any notice or demand to be given under this Agreement shall be delivered in person or deposited in United States Certified Mail, Return Receipt Requested. Any notices or other communications shall be addressed as follows:



**COMPANY:**

Comcast  
Attention: Institutional Network/Engineering  
9605 SW Nimbus Ave  
Beaverton, OR 97008

**CUSTOMER:**

City of Portland  
Attn: Director  
Bureau of Technology Services  
1204 SW 5<sup>th</sup> Ave., Rm 450  
Portland, OR 97204-1912

If either Party changes its address or if a Party's representative changes, the other Party shall be advised of such a change in writing, in accordance with this section.

40. **Confidentiality of Network Transmissions.** All Customer data, voice, or video transmission using Company I-Net facilities shall be treated as confidential information. Company agrees that this information shall not be made available, in any form, to any party other than Company or its agents or contractors as may be necessary to conduct maintenance or repair activity, without written permission, in every instance, of Customer.
41. **Content Control and Privacy.** Customer shall have full and complete control of, and responsibility and liability for, the content of any and all communications transmissions sent or received using the leased facilities. In addition, Customer shall not intentionally utilize I-Net bandwidth other than that assigned to Customer, in order to receive, record, or re-transmit information that is present on the I-Net, without prior written consent from the party that is transmitting such information, and from Company to utilize those frequencies.
42. **Access to Customer Premises.** Customer shall, in accordance with its visitor control procedure, provide Company, their agents, representatives, or employees, ingress and egress to Customer's premises for purposes of system performance tests, maintenance, repairs and equipment replacement or change-outs.
43. **Assignment.** Either Party may assign this Agreement upon prior written consent of the other Party. Such consent shall not be unreasonably withheld.
44. **Damage.** Company shall be responsible for restoring, or otherwise repairing to its prior condition any portion of Customer's Premises or facilities, which are damaged by Company or its agents. Customer shall be responsible for, restoring, or otherwise repairing to its prior condition any portion of Company's connectivity equipment or other facilities, located at Customer Premises, which are damaged by Customer.
45. **Liability.** Except as may be specifically set forth in this Agreement; Company shall not be liable to Customer or any third party for interruption of service from any cause. Notwithstanding any other provision of this Agreement, in no event shall either Party be liable to the other for incidental, indirect, special, punitive or

consequential damages of any kind, including but not limited to any loss of use, loss of business, or loss of profit.

**46. Warranties.**

**46.1.** Both Parties agree no warranties exist, express or implied, either in fact or by operation of law, between Customer and Company including, without limitation, warranties of merchantability and fitness for a particular purpose or use.

**46.2** In no event shall Company, its affiliates, its/their employees, agents, contractors, merchants, or licensors be liable for any loss, damage or claim arising out of or related to: (1) stored, transmitted, or recorded data, files, or software. (i.e., Customer is advised to back up all data, files and software prior to the installation of service and at regular intervals thereafter); (2) interoperability, interaction or interconnection of the service provided under this Agreement with applications, equipment, services or networks provided by Customer or third parties.

**46.3** Neither Customer nor its agents or independent contractors shall offer third parties warranties or representations for the service which would obligate or otherwise bind Company beyond any warranty or representation expressly set forth in this Agreement.

**47. Amendment.** This Agreement shall not be amended except in writing and signed by both Parties.

**48. Default.**

**48.1.** Any failure to perform or comply with any material obligation or condition of this Agreement by any Party shall constitute a Default of this Agreement.

**48.2.** Any defaulting Party shall have forty five (45) days in which to cure following written notice of Default by the non-defaulting Party. Within fifteen (15) days of notice of a Default by a Party, the defaulting Party shall provide a plan to cure the Default.

**49. Entire Agreement.** This Agreement and its Appendices represent the entire agreement between the Parties. This Agreement is a final, complete exclusive statement of the terms thereof, and supersedes and terminates any prior agreement, understanding, or representation between the Parties with respect thereto, whether written or oral.

50. **Non-Waiver.** No waiver, consent, modification, or change of terms of this Agreement shall bind either Party unless amended in writing and signed by both Parties. Such waiver, consent, modification, or change if made, shall be effective only in specific instances and for the specific purposes given in the amendment. The failure of either Party to enforce any provision of this Agreement shall not constitute a waiver of that or any other provision.

COMPANY AND CUSTOMER, BY THE SIGNATURE OF THEIR RESPECTIVE AUTHORIZED REPRESENTATIVE, HEREBY ACKNOWLEDGES THAT HE OR SHE HAS READ THIS AGREEMENT, UNDERSTANDS IT AND AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS.

IN WITNESS WHEREOF, Company and Customer execute and authorize this Agreement as of the last date shown below:

**CITY OF PORTLAND**

**COMCAST OF OREGON II, Inc.**  
**an Oregon corporation**

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Name Typed or Printed

\_\_\_\_\_  
Name Typed or Printed

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

**Approved as to form:**

\_\_\_\_\_  
Business License Number

\_\_\_\_\_  
Name Typed or Printed

\_\_\_\_\_  
Office of the City Attorney

\_\_\_\_\_  
Date

**APPENDIX A**

(City of Portland standard language pertaining to all public contracts – to be provided by City Attorney and Purchasing departments.)

**EEO Certification.** Contractor shall be certified as Equal Employment Opportunity Affirmative Action Employer as prescribed by Chapter 3.100 of the Code of the City of Portland and maintain their certification throughout the term of the Contract.

**Non-Discrimination in Benefits.** Throughout the term of the Contract, Contractor shall provide and maintain benefits to its employees with domestic partners equivalent to those provided to employees with spouses as prescribed by Chapter 3.100 of the Code of the City of Portland. The required documentation must be filed with the Bureau of Purchases, City of Portland, prior to Contract execution.

**City as Additional Insured.** The insurance coverage required in this Agreement shall apply as to claims between insureds on the policy. The insurance shall be without prejudice to coverage otherwise existing. The insurance certificate shall name as additional insureds “the City of Portland, Oregon, and its officers, agents and employees.” Notwithstanding the naming of additional insureds, the insurance shall protect each additional insured in the same manner as though a separate policy had been issued to each, but nothing herein shall operate to increase the insurer's liability as set forth elsewhere in the policy beyond the amount or amounts for which the insurer would have been liable if only one person or interest had been named as insured.

**APPENDIX B****SERVICES AND RATES**

Rates and fees contained in Appendix B are effective on the effective date of Franchise Agreement.

**B.1. IRNE Distribution Network Service (IDNS).**

**B.1.1.** The monthly reoccurring costs (MRC) for IDNS per optical handoff up to 1 Gigabit rate, per site, shall be:

**B.1.1.1.** For the period Jan. 1, 2012-June 30, 2012: \$275.40;  
For the period July 1, 2012-June 30, 2013: \$298;  
For the period July 1, 2013-June 30, 2014: \$322; and  
For the period July 1, 2014-June 30, 2015: \$350.

**B.1.1.2.** For the period starting July 1, 2015, Company may annually increase the MRC for IDNS by three percent (3%) or by the Consumer Price Index for the Portland Standard Metropolitan Statistical Area, whichever is higher. Company must notify Customer of any increase no later than December 31 for an MRC increase to be effective during the following July 1 through June 30 period.

**B.1.2** For optical handoffs greater than 1 Gigabit optical handoffs, Grantee shall provide services at MRC's based on a forty percent (40%) reduction from regular commercial rates offered to customers for similar services.

**B.1.3 Minimum Number of I-Net Sites.** The IDNS rates are valid only if a minimum of two hundred (200) Customer sites are activated for IDNS. If the number of activated Customer sites is less than two hundred (200) for more than one calendar month, then the MRC under Section B.1.1 shall be increased to equal the total amount of MRC Grantee would have received for two hundred (200) activated Customer sites.

**B.2. Managed Core Network Service (MCNS).**

**B.2.1.** The monthly reoccurring cost (MRC) for Managed Core Network Service (MCNS) shall be \$920.00.

**B.2.2.** Company may annually increase the MRC for MCNS by three percent (3%) or by the Consumer Price Index for the Portland Standard Metropolitan Statistical Area,

whichever is higher. Grantee must notify Customer of any increase no later than December 31 for a MRC increase to be effective during the following July 1 through June 30 period.

**B.3. Grantee Scope of Work Included in Fees.**

**B.3.1. Network Planning.**

Work with I-Net stakeholders to assess I-Net bandwidth, service and equipment needs.

Produce plans for network growth, including designs and implementation costs.

Produce backbone capacity forecast information.

**B.3.2. Network Provisioning.**

Engineer, order, walk out, install and make ready activities for fulfillment of plans and designs to address network growth.

Process I-Net service orders.

Perform acceptance testing of the network.

Establish equipment standards with I-Net subscribers for end-user equipment.

Consult with subscribers on recommended equipment.

Provide least cost estimates for installation of I-Net facilities to sites requesting service that require new construction or other equipment placement.

**B.3.3. I-Net Service Agreement with City of Portland.**

Facilitate and fulfill I-Net services agreement between Company and City of Portland for interconnection of the I-Net to the IRNE, and related I-Net services.

**B.3.4. Performance Monitoring and Maintenance.**

Monitor network performance and alarms 24X7x365.

Perform regular preventative maintenance and testing on network.

Provide advance notices to I-Net subscribers of planned maintenance, testing and changes that may affect network interoperability.

Restore network outages, including typical occurrences and disaster recovery.

Address performance issues and repair requests, including issuance and resolution of trouble tickets.

Maintain and repair of I-Net fiber.

Maintain nodes, hub electronics and headend electronics, and other I-Net facilities.

Monitor backbone and hub traffic, and lateral connections to demarcation point.

Report on congestion of network capacity, including backbone, hubs, and through to the demarcation point.

Report on all interconnection backbone utilization and all inter-hub backbone utilization.

Reports on system operations, including network performance statistics.

Provide for the physical and signal content security of the I-Net.

**B.3.5 Subscriber Support and Administration.**

Subscriber support for I-Net services.

Billing and accounting for I-Net services and sites.

Accounting and reports for I-Net fund.

Disconnection of an I-Net service.

Any necessary insurance, bonds or indemnification.

**B.3.6 Interconnects.**

Maintain and operate established I-Net interconnects.

Maintain and operate I-Net interconnects in accordance with Franchise Agreement.

**APPENDIX C****MAINTENANCE AND OPERATIONS STANDARDS****C.1. Network Monitoring.**

**C.1.1.** Company shall provide network monitoring and reporting on all services provided under this Agreement, including any Company-owned Customer Premises equipment, 24 hours a day, 7 days a week (24 x 7 x 365).

**C.1.2.** Company shall monitor the CN and DN and the IRNE/I-Net interconnection to detect network availability for any service provided to the Customer. Network monitoring shall occur continuously (24 hours a day, 7 days a week, all days of the year (7 X 24 x 365)). Specific monitoring and reporting responsibilities of Company shall be in accordance with Section 7.2.

**C.2. Maintenance**

**C.2.1. Maintenance Window and Notification.** Company shall be responsible for the ongoing maintenance and performance of MCNS and IDNS. The Company shall perform all routine and preventive maintenance to ensure that service provided under this Agreement meets the network availability standard in Section 13.

**C.2.1.1. Planned Maintenance.** Company shall provide a minimum of seven (7) business days advance written notice to Customer of intent to perform any INET service-affecting Planned Maintenance, including the proposed date, time, sites that will be affected, and scheduled length of the maintenance. Normal Planned Maintenance hours will be between midnight and 6:00AM to minimize disruption of services. Customer shall have up to three (3) business days to notify Company if the Customer would prefer an alternate date due to undue hardship. Company will honor that date if reasonably feasible, but the final schedule is at Company's sole discretion. Customer and Company shall work cooperatively to ensure that the impact of service disruptions are minimized.

**C.2.1.2. Emergency Maintenance.** Company reserves the right to perform emergency maintenance at anytime without prior notice if such maintenance is deemed by the Company as necessary to protect



the stability of the network, and where a delay risks greater harm. Company will inform Customer immediately of Company's requirement and intent to perform emergency maintenance.

**C.2.1.3. Reports.** Company shall provide network reports after maintenance activities are completed for both Planned Maintenance and emergency activities. Reports will include the actual start time and restored service time and a description of activities performed.

**C.2.2.** Company shall notify Customer of any known Service Interruption within one (1) business day, whether or not Customer has reported the event to Company. Company shall provide network reports verifying the date and time of Service Interruption as well as the restored service time of day and date.

**C.3. Service and Repair.**

**C.3.1.** Company shall provide trouble reporting and repair service to the Customer continually and at all hours (24 x 7 x 365).

**C.3.2. Public Safety.** Public safety may require limiting access to public work sites, public facilities and public offices, sometimes without advance notice. Company shall anticipate delays in such instance and the costs associated with such delays. The Company's employees and agents shall carry sufficient identification to show by whom they are employed and display it upon request to security personnel. City project managers have discretion to require the Company's employees and agents to be escorted to and from any public work site, facility or office if national or local security appears to require it.

**C.3.3. Access to Customer Premises.** Customer shall provide Company, upon reasonable advance notice, access to Company's Distribution Network facilities (e.g. optical fiber and termination panels) at each Customer Premises. Customer shall, in accordance with its public safety procedures, provide Company, its agents, representatives, or employees, ingress and egress to Customer Premises for purposes of system performance tests, maintenance, repairs, and equipment replacement or change-outs.

**C.3.4. Response Interval.** Company shall provide trouble reporting and repair response to all known situations creating problems on the network, regardless of whether they originate within the CN or DN, or within Company owned equipment or software at the Customer Premises.

**C.3.4.1.** During regular business hours, defined herein as 7:00 a.m. to 5:00 p.m. on weekdays on which no Company holidays fall (Appendix D), appropriate Company technical support shall respond and actively begin working on network problems within thirty (30) minutes of either: 1) Company identifying such problem, or 2) Company receiving notification of a network problem from Customer via the trouble reporting procedure defined in Paragraph C.5.

**C.3.4.2.** On weekends, weekday evenings from 5:01 p.m. to 6:59 a.m., and on Company holidays (Appendix D), appropriate Company technical support shall respond and actively begin working on network problems within sixty (60) minutes of either 1) Company identifying such problem, or 2) Company receiving notification of a network problem via the trouble reporting procedure defined in Section C.5.

**C.3.4.3.** Company shall communicate with Customer's designated service contact throughout the incident via email, telephone or in person to inform Customer that the situation is being addressed.

#### **C.4. Trouble Resolution Procedure.**

##### **C.4.1. Company Network Problems.**

**C.4.1.1.** Company shall work continuously until any Network problem is resolved.

**C.4.1.2.** If dispatch of Company technical personnel to a location on the Network outside of Company's Hub is necessary, the technical personnel shall be dispatched and shall arrive on-site within two (2) hours during normal business hours (7:00 a.m. to 5:00 p.m.) and within four (4) hours on Saturdays, Sundays, Company holidays (Appendix D), and weekday evenings (5:01 p.m. to 6:59 a.m.);

**C.4.1.3.** If it is determined by the Company that the network problem exists on Company side of a DDP, and the problem has not been

resolved and the trouble ticket cleared within one (1) hour of said determination, the problem shall be escalated to a supervisory level. The supervisor shall communicate to Customer Company's new resolution plan and timelines.

#### **C.4.2. Customer Network Problems.**

- C.4.2.1.** If Company determines that Customer-owned equipment or software caused the network problem, then Company shall immediately notify Customer's network operation center.
- C.4.2.2.** If Customer is creating a problem on Company's network that causes interference or conflicts with the proper operation of Company's service to other customers, Customer shall correct the problem so that other customers are no longer affected.
- C.4.2.3.** If Customer does not correct the problem after notification by Company, Company may disconnect the affected Customer premises equipment from the IDNS until such time that the Customer equipment or software is repaired.
- C.4.2.4.** If Customer desires assistance from Company in correcting the equipment or software problem within its ability to do so, then Company shall have the option to provide such assistance, and Company shall have the option to invoice Customer, at Company's prevailing hourly rate, for the time spent correcting Customer-owned equipment or software problems.
- C.4.2.5** When Company responds to repeat requests for service problems and no problem is found on Company's side of DDP or in the Core Network, Company may charge the Customer for the service call at Company's prevailing hourly rate.

#### **C.5. Trouble Call Processing and Tracking.**

- C.5.1.** Company and Customer shall establish mechanisms and procedures for Customer to quickly and easily report system problems.
  - C.5.1.1.** Company shall have a trouble ticket system for use to track all trouble in the network, which shall provide a date and time stamp for the trouble report and a date and time stamp for the trouble resolution, a description of the trouble as reported, description of the procedures employed and a description of the trouble resolution.

- C.5.1.2.** Company shall supply a phone number to Customer for purposes of reporting trouble.
- C.5.1.3.** Customer shall receive a copy of the trouble ticket on a monthly report from Company by the 10<sup>th</sup> of the month following the reported incident.
- C.5.1.4.** In the event a trouble with the network is reported to Company, whether the trouble notification originates from Company's network monitoring activities or from the Customer, Company shall ensure that the following occurs:
  - (A) The trouble report is logged and assigned a trouble ticket and tracking number.
  - (B) A Company representative is assigned to the problem.
  - (C) Company representative works independently or with Customer to answer technical and non-technical questions.
  - (D) Customer receives accurate information on equipment utilization.
  - (E) Company has provided the necessary equipment configuration or reconfiguration.
  - (F) Company has rectified an equipment malfunction or replaced or repaired Company-provided equipment.
  - (G) Company has repaired or replaced damaged or malfunctioning network infrastructure.
  - (H) The trouble ticket is closed after the repair is completed.

**Appendix D****HOLIDAYS OBSERVED BY COMPANY**

The observation of these holidays by Company is in effect as of the commencement of this Agreement, and may vary. Upon implementing any change in such holiday observation, Company shall send written notification to Customer of such change.

New Year's Day (January 1)  
Martin Luther King Jr. Day  
Memorial Day  
Independence Day (July 4)  
Labor Day  
Thanksgiving (November 26)  
Day after Thanksgiving (November 27)  
Christmas Eve (December 24)  
Christmas Day (December 25)

## Appendix E

### Technical Description of Network

This section describes the minimum hardware/software features and configurations currently in place as of the Effective Date of this Agreement. The technical descriptions contained in Appendix E are subject to change based on any I-Net upgrades undertaken in accordance with the Franchise Agreement.

#### **E.1. Technical Description of Company I-Net Core Network Provided to Customer.**

Company agrees to work with Customer as required to implement new hardware /software features and modify configurations in order to support I-Net growth, reliability and new Customer requirements.

- Modular Chassis with hot-swappable interface modules;
- Support redundant hot-swappable supervisor modules;
- Support a minimum of an average of 64 Gigabit Ethernet ports with optics per CN switch;
- Support optic distances of LX/LH with Single Mode Fiber (SMF) (10km) and ZX with SMF (70km);
- Support redundant hot-swappable load sharing power supplies (AC and DC simultaneously);
- Support VLAN tagging based on 802.1Q;
- Support Class of Service (CoS) prioritization based on 802.1p;
- Support the following Layer 2 Spanning Tree Protocol (STP) features:
  - i. Per VLAN Spanning Tree (802.1s)
  - ii. Rapid Spanning Tree (802.1w)
  - iii. Multiple Instance STP functionality (i.e. Cisco – MISTP);
- Support Link Aggregation based on 802.3ad;
- Support IGMP Layer 2 Multicast;
- Support SNMP v1/v2; and
- Reservation of 1,500 VLANs for exclusive Customer use.

#### **E.2. Company I-Net Implementation and Provisioning.**

Section F.2. describes the protocol features and configuration to be provisioned on Company I-Net CN switches.

The Spanning Tree Protocol (or similar mechanism) shall be configured to allow Layer Two path redundancy as well as load sharing of the configured VLANs

across CN physical links, based on a mutually agreed upon VLAN implementation plan.

All CN and CDP ports shall be provisioned for 802.1Q VLAN tagging. VLAN information shall be propagated throughout the Core Network using statically defined VLANs. VLANs shall be pre-configured based on the VLAN implementation plan

To allow for applications requiring prioritization using 802.1p Class of Service (CoS) on the network, all CN and CDP ports shall be configured to honor trusted CoS bits, and perform priority queuing.

The following hardware / software configurations and protocols shall be configured, upon request from Customer, and are provided as an example of the CN configuration:

- Install a Gigabit Ethernet Layer Two switch at each Hub;
- Interconnect switches with SMF as described in this Appendix and drawing included as part of this Appendix;
- Configure CN and CDP ports for 802.1Q VLAN tagging;
- Configure CN switches with pre-defined static VLANs to allow VLAN information distribution within the CN only, at the same time allowing Customer to activate their sites with minimal or no interaction with Company;
- Configure multiple instance STP for load sharing of Customer Layer Two traffic over physical links at the configured root bridge; and
- Configure CN and CDP ports to honor CoS bit priorities which may be set at the network edge.

