



Dave DeVore
Interim TS Director

Technology Services

121 Library Court Oregon City, OR 97045

May 12, 2022

Board of County Commissioners
Clackamas County

Members of the Board:

Approval of a Service Level Agreement with the Oregon Trail School District for
dark fiber leases on the Clackamas Broadband eXchange Fiber Network

Purpose/Outcomes	Clackamas Broadband eXchange (CBX) is looking for approval to enter into a Service Level Agreement (SLA) with the Oregon Trail School District for the lease of dark fiber on the Clackamas Broadband exchange's fiber network.
Dollar Amount and Fiscal Impact	The Oregon Trail School District will pay a recurring lease fee of \$18,360.00 annually for the 6 dark fiber connections.
Funding Source	The funding source for the expansion of the CBX fiber network will be contributed from the CBX budget and then reimbursed by the Oregon Trail School District. No general funds will be utilized.
Duration	Effective upon signature by the board the initial contract is for 10 years.
Previous Board Action	Board previously approved CBX to build and maintain connections for the Oregon Trail School District in February 2012.
Strategic Plan Alignment	Direct support for County and Technology Service initiatives for: <ul style="list-style-type: none"> - Build a strong infrastructure - Build public trust through good government
Counsel Review	Andrew Naylor March 22, 2022
Procurement Review	This project was not processed through Procurement.
Contact Person	Duke Dexter, IS Project Coordinator, 503-722-6663
Contract No.	N/A

Background:

CBX is looking for approval to provide a new Service Level Agreement with the Oregon Trail School District for the lease of dark fiber on the CBX fiber network. The Oregon Trail School District is an existing customer and they are requesting to continue this service for an additional 10 years.

Recommendation:

Staff respectfully recommends approval to enter into this Service Level Agreement with the Oregon Trail School District.

Sincerely,

Dave DeVore,
Interim TS Director

Clackamas County

FIBER OPTIC SERVICE LEVEL AGREEMENT

Oregon Trail School District 62
(Customer Name)

1. Recitals

WHEREAS, Clackamas County (County) desires to provide to Oregon Trail School District 62 (Customer) the services set forth in this Agreement (the “Services”), between the specified Customer sites listed in Appendix A, and at the price contained in Appendix A; and

WHEREAS, Customer desires to use the Services; and

WHEREAS, the Parties desire to set forth herein their respective rights and obligations with respect to the provision of Services,

NOW, THEREFORE, in consideration of the foregoing, and the mutual covenants and promises set forth herein, intending to be legally bound, the Parties agree as follows.

2. Fiber Optic Network Description

County will provide Customer with point-to-point single mode fiber optic network connectivity, including a termination panel for the fiber optic cables, at each Customer site on a path designated by the County.

3. Service Description

Services provided to Customer by County are physical connectivity of one (or more) strands of optical fiber (“Fiber”), between sites specifically identified in Appendix A for the exclusive use of the Customer’s internal communication needs. Each site listed in Appendix A will have a single mode fiber termination. The Fiber is and shall remain property of the County.

4. Construction and Installation Requirements

- a. County, when installing Fiber on the property of Customer, shall do so in a neat and professional manner. Routing and location of these cables shall be mutually agreed upon between the parties.
- b. Customer shall secure any easements, leases, permits or other agreements necessary to allow County to use existing pathways to, into and within each site to the demarcation point for service. Customer shall provide a path for the Fiber from the point of entry into the site to the termination panel that complies with all applicable building, electrical, fire and related codes.
- c. Subject to the terms of this Agreement, and at no cost to County, Customer shall

provide adequate environmentally controlled space and electricity required for installation, operation, and maintenance of the Fiber used to provision the service within each site.

- d. Customer shall provide a clean, secure, relatively dry and cool location (consistent with environmental requirements for fiber optic network connectivity equipment) at each of its sites for necessary equipment, as determined by the County in its sole discretion.
- e. Customer will provide or arrange for County and its employees, agents, lessees, officers and its authorized vendors, upon reasonable notice, to have ingress and egress into and out of Customer properties and buildings in connection with the provision of Service.
- f. If the presence of asbestos or other hazardous materials exists or is detected, Customer must have such hazardous materials removed immediately at Customer's expense or notify County to install the applicable portion of the Fiber in areas of the site that do not contain hazardous material. Any additional expense incurred as a result of encountering hazardous materials, including but not limited to any additional equipment that may be required, shall be paid by Customer.
- g. County has no obligation to install, operate, or maintain Customer-provided facilities or equipment.
- h. County shall construct Fiber into each Customer building enumerated herein; splice fiber into existing County fiber optic resources; terminate County's optical fiber in each Customer building; test and certify appropriate Fiber performance at each Customer location; and provide the appropriate fiber patch panel ("hand-off's") at each location for Customer utilization. Test results for physical connection will be made available to Customer upon request.

5. Term of Agreement

Upon completion of installation and connection of the necessary facilities and equipment to provide service herein, County shall then certify and notify Customer in writing that the service is available for use, and the date of such notice shall be called the "Service Start Date." Unless terminated as herein provided, this Agreement shall continue for a period of ten (10) years following the Service Start Date.

6. Rates

In return for County providing the Services described in Appendix A for the term indicated herein, Customer shall pay County both nonrecurring construction/installation charges and recurring charges for Services described in Appendix A, as amended from time to time.

7. Payment

a. Payments for Nonrecurring Charges

For payment of nonrecurring charges described in Appendix A, County shall provide an invoice after completion of the construction and installation of the Fiber. Customer shall pay the invoice for the nonrecurring charges within thirty (30) days of receipt of the invoice. Interest charges shall be assessed for late payments in accordance with Appendix A. Failure of Customer to pay within thirty (30) days of receipt of an invoice shall constitute an event of default and County may pursue any remedies provided in this Agreement including, but not limited to, terminating the Agreement upon appropriate advance written notice to Customer.

b. Annual Payments for Recurring Charges

For payment of recurring charges described in Appendix A, County shall provide an invoice for six months of service (July 1 through June 30), or prorated weekly for any portion thereof, to Customer at the beginning of the service period. The semiannual charge shall be payable within thirty (30) days of receipt of invoice. Interest charges shall be assessed for late payments in accordance with Appendix A. Failure of Customer to pay within thirty (30) days of receipt of an invoice shall constitute an event of default and County may pursue any remedies provided in this Agreement including, but not limited to, terminating the Agreement upon appropriate advance written notice to Customer.

8. Fiber Maintenance

County shall maintain the structural aspects of the Fiber in good operating condition, utilizing commercially reasonable practices in accordance with Appendix B, throughout the Agreement Term. In the event the Fiber fails at any time to meet the specifications outlined in Appendix C, County shall endeavor to restore the Fiber to meet the specification standards in as timely and expedited a manner as reasonably possible.

County may subcontract for testing, maintenance, repair, restoration, relocation, or other operational and technical services it is obligated to provide hereunder.

Customer shall promptly notify County of any matters pertaining to any damage or impending damage to or loss of the use of the Fiber that are known to it and that could reasonably be expected to adversely affect the Fiber. County shall promptly notify Customer of any matters pertaining to any damage or impending damage to or loss of the Fiber that are known to it and that could reasonably be expected to adversely affect the Fiber and/or Customer's use thereof.

9. Confidentiality

All Customer data, voice, or video transmission using County Fiber shall be treated by County as confidential information, to the extent allowable by law. Customer expressly acknowledges and agrees that County's confidentiality obligations under this Agreement are subject to, and only enforceable to the extent permitted by, the Oregon Public Records Law, Oregon Revised Statutes ("ORS") Chapter 192 *et. seq.*, and any other applicable state or federal law

10. 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 Fiber.

11. Assignment and Successors

Either party may assign this Agreement upon prior written consent of the other party. Such consent shall not be unreasonably withheld. Upon such assignment, all rights and obligations of County and Customer under this Agreement shall pass in total without modification to any successor(s) regardless of the manner in which the succession may occur.

12. Damage

County shall be responsible for restoring, or otherwise repairing to its prior condition, any portion of the Customer's premises or facilities, which are damaged by the negligent acts or omissions of County. Customer shall be responsible for restoring, or otherwise repairing to its prior condition, any portion of County's connectivity equipment or other facilities, located at Customer premises, which are damaged by Customer or its agents.

Customer will reimburse all related Costs associated with damage to the Fiber caused by the acts or omissions of Customer, its affiliates, employees, agents, contractors or customers. As used herein, "Costs" includes the following: (a) labor costs, including wages, salaries, and benefits together with overhead allocable to such labor costs; and (b) other direct costs and out-of-pocket expenses on a pass-through basis (such as equipment, materials, supplies, contract services, sales, use or similar taxes, etc.).

13. Force Majeure

Neither party hereto shall be deemed to be in default of any provision of this Agreement, for any failure in performance resulting from acts or events beyond the reasonable control of such party. For purposes of this Agreement, such acts shall include, but shall not be limited to, acts of nature, civil or military authority, civil disturbance, war, strikes, fires, power failure, other catastrophes or other force majeure events beyond the parties' reasonable control, provided however that the provisions of this paragraph and article shall not preclude Customer from cancelling or terminating this Agreement as otherwise permitted hereunder, regardless of any force majeure event occurring to County.

14. Consequential Damages

NOTWITHSTANDING ANY PROVISION OF THIS AGREEMENT TO THE CONTRARY, IN NO EVENT SHALL EITHER PARTY BE LIABLE TO THE OTHER PARTY FOR ANY SPECIAL, INCIDENTAL, INDIRECT, CONSEQUENTIAL, OR PUNITIVE DAMAGES, WHETHER FORSEEABLE OR NOT, ARISING OUT OF, OR

INCONNECTION WITH, TRANSMISSION INTERRUPTIONS OR DEGRADATION, INCLUDING BUT NOT LIMITED TO DAMAGE OR LOSS OF PROFITS OR EQUIPMENT, LOSS OF PROFITS OR REVENUE, COST OF CAPITAL, COST OF REPLACEMENT SERVICES OR CLAIMS OF CUSTOMERS, WHETHER OCCASIONED BY ANY REPAIR OR MAINTENANCE PERFORMED BY OR FAILED TO BE PERFORMED BY A PARTY, OR ANY OTHER CAUSE WHATSOEVER, INCLUDING WITHOUT LIMITATION BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE OR STRICT LIABILITY.

15. Public Contracting Provisions

The provisions of Oregon public contracting law, ORS 279B.020 through 279B.235, to the extent applicable, are incorporated herein by this reference.

16. Non-Appropriation or Change in Law

Notwithstanding any other provisions of this Agreement, the parties hereby agree and understand that if County fails to receive expenditure authority sufficient to allow the County, in the exercise of its reasonable administrative discretion, to perform under this Agreement, or if federal or state laws, regulations or guidelines are modified or interpreted in such a way that County is prohibited from performing under this Agreement, the Agreement shall terminate and Customer shall pay County any remaining pro rata fees for services due to the date of such termination payable pursuant to Section 7 of this Agreement.

17. Compliance with Laws

Customer shall comply with all applicable federal, state, county and city laws, ordinances and regulations, including regulations of any administrative agency thereof, heretofore or hereafter adopted or established, during the entire term of this Agreement.

18. Taxes and Assessments

- a. Customer agrees to pay any and all applicable national, federal, state, county and local taxes, fees, assessments or surcharges, and all other similar or related charges, which are imposed or levied on the Fiber, or because of Customers use of the Services under this Agreement (collectively, "Taxes), whether or not the Taxes are imposed or levied directly on the Customer, or imposed or levied on the County because of or arising out of the use of the Services either by the Customer, or its affiliates, or anyone to whom Customer has sold or otherwise granted access to the Services. Customer agrees to pay these Taxes in addition to all other fees and charges as set forth elsewhere in this Agreement.
- b. "Taxes" include, but are not limited to, business and occupation, commercial, district, excise, franchise fee, gross receipts, license, occupational, privilege, property, Public Utility Commission, right-of-ways, utility user, or other similar taxes, fees surcharges and assessments as may be levied against Customer, or against County and passed through to Customer.

19. Termination

- a. Either party may terminate this Agreement for convenience following 90 day's written notice to the other party.
- b. Pursuant to Section 20 of this Agreement, either party may terminate this Agreement in the event of default of the Agreement by the other party. Neither the County nor the Customer shall be deemed to have waived any breach of this Agreement by the other party except by an express waiver in writing. An express written waiver as to one breach shall not be deemed a waiver of any other breach not expressly identified, even though the other breach is of the same nature as that waived.
- c. If Customer terminates this Agreement for any reason other than County's default or failure to perform, County shall be entitled to 5% of the remaining contract amount for the unexpired term of this Agreement.

20. Default

1. Either of the following events shall constitute a default:
 - a. Failure to perform or comply with any material obligation or condition of this Agreement; or
 - b. Failure to pay any sums due under this Agreement.
2. Any defaulting party shall have thirty (30) days in which to cure following written notice of default by the non-defaulting party.

21. Remedies

If this Agreement is terminated by the County due to a breach by the Customer, then the County shall have any remedy available to it in law or equity. If this Agreement is terminated for any other reason, Customer's sole remedy is reimbursement of the pro rata amounts paid to County on the unexpired term of this Agreement, less any setoff to which the County is entitled.

22. Amendment

Any amendments to this Agreement shall be in writing and shall be signed by all parties.

23. No recourse Against the County

Customer shall have no recourse whatsoever against County or its officials, boards, commissions, or employees for any loss, costs, expense, or damage arising out of any provision or requirement contained herein, or in the event this Agreement or any part thereof is determined to be invalid.

24. Notice

Any notice hereunder shall be in writing and shall be delivered by personal service or by United States certified or registered mail, with postage prepaid, or by electronic mail as follows:

Notice to the County

Manager, Clackamas Broadband Express
Clackamas County Technology Services
121 Library Court
Oregon City, Oregon 97045
ddexter@clackamas.us
Fax Number (503) 655-8255

with a copy to

Chief Information Officer
Clackamas County Technology Services
121 Library Court
Oregon City, Oregon 97045
cbxinfo@co.clackamas.or.us
Fax Number: (503) 655-8255

Notice to the Customer

Oregon Trail School District 62
Scott Coleman
PO Box 547
Sandy, OR 97055
Scott.coleman@ortrail.k12.or.us
(503) 668-5541

With a copy to

Oregon Trail School District 62
Tim Belanger
PO Box 547
Sandy, OR 97055
Timothy.belanger@ortrail.k12.or.us

Either Party, by similar written notice, may change the address to which notices shall be sent.

25. Debt Limitations

This Agreement is expressly subject to the debt limitation of Oregon counties set forth in Article XI, Section 10, of the Oregon Constitution, and County's performance is

contingent upon funds being appropriated therefore. Any provisions herein which would conflict with law are deemed inoperative to that extent.

26. No Attorney Fees

No attorney fees shall be paid for or awarded to either party in the course of any dispute or other recovery under this Agreement. It is the intent of the parties that each shall bear the costs of its own legal counsel.

27. Governing Law

This Agreement shall be governed and construed in accordance with the laws of the State of Oregon without regard to principles of conflicts of law. Any claim, action, or suit between County and Customer that arises out of or relates to the performance of this Agreement shall be brought and conducted solely and exclusively within the Circuit Court for Clackamas County, for the State of Oregon. Provided, however, that if any such claim, action, or suit must be brought in a federal forum, it shall be brought and conducted solely and exclusively within the United States District Court for the District of Oregon.

28. Survival

All rights and obligations shall cease upon termination or expiration of this Agreement, except for the rights and obligations set forth in Sections 9, 12, 14, 21, 23, 25, 26, 27, and 28, and all other rights and obligations which by their context are intended to survive.

29. Severability

If any term or provision of this Agreement is declared by a court of competent jurisdiction to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Agreement did not contain the particular term or provision held to be invalid.

30. Whole Contract

THIS CONTRACT CONSTITUTES THE COMPLETE AND EXCLUSIVE STATEMENT OF THE CONTRACT BETWEEN THE PARTIES RELEVANT TO THE PURPOSE DESCRIBED HEREIN AND SUPERSEDES ALL PRIOR AGREEMENTS OF PROPOSALS, ORAL OR WRITTEN, AND ALL OTHER COMMUNICATION BETWEEN THE PARTIES RELATING TO THE SUBJECT MATTER OF THIS CONTRACT. NO WAIVER, CONSENT, MODIFICATION, OR CHANGE OF TERMS OF THIS CONTRACT WILL BE BINDING ON EITHER PARTY EXCEPT AS A WRITTEN ADDENDUM SIGNED BY AUTHORIZED AGENTS OF BOTH PARTIES.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the date and year first above written.

Clackamas County

By (signature): _____

Name: _____

Title: _____

Date: _____

Customer

Oregon Trail School District 62
(Customer Name)

By (signature): 

Name (print): Timothy Belanger

Title: Business Director

Date: 5-3-2022

APPENDIX A

SERVICE AND RATE SCHEDULE

1. Specified Services and Rates

The following are the sites, services, and rates agreed to by County and Customer at which Customer shall be provided services on the fiber optic network during the term of the Agreement. It is understood by both parties that service to these sites shall be provided for the rates below, subject to any rate increases otherwise applicable in accordance with terms herein. It is further understood that, during the term of the Agreement, Customer may add services to existing or new locations, or change services and/or locations, but that such changes are subject to the rates for such additional services.

2. Construction, Installation and Activation

For construction, installation and activation work and provision of fiber optic network components, the County shall charge Customer nonrecurring charge(s) as specified in Section 5 of Appendix A. All facilities constructed under this Agreement and Appendix A shall be owned, operated, and maintained by the County.

3. Service Changes and Conversions

Both parties agree that Customer may add or change services during the term of the Agreement, but that such changes are subject to applicable rates, and upgrade and downgrade charges.

4. Annual Recurring Charges

	From (Connecting Point A:Site Name & Address)	To (Connecting Point B:Site Name & Address)	Service	Monthly Rate (\$)
1	Sandy High School 37400 Bell St Sandy, OR 97055	Clackamas ESD 13455SE 97 th Ave Clackamas, OR 97015	One dark fiber	\$255.00
2	Sandy High School 37400 Bell St Sandy, OR 97055	Boring Middle School 27801 SE Dee St Boring, OR 97009	One dark fiber	\$255.00
3	Sandy High School 37400 Bell St Sandy, OR 97055	Oregon Trail District Office 36525 SE Industrial Way Sandy, OR 97055	One dark fiber	\$255.00
4	Sandy High School 37400 Bell St Sandy, OR 97055	Kelso Elementary 34651 SE Kelso Rd Boring, OR 97009	One dark fiber	\$255.00
5	Sandy High School 37400 Bell St Sandy, OR 97055	Firwood Elementary 42900 SE Trubel Rd Sandy, OR 97055	One dark fiber	\$255.00

6	Sandy High School 37400 Bell St Sandy, OR 97055	Welches Elementary 24903 E Salmon River Rd Welches, OR 97067	One dark fiber	\$255.00
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5. Nonrecurring Charges

	From (Connecting Point A:Site Name & Address)	To (Connecting Point B:Site Name & Address)	Service	Amount (\$)
1	Sandy High School 37400 Bell St Sandy, OR 97055	Clackamas ESD 13455SE 97 th Ave Clackamas, OR 97015	Construction	\$0.00
2	Sandy High School 37400 Bell St Sandy, OR 97055	Boring Middle School 27801 SE Dee St Boring, OR 97009	Construction	\$0.00
3	Sandy High School 37400 Bell St Sandy, OR 97055	Oregon Trail District Office 36525 SE Industrial Way Sandy, OR 97055	Construction	\$0.00
4	Sandy High School 37400 Bell St Sandy, OR 97055	Kelso Elementary 34651 SE Kelso Rd Boring, OR 97009	Construction	\$0.00
5	Sandy High School 37400 Bell St Sandy, OR 97055	Firwood Elementary 42900 SE Trubel Rd Sandy, OR 97055	Construction	\$0.00
6	Sandy High School 37400 Bell St Sandy, OR 97055	Welches Elementary 24903 E Salmon River Rd Welches, OR 97067	Construction	\$0.00

6. Late Payment Interest

Customer will be charged interest for any payment made after its due date (thirty (30) days after receipt of invoice). Interest is charged at a rate of one and a half percent (1.5%) per month, or eighteen percent (18%) annually, or the highest rate allowable in accordance with applicable law, whichever is less, on any installment not paid when due.

7. Annual Consumer Price Index (CPI) Adjustments

All fees and minimum charges are subject to Consumer Price Index (CPI) adjustments, to be applied annually. The amount of the fees and charges specified herein may increase annually by a percentage up to the change in the West Region (West City Size B/C 2.5 Million or less) Consumer Price Index of the US Dept. of Labor, Bureau of Labor Statistics (<https://www.bls.gov/regions/west/data/xg-tables/ro9xg01.htm>), based upon the rate of change as stated from the last month reported to the same month of the preceding year. In the event such Consumer Price Index (or a successor or substitute index) is not available, a reliable governmental or other nonpartisan publication evaluating the information theretofore used in determining the Consumer Price Index shall be used in lieu of such Consumer Price Index.

APPENDIX B

MAINTENANCE AND OPERATIONS SPECIFICATIONS AND PROCEDURES

1. Defined Terms

- a. “Routine Maintenance” is all preventive maintenance activities and repairs.
- b. “Non-Routine Maintenance” is all efforts and activities in response to an emergency circumstance which requires restoration of service.

2. General

- a. County shall operate and maintain a Network Control and Management Center (NCAM) staffed twenty-four (24) hours a day, seven (7) days a week, by trained and qualified personnel. County shall maintain (503) 742-4219 telephone number to contact personnel and NCAM. County’s NCAM personnel shall dispatch maintenance and repair personnel along the fiber optic network to repair problems detected through the NCAM’s remote surveillance equipment, by the Customer, or otherwise.
- b. In the event Customer identifies a circumstance which requires restoration of service, Customer shall provide NCAM personnel the name and address of the facility with the problem, the identification number of the Fiber circuits in question, and the name and telephone numbers of Customer’s personnel to contact for site access and status updates. NCAM personnel shall immediately contact a County technician and provide the Customer contact information. County technician shall contact Customer within one (1) hour of initial call.
- c. If the County’s technician cannot repair the service interruption by telephone, County shall use commercially reasonable efforts to have its first maintenance employee or contractor at the site requiring repair within five (5) hours of the initial call to the NCAM. County will then work continuously until service has been restored.
- d. County shall use commercially reasonable efforts to notify Customer seven (7) days prior to the date of any planned non-emergency maintenance activity. In the event that a County planned activity is canceled or delayed for any reason as previously notified, County shall notify Customer as soon as reasonably possible and will comply with the provisions of the previous sentence to reschedule any delayed activity.

3. Fiber Optic Network

- a. County shall maintain the fiber optic network in good and operable condition and shall repair the fiber in a manner consistent with industry standards and using commercially reasonable efforts.
- b. County shall perform appropriate routine maintenance on the fiber optic network in accordance with County's then current preventive maintenance procedures. County's maintenance procedures shall not substantially deviate from industry practice.

4. Restoration

- a. When restoring damaged fiber, the Parties agree to work together to restore all traffic as quickly as possible. County, immediately upon arriving on the site of the damage, shall determine the best course of action to be taken to restore the fiber and shall begin restoration efforts.
- b. It will be the responsibility of County and Customer to report to one another respectively any known environmental hazards which would restrict or jeopardize any maintenance work activities in shelters or right of way areas of operation.
- c. Upon notification of interruption of fiber optic network service, disrepair, impairment or other need for repair or restoration of the fiber and the location of the damaged fiber, County shall pursue commercially reasonable efforts to mobilize technicians to achieve necessary repair or restoration, including, but without limitation, having maintenance personnel at the affected site within five (5) hours after receipt of such notice with the required restoration material and equipment.
- d. In the event that Customer's use of the fiber optic network is interrupted due to an occurrence of a force majeure event, repairs and restoration shall be made as expeditiously as reasonably possible. Customer recognizes that five (5) hour response time represents optimal conditions, and may be impossible to achieve when emergency restoration of fiber optic network integrity is required or when responding to certain remote locations. Actual response times will be influenced by such factors as terrain, weather conditions present at the time the request is made and actual mileage to the fault site.
- e. For purposes of this section, "commercially reasonable efforts" means activities and performances consistent with prudent utility practice, existing contract provisions for County technicians and/or employees, practices required for preserving the integrity of the fiber optic network, and response times that do not jeopardize the health and safety of the employees, contractors and agents of County and Customer.

5. Customer shall be responsible for paying County standard maintenance fees for

any calls to County for maintenance issues related to the Fiber that County later confirms as resulting from another source other than functionality of the Fibers.

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APPENDIX C

FIBER SPLICING AND TESTING STANDARDS AND PROCEDURES

1. Fiber and Connector Standards

a. **Connector Standards**

The loss value of any pigtail connector and any associated fiber jumper or pigtail with matching mode field diameters will not exceed .5dB at 1550 nm. The loss value of a connector and its associated jumper with mismatched mode field diameters should not exceed .8 dB.

b. **Field Splice Standards**

The objective for each splice is an averaged loss value of 0.1 dB or less when measured bi-directionally with an OTDR at 1550 nm. In the event of damage and subsequent restoration of the Fibers, commercially reasonable efforts will be made to restore the Fibers to this standard. If after 3 restoration splicing attempts, County is not able to produce a loss value of 0.1 dB or less bi-directionally at 1550 nm, then 0.5 dB or less bi-directionally at 1550 nm will be acceptable. Fibers not meeting the 0.1 dB or less specification will be identified as Out Of Specification (OOS). Documentation of the three attempts (re-burns) to bring the OOS fiber within specification will be provided.

c. **Span Loss**

It is County's responsibility to insure proper continuity of all fibers at the fiber level, not just the pigtail level. Any "frogs" or fibers that cross in the route will be remedied by County. The following span loss calculation will be used:

$$(A * L) + (0.1 * N) + C = \text{Acceptable Span Loss}$$

A = Attenuation per KM at 1550 nm

L = Optical length of cable measured in kilometers (from OTDR Trace)

N = Number of splices in a span

C = Connector loss. The connector loss will not exceed .5dB. The section test will have (2) pigtail connectors/splices under test, so 1.0dB will be allowed for this loss.

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