



Home of the Tualatin River National Wildlife Refuge

Resolution No. 2002-010

A RESOLUTION AUTHORIZING THE CITY MANAGER TO ENTER INTO AN AGREEMENT WITH TCI OF TUALATIN VALLEY, INC. FOR INSTITUTIONAL NETWORK SERVICES FOR THE CITY OF SHERWOOD.

WHEREAS, the City requires connection for it's on-line computer services for City Hall and Library, and;

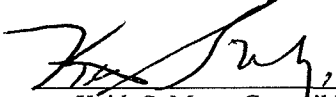
WHEREAS, the City has a franchise agreement in place with AT & T to provide these services throughout the City; and

WHEREAS, AT & T uses TCI of Tualatin Valley, Inc. as their contracting entity,

NOW, THEREFORE, THE CITY RESOLVES AS FOLLOWS:

The City Manager is authorized to enter into the attached Contract with TCI of Tualatin Valley, to provide network access for the Library and City Hall.

Duly passed by the City Council this 9th day of April, 2002.



Keith S. Mays, Council President

ATTEST:



C.L. Wiley, Recorder

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CITY OF SHERWOOD

TCI of Tualatin Valley, Inc.
AGREEMENT
TO PROVIDE INSTITUTIONAL NETWORK SERVICES
FOR
THE CITY OF SHERWOOD
COMMENCING JULY 1, 2000

1. Purpose

This Agreement is made this ____ day of _____, 2002, by and between TCI of Tualatin Valley, Inc. (hereinafter Company) and the City of Sherwood (hereinafter Customer) for the provision of communications transport services on the Sherwood Institutional Network (hereinafter I-Net), a service requirement of the Franchise between the City of Sherwood (hereinafter City) and the Company, as hereinafter defined in Appendices B and/or C, in a manner as provided for in Appendix A. This Agreement implements and is an integral part of the Franchise ("Franchise"), which is intended by the parties to be the controlling Agreement. Company is the owner and operator of the I-Net.

2. Background

During the term of this Agreement, Company will be upgrading the I-Net from a "hybrid fiber-coaxial" system ("HFC I-Net") to an all-fiber I-Net system ("Upgraded I-Net"). During this transition, all Customer's I-Net connection sites will be converted to the Upgraded I-Net in 2002. As I-Net sites are converted to the Upgraded I-Net, Company will provide Customer with connectivity over an all optical fiber network, including Company-owned interface equipment at each Customer premise. During the transition, Company will provide "mirrored" networks, with sections of the HFC I-Net and Upgraded I-Net operating concurrently, so that Customer's applications will operate continually over the network. All provisions herein referring to the HFC I-Net apply to requirements that will be in place while the Customer site is on the HFC I-Net, and only until Company replaces such connectivity at that site with connectivity on the Upgraded I-Net.

3. Term of Agreement

The Initial Term of the Agreement shall be for twenty-four (24) months, , beginning on July 1, 2000, and ending on June 30, 2002.

4. Lines of Demarcation

While Sites Are Served by the HFC I-Net

Company shall initially provide coaxial network cabling to a specified line of demarcation ("Demarc") at Customer premise. That Demarc shall consist of an RF connection within each premise of Customer, at which point Company shall connect the HFC I-Net to Customer's RF connectivity equipment. All equipment and cabling from the Demarc to any equipment at Customer's premise shall be the responsibility of Customer.

For Sites Served by the Upgraded I-Net

When Company begins serving any or all Customer site(s) with the all-fiber, Upgraded I-Net, Company will provide optical fiber network cabling to Company-owned-and-provided optonics network access equipment at Customer Premise. The Upgraded I-Net Demarc at the premise shall consist of a multimode or copper port(s), providing the services specified herein, on the Customer side of the Company-provided optonics device. All equipment and cabling from the Demarc to any equipment at Customer's premise shall be the responsibility of Customer. See Connection and Operating Standards for Upgraded I-Net in Appendix C.

Company's Headend

For any RF-based I-Net services on the HFC I-Net, specialized network reference, frequency translation, and/or switching equipment shall reside at Company's Headend (central network facility).

Company shall provide and be responsible for such equipment at Company's Headend. Headend equipment may be accessed, on an ongoing basis, by Customer electronically through the network. Company shall provide Customer with a Web-based interface for network transport usage statistics. Upon request by Customer, as resources permit, Company shall provide Customer with statistics on such criteria as port and frame errors, or other statistics specific to Customer's I-Net utilization.

5. Technical Requirements

Technical requirements and network availability standards are explained in Appendices “B” and “C” herein.

When Company activates a new service at a Customer premises, such service shall not be deemed to be certified, and therefore shall not be billable, until Customer has signed a document stating that such new service is certified, in accordance with the standards and provisions of the Cable Services Agreement.

6. Construction Requirements

Company, when installing cable on the property of Customer, shall do so in a neat and professional workmanlike manner. Routing and location of optical and/or coaxial cables shall be mutually agreed upon between the parties.

7. Signal Carriage (HFC I-Net)

On the HFC I-Net, Customer shall transmit and receive communications only on those frequencies enumerated in Appendix A, as designated by Company. Neither Company nor Customer shall permanently alter the assigned frequencies without the written consent of the other party.

8. Networking Equipment at Customer Premises

Customer-Owned Equipment

At Customer sites, Customer shall be responsible for all equipment on Customer side of the Demarcation Point. The Demarcation Point shall be defined as the point of connection between customer-owned premise equipment and Company-owned electronic and/or fiber/coaxial infrastructure. No equipment which will be used to transmit and/or receive signals on the I-Net shall be connected to on the Company’s side of the Demarcation Point except by Company or its designee. On the HFC I-Net, Customer may replace equipment on Customer side of the Demarcation Point, unless that equipment would generate an RF carrier(s) onto the I-Net, in which case prior written approval by Company shall be required. Such approval shall not be unreasonably withheld. The execution of this Agreement shall constitute approval for equipment as indicated in Appendix A. Customer shall observe the technical requirements in Appendix B in the installation and operation of equipment and wiring connected to the I-Net from the Demarc.

HFC I-Net Data Customers Only - Company shall consider Customer requests to utilize alternative, RF-based equipment, operating up to 40 Mbps on forward frequencies, provided that:

- (1) Company is convinced that such equipment does not jeopardize the integrity and reliability of the I-Net to any customer;
- (2) Customer agrees to purchase and be responsible for the maintenance of any and all premise and Headend equipment associated with the alternative, RF-based strategy;
- (3) The alternative equipment can be accommodated in the allotted frequencies for the Customer's application;
- (4) If there are other Public Agencies sharing the same pair of RF frequencies, they all agree to adopt the common new hardware, software, and configuration; and
- (5) Company and Customer(ies) sign a written agreement adopting the new RF equipment strategy to replace the "legacy" one in place on the frequencies they occupy.

Company-Owned Equipment (Upgraded I-Net Only)

Customer shall provide clean source of 110 VAC power for Company-provided network electronics/optonics, as well as a clean, secure, relatively dry and cool location (consistent with environmental requirements for most network connectivity equipment) at each premise for such equipment.

9. Customer Premise Wiring

With respect to the HFC I-Net, Customer shall be responsible for assuring that any internal RF wiring and connectors beyond the Demarc meet or exceed those specified in Appendix B. All customer premise wiring on Customer side of the Demarc shall be the responsibility of Customer.

10. Rates

- a. Customer shall pay Company rates for services as specified in Appendix A.
- b. Any rate increases or decreases permissible in the Cable Communications Franchise with the City, and opted for by Company shall be passed through to Customer as they become effective.

11. Payments

Company shall mail an invoice 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 calendar month after the service is provided, said invoice has not been paid. Payments after the fifth day of the calendar month after the service is provided shall be assessed an interest charge at an annual rate of current prime plus two percent (2%), but not less than twelve percent (12%) APR for the time the payment is in arrears. Failure of the Customer to pay within sixty (60) days of receipt of an invoice shall constitute grounds for Company to terminate the Agreement.

12. Service Changes and Conversions

The following charges for service changes and conversions are *not* applicable to changes from services on the HFC I-Net to services on the Upgraded I-Net, but they are relevant to the services intended and identified herein for Customer connectivity subsequent to Customer sites' transition to the Upgraded I-Net.

Upgrades and Downgrades

If, during the term of this Agreement, Customer opts to upgrade or downgrade service, *within the same transport technology (Gigabit Ethernet or ATM) identified herein*, Company shall charge Customer the following non-recurring upgrade or downgrade charges:

For a single upgrade (e.g.: T1 to 10 Mbps) \$250.00 per site

For a single downgrade (e.g.: 100 Mbps to 10 Mbps) \$250.00 per site

Transport Conversions

If, during the term of this Agreement, Customer opts to change the transport technology Company provides (for example, from ATM to Gigabit Ethernet or vice-versa), Company shall charge Customer the following non-recurring conversion charge:

For a single conversion (e.g.: Gigabit Ethernet to ATM) \$1,000.00 per site

13. Interruptions and Liquidated Damages

In its provision of the services detailed herein, Company agrees to comply with the service and performance standards in Attachment A of the Franchise between the City of Sherwood (Customer) and TCI of Tualatin Valley, Inc. (Company).

14. Trouble Calls and Maintenance

Demand Maintenance/Service and Repair - Response to network problems shall occur at all hours (24 x 365) and as outlined under Attachment 11.2 A of the Franchise. If Company is to provide maintenance/service or repair on network facilities located within Customer premises, Company must have reasonable access to such facilities on a 24/365 basis. This shall include response to all situations creating problems on the network, regardless of whether they originate within the network or within equipment or software at the user site. Appropriate Company technical support shall respond and actively begin working on network problems within 30 minutes of either 1) Company identifying such problem or 2) Company receiving a call from Customer reporting a network problem. Company shall place a phone call to Customer's designated service contact to inform Customer that the situation is being addressed. Company shall work continuously until the problem is resolved. If it is determined by Company that the network problem is caused by user equipment or software, then Customer shall correct the problem such that other I-Net users are no longer affected. If Customer does not correct the problem, then Company may disconnect the affected Customer site from the I-Net until such time that the user equipment or software is repaired. If Customer desires assistance from Company in correcting the equipment or software problem, then Company shall provide such assistance, but Company shall also have the right to invoice Customer, at a mutually agreed to prevailing hourly rate for the time spent correcting Customer equipment or software problems.

15. Confidentiality

All Customer data, voice, or video transmission using Company I-Net network 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.

16. Content Control and Privacy

Customer shall have full and complete control of, and responsibility and liability for, the content sent or received using the leased facilities. In addition, Customer shall not intentionally utilize I-Net frequencies other than those assigned to Customer (see Appendix A), 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.

17. 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.

18. Assignment

Consistent with the Franchise, either party may assign this Agreement upon prior written consent of the other party. Such consent shall not be unreasonably withheld. Upon the transfer of ownership or control of the Franchise, Customer shall give sixty (60) days written notice to Company to terminate this Agreement without incurring a financial penalty. Customer, upon termination, shall pay Company the pro-rata amount due for services through the date of termination.

19. Damage

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

20. Force Majeure

Neither party hereto shall be deemed to be in default of any provision of the 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 not be limited to, acts of nature, civil or military authority, civil disturbance, war, strikes, fires, 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 canceling or terminating this Agreement as otherwise permitted hereunder, regardless of any force majeure event occurring to Company.

21. Liability

Each party shall be liable for any negligent acts or omissions committed by its agents or employees in performing this Agreement.

22. Insurance

Company shall maintain, throughout the term of this Agreement, liability insurance insuring the Company, its officers, agents and employees, with regard to all claims, damages and penalties indicated in Section 5.1 of the City of Sherwood Cable Communications Franchise.

23. Successors

Upon a permitted assignment or transfer under Section 17 of the Franchise, and the other relevant provisions of this service 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.

24. Non-Appropriation

Notwithstanding any other provisions of this Agreement, the parties hereby agree and understand that any obligation of Customer to obtain services as provided herein is subject to fund availability and appropriation by Customer for such services through its adoption of an annual budget. Should funds not be appropriated or be available from Customer during the term of this Agreement, the Agreement shall terminate and Customer shall pay Company any remaining pro-rata fees for services due to the date of such termination. When and if such funding is restored to Customer in order to procure the services indicated herein,

or similar communications services, Customer shall provide Company at least an equal opportunity to provide the services indicated herein that Customer might provide another provider(s) of the same or similar services at the same time.

25. Non-Discrimination

Company shall not deny service, deny access, or otherwise discriminate against Customer on the basis of race, color, religion, national origin, sex or age. Company shall strictly adhere to the equal employment opportunity requirements of the federal government, as expressed in Section 76.13 (a) (8) and 76.311 of Chapter 1 of Title 47 of the Code of Federal Regulations, as now or hereafter constituted. Company shall comply at all times with all other applicable federal, state, or city laws, rules or regulations relating to non-discrimination.

26. Termination

Except as provided in Section 3 of this Agreement, this Agreement shall terminate thirty (30) days following written notice by either party.

- a. In the event Customer terminates this Agreement based upon Company's default or failure to perform as described in this Agreement, Company shall reimburse to Customer the pro rata amounts paid on the unexpired rate year of this Agreement.
- b. If Customer terminates this Agreement for any reason other than that based on non-appropriation or on Company's default or failure to perform, Company shall be entitled to a penalty of 5% of the pro rata amount of the unexpired rate year of this Agreement.

27. Amendment

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

28. Default

Each of the following events shall constitute a default:

1. Failure to perform or comply with any material obligation or condition of this Agreement by any party.

2. Failure to pay any sums due under this Agreement.
3. Any defaulting party shall have thirty (30) days in which to cure following written notice of default by the non-defaulting party.

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

TCl of Tualatin Valley, Inc.

By: _____

Title: _____

Date: _____

Customer

By: _____

Title: _____

Date: _____

APPENDIX A

CITY OF SHERWOOD
SERVICES AND RATES

The following rates shall be applicable during the term of this Agreement, commencing July 1, 2000.

Services Provided While Customer Sites Are on HFC I-Net

HFC I-Net Data Services

Customer shall operate one LANcity Broadband Interface device between:

17.75 MHz and 23.75 MHz on the reverse side and between 258.0 MHz and 264.0 MHz on the forward side (Channel "T9" to "O"), for a link to Washington County Cooperative Library Services;

and one LANcity Broadband Interface device between:

23.75 MHz and 29.75 MHz on the reverse side and between 312.0 MHz and 318.0 MHz on the forward side (Channel "T10" to "CC"), for a link to the Northwest Regional Education Service District.

It is recognized by Customer that Company may assign additional use of these frequencies by other agencies, provided both Company and Customer agree that the additional equipment and applications would not be deleterious to communications by Customer and its clients.

Customer sites:

Customer has two (2) LANcity bridges on-line upon commencement of the Agreement on July 1, 2000 at the following single location:

Sherwood Library
955 N. Sherwood Blvd.
Sherwood, OR 97140

APPENDIX A, continued

The initial rate for each of these LANcity cable modems shall be:

Link to WCCLS:	\$ 255.39/month
Link to NWRESA:	\$ 193.82/month

The following initial charges are based on the assumptions above for use of I-Net High Speed Data Services on the HFC I-Net:

<u>TOTAL MONTHLY RATE FOR HIGH SPEED DATA</u>	\$ 449.21/month
<u>SERVICES ON HFC I-Net UTILIZING LANCity</u>	
<u>DEVICES UPON COMMENCEMENT OF AGREEMENT</u>	

Services Provided Once Customer Sites Are on Upgraded I-Net

The following rates are all based upon services provided over an optical fiber institutional network (the "Upgraded I-Net"). Once the Upgraded I-Net becomes available at a site served by the HFC I-Net, Company shall provide a connection to the Upgraded I-Net.

Once a Customer site becomes connected to the Upgraded I-Net, the Upgraded I-Net rates shall go into effect seven (7) days subsequent to the date of Upgraded I-Net service activation,.

Until sites are connected to the Upgraded I-Net, and while they remain on the HFC I-Net, between January 1, 2001 and January 31, 2002, Customer will be charged for those sites in accordance with the rates for the "Old I-Net" in their service contracts that will commence on July 1, 2000.

During transition of any Customer sites to the Upgraded I-Net, Company shall provide to each Customer network site, as a backup, the HFC I-Net service Customer was using prior to the transition for a period of thirty (30) days subsequent to activation of the Upgraded I-Net service, until the Customer has signed a document stating that such new service is certified, in accordance with the standards and provisions of the Cable Services Agreement. This backup service shall be provided by Company at no additional charge.

APPENDIX A, continued

UPGRADED I-Net DATA SERVICES

<i>Service</i>	<i>Monthly Rate Per Site</i>
<u>Data Communications (Using ATM Backbone)</u>	
T1 (1.544 Mbps) Service (using Ethernet or circuit emulation)	\$ 300.00
10 Mbps Service	\$ 498.73
100 Mbps Service	\$ 598.73
10 Mbps and T1 Services (T1 through circuit emulation)	\$ 638.00
100 Mbps and T1 Services (T1 through circuit emulation)	\$ 738.00

Data Communications (Using Gigabit Ethernet Backbone)

T1 (1.544 Mbps) Service (using Ethernet)	\$ 300.00
10 Mbps Service	\$ 498.73
100 Mbps Service	\$ 598.73
Gigabit Ethernet Service	\$ 849.00

Customer and Company agree that, during the term of this Agreement, once the Upgraded I-Net is available to the sites indicated below, the services indicated will be provided Customer by Company, for which Customer shall compensate Company in accordance with provisions herein. In addition, Company shall notify Customer at least thirty (30) days prior to the change-over at each site from HFC I-Net to Upgraded I-Net service; shall for a period of seven (7) days charge Customer for the Upgraded I-Net service at the old HFC I-Net rate Customer had paid previously; and shall continue to provide a back-up HFC I-Net service to Customer location for a period of thirty (30) days subsequent to the site being converted to the Upgraded I-Net service. When Company activates a new service at a Customer location, such service shall not be deemed to be certified, and therefore shall not be billable, until Customer has signed a document stating that such new service is certified, in accordance with the standards of the Franchise. Said period of thirty (30) days shall be extended if, in the determination of Customer, service to the location is not certified, and such extension shall carry over until Customer signs aforementioned certification document. Company shall begin charging the Upgraded I-Net service rate on the eighth day Customer has received the Upgraded I-Net service at a site, unless it is mutually determined that the Upgraded I-Net service is unacceptable in accordance with the standards herein.

APPENDIX A, continued

The following are the sites, services, and rates agreed to by Company and Customer to which Customer may be transitioned on the Upgraded I-Net during the term of the Agreement. It is understood by both parties that service to all of these sites, if and when they have been transitioned to the Upgraded I-Net, shall be provided for the rates below, subject to any discounts or annual increases otherwise applicable in accordance with terms herein, for the remaining term of the Agreement. It is further understood that, during the term of the Agreement, Customer may add services to locations, or to change services and/or locations, but that such changes are subject to the Upgrade, Downgrade, and Transport Conversion charges detailed herein.

Two (2) 10 Mbps fiber optic links to Sherwood Library, over Upgraded I-Net:	\$ 498.73/month each
Total monthly rate:	\$ 997.46/month

Rate Assurance - All I-Net rates specified herein shall not exceed the market rates charged for substantially equivalent services provided by other service providers.

Rate Increases/Decreases

Annual Increase - I-Net rates established herein will be adjusted annually by 3.5% or the Consumer Price Index for the Portland Standard Metropolitan Statistical Area, whichever is greater, beginning on June 30, 2002, with the exception below.

Such annual increase shall NOT be exercised by Company for the full term of multi-year agreements. Therefore, the rate increase that would otherwise be applicable to the service being received at the beginning of each year in which a new contract would be necessary, would NOT be implemented in the case where Customer opts for a multi-year agreement.

Monthly Payments, commencing July 1, 2000: Based on 2 sites on LANcity modems, each operating @ 10 Mbps; 1 device @ \$193.82/month, and 1 device @ \$255.39/month:	\$ 449.21
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APPENDIX A, continued

Monthly Payments, when ALL Sites are converted to Upgraded I-Net*:
Based on 2 sites on all-fiber Upgraded I-Net, each operating
@ 10 Mbps; 2 @ \$498.73/ month: \$ 997.46

* Currently projected to occur during calendar year 2002

I-Net INSTALLATION (Upgraded I-Net)

For sites not currently connected to the I-Net (HFC I-Net or Upgraded I-Net), an installation charge may be required before service is provided. The cost for such installation shall be quoted to Customer by Company, upon request by Customer, and such quotation shall be reported in a timely manner. The I-Net is installed to a *line of demarcation* (defined in Appendix C, herein) on or at the facility to receive service. Internal wiring to communications and terminal equipment is generally the responsibility of the customer.

APPENDIX B

CONNECTION AND OPERATING STANDARDS FOR SUBSCRIBERS TO THE “HFC I-Net”

Introduction

The following standards are intended to ensure optimum network performance for all public and nonprofit subscribers to the *existing* HFC Sherwood I-Net (HFC I-Net), which was in place on June 1, 1999. These standards will be observed by subscribers and their contractors in installing all new internal network interfaces, in modifying existing installs, and in operating equipment on the HFC I-Net. Customer hereunder may connect to the HFC I-Net for telecommunication services pursuant to such franchise.

Current HFC I-Net subscribers and new users with "pre-builds" are encouraged to bring their internal networks up to these standards. Company has indicated that they will provide consultations at no cost to any public or nonprofit agency on how to facilitate the construction of such internal networks, or how to achieve the standards in existing installations.

Network Description – HFC I-Net

The Hybrid Fiber-Coaxial Sherwood I-Net (HFC I-Net) is a discrete, private line, broadband telecommunications system, comprised of over 500 miles of state-of-the-art, interactive hybrid fiber-coaxial cable plant, capable of 330 MHz of signal carriage. It is an "equal split" frequency configuration, meaning that there is as much "upstream" capacity as there is "downstream." The HFC I-Net is operated and managed by Company, the cable television franchisee for most of Washington County and parts of Clackamas County.

Appendix B, continued

The HFC I-Net serves public and nonprofit agencies with a reliable, cost-effective means to communicate data, video, voice, and telemetry within an area spanning about forty miles. The HFC I-Net's current uses include computer networking for records management, electronic mail, circulation of materials, computer-aided dispatch, training and briefing of staff and students through interactive video programming; telemetry for monitoring pump stations; and voice networking.

During the term of the accompanying Agreement, Company will be in the process of upgrading the HFC I-Net to an all-fiber optic network ("Upgraded I-Net"). Between July 1, 2000 and January 31, 2002, as the I-Net is upgraded from HFC to all-fiber, Company will provide I-Net customers incrementally with the means to upgrade to the all-fiber Upgraded I-Net, with optical-to-electrical or optical-to-optical conversion occurring at each customer premise.

Standards and Procedures – HFC I-Net

In its operation of the network, Company will meet or exceed the following established technical standards.

A. Signal Requirements – HFC I-Net

1. Reverse Signals

The reverse channels must be capable of providing return signals from any subscriber tap on the HFC I-Net to any other tap on the HFC I-Net without noticeable signal degradation or interference.

Appendix B, continued

- a. Capability – HFC I-Net must be capable of carrying audio, color and black-and-white video, and low and high-speed data (analog or digital), according to the above criterion.
 - b. Maximum Customer Output Level Requirement - No more than 54 dBmV at video RF reference output level is required out of any customer communications device.
2. Level Standards and Pilot Carrier
Provision of a +15dbmv (+or- 2dbmv) video reference on pilot carrier 301.2625 at the line of demarcation at each HFC I-Net user site.

The following are the level standards that will be followed for all public and nonprofit facilities on the Residential Subscriber Network (RSN) or on the HFC I-Net. These levels establish the requisite level that Company will provide for downstream signal and the requisite level that a public facility must provide when transmitting upstream. The standards should be referenced to video carrier levels.

a. DOWNSTREAM LEVELS

Levels provided at the drop or first outlet in the downstream direction:

(1) RSN Downstream Level (50-450 MHz)
Channel 2 through Channel WW,
referenced to video. Data
carrier levels may vary, depend-
ing on user-specific hardware. +15.0 dBmV

(2) I-Net Downstream Level (210.00-330.25 MHz)
Channel 12 through Channel EE,
referenced to video. +15.0 dBmV

Appendix B, continued

b. UPSTREAM LEVELS

Levels provided at the first active service, e.g. trunk amplifier on the I-Net:

(1) I-Net Upstream level (5.75-132.00 MHz)
Channel T-7 through 132.00 MHz, +20.0 dBmV
referenced to video.

B. Maintenance and Repair Requirements – HFC I-Net

1. Repair Force – HFC I-Net

Company provides a repair force of technicians capable of responding properly to all requests for service by I-Net users.

2. Repair Response Times – HFC I-Net

Response to network problems shall occur at all hours (24 x 365). This shall include response to all situations creating problems on the network, regardless of whether they originate within the network or within equipment or software at the user site. Appropriate Company technical support shall respond and actively begin working on network problems within 30 minutes of either 1) Company identifying such problem or 2) Company receiving a call from Customer reporting a network problem. Company shall place a phone call to Customer's designated service contact to inform Customer that the situation is being addressed. Company shall work continuously until the problem is resolved. If it is determined that the network problem is caused by user equipment or software, then Customer shall correct the problem such that other HFC I-Net users are no longer affected. If Customer does not correct the problem, then Company may disconnect the affected Customer site from the HFC I-Net until such time that the user equipment or software is repaired. If Customer desires assistance from Company in correcting the equipment or software problem, then Company may provide such assistance, but Company shall also have the right to invoice Customer, at Company's prevailing hourly rate for the time spent correcting Customer equipment or software problems

Appendix B, continued

3. Service Calls – HFC I-Net

All service calls should be made directly to Company, when possible, by the user agency's key service contact person.

4. Network Availability – HFC I-Net

For purposes of this availability standard, network problems shall not be defined as: infrequent scheduled preventative maintenance as long as I-Net customers are notified in advance, according to the provisions of the City Franchise and user contracts. Network availability is subject to the Section 19 force majeure provisions herein and those conditions which are not within the reasonable control of the Company. These include, but are not limited to: damage resulting from conduct by a third party, natural disasters, civil disturbances, major non-Company owned telephone network outages, or severe and unusual weather conditions. Company will give affected I-Net users notice in the event of any of the foregoing occurrences.

5. Penalties and Procedures – HFC I-Net

Company agrees to the following liquidated damages for interruptions. In the event of interruptions of transmission on any circuit during Customer business hours not found to be beyond the reasonable control of Company, Customer shall be solely entitled to a reduction of \$5.00 per hour from the monthly lease fee for every hour of interruption of transmissions over two (2) hours during regular business hours (defined as 8:00 am to 5:00 p.m. Mondays through Fridays, except holidays) and six (6) hours after regular business hours. Said reduction shall appear on the subsequent month's invoice. No reduction shall be provided for interruptions of two (2) hours or less. Total reductions in any single month shall not exceed the total monthly lease charge. The interruptions of transmission are considered different if they are separated by no less than thirty (30) minutes of continuous transmission capability.

Appendix B, continued

When Company anticipates transmission interruptions due to preventive maintenance or line extension procedures seven (7) or more days in advance, Company shall notify Customer of such predicted interruptions at least seven (7) days in advance. In cases when Company anticipates such interruptions less than seven (7) days in advance, Company shall notify Customer as soon as possible, and at least twenty-four (24) hours in advance of the interruptions. Such interruptions shall be kept to a minimum and performed between 9:00 PM and 8:00 AM whenever possible.

C. User Connection Requirements – HFC I-Net

1. Materials and Local Network Configuration

Prior to constructing an internal coaxial, RF "local area network" within a I-Net user site that will interface with any RF-based portions of the HFC I-Net, the user or contractor will contact Company and provide them with a copy/drawings of their plans and specifications of the devices and materials used in distributing HFC I-Net signals through the facility. This will allow Company to advise the network user on materials and equipment that will most suitably interface with the cable system, while meeting the user's needs.

The following are agreed to be acceptable materials for use in broadband coaxial local area networks that interface with the HFC I-Net. In order to maintain compatibility, Customer will consult with Company when considering interfacing equipment other than those components listed in the examples below.

- a. **Broadband Coaxial Cable:**
Minimum 0.500" CATV Coaxial Cable "Hardline"; Drop Cable: RG-6 Quad Shield; Nat'l. Electrical Code rated "CATV" or better.

Appendix B, continued

All cable is to have a minimum 30 dB structural return loss from 5 to 350 MHz.

- b. Amplifiers, Pads, and Equalizers:
Need to meet minimum bandwidth requirements of the I-Net (5 to 132 MHz and 186 to 350 MHz).

Not more than 2 dB peak to valley response.

Rf-gasketed or sealed, and should emit not more than 20 uV/M radiation levels of any RF signals at 3 meters.

Examples of Acceptable Equipment:
C-COR LAN 101 Distribution Amplifiers, ac powered (compatible with amplifiers on the HFC I-Net itself).

C-COR Pads and Equalizers.

- c. Taps/Drops:
Each Unused Port Terminated in 75 Ohm Resistor.
End-of-Line Terminators at 75 Ohms.
5 to 350 MHz bandpass.
Must have integral gasketing or sealing; shall not emit more than 20 uV/M radiation levels of any rf signals at 3 meters.
- d. FCC Specifications:
Upon internal network construction and activation, network shall not radiate levels greater than 20 uV/M at 3 meters, as per FCC Rules, Part 76.
- e. Connectors:
"Hardline Section" - On internal "trunk" (hardline) coaxial cable, use only PIN-type, integral sleeve, aluminum connectors.

Appendix B, continued

Network Service Drops - F-connector should be a one-piece, integral sleeve, with crimp-sleeve specification matched to the cable's diameter.

- f. Other Considerations:
Company recommends that the user should procure at least a 1-year warranty on parts and labor on LAN equipment, and complete documentation on cable routing, footages, tap locations and values, and drop locations (referenced to "as-built" drawings).

- D. Equipment Additions/Deletions/Changes in Location or Frequency – HFC I-Net
Prior to adding, deleting, or moving communications devices on the HFC I-Net, or to changing frequencies, the network user will notify Company with a Service Action Request form. Any change in equipment or location is subject to the approval of Company.

APPENDIX C

CONNECTION AND OPERATING STANDARDS FOR SUBSCRIBERS TO THE “UPGRADED I-Net”

Introduction

The following standards are intended to ensure optimum network performance for all Sites on the *Upgraded* Sherwood I-Net (Upgraded I-Net), and to which some customers will be transitioned during the term of the Agreement. These standards will be observed by subscribers and their contractors in installing all upgraded internal network interfaces, in modifying existing installs, and in operating equipment on the Upgraded I-Net.

SIGNAL QUALITY – UPGRADED I-Net

The network shall achieve the performance standards listed below under worst-case conditions for communications occurring between each Upgraded I-Net institution and Company's headend, since all communications will be regenerated at the headend.

Data Communications - For any data communications link on the network, the bit error ratio (BER) shall be equal to or better than 1×10^{-9} , provided customer premise

Appendix C, continued

equipment meets or exceeds, and is operating to these specifications.

Network Availability – Upgraded I-Net - For each user on the network, network availability shall be equal to or better than 99.965% (no more than 184 minutes of network downtime per user) as measured on an annual basis.

The network shall be defined as 'unavailable' for any given user when such user:

- A. Cannot, because of a network problem, measured by SNMP software or other appropriate software and associated hardware, or through a failure of a Company-provided interconnect, transmit video, voice and/or data communications to, from, and/or on the network, for which such user is paying a fee to Company.

Such problems shall be the result of a failure of one or more of the following: 1) the fiber optic cabling, connections and transmission equipment on the network; 2) the optical switching or routing equipment at Company's headend; 3) the optical-to-electrical or optical-to-optical conversion equipment at the customer's premise (where such equipment is provided by Company); 4) any necessary network powering systems with the exception of Company-provided customer premise equipment, which shall be powered by Customer; and/or 5) any other Company-provided network component; and/or,

- B. Experiences due to a network problem a data communications packet loss of greater than ten (10) percent.

For purposes of this availability standard, network problems shall not be defined as: infrequent scheduled preventative maintenance as long as Upgraded I-Net customers are notified well in advance, according to the provisions of the Franchise and user contracts. Except as otherwise provided for herein, network availability is subject to the force majeure provisions of the Franchise and those conditions which are not within the control of the Company. These include, but are not limited to: damage resulting from conduct by a third party, natural disasters, civil disturbances, major non-Company owned telephone network outages, or severe and unusual weather conditions. Company shall comply with the requirements of "Demand

Appendix C, continued

Maintenance/Service and Repair” to restore service following any of these occurrences. Company will give affected Upgraded I-Net users notice in the event of any of the foregoing occurrences.

Service Response – Upgraded I-Net

Network Maintenance – Upgraded I-Net - Company shall be responsible for the ongoing maintenance and performance of the Upgraded I-Net from the demarcation point within a facility through the network, including the Upgraded I-Net headend. The demarcation point shall be that point, designated by a Upgraded I-Net site agreement, where the Upgraded I-Net connects to internal wiring and/or equipment within the facility unless such wiring or equipment has been supplied or is maintained by Company, in which case the Company shall be responsible for Upgraded I-Net performance to the point of connection to facility owner supplied wiring or equipment. Routine and preventive maintenance shall be performed continually on the network to ensure that it meets all performance criteria detailed herein. Upgraded I-Net users shall have at least ten (10) business days advance notice of routine and preventative maintenance activities that may affect operation of their Upgraded I-Net circuits.

Demand Maintenance/Service and Repair – Upgraded I-Net - Response to network problems shall occur at all hours (24 x 365). This shall include response to all situations creating problems on the network, regardless of whether they originate within the network or within equipment or software at the user site. Appropriate Company technical support shall respond and actively begin working on network problems within 30 minutes of either 1) Company identifying such problem or 2) Company receiving a call from a Upgraded I-Net user reporting a network problem. Company shall work continuously until the problem is resolved. If it is determined that the network problem is caused by user equipment or software, then the user shall correct the problem such that other Upgraded I-Net users are no longer affected. If Customer does not correct the problem, then Company may disconnect the affected user site from the Upgraded I-Net until such time that the user equipment or software is repaired. If the user desires assistance from Company in correcting the equipment or software problem, then Company shall provide such assistance, but Company shall also have the right to invoice the user, at Company's prevailing hourly rate for the time spent correcting user equipment or software problems.

Appendix C, continued

Network Support – Upgraded I-Net - Company shall provide an appropriate complement of administrative, headend and field personnel at all times to meet the performance criteria detailed herein. At a minimum, this includes a complement of three engineering and technical personnel (at least one of which shall be a data professional) devoted solely to the operation of the Upgraded I-Net.

Service Call Processing and Tracking – Upgraded I-Net - Company will establish mechanisms and procedures for all Upgraded I-Net users to quickly and easily report system problems. All trouble or service calls will be documented, processed and completed in an expedient manner. Company will consider employing an automated trouble notification system accessible to Upgraded I-Net users. Documentation will include monthly upgraded I-Net service call reports, which will include a breakdown of reasons and resolutions as well as call handling efficiency (including all activities from the time a network trouble call is received to the time Company and user agree that network trouble is resolved). Notwithstanding the staffing, testing and equipment and response requirements set forth herein, the Company will provide: in-house and/or contractor staff; spare and back-up headend, distribution, and other applicable equipment; test and maintenance equipment; and additional steps necessary to ensure that the network performs reliably in accordance with all standards detailed herein.

Upgraded I-Net User Location Performance Testing - All network performance specifications shall be met at each Upgraded I-Net user location, and the network shall at all times enable Upgraded I-Net user video, voice and data communications to be successfully transmitted in accordance with the reliability and availability standards incorporated herein. Company shall schedule with each user such testing as required to ensure successful network performance at each Upgraded I-Net customer location.

Physical Network Characteristics – Upgraded I-Net - The physical, optical and electrical configuration of the Upgraded I-Net will comply with all applicable Federal, State and local requirements. Inspections of all cable runs and components will be made by Company during the upgrade process to ensure the integrity of the network and Company shall keep records thereof.

Appendix C, continued

Upgraded I-Net Service Penalties And Procedures

These following penalties will apply beginning thirty (30) days after the date any user begins service on the Upgraded I-Net. Until that time, HFC I-Net penalties and procedures, above, shall be in effect.

I-Net Network Outages - Each minute of each network outage shall be counted against the 184 minutes per site, per contract year, allowed under the above Standards.

Claims for a network outage credit will be subject to the following schedule:

There will be no credits for outages for the first 184 cumulative minutes for each Upgraded I-Net site in a single contract year. Credits will apply for each month of the contract year, beginning with the month in which the total of 184 outage minutes is reached. For each outage minute, or fraction thereof, during a single month, the network outage credit shall be two percent (2%) of the monthly rate, and shall increase by two percent (2%) for each additional minute, or fraction thereof. The maximum monthly outage credit for each Upgraded I-Net site shall not exceed 100% of the monthly rate.

Appendix C, continued

OUTAGES FOR EACH UPGRADED I-Net SITE EXCEEDING 184 CUMULATIVE MINUTES DURING A SINGLE CONTRACT YEAR:

<u>Cumulative Duration of Network Outages</u> During a Single Month (measured in minutes)	<u>Credit Towards Monthly Rate</u>
0.1 – 1.0	2%
1.1 – 2.0	4%
2.1 – 3.0	6%
↓	↓
	49.1 and above 100%

Written claims for outage credit. Upgraded I-Net users must provide Company with a written claim for outage credit within seven (7) business days of the event that caused the outage. The following information must be filed by the I-Net user's designated contract representative and include the following information:

- 1) Organization's name and contact information
- 2) Name of user contract representative
- 3) Date and beginning/end time of claimed outage
- 4) Site address(es) where outage(s) occurred
- 5) Description of outage event.

Claim Process: Upgraded I-Net users must submit the required information by USPO mail to:

TCI of Tualatin Valley Inc.
 Institutional Networks
 3075 NE Sandy Blvd.
 Portland, Oregon 97232

Company will acknowledge all claims within two business days of receipt of claim and will review all claims within ten (10) business days of receipt.

Company shall inform Upgraded I-Net user in writing whether the appropriate service credit claim will be granted or rejected. If rejected, the notification will specify the basis for the rejection. If Company fails to respond to properly made claim within fifteen (15) days of receipt of claim, claim is deemed to be accepted by Company and appropriate service credits will be due.

Appendix C, continued

Credit Process: Company will issue service credits in the form of deductions applied towards the Upgraded I-Net user's next applicable contract period service rate.