

## 10.1 Private Network

The I-Net is a private communications network governed by this Franchise and the Cable Act. The I-Net may be used by the City and any Qualified I-Net User to provide any technically and legally compatible, non-commercial service. The City agrees to require all Qualified I-Net Users to stipulate and agree to this limitation. "Technically compatible" includes, but is not limited to, the understanding that the I-Net will not be used in any way that will intentionally or unreasonably interfere with the signal quality and the normal operation of Grantee's Subscriber Network. "Legally compatible" includes, but is not limited to, the understanding that the I-Net may not be used for Telecommunications Services unless by separate agreement between the Grantee and Qualified I-Net Users, and that the Qualified I-Net Users will not resell access to the I-Net; provided, however, that the Qualified I-Net Users shall have the right to provide for the internal switching, routing and/or cross connection to Telecommunications carriers of its choice, for its normal voice and data communications operations, unless expressly prohibited by State or federal law. In addition, the Grantee and the City shall at all times provide such management of the I-Net as applicable to ensure the necessary protection of proprietary I-Net signals.

## 10.2 Qualified I-Net Users

The I-Net will be for the use of the City and any Qualified I-Net Users. Qualified I-Net Users are any of the following which are passed by the Cable System and located in the Franchise Area: (i) the City and its agencies (including, without limitation, the Denver Zoological Gardens, the Denver Botanic Gardens, the Colorado Museum of Natural History, the Denver Health Medical Center, the Water Board, and the Denver Performing Arts Complex), other governments and their agencies, public libraries, and all State-accredited public schools, and (ii) other entities that Grantee and the City agree in the future may use the I-Net.

## 10.3 I-Net Use

(A) Continued Use of the I-Net. The City is hereby granted the irrevocable right of continued use of the I-Net described in this Franchise, during the term of this Franchise. If, at any point, Grantee ceases to operate or maintain the I-Net, due to abandonment, revocation or for any other reason, the City may operate and maintain the I-Net and shall have an absolute right to obtain access to and utilize any Grantee facilities or equipment required to do so.

(B) Appropriate uses of the I-Net include, by way of example and not limitation:

(1) High-speed transmission of GIS and other data to and from City departments and to and from other Qualified I-Net Users;

(2) Transmitting live and stored instructional materials (whether in the form of data, video or otherwise) for distance learning and staff training purposes to and from Qualified I-Net Users;

(3) Providing videoconferencing among municipal and educational locations and to other locations for municipal and educational purposes;

- (4) Linking public libraries and providing terminals at library locations that allow members of the public to access library databases and other remote databases;
- (5) Providing for remote origination of Access programming;
- (6) Facilitating connections for telephone systems, security systems and other critical public entity communications applications, so long as such systems are not providing Telecommunications Services.

#### 10.4 I-Net Components

The City has delivered to Grantee a document which specifies certain sites to be served by the I-Net and the performance specifications needed at each site, such as capabilities for bi-directional video, voice, and low- and high-speed data communications. The following I-Net components are available and will be selected by the City in cooperation with the Grantee in order to ensure the most efficient and cost-effective I-Net options. The parties intend that the initial construction of the I-Net will be performed concurrently with the Upgrade of Grantee's Subscriber Network to the greatest extent possible.

(A) Incremental Backbone. An "Incremental I-Net Backbone" means those Fiber Optics which are integrated into the Fiber Optic portion of the Grantee's Subscriber Network, from the Headend to each Node in the City, as constructed during the Upgrade outlined in subsection 12.1 of this Franchise, and will be owned and maintained by the Grantee. The number of Fiber Optic lines constructed from the Headend to each individual Hub, and from each Hub to each individual Node, shall be dependent upon the I-Net locations and uses determined by the City. Based on the I-Net specifications determined by the City in cooperation with the Grantee, the Fiber Optics constructed may be dedicated for I-Net uses, or the I-Net signals may be multiplexed over shared Subscriber Network and I-Net Fiber Optics and related electronics in order that the shared Fiber Optics and related electronics may be used by the Grantee for other purposes in addition to the I-Net.

Should the City require any separate backbone electronics to be installed by the Grantee at the Hub or Node locations of the Grantee's Subscriber Network, the Grantee shall own and maintain such electronics, and Grantee shall install same during the construction of the incremental Fiber Optic construction period. Alternatively, if the City wants to own these separate backbone electronics, the City and the Grantee shall enter into a separate agreement for the Grantee to maintain such components. If the City wants such equipment returned to it at any time, it shall give written notice to the Grantee, and Grantee shall return such equipment to the City.

(B) Separate Backbone. A "Separate I-Net Backbone" means those Fiber Optics and related electronics which are in separate sheaths and not integrated into the Fiber Optic portion of the Grantee's Subscriber Network. Although the separate Fiber Optics and related electronic components will be constructed during the Upgrade outlined in subsection 12.1 of this Franchise to the greatest extent possible, any separate I-Net backbone will be owned, operated and maintained by the City, unless a separate business arrangement is made with Grantee.

(C) Node to I-Net Site. Distribution from the Nodes to designated Qualified I-Net User sites will be as directed by the City. The Qualified I-Net User will provide the route and the access from the property line of the I-Net site into the facility. Efforts will be made by Grantee and the City to ensure that the I-Net distribution system and drops share common paths with the Grantee's Subscriber Network where it is possible to do so, in order to minimize costs to the Qualified I-Net Users. This portion of the I-Net will be owned and maintained by the Grantee, unless otherwise specified by the City.

(D) I-Net Site to I-Net Site. In some locations, Grantee may be directed by the City to construct Fiber Optics between two I-Net sites. These I-Net components will be owned, operated and maintained by the City, unless otherwise requested by the City.

(E) Interconnection to Existing City Infrastructure. At some locations, Grantee may be directed to Interconnect the I-Net to the City's existing Fiber Optic infrastructure. The I-Net components constructed by the Grantee may be owned, operated and maintained by either the City or the Grantee, as specified by the City.

(F) Interconnection Between I-Net and the Subscriber Network. Grantee will provide an Interconnection between the I-Net and the Subscriber Network at the Headend.

(G) Network Equipment. Working in cooperation, the City and the Grantee shall determine the network equipment that is necessary for the operation of the I-Net from the Headend to the Demarcation Point at each I-Net site (excluding end user electronics), and Grantee shall install this equipment at appropriate points on the I-Net. Grantee shall not install or be responsible for any I-Net end user equipment past the Demarcation Point, unless through a separate agreement with the City; provided, however, that Grantee shall provide technical expertise as necessary to ensure that the end user equipment is compatible with the I-Net.

#### 10.5 Determination of I-Net Costs

The City or Qualified I-Net User shall pay the following in return for Grantee's construction of the I-Net.

(A) Base Construction Cost. The "Base Construction Cost" is the direct incremental costs of labor and materials that Grantee incurs in the construction, installation, and initial testing of the I-Net Fiber Optics, hardware and equipment, as specified below.

(1) Costs of necessary materials, equipment and hardware to construct the I-Net from the Node to each Demarcation Point, or from Demarcation Point to Demarcation Point, and any Separate I-Net Backbone constructed. Grantee will use the same procurement process for obtaining Separate I-Net Fiber Optics and related electronic components as it uses to acquire similar materials for its Subscriber Network, to provide the materials to the City and Qualified I-Net Users in the most cost-effective manner; and

(2) The allocated portion of any additional Fiber Optics and electronics installed on an Incremental I-Net Backbone; and

- (3) Payments made by Grantee to contractors specifically for I-Net construction; and
- (4) Wages and salaries of Grantee's employees performing construction of the I-Net, for such part of their time as is employed specifically on the I-Net; and
- (5) Other costs incurred on the relevant portion of the I-Net in the performance of the work if and to the extent approved in advance in writing by the City.

The City shall not be charged for any indirect costs, except that ten percent (10%) will added to the total of the costs specified in subsections 10.5 (A) (1)-(5) to cover the compensation of Grantee's employees and contractors who are involved in the design of the I-Net and other I-Net work whose time cannot be directly measured against the project, as well as to cover those miscellaneous expenses items which are not directly quantifiable. This ten percent (10%) figure shall be part of the "Base Construction Cost."

(B) Network Expenses. For portions of the I-Net which are constructed incrementally, and therefore are owned and maintained by the Grantee, "I-Net Network Expenses" shall be assumed to be \$500 per mile per year. For purposes of this subsection 10.5, I-Net Network Expenses include those expenses incurred by Grantee in maintaining the continuity of the I-Net connectivity over the incremental Fiber Optic backbone from the Headend, through the Hubs and Nodes to the Demarcation Points. I-Net Network Expenses include the incremental repair to damaged I-Net Fiber Optics, the cleaning of the incremental I-Net Fiber Optic connectors, testing of the incremental Fiber Optics separately from the Subscriber Network Fiber Optics, and the replacement of, at the Grantee's sole cost, any faulty or damaged common backbone electronics which are required to maintain the continuity of I-Net connectivity to the Demarcation Points.

In the event either party believes that these I-Net Network Expenses are substantially at variance with actual expenses, either party may initiate the modification procedures described in subsection 4.9 of this Franchise.

(C) If the Grantee qualifies for the term extension of the Franchise as specified in subsections 2.3 (A) and 12.1 (A), the Qualified I-Net Users shall pay the Grantee for years eleven (11) through (15) of this Franchise an I-Net Network Expense fee equal to the costs incurred by Grantee for maintaining the I-Net as described in subsection 10.5 (B) above, adjusted annually beginning in year eleven (11) of this Franchise term by the percentage increase in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W, 1982-84=100). Notwithstanding the foregoing, Grantee shall be entitled to recover from the Qualified I-Net Users no less than the cost of the actual I-Net Network Expenses, for years eleven (11) through fifteen (15) of this Franchise.

(D) Total Costs. For purposes of this Section, "Total Costs" means those described in this subsection 10.5 (D). In addition to Base Construction Costs, Grantee shall be entitled to eight percent (8%) annual interest on the Base Construction Cost (as identified in subsection 10.5 (A) above), calculated from the Activation Date (as defined in subsection 10.6 (D) below) of each I-Net site or I-Net component through December 31, 2009. Grantee shall also be entitled to a fifteen percent (15%) return on investment for each I-Net component constructed that it will own and maintain (where the investment is the Base Construction Cost plus I-Net Network Expenses, as defined above). In the alternative, Grantee shall be

entitled to a twenty percent (20%) return on investment for each I-Net component constructed that will be owned, operated and maintained by the City (where the investment is only the Base Construction Cost). The City or any Qualified I-Net User has the option to prepay any portion of the Total Cost in order to reduce the interest payments.

#### **10.6 Initial I-Net Construction**

(A) Grantee shall, in consultation with the City, incorporate the I-Net requirements provided by the City pursuant to subsection 10.4 into its Upgrade design. As each phase of the design is completed, Grantee shall provide the City with preliminary Total Cost estimates pursuant to subsection 10.5, and maps showing the proposed design and routing, for each City identified I-Net site or I-Net component. For purposes of this estimate, Grantee will calculate interest based on monthly payments. The City shall have thirty (30) days from receiving the preliminary Total Cost estimates and maps to give final approval thereof to Grantee (excluding permits and approvals required under applicable codes and ordinances), or the City may require Grantee to make such changes as may be required to ensure that the design is consistent with the City's requirements. If the City does not act within the thirty (30) day period, Grantee may proceed with the Upgrade of the Subscriber Network for that phase and shall not construct the I-Net design submitted. The City may later direct the Grantee to construct that portion of the I-Net in accordance with subsection 10.7. If the City orders changes to the design, the City shall have ten (10) days from receiving the modified Total Cost estimates and design to approve the same. If the City does not act within the ten (10) day period, Grantee may proceed with the Upgrade of the Subscriber Network for that phase and shall not construct the I-Net design submitted. The City may later direct the Grantee to construct that portion of the I-Net in accordance with subsection 10.7. The City shall act at all times in an expeditious manner so as not to delay the Upgrade to the Subscriber Network.

(B) The City may direct Grantee to construct or not construct any specific portions or segments of the I-Net, or change its equipment requirements, up to the point where Grantee begins construction of the Node area where such I-Net portion is located, and the parties agree that these changes will not delay the completion of the project or prevent Grantee from completing the I-Net initial construction as part of Grantee's Upgrade of its Subscriber Network. If the City wishes to add or delete sites or change its equipment requirements after construction has commenced, Grantee will make the changes and complete them as part of the construction of the Subscriber Network if the City agrees to (i) pay any additional costs caused by the change order, in addition to incremental costs; and (ii) provide appropriate extensions of time under subsection 10.6 (D) below in order to permit Grantee to make the change in an orderly fashion. After receiving a request for a change order, Grantee promptly will provide the City an estimate of the Total Costs including the requested changes, and any time extensions that would be required if the change were made. If the City then directs Grantee to proceed with the change, Grantee will make the change.

(C) If Grantee proceeds with the ordering of materials and Upgrade of its Subscriber Network in a particular phase without accommodating the City's I-Net requirements, then, to the extent that the City is not at fault, Grantee shall subsequently, upon a schedule determined by the City in consultation with Grantee, design and construct such improvements as are necessary to accommodate the City's I-Net requirements at a cost to the City no greater than what would have been the incremental cost of accommodating those requirements as a part of the Subscriber Network Upgrade. Under no circumstances will the City be considered at fault if it meets the deadlines established in this subsection.

(D) **Activation.** The initial construction of the I-Net shall be substantially completed concurrent with Grantee's completion of the Subscriber Network Upgrade. More particularly, as construction of the Upgraded Subscriber Network is completed in a geographic area served by a Node, I-Net work within that geographic area will also be completed and the I-Net Activated within six (6) months thereafter. For purposes of this subsection, I-Net Activation shall mean that all the necessary equipment to Activate the I-Net site or component has been installed and tested in accordance with subsection 10.6 (E) below by Grantee, excluding the installation and Activation of any end user equipment required to utilize the I-Net.

(E) **Initial I-Net Fiber Optic Testing / Certification.** All I-Net Fiber Optics installed either on an incremental build or separate build will have OTDR testing performed, and OTDR printouts will be included in the final documentation package to certify that an I-Net location is deemed Activated. Specifically, the I-Net Fiber Optics will be tested for end-to-end attenuation at both 1310nm and 1550nm, using an optical power source and optical power meter. Tests will be performed after the connectors have been installed and will be from the jumper side of the termination panel bulkhead connector, at the Fiber Optic origination point and through and to the jumper side of the bulkhead connectors at each I-Net location's Demarcation Point Fiber Optic termination panel. Maximum loss will not exceed manufacturers' passive cable system attenuation, adjusted for cable length, splice loss and connector loss. Minimum optical receive power will not fall below what is necessary for any particular I-Net service based on the manufacturers' minimum input specifications for the end user equipment. The maximum connector pair loss is assumed to be .5dB.

(F) Nothing in this Franchise shall be read to prevent the parties from agreeing to different procedures for I-Net construction as long as those procedures permit the I-Net to be constructed efficiently and cost-effectively. Consistent with this goal, it is the intent of the parties to cooperate to minimize any delay in the Subscriber Network Upgrade while providing sufficient time to permit the City to review and approve design plans and cost estimates.

#### **10.7 Future I-Net Construction or Upgrades**

Grantee and the City shall cooperate in investigating and considering options for upgrades to the I-Net. The City may direct Grantee to upgrade the I-Net or construct additional I-Net plant at any time, or to add, remove or replace I-Net equipment at any time throughout the initial term of this Franchise and any extension thereof. After receiving a request for additional I-Net work, Grantee promptly will provide the City an estimate of the Total Costs associated with the additional work. If the City then directs Grantee to perform the work, Grantee will perform it. After the completion of the initial I-Net construction, any such work shall be performed and completed within six (6) months after the City directs that the work be performed, unless the parties agree to a different completion date.

#### **10.8 Warranties/Acceptance**

The acceptance of any component of the I-Net, or reimbursement therefore, shall not waive any defect in the work or constitute acceptance of work or equipment not in compliance with the applicable design and specification requirements. Grantee shall provide in its contracts for warranties of the work and equipment satisfactory to the City and will provide for the enforcement of such warranties and for the correction of work or equipment

not provided in accordance with applicable design and specification requirements or which is otherwise defective.

## 10.9 Payment

(A) Form of Invoice. Following the Activation of each I-Net site or component of the I-Net, Grantee shall prepare and submit (i) a payment schedule for the Total Costs, including detail on the Base Construction Costs, I-Net Network Expenses and financing charges pursuant to subsection 10.5 and as may be reasonably required by the City; and (ii) a certificate that the work, materials and equipment for which payment is requested has been incorporated in the I-Net and Activated in accordance with subsection 10.6 (D). City shall have the option of paying on either a monthly or an annual basis.

(B) Payment. Payment for each component of the I-Net shall be made by the City or by Qualified I-Net Users, as determined by the City, unless prepaid in accordance with subsection 10.5. At its discretion, the City may use the capital grants specified in subsection 9.2 or the Capital Contributions specified in subsection 9.3 for payment of the I-Net costs.

(C) In satisfaction and final release by the City of all Grantee's I-Net requirements and obligations arising out of the June 14, 1984 franchise, as subsequently modified, Grantee shall provide a fund, in the amount of two hundred fifty thousand dollars (\$250,000), to be used by the City at its sole discretion for Franchise-related purposes.

## 10.10 I-Net Service and Performance Standards

Grantee shall only be responsible for meeting these service and performance standards on the portion of the I-Net which it owns and maintains.

(A) Signal Quality. The following standards presume that the I-Net will be constructed solely of Fiber Optics to the Demarcation Point at each Qualified I-Net User site, and that the I-Net will operate in an analog format up to 550 MHz, and in a digital format from 550-750 MHz. If the I-Net incorporates any coaxial cable or the bandwidth is used in a different manner than described above, the parties will negotiate in good faith to modify these standards as appropriate to the circumstances. The I-Net shall achieve performance standards listed below under worst-case conditions for communications occurring between one Demarcation Point and any other Demarcation Point.

(1) Noise – The I-Net will not add more than 4dB carrier-to-noise to transmissions, as measured from one Demarcation Point to another. Signal-to-noise or other interference measurements will be substituted for this standard where appropriate.

(2) Data Communications – For any data communications link on the I-Net, the bit error ratio (BER) shall be equal to or better than  $1 \times 10^{-9}$ .

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

(4) The I-Net shall be defined as "unavailable" or as an "I-Net Outage" under the standards in this subsection for any given Qualified I-Net User when such Qualified I-Net User:

(a) Cannot, because of an I-Net Problem, measured by SNMP software or other appropriate software and associated hardware, or through a failure of a Grantee-provided Interconnect, transmit video, voice and/or data communications to, from, and/or on the I-Net;

(b) Experiences, due to an I-Net Problem, video, voice, and data transmissions that are below the standards set forth in this subsection; or

(c) Experiences, due to an I-Net Problem, a data communications packet loss of greater than ten percent (10%).

(5) For purposes of this subsection, an I-Net Problem is defined as those that result from the failure of any Grantee-provided I-Net component.

(6) For purposes of this subsection, I-Net Problems shall not include:

(a) Infrequent scheduled preventative maintenance as long as Qualified I-Net Users are notified in advance; or

(b) Those caused by force majeure, as set forth in subsection 4.12 of this Franchise.

(B) Service Response.

(1) Maintenance - Grantee shall be responsible for the ongoing maintenance and performance of the I-Net from the Demarcation Point within a facility through the I-Net, including the Headend. Routine and preventative maintenance shall be performed on the I-Net to ensure that it meets all performance criteria detailed herein. Qualified 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 I-Net circuits.

(2) Demand Maintenance/Service and Repair - Response to I-Net Problems shall occur at all hours (24 X 365). Appropriate Grantee technical support shall respond and actively begin working on I-Net Problems within one (1) hour of either:

(a) Grantee identifying such I-Net Problem, or

(b) Grantee receiving a call from a Qualified I-Net User reporting an I-Net Problem.



Grantee shall work continuously until the problem is resolved. If it is determined that the I-Net Problem is caused by the Qualified I-Net User's equipment or software, then the Qualified I-Net User shall correct the problem such that other Qualified I-Net Users are no longer affected. If the Qualified I-Net User does not correct the problem, then Grantee may disconnect the affected site from the I-Net until such time as the equipment or software is repaired.

(3) **Staff Support** -- Grantee shall provide an appropriate complement of administrative, Headend and field personnel at all times to meet the performance criteria detailed herein.

(4) **Service Call Processing and Tracking** - Grantee will establish mechanisms and procedures for all Qualified I-Net Users to quickly and easily report I-Net Problems. All trouble or service calls will be documented, processed and completed in an expedient manner. The Grantee will provide in-house and/or contractor staff; spare and backup Headend and distribution equipment; test and maintenance equipment; and additional support as necessary to ensure that the I-Net performs reliably in accordance with all standards detailed herein.

(C) **Performance Testing.** Proof of performance testing will be conducted on the I-Net two times per year, no less frequently than every six months. A minimum of one (1) test point location per twenty (20) I-Net sites will be established for the I-Net which are representative of worst-case performance of the I-Net. A representative sampling of Activated Upstream and Downstream bandwidth shall be tested at each test point location. Testing shall be performed to ensure compliance with the I-Net performance specifications included in subsection 10.10 (A)(1) and (2). Tests shall be performed using standard test methodologies as incorporated in the most recent version of the NCTA's Recommended Practices for Measurement on a Cable Television System, or another test methodology as mutually agreed to by the City and Grantee. All tests will be documented and, upon request, filed with the City. At the City's request, all testing processes will be conducted under the observation of a representative from the City.

## **SECTION 11. GENERAL RIGHT-OF-WAY USE AND CONSTRUCTION**

### **11.1 Right to Construct**

Subject to applicable laws, regulations, rules, resolutions and ordinances of the City and the provisions of this Franchise, Grantee may perform all construction in the Rights-of-Way for any facility needed for the maintenance, Upgrade or extension of Grantee's Cable System.

### **11.2 Right-of-Way Meetings**

Grantee will regularly attend and participate in meetings of the City, of which the Grantee is made aware, regarding Right-of-Way issues that may impact the Cable System.

