

FACILITIES USE AND LICENSE AGREEMENT

This Facilities Use and License Agreement ("Agreement" or "Use Agreement") is effective June 28, 2013 and entered into by and between the City of Madison, a Wisconsin municipal corporation (the "City"), and Metropolitan Unified Fiber Network Consortium, Unincorporated Association ("MUFN-C"), a Wisconsin Unincorporated Association under ch. 184, Wis. Stats.

RECITALS

A. The City owns certain conduit and fiber facilities located throughout the City of Madison's rights-of-way. The City also has arrangements with other units of government for the use of fiber and/or conduit that the City does not own but is within its jurisdictional boundaries, and has arrangements with other units of government to place city-owned and maintained fiber and conduit within rights-of-way outside the City limits. Such facilities are considered "Member-Owned or Controlled Facilities" as defined in the MUFN-C Agreement of Association entered into on January 29, 2013. The City wishes to make its Member Owned or Controlled Facilities as further defined herein and shown on Exhibit 1 available to the entity known as MUFN-C under the terms described in this Agreement. The City also will make certain pre-existing City-owned conduit and fiber available to MUFN-C.

B. MUFN-C is a consortium of governmental bodies, educational entities, private healthcare organizations and commercial entities in and around Dane County, organized as an Unincorporated Association under ch. 184 of the Wisconsin Statutes to further the mission of the federal BTOP MUFN Grant (further described in the MUFN-C Agreement of Association, hereafter, "Grant") awarded to the University of Wisconsin-Madison ("UW"). UW was the recipient of the Grant and the City and MUFN-C, U.A. are subrecipients. UW and the City are also Member Organizations of MUFN-C.

City's Member Owned Facilities existing at the time of the Grant award were pledged as an in-kind contribution to the Grant, improved under the Grant, with ownership transferred back to the City according to the City's Subrecipient Agreement with the UW. The Grant also funded new facilities in the City's right-of-way for which ownership has been transferred to the City under the Subrecipient Agreement. Finally, the City owns or controls pre-existing city-owned conduit and fiber that was not involved in the Grant. All such conduit and Fiber is shown in Exhibit 1 hereto.

C. The City will make its Member Owned or Controlled Facilities shown in Exhibit 1 available to MUFN-C so that MUFN-C Member Organizations can have access and use of the same in furtherance of MUFN-C's mission.

D. This Agreement sets forth the terms of MUFN-C's access to and use of the City's Member Owned or Controlled Facilities, procedures for MUFN-C to build new facilities ("New Projects") in the City's right-of-way and/or connect to the City's Member Owned Facilities, terms for MUFN-C to place Equipment on City Premises, and fees for the City's services associated with management and maintenance of the Member Owned Facilities that are used by MUFN-C.

AGREEMENT

Now, therefore, in consideration of the above recitals, which are incorporated herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree to the following covenants, terms and conditions:

1. **Definitions.** The following definitions shall apply to this Use Agreement. Additionally, capitalized terms not defined herein shall have the meaning given in the MUFN-C Agreement of Association.
 - 1.1. **City.** "City" means the City of Madison.
 - 1.2. **Effective Date.** "Effective Date" means the date of this Use Agreement.
 - 1.3. **Equipment.** Optical, data network transmission hardware, direct current (DC) power systems and related hardware (i.e. hardware used to light fiber). "Equipment" as used herein does not include any fiber or conduit.
 - 1.4. **Fee.** "Fee" means any assessment, license, charge, fee, imposition, tax or levy of general application to entities doing business in the City lawfully imposed by any governmental body.
 - 1.5. **Installation Date.** "Installation Date" shall mean the date that any Equipment, or conduit and fiber facilities are installed by MUFN-C as a New Project pursuant to this Use Agreement.
 - 1.6. **Laws.** "Laws" means any and all statutes, constitutions, ordinances, resolutions, regulations, judicial decisions, administrative orders adopted after a public hearing of the City or other governmental agency having joint or several jurisdiction over the parties to this Use Agreement.
 - 1.7. **License.** The term "license" in this Use Agreement is not meant to imply that the City has the right to terminate this Use Agreement at will. It is the intention of the parties that this Use Agreement may only be terminated by the specific provisions contained herein.
 - 1.8. **Member-Owned or Controlled Facilities.** Facilities (fiber, conduit, other assets*) owned or controlled by Initial or New Member Organizations and made available for use of the Association, but for which ownership is not transferred to MUFN-C. This includes facilities within the Original MUFN for which ownership has been transferred to the City of Madison pursuant to the BTOP grant or related agreement(s), and facilities owned or controlled by other Member Organizations.**

*For purposes of this Use Agreement, the City's Member Owned or Controlled Facilities include only fiber and conduit, and does not include any Equipment or other assets.

** For purposes of this Use Agreement, the City's Member Owned or Controlled Facilities include only that fiber and conduit shown in Exhibit 1 of this Agreement.

- 1.9. Metropolitan Unified Fiber Network ("MUFN" or "Original MUFN"). The fiber network constructed pursuant to federal grant monies under the Broadband Technology Opportunities Program ("BTOP") grant ("Grant"), and the City of Madison's in-kind contribution of fiber and conduit made as part of the BTOP Grant. The Original MUFN, as it existed on January 29, 2013 is depicted in Exhibit B to the MUFN-C Agreement of Association.
- 1.10. MUFN-C Agreement of Association: the agreement effective January 29, 2013 that created the MUFN-C Unincorporated Association.
- 1.11. MUFN-C Facilities. All of the electronic equipment, fiber, conduit, and other network equipment, which, through ownership or the MUFN-C Agreement of Association or other arrangements, the Association and its Member Organizations will have access to and the right to use. The MUFN-C Facilities include the Original MUFN, Member Owned or Controlled Facilities, and any other assets acquired for use of the Association under the procedures in the MUFN-C Agreement of Association. The MUFN-C Facilities as they existed on January 29, 2013 are shown in Exhibit C to the MUFN-C Agreement of Association.
- 1.12. Municipal Right-of-Way. "Municipal Right-of-Way" means the space in, upon, above, along, across and over the public streets, roads, highways, lanes, courts, ways, alleys, boulevards, sidewalks, and bicycle lanes, including all public utility easements and public service easements as the same now or may hereafter exist, that are under the jurisdiction or under the control of the City of Madison.
- 1.13. Municipal Property. "Municipal Property" means any property, other than Municipal Right-of-Way, owned by the City. "Municipal Property" specifically excludes any property owned by the Community Development Authority of the City of Madison.
- 1.14. Premises. "Premises" means City-owned or controlled structures and facilities, which shall include poles (such as traffic signals, streetlights, and lighting fixtures), water towers, buildings, underground conduit system or other City-owned structures or facilities located within the Municipal Right-of-Way or on Municipal Property and may refer to such structures and facilities in the singular or plural, as appropriate to the context in which used. "Premises" specifically excludes any structures or facilities owned by the Community Development Authority of the City of Madison.
- 1.15. New Project. Expansion of MUFN-C Facilities that occurs through projects undertaken by one or more Member(s) of MUFN-C as described in section 4 of the MUFN-C Agreement of Association.
- 1.16. Subrecipient Agreement. The "Recipient/Subrecipient Agreement between the Board of Regents of the University of Wisconsin System and the City of Madison" entered into on September 1, 2011, as amended. The Subrecipient Agreement establishes the obligations of the City as a subrecipient to the federal Grant.

2. **Term.**

2.1. **Initial Term.** This Use Agreement shall be for an initial term of twenty (20) years ("Initial Term"), commencing on the Effective Date.

2.2. **Renewal.**

- a. This Use Agreement shall automatically renew for one (1) additional term of ten (10) years at the end of the Initial Term, unless earlier terminated by either party under termination provisions elsewhere in this Use Agreement.
- b. This Use Agreement may be renewed for subsequent terms of ten (10) years each upon the mutual written agreement of the parties. Any agreement for renewal after the first 10-year (automatic) renewal period shall require review by the City Finance Director and Office of the City Attorney prior to being executed.

3. **Scope of Use Agreement.**

3.1 **Conduit and Fiber Included.** The totality of the City's conduit and fiber to be made available to MUFN-C under this Agreement is shown in **Exhibit 1**, and comprises:

- a. City's Member-Owned or Member Controlled Facilities (defined herein) that are
 - (i) within the Municipal Right-of-Way and determined by the City to be needed for MUFN-C's operations within the City limits; and
 - (ii) within another government's right-of-way, outside the City limits but owned, controlled, or used by the City and, in some cases, maintained by the City, pursuant to an agreement with the unit of government in question (City of Monona, Town of Madison, City of Fitchburg, or State of Wisconsin);

and

- b. all pre-existing City owned conduit and fiber that was not part of the City's in-kind contribution to the Grant.

3.2 This Agreement allows three categories of use of the City's Member-Owned or Controlled Facilities by MUFN-C:

- a. **Use and Access.** City is making available the conduit and fiber included in sec. 3.1 and shown in **Exhibit 1** (i.e. dark fiber and conduit), subject to the capacity limit expressed below, to MUFN-C so that MUFN-C and its Member Organizations can access and provide data communication transport services and related functions in furtherance of its mission and the requirements of the Grant. Capacity limit: Notwithstanding the foregoing, the City retains the right to limit or control the number of strands available to MUFN-C under this Agreement. The City will reserve strands as needed for the City's own use in locations the City deems necessary in its sole discretion.

- b. Placement of Equipment. MUFN-C may use the Premises for the installation, operation, maintenance, repair, and removal of Equipment owned by MUFN-C. MUFN-C acknowledges that this Use Agreement is non-exclusive and that the City will continue to use the Premises and shall have the right to lease or grant other licenses to one or more entities provided that such subsequent use, lease, or license shall not interfere with MUFN-C's Equipment placement rights under this Use Agreement. Additional requirements for Equipment placement are found in Sections 3.6 and 3.7 and elsewhere throughout this Agreement. A New Project may also involve the placement of additional MUFN-C owned Equipment as part of the Project. Any such Equipment, if it remains the property of MUFN-C and not the City, shall be treated like other MUFN-C owned Equipment under this Agreement.
- c. New Projects. MUFN-C may have access to the Premises and use of the Member Owned Facilities for purposes of installing or connecting a New Project, as further described in Section 3.7 and elsewhere in this Agreement.

3.3 Any and all rights expressly granted to MUFN-C under this Use Agreement shall be subject to the prior and continuing right of the City under applicable Laws to use any and all parts of Municipal Right-of-Way and Municipal Property exclusively or concurrently with any other person or entity and shall be further subject to all deeds, easements, dedications, conditions, covenants, restrictions, encumbrances and claims of title of record which may affect the Municipal Right-of Way and Municipal Property. Nothing in this Use Agreement shall be deemed to grant, convey, create, or vest in MUFN-C a real property interest in land, including any fee, leasehold interest or easement. Nothing in this Agreement shall be construed to contradict or supersede the City's obligations as a subrecipient of the Grant set forth in the Subrecipient Agreement.

3.4. Maintenance of the Member-Owned and Controlled Facilities by the City:

- a. The City will manage, maintain, and repair its Member Owned or Member Controlled Facilities in public right-of-way shown in Exhibit 1 in accordance with the Maintenance Requirements and Procedures found in **Exhibit B** to the Subrecipient Agreement (attached hereto.)
- b. Fiber Management Database. The City intends to enter data relating to its Member Owned and Controlled Facilities into a database that will assist the City in performing its maintenance and other fiber management duties under this Agreement and the Subrecipient Agreement. The City may allow MUFN-C or one or more Member Organizations to have a degree of access to the database. MUFN-C or its Member Organizations may be asked to mark-up maps for editing use by the City and communicate with the City's database service provider on request of the City. MUFN-C agrees to cooperate with such efforts as requested. The City may also require MUFN-C to use the database to track each MUFN-C member's use of City facilities under this Agreement to assist the City in preparing invoices and tracking and verifying fees under sec. 3.5, and the City agrees to provide database access to MUFN-C representatives(s) or Member Organizations for that purpose.

3.5 Fees.

- a. As compensation for MUFN-C's use of City's Member-Owned or Controlled Facilities under this Agreement and the City's services associated with managing the same, including the services described in Section 3.4.a. above, and not as a tax levied or collected on income within the meaning of Wis. Stat. §66.0611, MUFN-C shall pay to the City the fees shown in the tables **Exhibit 5A** (by pair or strand, as applicable) according to the zones shown in **Exhibit 5B**, except that fees for the fiber paths shown on **Exhibit 6** shall be as set forth in that Exhibit, and fees for Initial Commercial Members shall be as described in sec. 3.5.c. MUFN-C will collect fees from its Member Organizations pursuant to procedures in the MUFN-C Agreement of Association and Bylaws, however MUFN-C agrees not to charge the fees shown in Exhibit 5A from the City (as a member of MUFN-C) for the City's use of its own fiber.

MUFN-C is responsible for these fees effective June 28, 2013, the date the City accepted ownership of the Grant assets.

MUFN-C shall develop operating procedures and maintain records that accurately track fiber use by each of its members by circuit, pair, and strand, and make that information available to the City on request, either through the City's database described in sec. 3.4.b. or another agreed upon format.

- b. City will invoice MUFN-C annually for the fees described in sec. 3.5.a. according to a schedule to be mutually agreed between the parties. The City will provide a detailed invoice. The City will use procedures in its separate facilities use agreements with the Initial Commercial Partners for invoicing and verifying fees owed by the Initial Commercial Partners. MUFN-C shall pay invoices within ninety days (90) days from the date of invoice. All amounts paid the City shall be subject to audit and re-computation by the City. In the event that any payment is not made as required or re-computation results in additional monies owed, such amounts shall be subject to a twelve percent (12%) per annum interest charge.

- c. Initial Commercial Partners.

- i. The City will not charge MUFN-C the fees under Exh. 5A for fiber circuits used by an Initial Member Organization (as defined in the MUFN-C Agreement of Association) of MUFN-C that is a commercial provider and has in effect a separate facilities use agreement with the City governing that member's use of City conduit and other facilities ("Initial Commercial Members"). Fees for such Initial Commercial Members shall be set forth in the separate agreement and the member will compensate the City for its use of the City's Member Owned or Controlled Facilities through that agreement. The City's agreement not to charge for Initial Commercial Members under this Agreement is contingent upon the Initial Commercial Member executing and maintaining in effect for the duration of this Agreement a separate facilities use agreement (or amendment thereto) under which the member agrees to compensate the City for its use of the City's Member Owned or Controlled Facilities as of June 28, 2013 at a rate of not less than 5% of its gross revenues for commercial services using such facilities. Failure to do so will result in

MUFN-C being billed for the Original Commercial Member's fiber use at the rates in Exhibit 5A.

ii. The parties agree to review the fee structure for Initial Commercial Members every five (5) years. The City may initiate a review by notifying MUFN-C in writing. Upon such notice the parties agree to review amounts billed for Initial Commercial Members as compared to the other members and if fees received from commercial members is significantly lower than other members with comparable fiber usage, the City may opt to begin billing the Initial Commercial Members the fees in Exhibit 5A, in lieu of the alternate fee structure described in par. i. above, effective with the first annual billing cycle one (1) year after the date such review is completed.

3.6. Equipment Placement Conditions.

- a. Authorization to Place Equipment: The City hereby authorizes and permits MUFN-C, as a licensee, to enter upon the Municipal Right-of-Way and upon Municipal Property to locate, place, attach, install, own, operate, maintain, remove, reattach, reinstall, relocate, and replace its Equipment in ("in" should not imply "inside" any City boxes or cabinets) or on the Premises as set forth in this Agreement. This includes the opportunity to draw electricity to power the Equipment as set forth elsewhere in this Agreement.
- b. Initial installation of MUFN-C owned Equipment shall be subject to the prior written approval of plans and specifications by the City's Information Technology Department Director, or his/her designee. Such approval shall not be unreasonably withheld, conditioned or delayed.
- c. Equipment Maintenance by MUFN-C. MUFN-C shall, at its own expense, during the term of this Use Agreement, construct, install and maintain its Equipment in a safe condition, properly identified and tagged, in accordance with regulations established by the City and made available to MUFN-C in writing, so as not to physically conflict or electrically interfere with existing Premises. MUFN-C shall provide the City at least five (5) business days' notice prior to any known repair or maintenance of its Equipment, however the day and time of MUFN-C's access shall be subject to the availability of City staff and their schedules. If an emergency involving MUFN-C's Equipment is detected by MUFN-C, MUFN-C personnel will use the emergency procedures in Sec. 3.17 to contact with the City and arrange for escorted access as needed.
- d. Equipment Maintenance upon MUFN-C Default. If any part of Equipment owned by MUFN-C is not placed and maintained in accordance with the terms and conditions set forth in this Use Agreement and MUFN-C has not corrected the violation within sixty (60) days from receipt of written notice thereof from the City, or such longer period as may be reasonably necessary under the circumstances, then, in such event, the City may, at its option, correct said condition and notify MUFN-C in writing prior to performing such work. However, in the event such conditions pose an immediate threat to the safety of the City's employees or the public, interfere with the performance of the City's service obligations, or pose an immediate threat to the physical integrity of the Premises, and prior notice to MUFN-C is not possible under the circumstances, the City may perform

such work and/or take such action that it deems necessary without first giving written notice to MUFN-C and without subjecting itself to any liability for damage to MUFN-C's Equipment or for any interruption of the use of the Member Owned Facilities provided the City uses reasonable care in its activities to minimize any disruption. Immediately thereafter, the City will advise MUFN-C in writing of the work performed or the action taken. MUFN-C shall be responsible for all reasonable expenses incurred by the City associated with any work or action performed by the City pursuant hereto and shall reimburse the City within sixty (60) days from its receipt of the City's invoice therefore.

- e. Equipment Inspection Rights. The City reserves the right to make periodic inspections of any part of MUFN-C's Equipment. MUFN-C shall have the right to have its employees or representatives present during the time of any such inspection. The City shall give MUFN-C advance written notice of such inspections, except in those instances where, in the reasonable business judgment of the City, safety considerations justify the need for such an inspection without the delay of providing written notice. In that event, the City shall provide notice by any means available as immediately as possible thereafter. The making of periodic inspections or the failure to do so shall not operate to impose upon the City any liability of any kind whatsoever nor relieve MUFN-C of any responsibility, obligations or liability assumed under this Use Agreement.
- f. The City shall not be held responsible for any damage to MUFN-C's Equipment located on the City's Premises, Municipal Right-of-Way or Municipal Property caused by the City or its employees, officers, officials, contractors, or agents.

3.7 Conditions Applicable to Equipment Placement and New Projects:

- a. New Projects - Conduit and Fiber. If MUFN-C installs conduit and fiber in the Municipal Right of Way or Municipal Property as part of a New Project, MUFN-C shall give City the following: ALL conduit (including pull boxes, manholes and other facilities associated with conduit installation), and all fiber optic cable in conduit plus cable sheathing, troughing, pedestals, slack containers, and related equipment necessary for the operation and use of the fibers, but excluding any Equipment that will remain owned by MUFN-C. The procedure for acceptance in Section 3.7.c., et. seq., shall be followed.

MUFN-C shall, at its own expense, during the term of this Use Agreement, construct, install and maintain any New Project in a safe condition, properly identified and tagged, in accordance with regulations established by the City and made available to MUFN-C in writing, so as not to physically conflict or electrically interfere with existing Premises. The City will bear no cost for initial build, nor any future upgrades that are done as a New Project by MUFN-C (unless the City has agreed to contribute through the process for a New Project under the MUFN-C Agreement of Association or unless the City has otherwise agreed.) All installations of conduit by MUFN-C shall be completed in accordance with the current City of Madison "Standard Specifications for Public Works Construction" if deemed applicable by the City.

The specifications for fiber optic cable and conduit to be installed as a New Project shall be subject to review and approval by the City prior to commencing the New Project. Section 3.8 below provides additional requirements for fiber.

b. Construction Management. MUFN-C shall notify the City not less than sixty (60) days in advance by written notice before undertaking construction or installation of Equipment or a New Project, or the length of time necessary for the encroachment permit or other applicable city permit processes, whichever is longer. In either case, the day and time of MUFN-C's access shall be subject to the availability of City staff and their schedules. The City (or its authorized agent) shall have the authority, without subjecting the City to any liability therefore, to suspend MUFN-C's work or operations in and around the Municipal Right-of-Way, Municipal Property or Premises if, the reasonable business judgment of said employee or agent, any hazardous conditions arise or any unsafe practices, including unsafe practices which may threaten the integrity of the Municipal Right-of-Way, Municipal Property, or Premises, are being followed by MUFN-C's employees, agents or contractors. In the event of a City imposed suspension of MUFN-C's work, authorized representatives of the City and MUFN-C shall promptly meet at the earliest possible moment but no more than twelve (12) hours after the imposition of the suspension, to take all steps necessary to continue. Within that time, the City shall provide to MUFN-C written notice of steps to be taken by MUFN-C to eliminate any hazardous conditions or to revise any practices deemed to be unsafe. The presence of City staff or authorized agent shall not relieve MUFN-C of its responsibility to conduct all of its work in and around the Municipal Right-of-Way, Municipal Property and Premises in a safe and workmanlike manner.

3.8 Conduit and Fiber installed by MUFN-C. If MUFN-C installs new conduit and fiber as part of a New Project, the following shall apply:

- a. Conduit installed by MUFN-C. Except for locations where a smaller size is approved by the City, MUFN-C shall install three (3) inch conduit. All conduit installation work shall be completed in accordance with: (a) the Permit to Excavate in Right-of-Way as set forth in this agreement (when required) (b) Exhibit 4, including any additional requirements of the City that are not included in the Permit to Excavate in Right-of-Way; and (c) any applicable sections of the current City of Madison "Standard Specifications for Public Works Construction" found at: <http://www.cityofmadison.com/business/pw/specs.cfm> ("Standard Specifications"). The parties intend only to incorporate those substantive specifications from this document that apply to the type of work being done in the New Project under this Agreement. In the event of a conflict in terms between this Agreement and the Standard Specifications, this Agreement shall control. The City shall have the right to review the installation as set forth in the applicable procedures under MGO 10.05, the Standard Specifications, or as specified elsewhere in this Agreement.
- b. Before MUFN-C installs fiber in existing occupied City conduit, MUFN-C shall receive approval from City Traffic Engineering that space for the fiber is available in the conduit.

- c. Prior to conveyance of fiber to the City as part of a New Project, MUFN-C shall test all fiber and shall provide the test results to the City. Testing shall be performed as specified in **Exhibit 2** hereto, and **Exhibit B** to the Subrecipient Agreement. Within thirty (30) days of receiving the test results, City shall provide MUFN-C with an Acceptance or Rejection Notice, in a form similar to Exhibit 3. Failure to provide notice of acceptance or rejection within thirty (30) days shall be deemed acceptance by the City. Prior to acceptance or rejection of fiber, the City also may perform visual inspection of all above-ground Access Points and visible fiber optic cable construction.
- d. If the City rejects any fiber within the thirty (30) day time period in a., MUFN-C shall use commercially reasonable efforts to cure the defective condition identified in the Rejection Notice within ninety (90) days, to the extent the defective condition was caused by MUFN-C. If MUFN-C is unable to cure within ninety (90) days, City may terminate the Agreement.
- e. Within ninety (90) days of receipt of an Acceptance Notice, MUFN-C shall provide the City with technical specifications of the fiber optic cable, associated splices and other equipment used in the New Project, in a format acceptable to the City. MUFN-C also shall provide the City with general documentation regarding the fiber that illustrates the location of:
 - i. End Locations
 - ii. Mid Span Splice Locations
 - iii. Mid Span Repeater Locations
 - iv. A summary of distances between the locations listed in i.-iii.
 - v. Type of cable construction between locations
 - vi. Geographical information necessary to further clarify the fiber route.
 - vii. "as-built" plans as required by Exhibit 4.
 - viii. the following data elements that the City is required to provide to its fiber database management service contractor:
 - a. Conduit and vault quantity, size and location. Location shall be GPS coordinates.
 - b. Strand Count (per cable)
 - c. Location A to Z with path information (interconnect points)
 - d. A list of which organizations are using which strands
 - e. Splice points/diagrams
 - f. Patch panel details

3.9. Splicing.

City-owned fiber optic cable may be physically spliced into MUFN-C fiber optic cable as part of a New Project. To maintain the integrity of the fiber optic cable, only the following parties will be authorized to perform such splicing: MUFN-C, MUFN-C subcontractor(s) authorized by the City, the City, the City's constructor(s). Where expansion occurs at existing access points, MUFN-C or the City will perform the splicing upon written request or notification by the City.

If MUFN-C constructs new fiber as a New Project, it shall construct the new facilities in accordance with standards adopted from time to time by the Institute of Electrical and Electronics Engineers and shall conform to specifications in Exhibit 1 (Splicing, Testing

and Acceptance Standards) and Addendum A to Exhibit B to the Subrecipient Agreement.

MUFN-C warrants that the fiber optic cable and fibers it may install under this Agreement shall be free of material defects in workmanship for a period of 1 year from acceptance by the City.

3.10. Special Conditions for Equipment Placement and New Projects. The following special conditions apply to MUFN-C owned Equipment and New Projects, or both, as indicated:

- a. No storage of material or equipment is permitted on Premises, except the temporary and orderly placement of items in conjunction with installation, maintenance, repair, or removal activities. Any temporary storage shall be secured to protect the public and the work zone, as needed, according to City's standards.
- b. MUFN-C shall be responsible for the installation, operation, maintenance, repair, and removal of Equipment. All installation, operation, maintenance, repair, and removal activities shall have appropriate work zone signage and barricading consistent with part VI of the MUTCD, City of Madison Standards for Sidewalk and Bikeway Closures, and State of Wisconsin Standard Detail Drawings, if applicable.
- c. The City shall not be liable for any damage to the Equipment occasioned by water, ice, snow, knockdowns, lightening, or power surges.
- d. Any modifications to the Equipment shall be subject to the prior written approval of the City and any other required governmental approvals before MUFN-C may begin the modification of the Equipment, which approval shall not be unreasonably withheld.
- e. Except for peak traffic hours between 7:00-9:00 A.M. and 4:00-6:00 P.M., MUFN-C shall have non-exclusive, unlimited access, 24 hours a day, 7 days a week, 365 days a year to any outdoor Premises upon which MUFN Equipment is placed under this Agreement, provided MUFN-C's access shall be limited to MUFN-C's Equipment on the Premises, and to the plug-in between MUFN-C's Equipment and City electrical equipment. During peak traffic hours, MUFN-C access to the Premises shall be only with the permission of the City.
- f. The City does not guarantee continuous power at the Premises. In the event of a disruption in power at the Premises, City will endeavor to restore power during normal workday hours, after restoring power to mission critical City services.
- g. MUFN-C shall be responsible for all costs for moving or damaging City Premises or City property including street signs, street lights and cable. Any or all work of this type that may be necessary shall be done by the City on a time and material basis.

- h. Fiber optic cable facilities if installed by MUFN-C as a New Project, shall maintain a six (6) foot clearance from any traffic signal or street light base, manhole or City sign.
- i. MUFN-C shall coordinate its Equipment installation on Premises with the City of Madison Information Technology Department Director, or his/her designee, (608-266-4454), prior to beginning installation of any Equipment.
- j. MUFN-C shall obtain all necessary Permits to Excavate in Public Right-of-Way prior to beginning any work within the Municipal Right-of-Way. The City charges a fee for Permits to Excavate in Public Right-of-Way for inspection and street degradation. Permittees failing to obtain a Permit to Excavate in Public Right-of-Way are subject to penalty. The Permit to Excavate in Public Right-of-Way can be obtained at the office of the City Engineer.
- k. Structural Study. For certain Premises (e.g., water towers or other structures or buildings) the City may require that MUFN-C provide to the City, at MUFN-C's expense and prior to the installation of any Equipment or commencement of a New Project on said Premises, an engineering study indicating whether said Premises is able to structurally support the Equipment or anything else installed under a New Project without prejudice to the City's primary use of the Premises.

3.11. Interference. MUFN-C's installation, operation, maintenance, repair or removal of its Equipment or anything else installed as a result of a New Project shall not damage or interfere in any way with the City's use of the Premises or related repair and maintenance activities or such activities of others using the Premises. MUFN-C agrees to cease all such actions that materially interfere with the City's use of the Premises immediately upon actual notice of such interference, provided however, in such case, MUFN-C shall have the right to terminate this Use Agreement. The City at all times during this Use Agreement, reserves the right to take any action it deems necessary, in its sole discretion, to repair, maintain, alter, or improve the Premises in connection with Premises operations. Except in cases of emergency, the City will endeavor to provide MUFN-C with written notice in advance of any scheduled repair, maintenance, alteration, or improvement of the Premises that may affect MUFN-C owned Equipment. The City shall attempt to minimize, at no additional expense to the City, any disturbance of MUFN-C's Equipment during such repairs, maintenance, alterations, or improvements. MUFN-C agrees to reimburse the City for any additional repair, maintenance, alteration or improvement costs that the City incurs as a result of MUFN-C's Equipment being located on the Premises.

3.12. Destruction of Premises/Equipment Damage. If the Premises where MUFN-C Equipment is located are destroyed by fire, winds, flood, lightning or other natural or manmade cause (other than caused by MUFN-C), the City shall have the option to repair or replace the Premises at its sole expense or to revoke this Use Agreement for those Premises, effective on the date of such damage or destruction. In the event the Premises are not repaired or replaced after the event, MUFN-C may request the City to designate if possible, another Premises for Equipment placement that would allow them to continue their operations ("Alternate Equipment Location"). MUFN-C shall have the option of keeping its Equipment on such Alternate Location for the term

of this Use Agreement if both parties agree. In no case shall the City be obligated to provide an Alternate Equipment Location.

3.13 Conduit/Fiber Relocates. The City is obligated to perform extraordinary relocates of grant-funded fiber due to road construction or other changes to existing Municipal Right-of-Way, under Exhibit B to the Subrecipient Agreement. Such relocates are described in Exhibit B under "Scheduled Maintenance." For purposes of this Agreement, the City agrees to complete such relocates on all City of Madison Member-Owned Facilities.

3.14. Equipment Relocation and Displacement.

- a. Equipment Relocations at City's Request. MUFN-C understands and acknowledges that City may require MUFN-C to relocate its Equipment, and MUFN-C shall at City's direction relocate such Equipment at MUFN-C's sole cost and expense, whenever City reasonably determines that the relocation is needed for any of the following purposes: (a) if required for the construction, completion, repair, relocation or maintenance of a City project; (b) because the Equipment is interfering with or adversely affecting proper operation of City-owned light poles, traffic signals, or other Premises; or (c) to protect or preserve the public health or safety. In any such case, the parties shall work cooperatively to find "Work Around Solutions" that least interfere with the provision of Services or the City shall use its best efforts to afford MUFN-C a reasonably equivalent alternate location. The term "Work Around Solutions" shall mean the use of some sort of technical alternative to provide the same or comparable service. If MUFN-C shall fail to relocate any Equipment as requested by the City within a reasonable time under the circumstances in accordance with the foregoing provision, City shall be entitled to relocate the Equipment at MUFN-C's sole cost and expense, upon prior notice to MUFN-C and in a manner that least interferes with the provision of Services on the Network. To the extent the City has actual knowledge thereof, the City will attempt promptly to inform MUFN-C of the displacement or removal of any pole or other Premises on which any Equipment is located.
- b. Relocations at MUFN-C's Request. In the event MUFN-C desires to relocate any Equipment from one Premises location to another, MUFN-C shall so advise City. City will use reasonable efforts to accommodate MUFN-C by making another reasonably equivalent premise available for use in accordance with and subject to the terms and conditions of this Use Agreement.

3.15. Damage to Municipal Property Caused by Work Permitted under this Agreement. Whenever the installation, maintenance, repair, removal or relocation of Equipment located on Municipal Right-of-Way or Municipal Property is required or permitted under this Use Agreement, and such installation, maintenance, repair, removal or relocation causes damage to the Municipal Right-of-Way or Municipal Property or Premises, MUFN-C, at its sole cost and expense, shall promptly repair and return the Municipal Right-of-Way and Municipal Property and Premises to their former condition. MUFN-C must notify the City immediately regarding any damage to Municipal Right-of-Way or Municipal Property or Premises. If MUFN-C does not repair the site as just described, then the City shall have the option, upon five (5) days' prior written notice to MUFN-C, to perform or cause to be performed such

reasonable and necessary work on behalf of MUFN-C. Upon the receipt of a demand for payment by the City, MUFN-C shall promptly reimburse the City for such costs.

3.16. City's Maintenance Right. The City's right to maintain and operate its Premises in such a manner as will best enable the City to fulfill its own service requirements is in no manner limited by this Use Agreement. However, the City will use all reasonable efforts to avoid removal or relocation of, or interference with, any Equipment once installed on Premises.

3.17 Emergency Procedures.

- a. City Emergency. In the event of a City emergency, City's work shall take precedence over any and all operations of MUFN-C on the Premises. To the extent possible, when responding to such emergency, the City shall take reasonable care to avoid or minimize disruption and interference with operation of the Network.
- b. MUFN-C Emergency. In the event of a MUFN-C emergency, MUFN-C shall immediately notify the City at Traffic Engineering Division (608) 266-4767 prior to performing any maintenance or repair necessary to correct the emergency situation. If the Emergency relates to MUFN-C Equipment, MUFN-C must also notify City Information Technology Help Desk at 266-4193 during business hours (7:00-4:30) and 267-1114 after business hours.

4. Nondiscriminatory Network.

MUFN-C shall conduct its operations under this Agreement (i.e. the transmission of bits or transport layer) in such a manner as to provide a common, nondiscriminatory service platform for multiple ISPs.

Non-discriminatory Network. The parties acknowledge that the Grant requires MUFN-C to comply with the following: (i) adhere to the principles contained in the FCC's Internet Policy Statement (FCC 05-151, adopted August 5, 2005); (ii) not favor any lawful Internet applications and content over others; (iii) display any network management policies in a prominent location on the service provider's web page and provide notice to customers of changes to these policies (awardees must describe any business practices or technical mechanisms they employ, other than standard best efforts Internet delivery, to allocate capacity; differentiate among applications, providers, or sources; limit usage; and manage illegal or harmful content); (iv) connect to the public Internet directly or indirectly, such that the project is not an entirely private closed network; and (v) offer interconnection, where technically feasible without exceeding current or reasonably anticipated capacity limitations, on reasonable rates and terms to be negotiated with requesting parties. This includes both the ability to connect to the public Internet and physical interconnection for the exchange of traffic.

5. **Abandonment of MUFN-C Fiber and Conduit.**

Upon the expiration or termination of this Use Agreement, the parties agree that all fiber optic cable and conduit installed by MUFN-C in Municipal Right-of-Way on Municipal Property as part of a New Project that was not transferred upon completion to the City, and is not funded in part or whole by federal funds subject to federal regulatory (CFR) rules of asset disposition, shall be abandoned in place. Upon abandonment, such fiber optic cable and conduit shall become the property of the City.

6. **Liability.**

a. The CITY and MUFN-C each shall be responsible for its own acts or omissions and those of its officers, officials, agents, and employees (and in the case of MUFN-C, its committees and Member Organizations), and for all losses, claims, and liabilities that are attributable to such acts or omissions. In so agreeing, it is not the intent of either party to modify any immunity or protection available to the City under Wis. Stat. sec. 893.80 or available to either party by law.

Notwithstanding the foregoing, if any City permit or similar procedure (including but not limited to permits for excavations in the right-of-way) requires MUFN-C to accept additional liability or agree to a provision that conflicts with the preceding paragraph, the provision that provides more protection to the City (in the City's sole opinion) shall apply to claims that arise under the applicable permit or procedure.

b. Whenever MUFN-C uses a contractor/subcontractor/vendor ("Contractor") to perform any work on the Premises or other Municipal Property (including Municipal Right-of-Way), whether such work is related to the Equipment or a New Project, MUFN-C shall require the Contractor to agree to indemnify the City of Madison as follows:

"Indemnification. To the fullest extent permitted by law, the Contractor shall indemnify, defend and hold harmless the City of Madison, its officials, officers, agents, employees, and consultants from and against all suits, claims, damages, losses and expenses, direct, indirect or consequential (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs) arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense: (a) is attributable to bodily injury, sickness, disease, death, personal injury, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom and, (b) is caused in whole or in part by any negligent act or omission of the Contractor, any subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the work or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder or arises by or is imposed by law regardless of the negligence of any such party.

In any and all claims against the City of Madison, its officials, officers, agents, employees, or consultants, by any employee of the Contractor, any subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the work or anyone

for whose acts any of them may be liable, the indemnification obligation hereunder shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any such subcontractor or other person or organization under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

The obligations of the Contractor hereunder shall not extend to the liability of the City of Madison's consultants or consultants' agents or employees arising out of the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, and designs or specifications."

7. Insurance.

7.1. Required Coverage.

a. **Insurance for Equipment-related work:** If MUFN-C comes on to the City's Premises to do any work related to MUFN-C's Equipment, or if MUFN-C uses a contractor/subcontractor/vendor ("Contractor") to come on to the City's Premises to do any such work, MUFN-C or the Contractor, as applicable, shall carry at a minimum the following insurance coverage:

Commercial General Liability. MUFN-C or its Contractor, as applicable, shall procure and maintain for the duration of the Equipment-related work, Commercial General Liability insurance including, but not limited to bodily injury, property damage, personal injury, and products and completed operations (unless determined to be inapplicable by the Risk Manager) in an amount not less than \$2,000,000 per occurrence. This policy shall also provide contractual liability in the same amount. The coverage shall be primary and name the City of Madison, its officers, officials, agents and employees as additional insureds. Contractor shall require any subcontractors performing such work to procure and maintain insurance meeting the above criteria, applying on a primary basis and naming the City of Madison, its officers, officials, agents and employees as additional insureds.

Worker's Compensation. MUFN-C or its Contractor, as applicable, shall procure and maintain for the duration of the Equipment-related work, statutory Workers' Compensation insurance as required by the State of Wisconsin. The Contractor shall also carry Employers Liability limits of at least \$100,000 Each Accident, \$100,000 Disease – Each Employee, and \$500,000 Disease – Policy Limit. Contractor shall require any subcontractors performing such work to procure and maintain such insurance, covering each subcontractor.

Acceptability of Insurers. The above insurance is to be placed with insurers who have an A.M. Best rating of no less than A- (A minus) and a Financial Category rating of no less than VII.

Acceptability of Insurers. The above insurance is to be placed with insurers who have an A.M. Best rating of no less than A- (A minus) and a Financial Category rating of no less than VII.

Proof of Insurance, Approval. MUFN-C shall provide, or require its Contractor to provide the City with certificate(s) of insurance showing the type, amount, class of operations covered, effective dates, and expiration dates of required policies. The certificate shall be provided to the City before MUFN-C or its Contractor commences the Equipment-related work on City property and shall not proceed until the City Risk Manager has approved the certificate. MUFN-C or its Contractor shall provide copies of additional insured endorsements or insurance policies, if requested by the Risk Manager.

Notice of Cancellation. MUFN-C, its subcontractor(s) and/or Insurer shall give the City thirty (30) days advance written notice of cancellation, non-renewal or material changes to any of the above-required policies during the term of this Agreement.

b. Insurance for New Projects. Prior to commencing work on any New Project as that term defined in this Agreement, MUFN-C and/or its Contractor(s) shall obtain and maintain in force for the duration of the New Project and until any facilities constructed under the New Project are accepted by the City and for as long as required under applicable City permit or similar procedures the insurance required under Section 107.4, "Contractor's Liability Insurance," of the then-current version of the "City of Madison Standard Specifications for Public Works Construction" available at <http://www.cityofmadison.com/business/pw/specs.cfm>.

8. Hazardous Substance Indemnification. MUFN-C represents and warrants that its use of the Premises will not generate any hazardous substance, and it will not store or dispose on the Premises nor transport to or over the Premises any hazardous substance in violation of any applicable federal, state or local law, regulation or rule. MUFN-C further agrees to hold the City harmless from and indemnify the City against any release of such hazardous substance and any damage, loss, or expense or liability resulting from such release including all attorneys' fees, costs and penalties incurred as a result thereof, which was caused by MUFN-C or any of its employees or agents. "Hazardous substance" shall be interpreted broadly to mean any substance or material defined or designated as hazardous or toxic waste, hazardous or toxic material, hazardous or toxic radioactive substance, or other similar term by any federal, state or local environmental law, regulation or rule presently in effect or promulgated in the future, as such laws, regulations or rules may be amended from time to time; and it shall be interpreted to include, but not be limited to, any substance which after release into the environment will or may reasonably be anticipated to cause sickness, death or disease. The City represents and warrants that it has no knowledge of any hazardous substance existing on the Property in violation of any federal, State or local law, regulation or rule.

9. Default by MUFN-C. Each of the following shall constitute an "Event of Default" by MUFN-C under this Use Agreement:

9.1. Failure to Perform. If MUFN-C shall fail to fully and timely perform any material covenant, commitment or obligation or otherwise breaches any term, provision or requirement set forth herein which failure shall continue uncured for a period equal to thirty (30) days following notice of same from the City or for such longer period if the

default is not susceptible of a cure within 30 days, provided MUFN-C promptly initiates steps to cure the default following receipt of notice of same from the City and thereafter diligently pursues further efforts to cure. Notwithstanding the foregoing, in the event MUFN-C (or its subcontractor, if subcontractor insurance was required by the City Risk Manager under Section 7) shall fail to maintain insurance as required by this Use Agreement, the City may elect to: (a) immediately terminate this Use Agreement and cause the removal of all MUFN-C owned Equipment installed upon the Premises at the sole expense of MUFN-C; or (b) purchase or pay for any insurance coverage required by this Use Agreement and charge MUFN-C the cost of same as an additional fee.

9.2. Insolvency. If MUFN-C shall

- a. Become insolvent;
- b. Be unable, or admit its inability, to pay its debts as the same become due;
- c. Make a general assignment for the benefit of creditors or an agent authorized to liquidate its property;
- d. Become subject voluntarily or involuntarily, to an order for relief under the U.S. Bankruptcy Code, and, In the case of an involuntary proceeding, such order is not vacated within 60 days of entry;
- e. File a petition to effect, or consent to the entry of, a plan of reorganization or other arrangement with creditors;
- f. Apply to a court for the appointment of a receiver for any of its assets or have such a receiver appointed; or
- g. Otherwise become the subject of any federal or state bankruptcy or insolvency proceeding.
- h. Dissolves for any of the reasons set forth in the MUFN-C Agreement of Association, section 8 or through any other lawful proceeding.

10. Remedies. Upon the occurrence of an Event of Default by MUFN-C, and following the passage of any grace or notice period required hereunder, City may do any of the following:

10.1. Terminate. Terminate this Use Agreement effective immediately upon written notice to MUFN-C.

10.2. Collection. Take any steps authorized by Law to collect unpaid and outstanding monetary obligations, including without limitation costs of collection and the City's reasonable attorneys fees.

10.3. Date of Notices: Changing Notice Address. Notices shall be deemed given upon receipt in the case of personal delivery, three (3) days after deposit in the mail, or the next business day in the case of facsimile, email or overnight delivery. Either party may from time to time designate any other address for this purpose by written notice to the other party delivered in the manner set forth above.

11. **Termination.** In addition to any other conditions for termination of this Use Agreement, including under "Default by MUFN-C," this Use Agreement may be terminated by the parties in the following situations:

11.1. Mutual Termination. This Use Agreement may terminate at any time upon written mutual agreement of the parties hereto.

11.2. Termination by MUFN-C. MUFN-C may terminate this Use Agreement, upon written notice to the City, in the event that:

- a. MUFN-C is no longer able to perform the functions intended by the Grant using the City Owned or Controlled Facilities due to technology obstacles which MUFN-C is incapable of overcoming in a financially viable manner.
- b. The City shall fail to fully and timely perform any material covenant, commitment or obligation or otherwise breaches any term, provision or requirement set forth herein which failure shall continue uncured for a period equal to 30 days following notice of same from MUFN-C or for such longer period if the default is not susceptible of a cure within 30 days, provided the City promptly initiates steps to cure the default following receipt of notice of same from MUFN-C and thereafter diligently pursues further efforts to cure.

12. **Assignment.**

12.1. Assignment in General. This Use Agreement shall not be assigned by MUFN-C without the express written consent of the City, which consent shall not be unreasonably withheld, conditioned or delayed.

12.2. Obligations after Assignment. In the event of any assignment by either party, the assigning or transferring party shall remain liable for all its obligations under this Use Agreement, unless: (a) the other party consents to release, by written instrument, the assigning or transferring party from such obligations, and (b) the assignee or transferee shall have affirmatively assumed in writing all of the obligations of the assigning or transferring party under this Use Agreement.

12.3. Transfer of Assets. Any transfer, assignment or sale of assets or business interests by MUFN-C to an unaffiliated entity must receive prior City approval, not to be unreasonably withheld, excluding transactions (a) required to secure or maintain financing arrangements; (b) conducted in the ordinary course of business; or (c) involving 20% or less of the assets or business interests of MUFN-C so long as prior notice is given the City.

13. Notices.

13.1. Delivery. All notices which shall or may be given pursuant to this Use Agreement shall be in writing and delivered personally or transmitted (a) through the United States mail, by registered or certified mail, postage prepaid; (b) by means of prepaid overnight delivery service; or (c) by facsimile or email transmission, if a hard copy of the same is followed by delivery through the U.S. mail or by overnight delivery service as just described, addressed as follows:

If to the City: City of Madison Information Technology Department
 Attention: Director
 210 Martin Luther King, Jr. Blvd.,
 Room 500
 Madison, WI 53703

If to MUFN-C: MUFN-C, U.A.
 Chair, Oversight Committee
 Rich Beadles
 210 Martin Luther King Jr Blvd. Room 525
 Madison, WI 53703

13.2. Contacting MUFN-C. MUFN-C shall be available to City employees or designated contractors by telephone twenty-four (24) hours a day, seven (7) days a week, regarding problems or complaints resulting from the attachment, installation, operation, maintenance or removal of its Equipment or any New Project.

14. Miscellaneous Provisions.

14.1. Nonexclusive Use. MUFN-C acknowledges that this Use Agreement does not provide MUFN-C with exclusive use of the Municipal Right-of-Way, Municipal Property or Premises and that City shall have the right to permit other providers of communications services to install equipment or devices in the Municipal Right-of-Way, on Municipal Property, and on Premises, so long as the foregoing do not materially interfere with operation of the Network. If the City enters into an agreement with a third party (the "Third Party Agreement") related to the deployment of a fiber network, the City shall provide a copy to MUFN-C. Within one hundred twenty (120) days after receipt, MUFN-C may elect, by written notice, to reopen discussion with the City on any financial or operational term in the Third Party Agreement that places MUFN-C at a competitive disadvantage, after considering the terms of this Use Agreement and the Third Party Agreement taken as a whole, in providing the Services. The City and MUFN-C shall negotiate in good faith appropriate modifications in this Use Agreement to obviate such competitive disadvantage.

- 14.2. No Waiver. No failure to exercise and no delay in exercising any right, power or remedy hereunder on the part of the City or MUFN-C shall operate as a waiver thereof, nor shall any single or partial exercise of any right, power or remedy preclude any other or further exercise thereof or the exercise of any other right, power or remedy. No express waiver shall affect any event or default other than the event or default specified in such waiver, and any such waiver, to be effective, must be in writing and shall be operative only for the time and to the extent expressly provided by the City or MUFN-C therein. A waiver of any covenant, term or condition contained herein shall not be construed as a waiver of any subsequent breach of the same covenant, term or condition
- 14.3. Severability of Provisions. If any one or more of the provisions of this Use Agreement shall be held by court of competent jurisdiction in a final judicial action to be void, voidable or unenforceable, such provision(s) shall be deemed severable from the remaining provisions of this Use Agreement; and the parties shall promptly engage in negotiations for a replacement provision that most closely approximates the original intent of the parties.
- 14.4. Governing Law, Jurisdiction. This Use Agreement shall be governed and construed by and in accordance with the laws of the State of Wisconsin, without reference to its conflicts of law principles. If suit is brought by a party to this Use Agreement, the parties agree that trial of such action shall be vested exclusively in the state courts of Wisconsin, County of Dane, or in the United States District Court for the Western District of Wisconsin.
- 14.5. Consent Criteria. In any case where the approval or consent of one party hereto is required, requested or otherwise to be given under this Use Agreement, such party shall not unreasonably delay, condition or withhold its approval or consent.
- 14.6. Amendment of Use Agreement. This Use Agreement may not be amended except pursuant to a written instrument signed by duly authorized representatives of both parties.
- 14.7. Entire Agreement. This Use Agreement contains the entire understanding between the parties with respect to the subject matter herein. There are no representations, agreements or understandings (whether oral or written) between or among the parties relating to the subject matter of this Use Agreement which are not fully expressed herein.
- 14.8. Force Majeure. Neither party shall be responsible for performance of any obligation under this Use Agreement that is prevented or delayed by reasons outside of its reasonable control, including without limitation floods, fires, hurricanes, tornadoes, earthquakes or other unavoidable casualty, acts of public enemy, insurrection, war, riot, sabotage, epidemic, strike or other labor disputes, freight detentions, acts or omissions of government, utility or other third parties or unusually severe weather conditions.
- 14.9. Compliance with Laws. MUFN-C shall become familiar with, and shall at all times comply with and observe all federal, state, and local laws, ordinances, and regulations

which in any manner affect the services or conduct of MUFN-C and its agents and employees.

14.10. Status of Parties / No employee relationship. For purposes of this Use Agreement, it is agreed that MUFN-C and its employees, agents, subcontractors, representatives, committee members and any other person involved on behalf of MUFN-C in the performance of this Agreement is not an employee of the City.

14.11. Audit and Retaining Of Documents. MUFN-C agrees to provide all records requested by the City including, but not limited to, financial statements, Equipment inventory and documentation and any other reports or documents reasonably requested by the City in order to audit or review activities under this Agreement, within five (5) working days after MUFN-C receives the City's written requests, unless the parties agree in writing on a longer period. MUFN-C also agrees that, subject to any applicable confidentiality requirements, the City may review copies of agreements entered into between MUFN-C and its Member Organizations and subcontractors, between any MUFN-C Member Organization and another party, and between MUFN-C's commercial Member Organizations and their customers, to ensure MUFN-C's compliance with the terms of this Use Agreement.

14.12. Non-Discrimination. In the performance of work under this Agreement, MUFN-C agrees not to discriminate against any employee or applicant for employment because of race, religion, marital status, age, color, sex, handicap, national origin or ancestry, income level or source of income, arrest record or conviction record, less than honorable discharge, physical appearance, sexual orientation, political beliefs or student status. MUFN-C further agrees not to discriminate against any subcontractor or person who offers to subcontract on this Agreement because of race, religion, color, age, disability, sex, or national origin.

14.13. Authority. MUFN-C represents that it has the full right, power, legal capacity and authority to enter into and perform its obligations under this Agreement, and each person signing on behalf of MUFN-C represents and warrants that s/he has been duly authorized to bind MUFN-C and sign this Use Agreement on MUFN-C's behalf.

IN WITNESS WHEREOF, the parties have entered into this Facilities Use and License Agreement as of the date first set forth above.

**METROPOLITAN UNIFIED FIBER
NETWORK, UNINCORPORATED
ASSOCIATION**

By: 

Print Name: Richard A. Baudles

Title: Chair MUFN-C, U.A. Oversight Committee

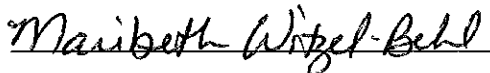
Date: 07/02/2013

**CITY OF MADISON
a Wisconsin Municipal Corporation:**

By:  7-2-13

Paul R. Soglin, Mayor

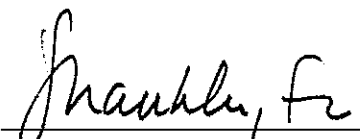
Date

By:  7-2-13

Maribeth Witzel-Behl, City Clerk

Date

APPROVED:

 7/2/2013
David Schmiedicke, Date
Date Director of Finance

 7/2/13
Eric Veum Date
Risk Manager

APPROVED AS TO FORM:

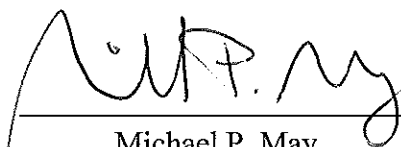
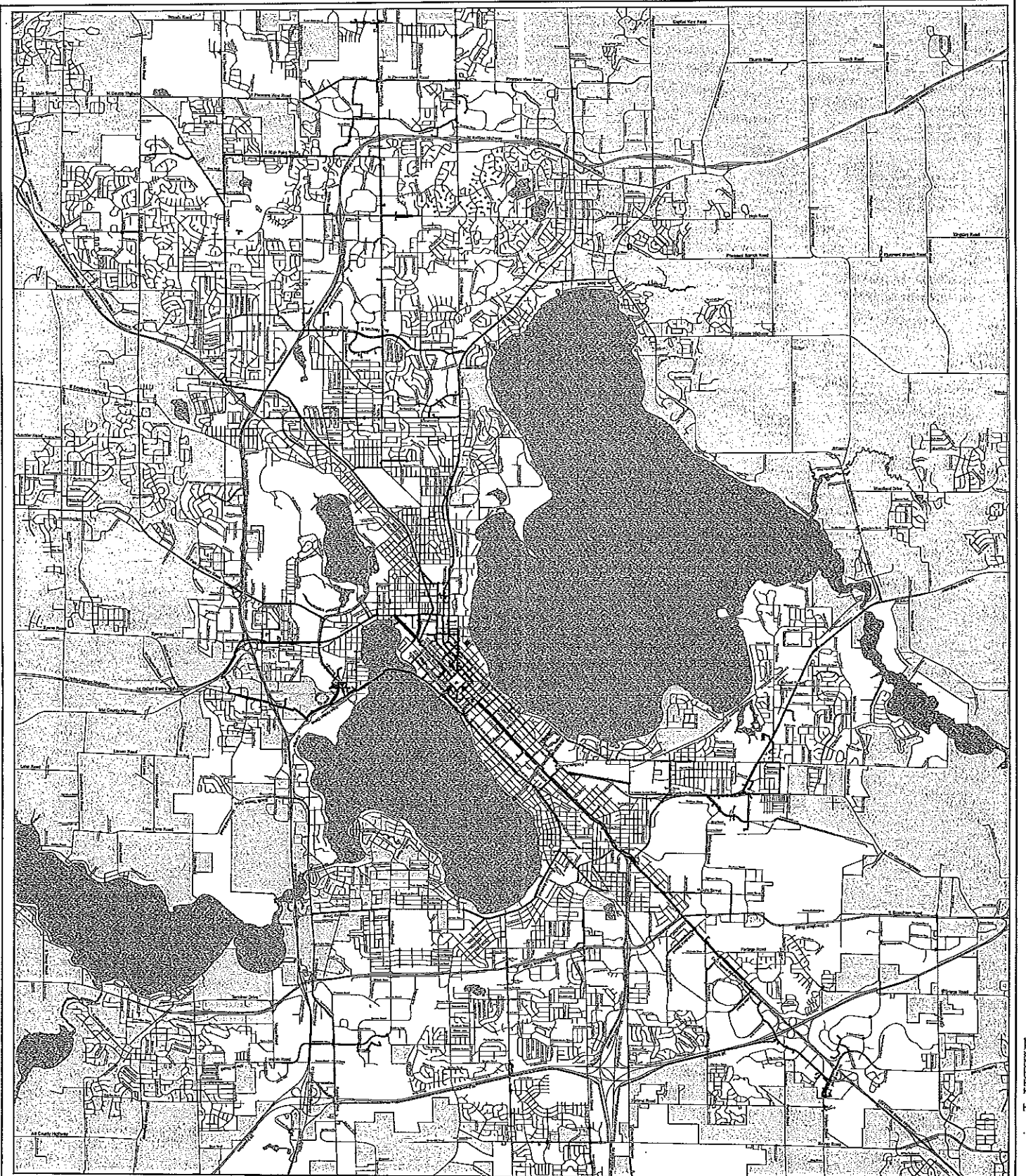
 7/2/13
Michael P. May Date
City Attorney

EXHIBIT 1

(Sec. 3.1 of the Facilities Use and License Agreement)

See 11 x 17 Map – attached.



Legend
WABOT Trail
City Owned or Controlled (within limits of County)
City Control
Outside City of Madison

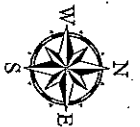


EXHIBIT 2

SPLICING, TESTING, AND ACCEPTANCE STANDARDS

MUFN-C will use the following procedures and specifications for any New Project it installs under this Agreement. The City will use the procedures and specifications for cable repair and relocates for which it is responsible under this Agreement (per the Subrecipient Agreement).

1. All splices will be performed with an industry, accepted fusion splicing machine.
2. After end-to-end (site-to-site) connectivity on the fibers, bi-directional span testing will be completed. These measurements will be made after all cable installation activities are complete for each span. Connectors will be cleaned as necessary to ensure accurate measurements are taken.
 - Installed loss measurements at 1550nm (and 1310nm when possible) will be recorded using an industry accepted laser source and power meter. Continuity testing will be done on all fibers concurrently.
 - OTDR traces will be taken at 1550nm and 1310nm and splice loss measurements will be analyzed. All testers shall be calibrated at a minimum of once a year.
 - All testing, power levels and OTDR traces will be conducted at 1550nm and 1310nm.
 - OTDR traces shall be saved in a standard file naming convention.
 - An electronic file with OTDR traces and Power level results will be provided.
3. The splicing standards are as follows:
 - The objective loss value of a connector & its associated splice will be .50 dB or less.
 - The objective for each fiber within a span shall be an average bidirectional loss of 0.15 dB or less for each splice. For example, if a given span has 10 splices, each fiber shall have a total bi-directional loss (due to the 10 splices) of 1.5 dB or less. Individual bi-directional loss values for each splice will be reviewed for high losses.
 - The aforementioned standards are objectives, not the basis for acceptance. The acceptance standard for each fiber per span shall be calculated as follows:
Span Loss= a(span distance in kilometers)+ b(0.15dB) + c(0.50 db)Where:
a = maximum fiber loss in dB per kilometer for the specific fiber type/manufacturer at 1550nm and 1310nm.
b = number of splice locations for the span
c = number of connectors for the span
4. All connector splices will be protected with heat shrinks. Backbone splices may be stored in trays with bare fiber manifolds and RTV silicone protection. Buffer tubes/ribbons will not be split across more than one splice tray. An industry accepted splice enclosure will be used on all splices.

EXHIBIT 3

ACCEPTANCE/REJECTION NOTICE (for New Projects)

Check one box:

- ☐ Fiber Accepted (fill in acceptance statement below)

Pursuant to the Facilities Use and License Agreement between MUFN-C and the City of Madison ("City"), dated _____, City hereby accepts the following fiber and/or conduit, as described in the attached project design for the segment described as _____

- ☐
- Fiber Rejected (fill in reason statement below)

Reason for Rejection:

CITY OF MADISON

MUFN-C

Accepted

Rejected

(Print Name)

(Print Name)

(Signature)

(Signature)

(Title)

{Title}

{Date}

{Date}

EXHIBIT 4

PLANNING AND CONSTRUCTION PROCEDURES

MUFN-C will follow the procedures set forth below for all New Projects under this Agreement:

(A) MUFN-C shall be subject to all policies and procedures provided in this Exhibit. The City may amend the policies and procedures in this Exhibit upon prior written notice to MUFN-C. MUFN-C further understands that non-compliance with this Exhibit will be considered a material breach as described in the Agreement. Remedies for such default will be at the sole discretion of the City of Madison.

(B) MUFN-C shall, at its own expense, during the term of this Use Agreement, construct and install its conduit and fiber in a safe condition so as to not physically conflict or interfere with existing Premises. Construction and installation of conduit and fiber on Municipal Right-of-Way or Municipal Property shall be in accordance with the terms of this Exhibit: and (a) the Permit to Excavate in Right-of-Way as set forth in this agreement (when required); (b) any applicable section of the current City of Madison "Standard Specifications for Public Works Construction" found at: <http://www.cityofmadison.com/business/pw/specs.cfm>; and (c) any additional requirements of the City made available in advance to MUFN-C in writing. The City will bear no cost for initial build, nor any future upgrades.

(C) MUFN-C shall properly identify and tag all of its Equipment, as instructed by the City.

(D) Planning. Before entry on or into any Municipal Right-of-Way, Municipal Property or Premises, including but not limited to street lights, conduits, hand-holes, man-holes controller cabinets and building facilities, MUFN-C shall provide to the City, through the City's conduit management system, an installation and/or survey plan of MUFN-C's intended use of the Municipal Right-of-Way, Municipal Property or the Premises.

(E) Construction. In addition to the other notification and permit application procedures found in the body of this agreement MUFN-C shall make an entry in the City's electronic conduit management system at least ten (10) days in advance before commencing construction and installation of conduit or fiber (as a "New Project" under this Agreement.) All work shall be performed to the specifications described herein. The City shall have the authority, without subjecting the City to any liability therefore, to suspend MUFN-C's work or operations in and around the Premises, Municipal Right-of-Way and Municipal Property if, the reasonable business judgment of an authorized City employee or agent, any hazardous conditions arise or any unsafe practices, including unsafe practices which may threaten the integrity of the Premises, Municipal Right-of-Way or Municipal Property, are being followed by MUFN-C's employees, agents or contractors/subcontractors. In the event of a City-imposed suspension of MUFN-C's work, authorized representatives of the City and MUFN-C shall promptly meet at the earliest possible moment but no more than twelve (12) hours after the imposition of the suspension, to take all steps necessary to continue. Within that time, the City shall provide to MUFN-C written notice of steps to be taken by MUFN-C to eliminate any hazardous conditions or to revise any practices deemed to be unsafe. The presence of the City's authorized agent shall not relieve MUFN-C of its responsibility to conduct all of its work in and around the Premises, Municipal Right-of-Way and Municipal Property in a safe and professional manner.

(F) As-built Plans. MUFN-C shall also provide "as-built" plans in a prompt manner and no later than 60 (sixty) days after completion of project construction.

EXHIBIT 5A

FIBER LEASE FEES – PER PAIR:

The City will charge MUFN-C for each pair used
(subject to the exceptions in sec. 3.5.a.)

ZONE	TOPOLOGY	FEE PER PAIR
1 to 1	Point-to-Point	\$200/Month
1 to 2	Point-to-Point	\$200/Month
1 to 3	Point-to-Point	\$200/Month
2 to 2	Point-to-Point	\$200/Month
3 to 3	Point-to-Point	\$200/Month
2 to 3	Point-to-Point	\$400/Month
1 to 1	Ring	\$400/Month
1 to 2	Ring	\$400/Month
1 to 3	Ring	\$400/Month
2 to 2	Ring	\$400/Month
3 to 3	Ring	\$400/Month
2 to 3	Ring	\$800/Month

EXHIBIT 5A

FIBER LEASE FEES - PER STRAND:

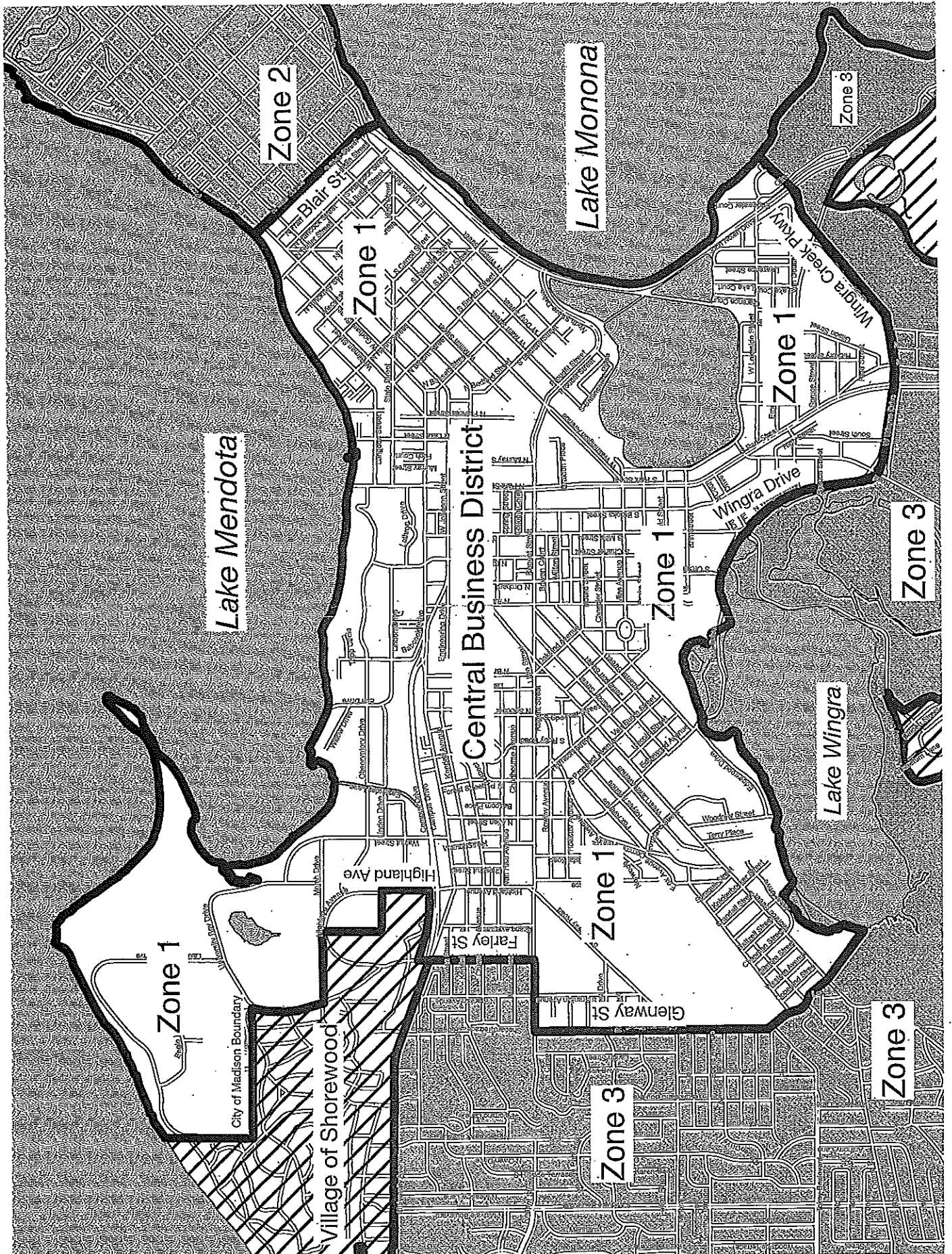
The City will charge MUFN-C for each strand used
(subject to the exceptions in sec. 3.5.a.)

ZONE	TOPOLOGY	FEE PER STRAND
1 to 1	Point-to-Point	\$100/Month
1 to 2	Point-to-Point	\$100/Month
1 to 3	Point-to-Point	\$100/Month
2 to 2	Point-to-Point	\$100/Month
3 to 3	Point-to-Point	\$100/Month
2 to 3	Point-to-Point	\$200/Month
1 to 1	Ring	\$200/Month
1 to 2	Ring	\$200/Month
1 to 3	Ring	\$200/Month
2 to 2	Ring	\$200/Month
3 to 3	Ring	\$200/Month
2 to 3	Ring	\$400/Month

EXHIBIT 5B

Zones for Lease Fees

See 11 x 17 2-sided map, attached.



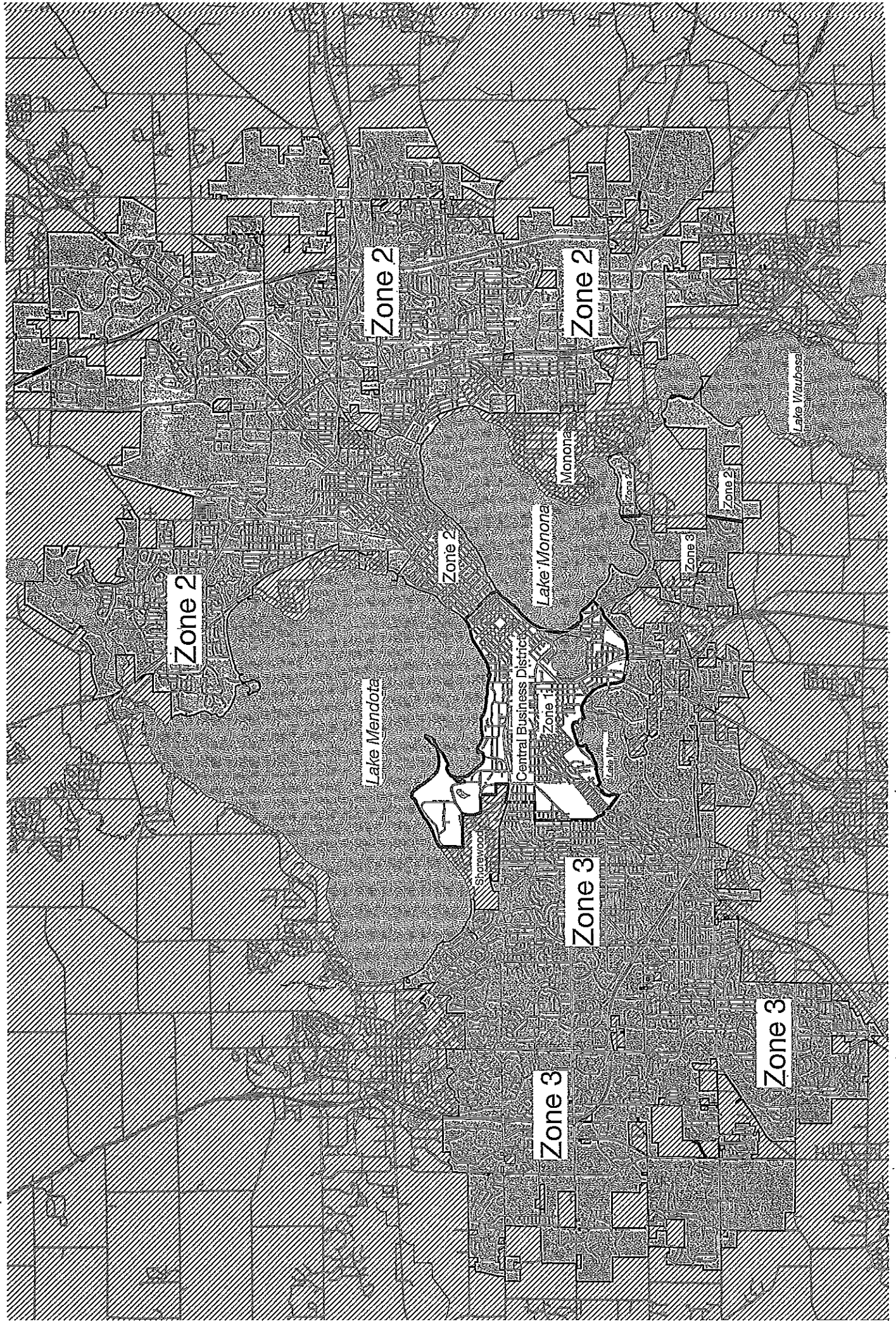


EXHIBIT 6

The City will not charge to MUFN-C the lease fees in Exhibit 5A for up to twelve (12) fiber optic strands serving the Meriter Business Center, identified on the dashed line fiber path depicted below (Meriter fiber optic network map), until June 18, 2019. The fees shown in Exhibit 5A for these strands in 2019 shall be prorated from June 19 to December 31. Thereafter, the City will charge the fees in Exhibit 5A on an annual basis according to the procedures in sec. 3.5 of the Facilities Use and License Agreement to which this Exhibit is attached.

Meriter fiber optic network map

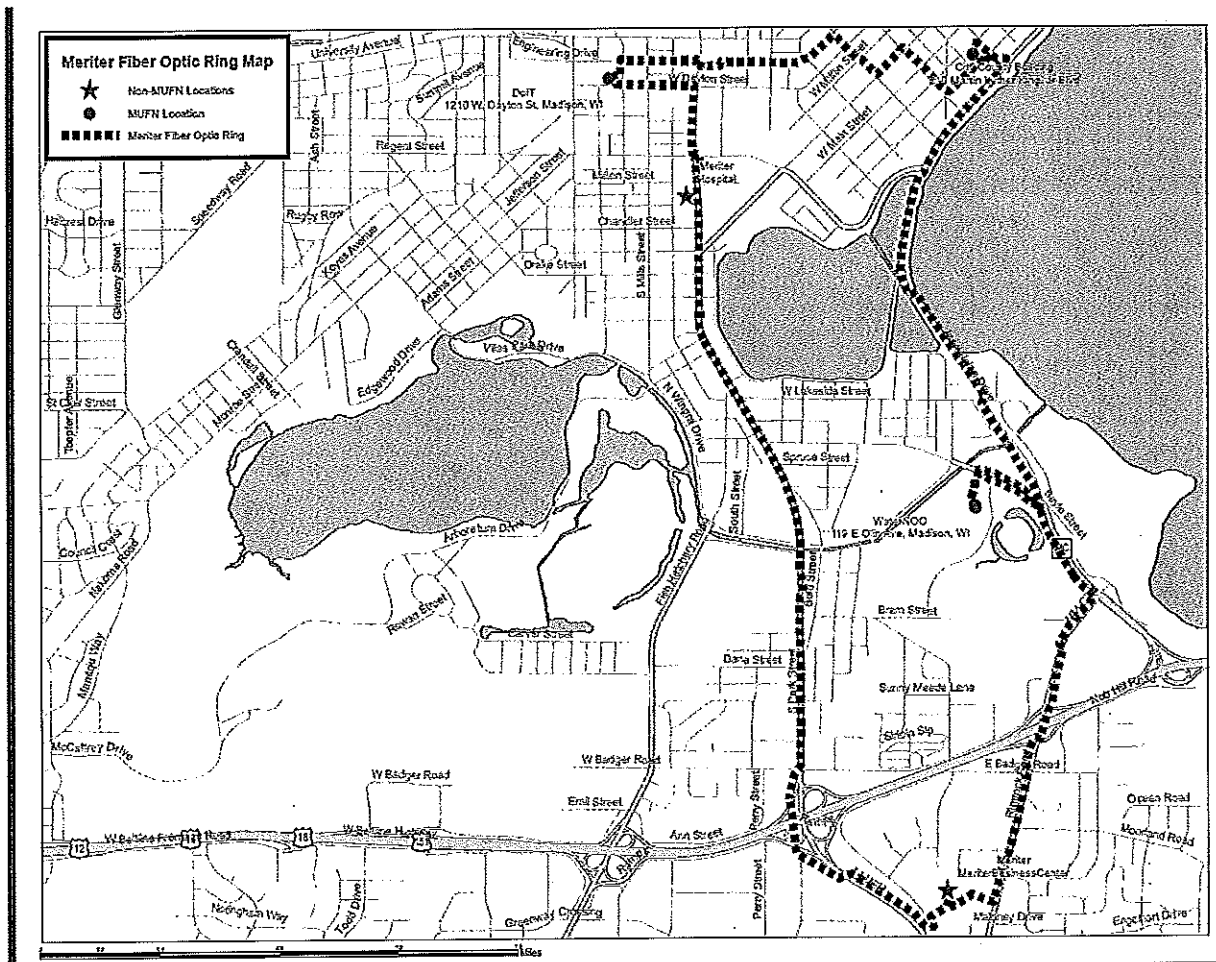


EXHIBIT 6

The City will not charge to MUFN-C the lease fees in Exhibit 5A for twelve (12) fiber optic strands identified on the dotted line fiber path depicted below (**Whitney Way fiber build**) until March 1, 2020. The fees shown in Exhibit 5A for these strands in 2020 shall be prorated from March 2 to December 31, 2020. Thereafter, the City will charge the fees in Exhibit 5A on an annual basis according to the procedures in sec. 3.5. of the Facilities Use and License Agreement to which this Exhibit is attached.

Whitney Way fiber build

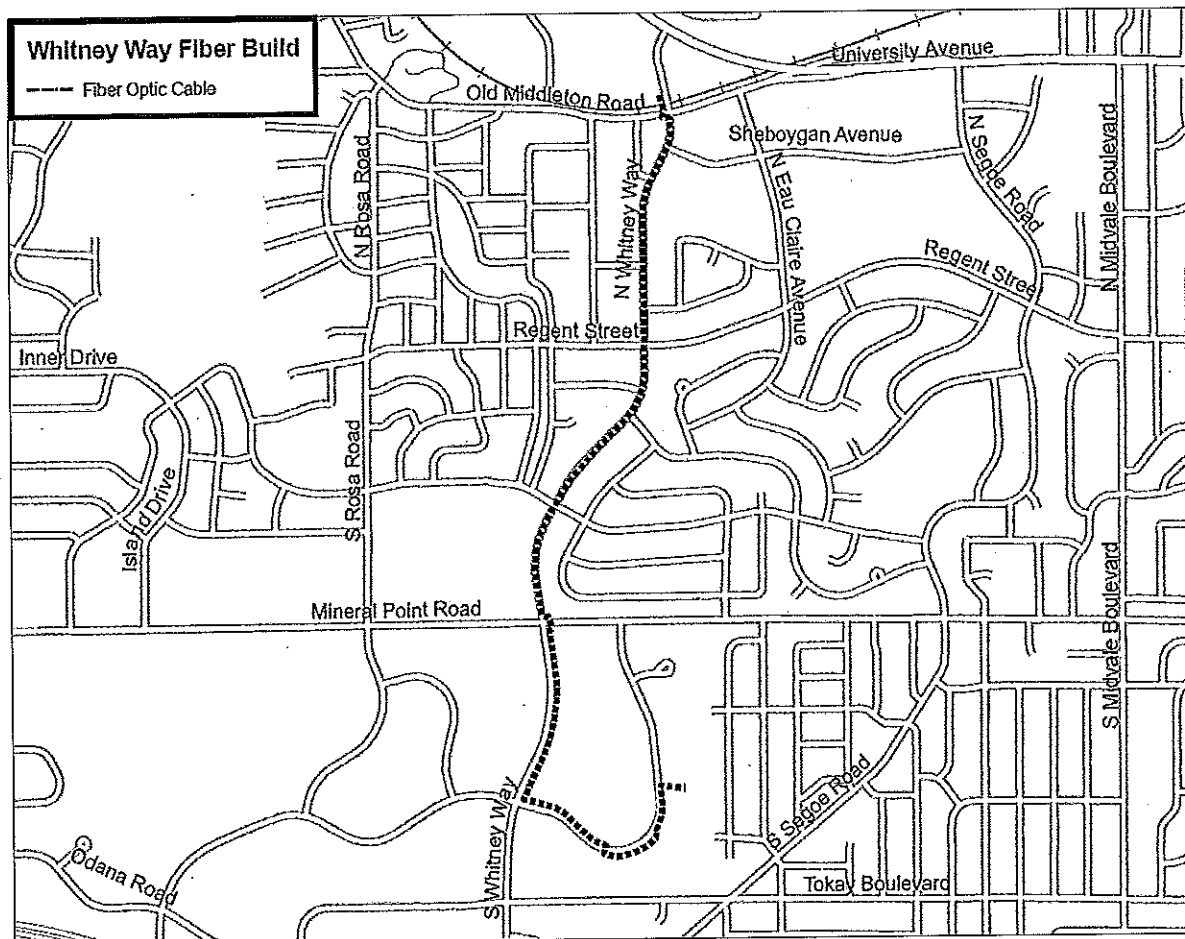


Exhibit B to the Subrecipient Agreement

(begins on next page)

EXHIBIT B
STATEMENT OF WORK

Metropolitan Unified Fiber Network (MUFN) City of Madison Subrecipient Statement of Work

This statement of work defines the major tasks, deliverables, and compliance activities, as well as the general approach for collaboration between UW and the CITY, pursuant to the requirements of the NTIA BTOP award NT10BIX5570045.

Maintenance Requirements and Procedures

Maintenance

Scheduled Maintenance

Routine maintenance and repair of the MUFN Fibers on public property described in this section ("Scheduled Maintenance") shall be performed by or under the direction of the CITY, at the CITY's reasonable discretion and in accordance with industry standards. Scheduled Maintenance shall commence upon the Effective Date. Scheduled Maintenance shall include the following activities:

1. Maintenance of a "Call-Before-You-Dig" program (Diggers' Hotline) and all required and related cable locates on public property
2. Routine maintenance of outside facilities including repair or restoration of handholes, conduit, fiber or splice cases impacted by weather, animal human-inflicted damage
3. Extraordinary relocations of conduit and fiber due to road construction or other changes to existing right-of-way (required rights)

Unscheduled Maintenance

Non-routine maintenance and repair of the MUFN Fibers on public property which is not included as Scheduled Maintenance ("Unscheduled Maintenance") shall be performed by or under the direction of the CITY and in accordance with industry standards. Unscheduled Maintenance shall commence upon the Effective Date and consist of:

1. "Emergency Unscheduled Maintenance" in response to an alarm identification by CITY's Operations Center, notification by UW or notification by any third party of any failure, interruption or impairment in the operation of fibers within the MUFN Fibers, or any event imminently likely to cause the failure, interruption or impairment in the operation of fibers within the MUFN Fibers.
2. "Non-Emergency Unscheduled Maintenance" in response to any potential service-affecting situation to prevent any failure, interruption or impairment in the operation of fibers within the MUFN Fibers not covered by Scheduled Maintenance. UW shall immediately report the need for Unscheduled Maintenance to the CITY in accordance with reasonable procedures promulgated by the CITY from time to time. CITY will log the time of UW's report, verify the problem and dispatch personnel as soon as reasonably possible to take corrective action.

Operations Center

CITY shall operate and maintain an on-call capability twenty-four (24) hours a day, seven (7) days a week by trained and qualified personnel. CITY's maintenance personnel shall be available for dispatch twenty-four (24) hours a day, seven (7) days a week. CITY shall have its first maintenance personnel at the site requiring Emergency Unscheduled Maintenance activity within twelve (12) hours after the time CITY becomes aware of an event requiring Emergency Unscheduled Maintenance, unless delayed by Force Majeure Events. CITY shall maintain a telephone number to contact personnel at the OC and shall provide such number to UW. CITY shall also maintain an "escalation list" that identifies the responsible personnel of CITY (and their contact information) based on the duration of an outage resulting in Unscheduled Maintenance ("Escalation List") and provide a copy of the Escalation List, and updates thereto, to UW. CITY's OC personnel shall dispatch maintenance and repair personnel to handle and repair problems detected in the MUFN Fibers: (i) through UW's remote surveillance equipment and/or upon notification by UW to CITY, or (ii) upon notification by a third party.

CITY will not be responsible for monitoring the performance or operation of the MUFN Fibers; in the event that UW detects a failure in the operation of the MUFN Fibers which may indicate the need for Unscheduled Maintenance, UW shall report same to CITY's OC.

Cooperation and Coordination

In performing its services hereunder, CITY shall take workmanlike care to prevent impairment to the signal continuity and performance of the MUFN Fibers. The precautions to be taken by CITY shall include prior notifications to UW. In addition, CITY shall reasonably cooperate with UW in sharing information and analyzing the disturbances regarding the cable and/or fibers. In the event that any Scheduled or Unscheduled Maintenance hereunder requires a traffic roll or reconfiguration involving cable, fiber, electronic equipment, or regeneration or other facilities of the UW, then UW shall, at CITY's reasonable request, make such personnel of UW available as may be necessary in order to accomplish such maintenance, which personnel shall coordinate and cooperate with the CITY in performing such maintenance as required of CITY hereunder.

CITY shall notify UW as soon as is practicable under the circumstances, but in no event less than 48 hours prior to the date in connection with any Planned Service Work Period ("PSWP") of any Scheduled Maintenance and as soon as possible after becoming aware of the need for Unscheduled Maintenance. A "Planned Service Work Period" shall mean the time window that CITY typically uses for performing Scheduled Maintenance. UW shall have the right to be present during the performance of any Scheduled Maintenance or Unscheduled Maintenance so long as this requirement does not interfere with CITY's ability to perform its obligations under the Agreement. In the event that Scheduled Maintenance is canceled or delayed for whatever reason as previously notified, CITY shall notify UW at CITY's earliest opportunity, and will comply with the provisions of the previous sentence to reschedule any delayed activity.

Facilities

CITY shall maintain the MUFN Fibers in a manner which will permit UW's use, in accordance with the terms and conditions of the Agreement.

UW will be solely responsible for providing and paying for any and all maintenance of all electronic, optronic and other equipment, materials and facilities used by UW in connection with the operation of the MUFN Fibers, none of which is included in the maintenance services to be provided hereunder.

Cable/Fibers

CITY shall perform appropriate Scheduled Maintenance on the MUFN Fibers in accordance with CITY's then current preventive maintenance procedures.

When correcting or repairing cable discontinuity or damage, including but not limited to in the event of Emergency Unscheduled Maintenance, CITY shall use reasonable efforts to repair traffic affecting discontinuity within twelve (12) hours after CITY's representatives arrive at the problem site and have the ability to begin uninterrupted repair activities. The aforementioned twelve (12) hour time frame is merely an estimate, and repair times may increase depending upon such variables as fiber counts and the location of the problem site. For a more accurate estimate of how long the repairs will take for any given Emergency Unscheduled Maintenance, UW should contact CITY's OC at 608.266.4767. In order to accomplish the above-referenced objectives, it is acknowledged that the repairs so effected may be temporary in nature. In such event, within twenty-four (24) hours after completion of any such Emergency Unscheduled Maintenance, CITY shall commence its planning for permanent repair, and thereafter promptly shall notify UW of such plans, and shall implement such permanent repair within an appropriate time thereafter. Restoration of open fibers on fiber strands not immediately required for service shall be completed on a mutually agreed-upon schedule. If the fiber is required for immediate service, the repair shall be scheduled for the next available PSWP.

In performing repairs, CITY shall comply with the splicing specifications as set forth in Addendum A to this Statement of Work. CITY shall provide to UW any modifications to these specifications as may be necessary or appropriate in any particular instance.

Planned Service Work Period

Scheduled Maintenance which is reasonably expected to produce any signal discontinuity must be coordinated between the parties. The intent is to avoid jeopardy work during high-traffic periods.

Restoration

CITY shall respond to any event giving rise to the need for Unscheduled Maintenance (in any event, an "Outage") as quickly as possible (allowing for delays caused by Force Majeure Events) in accordance with the procedures set forth herein.

When restoring a cut cable in the CITY System, the parties agree to work together to restore all traffic as quickly as possible. CITY, promptly upon arriving on the site of the cut, shall

determine the course of action to be taken to restore the cable and shall begin restoration efforts. CITY shall splice fibers tube by tube or ribbon by ribbon or fiber buffer by fiber buffer, rotating between tubes, ribbons or buffers operated by the parties having an interest in the cable, including UW and all future fiber users of the system (collectively, the "Interest Holders"); provided that, operating fibers (i.e., fibers which have been jumpered to UW's or another party's space or equipment) in all buffer tubes or ribbons or fiber bundles shall have priority over any non-operating fibers in order to allow transmission systems to come back on line; and provided further that, CITY will continue such restoration efforts until all lit fibers in all buffer tubes or ribbons are spliced and all traffic restored. Notwithstanding the foregoing, CITY does not guarantee any specific rotational prioritization for UW in light of the overriding requirement for expediency in restoration of service to all parties.

Subcontracting

Subject to notification to UW, CITY may subcontract any of the maintenance services hereunder; provided that CITY shall require the subcontractor(s) to perform in accordance with the requirements and procedures set forth herein. The use of any such subcontractor shall not relieve CITY of any of its obligations hereunder.

Federal Grant Compliance

To ensure UW is able to meet the NTIA's requirements regarding overall project performance and compliance, the CITY is required to perform the following items within 60 days of Effective Date:

1. Identify contact information and make accessible during regular working hours staff directly responsible for subcontract administration and financial management
2. Identify a record-keeping location for all documents associated with this project (note that any changes in record location will require written notice to UW)
3. Provide a DUNS number
4. Provide detailed records of the assets profiled as in-kind contributions in accordance with proposal commitments and to support the NTIA's expected audit of such contributions
5. Certify that all contributed assets are free and clear of all liens and any other encumbrances

Addendum A

Fiber Splicing, Testing, and Acceptance Standards and Procedures

1. End-to-End Testing

A. After CITY has established end-to-end connectivity on the MUFN Fibers during repair construction, it shall:

- test continuity to confirm that no fibers have been "frogged" or crossed at any splice points, and
- perform (with UW) bi-directional optical time domain reflectometer ("OTDR") end-to-end tests to record splice loss measurements

B. At MUFN Fibers termination points, the pigtail connector attenuation shall be less than .5dB per mated connector pair, and the reflectivity level at such termination points shall be less than -50dB.

C. When MUFN Fibers have been spliced, the splice loss shall not be greater than .1 dB bi-directional averaged loss.

D. When a Fiber on a MUFN Fibers span has been spliced, the average of the bi-directional splice loss on the span shall not be greater than .5 dB.

2. Post-Construction Testing

After performing permanent splicing (in conjunction with repair of a cable cut, replacement of a segment of cable, or other work after initial installation and splicing of the cable), the test procedures set forth in Section 1 (End-to-End Testing) of this Addendum A shall apply to the relevant fibers and cable segments. The provisions in Sections 4 (OTDR Equipment and Settings) and 5 (Acceptance Test Deliverables) of this Exhibit, that are relevant to such testing shall also apply. CITY may, after the Effective Date, adopt any alternative methods of testing that are generally accepted in the industry and that provide sufficient data to fulfill the objectives of the tests set forth in this Exhibit.

3. Out-of-Spec Splices

OOS splices shall be noted, but shall not preclude Acceptance of MUFN Fibers if the OOS condition does not affect transmission capability (based on use of then-prevailing telecommunications industry standards applicable to equipment generally used with the relevant type of fiber) or create a significant possibility of an outage. In the event the UW is later able to reasonably establish that the OOS splice affects service, CITY shall take necessary action to bring the splice into compliance with the applicable specifications under Section 1 of Exhibit A.

4. OTDR Equipment and Settings

CITY (if performing OTDR testing) shall use OTDR equipment and settings that are, in its reasonable opinion, suitable for performing accurate measurements of the fiber installed. Such equipment and settings may include, without limitation, the Laser Precision CMA4000 models and compatible models for OTDR testing, and the following settings:

A. Index of refraction settings at 1550nm:

Lucent Truewave	
(Classic and RS)	1.4701
Corning SMF-28	1.4682
Corning SMF-LS	1.470
Corning LEAF	1.469
Corning MetroCore	1.469
Sumitomo Fiber	1.467

B. Tests of a pigtail connector and its associated splice:

- 1) Use of a launch cable with UPC ends of length suitable to readily observe and discriminate between the termination endface reflectivity and the effects of instrument termination, dead zone and saturation.
- 2) Patch panel:
 - a) Orient LC bulkheads so the tab faces up.
 - b) appliques should be installed so numbers and labeling are right side up.
 - c) fiber strands should be cleaned prior to insertion in the back of a patch panel. Cleaning should be done using a dry cleaning system such as a cletop, white ribbon, type S cleaner. Product number 14110611 from this page: <http://www.cletop.com/html/products.html>
- 3) OTDR measurements:
 - a) OTDR measurements should be 1 minute per strand with the OTDR set to averaging mode. Never use automatic mode.
 - b) If new terminations have been installed, the near side facings and pigtails splices should be tested for loss and reflectivity.
 - i) pulse width should be set to 10ns
 - ii) A launch cable with ultra-polish connectors (UPC) of at least 100 meters should always be used between the OTDR and the patch panel to avoid dead-zone problems.
 - c) For testing total fiber lengths or splices in the field pulse width should be as low as possible given the fiber distance being tested. (e.g. 100ns for 10km, 300ns for 20km, 1us for 50km, etc.)
 - i) A launch cable of at least 100 meters should always be used between the OTDR and the patch panel to avoid dead-zone problems.
 - ii) Use the following chart to select the pulse width that matches the cable length

segment length pulse width

-----+-----
FTP/Pigtail testing 5ns
shorter than 10km 10ns

10km - 20km 30ns
20km - 50km 100ns
50km - 75km 300ns
longer than 75km 1us

iv) An example: If a new fiber panel termination has been installed and the cable segment is 23km long, the fiber panel facings should be tested as described in C ii above with a 10ns pulse width and then the strand should be reshot with a 100ns pulse width to record the entire cable span. Both scans should be provided per strand.

d) if fiber has been spliced in the field AND new terminations have been installed take traces for both b) and c) for each strand.

e) The fiber strand should be tested at 1310 and 1550 nm

f) The fiber strand should be tested from both sides

5. Acceptance Test Deliverables

CITY (working with UW) shall document for the relevant MUFN Fibers and cable segments:

A. Verification of end-to-end fiber continuity with power level readings for each fiber taken with a stable light source and power meter.

B. Verification that the loss at each splice point is in accordance with the requirements of this Addendum A.

C. The final bi-directional OTDR test data, with distances.

D. The final report of fiber termination connectors noting any defects.

E. Cable manufacturer, cable type (buffer/ribbon), fiber type, number of fibers, specific identification of fibers tested and presented for acceptance, maximum manufacturer specified loss at 1550 nm, and approximate date of installation.

F. Fiber optic cable as-built information in electronic AutoCAD or GIS format

As a minimum, As-built drawing should include a route diagram that illustrates the location of the:

- End locations
- Splice locations
- Repeater locations
- All Handholes

In addition they should include:

- Manufacturer type of cable, fiber count and reel numbers.
- A summary of distances between the locations listed above and offset of cable in relation to fixed objects.
- The type of cable construction between location (buried, aerial, conduit) and any typical or details needed for the specified type of construction.
- Any geographical information deemed necessary to further clarify the route.

Detailed Route Information that includes:

- Street, road and highway names
- Railroad and major highway crossings
- Bridge crossings
- Manhole and pole identification

- Pole to pole distances in feet
- Manhole-to-manhole distances in feet
- Distance along or between any other attachment points on the router
- New conduit, manhole and pole installations.
- Building riser and lateral conduit locations if any.

Fiber Specifications

1. All external splices shall be sealed in waterproof splice enclosures. Internal splices shall be housed in an industry standard splice tray.
2. Between the wavelengths of 1300 nm and 1320 nm, fiber attenuation shall not exceed 0.4 dB/km for standard ITU-T G.652 single-mode fiber (e.g. SMF-28) for temperatures between -40 C and +65 C.
3. Between the wavelengths of 1540 nm and 1560 nm, fiber attenuation shall not exceed 0.3dB/km for standard ITU-T G.652 single-mode fiber (e.g. SMF-28) and shall not exceed 0.25dB/km for ITU-T G.655 compliant fiber (e.g. TrueWave) for temperature between -40 and +65C.
4. Between the wavelengths of 1615 nm and 1635 nm, fiber attenuation shall not exceed 0.3 dB/km for standard ITU-T G.655 single-mode fiber (e.g. TrueWave) for temperatures between -40 C and +65 C.
5. The wavelength of zero fiber dispersion shall be between 1300 nm and 1320nm for ITU-T G.652 unshifted single-mode fiber. The wavelength of zero fiber dispersion shall be between 1510 nm and 1565 nm for ITU-T G.655 (e.g. TrueWave). The slope of the dispersion curve at the wavelength of zero dispersion shall not exceed .10ps/nm-km.
6. The fiber dispersion of a wavelength of 1550 nm shall not exceed 17 ps/nm-km.
7. The fiber cut-off wavelength shall be less than 1330 nm and greater than 1130nm.
8. Fiber attenuation shall be uniform along its entire cable length. Attenuation discontinuities shall not exceed .1dB at either 1310 nm, 1550 nm or 1625 nm wavelengths as measured at any point along the fiber.
9. Total per segment Optical Return Loss (ORL) shall exceed 30dB. Individual reflective events shall not be greater than -30dB.
10. All fibers from the same fiber handoff to same destination location to be measured must show nearly identical lengths. Each fiber pair in the same path will be within 1% of the same length.
11. All fiber terminations must be ultra-polish connectors (UPC) grade or better.

12. Terminations must be void of defects such as pitting, hackles, scratches, lips, fractures or non-removable dirt.

13. Uncut fiber optic cable strands shall not have reflections or attenuation steps as viewed by an OTDR.

14. All fiber spans, after reasonable chromatic and polarization mode dispersion compensation efforts, must pass for transmission at 10 Gigabits per second.