

# STATE OF NEW HAMPSHIRE

## Inter-Department Communication

**DATE:** September 11, 2012

**AT (OFFICE):** NHPUC

**FROM:** Randy Knepper, Director, Safety & Security



**SUBJECT:** Docket No. DT 12-012 New Hampshire Optical Systems, Inc. Petition for a License to Construct and Maintain Fiber Optic Cables at four locations described as across Oliverian Brook in Haverhill and Wild Ammonoosuc River in Bath, Ammonoosuc River in Lisbon, and Jacob Brook in Orford, New Hampshire

**TO:** Debra Howland, Executive Director  
Kate Bailey, Director, Telecom Division  
Lynn Fabrizio, Staff Attorney

The Safety Division's review of the above petition consisted of the following elements:

- Petition contents and history
- Review of land ownership of existing pole structures.
- Review of public need and public impact, including applicability of State regulations
- Conclusions and Recommendations

### 1. Petition contents and history

- On January 11, 2012, New Hampshire Optical Systems, Inc. (NHOS) filed a petition to construct and maintain fiber optic cables over and across four bodies of water. Each of the four proposed crossings will be constructed using a 288 single mode fiber cable (fiber) bundled with a 0.25 inch diameter extra high strength support cable. The bundle fiber will have a combined weight of 0.31 pound per foot and nominal diameter of 1.1 inches.
- The water crossings are located over:
  1. the Oliverian Brook in Haverhill between Pole 3/100 and Pole 3/99 along a path that parallels the southerly side of Mount Moosilauke Highway (Route 25) in the vicinity of Back Bay Road.
  2. the Wild Ammonoosuc River in Bath between Pole 374/50 and Pole 374/51 along a path that parallels the northerly side of Rum Hill Rd (Route 10 and Route 302) bridge by approximately 67 feet

in the vicinity of intersection of Wild Ammonoosuc Rd (Route 112).

3. the Ammonoosuc River in Lisbon between Pole 210/60 and Pole 210/61 along a path that parallels the northerly side of Dartmouth College Rd (Route 10) bridge in the vicinity of Lyman Rd.
4. the Jacob Brook in Orford between Pole 41/32 and Pole 41/33 along a path that parallels an easement from the extension of Tannery Rd at Dublin St, to Tannery Rd connected to Archertown Rd.

- On April 27, 2012, New Hampshire Optical Systems, Inc. (NHOS) filed revised petitions on planned construction following discussion with Staff affecting crossings 2, 3, and 4 above.
- NHOS' construction is a portion of the Network New Hampshire Now Middle Mile Fiber network; a project that will extend broadband capability in areas of New Hampshire that have limited or no broadband services. This project is being funded by a grant from the Federal Broadband Technology Opportunities Program. These crossings are cross referenced to those in Segment 5 of the Middle Mile Fiber network that connects from Lebanon to Littleton. An annotated map of this portion is labeled as Attachment 1.
- NHOS was certified and authorized to provide competitive local exchange services in New Hampshire on August 13, 2010 by the PUC (*see DT 10-215 authorization CL-08-002-10*).
- This construction does not require New Hampshire Department of Environmental Services or New Hampshire Department of Transportation permits.
- Vertical clearances over the water crossings have not been calculated using the FEMA 10 year flood profile since they are not available for Grafton County. A review of the digital flood insurance rate maps on the GRANIT website confirms the non availability. Where the water crossing is within 10 feet horizontally of an existing bridge, the vertical clearances over the water crossings have been conservatively calculated from the bridge structure which in all cases will meet the required vertical clearances above the water required by the NESC code. Vertical distances on the submitted petition indicate final attachment heights and clearances, once all utilities have completed the make-ready work necessary to provide space for the NHOS fiber.

- The maximum sags of the fiber and minimum clearances for the proposed crossings were determined and designed using the above design criteria.
- The existing crossings over these bodies of waters have not been researched for existing licenses from the New Hampshire Public Utilities Commission.
- NESC heavy load conditions (0 degree F, 4.0 pound per sq ft wind loading and 0.5 inch radial ice loading) were the prevailing loading condition when verifying the sag conditions with required clearances.
- NHOS states that based on its research and field inspection these water crossings are not suitable for sail boating. This consideration has been taken into account in the engineering and design.
- The water crossing locations listed in the petition are listed as Public Rivers and Streams on the DES official list of public waters in which RSA 371:17 is applicable *see* <http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/olpw.pdf>

### **1. A. Details of Each Crossing**

*(for purposes of this memo pole attachees are considered any utility or municipal cabling that are attached to the pole other than the electric company).*

1) NHOS will install fiber optic over the Oliverian Brook in Haverhill between Pole 3/100 and Pole 3/99 along a path that parallels the southerly side of Mount Moosilauke Highway (Route 25) in the vicinity of Back Bay Road. The pole to pole span is 201 feet while the brook span is 181 feet. The poles are jointly owned by Public Service of New Hampshire and Fairpoint Communications and are approximately 35 feet in height. NHOS will be the second attachee from the electric space and will be placed directly under fire alarm cable at a distance of 12 inches. All other attachees will be relocated in a make ready process. There is a CATV cable below NHOS and a guy cable used to support the span on the pole as well as CATV.

2) NHOS will install fiber optic over the Wild Ammonoosuc River in Bath between Pole 374/50 and Pole 374/51 along a path that parallels the northerly side of Rum Hill Rd (Route 10 and Route 302) bridge by approximately 67 feet in the vicinity of intersection of Wild Ammonoosuc Rd (Route 112). The pole to pole span is 285 feet while the river span is 91 feet. The poles are singly owned by

Fairpoint Communications and are approximately 29 feet in height at Pole 374/50 and 31 feet in height at Pole 374/51. NHOS will be placed directly above Seg Tel fiber optic telecommunication cable by 12 inches. There are no relocations required during make ready process.

3) NHOS will install fiber optic over the Ammonoosuc River in Lisbon between Pole 210/60 and Pole 210/61 along a path that parallels the northerly side of Dartmouth College Rd (Route 10) bridge in the vicinity of Lyman Rd. The pole to pole span is 304 feet while the river span is 136 feet. The poles are jointly owned by Public Service of New Hampshire and Fairpoint Communications and are approximately 48 feet in height at Pole 210/60 and 40 feet in height at Pole 210/61. NHOS will be the first attachee from the electric space and will be placed directly above SegTel fiber optic cable at a distance of 12 inches. All other attachees will be relocated in a make ready process. There is a CATV cable below NHOS and a telecommunication cable. Including NHOS there are 5 attachees to the pole.

4) NHOS will install fiber optic over the Jacob Brook in Orford between Pole 41/32 and Pole 41/33 along a path that parallels an easement from the extension of Tannery Rd at Dublin St, to Tannery Rd connected to Archertown Rd. The pole to pole span is 208 feet while the brook span is 47 feet. The poles are jointly owned by Public Service of New Hampshire and Fairpoint Communications and are approximately 28 feet in height at Pole 41/32 and 34 feet in height at Pole 41/33. NHOS will be the first attachee from the electric space and will be placed directly over fiber optic cable at a distance of 12 inches. Including NHOS there are 4 attachees to the pole.

**2. Review of land ownership of existing pole structures.**

NHOS states that each of the proposed water crossings will be placed on existing utility poles within the existing public-right-of way and thus there are no land ownership considerations.

**3. Review of public need and public impact.**

The Safety Division's review of the petition finds the petition to be in conformance with the applicable sections of the NESC C2-2002.

Staff has determined, after reviewing the petition and existing field conditions, that the water crossings require a license under RSA 371:17. Staff concurs with the methodology utilized by NHOS in determining vertical clearances from existing bridge structures, where the crossing is 10 feet within an existing bridge,

as the clearance will be greater than utilizing the FEMA 10 year flood profile if known. For these four crossings there are no published 10 year flood profiles thus but a review indicated that the clearances indicated should not cause potential conflicts. Staff notes that existing water crossing licenses, for the other utilities located on the poles utilized by NHOS, have not been researched in the interest of expediting this petition. This is based on NHOS' timeline dictated by Federal funding. Finally, NHOS states it will build an open access, non-discriminatory network offering broadband providers the ability to expand their service areas, allow companies the opportunity to build private networks they own and control, and give end users more choice and affordability in Internet access and communication products. Staff concludes that NHOS has demonstrated a public need for the proposed crossings and that approval of the petition for a license of the proposed crossings is consistent with the public interest.

**4. Recommendations and Conclusions.**

The Safety Division recommends approval of New Hampshire Optical Systems, Inc.'s petition for a license to construct and maintain fiber optic cables over and across Oliverian Brook in Haverhill and Wild Ammonoosuc River in Bath, Ammonoosuc River in Lisbon, and Jacob Brook in Orford, New Hampshire with the following conditions:

- a) The Commission should require that all future alterations to the crossings that may affect the public conform to the requirements of both the 2002 and 2007 editions of the NESC and be resubmitted to the Commission 60 days prior to the alteration.
- b) New Hampshire Optical Systems, Inc. should be required to maintain and operate the crossings in conformance with the NESC or risk future revocation of the license.

- Legend**
- Paths by Segment**
- Laterals 1-32 (#3135) 33-41 (#3185)
- Segment**
- Primary-1 - Job# 3123
  - Primary-2 - Job# 3124
  - Primary-3 - Job# 3125
  - Primary-4 - Job# 3183
  - Primary-4 (IBEAM)
  - Primary-5 - Job# 3128
  - Primary-6 - Job# 3127
  - Primary-7 - Job# 3128
  - Primary-8 - Job# 3129
  - Primary-10 - Job# 3130
  - Primary-11 - Job# 3131
  - Primary-13 - Job# 3132
  - Primary-14 - Job# 3133
  - Primary-15 - Job# 3184
  - Primary-16 - Job# 3134
  - Primary-17 - Job# 3188
  - Primary-18 - Job# 3189
  - FastRoads-2 - Job# 3186
  - FastRoads-6 - Job# 3187
  - FastRoads7 - Job# 3192

