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STATE OF NEW HAMPSHIRE
DEPARTMENT of NATURAL and CULTURAL RESOURCES
DIVISION of FORESTS and LANDS

172 PEMBROKE ROAD CONCORD, NEW HAMPSHIRE 03301
PHONE: 271-2214 FAX: 271-6488 WWW.NHDFL.ORG

July 12, 2017

His Excellency, Governor Christopher T. Sununu
and the Honorable Executive Council
State House
Concord, New Hampshire 03301

REQUESTED ACTION

1. Pursuant to RSA 227-H:9, authorize the Department of Natural and Cultural Resources, Division of Forests and Lands (Department) to enter into a **RETROACTIVE** Memorandum of Agreement (MOA) with the Department of Transportation (DOT) for equipment and antenna space in designated areas at Mount Washington State Park for a 5-year period effective July 1, 2017 through June 30, 2022, with the option to renew for three additional 5-year periods subject to Governor and Executive Council approval.
2. Further authorize the Department to accept annual rental payments, to be deposited into accounting unit #03-35-35-351510-37420000 "Mt. Washington Commission," per the table below:

Year	Annual Rent
1	\$10,760
2	\$11,520
3	\$12,280
4	\$13,040
5	\$13,800
Total:	\$61,400

EXPLANATION

DOT has land mobile radio repeaters on Mount Washington for operations purposes. These repeaters provide truck to truck as well as District-1 and Statewide dispatch communications for day-to-day operations and incident management. DOT has been a tenant on Mount Washington for more than 20 years. The Department was unable to complete processing of this MOA in a timely manner and therefore retroactive approval is requested.

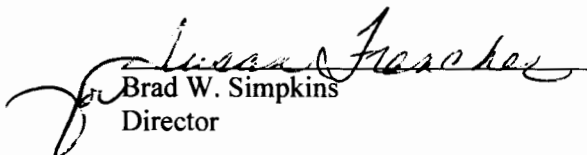
The MOA is subject to the Department's "Policy on Use and Management of DRED Communication Facilities" attached as Exhibit A and all installed communication equipment shall meet the guidelines set forth by the Department's "Technical Requirements for the Use of Communication Sites" attached as Exhibit B.

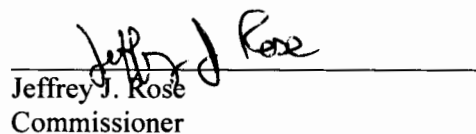
The Attorney General's office has approved this MOA as to form, substance, and execution.

Respectfully submitted,

Concurred,

(44)


Brad W. Simpkins
Director


Jeffrey J. Rose
Commissioner

MEMORANDUM OF AGREEMENT
between the
DEPARTMENT OF RESOURCES AND ECONOMIC DEVELOPMENT
and the
DEPARTMENT OF TRANSPORTATION

<u>CRITICAL DATES / TERM / RENT</u> (for State use only)	
DEFINITION	DATE
Term Effective Date: Governor and Council approval	
Term & Initial Annual Rent: 5 years with three 5-year extensions subject to Governor & Council approval starting with a \$10,760 annual rent. (no annual escalator shall apply to NH state agencies)	

In accordance with RSA 227-H:9, this Memorandum of Agreement (Agreement) is entered into between the New Hampshire Department of Resources and Economic Development (DRED), 172 Pembroke Road, Concord, New Hampshire 03301, and the New Hampshire Department of Transportation (DOT), 7 Hazen Drive, Concord, New Hampshire 03302.

WHEREAS Mount Washington State Park, located at the Summit of Mount Washington in Sargent's Purchase, New Hampshire, is owned by the State of New Hampshire and managed by DRED through the Division of Parks and Recreation;

WHEREAS DOT currently occupies space in the Yankee Building on the summit of Mount Washington for equipment associated with its statewide radio system for the purpose of agency and public safety communications;

NOW THEREFORE, DRED and DOT agree to the following terms:

1. **Occupied Space:** Pursuant to the equipment list here attached as Exhibit C, DOT shall have the right to occupy certain space on the second floor of the Yankee Building for two equipment racks taking up approximately 10 square feet of floor space and two (2) four-foot whip antennas attached to the roof of the Yankee Building (the Premises). DOT shall also have the right to common areas necessary for access to lavatories.

2. **Term:** The Agreement shall be in effect from July 1, 2017 until June 30, 2022.

3. **Rent:** DRED has accepted a market rent appraisal for Mount Washington. This resulted in a significant annual rent increase for DOT. DOT annual rent will be transitioned to the new rent over the 5 year period of this Agreement. For Year 1, DOT shall pay DRED annual rent upon approval of the Agreement by G&C, or on July 1, 2017, whichever shall occur later.

Thereafter, DOT shall pay DRED rent annually on July 1st, and in accordance with the table below:

Year	Annual Rent
1	\$10,760
2	\$11,520
3	\$12,280
4	\$13,040
5	\$13,800
Total	\$61,400

4. **Policy:** The Agreement is subject to the Department of Resources and Economic Development Policy on Use and Management of Mountaintops for Communication Facilities adopted November 7, 1989, revised April 15, 1998 and revised January 1, 2014, which is attached hereto as Exhibit A.
5. **Technical Requirements:** Equipment installation shall conform to the State of New Hampshire, Department of Resources and Economic Development Technical Requirements for use of Communication Sites adopted June 30, 1995 and revised February 2014 which is attached hereto as Exhibit B.
6. **Access:** DOT must coordinate any access or entry to the Premises through DRED's Communication Technician. If possible, at DRED's sole discretion, DRED shall provide transportation free of charge for DOT to access the Premises on scheduled DRED transportation times; otherwise, DOT's access to the Premises shall be at DOT's expense. During the summer season, DOT shall, if possible, schedule non-emergency access at dates and times that cause the least amount of interruption to the public's recreational use of the property.
7. **Assignment:** DOT shall not assign its rights under the Agreement to any other third party without DRED's prior written consent.
8. **Termination:** DOT shall have the unilateral right to terminate the Agreement at any time by giving (90) day written notice to DRED of the exercise of this option. DOT, upon termination of the Agreement, shall, within (14) days of termination, remove all of its equipment, personal property and all fixtures from the Premises and repair any damage caused by its use of the Premises or the removal of its equipment, reasonable wear and tear excepted. If such time for removal causes DOT to remain on the Premises after termination of the Agreement, the DOT shall pay rent at then-existing monthly rate or on the existing monthly pro rata basis if based upon a longer payment term, until such time as the removal of the equipment, personal property and all fixtures are completed. In the event of an early termination, DOT will be entitled to prorated reimbursement of the annual rent if paid in full at the time of termination.

9. **Notices:** All notices, demands, requests and other communications required by the Agreement shall be in writing and shall be delivered to:

(a) DRED:

The State of New Hampshire

Department of Resources and Economic Development

172 Pembroke Road

Concord, New Hampshire 03301

Attention: Jeffrey J. Rose, Commissioner (or duly appointed successor)

or at such other address of DRED from time to time may have designated by written notice to DOT. Such notice shall be deemed properly given upon the posting in the United States mail.

(b) DOT:

The State of New Hampshire

Department of Transportation

PO Box 483

Concord, New Hampshire 03302-0483

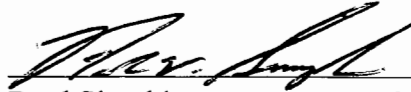
Attention: Victoria Sheehan - Commissioner (or duly appointed successor)

or at such other address as the DOT from time to time may have designated by written notice to the DRED. Such notice shall be deemed properly given upon the posting in the United States mail.

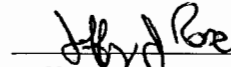
IN WITNESS WHEREOF, the parties have caused this Agreement to be executed:

**STATE OF NEW HAMPSHIRE
DEPARTMENT OF RESOURCES AND ECONOMIC DEVELOPMENT**

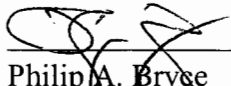
Concur:



Brad Simpkins Date 6/5/17
Director of Forests and Lands



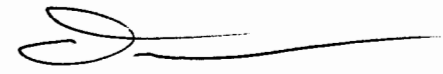
Jeffrey J. Rose Date 6/12/17
Commissioner



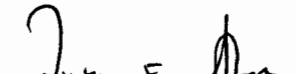
Philip A. Bryce Date 6-7-17
Director of Parks and Recreation

**STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION**

Concur:

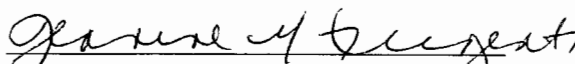


David Rodrigue, P.E. Date
Director of Operations 5/30/17



Victoria F. Sheehan Date 5/31/17
Commissioner

Approved as to Form and Execution,

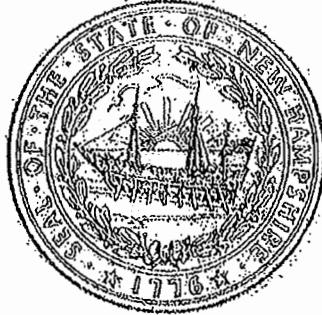


Attorney General's Office Date 6/19/17
New Hampshire Department of Justice

Governor and Executive Council Approved: Date _____ Item No. _____

Exhibit A

STATE OF NEW HAMPSHIRE
DEPARTMENT OF RESOURCES AND ECONOMIC DEVELOPMENT



POLICY ON USE AND MANAGEMENT
OF DRED COMMUNICATION FACILITIES

Adopted Nov. 7, 1989
Revised April 15, 1998
Reviewed January 2, 2008
Revised January 1, 2014

Jeffrey J. Rose, Commissioner

172 Pembroke Rd
Concord N.H. 03301
State of New Hampshire
Department of Resources and Economic Development

POLICY ON USE AND MANAGEMENT
OF DRED COMMUNICATIONS
FACILITIES

INTRODUCTION

In 1964, the State of New Hampshire, recognizing the future needs for public communication sites and the potential proliferation of antenna towers, microwave dishes, transmitter buildings and other apparatus on New Hampshire's high peaks and ridges, established a policy limiting radio/electronics installations on Department of Resources and Economic Development (DRED) administered land. At that time, the primary concerns were providing sites for future public communication needs and mitigating the visual impact of installations. New communication installations and renewals of existing permits were limited to public agencies. Requests for new communications installations by agencies not supported with public funds were considered only where installations would provide a measure of public service or public safety.

In the 1980's, three additional concerns developed regarding communication facilities on state-owned summits. First was a concern for protecting the aesthetics and natural condition of the State's high peaks and ridges. Second was a concern regarding electronic interference and signal deterioration caused by the growing number of transmission and reception installations. Although there currently isn't a way to quantify the threshold below which a transmission signal becomes unacceptably weakened by neighboring users, each addition of equipment at a site has a negative effect. As the number of installations increased, so had the concern over maintaining signal integrity since most of the Communications users at state-owned mountaintops were there for the purposes of public health and safety, law enforcement, national defense, and public information.

The third concern was the potential negative impact to public health from intense communications signals. The mountaintops were originally acquired and maintained for the visiting public and it was important to limit radio frequency radiation to levels safe for continued public use of the area.

In 2012, a review of the policy was prompted by DRED's growing responsibility for over 167,000 acres of public land and an ever increasing demand to install or expand communications facilities on DRED lands to enhance public safety and security, and to fulfill the public interest for commercial broadband internet access. In 2013, the Policy was revised to: a) provide new guidelines and processes for establishing new or expanded communication sites in locations beyond just mountaintops; b) allow for commercial communications applications and corresponding lease fees; and c) ensure that impacts from new or expanded communications facilities to the land's traditional uses and purposes were minimized and mitigated.

As the result of a "Internal Control Review" of the Communications Program by the Office of Legislative Budget Assistant – Audit Division, a "Communications Program Manual" was developed. The Manual dovetails with the Policy and established procedures and protocols, including accountability of equipment and sites through a newly acquired database – ComSite,

and the billing and collecting of Program revenues through the State's new billing system --
LAWSON/NHFirst.

I. DEFINITIONS:

"Commissioner" shall mean the Commissioner of the Department of Resources and Economic Development (DRED).

"Permit" shall mean any form of agreement, including licenses, special use permits, or leases issued by the Commissioner for use of a DRED communication site.

"Private user" shall mean any person or business entity, including a non-profit organization, which is not a "public user" or "quasi-public user."

"Public user" shall mean a federal, state, county, or municipal agency or some governmental association thereof.

II. GOAL:

The ultimate goal for state-owned locations used for communications facilities, including mountaintops, is to have such areas cleared of all appurtenances and machinery, with the possible exception of observation platforms. This goal cannot be realized until the technology of electronic communications has advanced to where antennas and other electrical paraphernalia are outmoded. Until that time, the overall management objective for communications sites will be to give priority to transmission sites for communications critical to the public health, safety and welfare, while minimizing the aesthetic and environmental impacts of these communications facilities.

III. POLICY:

It is the policy of the Department of Resources and Economic Development to permit, when no other feasible alternative is available, controlled development of state-owned land under its jurisdiction for electronic communications necessary to public health, safety and welfare; and to facilitate, wherever possible, in the consolidation of commercial electronic communication networks across the state.

IV. GUIDELINES AND CONSIDERATIONS:

A. Values to Be Protected: Management of the communications sites on DRED lands is intended to protect three distinct values deemed essential to the public interest:

1. *Aesthetics/natural condition and public use:* To maintain the natural and scenic character of an area. Communication facilities shall be installed so as to have the least physical disturbance or modification of the natural environment and minimal impact to the public enjoyment of these environments.

2. *Public health, safety and welfare:* To consider communications projects necessary and desirable to maintain or improve the health, safety and welfare interests of the public at large, as well as to reasonably safeguard the health and safety of visitors to communication sites.
 3. *Electronic integrity:* To uphold the non-interference of communications signals and frequencies between communications systems and/or associated electrical devices.
- B. Communication Site Designation: In order to articulate the use of DRED properties for communications activities, the following site designations are hereby established for the purpose of describing existing assets and limitations that each site category may possess. All current and future sites will be classified by these designations:
1. *Multiple Use Sites ("MU")* may allow for the full range of communication uses, so long as those uses are compatible with site conditions, typical management activities, traditional public use, and deed covenants, if any; and strive to minimize the aesthetic and environmental impacts. MU Sites typically contain electric power from off-site, phone capability, and usually have generator back-up capabilities. Infrastructure specific to communications can be erected at these sites (tower, building, etc.) provided such installations are in compliance with and meet the objectives of the other sections of this policy.
 2. *Limited Use Sites ("LU")* have one or more limitations that prohibit the expansion of a LU Site. Limitations may include, but are not limited to: access issues; protection of special aesthetic or natural site conditions; lack of a power source, telephone, or fiber resources; public health or safety concerns; interference with other communication sites; or incompatibility with other primary uses of a particular site. These sites shall have restrictions placed upon them based upon their limiting factors.
 3. *Restricted Use Sites ("RU")* are restricted communication sites and shall be limited to only those uses that are deemed a critical need for public health, safety or welfare; where the benefits derived from having the communication site outweigh the potential detriments to the values to be protected. Examples of restricted uses include those related to fire and rescue, law enforcement, emergency medical services, and/or emergency management. Such sites shall not be used for commercial activities or "for profit" purposes. Measures shall be taken to ensure that no alternatives sites exist, and that aesthetic and environmental impacts will be minimized or mitigated.
- C. Approved, Designated DRED Sites: The following specific DRED sites are hereby designated by the Commissioner as "Communication Sites." The letter designation after each site indicates its current designation.

Belknap Mountain, Belknap Mountain State Forest (MU)
Blue Job Mountain, Blue Job State Forest (MU)
Cannon Mountain, Franconia Notch State Park (MU)
Cardigan Mountain, (RU)
Federal Hill, Federal Hill Fire Tower (LU)
Hampton Beach State Park, (RU)
Holden Hill, Coleman State Park (MU)
Hyland Hill, Hyland Hill State Forest (MU)
Jordan Hill, Walker State Forest (RU)
Kearsarge Mountain, Kearsarge Mountain State Forest (MU)
Magalloway Mountain (RU)
Milan Hill, Milan Hill State Park (MU)
Oak Hill, Oak Hill Fire Tower (MU)
Pack Monadnock Mountain, Miller State Park (MU)
Pitcher Mountain, Pitcher Mountain Fire Tower (MU)
Prospect Mountain, Weeks State Park (LU)
Mt. Sunapee, Mt. Sunapee State Park (MU)
Mt. Washington State Park, (MU)
Wantastiquet Mountain, Wantastiquet Mountain State Forest (MU)
Warner Hill, Warner Hill Fire Tower (MU)

Development of communications facilities at these sites shall be restricted to specific areas, as determined by the Commissioner.

V. APPLICATION FOR COMMUNICATIONS SITE USE:

- A. Application for a communication site use will be filed with the Commissioner, Department of Resources and Economic Development and shall include the following information:
1. Demonstrated need for public health and safety, or for the public welfare interests served by commercial-service communications.
 2. Complete plans and specifications of the proposed installation including, but not limited to, buildings, towers, power lines, accessory structures, fuel tanks, generators, method(s) of access to the site and access improvements.
 3. Detailed specifications including type, frequency, size and proposed location of

receiving and/or transmission unit(s) and antenna(s).

4. Analysis of compatibility with existing facilities and equipment (intermod and structural analysis) and power requirements.
5. Written documentation that the installation meets the current ANSI standards for controlled and uncontrolled human exposure to radio frequency electromagnetic fields. Cumulative effects of the proposed installation together with the existing facilities shall be considered.
6. Power and access availability without major new development.

B. Applications for New Communications site designations will be filed with the Commissioner, Department of Resources and Economic Development and shall include the following process.

1. A description of alternative sites considered, including other DRED-designated communication sites and locations on private property, and the results from an investigation that demonstrates why the alternative sites are not feasible.
2. Compatibility with long-range multiple use plans.
3. Aesthetic compatibility with surrounding environment.
4. Impact on aesthetic/natural and recreational resources and efforts to minimize or mitigate such impacts.
5. Deed and/or property use restrictions.

Regional and Local Review: In accordance with RSA 674:54 II, all applications for new communication site designations shall be sent to the Board of Selectmen/City Council of the municipality and to the appropriate Regional Planning Commission in which the proposed site is located to provide an opportunity for public hearing(s), subject to the following:

1. DRED will provide a public notification in a newspaper in general circulation in the area stating that a proposal for a new communication site designation has been sent to the municipality.
2. DRED will provide written notification to: (1) persons who have interests of record in the site; (2) persons who have written use agreements for the site on file with DRED; (3) landowners across which the State has deeded or written access rights to the site; and (4) donors of land which contains the site.
3. DRED personnel and the applicant shall participate in any hearing(s) requested by the municipality or by the Regional Planning Commission.

4. DRED shall respond in writing to any written comments made by the municipality relative to the application and received within 30 days after the hearing. Responses shall identify any modifications made in response to comments from the municipality or a written explanation as to why the implementation of the comments would be contrary to the proposed public project.
5. Upon completion of the processes described in this section, applications for a new communication site shall be submitted to Governor and Executive Council for final approval.
6. Applications from public and private users shall be submitted to the local governing body by the applicant for approval under the municipality's Site Plan Review Regulation.
7. Application(s) for use permits or leases for new communication sites shall follow the same procedures as existing designated sites.
8. Application(s) for a new site, or modification or expansion of an existing site may be reviewed by the Communication Site Advisory Committee, as deemed necessary by the Commissioner.
9. Once a site has been officially designated, new users on the site can be processed by the DRED communications office without review by the Advisory Committee, providing the new user doesn't significantly modify or alter the site, such as but not limited to adding buildings, extending the tower height or other buildings or structures, in which case it shall be reviewed by the Advisory Committee.

VI. CONSOLIDATION:

- A. Towers and buildings: on each communication site will be consolidated and shared by site users in a manner striving for the following goals:
 1. A single, expandable, low profile transmitter building serviced by a single, non-overhead utility line.
 2. As few multiple-use, broadband antennae as are technically feasible, affixed to a single tower. Such consolidation will be planned on a site-by-site basis according to building design, cable and power layout, and vegetation distribution; and accomplished through cooperative funding among users, contributions, or bonding.
 3. Additions to, and modifications or relocation of, existing structures and equipment shall be compatible with the designated site plan for consolidation of facilities through shared use.

VII. ADVISORY COMMITTEE:

A. Communication Site Advisory Committee is established as an adjunct to the Commissioner's office. Technical advisors may serve as deemed necessary or desirable by the Committee. Committee membership shall include the following individuals or their designee:

- Director, Division of Forests and Lands
- Director, of Parks and Recreation
- Director, Division of State Police
- Executive Director, New Hampshire Fish & Game Department
- President/Forster, Society for the Protection of New Hampshire Forests
- Executive Director, Local Government Center

B. Purpose: The Advisory Committee is established for the purpose of advising the Commissioner on the following matters:

1. Designation of new communication sites, or modification to tower height, building size and/or expansion of existing sites if deemed necessary by the Commissioner.
2. Developing Plans for consolidation of facilities.
3. Policies, rules, and regulations for communication site management may be reviewed periodically
4. Recommended changes to policy, rules and regulations for communications site management may be made by Advisory Committee, Communications Site Committee, Communications Section Chief, or the Department and approved by the Commissioner.

VIII. MODIFICATION OR EXPANSION OF EXISTING SITES:

A. New or Expansion Proposals: Proposals for new or enlarged installations at designated communication sites, which are demonstrated to be in the overall interest of public health or safety will be given the highest priority. New users may be permitted subject to the following:

1. Can be accomplished without compromising the values to be protected under Section IV. A, and
2. Would result in a net improvement in onsite facility aesthetics, primarily through consolidation, or
3. Would result in enhanced public recreation access or opportunities, or
4. Would provide the tower or building space needed to accommodate "public users," as determined by the Commissioner.

IX. INTERFERENCE:

- A. New Installations: New installations/users shall not interfere with existing installations, users and functions. Where irreconcilable conflicts arise between "public user," and "private user" installations over electronic interference, space, power supply, or location, the "public" or "quasi-public" user shall take precedence and displace the "private user." Order of displacement is: 1) private users; 2) quasi-public users engaged in low power broadcasting; 3) other quasi-public users. Within each category, newest installations shall be displaced first.
- B. Electronic Interference: In the case of a complaint of electronic interference or other conflicts created by a new installation, it shall be the responsibility of the proponent of the new installation to submit plans for resolving the complaint or potential problem. The plans shall be consistent with the site consolidation effort. The complainant and new installation proponent shall attempt to resolve the matter. Unresolved issues and the proponent's plans shall be submitted to the Communication Office within 10 working days of the complaint for review and recommendation for action by the Commissioner.

X. OTHER INSTALLATION REQUIREMENTS:

- A. Additional considerations shall include:
1. Communication tower(s) on DRED communication sites shall be the minimum height necessary to meet technical requirements of the equipment installed and the service area, but under no circumstances shall tower structure exceed 180 feet in height.
 2. All DRED communication sites shall meet the current American National Standards Institute (ANSI) requirements for controlled and uncontrolled human exposure to radio frequency electromagnetic fields.
 3. Permits/leases for site use are not transferable and facilities (buildings, tower and equipment) may not be sub-leased.
 4. Requests for changes or modification of a permitted installation shall be submitted in writing for approval by the Commissioner.
 5. Site users shall comply with all applicable federal, state and local laws, ordinances and rules.
 6. All equipment installations shall be accomplished in compliance with the latest edition of the "State of New Hampshire Department of Resources and Economic Development Technical Requirements For use of Communication Sites," and all grounding of equipment will meet Motorola's R-56 requirements.
 7. Intermod Study is required of all new prospective users or a change of frequency by a current user.

8. Structural analysis may be required by new users and upgrades by current users.
9. An RF Study is required by all new users at all sites. Sites that are manned by volunteers or paid personnel require the RF Study to specifically reference and address the effects and risk to personnel from RF exposure.

XI. TENANT CATEGORIES (basis for annual rent):

The following table depicts the tenant categories and provides the degree of annual rent to be charged in order to occupy a DRED communication site:

CATEGORY	ANNUAL RENT BASIS
NH State Entity	Beneficial Services (no-charge tenants as of 1/1/2013)
Federal Entity	Administrative Fee (\$1,000 as of 1/1/2013)
Government/Quasi-Governmental, Municipalities, County, Other State	Administrative Fee (\$1,000 as of 1/1/2013)
Commercial	Fair Market Rent
Other	Fair Market Rent

XII. FEES:

- A. Fair Market Value Rent: All new or renewed non-state tenant contracts (leases, permits, licenses) shall be assessed an annual fair market value rent (the Market Rent) or annual administrative fee(the Administrative Fee: based on beneficial services arrangements and/or other considerations) for each communications site, which shall be set by the Commissioner.
 1. Items to be considered in determining the Market Rent or Administrative Fee will include:
 - Administration costs to the state.
 - User classification (public, quasi-public, private) and type of installation.
 - Prorated share of facilities maintenance.
 - Inventory of the equipment installed at the site.
 - Benefits accruing to the state as a result of joint installation.
 - Costs associated with installations at alternative locations on private property.
 - Market Rent values on comparable private communications sites.
 - Potential impacts to existing state park or state forest operations.
 - Public safety and/or quality of life considerations.
 2. All communication installations on DRED lands owned by or leased to non-public tenants shall be subject to local taxes, payable by the tenant.

XIII. AMENDMENTS:

The Policy may be amended from time to time to serve the public interest upon recommendation of the Communication Site Advisory Committee and approval by the Commissioner.

Approved: Jeffrey J. Rose Date 1/29/14
Jeffrey J. Rose, Commissioner
Department of Resources and Economic Development



STATE OF NEW HAMPSHIRE
DEPARTMENT OF RESOURCES AND ECONOMIC DEVELOPMENT



**TECHNICAL REQUIREMENTS
FOR USE OF COMMUNICATION SITES**

Adopted June 30, 1995
Reviewed April 27, 2005
Revised February , 2014

Jeffrey J. Rose, Commissioner

172 Pembroke Road
Concord, N.H. 03301

State of New Hampshire
Department of Resources and Economic Development
Technical Requirements
For Use of Communication Sites

Introduction

The following outlines technical requirements for installation, operation and maintenance of communication equipment and appurtenances at Department of Resources and Economic Development (DRED) communication sites as required by Item III.H.6 of the DRED "Policy On Use and Management of Mountaintops for Communication Facilities". As stated in the policy, all requests for new communication equipment installations or modifications of existing equipment require review by the Communication Site Advisory Committee and approval by the Commissioner.

The Commissioner, with counsel from the Communication Site Advisory Committee, shall be the final authority in resolution of any conflicts between site users or in interpretation of these technical requirements and may require testing of user's equipment to determine compliance or to investigate possible sources of interference.

These requirements are in addition to any standards or conditions contained in the lease/use agreement.

These requirements shall apply to all new communications facilities and to existing facilities that are upgraded or expanded. The requirements may be waived or modified by the DRED Site Manager for facilities and/or users in existence at the date of adoption, as communication site conditions warrant.

Transmitters and Associated Equipment

- A. Transmitters shall be equipped with isolators to provide the following minimum isolation to reduce the possibility of intermodulation interference.
 - 25 db (70 MHz to 220 MHz)
 - 50 db (220 MHz to 1000 MHz)
 - 75 db (1000 MHz to 76 GHz)
- B. A Bandpass cavity shall be used between each antenna and associated transmitter or combiner. A combiner, or duplexer will satisfy this requirement.
- C. R.F. Devices including duplexers, isolators, cavities, switches, etc. shall be located inside grounded cabinets where physically possible. Open racks may be permitted on a site by site basis to fit specific needs.
- D. Grounding to each cabinet and device shall be installed and comply with current Standards and Guidelines for Communication Sites (R56), NFPA 780: Standard for the Installation of Lightning Protection Systems, and NFPA 70: National Electrical Code® when applicable.
- E. Transmission lines entering enclosed equipment cabinets shall do so via bulkhead connectors. Type "N" bulkhead connectors shall be used above 54 MHz.
- F. Power, telephone, network, or control lines shall be protected by grommets where they enter enclosed radio cabinets. Where high R.F. fields exist, telephone lines and control lines shall enter radio cabinets via RFI filtration devices.

- G. The use of RG\8, RG\58, braided shield, single shield coax cable or aluminum shielded cable is not permitted. This includes cables located within cabinets or racks. PTP, Microwave, or GPS systems whose manufacturer requires the use of LMR-400 or similar cable will be exempt providing the manufacturer's documentation is submitted to the DRED site manager prior to installation. Double shielded RG\58 (Belden 8268, etc.) may be used in external frequency reference and 1 PPS launch timing applications.
- H. Ethernet cable (CAT5e, CAT6, etc.) shall be routed to not interfere or receive interference from RF equipment.
- I. Ethernet cable (CAT5e, CAT6, etc.) shall be plenum rated for in shelter use and shielded/ outdoor rated when used outside of the shelter or on the tower.
- J. Ethernet cable (CAT5e, CAT6, etc.), and telephone lines shall be grounded upon entry into the shelter from an outside source (tower mounted equipment, or telco lines) using a UL listed surge suppressor and shall be installed in accordance with current Standards and Guidelines for Communication Sites (R56), NFPA 780: Standard for the Installation of Lightning Protection Systems, and NFPA 70: National Electrical Code® when applicable.
- K. Microwave or PTP transceivers shall be secured to an open rack or mounted within an enclosed cabinet. Unsecured devices will not be permitted.
- L. At no time will any equipment be mounted to an ice bridge or its support structure.
- M. Microwave or PTP ODU (Outdoor Units) should be mounted as close to the antenna as possible.

Antenna System Requirements

- A. Antenna systems must be approved by the DRED Site Manager prior to the commencement of installation work. The cost of any changes to the existing tower including structural work, tower painting, tower lighting, etc. will be paid for by the site user. Rearrangements of existing antennas will not be considered except under unusual circumstances.
- B. The design of each proposed antenna systems shall take into account the following:
 - *Antenna location will be assigned by the DRED Site Manager based on available space, required radiation pattern, transmitter power and frequency, antenna type, mounting restrictions and interference considerations.
 - *Only antennas which provide a direct dc path to ground may be utilized.
 - *Antennas shall be equipped with coaxial lightning protectors meeting ANSI standard 62.1. Lightning protectors shall be connected to site ground system in accordance with current Standards and Guidelines for Communication Sites (R56) and NFPA 780: Standard for the Installation of Lightning Protection Systems.
 - *R.F. link antennas, control antennas, and Microwave Antennas will be assigned mounting positions as low on the tower as possible.

*Metal antenna mounting hardware and falling ice protection hardware will be hot dipped galvanized or stainless steel.

*Only solid copper jacketed coax cable will be permitted for antenna cable runs. PTP, Microwave, or GPS systems whose manufacturer requires the use of LMR-400 or similar cable will be exempt providing the manufacturer's documentation is submitted to the DRED site manager prior to installation.

*Coax cable shall be individually attached to the tower legs or waveguide hangers. The location of coax cable runs will be assigned by the DRED Site Manager.

*Attachment of coax cable will be by stainless steel clamps or hangers spaced a maximum of three feet apart.

*The use of plastic "tie wraps" to support coax cable in any location is not permitted. The use of coating products that emit acetic acid are not permitted. Use of ultra-violet protected "tie wraps" are allowed on a temporary basis during construction or for temporary installations.

*Grounding kits with solid copper straps and mechanical compression shall be installed at top of tower, at point where coax cable departs the tower, and at the building entrance point. These clamps will be properly sealed to prevent corrosion at the coax cable connection. Stainless steel connectors will be used from the grounding kit to the tower. Grounding kits and procedures must comply with current Standards and Guidelines for Communication Sites (R56).

*Horizontal runs of coax cable shall be protected by ice shields and supported every three feet with stainless steel clamps or hangers.

*Coax cable shall enter buildings via weatherproof cable entrance ports or cable mounting plates. Positions will be assigned by the DRED Site Manager. Ground Clamps will be used on both sides of this connection and will be connected to the site ground system.

*Coax cable runs located inside buildings will utilize existing cable racks or will be supported overhead by hangers.

Power Requirements:

- A. Each site user will be responsible for the cost of installation of separately metered electrical service when such metering is required unless otherwise specified in the lease/use agreement.
- B. The provisions of backup power by DRED will require approval of the DRED Site Manager.
- C. Emergency generating equipment or battery backup units shall not be installed without approval of the DRED Site Manager.
- D. Each new transmitter and equipment cabinet will be connected to a separately fused AC outlet in accordance with current Standards and Guidelines for Communication Sites (R56), NFPA 70: National Electrical Code®, and State Electrical codes.
- E. Under no circumstances will one station be plugged into the accessory outlet of another cabinet.

- F. All electrical installation work shall be in full compliance with current Standards and Guidelines for Communication Sites (R56), NFPA 70: National Electrical Code®, and State Electrical codes.

Administrative Items

- A. A frequency compatibility study must be performed prior to installation; it shall be done by an independent consulting firm, which has been approved by DRED. The cost of this study is the responsibility of the site user. A subsequent study may be required each time the site user proposes an additional frequency at the site.
- B. The site user shall immediately cease operation if notified by the DRED that they are causing harmful interference.
- C. The DRED Site Manager shall be provided with copies of all FCC license applications, current FCC licenses and equipment specifications.
- D. The site user shall make no changes after the initial installation without prior written approval from the DRED Site Manager.
- E. Equipment shall be maintained in such a manner as to prevent it from becoming a source of interference or a safety hazard.
- F. Equipment shall have an ID tag attached, which shows licensee's name, address, call sign, frequency, tone squelch frequency and telephone number of person or organization responsible for maintenance work. Radio station licenses shall be posted for each transmitting station as required by FCC rules.
- G. Speakers will be turned off except during periods of maintenance work.
- H. Areas in and around the site user's equipment shall be kept clean and neat at all times. In addition, exterior areas including access roads, trails, and parking area shall be kept clean. Trash and unused materials shall be immediately removed from the site and not stored on the premises in any manner.
- I. Smoking, open flame, or welding will not be permitted inside buildings.
- J. Should the site user cause discharge of any Fire Protection System, they will be responsible for all costs associated with recharging the system, cleaning the building and repairing damaged equipment.
- K. If the building has an alarm system installed, the site user will notify designated Alarm Center when entering or leaving building in accordance with posted instructions.
- L. Site access shall be as designated in and subject to restrictions as described in the lease\use agreement. The DRED will not be responsible for plowing of access roads or trail entrances to the site unless specified in lease/use agreement.
- M. Prior to the signing of any lease, a joint visit of the site will be made by the proposed site user and the DRED Site Manager. Any additional special technical requirements not covered in this document will be determined at this meeting.

- N. When a lease is terminated for any reason, the site user will remove all equipment including antennas and feed lines within thirty days and will be responsible for any work necessary to return site to its previously existing condition. Should the site user fail to do so, then DRED will arrange to have work completed and will bill the site user for this work.

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MOA EQUIPMENT INVENTORY

Mount Washington
Site

Department of Transportation
Organization

NHDOT Comm' Supervisor
Contact Phone #

TOWER MOUNTED EQUIPMENT:
(Antenna Make, Model, Feed-line Type)
(Tower Make, Model and height)

LOCATION:
(Mounted Elevation and Bearing on
Structure)

2-each roof-mounted, DB 636 antenna

2-each 1/2-inch Andrew's hardline

HOUSED EQUIPMENT:
(Make, Model, Serial Number,
Tx/Rx Frequencies) Also List Back-up
Power (Batteries or UPS)

LOCATION - SHELTER:
(Rack or Cabinet Mounted)

1-each 69" cabinet with doors
Houses 2-each Ericsson, Mastr III, radio
Repeaters, Cisco router, and Bosch Ip-224

Master III 69" cabinet
TX / RX combiner open Rack

Secondly, TX / RX UHF receiver multi-
coupler, Transmitter Combiner (open) rack

Copy of FCC Licenses and ASR # 1-each license attached Call sign KRO247. Site -2

Jan P. Chase, Comm Supervisor
Signed:

May 22, 2017
Date:

NHDOT, B56, PO Box 483, Concord, NH 03301-0483
Address

(603) 227-0018
Phone Number

SUBMIT TO: Justin Bellen
Division of Forests and Lands
172 Pembroke Road
Concord, NH 03301