

***County of Cumberland Maine,
County Commissioners***

Request for Proposal

**Two Way simulcast radio
system upgrade for County
Public Safety agencies**

Issued December 18, 2007

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1. TWO-WAY SIMULCAST RADIO SYSTEM UPGRADE with backhaul infrastructure

REQUESTED BY THE COUNTY OF CUMBERLAND MAINE

PROPOSALS ARE DUE 02/29/2008
@ 1:00 PM Eastern STANDARD TIME

A required pre-proposal conference will be held at a time to be announced. This conference is expected to be held during the first part of January, 2008. Prospective Manufacturers are **required** to attend.

Notice is hereby given that sealed competitive proposals, to provide the specified materials/services, will be received by Cumberland County at the specified location, until the time and date cited. Proposals will be publicly opened and will not be read aloud. Any Proposals received later than the date and time specified above will be returned unopened. The County is requesting 10 copies of the response from each Proposer.

Copies of the Request for Proposals are available by contacting William Whitten, Assistant County Manager at: phone 207-871-8380.

The County of Cumberland Maine reserves the right to accept or reject any proposal or any part thereof; to defer action on the proposals; to reject all proposals; to waive any informality in solicitation procedures. Deviations from the proposal specifications may be considered at the option of the Cumberland County Radio committee, its technical consultant and the County Commissioners

Mail or deliver proposals to:

William Whitten
Assistant County Manager
County of Cumberland
142 Federal Street, Suite 102
Portland, ME 04101
(207) 871-8380 ext 3104

2. Proposal Authorization

To The County of Cumberland Maine:

The undersigned hereby offers and agrees to furnish the material, service or construction in compliance with all terms, conditions, specifications and amendments in the solicitation and any written exceptions in the offer. Signature also certifies understanding and compliance with Section 2.0 of the General Terms and Conditions.

The Manufacture as applicable will add State of Maine and other Federal government sales taxes to the bid price. The County of Cumberland Maine is exempt from F.E.T. and State of Maine sales tax.

<hr/>			For Clarification of this offer contact:
License Number Under Which Work Will Be Performed			
<hr/>			
Transaction (Sales) Privilege Tax License Number		Name (Print or Type)	
<hr/>			
Federal Employer Identification Number		Title	
<hr/>			
Company Name		Phone	
<hr/>			
Mailing Address		Fax	
<hr/>			
City	State	Zip	PROPOSAL AUTHORIZATION
<hr/>			
			Signature
<hr/>			
THIS PAGE MUST BE SUBMITTED WITH THE PROPOSAL			Print Name and Title

3. Scope of Work

Background and Objective

The County of Cumberland Maine, maintains and operates County government radio sites and locations throughout the entire County and serves it's customers with a broad spectrum of emergency communication services to the Cumberland County Sheriff's Office, municipal town police and fire services as well as all E911 dispatch services to the municipalities that contract with the County. With the present twenty plus year old two-way radio communications systems which seems to provide on the average about 60% mobile and portable radio coverage to the County area it serves, it has become increasingly apparent that due to officer safety issues for law enforcement, on scene communication for the fire services and EMS services that a new and improved two way radio system is needed. The Cumberland County radio committee has moved to put out this RFP to respond to those issues. The successful bidder will be required to provide a performance bond. The County is requesting that this project be completed within 6 months of award of contract. The County will address any issues with tower site owners due to current leases and will coordinate with manufacturers. The County will be responsible for issues that arise if new sites are needed and/or any upgrades that would change the current footprint at existing tower sites.

Equipment to be provided

All equipment proposed or provided under this contract shall meet or exceed the latest applicable standards of the FCC, EIA, NEMA, RETMA, and IEEE. LMR infrastructure equipment will be APCO P25 digital capable with ability to operate in analog mode until the County upgrades all field units to P25 standards.

All equipment provided will be required to meet manufacturer's published specifications.

Definitions

Terminology used in this Scope of Work is intended to be generic in nature and consistent with meanings that have been defined through general use and/or accepted trade practices. Where variant meaning may exist, the County of Cumberland Maine will determine the applicable interpretation.

Wideband equipment is considered to be 25 kHz bandwidth with ± 5 kHz modulation.

Narrowband equipment is considered to be 12.5 kHz bandwidth with ± 2.5 kHz modulation.

Simulcast is the operation of two or more transmitters at the same time on the same frequency.

Voting is the operation of two or more receivers such that the receiver with the best signal to noise ratio is passed on to the audio lines.

Workmanship

All work performed as a result of this RFP shall be performed to industry standard.

Requested Equipment

The County of Cumberland Maine is requesting proposals from LMR two way radio manufactures and microwave manufactures for a new simulcast radio system and licensed wireless backhaul to be used by the County of Cumberland and its public safety agencies. The County will also consider responses to this RFP that are for the simulcast radio infrastructure only as well as microwave backhaul infrastructure only. The microwave backhaul provider will be responsible for interfacing with the two way radio manufacturer for compatibility and correct simulcast operation. Responses to subscriber units (mobile and portables) only, can be bid without responding to the two way radio simulcast or microwave infrastructure portions of this RFP. Manufactures responding to the subscriber units will hold the price for up to one year allowing all county agencies and county municipalities to purchase from that quote. The County will not guarantee an initial order for subscriber units, but wants to provide a service to all county entities. The acceptable subscriber units that will be considered are P25 capable tier 2 mobiles and portables and will be the following: Motorola XTL2500 mobiles and XTS 2500/2500I portables, TAIT TM9155 mobiles and TP9100 portables, Kenwood TK5710 mobiles and TK5210 portables, M/A COM M7150 mobiles and P5450 portables. The proposed system needs to be able to expand to other departments and agencies in the County given the appropriate frequencies that are available. All assumptions and background for this RFP come from the 2004 Kimball Study the County authorized and is available on the County website at www.cumberlandcounty.org.

Coverage

All parts of the desired system require at least 90% mobile and portable radio coverage throughout Cumberland County. (As defined in NFPA 1221).

Sites

Voted Receivers- Additional receivers may be necessary to provide required coverage.

Microwave Connectivity

The County is also requesting connectivity to the required radio infrastructure tower sites and County dispatch center located in Windham, ME. The sites for two way radio infrastructure may be connected through licensed 960 MHz fractional "T" TDM radios (GE MDS LEDR radio) microwave. As required between the licensed 960MHz radios and the LMR Radio, The County is also looking for the Proposer to use Harris Intraplex multiplex or equivalent products and to specify the type/model and capacity needed for any multiplex equipment to connect to the existing or new microwave systems. All links should be redundant.

The County is also requesting to use higher bandwidth licensed carrier class frequency microwave radio (such as GE MDS Intrepid or Alcatel Lucent MDR 8000). Microwave radios should be able to transport Ethernet traffic, including IP VoIP based LMR radio systems, and be able to transport TDM based (2 wire and 4 wire) traffic for legacy LMR systems. All higher bandwidth solutions should have the minimal capacity of four DS-1's or equivalent IP capacity and be capable of expanding to 155Mbs capacity without a total microwave chassis replacement All links should use be designed with redundancy utilizing ring architecture, hot standby or other redundant methods

Microwave links should be optimized to provide a minimal amount of constant latency for the simulcast LMR radio system carrying voice traffic. Consideration must also be given to additional Towns needing connectivity to the CCRCC for dispatch needs.

Microwave system design shall provide redundancy in either a ring or hot standby architecture. If ring architecture is provided, the system shall be able to provide an indication of the selected direction of each remote loop switch at the central site. In addition, the selected direction of each remote loop switch shall be able to be controlled from the central site. Alternatively, the loop switch shall equalize bulk delay such that it is the same regardless of the direction selected.

All LMR sites must be connected by either licensed 960 MHz radios, licensed microwave. Leased lines may be an option if tower site has structural issues not resolvable by the County. The County prefers not to have ongoing costs for monthly leased lines.

The County will be look closely at this option as there other many other current and future communication requirements for the County to provide robust connectivity .

All microwave paths will be designed for 99.999% or greater availability Path calculations, profiles and any other supporting documentation are required as part of the RFP .

Interface I/O between the microwave and LMR systems may utilize VoIP, TDM, or Ethernet with RJ-45 physical connections. All microwave equipment will have a 3 year warranty and yearly maintenance contract price with factory trained service people in the State of Maine.

LMR Channels

The Cumberland County Sherriff channel will be a simulcast repeater channel that the dispatch center will use for Sherriff voice communications. The other two simulcast repeater channels will be a county wide law enforcement channel and a county wide Fire/EMS channel for redundant backup to existing municipality's current systems and for radio interoperability when mutual aid coordination is needed. The actual frequencies to be used are as follows:

1. TX=152.5775 RX=157.8375
2. TX=152.0825 RX=158.5425
3. TX=152.5325 RX=157.7925

These frequencies have recently agreed to be purchased by the county and can be used on any site in the County as they are not site specific.

LMR Equipment Requirements

This will establish the minimum equipment requirements for this Request for Proposals. The County is looking for a manufacturer of two way radio equipment to design and propose a simulcast system to meet the criteria requested with all equipment having a 3 year warranty and yearly maintenance contract price with factory trained service people in the State of Maine. Manufactures can use local support provided the local service shop has a full time employee that is a factory certified/trained technician (technicians) and hold a minimum of a GROL FCC license. Local two way radio shops meeting these basic requirements can be used to assist in the initial install and future service and maintenance after initial commissioning of the two way radio system.

All equipment offered shall be type accepted for licensing under the applicable section of the FCC rules and regulations.

All equipment shall be fully solid state. All indicators shall be of LED type. All relays shall be rated for at least 5 million cycles. Any backbone equipment utilizing an internal battery (exclusive of a UPS) shall not be acceptable unless the battery life is rated at 5 years or longer.

Equipment proposed shall be simulcast two-way radio equipment. All equipment offered shall be suitable for operation as a repeater, base station or control station. All radio equipment shall be frequency synthesized and PC programmable.

Equipment shall include transmitters, receivers, power supplies, combining, multicoupling, transmission line, antennas, interconnection panels and ancillary hardware necessary for a fully operational system.

Modular equipment design is preferred to allow maintenance personnel to change a module rather than an entire assembly when troubleshooting the system.

The equipment shall be rack mounted in a standard 19-inch relay rack and include protective covers. Rack maximum height may vary in some installations but will not exceed 7 feet.

Card extenders, special test leads and fixtures and tuning tools shall be included for each site in the basic price quotation.

Automatic Adjustment (LMR)

The simulcast controller must perform periodic automatic adjustment of amplitude and phase response. Automatic adjustment must be programmable to occur at a designated time of day, and programmable to occur from once a day to once a year. The simulcast system must perform centrally controlled adjustments requiring no operator interface for regularly scheduled maintenance. Adjustments must be performed at least once every 6 months. There must be continuous monitoring of control equipment and logging of maintenance adjustments.

Adjustment must be performed in less than 10 seconds per transmitter per site.

Maintenance personnel must be able to perform adjustments from a central site at any time by manually starting the adjustment procedure. Maintenance adjustments must be able to be performed by a single maintenance person.

Equipment Reliability

Each transceiver pair shall have a MTBF of at least 40,000 hours based on failure data. In lieu of adequate field data for equipment recently placed in service, the vendor may show calculated MTBF based on industry standard methodologies.

Electromagnetic Interference

The radio equipment proposed shall be designed to operate in close proximity to other communication equipment which may include VHF, UHF and 800 MHz handheld and mobile radio transceivers, commercial FM and TV broadcast equipment, other digital microwave systems, telephone switching equipment and emergency power control and transfer systems. The equipment proposed shall not emit Radio Frequency Interference (RFI) to any of the types of equipment mentioned above that causes measurable degradation of their performance.

Any shielding necessary to cause the vendor's equipment to meet the above requirements will be the responsibility of the vendor.

Brand Names

Brand names and numbers, when used are for reference to indicate the character or quality desired.

Unless otherwise provided in this solicitation, the name of a certain brand, make or manufacturer does not restrict Proposer to the specific brand, make or manufacturer named, but conveys the general style, type character, and quality of the article desired.

Any article that the public body, in its sole discretion, determines to be the equal of that specified, considering quality, workmanship, economy of operation, and suitability for the purpose intended, shall be accepted.

The Proposer is responsible to clearly and specifically indicate the product being offered and to provide sufficient descriptive literature, catalog cuts and technical detail to enable the owner to determine if the product offered meets the requirements of the solicitation. This is required even if offering the exact brand, make or manufacturer specified.

Failure to furnish adequate data for evaluation purposes may result in declaring your proposal non-responsive.

Unless the Proposer clearly indicates in its proposal that the product offered is an "equal" product, such proposal will be considered to offer the brand name products referenced in the solicitation.

Equal items will be considered, provided your offer clearly describes the article. Offers for equal items shall state the brand and number or level of quality. The determination of the owner as to what items are equal shall be final and conclusive.

When the Proposer does not state brand, number, or level of quality, it is understood the offer is exactly as specified.

Any items other than those brands specified in the proposal specifications require approval of the buyer. The items offered must be equivalent as to function, basic design, type and quality of material, method of construction, and any required dimensions.

Backup Power

1.1.1 UPS or Battery

UPS or battery backup power must be provided for all equipment offered to provide minimum 2 hour of operation. Generator power may or may not be currently available at any of the sites. All batteries must be of a non-gassing, non-spill able design. If direct battery backup is offered, the battery plant must provide for low voltage disconnect to prevent battery damage from over-discharge. If direct battery backup is offered, the battery charger must be sized such that the radio equipment will be fully functional while a completely discharged battery is being recharged. For the higher capacity Microwave radio systems, it is desired to have one backup power system for both microwave and LMR radios. The combined microwave and LMR back up power system will be designed as in the above paragraph with the following additions. To operate at an input voltage: +/- 20 V dc to +/- 60 V DC, provide a minimum of 2 hour of operation

Surge Suppression

All coax entering an equipment shelter shall terminate in a surge suppressor. The surge suppressor shall be rated for the frequency carried by the coax. The surge suppressor shall utilize type N connectors. Non-corrugated and/or aluminum outer conductor coax is not acceptable. All coax must have an external UV resistant outer jacket.

All external coax shall be Andrew LDF4, LDF4.5, LDF 5 or equivalent. Selection of coax size shall be determined by the Offeror to minimize losses in order to meet the coverage requirements. All external coax shall be attached to the tower(s) using either snap-in coax mounts, round member adaptor coax mounts, or angle adapter coax mounts. Attachment using tape, lengths of wire, wrap lock, or other means shall not be allowed.

All internal jumper coax shall either be of a solid outer conductor such as LDF 4, FSJ4, or double shielded such as LMR400. Selection of coax size shall be determined by the Offeror to minimize losses in order to meet the coverage requirements.

All connectors shall be of Type N unless a different style is required at equipment termination. Crimp on connectors are allowed but must be attached with a manufacturer approved crimp tool.

Weather Proofing

All external connectors shall be protected from water intrusion. Weather protection shall be accomplished using Andrews "Cold Shrink" or equivalent. Wrapping the connector with vinyl tape, encasing with a heat shrink sleeve, or the use of natural rubber tape is not acceptable.

Grounding

All coax shall be grounded within six (6) feet of the antenna, each 100 feet along the tower if applicable, at the departure from the tower, and at the building entrance. A ground buss bar shall be supplied on the building exterior at the coax entrance if not already present. An internal ground buss bar shall be supplied inside the building if not already present. Both ground buss bars shall be individually connected to the site ground. All provided equipment inside the building(s) shall be individually grounded to the internal ground buss bar. Daisy Chain or Loop grounding shall not be allowed.

Site Ground

The supplied ground buss bars shall be attached to the site ground, if existing. If a site ground does not exist, one shall be installed by the Offeror. The site ground shall exhibit ground conductivity of 5 ohms or less. If the existing site ground is greater than 5 ohms, Offeror shall provide a solution and cost to improve the site ground to meet the 5 ohm requirement. Grounding shall follow the latest addition of Motorola's "STANDARDS & GUIDELINES FOR COMMUNICATIONS SITES" document also known as the "R56 manual" The document will be used as a base foundation for the communications equipment in this RFP

Spares

A spare assembly shall be supplied for all major electronic components. Spares shall be supplied at a quantity of 10% of the equipment provided. A minimum of 1 spare shall be supplied if the 10% is less than a total quantity of 1. Microwave Radio spare assembly will be provided as recommended by the microwave radio manufacturers.

4. LMR Equipment Specifications

Voting Comparator

1.1.2 General

System Capacity	(tbd by design needs) receivers
Hot Insertion / Removal Signaling	Supported
Power	E&M, 1950, 2175, 2700 Pilot Tone
Operating Temperature	117 Vac or + 12 Vdc -20C to +60C

1.1.3 Site Audio Input

Audio Impedance	600 ohms
Level Range	-30 to +10 dBm adjustable
Frequency Response	300 - 3200 Hz \pm 2 dBm ref. to 1000 Hz.
Pilot Tone Sensitivity	-25 dBm minimum

1.1.4 Voted Audio Output

Audio Impedance	600 ohms
Level Range	-20 to +11 dBm adjustable
Frequency Response	300 to 3200 Hz \pm 2 dB ref. to 1000 Hz.
Absolute Output Delay	Less than 10 ms
Audio Distortion	< 1% 300 to 3000 Hz @ 0 dBm

1.1.5 Voting Action

Switching time between sites	< 1 ms
Unselected output rejection	> 60 dBm
Voting threshold	2 thru 14 db
Voting delay	0 to 300 ms

Frequency Standard

GPS derived frequency standard - Crystal or rubidium oscillators locked to a GPS standard is required

Output Accuracy	$\pm 1 \times 10^{-11}$, 24 hour average, locked $\pm 2 \times 10^{-9}$ / week aging, unlocked
Operating Temperature	-30C to +60C
CTCSS Output	4 programmable outputs

Transmitter

1.1.6 RF

Operating Temperature	-30C to +60C
Operating Voltage	+12 Vdc
Frequency Range	136-174 MHz
Output Power	100 Watts
Modulation	Direct FM
Switching Range	± 4 MHz from center frequency
Load Impedance	50 ohms
Frequency Stability (External Reference input for Simulcast)	± 2.5 PPM -30C to +60C
Adjacent Channel Power (full deviation)	Wideband -60 dBc Narrowband -70 dBc (full deviation)
Sideband Noise (no modulation ± 15 KHz bandwidth)	± 25 KHz -95 dBc ± 1 MHz -105 dBc
Duty Cycle	100%

1.1.7 Audio

Inputs Available	Line, Microphone, CTCSS
Line Input Impedance	600 ohms
Line Input Sensitivity	-50 dBm (60% modulation, 1 KHz)
Bandwidth	300-3000 Hz (wideband) 300-2550 Hz (narrowband)
Pre-emphasis Response	Within -1, +3 dB of a 6dB/octave pre-emphasis characteristic
Flat Response	Within -1, +2 dB of output at 1 KHz

Receiver

1.1.8 RF

Operating Temperature	-30C to +60C
Operating Voltage	+ 12 Vdc
Frequency Range	136-174 MHz
Frequency Stability	±1.0 PPM -30C to +60C
Switching Range	±1.5 MHz from Center Frequency
Input Impedance	50 ohms
Frequency Stability	±1.0 PPM -30C to +60C
Sensitivity	-117 dBm (12 dB sinad)
Selectivity	Narrow Bandwidth 85 dB Wide Bandwidth 90 dB

1.1.9 Audio

Outputs Available	Line, Monitor
Line output Impedance	Ethernet
Line Output Level	Adjustable to +10 dBm
Flat Response	Bandwidth 67-3400 Hz Response +1, -2 dB ref. 1 KHz
De-emphasized	Bandwidth 300-3400 Hz Response +1, -3 dB ref. 1 KHz
Squelch Type	Combination of Carrier And CTCSS/DCS
Tone Squelch Opening	Better than 6 dB sinad
Tone Detect Bandwidth	±2.1 Hz accept, ±3 Hz reject
Tone Response Time	150 ms open and close

|

5. Coverage Testing

The County requires that Talk Out and Talk back testing be done. The testing shall determine the percentage of system coverage.

Talk Out Testing

Talk Out testing shall be accomplished using an automated drive test tool similar to the Survey Technologies Inc system. The tool shall measure received signal strength periodically, at least twice per mile. The tool shall record the received signal strength and at each location determined via an integral GPS receiver.

Talk Back Testing

Talk Back testing shall be accomplished using a mobile radio. The radio shall have its output power reduced as required by the user mode specified. Talk Back testing shall use a subjective DAQ rating methodology.

Grids

The County will be uniformly divided into grids no larger than 1.25 mile grids and no smaller than 100 wavelength. The number of grids shall be sufficient to provide a statistically valid test. Measurements shall be made randomly in each grid in accordance with industry standard coverage verification test procedures as specified in EIA/TIA TSB 88. The average test score for the grid shall be calculated and entered as the test score for the grid. The validated service area reliability is the ratio of the total number of passing tiles to the total number tested.

Terrain

It is recognized that a considerable amount of the County may be inaccessible to a test vehicle. Testing shall be done on roads bounding these areas and the road shall be assumed to be the center of the test grid for each mile of road. Inaccessible test grids shall not be considered in the computation of coverage.

Pass / Fail

1.1.10 Talk Out

A grid shall be deemed to have passed if the received signal strength greater than that required for the specified channel performance criteria (CPC) The CPC includes 15 dB of building attenuation.

1.1.11 Talk Back

A grid shall be deemed to have passed if the Delivered Audio Quality (DAQ) value for the grid is a 3.0 or higher.

DAQ

DAQ is a subjective method of judging a signals quality. The scale is:

- DAQ 5 Speech easily understood.
- DAQ 4.5 Speech easily understood. Infrequent noise/distortion.
- DAQ 4 Speech easily understood. Occasional noise/distortion.
- DAQ 3.4 Speech understandable with repetition only rarely required. Some noise/distortion.
- DAQ 3 Speech understandable with slight effort. Occasional repetition required due to noise/distortion.
- DAQ 2 Speech understandable with considerable effort. Frequent repetition due to noise/distortion.
- DAQ 1 Unusable, speech present but unreadable.

DAQ testing shall be done in the presence of a representative of the County and a representative of the Contractor. The test shall use a standard script such as a "Five Count" or other uniform script.

6. Additional Requirements

Replacement Parts

The Contractor will guarantee that standard replacement parts will be available for a minimum of five (5) years from the date of shipment of the system and that repair or replacement parts will be provided within a reasonable time period from receipt of an order.

The Contractor shall state its standard policy for providing replacement parts during the warranty period as well as after the warranty expires. The vendor is to include repair and return policy, procedures and pricing structure.

Warranty

All equipment delivered will be new, will conform to stated specifications and will be free from mechanical, electrical or other defects for a minimum of three (3) years from the date of installation.

If workmanship or design defects cause the system to require modification, repair or replacement, the vendor shall promptly bring the units to satisfactory operating condition at no expense to Cumberland County.

Both the Contractor and manufacturer agree that the buyer has the right to perform any routine maintenance and/or repairs required during the warranty period without jeopardizing the Contractor's warranty or guarantee.

The Contractor agrees to replace or repair any defective parts during the warranty period. Manufacturer may agree to replace these parts or choose to have repairs and modifications done by the Contractor or their local service representative.

If the Contractor is unable to provide local service they must identify how they intend to provide satisfactory service support that is comparable.

Training

The Contractor shall provide training by a qualified instructor at either the Contractor's local facility or a designated Cumberland County location, or by any alternate method that will be acceptable to the manufacture and county. Proposer shall clearly describe training offered and provide a breakdown of all costs associated with such training.

Manuals

The vendor shall provide a minimum of one (1) technical manual with each radio model shipped. The manuals shall each provide concise information, including schematics, troubleshooting diagrams, layout diagrams, printed circuit board overlays, test and alignment procedures, interconnecting diagrams, part numbers/descriptions and final test procedures used to verify proper system operation.

During the lifetime of the equipment the vendor shall be responsible for upgrading the technical manuals. The vendor shall detail the process that will be used in upgrading the user manuals when engineering/technical changes are made to the equipment.

LMR Propagation Prediction

The Manufacture shall supply propagation maps showing the expected coverage from each site and the combined coverage from all sites.

Propagation maps must be based on the one of industry standard propagation model

Talk out and talk back maps must be provided

Propagation maps must show at the minimum 3 gradients from -65 dBm to -105 dBm

Microwave

The manufacturer shall supply link calculations and path profile for each 960MHz and Microwave Links

7. SITES

Site Identification

The following table identifies the GPS coordinates reference NAD83 where available. Sites that have not been recently verified will not be marked with the legend "GPS". Other coordinates supplied in this table are from published documents and have not been verified using NAD83 datum.

Site Location	FCC ASR #	Structure AGL	Structure Type	Ground Elevation (ASML)	Latitude	Longitude	Owner	Shelter Available	Notes
Harrison, ME	1021389	280'	Guyed	579'	N44 05' 49.1"	W70 39' 19.2"	Crown Castle	yes	POTENTIAL SITE
Quaker Hill	-	180'	Self Support		N43 58' 03.58"	W70 31' 36.63"	ATT&T	upgrade	Current Site
Gray	1022679	730'	Guyed	408'	N43 51' 06"	W70 19' 37.4"	American Tower	yes	Current Site
Harpswell	-	180'	Self Support	180'	N43 48' 52"	W69 56' 29"	Strout	yes	Proposed to be built
Phippsburg	-	180'	Self Support	180'	N43 50' 01.76"	W69 49' 40.33"	AT&T	no	Current Site
Scarborough	-	RawSite	no tower	101'	N43 35' 26.3"	W70 20' 11.2"	PWD	no	POTENTIAL SITE
Westbrook	-	Raw Site	no tower	250'	N43 41' 57.3"	W70 21' 51.4"	PWD	no	POTENTIAL SITE
CCRCC	-	180'	Self Support	186'	N43 43' 51"	W70 25' 08.78"	Cumberland County	yes	Current Site
Winn MT.	1055705	1300'	Guyed	1166'	N43 51' 30"	W70 42' 39"	Pacific & Southern (WCSH)	yes	Current Site

BLUE HIGHLIGHTED SITES are existing county LMR sites

Site Details

Winn Mt WCSH-current VHF transmit site w/uhf link back to Windham

Casco Quaker Hill-current VHF receiver site Sheriff w/cross band link TX=uhf to voter in Windham and RX=vhf from patrol mobiles

Gray-current VHF transmit site Sheriff w/uhf link back to Windham

%Phippsburg-current VHF receiver site Sheriff w/cross band link TX=uhf to voter in Windham and RX=vhf from patrol mobiles

% Phippsburg would be changed over to the new Harpswell tower when constructed

Windham-current CRCC dispatch w/JPS voter

****Scarborough-Gorham Fire and Police tactical receivers currently**

Possible additional sites

Cumberland County Jail–potential simulcast site or Aux Receiver site

Harrison-potential simulcast site

Harpswell-potential simulcast site

Additional Sites

Any additional sites that the contractor deems necessary to meet the coverage requirements of this RFP may be identified in the proposal and priced in the optional pricing section. All equipment required to implement such sites including audio connection options, site improvements, emergency power, grounding, combining, and antennas must be included, if offered.