



Jamaica Public Service Company Limited
(JPS)

Request for Proposal (RFP) No. 945067
for

DMR Links for Microwave Radios

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1 Background

Jamaica Public Service Company Limited (JPS) is an integrated electric utility company engaged in the generation, transmission and distribution of electricity throughout the island of Jamaica. JPS owns and operates 28 generating units and also purchases power from seven Independent Power Producers (IPP). JPS assets include conventional thermal plants (611.5 MW), hydro and wind (32.5 MW), System storage in the form of Hybrid Fly-Wheel and Batteries, 53 Substations, approximately 1200 km of transmission lines and 20,534 km of distribution lines.

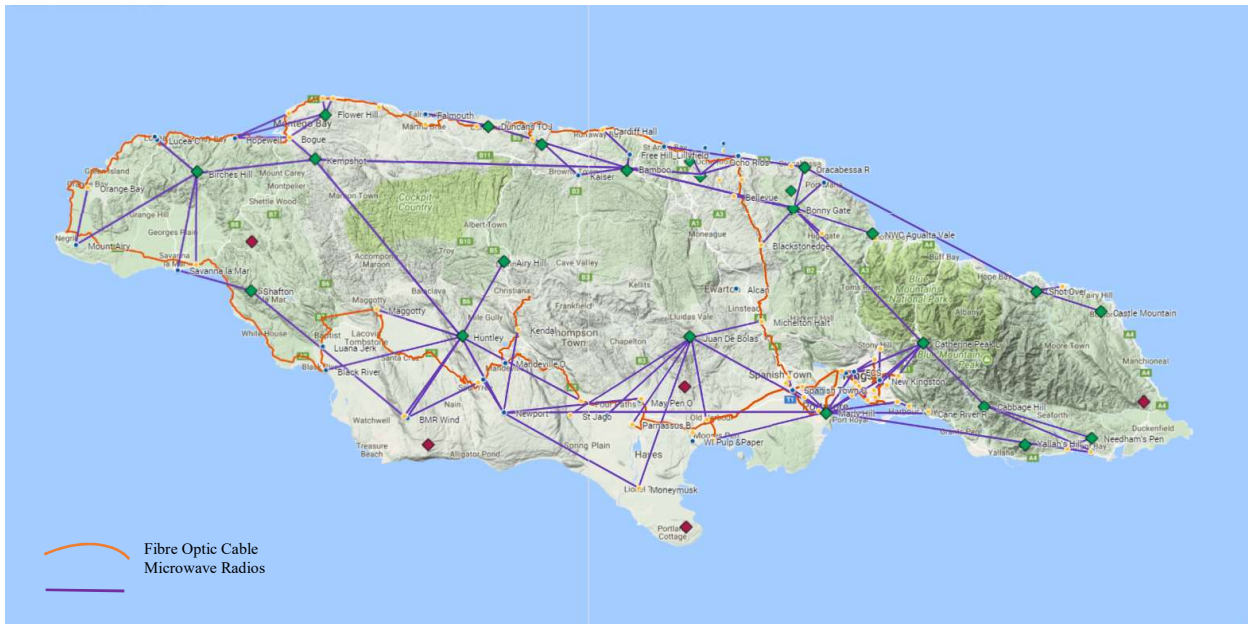
In support of the electric grid, JPS owns and operates an extensive Telecommunication network that supports the Generation, Transmission and Distribution Systems and an Emergency Safety System with locations connected by both Fibre and Microwave (a few with Microwave Only). The Microwave Network is supported by Repeater Sites at strategic high points on the island that enables diversification of communication circuits from nodes that are located on the optical fibre. The ring architectures allow each node to be connected to exactly two other nodes and is utilized on both the fibre and microwave networks. These networks support the following services:

- SCADA
- Teleprotection
- Remote Relay Monitoring
- Digital Mobile Radio/Two Way Radio
- Automated Metering Infrastructure
- Distribution Automation
- Metering
- Security System
- Voice

The power grid is managed from System Control in Kingston with a backup site in Montego Bay.

The Kingston location is the host location for the Digital Mobile Radio network, where, by regulation, a recording of all switching conversation must be stored. The licensed, coverage type network is in the 400MHz range and provides full coverage of the terrain for handheld use along the power lines. The DMR inter site linking is currently supported by the existing backbone point to point backbone microwave network over parabolic high capacity antennas.

JPS Telecommunication Network



2 Scope of Supply

The purpose of this Request for Proposal (RFP) is to identify qualified vendors technology to supply a microwave radio system with a minimum bandwidth capacity and high reliability and availability, for linking Digital Mobile Radio (DMR) Base Stations across Jamaica. This radio system should be Point-to-point, licenced spectrum below 4GHz, and utilize wide beamwidth antennas that will not be severely impacted by minor shifts during adverse weather conditions. The selection of a communications technology vendor and equipment will be heavily weighted to:

1. proven success in deployment of low capacity point to point technologies;
2. maturity of deployed devices
3. integration with the existing and planned communication network(s);
4. system's demonstrated ability to support JPS's planned use for DMR System
5. functionality in terms of value-added services;
6. equipment Road Map
7. the financial stability of the supplier.

3 Deliverables and Schedules

Deliveries will be phased over a three (3) year period as per below.

Phase 1		2023								
Site name S1	Latitude S1	Longitude S1	Tower height (m) S1	Tower type S1	Path length (km)	Site name S2	Latitude S2	Longitude S2	Tower height (m) S2	Tower type S2
Birches Hill	18.38633056	-78.09663056	12	Self Supporting	24.19	Kempshot	18.41095	-77.86916389	50	Self Supporting
Catherine Peak H	18.07724444	-76.70251111	60	Self Supporting	15.31	ECS	18.02500833	-76.8356	50	Self Supporting
ECS	18.02500833	-76.8356	50	Self Supporting	9.84	Marly Hill	17.95107222	-76.88725278	30	Self Supporting
Bamboo	18.39419722	-77.27025278	60	Self Supporting	63.31	Kempshot	18.41095	-77.86916389	50	Self Supporting
Marly Hill	17.95107222	-76.88725278	30	Self Supporting	65.68	Newport	17.95056944	-77.50717222	50	Self Supporting
Bamboo	18.39419722	-77.27025278	60	Self Supporting	69.56	Catherine Peak H	18.07724444	-76.70251111	60	Self Supporting
Bonny Gate	18.32148056	-76.95013333	50	Self Supporting	37.66	Catherine Peak H	18.07724444	-76.70251111	60	Self Supporting
Huntley	18.08893611	-77.58831111	45	Self Supporting	17.56	Newport	17.95056944	-77.50717222	50	Self Supporting

Phase 2		2024								
Site name S1	Latitude S1	Longitude S1	Tower height (m) S1	Tower type S1	Path length (km)	Site name S2	Latitude S2	Longitude S2	Tower height (m) S2	Tower type S2
Juan De Bolas	18.087275	-77.14772222	45	Self Supporting	31.44	Marly Hill	17.95107222	-76.88725278	30	Self Supporting
Birches Hill	18.38633056	-78.09663056	12	Self Supporting	28.51	Mount Airy	18.25569167	-78.32907222	50	Self Supporting
Birches Hill	18.38633056	-78.09663056	12	Self Supporting	16.09	New Town Flow	18.41824722	-78.24511389	45	Self Supporting
Dalvey DMR	17.91358056	-76.25030556	45	Self Supporting	7.03	Rowlandsfield	17.97102778	-76.2785	45	Self Supporting
Cabbage Hill	17.96292778	-76.5831	50	Self Supporting	35.69	Dalvey DMR	17.91358056	-76.25030556	45	Self Supporting
Castle Mountain	18.135375	-76.3608	52	Self-Supporting	7.64	Rural Hill TG FLOW	18.086219	-76.310167	45	Self-Supporting
Rowlandsfield	17.97102778	-76.2785	45	Self-Supporting	13.2	Rural Hill TG Flow	18.086219	-76.310167	45	Self-Supporting
Castle Mountain	18.135375	-76.3608	52	Self Supporting	13.72	Shotover	18.17373611	-76.48408611	45	Self Supporting
Cabbage Hill	17.96292778	-76.5831	50	Self Supporting	32.26	Marly Hill	17.95107222	-76.88725278	30	Self Supporting
Cabbage Hill	17.96292778	-76.5831	50	Self Supporting	22.65	Needham's Pen	17.90447222	-76.37838889	55	Guyed

Phase 3		2025								
Site name S1	Latitude S1	Longitude S1	Tower height (m) S1	Tower type S1	Path length (km)	Site name S2	Latitude S2	Longitude S2	Tower height (m) S2	Tower type S2
Airy Hill	18.22651944	-77.50621667	50	Self Supporting	17.53	Huntley	18.08893611	-77.58831111	45	Self Supporting
Bamboo	18.39419722	-77.27025278	60	Self Supporting	14.95	Murphy Hill	18.38280556	-77.12932222	50	Self Supporting
Bamboo	18.39419722	-77.27025278	60	Self Supporting	29.4	Duncans TOJ	18.47205833	-77.53622222	24	Self Supporting
Flower Hill	18.49405	-77.84920833	24	Guyed	9.44	Kempshot	18.41095	-77.86916389	50	Self Supporting
Mount Airy	18.25569167	-78.32907222	50	Self Supporting	36.81	Shafton	18.17259167	-77.99213889	45	Self Supporting
Bonny Gate	18.32148056	-76.95013333	50	Self Supporting	8.51	Oracabessa R	18.39588333	-76.93013056	50	Self Supporting
Oracabessa R	18.39588333	-76.93013056	50	Self Supporting	53.19	Shotover	18.17373611	-76.48408611	45	Self Supporting
Bamboo	18.39419722	-77.27025278	60	Self Supporting	17.77	Woodstown	18.44302222	-77.43039444	20	Wooden Pole
Huntley	18.08893611	-77.58831111	45	Self Supporting	43.7	Shafton	18.17259167	-77.99213889	45	Self Supporting
Airy Hill	18.22651944	-77.50621667	50	Self-Supporting	31.1	Bamboo	18.39419722	-77.27025278	60	Self-Supporting

JPS will review the initial submissions and select a group of “shortlisted” firms who will be invited to participate in the final submissions. Short-listed firms may also be required to make presentations to JPS.

The Calendar of Activities table below indicates the calendar of activities to be undertaken by JPS and the prospective consultants in order to meet the established schedule of the RFP.

Table 1: RFP Calendar of Activities

ITEMS	TASKS AND DELIVERABLES	END DATES	RESPONSIBILITY
01	RFP posted on JPS and Carilec Websites	April 3, 2023	JPS
02	Respondents submit questions about the RFP	April 6, 2023	Vendor
03	Answers to Questions will be posted on JPS and Carilec websites	April 13, 2023	JPS
04	Respondents indicate intention to participate in RFP	April 17, 2023	Vendor
05	Access given to JPS FTP site	April 18, 2023	JPS
06	Respondents upload response to JPS FTP Site	April 25, 2023	Vendor
07	Private opening of submissions	April 26, 2023	JPS
08	Completion of review for submissions	April 28, 2023	JPS
09	Shortlisting and notification to respondents	May 1, 2023	JPS

4 Evaluation Criteria

The Evaluation Team, that is JPS, will evaluate the product specifications submitted by each Respondent. The selection will be based on the Evaluation Team’s judgment of the vendor’s potential to successfully provide and support the microwave devices/ system. The selection will also be based on an evaluation of the submitted information and any additional information provided as a result of follow-up questions that may be posed by the Evaluation Team.

The evaluation criteria will include, but not be limited to, the following and is further detailed in **Attachment A**.

4.1 Technical Merit

- Product Technical Specification
- Equipment Road Map

4.2 Commercial Merit

- Organizational Details
- Financial Capabilities
- Technical Capabilities
- Qualification

4.3 Evaluation Weighting

Table 2: Evaluation Criteria

EVALUATION CRITERIA	SCORE (%)
Technical	Pass/Fail
Commercial	
- Price	80%
- Delivery/ Lead time	10%
- Terms of payment	5%
- Organization Details	5%
- Total	100%

4.4 Selection of Firms

Selection of the short listed vendors for the Microwave System will be based on the evaluation's team assessment and ranking of the proposals received from the shortlisted vendors. Each proposal will be evaluated and ranked giving the indicated weighting to both the commercial and technical aspects of the proposal as well as the development plan. Any proposal not complying with the RFI instructions, and/or the required terms and conditions shall be considered a non-conforming proposal. Non-conforming proposals may be excluded from further consideration.

5 General Instruction to Vendors

5.1 General

Vendors' submissions shall be prepared and submitted strictly in accordance with the instructions provided herein. Vendor, whose submissions are not prepared and submitted in accordance with these instructions, may be considered non-compliant and rejected.

Quotation & prices are to be included in your submission for this RFI for budgetary considerations.

In all cases, JPS reserves the right to accept or reject submitted responses at its sole discretion without stating any cause or reason, and without any cost or liability or obligation on the part of the JPS.

Throughout this RFP Document:
(a) “day” means calendar day.

5.2 Submittal Requirement

The Vendor shall submit their proposals via the designated FTP site, which is JPS Sharefile.

5.2.1 Internet RFP Platform

- The Procuring Entity is utilizing a FTP site to facilitate the RFP process.
- There are no license costs or usage fees to the vendor for the use of the FTP site.
- This will not be a reverse auction; instead this platform will simply provide the means to communicate your proposals to the Procuring Entity.
- The website address of the FTP site will be provided to vendors via email. Vendors are to upload files in responding to this RFP. Failure to do so may result in disqualification.
- It is the responsibility of the vendor to ensure that their proposal is received by Procuring Entity (that is, uploaded to the FTP platform) by the due date and time. Any proposal received after the stated date and time may be rejected.

5.2.2 File Transfer Protocol (FTP) Site Submittal Procedure

The vendor’s designated contact will be sent an email with detailed instructions on how to access the FTP site, including login credentials. This will provide access to an individual folder in which the proposal package can be uploaded.

5.2.3 Communications

All proposals MUST be uploaded to the FTP website. All responses to this RFP are to be submitted in the English Language.

Observing the deadline to submit questions as stated in the RFP Calendar (Table 1), respective firms are invited to submit technical questions via email as follows:

Email Subject: **JPS RFP # 945067**
To: Charmaine Shaw cshaw@jpsco.com
CC: Dianne Plummer Dplummer@jpsco.com

The Procuring Entity will then post both the technical question(s) and respective response(s) on JPS website, titled "Question and Answer". This will be completed by the date stated in RFP Calendar of Activities. The originating entity will remain anonymous but all RFP firms will see all questions and responses.

Any contact made directly with any other employees or board members of the Procuring Entity regarding this RFI is a violation of the terms of the RFP response criteria and may be cause for disqualifying an Entity at the sole discretion of the Procuring Entity.

5.3 Interpretation of RFP Document

The Procuring Entity will be the sole source of information regarding clarifications, interpretations, corrections, supplemental data, or changes to the proposal.

Noting the RFP calendar of activities, firms are requested to carefully examine and understand the RFP document and seek clarifications prior to submission of proposals, if required, to ensure that they have understood the RFP.

5.4 Ethical Practices

JPS requires that firms, (including their respective officers, employees and agents), adhere to the highest ethical standards, and report to the (JPS) all suspected acts of fraud or corruption of which they have knowledge or become aware both during the RFP Process and throughout evaluation or selection process.

5.5 Eligible RFP Entity

An RFP entity may be a natural person, private entity, government-owned entity or any combination of such firms supported by a letter of intent to enter into an agreement or under an existing agreement in the form of a joint venture or association (JVA). In the case of a joint venture or association unless otherwise specified, all partners shall be jointly and severally liable.

The RFP entity, local or overseas should be tax compliant in the country of origin and or incorporation.

An entity, and all parties constituting the firm, may have the nationality of any country.

An Entity shall be deemed to have the nationality of a country if the respondent or Entity is a citizen or is constituted, incorporated, or registered and operates in conformity with the provisions of the laws of that country. This criterion shall also apply to the

determination of the nationality of proposed subcontractors or suppliers for any part of the Contract including related Services.

5.6 Amendment to RFP

At any time prior to the deadline for submission, the Procuring Entity (JPS) may amend the RFP by issuing addenda.

Any addendum issued shall be part of the RFP and shall be communicated in writing to all who have obtained the RFP from the Procuring Entity.

To give prospective firms reasonable time in which to take an addendum into account in preparing their submissions, the Procuring Entity may, at its discretion, extend the deadline for the submission of RFP.

5.7 Cost of RFP

The Entity shall bear all costs associated with the preparation and submission of its proposal, and the Procuring Entity (JPS) shall not be responsible or liable for those costs, regardless of the conduct or outcome of the RFP process.

5.8 Language of RFP Responses

The Submissions, as well as all correspondence and documents relating to the submissions exchanged by the RFP Firm and the Procuring Entity, shall be written in the English language. Supporting documents and printed literature that are part of the Submissions may be in another language provided they are accompanied by an accurate translation of the relevant passages in the English language.

5.9 Firm's Experience and Qualifications

The Entity shall provide necessary experience details to establish that it has capacity to successfully supply a Microwave System and supply spares and remote management.

Prospective Firms/Consultants shall demonstrate in their submissions that they meet the minimum required specification and experiences and are fully capable of supporting an implementation by demonstrating the following, whilst not limited to:

- The vendor shall have a minimum of ten (10) years' experience in the microwave equipment market
- The vendor shall have a reputable and reliable supply/supplier of spares to support installation and general maintenance

- The vendor's proposal shall include demonstration of qualifications for project execution including, evidence of detailed projects for which equipment was appropriated/offered in at least two projects with similar requirement for which information is being sought and have been successfully commissioned in the last ten (10) years.

5.10 RFP Entity Financials

Respondents shall be financially solvent to undertake the Project. This shall be evidenced by submission of complete audited financial statement/ Annual Report of the Entity for the last year of operation. If short-listed, the entity will be required to provide the last three (3) consecutive years of audited financial statements/annual report.

5.11 Corporate Resources

Firms shall provide information on the corporate management structure pertinent to the control and management of the Project. General information should also be provided on corporate resources and capabilities required to support this project.

5.12 RFP Opening

The Procuring Entity (JPS) will open submissions privately.

5.13 Confidentiality

Information relating to the evaluation of the responses and recommendation of shortlisted firms shall not be disclosed to firms or any other persons not officially concerned with such process until information is communicated to all firms.

5.14 Clarification of Proposals After Submission

To assist in the examination, evaluation, and comparison of the submissions, and qualification of the Vendors, the Procuring Entity may, at its discretion, ask any Entity for a clarification of its proposal. Any clarification submitted by a Vendor that is not in response to a request by the Procuring Entity shall not be considered. The Procuring Entity's request for clarification and the response shall be in writing.

If an Entity does not provide clarifications of its proposal by the date and time set in the Procuring Entity's request for clarification, its proposal may be rejected.

5.15 Reservation of Rights

In connection with this procurement, JPS reserves to itself all rights (which rights shall be exercisable by JPS in its sole discretion) available to it under applicable Jamaican laws, including without limitation, the following, with or without cause and with or without notice:

- The right to cancel, withdraw, postpone or extend this RFP in whole or in part at any time prior to the execution by JPS of the Contract, without incurring any obligations or liabilities.
- The right to issue a new RFP.

5.16 Notification to Shortlisted Firms

JPS shall have the right to select Short-listed Firms or the preferred firms that, in JPS' sole judgment and discretion, has provided a Proposal that is in the best interests of and has the best value to JPS and its customers.

The Procuring Entity shall notify the shortlisted Firms in writing, that its proposal has been accepted.

6 FORM OF SUBMISSION TO SUPPLY DMR MICROWAVE LINKING RADIO

Each interested party shall submit responses to JPS with accurate file names/labels. Standard file types (PDF, PowerPoint, Excel etc.) are preferred. All responses shall address at a minimum and must include, but not limited to the following areas listed below:

1. Documentation

- Device specifications
 - Radios
 - Antennas
 - Cables
 - Management system
 - Etc.
- Proof of device capability to fulfil requirements.
 - Path calculations
 - Road Map Document
 - Prior deployment examples
 - Market experience
- Any Other service type provided by organization
 - Maintenance Support
 - Training

2. Pricing

- Unit Price of each component in submission

3. Organization Details

- Company Experience
 - Description of at least 4 (four) completed projects
 - List of projects with similar scope
- Ownership Structure
 - Structure and Organization Chart

4. Financial Capabilities

- Last 3 years of Audited Financial Statements (Income Statements and Balance Sheets) of Firm, Parent Company, Partners and/or Consortium Members as applicable

Table: Linking Radio homing requirements.

Site name S1	Latitude S1	Longitude S1	Tower height (m) S1	Tower type S1	Path length (km)	Site name S2	Latitude S2	Longitude S2	Tower height (m) S2	Tower type S2
Airy Hill	18.22651944	-77.50621667	50	Self-Supporting	17.53	Huntley	18.08893611	-77.58831111	45	Self-Supporting
Bamboo	18.39419722	-77.27025278	60	Self-Supporting	14.95	Murphy Hill	18.38280556	-77.12932222	50	Self-Supporting
Birches Hill	18.38633056	-78.09663056	12	Self-Supporting	24.19	Kempshot	18.41095	-77.86916389	50	Self-Supporting
Bamboo	18.39419722	-77.27025278	60	Self-Supporting	29.4	Duncans TOJ	18.47205833	-77.53622222	24	Self-Supporting
Catherine Peak H	18.07724444	-76.70251111	60	Self-Supporting	15.31	ECS	18.02500833	-76.8356	50	Self-Supporting
ECS	18.02500833	-76.8356	50	Self-Supporting	9.84	Marly Hill	17.95107222	-76.88725278	30	Self-Supporting
Juan De Bolas	18.087275	-77.14772222	45	Self-Supporting	31.44	Marly Hill	17.95107222	-76.88725278	30	Self-Supporting
Bamboo	18.39419722	-77.27025278	60	Self-Supporting	63.31	Kempshot	18.41095	-77.86916389	50	Self-Supporting
Flower Hill	18.49405	-77.84920833	24	Self-Supporting	9.44	Kempshot	18.41095	-77.86916389	50	Self-Supporting
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Marly Hill	17.95107222	-76.88725278	30	Self-Supporting	65.68	Newport	17.95056944	-77.50717222	50	Self-Supporting
Bonny Gate	18.32148056	-76.95013333	50	Self-Supporting	8.51	Oracabessa R	18.39588333	-76.93013056	50	Self-Supporting
Oracabessa R	18.39588333	-76.93013056	50	Self-Supporting	53.19	Shotover	18.17373611	-76.48408611	45	Self-Supporting
Dalvey DMR	17.91358056	-76.25030556	45	Self-Supporting	7.03	Rowlandsfield	17.97102778	-76.2785	45	Self-Supporting
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Bonny Gate	18.32148056	-76.95013333	50	Self-Supporting	37.66	Catherine Peak H	18.07724444	-76.70251111	60	Self-Supporting
Cabbage Hill	17.96292778	-76.5831	50	Self-Supporting	32.26	Marly Hill	17.95107222	-76.88725278	30	Self-Supporting
Cabbage Hill	17.96292778	-76.5831	50	Self-Supporting	22.65	Needham's Pen	17.90447222	-76.37838889	55	Self-Supporting
Huntley	18.08893611	-77.58831111	45	Self-Supporting	17.56	Newport	17.95056944	-77.50717222	50	Self-Supporting
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Huntley	18.08893611	-77.58831111	45	Self-Supporting	43.7	Shafton	18.17259167	-77.99213889	45	Self-Supporting
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Rowlandsfield	17.97102778	-76.2785	45	Self-Supporting	13.2	Rural Hill TG Flow	18.086219	-76.310167	45	Self-Supporting

7.2 Requirements

The following lists the details of the information to be provided by the Vendor regarding their DMR Linking radio solution. In addition to these specifics JPS expects that an overview be presented, wherein the solution being proposed is summarized. Within this overview, the technologies utilized, **key benefits and 10-15 year growth potential must also be shown**. It is also expected that any value-add benefits to this solution be clearly shown (supporting financial or other empirical statistics is strongly recommended).

Vendor must show compliance by indicating:

C- Compliant – proposal is fully compliant with the requirements in the paragraph and no functional alternative is proposed.

X - Non Compliant – Vendor takes exception to the requirement. Proposal is not compliant with the paragraph and no functional alternative is proposed.

A - Alternative – proposal is not compliant with the requirements of the paragraph and a functional alternative is proposed.

CL - Clarification – proposal complies with the intent of the requirement of the paragraph. Vendor shall describe all assumptions, clarifications and qualifications support this assertion of compliance with intent.

Vendor response must clearly articulate how the system meets the requirements, aspects of non-compliance, detailed alternatives and clarification. Add all supporting documentation as needed to support the response. Reference to manuals or other documents must be specific; page numbers, bullets, etc.

Attribute	Requirement	Compliance	RFP Required Response
Equipment Roadmap	Below 4 GHz as recommended		State recommendation. Do not deviate from the recommended frequency bands
Frequency	Below 4 GHz as recommended		State recommendation. Do not deviate from the recommended frequency bands

Capacity	Minimum throughput of 2Mbps		Show compliance
Scalability	Must be scalable for increased throughput		Show hardware and software requirements for each tier of upgrade
	Initial throughput requested is 2Mbps		Show compliance and configuration
Transport	IP Only		Show hardware compliance and hardware interface
Antenna Type	Hi availability Yagi or Grid type; greater than 15° Beamwidth		Design depicting links for each antenna heights and sizes
Antennas	Recommend optimum antenna sizes		Show antenna models chosen
Networking	Carrier Ethernet switching capable		Show compliance
	Carrier-grade service resiliency (MSTP, 8032.G)		
Interfaces	<p>Vendor should state physical interface provided and provide diagrams or photographs of the interfaces.</p> <ul style="list-style-type: none"> - RJ45 (8P8C) Copper Ethernet (Required) - If all outdoor, SFP preferred. 		State physical interface provided

	-		
Configuration	1+0		
Redundancy	None		Show in proposed configuration if needed
Mount	All outdoor preferred, but all recommendations are acceptable.		Show in proposed configuration
Availability	Minimum 99.999% annual availability		Show expected availability for each link
Security/Encryption	AES 128 minimum. List all other security protocols supported by equipment.		State compliance
Data Security			
Management	SNMPv3. NMS application/software		State SNMP compliance and NMS option
Power	9-60VDC (-48VDC preferred)		State voltage range supported and current requirement
Cabling	Include in Bill of Materials (BOM)		Include in BOM for cables for all-IP radios Power Management - Cta5E (with Ethernet surge protection) Data - FOC with Optical SFP Data - Ethernet (with Ethernet surge). Use 100m for cable lengths for self-supporting towers and 50m for wooden poles and roof mounts

			Vendor to separate cost options: Optical SFP Ethernet electrical SFP
Lightning/Surge Protection	Indicate		
Operating Temperature	18°C to 70°C		
Form Factor	Vendor should state the size of each equipment (to include: antenna sizes.) Show form factors supported with drawings/images.		
Hardware	Include all relevant antenna mounting and other installation hardware in BOM		BOM
Training	10 persons to be trained on installation and management of radios		Indicate option for vendor or other training
Factory Testing and Pre-Configuration	Vendor to propose Factory Testing and Pre-Configuration of Radios		Include ability to complete FAT
Installation	Site assessments, installation and spectrum licensing		Indicate ability to complete installation, or support to JPS for installation

END OF DOCUMENT