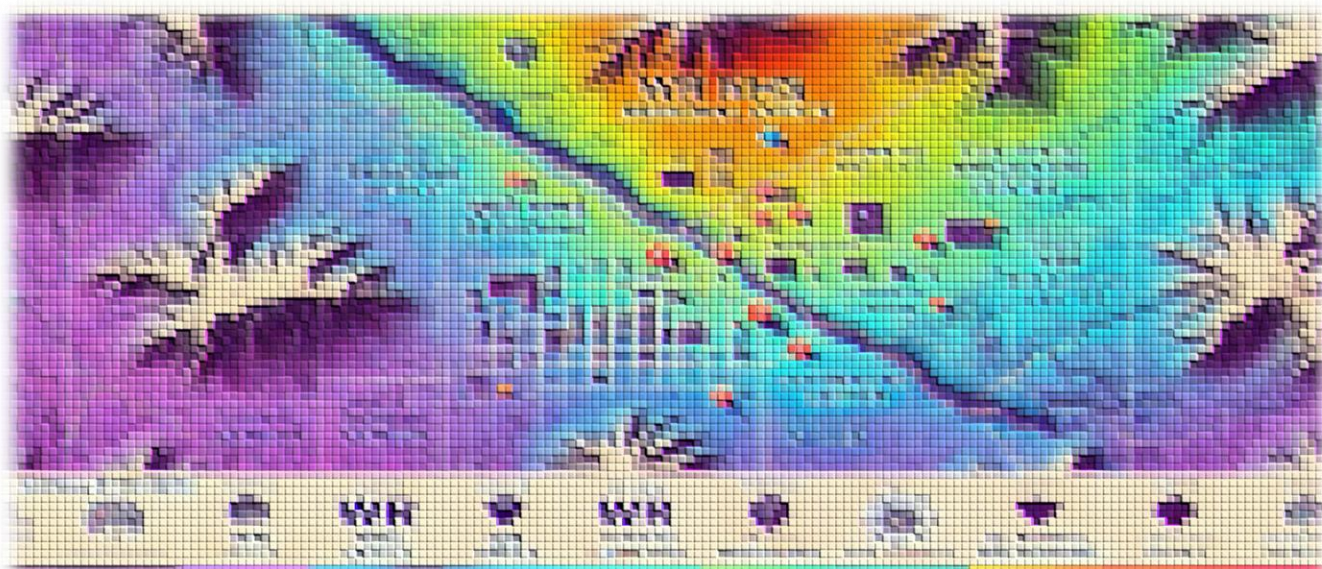


Navajo Nation Department of Information Technology Fixed Wireless Access Network

**BID NO 24-08-3449SB
FINAL VERSION**

Document Version: 6.0



September 3, 2024

Prepared for:
The Navajo Nation



Prepared by:
**Navajo Nation Broadband Office
Digital Equity Initiative
Office of the President and The Vice-President of the Navajo Nation**

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Document History

Version	Description	Date	Author
1.0	First Draft	07/20/2024	DEI
2.0	First Version for Internal Review	08/13/2024	DEI, NNBO
3.0	Release for all party review	08/16/2024	DEI/NNBO
4.0	Added detailed Scope	08/16/2024	DEI/NNBO
5.0	Added Ft. Defiance sites and Maintenance Scope	09/01/2024	DEI/NNBO/DIT
6.0	Final Version for Release	09/03/2024	All

1.0 General information about the Telecommunications Structures Development RFP for the Navajo Nation – Final Version

1.1 Issuing office

Navajo Nation Broadband Office
1575E State Hwy 264
Tse Bonito, New Mexico
Website: www.broadband.navajo-nsn.gov

1.2 RFP Title

Navajo Nation Department of Information Technology Fixed Wireless Access Network - BID NO 24-08-3449SB – Version 6.0.

1.3 RFP General Schedule of Activities

Advertisement Period:

September 3rd – October 3rd , 2024

RFP Meeting:

September 19th , 2024

Questions/Feedback and Comments Due:

Questions will be accepted from September 3rd – September 20th , 2024.

All feedback to be submitted electronically via email with the subject “**NNDIT Fixed Wireless Access Network - BID NO 24-08-3449SB –Entity Name**” (where Entity name is the name of the entity sending the email communications).

Answers to Questions:

Ongoing within 2 business days of receiving the questions until September 20th , 2024.

Points of Contact:

Sonia Nez, Department Manager
Email: sonianez@navajo-nsn.gov
Phone: 928-810-9205
www.broadband.navajo-nsn.gov

1.4 Project Overview

The Navajo Nation Broadband Office (NNBO) invites to respond to this request for proposal for the implementation of a fixed wireless access network in the area of Window Rock and Ft Defiance for The Navajo Nation Department of Information Technology (DIT)

The Navajo Nation Department of Information Technology (DIT) is committed to enhancing connectivity and ensuring reliable broadband access across the Window Rock area. To support this mission, we are seeking qualified vendors to design, build, and deploy a fixed wireless network that will connect our satellite offices with robust and consistent broadband services.

The scope of this project is to implement a high-performance wireless network utilizing Tarana equipment, known for its ability to deliver reliable broadband in challenging environments. This network will serve as a critical infrastructure backbone, facilitating efficient communication, data sharing, and service delivery across the Navajo Nation's satellite offices within the Window Rock area.

Vendors responding to this RFP should demonstrate experience in deploying fixed wireless networks in rural or remote areas, with a focus on innovative solutions that address the unique geographical and environmental challenges of the region. The selected vendor will work closely with DIT to ensure that the network meets our standards for performance, reliability, and scalability.

We look forward to receiving proposals that not only meet our technical requirements but also align with our broader goals of improving digital access and supporting the technological advancement of the Navajo Nation.

1.5 Purpose of the RFP

The purpose of this Request for Proposals (RFP) is to identify and engage a qualified contractor to design, build, and implement a fixed wireless broadband network in the Window Rock area. This network will serve the Department of Information Technology (DIT) of the Navajo Nation by providing reliable, high-speed internet connectivity to satellite offices throughout the region.

1.6 Advertisement

The RFP will be advertised on the official NNBO website and in recognized public newspapers to ensure adequate public notice and to encourage a wide range of proposals. Details of the advertisement, including the bidding number, will be as follows:

Bidding Number: BID NO 24-08-3449SB.

Platforms: NNBO website, Local Newspapers

Advertisement Period: September 3rd – October 3rd, 2024

Submission Deadline: October 3rd, 2024, 3:00 pm

Late submissions will not be considered.

1.7 Contractual Provisions:

In order for the Navajo Nation to contract for services of this nature, the successful proposer must agree to include the following provisions as part of the Agreement:

1.7.1 Governing Law and Dispute Resolution:

Navajo Nation Law and Courts shall govern the contract. No provision of the contract shall constitute a waiver of sovereign immunity of the Navajo Nation. Disputes arising under the contract shall be resolved exclusively in Navajo Nation courts.

1.7.2 Navajo Nation Sales Tax:

The successful proposer must include the Navajo Nation's 6% sales tax within their cost proposal and be responsible for remitting the tax to the Navajo Nation.

1.7.3 Navajo Nation Procurement:

Preference will be applied in accordance with the Navajo Business and Procurement Act (12 N.N.C. § 1501 et seq.); the Navajo Nation Procurement Act (12 N.N.C. § 301 et seq.); the Navajo Nation Business Opportunity Act (5 N.N.C. § 201 et seq.), and other relevant statutory and regulatory requirements. Proposers must provide evidence of their Navajo Preference Priority Certification if applicable.

2.0 Scope of Work of the RFP

2.1 Summarized Scope of Work

Provide design, equipment, materials to implement a fixed wireless access network for Navajo Nation DIT that consists of up to 4 Base Nodes and multiple Remote Nodes.

2.2 Description of the Fixed Wireless Network

The goal of the project is to make reliable, high-speed broadband available to Navajo Nation DIT business location in the participating Window Rock town and surrounding areas. NNBO understands that there are many technologies available to support a fixed wireless network solution, however after careful evaluation NNBO has selected Tarana Wireless products as the best cost/performing solution for the Navajo Nation DIT needs.

2.2.1 Expected Coverage and Performance Requirements

The Tarana broadband network design must serve all Navajo Nation DIT business locations with competitive, reliable, and scalable (future proof) service that meets the minimum requirements of 100/100 Mbps.

2.2.2 Expected auxiliary equipment for network locations.

Provide a complete DC power system for each Base Node site, including multiple parallel switch mode rectifiers for redundant operation, control and monitoring modules, AC distribution for rectifier input, dc output distribution, hot-plug batteries, battery charger, and low voltage disconnect switches. The DC power system shall be as per the technical specifications described in the next section.

Provide a complete power system for the remote node site with redundant 48V 802.3bt PoE operation as per the technical specifications described in the next section.

Any parts or accessories ordinarily furnished or required to make the equipment specified a complete operating unit or system shall be furnished by the Contractor.

2.3 Detailed description of the Scope of Work

2.3.1 Survey and network design

The scope of the network design aims to ensure the final solution meets the specific needs of the deployment environment, ensuring seamless integration and optimal performance. IP addressing scheme will be provided by DIT.

2.3.2 Site Survey and Feasibility Study

- Conduct thorough site surveys to assess the geographical, environmental, and structural characteristics of the deployment area, including terrain, vegetation, and existing infrastructure.
- Evaluate the technical feasibility of each of the network locations.

2.3.3 Network Architecture Design

- Define the logical network topology, based on the coverage requirements and user density.
- Strategically select locations for Tarana G1 base nodes to maximize coverage, minimize interference, and ensure line-of-sight (LOS) or near-LOS conditions where necessary.
- Design the antenna layout, including the center line and their orientation to achieve optimal signal propagation and coverage.
- Provide a comprehensive report for the final network design to be implemented including but not limited to antenna allocation, construction and site drawings, network topology maps etc.

2.3.4 Frequency Planning and Spectrum Management

- Plan the frequency channels to be used in the 5 and 6 GHz bands, considering local spectrum availability, regulatory restrictions, and potential interference from nearby systems.
- Implement frequency reuse strategies to maximize spectral efficiency and network capacity.

2.3.5 Capacity Planning

- Analyze the anticipated data traffic demands and user requirements to determine the necessary network capacity, ensuring future needs.
- Design the integration to the existing network to support the aggregate data load from the base nodes to the core network.

2.3.6 Materials

- Provide any installation materials or accessories required to deploy the Tarana G1 solution in accordance with each location requirement.
- Provide all the network equipment required for the Tarana G1 solution to operate.
- Provide any networking equipment required for the integration of the Tarana G1 solution to the existing DIT network.
- Provide any parts or accessories ordinarily furnished or required to make the equipment specified a complete operating unit or system.

2.3.7 Installation

- Provide and develop a detailed installation plan, including timelines, resource allocation, and logistics, to ensure efficient deployment of the network infrastructure.
- Install any parts, equipment or accessories in compliance with the telecom Industry Standards listed in the next section. Installation shall meet or exceed the guidelines and standards listed in the next section.

2.3.8 Testing and integration

Contractor shall conduct thorough testing and commissioning of the network, including coverage validation (e.g. RSSI verification), interference checks, and performance optimization, to ensure the network meets design specifications.

- Provide a RFC2544 or EtherSAM test for each deployed location.
- Conduct network integration and test to ensure the RNs obtained the expected service quality and capacity.

2.3.9 Maintenance

Contractor shall provide an estimated cost for maintenance activities and schedule aimed at ensuring the optimal performance, reliability, and security of the wireless broadband network. This includes as minimum, regular monitoring of network components to detect and resolve issues promptly. Maintenance tasks involve software updates, hardware inspections, and troubleshooting to prevent outages and minimize downtime. It should cover the management of network configurations, performance tuning, and the implementation of security patches.

2.5 Target Areas and Locations (Window Rock and Surrounding Areas)

2.5.1 Base Nodes (Up to 4) and Remote Nodes (Up to 28)

The Tarana solution shall provide service to the location listed in the table below. The estimated role for each location is also shown.

Location	Department/Building	Estimated Network Role	Latitude	Longitude
1	Department of Information Technology Administration 2	BN	35.67515	-109.0571028
2	Navajo Nation Facilities Maintenance	BN	35.7454944	-109.0542667
3	WR Indian Mission Radio Tower	BN	35.6553056	-109.0338
4	WR Sports Center	BN	35.6609278	-109.0677444
5	Child Support (Admin Bldg)	RN	35.6545778	-109.1056972

Location	Department/Building	Estimated Network Role	Latitude	Longitude
6	Elections East Radio	RN	35.6648306	-109.0533
7	Ft. Defiance Chapter	RN	35.7407306	-109.0737583
8	Ft. Defiance Child Support (Post Office Building)	RN	35.6549333	-109.1056833
9	Future Judicial Branch Office Complex	RN	35.742625	-109.0720944
10	Law Enforcement	RN	35.7587472	-109.0537361
11	Library Southwest Radio	RN	35.6645417	-109.0513611
12	Library/Elections West Radio	RN	35.6645472	-109.0513528
13	Library/Zoo East Radio	RN	35.6646389	-109.051
14	Navajo Air Toxic East Modular Bldg	RN	35.7441556	-109.0716222
15	Navajo Air Toxic West Modular Bldg	RN	35.7442806	-109.0720333
16	Navajo Behavior Health (DBMHS)	RN	35.7359556	-109.0685111
17	Navajo Department of Corrections	RN	35.7356111	-109.0469194
18	Navajo Nation Animal Shelter	RN	35.7457722	-109.0499167
19	Navajo Nation Forestry	RN	35.7476278	-109.0511139
20	Navajo Nation Water Resources Administration	RN	35.7441944	-109.0518889
21	NN Water Resources Department	RN	35.7445056	-109.0518028
22	St Michaels Chapter House	RN	35.6530417	-109.0951028
23	Tse Bonito FRF broadband	RN	35.657884	-109.0414893
24	Tse Bonito Veterans Administration - East Radio	RN	35.6624611	-109.0456389
25	Tse Bonito Veterans Administration - West Radio	RN	35.6625222	-109.0457722
26	Tse Bonito Veterinary Clinic	RN	35.6348056	-108.9985222
27	WR Airport/Air Transportation	RN	35.6599528	-109.0578722
28	WR Airport/Air Transportation South Direction	RN	35.6638972	-109.0513722
29	WR EMS	RN	35.6606361	-109.0700194
30	WR Museum/Library	RN	35.6642028	-109.0514861
31	WR NEPA Air Quality Program	RN	35.6581417	-109.0692278
32	Zoo West Radio	RN	35.6648694	-109.0496694

3.0 Technical Specifications of the RFP

3.1 Tarana Equipment Overview

The Tarana G1 platform includes base nodes (BNs, each a single integrated package that includes antennas, PAs, several teraflops of digital signal processing, managed Ethernet switching, and 10G optical network interfaces) and remote nodes (RNs, Tarana’s “customer premise equipment”).

3.2 Base Nodes (BN) Specifications

3.2.1 Tarana BN Radio Equipment

The Tarana G1 Base Nodes for the DIT solution are expected to operate in the unlicensed 5 and 6 GHz bands (BN 6 GHz). Below are the key specifications from Tarana Wireless:

Frequency Bands

- 5.725–5.850 GHz (UNII-3 FCC/ISED)
- 5.850–5.895 GHz (UNII-4 FCC)
- 5.925–6.425 GHz (UNII-5 FCC)
- 6.525–6.865 GHz (UNII-7 FCC)

Channel Bandwidth

- Configurable channel bandwidths supporting 40 MHz, 80 MHz, and 160 MHz.

Radio Technology

- Advanced MIMO (Multiple Input, Multiple Output) technology 1x1, 2x2, 4x4.
- OFDMA (Orthogonal Frequency-Division Multiple Access) for efficient spectrum usage and interference management.

Output Power

- Up to 30 dBm per chain, with configurable power settings to comply with regional regulations and minimize interference with other unlicensed devices.

Antenna Configuration

- Integrated, high-gain directional antennas with beamforming capabilities.

Modulation

- Support a wide range of modulation schemes including BPSK, QPSK, 16-QAM, 64-QAM, and 256-QAM, with adaptive modulation.

Latency

- Ultra-low latency operation with typical end-to-end latency below 5 ms.

Throughput

- Maximum aggregate throughput of up to 1 Gbps in optimal conditions.

Interference Mitigation

- Advanced interference mitigation techniques including dynamic frequency selection (DFS), automatic channel selection, and adaptive modulation and coding (AMC).

Management and Monitoring

- Centralized cloud-based management platform with real-time monitoring, firmware upgrades, and configuration management.

Compliance and Certifications

- FCC, CE, and other regional certifications and regulatory standards for unlicensed operation in the 5 and 6 GHz bands.

3.2.2 Tarana BN Interfaces

Input Power

- Positive grounded DC system with a nominal -48V DC.

Network Interfaces

- Data: 10 Gbps SFP+SM fiber interface
- Management: 1 Gbps Ethernet interface

3.2.3 Tarana BN -48V DC Power System

DC power system for the Base node site should include multiple parallel switch mode rectifiers for redundant operation, control and monitoring modules, AC distribution for rectifier input, dc output distribution, hot-plug batteries, battery charger, and low voltage disconnect switches. The DC power system shall be sized for 25% spare capacity, and expandable to accommodate any future Tarana radio equipment.

The DC power plant must be positive grounded (-48V DC). Rectifiers sized at expected load + 25% growth. Batteries sized at expected load +25% growth at 8hr discharge rate.

3.3 Remote Nodes (RN) Specifications

3.3.1 Tarana RN Radio Equipment

The Tarana G1 solution for the DIT solution is expected to operate in the unlicensed 5 and 6 GHz bands (RN 6 GHz). Below are the key specifications from Tarana Wireless:

Frequency Bands

- 5.725–5.850 GHz (UNII-3 FCC/ISED)
- 5.850–5.895 GHz (UNII-4 FCC)
- 5.925–6.425 GHz (UNII-5 FCC)
- 6.525–6.865 GHz (UNII-7 FCC)

Channel Bandwidth

- Configurable channel bandwidths supporting 40 MHz, 80 MHz, and 160 MHz.

Radio Technology

- Advanced MIMO (Multiple Input, Multiple Output) technology 1x1, 2x2, 4x4.
- OFDMA (Orthogonal Frequency-Division Multiple Access) for efficient spectrum usage and interference management.

Antenna Configuration

- Fully Integrated, high-gain directional antennas.

Modulation

- Support a wide range of modulation schemes including BPSK, QPSK, 16-QAM, 64-QAM, and 256-QAM, with adaptive modulation.

Latency

- Ultra-low latency operation with typical end-to-end latency below 5 ms.

Interference Mitigation

- Advanced interference mitigation techniques including dynamic frequency selection (DFS), automatic channel selection, and adaptive modulation and coding (AMC).

Management and Monitoring

- Centralized cloud-based management platform with real-time monitoring, firmware upgrades, and configuration management.

Compliance and Certifications

- FCC, CE, and other regional certifications and regulatory standards for unlicensed operation in the 5 and 6 GHz bands.

3.3.2 Tarana RN Interfaces

Input Power

- 48V 802.3bt PoE, type 3

Network Interfaces

- Data: 1 Gbps Ethernet interface

3.3.3 Tarana RN PoE Power System

Power system for the remote node site should provide redundant 48V 802.3bt PoE operation with batteries sized at expected load at 8hr discharge rate.

3.4 Radio Frequency and Network Design Requirements

Network design shall adhere to Tarana G1 network planning recommendations (Tarana Network Planning Overview 2402-00b) and include as minimum:

3.4.1 Link Budget analysis

- Verify Line-of-Sight (LOS) conditions.
- Incorporate a minimum fade margin of 10 dB.
- Perform a detailed link budget analysis for each link in the network, factoring in transmitter power, receiver sensitivity, antenna gains, cable losses, and the fade margin.

3.4.2 Overall network coverage map

- Employ a propagation model appropriated for the Tarana G1 frequency deployed.
- Show the predicted signal strength across the coverage area discriminated by modulation and receive signal.

3.4.3 Service availability for each location

- Predict service capacity and service availability for each link in the network.

3.4.4 Signal Strength and Coverage Expectations

The Tarana broadband network design must serve all Navajo Nation DIT business locations with competitive, reliable, and scalable (future proof) service that meets the minimum requirements of 100/100 Mbps. The capacity requirements translate into a minimum RSSI of -72.2 dBm.

3.4.5 Backhaul and Core Network

- Identify backhaul and core network requirements to ensure a competitive, reliable, and scalable (future proof) service.

3.5 Integration with Existing Infrastructure

Network Integration with the existing infrastructure will be provided by NN DIT team. Proposer will need to coordinate with NNDIT for final implementation.

3.6 Compliance with Industry Standards

- Network design and solution installation shall comply with Tarana Wireless installation specifications and best practices.
- Accessories such as antenna mounts shall comply with TIA-222-H standards.
- Electrical and grounding shall meet the National Electrical Code (NEC).
- All the work performed shall meet as minimum Motorola Standards and Guidelines for Communication Sites 68P81089E50-C April 2017.

4.0 Proposal Submission and Evaluation Criteria

This section outlines the structured format and evaluation criteria for submissions to the Navajo Nation RFP, designed to ensure a fair and comprehensive assessment of each proposal. Proposals must be clear, well-documented, and demonstrate a thorough understanding of the project's scope and requirements. The evaluation will assign points reflecting the importance of each section, focusing on the proposer's qualifications, project approach, financial stability, and commitment to the Navajo Preference in Employment Act.

4.1 Submission Requirements:

Submit one original proposal via email to sonianez@navajo-nsn.gov by the specified due date. Please note that submissions are to be made electronically via email only; no printed copies are required or will be accepted. The proposal must be submitted in two separate documents:

The Proposal Document: This document should contain the full proposal details. The document should be named "Response_BID NO 24-08-3449SB – [Entity Name]" (where "Entity Name" is the name of the entity sending the email response). Every page should be properly numbered and include the name of the entity.

The Proposal Cost Document: This document should contain only the pricing information and should be named "Response_Cost_BID NO 24-08-3449SB – [Entity Name]" (where "Entity Name" is the name of the entity sending the email response).

Both documents should be sent via email to sonianez@navajo-nsn.gov, and the combined size of the email submission should not exceed 20 MB. The sender should enable both delivery receipt and read receipt. Each document must be provided in a single file.

Email Subject Line: The subject line of the email shall be "BID NO 24-08-3449SB – [Entity Name] Response" (where "Entity Name" is the name of the entity sending the email response).

Clearly label the proposal response in the subject line of the email. The Navajo Nation will not be responsible for proposals that are not properly addressed or submitted.

Submission Deadline: October 3rd, 2024, 3:00 pm. Late submissions will not be considered.

Point of Contact:

Sonia Nez, Department Manager

Email: sonianez@navajo-nsn.gov

Phone: 928-810-9205

Website: www.broadband.navajo-nsn.gov

4.2 Proposal Submission Format:

4.2.1 Cover Letter

Introduction of the proposer, including contact details.

Statement of intent to participate and a summary of the proposer's qualifications.

4.2.2 Executive Summary

A concise overview that highlights key points of the proposal and its alignment with the project goals.

4.2.3 Table of Contents

A clear organization of the proposal contents with corresponding page numbers.

4.2.4 Appendices

Additional supporting documents, licenses, and certificates.

4.2.5 Signature Page

Authorized signature confirming the proposal's accuracy and acceptance of terms.

4.3 Bid Selection and Scoring Criteria

Bidders participating in the Request for Proposal (RFP) process follow the Navajo Nation Business Opportunity Act, ensuring fairness and transparency. This Act supports economic development within the Navajo Nation by establishing a structured framework for bid evaluation. Bids are assessed comprehensively, considering factors like cost, quality, and alignment with project requirements. The selection process aims to identify the most qualified bidder, promoting economic

growth and opportunities within the Navajo Nation community. Eligible bids will follow the evaluation criteria below:

4.3.1 Qualification and Experience (25 Points)

Detailed evidence of relevant project experience and administrative and technical capabilities.

Provide a reference list of at least three (3) projects completed in the last three years, with contact information and project descriptions.

Include at least two (2) verifiable references for similar projects, highlighting the proposer's capability.

Emphasis on experience exceeding five years in the relevant field.

4.3.2 Navajo Preference (20 Points)

Proof of Navajo Preference certification and details regarding Navajo ownership and control.

4.3.3 Financial Qualifications (20 Points)

Detailed budget and evidence of financial health, including audited financial statements. Demonstrations of financial stability and the capability to adhere to project timelines.

4.3.4 Project Plan (25 Points)

Resumes of team members, detailing skills relevant to the project scope. A comprehensive plan and timeline that adheres to the RFP's scope and technical specifications.

Commitment to a "not to exceed cost price" agreement.

4.3.5 Insurance (10 Points)

Valid insurance certificates and additional insured endorsements as required, including:

- General Property Liability
- \$1,000,000 Professional Liability Insurance
- Worker's Compensation
- Motor Vehicle Insurance
- The Navajo Nation must be named as additionally insured.

4.5 Technical Acceptance Compliance

By responding to this RFP, the proposer agrees to fully accept and comply with all technical specifications and the scope of work as detailed in the RFP.

Complete Compliance: Affirmation of meeting all technical specifications and scope requirements.

Exceptions and Deviations: Detailed specification of any deviations from the RFP standards, including justifications and proposed solutions.

Evaluation Criteria: Points will be assigned based on completeness, feasibility, and adherence to the specified requirements of the proposal.

This section also provides the Navajo Nation with the initial acceptance of the proposal before the cost proposal is opened. Once the proposer is accepted as reliable, the cost and any economic benefits brought to the Navajo Nation will be evaluated, including discretionary matching funding or economic development opportunities.

5.0 Cost Proposal

All associated General Conditions, Payment & Performance Bonds, and Insurance costs should be included within respective line items of cost schedule. Although the intent is to award the project in its entirety, any portion of the work may be removed at the discretion of NN DIT.

NN DIT shall compensate Contractor for satisfactory completion of Subcontractor’s Work as set forth below in accordance with the Subcontract requirements. Except as expressly indicated to the contrary, prices include all allowances; local, state, and federal sales and use taxes; any import or export duties (regardless of point of origin); contingencies; and costs of all insurance, overhead and profit.

5.1 Cost Breakdown

Cost Schedule NN DIT WR Fixed Wireless Access. Please breakdown the cost per Number of proposed network elements and locations.

Item	Description	Unit Price	Qty	Bid Price
1	Total Tarana G1 Equipment (up to 4 BNs and 28 RNs) including any parts or accessories ordinarily furnished or required to make the equipment specified a complete operating unit or system.			\$ _____
1.1	Location 1 Tarana G1 Equipment	\$ _____		
1.2	Location 2 Tarana G1 Equipment	\$ _____		
1.3	Location 3 Tarana G1 Equipment	\$ _____		
1.4	Location 4 Tarana G1 Equipment	\$ _____		
1.5	Location 5 Tarana G1 Equipment	\$ _____		
1.6	Location 6 Tarana G1 Equipment	\$ _____		
1.7	Location 7 Tarana G1 Equipment	\$ _____		
1.8	Location 8 Tarana G1 Equipment	\$ _____		
1.9	Location 9 Tarana G1 Equipment	\$ _____		
1.10	Location 10 Tarana G1 Equipment	\$ _____		
1.11	Location 11 Tarana G1 Equipment	\$ _____		
1.12	Location 12 Tarana G1 Equipment	\$ _____		
1.13	Location 13 Tarana G1 Equipment	\$ _____		
1.14	Location 14 Tarana G1 Equipment	\$ _____		
1.15	Location 15 Tarana G1 Equipment	\$ _____		

Item	Description	Unit Price	Qty	Bid Price
1.16	Location 16 Tarana G1 Equipment	\$ _____		
1.17	Location 17 Tarana G1 Equipment	\$ _____		
1.18	Location 18 Tarana G1 Equipment	\$ _____		
1.19	Location 19 Tarana G1 Equipment	\$ _____		
1.20	Location 20 Tarana G1 Equipment	\$ _____		
1.21	Location 21 Tarana G1 Equipment	\$ _____		
1.22	Location 22 Tarana G1 Equipment	\$ _____		
1.23	Location 23 Tarana G1 Equipment	\$ _____		
1.24	Location 24 Tarana G1 Equipment	\$ _____		
1.25	Location 25 Tarana G1 Equipment	\$ _____		
1.26	Location 26 Tarana G1 Equipment	\$ _____		
1.27	Location 27 Tarana G1 Equipment	\$ _____		
1.28	Location 28 Tarana G1 Equipment	\$ _____		
1.29	Location 29 Tarana G1 Equipment	\$ _____		
2	Tarana G1 solution installation materials (up to 4 BNs and 28 RNs) including any parts or accessories ordinarily furnished or required to make the equipment specified a complete operating unit or system.			\$ _____
2.1	Location 1 Tarana G1 installation materials	\$ _____		
2.2	Location 2 Tarana G1 installation materials	\$ _____		
2.3	Location 3 Tarana G1 installation materials	\$ _____		
2.4	Location 4 Tarana G1 installation materials	\$ _____		
2.5	Location 5 Tarana G1 installation materials	\$ _____		
2.6	Location 6 Tarana G1 installation materials	\$ _____		
2.7	Location 7 Tarana G1 installation materials	\$ _____		
2.8	Location 8 Tarana G1 installation materials	\$ _____		
2.9	Location 9 Tarana G1 installation materials	\$ _____		
2.10	Location 10 Tarana G1 installation materials	\$ _____		
2.11	Location 11 Tarana G1 installation materials	\$ _____		
2.12	Location 12 Tarana G1 installation materials	\$ _____		
2.13	Location 13 Tarana G1 installation materials	\$ _____		
2.14	Location 14 Tarana G1 installation materials	\$ _____		

Item	Description	Unit Price	Qty	Bid Price
2.15	Location 15 Tarana G1 installation materials	\$ _____		
2.16	Location 16 Tarana G1 installation materials	\$ _____		
2.17	Location 17 Tarana G1 installation materials	\$ _____		
2.18	Location 18 Tarana G1 installation materials	\$ _____		
2.19	Location 19 Tarana G1 installation materials	\$ _____		
2.20	Location 20 Tarana G1 installation materials	\$ _____		
2.21	Location 21 Tarana G1 installation materials	\$ _____		
2.22	Location 22 Tarana G1 installation materials	\$ _____		
2.23	Location 23 Tarana G1 installation materials	\$ _____		
2.24	Location 24 Tarana G1 installation materials	\$ _____		
2.25	Location 25 Tarana G1 installation materials	\$ _____		
2.26	Location 26 Tarana G1 installation materials	\$ _____		
2.27	Location 27 Tarana G1 installation materials	\$ _____		
2.28	Location 28 Tarana G1 installation materials	\$ _____		
2.29	Location 29 Tarana G1 installation materials	\$ _____		
2.30	Location 30 Tarana G1 installation materials	\$ _____		
2.31	Location 31 Tarana G1 installation materials	\$ _____		
2.32	Location 32 Tarana G1 installation materials	\$ _____		
3	Site Survey and Feasibility Study (up to 4 BNs and 28 RNs) specified in this RFP document			\$ _____
4	Tarana G1 Network Design (up to 4 BNs and 28 RNs)			\$ _____
5	DC power system for base node locations as per specifications	\$ _____		\$ _____
6	Backup power system for remote node locations as per specifications	\$ _____		\$ _____
8	Tarana G1 solution testing and integration.			\$ _____
8	Tarana G1 solution maintenance.			\$ _____
9	Additional Cost or contingencies			\$ _____
	BID Total			\$ _____

5.2 Payment Schedule

Contractor to submit an outline of a proposed payment schedule, indicating milestones or phases of work completion and corresponding payment amounts.

5.3 Additional Costs and Contingencies:

Contractor shall describe any additional costs or contingencies (item 8 if the cost breakdown) that may arise during the survey, planning, design and construction process, along with proposed strategies for managing them.

6.0 Annexes

This section includes additional annexes and supporting documents to complement the proposal submission.

6.1 Sites List

A comprehensive list of NN DIT locations for this RFP including detailed site descriptions, coordinates, and any relevant information.

6.2 Map Window Rock

Detailed map depicting the proposed tower sites, surrounding areas, access routes, and any other relevant geographical features. Maps should be clear, labeled, and accurately scaled to facilitate understanding and visualization.

6.3 Map Ft. Defiance

Detailed map depicting the proposed tower sites, surrounding areas, access routes, and any other relevant geographical features. Maps should be clear, labeled, and accurately scaled to facilitate understanding and visualization.

6.4 Estimated BN height and orientation

Detailed table with the estimated number of BN

6.1 Annex - Sites List

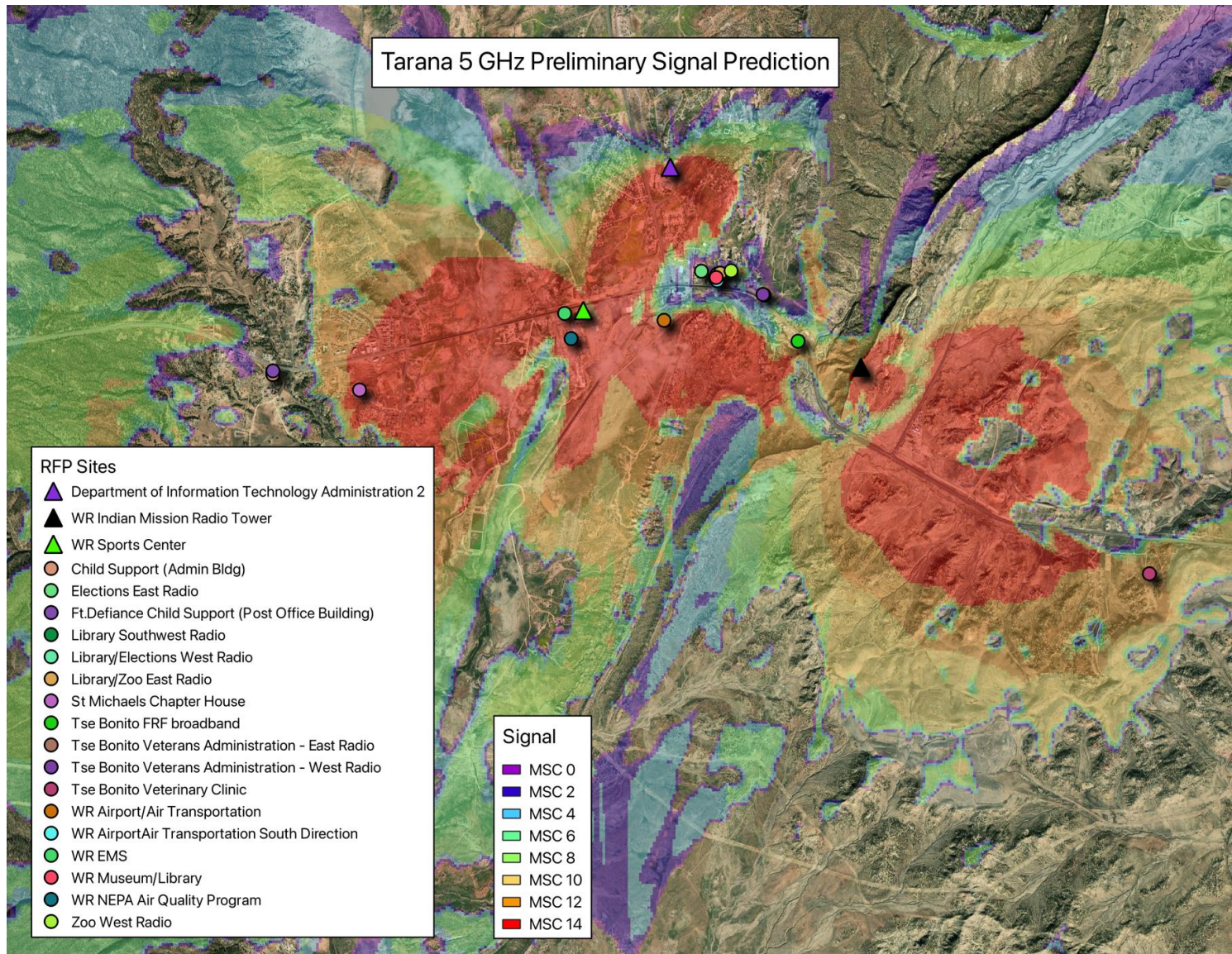
Location	Department/Building	Estimated Network Role*	Latitude	Longitude	Structure Type	Mount Type
1	Department of Information Technology Administration 2	BN	35.67515	109.0571028	Building	Roof Mount
2	Navajo Nation Facilities Maintenance	BN	35.7454944	109.0542667	Building	Roof Mount
3	WR Indian Mission Radio Tower	BN	35.6553056	-109.0338	SST	Leg/Face Mount
4	WR Sports Center	BN	35.6609278	109.0677444	Building	Roof Mount
5	Child Support (Admin Bldg)	RN	35.6545778	109.1056972	Building	Roof Mount
6	Elections East Radio	RN	35.6648306	-109.0533	Building	Roof Mount
7	Ft. Defiance Chapter	RN	35.7407306	109.0737583	Building	Roof Mount
8	Ft. Defiance Child Support (Post Office Building)	RN	35.6549333	109.1056833	Building	Roof Mount
9	Future Judicial Branch Office Complex	RN	35.742625	109.0720944	Building	Roof Mount
10	Law Enforcement	RN	35.7587472	109.0537361	Building	Roof Mount
11	Library Southwest Radio	RN	35.6645417	109.0513611	Building	Roof Mount
12	Library/Elections West Radio	RN	35.6645472	109.0513528	Building	Roof Mount
13	Library/Zoo East Radio	RN	35.6646389	-109.051	Building	Roof Mount
14	Navajo Air Toxic East Modular Bldg	RN	35.7441556	109.0716222	Building	Roof Mount
15	Navajo Air Toxic West Modular Bldg	RN	35.7442806	109.0720333	Building	Roof Mount

Location	Department/Building	Estimated Network Role*	Latitude	Longitude	Structure Type	Mount Type
16	Navajo Behavior Health (DBMHS)	RN	35.7359556	-109.0685111	Building	Roof Mount
17	Navajo Department of Corrections	RN	35.7356111	-109.0469194	Building	Roof Mount
18	Navajo Nation Animal Shelter	RN	35.7457722	-109.0499167	Building	Roof Mount
19	Navajo Nation Forestry	RN	35.7476278	-109.0511139	Building	Roof Mount
20	Navajo Nation Water Resources Administration	RN	35.7441944	-109.0518889	Building	Roof Mount
21	NN Water Resources Department	RN	35.7445056	-109.0518028	Building	Roof Mount
22	St Michaels Chapter House	RN	35.6530417	-109.0951028	Building	Roof Mount
23	Tse Bonito FRF broadband	RN	35.657884	-109.0414893	Building	Roof Mount
24	Tse Bonito Veterans Administration - East Radio	RN	35.6624611	-109.0456389	Building	Roof Mount
25	Tse Bonito Veterans Administration - West Radio	RN	35.6625222	-109.0457722	Building	Roof Mount
26	Tse Bonito Veterinary Clinic	RN	35.6348056	-108.9985222	Building	Roof Mount
27	WR Airport/Air Transportation	RN	35.6599528	-109.0578722	SST	Leg/Face Mount
28	WR Airport/Air Transportation South Direction	RN	35.6638972	-109.0513722	Building	Roof Mount
29	WR EMS	RN	35.6606361	-109.0700194	Building	Roof Mount
30	WR Museum/Library	RN	35.6642028	-109.0514861	Building	Roof Mount

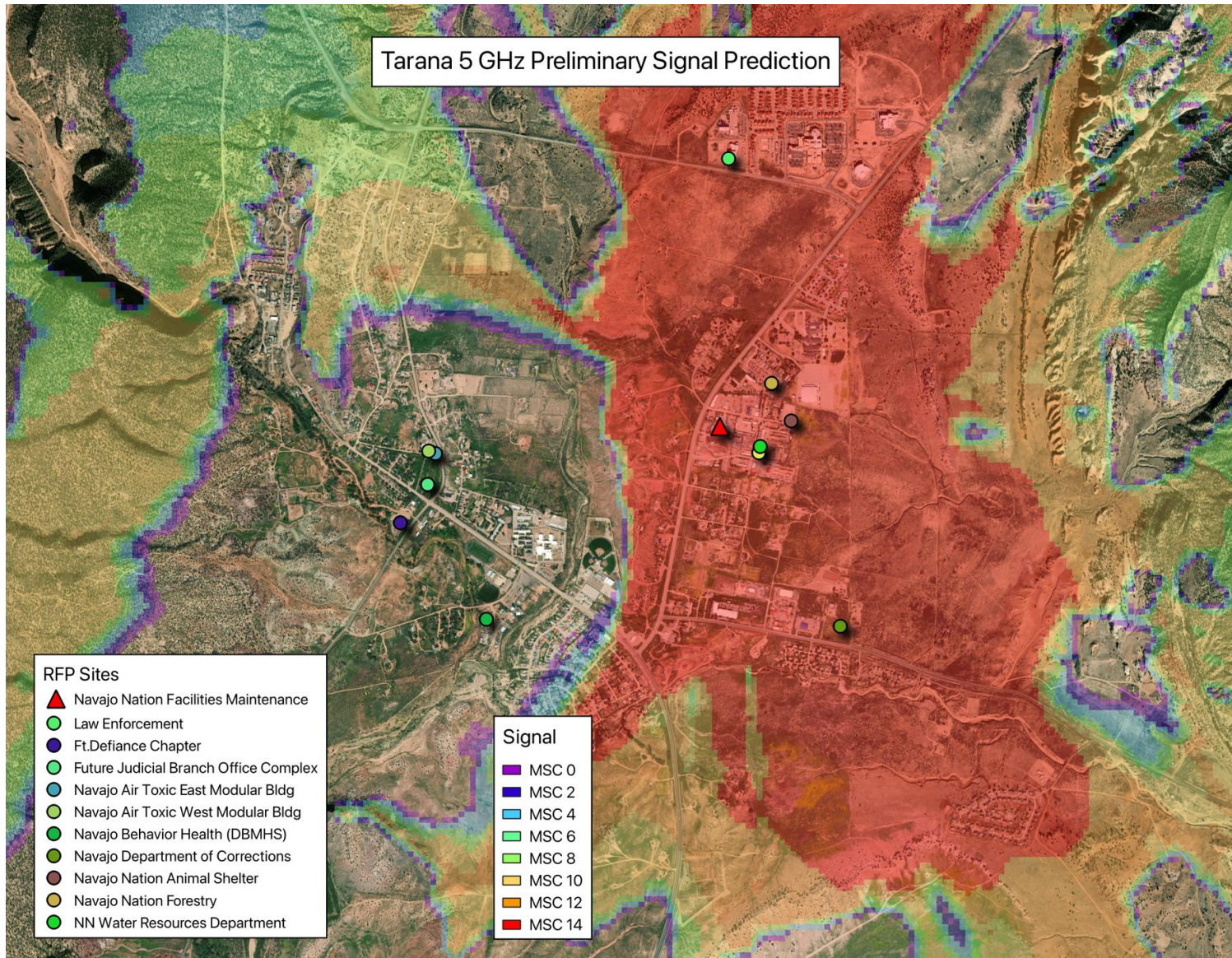
Location	Department/Building	Estimated Network Role*	Latitude	Longitude	Structure Type	Mount Type
31	WR NEPA Air Quality Program	RN	35.6581417	-109.0692278	Building	Roof Mount
32	Zoo West Radio	RN	35.6648694	-109.0496694	Building	Roof Mount

*Preliminary Estimated Network role

6.2 Annex – Window Rock Map (preliminary coverage map use for informational purpose only)



6.3 Annex – Ft Defiance Map (preliminary coverage map use for informational purpose only)



6.4 Annex – Estimated BN Height and Orientation

BN	Department/Building	Height (ft)	Azimuth (°)	Structure Type	Mount Type
1	Department of Information Technology Administration 2	35	160	Building	Roof Mount
2	WR Indian Mission Radio Tower	40	130	SST	Leg/Face Mount
3	WR Sports Center	40	235	Building	Roof Mount
4	Navajo Nation Facilities Maintenance	30	-109.0542667	Building	Roof Mount
5	Navajo Nation Facilities Maintenance	30	-109.0542667	Building	Roof Mount
6	Navajo Nation Facilities Maintenance	30	-109.0542667	Building	Roof Mount