



Wyoming Department of Transportation

Request for Proposals

WyoLink System Equipment and Development Services



Wyoming's Statewide Public-Safety
Interoperable Radio Communications System

RFP No. C-8055 - Amended

Being the original RFP with all addenda applied

Initial Publication: July 15, 2004

Amendments: September 8, 2004

PROPOSER'S CHECKLIST

This checklist is a guide to the Proposer in delivering a complete Proposal package.

Mandatory Proposal Items

-
- Attended Mandatory Pre-Proposal Meeting at 10:00 a.m. August 2, 2004

 - Submit Three copies of Intention to Propose / Terms & Conditions form at the Pre-Proposal Meeting

 - Submit First Test Articles at the Pre-Proposal Meeting.

 - Submit Technology Verification References at the Pre-Proposal Meeting.

 - Second Test Articles submitted as directed, between August 23 and September 24, 2004.

 - Bidders Application completed and submitted to Department Purchasing Program before submission of Proposal.

 - Three hardcopies of Cost Proposal Form, with required attachments, with three electronic copies on CD-ROM

 - Eight hardcopies of the Technical Proposal in required format, with eight electronics copies on CD-ROM

 - All Proposal Forms Signed

 - Bid bond submitted with Proposal

 - Proposal submitted on or before **11:00 a.m. Mountain Daylight Time on September 27, 2004.** (Proposals will NOT be received after that time.)

 - Proposal documents submitted in sealed package marked **“Proposal by [Proposer’s name] in response to RFP No.C-8055 for WyoLink System Equipment and Development Services.”**
-

TABLE OF CONTENTS

| | |
|--|-----------|
| PROPOSER’S CHECKLIST | 2 |
| TABLE OF CONTENTS | 3 |
| 1 INTRODUCTION | 7 |
| 1.1 Invitation to Submit Proposals | 7 |
| 1.2 Issuing Office | 7 |
| 1.3 Inquiries | 7 |
| 1.4 Document Scope | 7 |
| 1.5 Document Organization | 8 |
| 2 SCHEDULE OF EVENTS..... | 10 |
| 2.1 Intended Timetable..... | 10 |
| 2.2 Mandatory Pre-Proposal Meeting..... | 11 |
| 2.3 Early Delivery Procurement | 11 |
| 3 TERMS & CONDITIONS | 13 |
| 3.1 RFP Specific Terms & Conditions | 13 |
| 3.2 General Terms & Conditions..... | 21 |
| 3.3 Project Specific Term & Conditions | 27 |
| 3.4 Blank | 32 |
| 3.5 Intention to Propose / Terms & Conditions Form..... | 32 |
| 4 SELECTION PROCESS..... | 35 |
| 4.1 Overview | 35 |
| 4.2 Technology Verification (§7)..... | 35 |

| | | |
|------------|--|-----------|
| 4.3 | Purchasing Review..... | 35 |
| 4.4 | Technical Proposal (§9 + §10)..... | 36 |
| 4.5 | Cost Proposal (§8)..... | 36 |
| 4.6 | Negotiations | 36 |
| 5 | PROJECT SUMMARY | 38 |
| 5.1 | Overview | 38 |
| 5.2 | Benefits..... | 39 |
| 5.3 | Coverage | 39 |
| 5.4 | Internal Interoperability | 40 |
| 5.5 | External Interoperability | 40 |
| 6 | DEVELOPMENT PHASES..... | 41 |
| 6.1 | Contract Attachment Per Phase..... | 41 |
| 6.2 | Phase 1 — July 2004 Funding..... | 41 |
| 6.3 | Phase 2 — July 2006 Funding..... | 44 |
| 6.4 | Expansion Phases — 2007 > 2010 Funding | 44 |
| 7 | TECHNOLOGY VERIFICATION INSTRUCTIONS | 45 |
| 7.1 | Overview | 45 |
| 7.2 | References..... | 45 |
| 7.3 | Test Articles..... | 45 |
| 7.4 | Additional Verification Proposals | 48 |
| 7.5 | Test Plan | 48 |
| 8 | COST PROPOSAL INSTRUCTIONS..... | 56 |
| 8.1 | Overview | 56 |

| | | |
|--------------|--|-----------|
| 8.2 | Cost Proposal Summary Form | 57 |
| 8.3 | Project Budget..... | 59 |
| 8.4 | Progressive Payments Plan | 61 |
| 8.5 | Annual Adjustments | 61 |
| 9 | TECHNICAL PROPOSAL INSTRUCTIONS | 62 |
| 9.1 | Overview | 62 |
| 9.2 | Video Introduction..... | 62 |
| 9.3 | Additional Documents | 63 |
| 9.4 | Project Options..... | 63 |
| 9.5 | Document Format | 64 |
| 9.6 | Outline of Technical Proposal..... | 65 |
| 10 | TECHNICAL PROPOSAL CONTENT | 66 |
| 10.1 | Proposer Profile | 66 |
| 10.2 | Development Plan / Milestone..... | 67 |
| 10.3 | Project Risk Assessment..... | 67 |
| 10.4 | Site Requirements | 68 |
| 10.5 | Signal Coverage..... | 69 |
| 10.6 | Design Criteria | 72 |
| 10.7 | Functional Requirements | 77 |
| 10.8 | Acceptance Test Plan..... | 86 |
| 10.9 | Maintenance | 96 |
| 10.10 | Training | 97 |
| 10.11 | Options..... | 99 |

10.12 Subscriber Equipment..... 99

10.13 Summary of Compliance..... 100

10.14 Evaluation of Planning Assumptions 101

11 PLANNING ASSUMPTIONS 102

11.1 Interoperability 102

11.2 Projected System Loading..... 102

11.3 Transition Plan..... 111

11.4 VHF-57 Site Plan..... 112

11.5 RF Planning..... 114

11.6 WyDOT Locations 116

11.7 Microwave Interconnect..... 118

11.8 Traceability Matrix..... 122

1 INTRODUCTION

1.1 INVITATION TO SUBMIT PROPOSALS

The Wyoming Department of Transportation is contacting prospective Proposers who have an interest and/or are known to do business relevant to this RFP. Interested Proposers are invited to submit a Proposal in accordance with terms of this RFP.

*Signed original on file
in Purchasing Office*

Sleeter C. Dover, Esq.
Director
By:
Sally Duran
Purchasing Manager

1.2 ISSUING OFFICE

This Request for Proposal (RFP) is issued for the State of Wyoming, by the Wyoming Department of Transportation (WyDOT), Purchasing Program. Mike Deleeuw, CPPB, Senior Buyer is the sole point of contact concerning this RFP. All communication must be conveyed through his office.

1.3 INQUIRIES

Questions concerning this Request for Proposal shall be directed to:

Mike Deleeuw, CPPB, Senior Buyer
Wyoming Department of Transportation
5300 Bishop Blvd., Cheyenne WY 82009-3340
mike.deleeuw@dot.state.wy.us
Phone: (307) 777-4110 Fax: (307) 777-4755

1.4 DOCUMENT SCOPE

This RFP provides prospective Proposers with sufficient information to enable them to prepare and submit Proposals for consideration by WyDOT, acting as development agent for WyoLink, Wyoming's statewide public-safety interoperable radio communications system. Herein are instructions governing the Proposal to be submitted and the material to be included therein, mandatory requirements that must be met to be eligible for consideration, mandatory contract provisions for the resultant contract and other requirements to be met by each Proposal.

It is recognized that variables exist in the plan; in some cases, insufficient planning information is available to fully address certain functional requirements. To facilitate an equal comparison of Proposals, such requirements will be addressed as project options; all proposals will address a core set of planning assumptions as a common point of comparison.

1.5 DOCUMENT ORGANIZATION

This document is organized with the intention of clearly expressing the process the Proposer will follow in responding to this RFP.

The Proposer's Checklist provides a quick reference of the mandatory steps and submissions required for this procurement process. Likewise, the Schedule of Events section (§2) details the sequence of actions required. There will be a Mandatory Pre-Proposal Meeting, and certain hardware will be procured from this contract ahead of other deliverables.

The Proposer should review the Terms and Conditions section (§3) and fully understand its content. A form is provided at the end of the section to indicate the Proposer's intention to Propose and understanding of the Terms and Conditions. This form must be completed, signed, and submitted at the Pre-Proposal Meeting.

Section 4 describes the process that will be used in selecting the Proposal. The goal of the entire selection process is to select the Proposal that represents the "Best Value" to the State of Wyoming. The inner working of the selection process is confidential. Likewise, the content of all Proposals will be handled as proprietary.

Section 5 summarizes the WyoLink project while section 6 describes the planned development phases. Additional information regarding the Public Safety Mobile Communications assessment and planning process are available at the WyoLink web site — <http://WyoLink.state.wy.us> — where an electronic copy of this RFP will also be posted.

Technology Verification will be a critical component of the selection process; specific instructions are contained in section 7. The process will examine the current state of equipment produced by the Proposer; that assessment will be weighed against the WyoLink requirements. Where the Proposer intends to apply upgrades to the product to address WyoLink requirements, a risk assessment will be done to weight the credibility of the proposed upgrade rollout.

Instructions for the Cost Proposal are in a section 8. A Cost Proposal Form is provided, and will be used to summarize the cost proposal. A much more detailed project budget will be attached, along with a proposal that addresses progressive payments, and a proposal that addresses annual cost adjustments over the life of this six-year project.

WyoLink RFP

Instructions for the Technical Proposal (§9) are addressed in a separate section from the actual content of the proposal (§10). This is done so that the numbering of sections within the Technical Proposal will correspond to sub-sections within the RFP.

The final section of the document (§11) addresses Planning Assumptions. This is a volume of reference material to assist the Proposer and to ensure that different proposals address a common set of assumptions, and are thereby comparable.

2 SCHEDULE OF EVENTS

The procurement schedule for this project is critical. Rigid deadlines apply to the use of grant funds for the development of public safety communications systems. The rigidity of those deadlines mandates that milestones within this project be closely monitored and met.

2.1 INTENDED TIMETABLE

WyoLink procurement and implementation intends to proceed according to the following schedule:

- Request For Proposals Published.....July 15, 2004
- Written Questions ReceivedJuly 29, 2004
- Mandatory Pre-Proposal Meeting and
First Test Articles Received for Evaluation..... 10:00 a.m. August 2, 2004
- Second Test Articles Received for
EvaluationAs Directed, between August 23 and September 24, 2004
- All Submittals Received Complete..... 11:00 a.m. September 27, 2004
- Transportation Commission
Approval to Begin NegotiationsOctober 14, 2004
- Approval of Final Contract (NTL) November 18, 2004
- Contractor bond & insurance documents receivedNovember 29, 2004
- Notice to Proceed IssuedNovember 30, 2004
- Project Start-up Meeting December 02, 2004
- Early Delivery Items Received December 31, 2004
- Final Engineering Design Complete March 1, 2005
- Pilot Phase Final Acceptance CompleteOctober 1, 2005
- Core System Implementation PhaseOctober 2006
- Most WyoLink Coverage Operational..... October 2007
- Expansion Phases (four)2007 — 2010

This timetable is subject to change should circumstances warrant. Any changes in the timetable will be communicated to the Single-Point-of-Contact for each confirmed Proposer.

2.2 MANDATORY PRE-PROPOSAL MEETING

A **MANDATORY** Pre-Proposal meeting will be held at **10:00 a.m. on Monday, August 2, 2004** at the WyDOT Auditorium, 5300 Bishop Blvd, Cheyenne, Wyoming.

This date was chosen to allow the Proposer's engineering and technical staff sufficient time to review the RFP and formulate appropriate questions.

The purpose of this meeting will be to answer questions and provide any information that may have been inadvertently omitted from this RFP. This will be a public meeting; no proprietary information will be discussed. The content of the RFP, once published is public record. All questions shall relate directly to the RFP content and procurement process, rather than whether some element of their proposal will be acceptable.

Proposers are requested to submit questions in writing, via the WyDOT purchasing officer, at least three working days in advance of the meeting to allow WyoLink project team the opportunity to gather relevant information in advance of the meeting. Questions not so submitted will be addressed in the meeting but may not be fully answered should further information be required.

There will be an opportunity at that time to examine the space that has been designated for the Master Control site. Likewise, if it is deemed appropriate, there will be an opportunity to examine one or two of the radio sites in the Cheyenne area that will make up the pilot phase. Proposers are requested to indicate whether a site visit would be desired when questions are submitted.

If necessary, an addendum will be issued as soon as relevant data gathering and decisions are complete. Proposers should not rely on any other statements that alter any specification, requirements, terms or conditions of the RFP.

2.3 EARLY DELIVERY PROCUREMENT

To address immediate public safety radio system coverage issues, using current year grant funds, Wyoming public safety agencies require delivery of base station equipment by before the WyoLink implementation. These base stations will be placed in service in conventional modes and will be integrated into WyoLink later in the course of the project.

Proposer shall affirm readiness to ship eight (8) base stations for delivery before December 31, 2004. This quantity is a good faith estimate based on the stated needs of several Wyoming public safety agencies. The actual procurements will be issued by and delivery dates established by each agency.

These base stations shall be either fully WyoLink compliant or will be upgraded, at Proposer expense or as negotiated with the purchasing agency, to WyoLink compliance

during the course of the project. The cost of initial purchase and upgrading an early delivery unit shall not exceed the cost of purchasing a mature unit in future phases of the project. Purchase orders will be issued following contract signing and notice to proceed. (See §3.1.19)

3 TERMS & CONDITIONS

3.1 RFP SPECIFIC TERMS & CONDITIONS

3.1.1 Single Point of Contact

The person designated as Proposer's Authorized Representative on the Intention to Propose / Terms and Conditions Form (§3.4) shall be considered the Single-Point-of-Contact for all matters related to this Request for Proposals and shall be the assigned recipient of any addendum issued or other communications.

3.1.2 Submission of Proposal

Sealed Proposals for providing the WyoLink System Development will be received until **11 a.m., Monday, September 27, 2004**, in the office of the Purchasing Agent, 5300 Bishop Blvd., Building No. 6189, Cheyenne, Wyoming, 82009-3340 at which time they will be opened and read.

Proposals shall consist of the following elements:

- Intention to Propose / Terms & Condition form — submitted early
- Test Article Submissions (2 submissions) — submitted early
- References — submitted early (3 copies)
- Cost Proposal forms and required attachments (3 copies)
- Technical Proposal binder in required format (8 copies)
- CD-ROM containing all required Cost and Technical proposal documents in MS Word or Excel Format (12 copies containing Technical proposal, 3 copies containing Cost Proposal; Technical and Cost Proposals on separate CDs)
- Video Introduction to Technical Proposal — optional (2 copies)
- Sample Training Materials — optional (1 copy)

Each proposal must be signed by a proper official of the Proposer and submitted in a package marked: **“Proposal by [Proposer's name] in response to RFP No. C-8055 for WyoLink System Equipment and Development Services.”** Signatures and affirmations on the Cost Proposal form shall encompass all elements of the proposal whether attached or submitted separately.

Proposals submitted by telephone or facsimile will not be accepted.

A digital copy of all documents is required to facilitate transfer of Proposal content into the final contract documents.

Proposals must be received in the office of the Purchasing Agent on or before the time and date specified. Proposals received after the time specified will not be considered and will be returned unopened to the Proposer. The Department reserves the option of not considering Proposals that do not meet the minimum mandatory requirements; or of ruling out proposals in which the Proposal, Specifications, or any provisions have been modified.

Failure to respond to the Request for Proposal (RFP) will be understood by the Department to indicate a lack of interest and concurrence in the removal of the Proposer's name from the applicable active Proposer's mailing list. Submission of Proposal or notice in writing that you do not wish to submit a Proposal for this project will indicate that you will remain active on the Proposer's list.

The Wyoming Department of Transportation hereby notifies all Proposers that minority or disadvantaged business enterprises will be afforded full opportunity to submit bids in response to this Invitation and will not be discriminated against on the grounds of race, color, sex, creed, or national origin in consideration for an award.

3.1.3 Proposer's Application Forms

Proposers are required to have a **current** Bidder's Application Form on file in the Wyoming Department of Transportation's Purchasing Office. Bidders Application Forms may be obtained by contacting the Purchasing Office at (307) 777-4395 or at <http://dot.state.wy.us/web/business/pdf/biddersapp.pdf> . This form must be completed, signed and returned to the Department **before** the Proposal is submitted.

3.1.4 Acceptance of RFP Terms

A submission in response to this RFP acknowledges acceptance by the Proposer of all Terms and Conditions including compensation, as set forth herein.

3.1.5 Binding Offer

A Proposal submitted in response to this RFP shall constitute a binding offer. Acknowledgment of this condition shall be indicated by the signature of the Proposer or an officer of the Proposer legally authorized to execute contractual obligations.

3.1.6 RFP Cancellation

The Wyoming Department of Transportation reserves the right to cancel this Request for Proposal at any time, without penalty.

3.1.7 Preparation of Proposals

Proposers are expected to examine any drawings, specifications, schedules, and instructions included in the Request for Proposal. Failure to do so will be at the Proposer's risk.

Forms contained herein shall be reproduced in the Proposal, changing the page header to include the Proposer name and allowing page numbering to be updated.

In case of error in the extension of prices in the Cost Proposal, the UNIT PRICE will govern. UNIT PRICE shown must be net.

3.1.8 Acceptance of Proposal Content

The contents of the Proposal (including persons specified to implement the project) of the successful Proposer will become contractual obligations if acquisition action ensues. Failure of the successful Proposer to accept these obligations in a contract, purchase order or similar authorized acquisition document may result in cancellation of the award and such Proposer may be removed from future solicitations.

3.1.9 Selection of Proposal

The Wyoming Department of Transportation will be the sole judge with respect to the evaluation of Proposals. The firm best meeting the conditions of each of the individual criteria will be awarded the maximum points for that specific criterion. After each criterion is evaluated, the Proposal that represents the best value to the government will be determined.

3.1.10 Award of Contract

The Department reserves the right to reject any and all Proposals and to waive any informalities or technical defects in Proposals as may be in the best interest of the Department. No verbal explanation, clarifications, additions or instructions will be binding to either the Wyoming Department of Transportation or the Proposer. A signed purchase order/contract, furnished to the successful Proposer, results in a binding contract without further action by either party.

The award will be made to the responsible Proposer whose Proposal, conforming to the RFP, will be the most advantageous to the State of Wyoming, technical merit, project risks, cost, and other factors considered. The evaluation criteria, methods, and results documents used in determining the proposal most advantageous to the State of Wyoming will be considered confidential information. Negotiations will follow the identification of the proposal that appears to represent the "Best Value" to the State of Wyoming. A contract must be completed with provisions as outlined in this RFP and signed by all

parties concerned. In the event the parties are unable to enter into a contract, the State may elect to make the award to the next most responsible Proposer.

3.1.11 Termination of Contract

If at any time during the performance of the Resultant Contract, in the opinion of the Department, the work is not progressing satisfactorily or within the terms of the Contract, then at the discretion of the Department and after written notice to the Contractor, the Department may terminate the Contract or any part of it. At this termination date, the Contractor will be entitled to a pro rata payment for all materials and services received and accepted by the Department. However, the Contractor shall be liable to the Department for the additional costs of replacement materials for the duration of the contract term.

3.1.12 Proposal Guaranty

Each Proposal must be accompanied by a proposal guaranty in the amount of 10% of the total Proposal. The guaranty may be in the form of a bid bond, cashier's check, certified check or bank money order, drawn on a reliable bank and made payable to the Wyoming Department of Transportation.

The proposal guaranty shall be given as a guarantee that the Proposer will execute the contract documents if the contract is awarded to them. All negotiable proposal guaranties will be returned after a satisfactory contractor's bond has been furnished and the contract has been fully executed with the successful Proposer. Bid bonds furnished as proposal guaranties will be destroyed after the contract has been fully executed with the successful Proposer unless the Proposer requests return of such bid bond. Request for return of bid bond must be submitted in writing with your Proposal.

The successful Proposer shall within **ten (10) calendar days** after notification of the award, deliver to the Department a Contractor's Bond in the amount of 20% of the Proposal, as security for the faithful performance of the entire contract. The bond shall be submitted on the Department's form, and shall meet all statutory requirements as to form and execution.

3.1.13 Contract Time

WyoLink development will occur in an orderly sequence, with each procurement phase being addressed within an attachment to the contract established by this RFP process. Each attachment will address the agreed-to scope, cost, initiation date, project phase milestones, and completion date of the specified project phase. Completion of each phase will be acknowledged by issuance of a Letter of Full-Acceptance by the WyoLink Project Manager.

WyoLink RFP

Said work shall commence upon Notice-To-Proceed and will be completed by the agreed completion date according to the terms established by the contract attachment for each project phase. Work is to start immediately and to progress without interruption until the job is complete. Contractor shall understand that if circumstances so arise that a contract extension is needed, one may be granted due to inclement weather, natural disaster and acts beyond the control of the Contractor, such as strikes, fire, lockouts, unusual delays in shipment. Such an extension shall only be granted where The WyoLink Project Manager and the Contractor mutually agree on a reasonable extension of time; such agreement must be reduced to written form and signed by both parties.

In the event that all work is not completed by the agreed completion date, the Wyoming Transportation Commission will assess an amount according to the table below, per calendar day, not as a penalty but as liquidated damages to the State.

| Amount Per Phase more than (\$) | To and Including (\$) | Charge per day (\$) |
|---------------------------------|-----------------------|---------------------|
| 0 | 50,000 | 250 |
| 50,000 | 100,000 | 500 |
| 100,000 | 500,000 | 750 |
| 500,000 | 2,000,000 | 1,500 |
| 2,000,000 | 5,000,000 | 1,800 |
| 5,000,000 | 7,500,000 | 2,000 |
| 7,500,000 | 10,000,000 | 2,500 |
| 10,000,000 | 15,000,000 | 3,000 |
| 15,000,000 | 20,000,000 | 3,500 |
| 20,000,000 | — | 4,000 |

In the event the WyoLink Project Manager is unavailable to issue the required Letter of Full-Acceptance, the agreed-upon completion date is at hand, and the Contractor asserts that all work is complete, the Contractor shall deliver to the Wyoming Department of Transportation, Purchasing Program office a letter stating these facts. The Senior Buyer, in consultation with the Telecommunications Program Manager, will hold liquidated damages in abeyance until such time as the WyoLink Project Manager or his designee determines that the work is or is not complete.

The liquidated damages assessment for non-completion by the time specified will be computed beginning on the day following the agreed completion date and continue until the work has been completed and accepted. If necessary to apply this assessment, the total amount of such damages will be deducted from the contract amount.

If the successful Proposer/Contractor does not fulfill the contract in this Invitation to Bid package, the Proposer/Contractor will be held responsible for all additional costs incurred by the Department to complete the contract.

3.1.14 No Raiding

The Proposer, resulting Contractor, or any sub-contractor, shall not engage the services of any person or persons presently in the employ of the State of Wyoming for work covered by this proposal and resulting contract without written consent of the employer of such persons.

3.1.15 News Releases

News releases about this RFP shall NOT be made prior to the execution of the contract without prior written approval by the Wyoming Department of Transportation.

3.1.16 Material Availability

Proposer and resulting Contractor must accept responsibility for verification of material availability, production schedules, and other pertinent data prior to submission of Proposal and delivery time. It is the responsibility of the Proposer and resulting Contractor to notify the Department immediately if materials specified are discontinued, replaced or not available for an extended period of time.

Whenever a material or product is discontinued and replaced by a subsequent version or model that version or model shall be used in the project without altering the scope or cost unless specifically approved in writing by the WyoLink Project Manager.

3.1.17 Proposal Prices

Proposal prices will be considered to be the Proposer's best and final offer, unless otherwise stated in the RFP. The Proposal price will be a consideration in determining the successful Proposer. In response to identified weaknesses and points of clarification raised by the Department during direct Negotiations, the Department may elect to accept Cost Proposal Amendments.

3.1.18 Beneficial Pricing

During the contract period, any price declines at the manufacturer's level or cost reductions to Contractor(s) shall be reflected in a reduction of the contract price retroactive to Contractor(s) effective date.

During the term of this contract, should the Contractor(s) enter into price agreements with other customers providing greater benefits or pricing, Contractor(s) shall immediately amend the state contract to provide similar pricing to the state if the contract with other customers offers similar usage quantities, and similar conditions impacting pricing. Contractor(s) shall immediately notify the State of any such contracts entered into by Contractor(s).

3.1.19 Governmental Entities Cooperative Purchasing

This Proposal / Contract is primarily for the Wyoming Department of Transportation. Purchases may be made on this Proposal / Contract as requested by other governmental, educational, and research agencies and/or political subdivisions within or beyond the State of Wyoming per the terms and conditions and prices (discounts) afforded to the Department. The Wyoming Department of Transportation is responsible **ONLY FOR THE DEPARTMENT'S PURCHASES**. Purchases made on this Proposal / Contract by any other agency and/or political subdivision must be initiated, coordinated, and processed completely through the respective agency and/or political subdivision.

3.1.20 Additional Quantities

WyoLink reserves the right to procure additional quantities beyond that specified in the proposal at the same unit cost as proposed in the Cost Proposal, to address adjustments to the project scope and other changing requirements.

3.1.21 Protested Solicitations and Awards

Any actual or prospective Proposer or Contractor who is aggrieved in connection with the solicitation or award of a contract may protest to the WyDOT Purchasing Manager. The protest shall be submitted in writing within seven working days after such aggrieved person knows, or should have known, of the facts giving rise thereto.

3.1.22 Proprietary/Confidential Information

Any restrictions on the use of data within a Proposal must be clearly stated in the Proposal itself. Pursuant to W.S. 16-4-201 through 16-4-205, Proposals are privileged, confidential information containing trade secrets and other valuable information not generally available to competitors. The Department will not release any information regarding submitted Proposals other than price unless ordered by a Court of Competent jurisdiction, after proper application to such court.

3.1.23 RFP Response Material Ownership

All materials and documents submitted by the Proposer in response to the RFP will not be returned to the Proposer and become the property of the Wyoming Department of Transportation.

However, hardware submitted as "Test Articles," in accordance with the Technology Verification provisions (§7.3), will remain the property of the Proposer and will be returned intact upon completion of the Technology Verification process. Failure of equipment during the Technology Verification process shall be deemed as a manufacturing defect unless clearly demonstrated as resulting from damage.

3.1.24 State Ownership of Contract Products / Services

Proposals, upon established opening time, become the property of the State of Wyoming, Department of Transportation. All products and services produced in response to the contract resulting from this RFP will be the sole property of the State of Wyoming Department of Transportation. The contents of the successful Proposal will become contractual obligations.

3.1.25 Certification of Independent Price Determination

A. By submission of this Proposal each Proposer certifies, and in the case of a joint Proposal each party, thereto certifies as to its own organization, that in connection with this procurement:

- (1) The prices in this Proposal have been arrived at independently, without consultation, communication or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other Proposer or with any competitor;
- (2) Unless otherwise required by law, the prices quoted in this Proposal have not been knowingly disclosed by the Proposer and will not knowingly be disclosed by the Proposer prior to opening, directly or indirectly to any other Proposer or to any competitor; and
- (3) No attempt has been made or will be made by the Proposer to induce any other person or firm to submit or not to submit a Proposal for the purpose of restricting competition.

B. Each person signing this Proposal certifies that:

- (1) He is the person in the Proposer's organization responsible within that organization for the decision as to the prices being offered herein and that he has not participated, and will not participate, in any action contrary to (A)(1) through (A)(3) above; or
- (2) He is not the person in the Proposer's organization responsible within that organization for the decision as to the prices being offered herein but that he has been authorized in writing to act as agent for the persons responsible for such decision in certifying that such persons have not participated, and will not participate, in any action contrary to (A)(1) through (A)(3) above, and as their agent does hereby so certify; and he has not participated, and will not participate, in any action contrary to (A)(1) through (A)(1) above.
- (3) A Proposal will not be considered for award where (A)(1), (A)(3) or (B) above has been deleted or modified. Where (A)(2) above has been deleted or

modified, the Proposal will not be considered for award unless the Proposer furnishes with the Proposal a signed statement that sets forth in detail the circumstances of the disclosure and the head of the agency, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

3.1.26 Incurred Costs

The State of Wyoming is not liable for any cost incurred by Proposers, including but not limited to Proposals, oral presentations or any other such expenses prior to issuance of a legally executed contract, purchase order or other authorized acquisition document. No property interest of any nature shall occur until a contract is awarded and signed by all concerned parties.

3.1.27 Parent Company

If a Proposer is owned or controlled by a parent company, the name, main office address and parent company's tax identification number shall be provided in the Proposal.

3.1.28 Change in Circumstances

The State of Wyoming reserves the right to renegotiate the project cost with the contractor or re-bid remaining phases of the project based on a change in circumstances that was significantly lower the cost of the project. Such circumstances could include, but not be limited to, publication of new Project-25 standards.

3.2 GENERAL TERMS & CONDITIONS

3.2.1 Nondiscrimination

The Resultant Contractor shall comply with Presidential Executive Order 11246 entitled, "Equal Employment Opportunity," as amended by Presidential Executive Order 11375, and as supplemented in the Department of Labor Regulation (41 CFR Part 60), the Civil Rights Act of 1964, the Wyoming Fair Employment Practices Act (Wyo. Stat. § 27-9-105, et seq.), and the Americans with Disabilities Act (ADA), 42 U.S.C. 12101, et seq. The Contractor shall assure that no person is discriminated against based on the grounds of sex, race, religion, national origin or disability in connection with the performance of this Contract.

3.2.2 Compliance with Law

The Resultant Contractor shall keep informed of all Federal, State and local laws, ordinances, regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority that may affect those engaged or employed on the work or affect

the conduct of the work. The Contractor shall observe and comply with all such laws, ordinances, regulations, orders and decrees. The Contractor shall protect and indemnify the State and its representatives against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree whether by the Contractor, subcontractor, suppliers or the Contractor's employees or any others engaged

3.2.3 Americans with Disabilities Act

The Proposer and Resultant Contractor shall not discriminate against a qualified individual with a disability and shall comply with the Americans with Disabilities Act, P.L. 101-336, 42 U.S.C. 12101, et seq., and/or any properly promulgated rules and regulations related thereto. The Proposer and Resultant Contractor shall indemnify, defend, release, save and hold harmless the State of Wyoming, Wyoming Department of Transportation and its officers, agents and employees, from any causes of action, claims or demands, and the costs, including attorney fees, of defending against such claims or demands, arising out of the Contractor's failure to comply with the requirements, responsibilities and/or duties set forth in the Americans with Disabilities Act and/or any properly promulgated rules and regulations related thereto.

3.2.4 Time / Date

All references to specific times and dates shall be referenced as the current local time at the issuing office, whether Mountain Standard or Mountain Daylight time as is in effect at the stated date.

3.2.5 Contract

A formal Contract will be issued by the Wyoming Department of Transportation. Acceptance of the Contract will be deemed to mean acceptance of the Contract as specified in the Request For Proposals, Special Provisions and Addendum (if any). This Contract shall be binding upon either party.

3.2.6 Contractor's Insurance

The Contractor shall not commence work under this Contract until it has obtained all the insurance required by the Department and the State and such insurance has been approved by the Department and the State. Approval of insurance by the Department and the State shall not relieve or decrease the liability of the Contractor. The Contractor shall file a Certificate of Insurance with the Procurement Section of the Department verifying each type of coverage required.

- Worker's Compensation and Employers' Liability Insurance. The Contractor shall provide proof of workers compensation coverage for all its employees who are to work on the project described in this Contract. Contractor's coverage shall

WyoLink RFP

be under the Wyoming Workers' Safety and Compensation program, if statutorily required, or such workers' compensation insurance as appropriate. Contractor's insurance shall include Employer's Liability "Stop Gap" coverage, in an amount not less than Five Hundred Thousand Dollars (\$500,000) per employee for each accident and disease. The Contractor shall also supply to the Department proof of workers' compensation and employers' liability insurance on each and every subcontractor prior to allowing that subcontractor on the job site.

- **Commercial General Liability Insurance.** The Contractor shall provide coverage, during the entire term of this contract, against claims arising out of bodily injury, death, damage to or destruction of the property of others, including loss of use thereof, and products and completed operations, in an amount not less than Five Hundred Thousand Dollars (\$500,000) per occurrence.
- **Business Automobile Liability Insurance.** The Contractor shall maintain, during the entire term of the contract, automobile liability insurance in an amount not less than Five Hundred Thousand Dollars (\$500,000) per occurrence.
- **Unemployment Insurance.** The Contractor shall be duly registered with the Employment Security Commission, Unemployment Compensation Division. The Contractor shall supply an official notice of unemployment insurance coverage for itself and each and every subcontractor prior to beginning work under this contract.
- **Payment of Premiums and Notice of Revocation.** All policies required under this Contract shall be in effect for the duration of this Contract and project. All policies shall be primary and not contributory. Contractor shall pay the premiums on all insurance certificates which must include a clause stating that the insurance may not be revoked, canceled, amended or allowed to lapse until the expiration of at least thirty (30) days advance written notice to the Department.
- **Department/State May Insure for Contractor.** In case of the breach of any provision of this Section, the Department or the State may, at the Department's or State's option, purchase and maintain, at the expense of the Contractor, such insurance in the name of the Contractor, or subcontractor, as the Department or the State may deem proper and may deduct the cost of taking out and maintaining such insurance from any sums which may be found to be due or become due to the Contractor under this Contract.
- **DEPARTMENT/STATE AS ADDITIONAL INSURED:** All insurance policies required by this Contract, except workers' compensation and unemployment compensation policies, shall name the Department and the State as an additional insured, and shall contain a waiver of sub-rogation against the Department and the

State, its agents and employees. Contractor shall provide, upon request, a copy of an endorsement providing this coverage.

- DEPARTMENT’S/STATE’S RIGHT TO REJECT: The State reserves the right to reject a certificate of insurance if the Contractor’s insurance company is widely regarded in the insurance industry as financially unstable. This includes, but is not limited to, insurance companies with an “Omit” rating in the A.M. Best insurance rating guide.
- DEPARTMENT’S/STATE’S RIGHT TO CONTACT INSURER: The Department and the State shall have the right to consult with the Contractor’s insurance agent for disclosure of relevant policy information. Relevant information includes, but is not limited to:
 1. Exclusions endorsed;
 2. Claims in progress which could significantly reduce the annual aggregate limit;
 3. If the policy is a “Claims made” policy instead of an “occurrence” form, the information provided shall include, but not necessarily be limited to:
 - A. Retroactive dates;
 - B. Extended reporting periods or tails; and
 - C. Any applicable deductibles.

3.2.7 Trade Name Provisions

When items within the Proposal are identified by a manufacturer’s name, trade name, brand name, catalog number or reference, it is understood that the Proposer and resulting Contractor will furnish the item so identified and will not furnish an “equal” unless indicated hereon. The use of trade names by the Department is intended to be descriptive but not restrictive and only to establish a standard for articles that will be satisfactory. Proposals on all brands and models will be considered, provided the Proposer clearly states on the Proposal exactly what is to be furnished. Specifications or descriptive literature must be forwarded with the Proposal regarding “equals.”

The Purchasing Manager reserves the right to approve or reject any proposed “equals” that are a variation from Department specifications or requirements.

3.2.8 Assignment and Delegation

Except for assignment of antitrust claims, neither party to any resulting contract may assign or delegate any portion of the agreement without the prior written consent of the other party.

3.2.9 Independent Contractor Clause

The Resultant Contractor shall perform its duties hereunder as an independent contractor and not as an employee. Neither the contractor nor any agent or employee of the contractor shall be deemed to be an agent or employee of the state. Contractor shall pay when due all required employment taxes and income tax withholding, shall provide and keep in force worker's compensation (and show proof of such insurance) and unemployment compensation insurance in the amount required by law, and shall be solely responsible for the acts of the contractor, its employees and agents.

3.2.10 Entirety of Contract

The Resultant Contract represents the entire and integrated Contract between the parties and supersedes all prior negotiations, representations and agreements, whether written or oral.

3.2.11 No Assignment

Neither party shall assign or otherwise transfer any of the rights or delegate any of the duties set forth in the resultant contract without prior written consent of the other party. The Proposer shall not use this contract, or any portion thereof, for collateral for any financial obligation.

3.2.12 Availability of Funds

Each payment obligation of the Department is conditioned upon the availability of government funds that are appropriated or allocated for the payment of this obligation. If funds are not allocated and available for the continuance of the services performed by the Contractor, the resultant contract may be terminated by the Department at the end of the period for which the funds are available. The Department shall notify the Contractor at the earliest possible time of the services that will or may be affected by a shortage of funds. No penalty shall accrue to the Department in the event this provision is exercised, and the Department shall not be obligated or liable for any future payments due or for any damages as a result of termination under this section. This provision shall not be construed to permit the Department to terminate this Contract in order to acquire similar services from another party ("the Resultant Contract").

This being a multi-year project, in the event funding is delayed, the Department reserves the right to adjust the implementation phases accordingly, without canceling the contract.

3.2.13 Indemnification

The Proposer and resultant Contractor shall release, indemnify, defend, and hold harmless the State of Wyoming, the Department and their officers, agents, employees,

successors and assignees from any cause of action, or claims or demands arising out of the Proposer's or resultant Contractor's negligent performance under this contract.

3.2.14 Kickbacks

The Proposer certifies and warrants that no gratuities, kickbacks, or contingency fees were paid in connection with its Proposal or resultant Contract, nor were any fees, commissions, gifts or other considerations made contingent upon the award of this Contract. If the Proposer breaches or violates this warranty, the Department may, at its discretion, terminate this Contract without liability to the Department or deduct from the Contract price or consideration, or otherwise recover, the full amount of any commission, percentage, brokerage, or contingency fee.

3.2.15 Modifications or Withdrawal Of Bids

A Proposal that is in the possession of the Purchasing Manager may be altered by facsimile, telegram or letter bearing the signature or name of the person authorized for bidding, provided it is received prior to the time and date of opening. Alterations should not reveal the price but should indicate the addition, subtraction or other change in the Proposal.

A Proposal that is in the possession of the Purchasing Manager may be withdrawn by the Proposer up to the time of the Proposal opening. Proposals may not be withdrawn after the Proposal opening. Failure of the successful Proposer to complete the contract as awarded from this Proposal shall eliminate the firm from the active Proposers mailing list.

3.2.16 Sovereign Immunity

The State of Wyoming and the Department do not waive sovereign immunity by entering into this RFP or the Resultant Contract, and specifically retain immunity and defenses available to them as sovereigns pursuant to Wyoming Statute § 1-39-104(a) and all other state law except as otherwise provided in this RFP or the Resultant Contract.

3.2.17 Taxes

Direct purchases of material by the State of Wyoming are exempt from Wyoming Sales or Use Tax. The Proposer certifies that no Federal, State, County or Municipal tax will be added to the price shown on the Proposal.

3.2.18 Venue

Any issues or provisions of the agreement in dispute between the Department and the provider that, in the judgment of either party to the agreement, may materially affect the

performance of such party shall be reduced to writing and delivered to the other party. The Department and the provider shall promptly thereafter negotiate in good faith and use every reasonable effort to resolve such dispute in a mutually satisfactory manner.

Should the Proposer or resultant Contractor and the Department be unable to resolve such dispute in a mutually satisfactory manner, the issue shall be submitted to the Wyoming Attorney General's Office, whose decision shall be conclusive, subject to the laws of the State of Wyoming.

The provisions of the agreement shall be constructed in accordance with the provisions of the laws of the State of Wyoming, excluding its conflict of laws provisions. Any legal proceedings against the Department or any other state agency regarding this RFP or any resultant agreement thereof shall be brought before the administrative or judicial forums in Laramie County, Wyoming.

3.3 PROJECT SPECIFIC TERM & CONDITIONS

The issues addressed in this section relate to the conduct of the actual project. These issues will not be considered as part of the evaluation process, but are mandatory procedural issues. The procedures listed herein will be incorporated into the terms of the resulting contract.

3.3.1 Completeness

It is the responsibility of the Proposer to ensure that the communications system proposed is complete and fully addresses WyoLink's goals. The existence of any errors or omissions within this Request For Proposals shall not relieve the Proposer of the responsibility of proposing and providing a complete system. Identifying errors and/or omissions within this Request For Proposals, and providing proposal elements to address them, will be recognized as an example of the Proposer's full grasp of the project scope and goals.

The omission in the requirements of any feature and/or function from the set of features and functions that would be considered standard for the system proposed, or features that would be considered optional, shall not be construed as an indication that such other features are not desired. The Proposer shall include a full listing of all features available on the proposed system, indicating those that are standard features and those that are optional. The Budgetary Proposal shall contain an itemization of optional system features. (See §10.11)

3.3.2 Site Audits

The Contractor shall conduct an audit of each site / equipment location, including the Master Control Site, well in advance of equipment installation and shall report any

deficiencies in writing to the WyoLink Project Manager. The deficiencies report shall contain a list of specific recommendations to address the deficiencies. WyoLink will be responsible to address the deficiencies and for all associated costs.

3.3.3 Key Project Staff

The Contractor agrees that, for circumstances within the Contractor's control, proposed project staff in key roles will remain on this project, that their level of involvement will not decrease beyond that proposed, and that they will not be reassigned or replaced by less proficient project staff. Any proposal by the Contractor for changes to or replacement or substitution of key Contractor staff throughout the duration of the project must be submitted to the Department for review and approval.

In the event a key project staff replacement is required or requested by the Department, the Department shall have the right to review resumes, check candidate references, conduct security background investigations, and, at their discretion, accept or reject proposed replacements.

3.3.4 External / Third-Party Assistance

The Department may elect to retain a third party to provide independent quality assurance monitoring and project management assistance in the development process resulting from this RFP. The objective of this external assistance is to provide an independent assessment of project progress, technical issues, and development problems, and to proactively recommend strategies and actions to avoid or mitigate project risks. The Contractor must work cooperatively with this third party; share all technical, project management, and development-related plans, working papers, and documentation associated with the project; and maintain a candid and open communication forum with the third party as well as with the Department.

3.3.5 Acceptance Testing

The principles of the acceptance testing process will include:

- WyoLink reserves the right to review for completeness and approve all test procedures prior to execution of the tests.
- WyoLink reserves the right to have a representative present to witness all testing, re-testing, and/or inspections.
- WyoLink reserves the right to utilize external / third-party assistance in the conduct and/or oversight of all acceptance testing. (See §3.3.4)
- WyoLink reserves the right to independently perform any test as specified

- All test/inspection results shall be documented, signed, and submitted to WyoLink in hardcopy (paper) and softcopy (permanent CD-ROM) unless otherwise mutually agreed, in advance in writing.
- Any test/inspection that fails shall be documented on a master list of all test/inspection results plus on a separate list for failures only, and shall be scheduled for retest when repairs or adjustments are complete.
- All equipment tests shall be conducted utilizing certified calibrated test equipment each of which is traceable to the National Institute of Standards and Technology (NIST) and has not exceeded its calibration expiration date
- All equipment tests shall be conducted utilizing equipment representative of off-the-shelf equipment that will be deployed throughout the network
- The Proposer shall be held accountable to correct any test / inspection failure, and repeat the test / inspection that failed to verify compliance.

3.3.6 Safety

Certain hazards are inherent in work at remote radio communications sites. Recognized life-safety risks include, but are not limited to:

- Fall hazards related to tower climbing and antenna work
- Fall hazards related to bare and rocky ground
- Adverse reaction to insect bites
- Exposure to inclement weather
- The potential to become stranded due to vehicle breakdown or changing weather conditions
- Dehydration and heat exposure
- Exposure to electrical energy
- Exposure to radio frequency energy
- Being a significant distance from emergency medical support.

To mitigate these and other unforeseen risks, the Contractor, at a minimum, shall adhere to the following safety standards:

3.3.6.1 Safety File / Plan

The Contractor shall maintain a safety file / Plan throughout the course of the project. The Contractor shall present the safety file for inspection by the WyoLink Project Manager and the Department Safety Officer or their designees before commencing any

work at WyDOT facilities and thereafter upon request. The safety file shall incorporate information for all workers, whether directly employed by the Proposer or employed through subcontractors. The file shall contain

- A risk mitigation plan
- An emergency response plan
- An ongoing record of all injuries that occur and/or risk situations identified during the project
- A record of safety related training provided to each worker assigned to the project, which at a minimum shall include:
 - RF Exposure Site Awareness
 - Tower Work and Rescue — as prescribed by the National Association of Tower Erectors (NATE)
 - Basic First Aid
- A listing of all Safety / Personal Protection Equipment (PPE) provided to each worker assigned to the project

3.3.6.2 Reporting of Injuries / Risks

The Contractor shall report all injuries and/or risk situations to the WyoLink Project Manager and the WyDOT Safety Officer, or their designees, for investigation. Reporting shall be in writing and shall take place within 24 hours of any event.

3.3.6.3 Safety Violation – Stop Work Order

Any member of the WyoLink Project Team or any designated representative of the WyDOT Safety Officer shall have the authority to order a stop to all work when a safety violation is identified until the violation is corrected. Any dispute related to a safety violation will be resolved through consultation between the Contractor and the WyoLink Project Manager and/or the WyDOT Safety Officer or their designees.

3.3.6.4 Safety Officer

The WyDOT Safety Officer is:

Ron Chavez — Ron.Chavez@dot.state.wy.us
5300 Bishop Blvd, Cheyenne, Wyoming 82009
Voice: (307) 777-4021 Fax: (307) 777-3842

3.3.7 Project Communications

Throughout the course of the project, the WyoLink Project Manager shall be the primary point of contact for the project on behalf of WyoLink. At the Project Start-up meeting, the Contractor shall identify the primary point of contact for the project on behalf of the

Contractor. All project communications and/or deliverables shall be routed through these individuals or their designees in their absence.

While in person telephone communication is expected to be an ongoing process throughout the project, all official project communications shall be in writing. While e-mail and facsimile transmissions constitute documentable communications, only original signed documents will be used for transmittals required by the contract, for instance: Notice To Proceed, Letter of Full Acceptance, etc.

3.3.8 Inventory Control

Before shipment of equipment from the Contractor's assembly facility, an inventory of the type, serial number, quantity, and latest revision number of all equipment shall be transmitted to the WyoLink Project Manager or his designee. This inventory shall be transmitted as an Excel spreadsheet, in an agreed-upon format, and may be transmitted by e-mail, with receipt acknowledged by a return message.

Upon completion of installation, as part of the acceptance process at each site, the Contractor shall verify the accuracy of the previously submitted inventory. Discrepancies between installed items, equipment configurations, quantities, types, will be documented and reported to the WyoLink Project Manager, or his Designee. Such discrepancies shall be corrected by the Contractor. At WyoLink's option, WyoLink project team members may witness the inventory process and/or spot-check the results.

A complete and verified inventory will be incorporated into all system documentation.

Additional information regarding inventory steps is found in section 10.8.4 "Configuration Audit," within the Acceptance Test Plan.

3.3.9 Documentation

A complete set of equipment service, installation, and configuration manuals, and a complete set of system interconnect diagrams shall be provided for each WyoLink site. The accuracy of this documentation set will be verified during the acceptance process.

A complete set of system documentation and manuals shall be provided to each WyDOT Radio Service Shop representing the configuration of all radio sites within that shop's service area.

A complete set of system documentation and manuals for the entire WyoLink system shall be provided to the WyDOT Telecommunications, Central Office. (While the WyoLink Master Site will be located at the Central office, the Master Site shall be considered a separate location and will be supplied with a full set of appropriate documentation, which will be maintained in equipment room.)

All WyoLink specific documentation — interconnect diagrams, equipment layout drawings, rack configuration drawings, acceptance test documentation, etc. — shall be supplied as hard copies and in electronic form. “Electronic Form” shall be defined as the current versions of Microsoft Word, Microsoft Excel, and AutoCAD-LT. Electronic documentation shall be supplied to and maintained at the WyDOT Telecommunications Central Office so that any changes, modifications, or updates may be incorporated into the documentation throughout the life of system.

3.3.10 Warranty

The minimum warranty period for equipment under this contract shall be two years. (See §10.9.1)

The warranty period for all equipment installed by the Contractor under this contract shall commence upon completion of the project phase as acknowledged by issuance of a Letter of Full Acceptance by the WyoLink project manager.

The warranty period for all equipment not installed by the contractor but delivered directly to the customer shall commence upon acceptance of delivery.

3.3.11 Security

Access to WyoLink sites requires observance of a series of security steps related to locks and alarms. It is the obligation of all individuals working at WyoLink radio sites to understand and follow security procedures.

As WyoLink will carry mission-critical and law-enforcement sensitive messages, at the discretion of the Wyoming State Patrol, individuals whose work involves access to active communications systems shall be subject to law-enforcement background checks. Any individual found unsuitable based on law-enforcement background check will be denied access and it shall be the Contractor's responsibility to assign a qualified replacement to perform the required work.

3.4 BLANK

This section intentionally left blank.

3.5 INTENTION TO PROPOSE / TERMS & CONDITIONS FORM

The Proposers shall submit, at the Mandatory Pre-Proposal Meeting, three (3) copies of the Intention to Propose / Terms and Conditions Form indicating **Intention To Propose** and whether the **Terms and Conditions** stated in the Request for Proposals are fully accepted or whether the Proposer takes exception to certain Terms and Conditions.

WyoLink RFP

Where a Proposer takes exception to any Terms and Conditions, the Proposer shall attach to the form a document clearly identify each term or condition to which exception is taken. Along with each exception, the Proposer shall provide alternative language for the Department's consideration, and the contact information for the Proposer's legal counsel / representative. The Department will review the exceptions and proposed alternative language in consultation with the Attorney General and issue an addendum if warranted.

(The Proposer shall reproduce and complete the form electronically and, in doing so, replace the parenthetical text with the information requested.)

Intention to Propose / Terms & Conditions Form

Check either box A or B. Check box C.

- A:** We, the undersigned, Intend to Propose to furnish WYOLINK SYSTEM EQUIPMENT AND DEVELOPMENT SERVICES. We have read, understand, and accept the Terms and Conditions as stated within the Request For Proposals, dated July 15, 2004.
- B:** We, the undersigned, Intend to Propose to furnish WYOLINK SYSTEM EQUIPMENT AND DEVELOPMENT SERVICES. We have read and understand the Terms and Conditions as stated within the Request For Proposals, dated July 15, 2004. We take exception to the Term and Conditions and herewith attach a detailed statement of our exceptions, suggested alternate Terms and Conditions, and the contact information for our legal counsel / representative.
-
- C:** The Early Delivery requirement (§2.3) is understood and ability to deliver affirmed.
-

Proposer Identity

(Company — Name)

(Please use the formal name that will be used in contractual documents)

(Company — Telephone Number)

(Company — Fax Number)

(Company — Street Address/P.O. Box)

(Company — City, State, Zip)

Authorized Signature

(Date)

Single Point of Contact

(Name of Proposer's Authorized Representative)

(E-mail address of Proposer's Authorized Representative)

(Phone of Proposer's Authorized Representative)

(Mailing Address of Proposer's Authorized Representative)

4 SELECTION PROCESS

4.1 OVERVIEW

Proposals will be evaluated as a “Best Value” procurement. The needs of public safety agencies are paramount. Cost alone will not be the determining factor, but life-cycle cost will be a factor. Proposals will be evaluated to determine which provides the greatest value to the State of Wyoming. All elements of the proposal will be evaluated, but not all will be of equal weight. In preparing responses, Proposers should be mindful that the evaluation process intends to determine the best value, not necessarily the best proposal nor the lowest cost.

The final ranking of proposals will be based on the collective assessment composite of system features, system costs, and project risks. The evaluation is such that does not lend itself to reduction to a purely mathematical formula. As such, the evaluation process will rely heavily on the professional experience, technical expertise, and sound judgment of the members of the Technical Evaluation Team.

4.2 TECHNOLOGY VERIFICATION (\$7)

WyoLink intends to procure commercially available off-the-shelf land mobile radio technology to best satisfy WyoLink system requirements. While this is not a developmental procurement, Proposals will be accepted that involve the upgrade or addition of features to radio components. Before submission of proposals, the WyoLink Project Team will evaluate the technology each Proposer intends to submit for the WyoLink Project. (Instructions are in section 7.)

At a minimum, the WyoLink Project Team will examine Tests Samples of the proposed equipment. These tests will verify the features and functions of currently manufactured equipment. The Proposer will have the opportunity to suggest further methods of evaluation the technology.

Feature upgrades, addressed within the Technical Proposal, to meet WyoLink requirements will be evaluated in light of the results of the Technology Verification effort. The evaluation process will assess the project risks associated with the difference between currently produced technical samples and WyoLink requirements.

4.3 PURCHASING REVIEW

Upon the close of the proposal acceptance deadline, the Senior Buyer and WyoLink Project Manager will review all proposals for accuracy and contractual sufficiency. This review will verify that specified forms, signatures, and bid bonds are proper and in order. This will be a Pass/Fail review process. Proposals that fail this review will not receive

further consideration. Cost proposal that are unrealistically low will be judged as having failed to understand the scope of the project.

4.4 TECHNICAL PROPOSAL (\$9 + \$10)

The Proposer has the option of submitting a video presentation that shall serve as an introduction and overview of the Technical Proposal. The presentation will be viewed when the Technical Evaluation Team (TET) begins its work. As an introduction, the quality and content of the presentation will not be weighed. Proposers will not have an opportunity to dialog with the TET or WyoLink Project Team members at that time.

Each aspect of the technical proposal will be evaluated in terms of benefits and risks to the WyoLink project. The TET may draw on subject-matter-experts to review specific sections of the proposal, and will incorporate their written reports into the overall evaluation. A mathematical tabulation and predefined weighting will not be used; such methods do not reflect the best judgment and critical thinking of the TET, individually or as a whole. Each aspect will be weighed against the following criteria:

- Exceeds requirements — adds project value = Blue
- Fully Addresses Requirements — presents no project risk = Green
- Marginally Addresses Requirements — presents project risk = Yellow
- Critically Below Requirements — presents unacceptable project risk = Red

For each evaluation rating, the TET will describe either the perceived risk or benefit. During summation, the merits and risks of each the Proposals will be summarized and compared. It is anticipated that weighting the results will be an intense and involve process and will rely heavily on the professional expertise of each team member.

The documents, reports, and discussions of the TET will not be published; that information will remain confidential and procurement sensitive.

4.5 COST PROPOSAL (\$8)

The Cost Proposals will not be considered TET until the evaluation of the Technical Proposal is complete. At that point, the life-cycle cost of each proposal will be weighed alongside the merits and risks of the Technical Proposal, and weighed alongside the estimated lifecycle cost budget, to determine the Proposal that presents the best value to the State of Wyoming.

4.6 NEGOTIATIONS

The Proposer whose Proposal represents the Apparent Best Value to the Department will receive a report of negotiating points, indicating areas of the Proposal in need of

clarification and areas of perceived weakness. The Department Negotiating Team will be available to meet with the Proposer within three (3) business days to discuss the report.

The Proposer shall respond in writing within five (5) business days of the original negotiating points report, amending their Proposal to clarify the identified issues and address the perceived weaknesses raised in the report. Adjustments to the Cost Proposal will only be accepted where the adjustments are related clearly to and justified by amendments within the Amended Technical Proposal.

Promptly thereafter, face-to-face negotiations shall take place based on the Proposer's Amended Proposal. All promises, amendments, adjustments, and/or clarifications derived from the negotiations will be reduced to writing within the final contract, and only those terms incorporated into the contract shall be considered binding.

Should the Department and the Proposer whose Proposal represents the Apparent Best Value be unable to reach mutually acceptable terms for a final contract, the Department will repeat the process of negotiations with the Proposer whose Proposal represents the Apparent Next Best Value to the Department. The Department may exercise this option at its discretion and at any time.

The prohibition on Proposers issuing News Releases without Department approval (§3.2.5) will remain in effect until the final contract is signed by all parties.

5 PROJECT SUMMARY

5.1 OVERVIEW

The State of Wyoming, working through a Steering Committee and Project Team finalized a set of recommendations to develop a statewide public safety mobile communications system. The recommendations were chosen after careful consideration of all possible alternatives, including technical, operational, and financial factors; they represent the culmination of an extensive multi-year effort. WyoLink — Wyoming's statewide public-safety interoperable radio communications system — is the result of those recommendations.

WyoLink will be a Project-25 digital, trunked, VHF Hi-band (136-174 MHz) radio system utilizing 57 sites. The system will be interconnected via the Wyoming Department of Transportation (WyDOT) microwave backbone and its planned extensions (see §11.3.2). The 57 sites selected for the system are or will be under the control of WyDOT; the upgrade of buildings, towers, and supporting infrastructure is being addressed under a separate project that is well under way. The established goal is to achieve 95% statewide coverage for mobile radios, with portable radio coverage enhancements to be added to address specific user needs.

WyoLink development is projected to be a six-year project. This Request for Proposals constitutes the first phase of the project, and will select a Proposer and establish the pricing structure that will apply to development of the entire project. The first construction phase of the project will develop the central control point, five radio sites in southeast Wyoming, and interfaces to one local 800-MHz systems. This "pilot phase" will provide a full-scale technology demonstration and will provide the opportunity to iron out any technical issues. This will also allow WyoLink member agencies to appreciate the features and functions of the system and develop operational procedures based on that technology. The pilot phase procurement will purchase a limited number of user radios to demonstration system operations. Subsequent system development will be carried out in five phases, with the first phase being the largest and the remaining four to address particular RF coverage difficulties and to provide an orderly transition for WyoLink member agencies.

The Wyoming Legislature created the Public Safety Communications Commission, which will take effect on July 1, 2004. This 17-member commission will provide guidance for WyoLink. Changes significantly affecting the project scope and budget will be submitted to this body for review — although contract responsibilities rest with the Wyoming Department of Transportation.

5.2 BENEFITS

WyoLink will provide the following critical benefits to the citizens and Public-safety responders in Wyoming:

- Full interoperability across all participating State, local, and Federal agencies. This will include an interface to the existing Casper and proposed Cheyenne 800-MHz system, and ongoing “mutual aid” functionality for those who wait or decline to participate in the WyoLink shared system.
- Improved statewide mobile coverage from 83% (estimated coverage) to 95% (verified by field measurements).
- Full compatibility with the current and emerging Project-25 public safety digital radio communications standards.
- Digital technology, the technology of choice in the industry today and into the future, which brings added features such as encryption, low-speed data messaging, individual unit identification, and automatic vehicle location (AVL).
- Increased communications capacity through the addition of radio frequencies and the use of trunking technology, which will provide enhanced flexibility, reliability, and radio frequency efficiency.
- Improved reliability and disaster recovery capabilities through replacement of obsolete radio infrastructure and the addition of multiple control points.
- Provide overall cost savings by reducing the number of radio sites being maintained for public-safety. And will to the

5.3 COVERAGE

The goal of WyoLink is to provide 95% overall mobile radio coverage within the State of Wyoming. Interstate-80 and Interstate-25 carry the highest volume of traffic and have the potential for being the scene of a number of critical incidents. Therefore, the WyoLink system design shall strive to exceed the 95% overall mobile radio coverage goal along those highways.

In reaching the goal of 95% overall mobile radio coverage, WyoLink will provide portable radio coverage in a significant number of areas. Portable radio coverage, including in building penetration, may be extended by the development of additional sites and resources as described in overview in the PSMC plan. The ability to use portable radios will be further extended in that in-vehicle repeat technology will be available as an optional subscriber unit.

5.4 INTERNAL INTEROPERABILITY

WyoLink will provide interoperability by unifying Wyoming public-safety agencies into a single radio system. The organization of the trunking system will provide sufficient talk-groups to provide for intercommunication, calling, tactical incident, and Incident Command Structure operations. Trunking technology has been chosen as it provides a high degree of resource flexibility, system reliability, and radio channel efficiency. This technology also provides the ability for a user to communicate across great distances as the need arises.

The WyoLink system will be implemented in an extended series of steps, and interoperability will function through the transition. Public safety-agencies will transfer operations to WyoLink from their existing systems based on funding availability for subscriber units. During this transition time, interoperability will be provided through backward compatibility of subscriber units: the ability of a subscriber unit to operate as a WyoLink digital trunking radio on one user channel while able to operate as an analog conventional radio on a different user channel. Patching of selected WyoLink talk-groups to existing radio systems will further interoperability during the transition.

5.5 EXTERNAL INTEROPERABILITY

WyoLink will provide interoperability by interfacing with other radio systems. Interfaces to similar and dissimilar systems will be supported. In some cases, the interface will be to radio systems within the State of Wyoming. Currently identified examples include interfacing to the 800-Mhz radio system serving the city of Casper and the 800-Mhz system being developed for the city of Cheyenne Fire Department. Other examples include interfacing to radio systems serving U.S. Forest Service, the Bureau of Land Management, Warren Air Force Base, and other federal organizations as appropriate. In other cases, the interface will be to radio systems of the neighboring states. (See P SMC plan appendix H.) While recognizing certain barriers that exist in linking dissimilar technologies and RF bands, the goal in selecting interface standards will be to maximize the transfer of WyoLink system features and functions between systems.

Interoperability beyond the range of established WyoLink system interfaces will be supported using conventional-mode digital and conventional-mode analog channels, both within subscriber units and within the WyoLink radio system. WyoLink will support conventional-mode analog channels to allow interoperability with emergency service responders from outside Wyoming responding within the WyoLink service area, or Wyoming emergency responders responding outside of Wyoming. The FCC has specified a national plan for VHF interoperability channels, which will be implemented by WyoLink. These channels will be of extreme value during large-scale events where public safety responders would be called into service across great distances. While the likelihood of such events is hopefully rare, the events of September 11, 2001 indicate that such events can happen.

6 DEVELOPMENT PHASES

Proposals submitted in response to this RFP will be evaluated to establish the contract and pricing of the entire WyoLink project; however, the system development will occur in an orderly sequence of steps. This process is chosen based on projected funding availability and to provide sufficient time for staff training. Lessons learned from other large-scale projects indicate that a sequenced development approach provides a greater opportunity for user agencies to implement the added features and to develop appropriate operational procedures.

The details of the actual development process will be adjusted based on the cost proposals received and funds available during each fiscal cycle.

6.1 CONTRACT ATTACHMENT PER PHASE

As previously stated, WyoLink development will occur in an orderly sequence, with each procurement phase being addressed as an attachment to the contract established by this RFP process. Each attachment will address the agreed-to scope, cost, initiation date, project phase milestones, and completion date of the specified project phase. Completion of each phase will be acknowledged by issuance of a Letter of Full Acceptance by the WyoLink project manager.

The Proposer shall address this issue in two sections of the proposal. Within the Cost Proposal, a plan for progressive payments shall be included. Within the Technical Proposal, a plan for system development with milestones shall be included. It is recognized that this will be redundant.

6.2 PHASE 1 — JULY 2004 FUNDING

The Pilot Phase is planned as a 10%, first step, opportunity to demonstrate the validity of the technology and the performance of the features. This will also provide the opportunity for WyoLink user agencies to consider the operational procedures that may need to be adjusted in relation to the new features provided. The scope of this phase may be adjusted based on funds available and the cost structure established by this procurement process.

The current pilot phase plan calls for developing five radio sites and sufficient master-control-site resources to demonstrate all WyoLink features, including but not limited to:

- Trunking Features
- Data Communications Features
- Encryption Features
- Automatic Vehicle Location (AVL) Support System
- Subscriber equipment

WyoLink RFP

System encryption during the pilot shall demonstrate radio-to-radio and radio-to-console encryption along with Over-the-Air-Rekeying operation.

Data communications and AVL are recognized as features that utilized a core system as a data communications buss rather than being specific features of the core system. Thus, the selection of user equipment to demonstrate these features is undetermined at this time. However, the goal in demonstrating the extent of system capabilities with these features shall be addressed.

6.2.1 Phase 1 Sites

The Pilot Phase will be developed in southeastern Wyoming. The plan calls for developing the master control site and five radio sites. The locations have been selected for the pilot phase due to their proximity to the master site, which will be located at the Wyoming Department of Transportation facility in Cheyenne. The five sites are in close proximity to Cheyenne for easy access during this initial development and testing process.

The proposed sites are identified in the following table:

| # | Site Name | Latitude D-M-S | Longitude D-M-S | Antenna Height (Feet) | Elevation (Feet) |
|----|-----------------------------------|----------------|-----------------|-----------------------|------------------|
| 20 | Sherman (Beacon) Hill | 41° 15' 42" | 105° 25' 53" | 112 | 8770 |
| 38 | North Albin | 41° 28' 36.9" | 104° 6' 6.1" | 100 | 5368 |
| 39 | Russell Hill/Pine Bluff | 41° 15' 29" | 104° 6' 16.9" | 100 | 5345 |
| 40 | 85 South | 41° 1' 17" | 104° 47' 8.8" | 100 | 6277 |
| 41 | Whitcomb Hill/ County Line | 41° 39' 1" | 104° 54' 6.1" | 100 | 6035 |

The Sherman Hill site will be developed as a six talk-channel site, while the other for sites will be developed as four talk-channel sites.

6.2.2 Phase 1 Subscriber Units

A limited member of subscriber equipment will be purchased to WyoLink contract in order to demonstrate the technology. WyoLink user agencies will require thousands more units, which may be purchased through the contract or under the terms of this contract using the Governmental Entities Cooperative Purchasing Process (See §3.1.19). The current pilot phase plan calls for the following subscriber units:

| Agency | Tier 2 Mobile | Tier 2 Portable | Control Station | In-Vehicle Repeater |
|-------------------------|---------------|-----------------|-----------------|---------------------|
| WyoLink direct purchase | 50 | 40 | 10 | 2 |

WyoLink RFP

| Agency | Tier 2 Mobile | Tier 2 Portable | Control Station | In-Vehicle Repeater |
|---|---------------|-----------------|-----------------|---------------------|
| Users Agency (§3.1.19) anticipated | 600 | 480 | 20 | 10 |
| TOTAL Phase #1 Subscriber Units | 650 | 520 | 30 | 12 |
| <i>Anticipated user agency purchases include those in the phase 1 area and those making purchases with current year funds in preparation for WyoLink statewide development.</i> | | | | |

As this will be a demonstration phase, the goal will be to provide a sampling of the various options in subscriber equipment. This will include a mixture of different control head configurations. Likewise, portable radios will be procured in a mixture of available configurations. Optional encryption shall be added to 5 mobile radios, 5 portable radios, and 2 control stations; this portion of the procurement will include one encryption key loader. Optional RS-232 interface shall be added to five mobile radios.

The in-vehicle repeater will be a unit capable of in-band operation, support trunking operation, and function to extend portable radio coverage.

The exact mix of subscriber equipment to be procured during the pilot phase will be resolved during negotiations following Intent to Award, and will not impact Proposer selection.

During the Pilot Phase, multiple opportunities will exist to demonstrate possible applications that could ride on the low-speed data transmissions. The Proposer is encouraged to suggest a variety of subscriber equipment to be included for demonstration during the pilot phase. Such equipment may include but not be limited to: limited text message display and status reporting units, automatic vehicle location units, in vehicle repeater technology for extending portable radio coverage, barcode reader messaging systems, and other useful tools. WyoLink may purchase some as part of its commitment to demonstrate the technology, but opportunities will exist for other demonstrations at Proposer expense.

6.2.3 Phase 1 800-Mhz System Interface

The pilot phase procurement will involve development of interfaces between WyoLink and the 800-Mhz systems being developed for the City of Cheyenne Fire Department. Functional requirements for the interface are specified elsewhere in this document.

6.2.4 Phase 1 Portable Coverage

Portable radio coverage enhancements and in-building coverage enhancements within the city of Cheyenne will be incorporated into the Pilot Phase. All such enhancements will be identified and addressed as options.

The prudent course of action will be to develop the five radio sites and then test portable radio and in-building coverage performance. The advisability of enhancements will be evaluated after the performance of the five radio sites has been documented. This will provide a model of system performance that will serve to predict what level of portable radio coverage enhancements will be required throughout the remainder of the project.

6.3 PHASE 2 — JULY 2006 FUNDING

The Core Implementation phase is planned as a 50% development step, based on total funding, including the cost of subscriber unit purchases by all user agencies. This will be the largest development phase and proposes to build the remaining sites. All system features, functions, and redundancy will be operational at the close of this phase. System coverage will be statewide, and coverage deficiencies will be clearly identified.

The full scope of work to be accomplished during this phase will be adjusted based on funds available and the cost structure established by this procurement process.

6.4 EXPANSION PHASES — 2007 > 2010 FUNDING

The remaining four project phases will provide time and resources to address coverage issues that remain from the core development phase and to assist user agencies to continue their orderly migration from legacy system to WyoLink. Each is budgeted as being 10% of the overall project cost, including the cost of subscriber unit purchases by all user agencies.

- Phase 3 (Expansion) — July 2007 funding
- Phase 4 (Expansion) — July 2008 funding
- Phase 5 (Expansion) — July 2009 funding
- Phase 6 (Expansion) — July 2010 funding

The scope of each phase will be addressed in relation to identified issues, available funding, and the cost structure established by this procurement process.

7 TECHNOLOGY VERIFICATION INSTRUCTIONS

7.1 OVERVIEW

The Technology Verification process is intended to assess the current state of the Proposer's radio equipment. At a minimum, the WyoLink Project Team will examine Tests Samples of the proposed equipment. These tests will verify the features and functions of currently manufactured equipment. Those results will be compared with the stated performance. A risk assessment will be conducted later in the selection process based on difference between the system requirements and the current state of the Proposer's technology. Additionally, the Proposer will have the opportunity to suggest further methods of evaluating the technology.

7.2 REFERENCES

The Proposer shall submit reference contact information for user agencies employing identical or similar technology. Reference contact information shall include a description of the technology being used and all appropriate contact information for key individuals involved in system use and/or support. References will be contacted in the course of the evaluation.

References shall be delivered to WyDOT Telecommunications, 5300 Bishop Blvd., Cheyenne, WY 82009, at the Pre-Proposal Meeting, 11:00 a.m., August 02, 2004. (This requirement has been amended to August 23, 2004 based on an editing error.)

7.3 TEST ARTICLES

The Test Articles will be used to verify unequivocally that the proposed equipment conforms to the Project-25 open standards and to assess the current state of the Proposers equipment as compared to WyoLink requirements. The testing shall also verify backward compatibility. The tests to be performed will include any or all tests identified in the current and pending Project-25 standards.

It is recognized that not all Proposer Technical Test Articles will fully address WyoLink requirements. Samples should be submitted that most closely address WyoLink requirements accompanied by a statement indicating whether the sample fully address the requirements or in what respects it does not yet fully address the requirements. Within the accompanying statement and within the Technical Proposal, the Proposer shall indicate the planned upgrades that will address the deficiencies. That section shall include the schedule, current status, resources being applied, and identified obstacles to completing the proposed upgrades.

Proposers shall supply actual hardware, in two stages, and an engineering point of contact. The submission shall include all necessary documentation, programming

software, and programming interface cables, etc., as required to configure and test the equipment.

The WyoLink project team will be responsible for its own expenses in the course of the testing. Likewise, retaining the services of subject matter experts and/or testing laboratories will be the responsibility of WyoLink.

7.3.1 First Test Articles

The First Test Articles shall be delivered to WyDOT Telecommunications, 5300 Bishop Blvd., Cheyenne, WY 82009, at the Pre-Proposal Meeting (§2.2.).

The First Test Articles shall consist of a portable radio with appropriate RF test interface cables (test adapter cable to allow connection of portable radio RF port to BNC or N type female connector on test equipment). The submission shall include all necessary documentation, programming software, and programming interface cables, etc., as required to configure and test the equipment.

Proposers shall submit, along with the Test Article, a statement clarifying any differences in features and functions between the test articles submitted and the features and functions proposed to be delivered for the WyoLink system.

7.3.2 Second Test Articles

The Second Test Articles shall be delivered to the testing labs according to the assigned sequence.

The Second Test Article packages shall be delivered to a test laboratory selected by the WyDOT Telecommunications Department, for demonstration to, and evaluation by members of the WyoLink Project Team. Proposers shall submit, along with the Test Articles, a statement clarifying any differences in features and functions between the test articles submitted and the features and functions proposed for the WyoLink system.

Each Proposer will be allotted an equal block of time (evaluation time) to present the Second Test Article. A sequence of evaluation times will be established for the period between August 23, 2004 and September 24, 2004. The actual length, and start date, of evaluation time will be determined based on the number of Proposer's submitting test articles. (It is assumed that each evaluation time will be one week long, but adjustments may be made.) Proposers will be notified of the dates and test laboratory location as soon as possible following the Mandatory Pre-Proposal Meeting. Proposer preferences will be accommodated where possible.

The Second Test Article packages shall consist of all necessary items to configure a two-site, three-channel-per-site trunking system, with all necessary interconnect cabling, power supplies, site controllers, network management computer consoles, and system

WyoLink RFP

administration and network management tools to administer the system and subscriber units. (Subscriber units from the First Test Article submission may be used). Proposers shall provide their own personnel to carry out the uncrating, assembly, start-up, system check-out; and at the conclusion of their demonstration, system tear-down, disassembly, and re-crating for return shipment. All associated costs shall be the responsibility of the Proposer.

It is **STRONGLY** encouraged that Proposers provide engineering staff on site during their respective evaluation time, in order to make system configuration changes as necessary and required by the demonstration/evaluation. The evaluation will exercise each system in accordance with the pending TIA 102.CABC Trunking Interoperability Test Procedures document. (An electronic version of this document will be available for download by interested responding Proposers attending the Pre-Proposal Meeting (§2.2). On-site personnel will also accelerate resolution of any problems discovered during the verification testing. Any discovered problems, resolved or not, will be documented for the benefit of WyoLink Technical Evaluation Team and the affected Proposer, such that the Proposer will be able to track these issues and follow up with resolutions prior to submission of Proposals and/or Contract Negotiations.

The Proposer shall submit identification information for all Proposer personnel that shall be present during the setup, tear-down, and system operation during the test article demonstration/evaluation period

Due to security requirements of the test laboratory, identification information shall be submitted to the WyoLink Project Manager, or his designee, no later than five business days before the beginning of each Proposer's Test Time. Identification information shall include:

- Personnel names,
- Employer
- Affiliation of employer with Proposer if employer is not the Proposer
- Proposer/employer point-of-contact information
- Certification attesting to said personnel's declared citizenship

Information for non-US citizens should be provided as soon as possible, or two weeks prior to Proposer's allocated evaluation time; because of this security requirement, it is suggested that Proposers utilize personnel possessing US citizenship.

7.4 ADDITIONAL VERIFICATION PROPOSALS

The Proposer may suggest additional methods to verify the technology. Such suggestions may include visits to existing installations of similar equipment, the viewing of scripted demonstrations and/or other such methods as the Proposer deems appropriate to address the overall objectives of the technology verification process. The WyoLink Project team will review the additional verification proposals and, at its discretion, select those it deems appropriate.

Additional Verification Proposals shall be delivered to, 5300 Bishop Blvd., Cheyenne, WY 82009, no later than 11:00 a.m., August 23, 2004, but may be submitted earlier.

The WyoLink Project team will responsible for its own expenses should travel be required in the course of any additional verification steps chosen.

7.5 TEST PLAN

The following tests are proposed to evaluate the First and Second Test Articles. While all tests may be conducted, time or circumstances may dictate the selection of some tests and the omission of others. The actual selection of tests will be at the sole discretion of the WyoLink Project Team.

7.5.1 Verifying §10.6.1 (VHF-Hi Band) and §10.6.2 (Narrowband)

- **Reference Document:** ANSI/TIA 102.CAAA-A, Digital C4FM/CQPSK Transceiver Measurement Methods, November 2002.
- **Reference Document:** ANSI/TIA 102.CAAB-A, Land Mobile Radio Transceiver Performance Recommendations - Project 25 - Digital Radio Technology, C4FM/CQPSK Modulation, September 2002

| # | Test Title | Description |
|---|---|--|
| 1 | Test 3.1, section 2.1.4. Reference Sensitivity Test. | Verifies that the maximum RF input level for reference sensitivity shall not exceed the appropriate limit specified in the TSB-102.CAAB-A document, table 3-3. |
| 2 | Test 3.2, section 2.1.5. Faded Reference Sensitivity Test. | Verifies that the maximum RF input level for faded reference sensitivity shall not exceed the appropriate limit specified in the TSB-102.CAAB-A document, table 3-4. |

WyoLink RFP

| # | Test Title | Description |
|---|--|--|
| 3 | Test 3.3, section 2.1.7. Adjacent Channel Rejection Test. | Verifies that the adjacent channel rejection shall meet or exceed the appropriate limit in the TSB-102.CAAB-A document, Table 3-5 and verifies that the adjacent channel rejection shall not degrade more than 9 dB per kHz of frequency offset. |
| 4 | Test 3.4, section 2.1.8. Co-Channel Rejection Test. | Verifies that the co-channel rejection shall not exceed 9 dB. |
| 5 | Test 3.5, section 2.1.18. Receiver Throughput Delay Test. | Verifies that the average receiver throughput delay time for voice service in a conventional nontrunked system shall not exceed 125 milliseconds. |
| 6 | Test 3.6, section 2.2.2 Operating Frequency Accuracy Test. | Verifies that the maximum permissible departure from the assigned frequency shall be as specified in the TSB-102.CAAB-A document, table 3-12. |
| 7 | Test 3.7, section 3.2.5. Modulation Emission Spectrum Test. | Verifies that the power of any emission component shall be attenuated below the unmodulated transmitter output power in accordance with the TSB-102.CAAB-A document, table 3-14. |

7.5.2 Verifying §10.6.3 — Project 25

- **Reference Document:** TSB-102.CABA Project 25 Interoperability Test Procedures Conventional Voice Equipment

| # | Test Title | Description |
|----|---|--|
| | 3.1 Subscriber Tests | |
| 8 | Test 1.1, section 3.1.1. Subscriber Transmitter Call Type Tests. | Verifies that transmissions from the subscriber are correct for each of the following types of calls: Individual call, Default Talk Group call, System Wide Talk Group call, Talk Group call, Emergency call, and Repeater call. |
| 9 | Test 1.2, section 3.1.2 Status Symbol Tests | Verifies that transmissions from the subscriber contain the proper status symbol at the slot boundaries for any possible subscriber configurations |
| 10 | Test 1.3, section 3.1.3. Subscriber Receiver Squelch Tests. | Tests the proper mute/unmute response by the receiver under the different combinations of transmitter and receiver NAC, TGID, Source ID, and Destination ID for the three different receiver squelch settings of monitor, normal, and selective squelch. |

WyoLink RFP

| # | Test Title | Description |
|----|--|---|
| 11 | Test 1.4, section 3.1.4. Channel Access. | Verifies that transmissions from the subscriber can be inhibited when the status symbol at the slot boundaries is either 01 (busy) or 00 (unknown, used for talk around). |
| 12 | Test 1.5.1, section 3.1.5.1. Modulation Interoperability Subscriber Receiver Test. | Verifies within each band (applicable to the UUT) that the receiver is interoperable with transmitters that use either C4FM or CQPSK modulation. |
| 13 | Test 1.5.2, section 3.1.5.2. Modulation Interoperability Subscriber Transmitter Test | Verifies that transmitters using C4FM or CQPSK modulation are interoperable with receivers. These tests can only be performed if the UUT Tx can generate both the C4FM and CQPSK modulated signals. |

7.5.3 Verifying §10.7.1 — Trunking

- **Reference Document:** TSB-102.XXXX Project 25 Interoperability Testing for Voice Operation in Trunked Systems.

| # | Test Title | Description |
|----|--|--|
| | Section 3.1 Regular Group Call Tests | |
| 14 | Test 1.1, Section 3.1.1 Basic Group Call Test - One RF Site | This test verifies that voice transmissions from a subscriber are correctly transmitted to subscribers on the same talk group. |
| 15 | Test 1.2, section 3.1.2 Talk Group Privacy Test - One RF Site | This test verifies that voice transmissions from a subscriber in one talk group cannot be heard by a subscriber in another talk group. |
| 16 | Test 1.3, section 3.1.3. Group Call Late Entry Subscriber Test - Subscriber Initially Set for a Different Talk Group - One RF Site | This test verifies that when a new subscriber unit that was initially set to a different talk group, enters into an already established group call, that it can receive and transmit understandable voice messages. |
| 17 | Test 1.4, section 3.1.4. Group Call Late Entry Subscriber Test - Subscriber Initially Involved in a Unit-to-Unit Call - One RF Site. | This test verifies that when a new subscriber unit that was initially involved in a unit-to-unit call enters into an already established group call, that it can receive and transmit understandable voice messages. |
| 18 | Test 1.5, section 3.1.5. Basic Group Call Test - Two RF Sites | Between two sites, this test verifies that voice transmissions from a subscriber are correctly transmitted to subscribers on the same talk group. |

WyoLink RFP

| # | Test Title | Description |
|----|---|---|
| 19 | Test 1.6, section 3.1.6. Talk Group Privacy Test - Two RF Sites | Between two sites, this test verifies that voice transmissions from a subscriber in one talk group cannot be heard by a subscriber in another talk group. |
| 20 | Test 1.7, section 3.1.7. Group Call Late Entry Subscriber Test - Subscriber Initially Set for a Different Talk Group - Two RF Sites | For two sites, this test verifies that when a new subscriber unit that was initially set to a different talk group, enters into an already established group call, that it can receive and transmit understandable voice messages. |
| 21 | Test 1.8, section 3.1.8. Group Call Late Entry Subscriber Test - Subscriber Initially Involved in a Unit-to-Unit Call - Two RF Sites. | For two sites, this test verifies that when a new subscriber unit that was initially involved in a unit-to-unit call enters into an already established group call, that it can receive and transmit understandable voice messages. |
| | Section 3.2 Queued or Denied Group Call Tests | |
| 22 | Test 2.1, section 3.2.1. Busy Queuing and Call Back Test for Group Call - One RF Site. | This test verifies that if a user places a group call and a traffic channel is not available then the originating subscriber unit is given a busy indication. Furthermore, this test verifies that when a traffic channel becomes available, the originating subscriber unit is notified by the system and the group call can be properly completed . |
| 23 | Test 2.2, section 3.2.2. Busy Queuing and Call Back Test for Group Call - Two RF Sites. | For two sites, This test verifies that if a user places a group call and a traffic channel is not available then the originating subscriber unit is given a busy indication. Furthermore, this test verifies that when a traffic channel becomes available, the originating subscriber unit is notified by the system and the group call can be properly completed. |
| 24 | Test 2.3, section 3.2.3. Call Originator Subscriber Unit Not Valid Test - One RF Site. | This test verifies that a group call is not processed and the call originator subscriber unit receives an indication that the call has been denied if the call originator subscriber unit is not a valid user. |
| 25 | Test 2.4, section 3.2.4. Target Talk Group Not Valid Test - One RF Site. | This test verifies that a group call is not processed and the call originator subscriber unit receives an indication that the call has been denied if the target talk group is not valid. |
| 26 | Test 2.5, section 3.2.5. Call Originator Subscriber Unit Not Valid Test - Two RF Sites. | For two sites, This test verifies that a group call is not processed and the call originator subscriber unit receives an indication that the call has been denied if the call originator subscriber unit is not a valid user. |

WyoLink RFP

| # | Test Title | Description |
|----|---|---|
| 27 | Test 2.6, section 3.2.6. Target Talk Group Not Valid Test - Two RF Sites. | For two sites, this test verifies that a group call is not processed and the call originator subscriber unit receives an indication that the call has been denied if the target talk group is not valid. |
| | Section 3.3 Announcement Group Call Tests | |
| 28 | Test 3.1, section 3.3.1. Basic Announcement Group Call Test - One RF Site. | The purpose of the basic announcement group call tests is to verify interoperability of the subscribers and the FNE for trunked announcement group calls that initially result in a traffic channel grant. |
| 29 | Test 3.2, section 3.3.2. Basic Announcement Group Call Test - Two RF Sites. | For two sites, the purpose of the basic announcement group call tests is to verify interoperability of the subscribers and the FNE for trunked announcement group calls that initially result in a traffic channel grant. |
| | Section 3.4 Regular Unit to Unit Call Tests | |
| 30 | Test 4.1, section 3.4.1. Basic Unit-to-Unit Call Test - One RF Site. | This test verifies that voice transmissions from a subscriber unit are correctly transmitted to and received by the targeted unit. |
| 31 | Test 4.2, section 3.4.2. Unit-to-Unit Call Privacy Test - One RF Site. | This test verifies that voice transmissions from a subscriber unit in a unit-to-unit call cannot be received by an unintended subscriber unit. |
| 32 | Test 4.3, section 3.4.3. Call Originator Subscriber Unit Termination of Unit-to-Unit Call Test - One RF Site. | This test verifies that a call originator can terminate a unit-to-unit call. |
| 33 | Test 4.4, section 3.4.4. Target Subscriber Unit Termination of Unit-to-Unit Call Test - One RF Site. | This Test verifies that the called subscriber can terminate a unit to unit call. |
| 34 | Test 4.5, section 3.4.5. FNE Termination of Unit-to-Unit Call Test - One RF Site. | Tests the ability of the FNE to terminate a unit to unit call by a time out when there is no activity on the unit to unit call |
| 35 | Test 4.6, section 3.4.6. Basic Unit-to-Unit Call Test - Two RF Sites. | For two sites, this test verifies that voice transmissions from a subscriber unit are correctly transmitted to and received by the targeted unit. |

WyoLink RFP

| # | Test Title | Description |
|----|--|--|
| 36 | Test 4.7, section 3.4.7. Unit-to-Unit Call Privacy Test - Two RF Sites. | For two sites, This test verifies that voice transmissions from a subscriber unit in a unit-to-unit call cannot be received by an unintended subscriber unit. |
| 37 | Test 4.8, section 3.4.8. Call Originator Subscriber Unit Termination of Unit-to-Unit Call Test - Two RF Sites. | For two sites, This test verifies that a call originator can terminate a unit-to-unit call. |
| 38 | Test 4.9, section 3.4.9. Target Subscriber Unit Termination of Unit-to-Unit Call Test - Two RF Sites. | For two sites, This Test verifies that the called subscriber can terminate a unit-to-unit call. |
| 39 | Test 4.10, section 3.4.10. FNE Termination of Unit-to-Unit Call Test - Two RF Sites. | For two sites, Tests the ability of the FNE to terminate a unit to unit call by a time out when there is no activity on the unit to unit call |
| | Section 3.5 Queued or Denied Unit-to-Unit Call Tests | |
| 40 | Test 5.1, section 3.5.1. Busy Queuing and Call Back Test for Unit-to-Unit Call - One RF Site. | This test verifies that if a user places a unit-to-unit call and a traffic channel is not available (in this instance due to a group call occupying the channel) then, for Case 1, the originating subscriber unit is given a busy indication. For Case 2, the target subscriber unit is given a busy indication. Furthermore, this test verifies that when a traffic channel becomes available, the originating subscriber unit (in Case 1) or the target subscriber unit (in Case 2) is notified by the system and the unit-to-unit call can be properly completed. |
| 41 | Test 5.2, section 3.5.2. Busy Queuing and Call Back Test for Unit-to-Unit Call - Two RF Sites - Scenario 1. | For two sites, This test verifies that if a user places a unit-to-unit call and a traffic channel is not available (in this instance due to a group call occupying the channel) then, for Case 1, the originating subscriber unit is given a busy indication. For Case 2, the target subscriber unit is given a busy indication. Furthermore, this test verifies that when a traffic channel becomes available, the originating subscriber unit (in Case 1) or the target subscriber unit (in Case 2) is notified by the system and the unit to unit call can be properly completed. |
| 42 | Test 5.3, section 3.5.3. Busy Queuing and Call Back Test for Unit-to-Unit Call - Two RF Sites - Scenario 2. | For two sites, This test verifies that if a user places a unit-to-unit call and a traffic channel is not available (in this instance due to a group call occupying the channel) then, for Case 1, the originating subscriber unit is given a busy indication. For Case 2, the target subscriber unit is given a |

WyoLink RFP

| # | Test Title | Description |
|----|---|---|
| | | busy indication. Furthermore, this test verifies that when a traffic channel becomes available, the originating subscriber unit (in Case 1) or the target subscriber unit (in Case 2) is notified by the system and the unit-to-unit call can be properly completed. |
| 43 | Test 5.4, section 3.5.4. Target Subscriber Unit Not Valid Test - One RF Site. | This test verifies that a unit-to-unit call is not processed and the call-originator subscriber unit receives an indication that the call has been denied if the target subscriber unit is not valid. |
| 44 | Test 5.5, section 3.5.5. Target Subscriber Unit Off Test - One RF Site. | This test verifies that a unit-to-unit call is not processed and the call-originator subscriber unit receives an indication that the call has been denied if the target subscriber unit is not turned on. |
| 45 | Test 5.6, section 3.5.6. Target Subscriber Unit Not Valid Test - Two RF Sites. | For two sites, This test verifies that a unit-to-unit call is not processed and the call-originator subscriber unit receives an indication that the call has been denied if the target subscriber unit is not valid. |
| 46 | Test 5.7, section 3.5.7. Target Subscriber Unit Off Test - Two RF Sites. | For two sites, This test verifies that a unit-to-unit call is not processed and the call-originator subscriber unit receives an indication that the call has been denied if the target subscriber unit is not turned on. |
| 47 | Test 5.8, section 3.5.8. Target Subscriber Unit Involved in Another Call - One RF Site. | This test verifies that if a user places a unit-to-unit call and a traffic channel is available for this call, but the target subscriber is involved in another call (a group call in this case), that the call is either denied or queued. Since the Project 25 standards do not specify whether the call will be denied or queued in this case, both types of responses will be tested for. If the call is denied, the test will verify that the originating subscriber unit is given an indication of the denied call. If the call is queued because the target SU is involved in a Group Call, the test verifies that the originating subscriber unit is given an indication that the target unit is not responding. Furthermore, the test verifies that when the target subscriber unit becomes available, the target and originating subscriber units are notified by the system and the unit-to-unit call can be properly completed. |

WyoLink RFP

| # | Test Title | Description |
|----|--|--|
| 48 | Test 5.9, section 3.5.9. Target Subscriber Unit Involved in Another Call - Two RF Sites. | For two sites, This test verifies that if a user places a unit-to-unit call and a traffic channel is available for this call, but the target subscriber is involved in another call (a group call in this case), that the call is either denied or queued. Since the Project 25 standards do not specify whether the call will be denied or queued in this case, both types of responses will be tested for. If the call is denied, the test will verify that the originating subscriber unit is given an indication of the denied call. If the call is queued because the target SU is involved in a Group Call, the test verifies that the originating subscriber unit is given an indication that the target unit is not responding. Furthermore, the test verifies that when the target subscriber unit becomes available, the target and originating subscriber units are notified by the system and the unit-to-unit call can be properly completed. |

8 COST PROPOSAL INSTRUCTIONS

8.1 OVERVIEW

The Proposer shall submit a Cost Proposal that addresses the WyoLink features and functions described herein. Three copies shall be submitted by the Proposal Due date, September 27, 2004.

The Cost Proposal shall describe the pricing for the project. This pricing structure shall describe the cost for procuring all hardware, software, firmware, information, and professional services from the Proposer throughout the scheduled six-year life of the project.

The Cost Proposal shall consist of the following parts, and shall be assembled in the following order:

- Cost Proposal Summary Form
- Project Budget (Life-Cycle & Detailed Project)
- Progressive Payments Plan
- Annual Cost Adjustment Proposal

As variables remain within the project plan, to facilitate a reasonable and objective comparison of costs, all Proposals will address the VHF-57 proposal as their reference point.

8.1.1 Optional Items

8.1.1.1 Recommended Scope Change

The Proposer may identify and recommend options that constitute variations from the VHF-57 plan. Those optional items shall be fully explained in the technical proposal, shall be incorporated into the Detailed Project Budget, and shall be clearly identified on the Cost Proposal Summary Form

8.1.1.2 Identified Options

Multiple times, within the Technical Proposal Content section, items are identified as optional items within the Cost Proposal. Those optional items shall be incorporated into the Detailed Project Budget, within subsections the following the outline of the Technical Proposal Content section.

8.1.2 Subscriber Unit Procurement

While there will be a limited number of subscriber units procured during the pilot phase of the project, the majority of units will be procured by WyoLink user agencies directly, base on a negotiated or bid pricing structure or via the contract resulting from this procurement (see §3.1.19). User agencies will have the option of procuring from multiple vendors based on their specific needs via other contractual vehicles. The WyoLink project team will monitor procurements as an element in the overall budget tracking and will strive to insure the most competitive pricing for user agencies.

An “All Agency Pre-negotiated Pricing Structure” has been established for some subscriber unit procurement. The agreement and attached Contractor price sheets may be found at the following web site > <http://ipc.state.wy.us/radio/AllAgencyLtrFINAL.pdf> <. Additional vendors wishing to subscribe to the agreement and add their products to the list of those available for purchase under this agreement should propose to do so using the agency contact information contained in the agreement document.

8.2 COST PROPOSAL SUMMARY FORM

The Proposer shall use the following form when submitting the Cost Proposal.

(The Proposer shall reproduce and complete the form electronically and, in doing so, replace the parenthetical text with the information requested. The form shall be printed beginning and ending a new page. Table rows may be added or removed to accommodate the recommended scope changes.)

WyoLink Cost Proposal Summary by [Proposer Name]

We, the undersigned agree to furnish WYOLINK SYSTEM EQUIPMENT AND DEVELOPMENT SERVICES in accordance with the Request for Proposals, dated July 15, 2004, in consideration of the prices set below.

| Description | Total Proposed Cost |
|---|----------------------------|
| Phase 1 (Pilot) Infrastructure Cost (per §6.2.1) | \$ |
| Phase 1 (Pilot) Subscriber Unit Cost (per §6.2.2) | \$ |
| Phase 1 (Pilot) 800-Mhz System Interface (per §6.2.3) | \$ |
| | |
| Total System Infrastructure Cost — 57 Site Plan (§11.4) | \$ |
| | |

WyoLink RFP

| | |
|---|----|
| Recommended Scope Change #1 (§8.1.1.1) | \$ |
| Recommended Scope Change #2 (§8.1.1.1) | \$ |
| Total System Infrastructure Cost with Options | \$ |

- (1) In compliance with the above and subject to all conditions thereof, the undersigned offers and agrees, if this Proposal is accepted within 180 days from the date of opening, to furnish the goods and services.
- (2) Direct purchases of materials by the State of Wyoming are exempt from Wyoming Sales or Use Tax. The undersigned certifies that no Federal, State, County or Municipal tax will be added to the above quoted prices.
- (3) The Proposer hereby covenants and agrees that he is the only person interested in this Proposal and the Proposal is made without collusion with any other person, firm or corporation; that he has carefully examined the Special Provisions covering the services included in the Proposal, and the conditions under which the services are to be furnished.
- (4) The Proposer hereby certifies that no attempt has been made nor will be by the Proposer, to induce any other person or firm to submit a Proposal for the purpose of restricting competition.
- (5) The Proposer hereby certifies that the person signing this Proposal is authorized to represent the company and is legally responsible for the decision as to price and supporting documentation provided in response to this RFP.
- (6) The Department reserves the right to select the consulting firm best meeting the needs of the Department and is not required to select the lowest cost Proposal.

Is your firm incorporated? Yes No

State of Incorporation: _____

Federal Tax ID Number: _____

(Company — Name

(Please use the formal name that will be used in contractual documents)

(Company — Telephone Number)

(Company — Fax Number)

(Company — Street Address/P.O. Box)

(Company — City, State, Zip)

Authorized Signature

(Date)

8.3 PROJECT BUDGET

Following the Proposal Cost Form, the Proposer shall include in the proposal a project budget. The Project Budget will also be utilized by the WyoLink Project Team to evaluate changes to the WyoLink project plan that may arise in the course of the project. The Project Budget will be provided in two parts: A Life-Cycle Costs Estimate and a Detailed Project Budget.

8.3.1 Life Cycle Cost Estimate

The Life-Cycle Costs Estimate shall be a ten-year forecast structured in a format similar to Appendix N of the Wyoming Public-Safety Mobile Communications Plan. The plan is available at the WyoLink web site — <http://WyoLink.state.wy.us> — under “Wyoming Public Safety Mobile Communications Plan (Nov 2003).”

8.3.2 Detailed Project Budget

The Detailed Project Budget shall be a series of interrelated spreadsheets following the outline of the Technical Proposal Content section.

A Summary Spreadsheet shall be the first page, and shall reflect the cost figure declared on the “Cost Proposal Summary Form.” The following table is provided as an example of system level components to be included in the Summary Spreadsheet:

| WyoLink Total Infrastructure Cost Summary | | | | | |
|---|-----------------|------------------|----------------------|------------------|-------------------|
| Description | Per Site | No. Sites | Count Total s | Unit Cost | Total Cost |
| 5 Channel Radio sites (1 Control + 4 talk) | 5 | 51 | 255 | | |
| 7 Channel Radio sites (1 Control + 6 talk) | 7 | 6 | 42 | | |
| Total Base Stations | | | 297 | | |
| 5 Channel TX Combiner (5 WyoLink + 4 conventional, split to two antennas) | 2 | 51 | 102 | | |
| 6 Channel TX Combiner (7 WyoLink + 4 conventional, split to two antennas) | 2 | 6 | 12 | | |
| | | | | | |

WyoLink RFP

| WyoLink Total Infrastructure Cost Summary | | | | | |
|--|--------------|-----------|--------------|-----------|------------|
| Description | Per Site | No. Sites | Count Totals | Unit Cost | Total Cost |
| Per Site | | | | | |
| 8 Channel RX Multi-Coupler (5 or 7 WyoLink + 4 conventional + spares >> split to two antennas) | 2 | 57 | 114 | | |
| 6 db Gain Antenna with 7/8" feedline, runs | 4 | 57 | 228 | | |
| DC Power System | 1 | 57 | 57 | | |
| Redundant Site Controller, T1 Interfaces, hubs, routers, etc | 1 | 57 | 57 | | |
| Engineering & Design Services | | | | | |
| Installation & Testing Services | | | | | |
| Master Control Site | | | | | |
| Redundant System Controller | | | | | |
| T1 Interfaces, hubs, routers, etc. | | | | | |
| System Administration System | | | | | |
| System Alarm & Monitor System | | | | | |
| Engineering & Design Services | | | | | |
| Installation & Testing Services | | | | | |
| Acceptance Testing | | | | | |
| Pre-Installation Inspections & Tests | | | | | |
| Factory Integration (Staging) Tests | | | | | |
| Configuration Audit | | | | | |
| Installed Functionality Testing | | | | | |
| Coverage Testing | | | | | |
| Interoperability Testing | | | | | |
| Warranty | | | | | |
| 2 year warranty, effective upon phase acceptance | | | | | |
| Training | | | | | |
| | Staff | | | | |
| User Training = Train-the-Trainer | 20 | | | | |
| Technician Training | 17 | | | | |
| Administrator Training | 4 | | | | |

8.4 PROGRESSIVE PAYMENTS PLAN

The Proposer shall the review the Development Phases section of this document and within this section shall proposed project milestones and the applicable progressive payment for each milestone.

It is recognized that this will be redundant, duplicating information within the Technical Proposal, Development Plan section. The distinction between these two sections is that this section need not provide as much accomplishment detail and the progressive payments information shall be indicated within this section.

8.5 ANNUAL ADJUSTMENTS

WyoLink is planned at a six-year development project. As such, annual adjustments in the overall pricing structure will be considered. It is anticipated that some costs would rise due to inflation. It is also anticipated that some costs would decrease as the volume of Project-25 equipment produced increases and competitive forces act.

The Proposer shall recommend contractual language to address the issue of annual pricing structure adjustments.

9 TECHNICAL PROPOSAL INSTRUCTIONS

9.1 OVERVIEW

The Proposer shall submit a technical proposal that addresses the WyoLink features and functions described herein. Eight copies shall be submitted by the Proposal Due date, September 27, 2004.

This is a Request for Proposal based on a functional level system description rather than an invitation for bid against a set of detailed system specifications. As such, Proposers are encouraged to apply their creativity and technical expertise in proposing technical specifications and system design that best addresses the requirements of WyoLink. To facilitate a level comparison of budget proposals, a section of planning assumptions has been included. These assumptions have also been formulated to facilitate radio frequency licensing work, which is currently underway. Proposers should follow the planning assumptions as the core of their proposal. Thereafter, provide such options as the Proposer deems appropriate where variations from the planning assumptions will result in better value or more thoroughly address the requirements of the project.

The Technical Proposal shall describe the proposed system functionality, technical specifications, RF system designs, network architectures, project timeline with benchmarks, and optional feature(s) that the Proposer believes will add to the value of the WyoLink proposal.

Proposals will be evaluated as a “Best Value” procurement. The needs of public safety agencies are paramount. Cost alone will not be the determining factor, but life-cycle cost and estimated budget will be a factors. Proposals will be evaluated to determine which provides the greatest value to the State of Wyoming. All elements of the proposal will be evaluated, but not all will be of equal weight. In preparing responses, Proposers should be mindful that the evaluation process will seek to determine the best value, not necessarily the best proposal, nor the lowest cost.

The criteria listed below do not specify the length to which a Proposer may go in responding to any section of this RFP. It is the responsibility of the Proposer to construct their proposals in a clear and concise manner. One well-constructed paragraph may convey far more than the endless pages of verbiage and technical jargon. Technical proposals will not be evaluated for grammar and punctuation; however, readability may influence the evaluation team.

9.2 VIDEO INTRODUCTION

The Proposer has the option of submitting an oral introduction to the evaluation team. If elected, the presentation shall be submitted as VHS videotape or DVD, not exceeding 30 minutes in length. Submit two copies. Presentations exceeding 30 minutes will be

stopped at the 30-minute point. The evaluation team will view the presentation at the beginning of their deliberations. The presentation will be considered as an introduction and/or overview of the proposal, and as such will not be specifically weighed in the evaluation process.

The content of the presentation shall address only the content of the Technical Proposal. The presentation shall NOT contain information, inferences, or references to the content of the Cost Proposal. Presentations will be previewed by the WyoLink Project Manager; presentations that exceed the content criteria will not be forwarded to the Technical Evaluation Team.

This standard will be maintained to ensure the integrity of the procurement process. The technical evaluation will be based solely on the content of the Technical Proposal. Content absent from the proposal will not be considered during the evaluation. Cost information will be evaluated at the completion of the Technical Evaluation. Dialog and clarification will take place during the Negotiations phase of the procurement process.

9.3 ADDITIONAL DOCUMENTS

The Proposer has the option of submitting additional documents in support of their technical proposal. However, the Technical Evaluation Team will determine whether to refer to additional documentation. Voluminous documentation that is not cross-referenced to specific subsections within the Technical Proposal are unlikely to be reviewed.

9.3.1 Supporting / Reference Documents

Supporting and reference documents that relate specifically to the Technical Proposal shall be provided in a standard format (MS-Word, PDF etc.) on CD. One CD shall be included within each Proposal binder.

9.3.2 Example Training Materials

In support of proposal subsections relating to Training, the Proposer may submit one set of example training materials. Training materials may be submitted as printed documents and/or electronic documents on CD.

9.4 PROJECT OPTIONS

In some cases, sufficient planning assumption information is not available to allow for the preparation of a complete and comparable Proposal for certain WyoLink functional requirements. This is particularly true in the case of WyoLink requirements to interface to radio communications systems of other states or agencies that are still in development.

Another example would be the range of methodologies available to address portable radio coverage and in-building coverage issues.

In responding to issues, features, or functions identified as options, the Proposer shall identify possible solutions, with advantages and disadvantages; an assessment of the technical issues an obstacle involved; and a conceptual cost benefit analysis. The Proposer should seek to convey their understanding of the issues an established their credibility in addressing such issues. It would be reasonable to cite examples where the Proposer has successfully addressed similar issues.

To facilitate an equal comparison of Proposals, where insufficient planning information is available to allow all Proposers to address a comparable scope of work the requirement will be addressed as a project option within the Cost Proposal. Within the Technical Proposal, the functional requirement should be fully addressed. A description of the planning information that will be needed before a clearly defined methodology can be prescribed to address the functional requirement, shall be provided within the subsection.

9.5 DOCUMENT FORMAT

To expedite the evaluation of Technical Proposals, the following form and style is **mandatory**.

- Submit proposals in a white D-ring binder, no larger than trade size 1-1/2", with label sheets inserted in the cover and spine. The cover label shall include a sequential numbering of the document sets. (i.e.: copy #1, copy #2, etc.)
- Insert tabbed divider pages to mark the beginning of each document section.
- The headings and paragraph styles used within this RFP document shall be used in the proposal document. The goal here is to enhance readability and to provide consistency to facilitate the evaluation process.
 - Normal text font shall be Times Roman 12-point.
 - Single line spacing within paragraphs, double-spacing between paragraphs.
 - Heading text font shall be Arial — heading-1 = 18 pt, heading-2 = 16 pt, heading-3 = 14 pt, heading-4 = 12 pt. Level-1 headings shall begin a new page.
 - Color shall not be used in text but is appropriate for charts, graphs, or diagrams.
 - Margins at 1.25" on all sides, bottom and top, with header and footer at 0.7"

- Page header shall provide the document title, with the Proposer identity, while the footer shall provide the page number and total page count.

9.6 OUTLINE OF TECHNICAL PROPOSAL

The Technical Proposal document shall be organized according to the outline of the TECHNICAL PROPOSAL CONTENT section, which follows, and shall be so numbered. Omit the section number. Thus, heading 10.1 will become section 1 of the Technical Proposal document.

For each section and/or subsection, the Proposer shall describe how the requirement described therein is addressed by the Proposal. The Proposer may elect to recommend a higher standard than that called for in the RFP, but should clearly delineate the distinction between the RFP requirement and the recommendation, and the impact of the recommendation to the overall system.

At the Proposer's discretion, additional subsections levels may be inserted within a given subsections to enhance clarity. Additional subsections should only be used where warranted, such as where a series of concise bullet points would not suffice.

(NOTE: While not constituting the official copy of the RFP, an unofficial copy in MS-Word format will be available on request to facilitate reuse of the template and document outline.)

10 TECHNICAL PROPOSAL CONTENT

10.1 PROPOSER PROFILE

10.1.1 Profile of Proposing Firm

The Proposer shall describe the Proposing firm and shall include a description of any partnership and/or subsidiary relationships entered into for the purpose of proposing for this project. This description should provide an outline of the resources and roles of each firm, the nature of the business relationship, the date entered into and length of the relationship, and the identity of the authorized representative for each firm.

10.1.2 Development Resources

The Proposer shall describe the resources that will be used to complete this project within the allotted schedule. Proposers are not being asked to reveal their current workload and the scope of other contractual obligations. However, Proposers should evaluate their own workload and resources, and only indicate resources that will be available for this project. The description of resources shall address engineering, manufacturing, field installation and acceptance test resources that will be required to complete the project.

10.1.3 Resumes

The Project Team Profile section shall describe the individuals and subcontractors responsible for moving this project to a successful completion. A separate subsection shall describe the each project team member or subcontracting firm.

10.1.3.1 Project Team Resumes

For individual project team members the profile shall describe:

- **General Background**: Include the education, experience, and other related achievements. Also, indicate the length of affiliation and relationship with the Proposer.
- **Specific Experience**: Included dates and a description of experience on projects that relates specifically to the WyoLink project. Describe specific training the individual has received on the equipment / technology that the Proposer proposes to supply.
- **Project Role**: Include a description of the project role and areas of responsibility during the WyoLink project.

10.1.3.2 Subcontractor Profiles

For subcontracted firms the profile shall describe:

- General Background: Include a brief business history of the firm. Describe the area of expertise, the type of work in which the firm specializes. Also indicate the length of affiliation and relationship with the Proposer.
- Specific Experience: Included dates and a description of the work the firm has carried out on projects that relates specifically to the WyoLink project. Describe specific training the subcontractor's staff has received on the equipment / technology that the Proposer proposes to supply.
- Project Role: Include a description of the project role and areas of responsibility during the WyoLink project.

10.2 DEVELOPMENT PLAN / MILESTONE

The Proposer shall propose a project schedule with appropriate milestones for the development of the entire WyoLink System. In formulating the project schedule, the Development Phases (§6) should be reviewed, along with the microwave development plan addressed in §11.2.

It is recognized that this will be redundant, duplicating information within the Cost Proposal, Progressive Payments section. The distinction between these two sections is that the progressive payments information is not required in this section whereas this section shall provide more detail of the accomplishments related to each milestone.

The development plan shall include sections addressing the need to maintain service of existing systems and to transition those systems at the conclusion of the project.

Insert subsection headings as appropriate within this section.

10.3 PROJECT RISK ASSESSMENT

The Proposer shall identify all recognizable project risks. Each risk shall be evaluated on two axes: Possibility of Occurrence and Consequence of Occurrence. For each axis, the assessment shall be High, Medium, or Low. Thus, a risk identified as High/Medium would have a high possibility of occurrence and a medium consequence to the project, while another risk identified Medium/High would have a medium possibility of occurrence but a high consequence to the project, etc. Risks identified as Low- in either axes may be excluded.

The Proposer shall specify a Risk Mitigation Plan for each risk identified as either high or medium, in either Possibility or Consequence.

The following example illustrates the addition of subsections. The Proposer shall insert sufficient subsections to address all identifiable project risks.

10.3.1 Example Risk — High/Medium

10.3.1.1 Description of Risk

This is an example entry representing a risk with a high possibility of occurrence and a medium consequence to the project. This subsection shall contain a description and an explanation as to why it was rated in this manner.

10.3.1.2 Risk Mitigation Plan

This is an example entry for a mitigation plan, a planned response in the event the risk were to occur.

10.4 SITE REQUIREMENTS

WyoLink will be responsible for site infrastructure: leasing and access easements, equipment shelters, towers, electrical service, and HVAC. Site development and redevelopment work is currently underway. (See §3.3.2)

10.4.1 Master Control Site

The location chosen for the Master control site is an existing telecommunications equipment space adjacent to the microwave hardware. It is suited for equipment racks and already served by a UPS power system.

The Proposer shall describe the Master Control Site space and environmental requirements required to support the system they propose. The description shall include but not be limited to: the number and size of equipment racks, grounding and bonding requirements, the electrical power requirements and HVAC heat load, and a description of the volume of cabling required to interconnect and interface the system.

UPS power system capacity should be sufficient to operate the master control site for 24 hours in the absence of generator or commercial power. (See §3.3.2)

10.4.2 Individual Radio Sites

The Proposer shall describe the Individual Radio Sites space and environmental requirements required to support the system they propose. The description shall include but not be limited to: the number and size of equipment racks, grounding and bonding requirements, the electrical power requirements and HVAC heat load, and a description of the volume of cabling required to interconnect and interface the system. (See §3.3.2)

The Proposer shall describe the site development / grounding and bonding standards to be employed at each site. (It is appropriate to reference the standard in this section and attach the copy of the standards documents per the requirements of §9.3.1.)

10.4.2.1 Battery Power Systems

WyoLink radio sites shall utilize direct DC power. The use of direct DC power to operate base stations, rather than DC power derived from a power supply that in turn is operated from a UPS system, has been shown to be highly reliable and more efficient. As part of the microwave-system upgrades currently underway, all WyoLink sites are being equipped with 48 volt, positive ground, DC power systems, with backup generator. The units in place were manufactured by Power Conversion Product, which is now Eltek Energy, L.L.C.

The Proposer shall propose, as part of the VHF-57 Plan, a complete separate DC power system for the WyoLink radio site equipment. WyoLink radio sites shall function on battery power for at least 24 hours in the event of generator failure to start. Duty cycle shall be assumed as 100% on the Control Channel and 20% on each talk channel. Charger capacity shall provide for 24-hour recharge from complete discharge while maintaining required system load.

The DC power system shall be Eltek Energy “Twin-Pack Plus” or equal, for equipment standardization and support reasons. The DC power system shall feature full system monitoring, with remote interface; full capacity battery disconnect, with dual buss design, such that one string of batteries may be removed from service while the other remains active; circuit breakers panel with individual breakers for individual load circuits.

10.5 SIGNAL COVERAGE

10.5.1 Signal Modeling Criteria

All signal coverage modeling and calculations shall be conducted in accordance with Telecommunications Industry Association (TIA) Technical Service Bulletins #TSB-88-A: Wireless Communications Systems - Performance in Noise and Interference-Limited Situations - Recommended Methods for Technology-Independent Modeling, Simulation, and Verification (1999) and #TSB-88-A-1: Addendum 1 (2002). Where variations are found between the requirements listed in this document and TIA standards, the TIA standards shall apply.

The Proposer shall specify the detailed design criteria utilized in developing coverage and probability plots as required below. Design criteria should include, but not be limited to: Noise Floor value, Receiver Multicoupler Gain, Transmit Frequency spacing in order to determine combiner loss, etc. (See §11.4.3)

10.5.2 Site Selection

Site selection is important to the overall coverage success of WyoLink. The WyoLink VHF-57 Plan is one possible solution that maximizes the use of existing or planned WyDOT-only sites to achieve the stated goal. The VHF-57 solution and its specific sites

(see §11.4) are not meant to be the only solution; rather, it is a starting point for an interactive design effort between the successful Proposer and the WyoLink Project team that will consider any and all factors that make up the site selection.

The listed 57 sites are preferred, as they represent infrastructure under the control of, planned for, or under development by WyDOT. However, the Proposer may propose other existing state, local or federal sites to meet this coverage goal. The goal is to have the selected sites meet coverage parameters while minimizing extensive microwave backbone additions beyond those already planned, funded, and under development by WyDOT.

The Proposer shall review the VHF-57 site plan, as detailed in PSMC Plan, Appendix P, and shall propose any additions or modifications deemed by engineering analysis to be advised to achieve effectively and efficiently the stated coverage goals.

10.5.3 Mobile Coverage

The adopted PSMC plan establishes a goal of 95% mobile coverage statewide (except for Yellowstone National Park area), with a Bit-Error-Rate (BER) of 2.6% or better. This is recognized as an ambitious goal but one that is deemed achievable. Achievability is based on analysis by SAIC, as contracted by Federal Engineering, using EDS modeling software. The analysis is discussed within Appendix-P of the PSMC plan.

The Proposer shall provide mobile-radio coverage analysis in two forms.

- A composite coverage analysis based on the 57-site plan discussed in Appendix-P, indicating a coverage percentage based on the Proposer's engineering.
- A composite coverage analysis based on the Proposer's engineering that propose amendments or additions to the 57-site plan necessary to achieve a 95% mobile-radio coverage goal.

The Proposer shall provide statewide coverage probability plots for mobile radio coverage, showing both station talk-out and mobile talk-in, and showing specific sites used. The accompanying documentation shall detail the planning assumptions and propagation model used to produce the plots. The selected Proposer must demonstrate, during acceptance testing via field measurements, that actual coverage conforms to the engineering predictions.

The WyoLink VHF-57 Plan shall be used as a reference point for proposals. Should the Proposer's engineering analysis indicate that the VHF 57 solution fails to achieve the identified coverage goals, the Proposer shall provide a gap analysis within the proposal clearly identifying the deficiencies and recommending variations from the VHF 57 solution to reach the coverage goal.

Should the Proposer's proposals contain variations from the VHF- 57 solution, the Proposer shall submit a budget proposal based on the VHF-57 sites, and then address of variations as recommended options with clearly identified budget line items. (Organizing proposals in this manner is intended to ensure that comparisons of coverage and costs are clearly understandable and consistent between proposals, to facilitate the evaluation process.)

10.5.4 Portable Coverage

WyoLink requires portable coverage in selected areas. Agencies that rely on portable subscriber units such as cities and forestry agencies require additional signal margins to allow reliable portable operation. The WyoLink design will allow optional enhancement solutions beyond that allocated for mobile radio coverage to increase signal strengths and margins for portable subscriber units.

The Proposer shall submit coverage plots for portable radio coverage based on the VHF-57 sites plan for mobile radio coverage. Calculations for portable radio coverage shall be based on a 90% target coverage probability level with a Bit-Error-Rate (BER) of 2.6% or better, as measured with the portable radio at shoulder height above ground level (without speaker-microphone or radio on belt).

The Pilot Phase plan address portable radio and in-building coverage by proposing to first build the five high-sites and then conduct portable radio coverage tests to assess the need for coverage enhancements. (§6.2.4) This methodology should provide a sufficient model of performance to allow for better-established scope of work in subsequent phases.

The Proposers shall present optional enhancement solutions to overcome portable radio coverage concerns. The Proposer shall identify all enhancements for portable coverage as being options within this subsection and within the Cost Proposal.

Actual selection and implementation of portable radio coverage enhancements will be determined within the course of the project based on coverage testing of the VHF-57 site plan implementation.

10.5.5 In-Building Portable Coverage

WyoLink user cities also require additional signal strength and/or margins for in-building portable radio coverage. The WyoLink design will allow optional enhancement solutions beyond that allocated for general portable coverage to increase signal strengths and margins allowing portable subscriber units to operate within buildings. This may include additional receivers and/or repeater sites or passive/active in-building enhancements as the particular problems are investigated and the best solution determined.

The Pilot Phase plan address portable radio and in-building coverage by proposing to first build the five high-sites and then conduct portable radio coverage tests to assess the need

for coverage enhancements. (§6.2.4) This methodology should provide a sufficient model of performance to allow for better-established scope of work in subsequent phases.

The Proposers shall present optional enhancement solutions to overcome in-building coverage concerns. Margins for moderate office building shall be 10 dB. Area coverage plots presented for portable coverage shall clearly show areas where in-building enhancements are not needed (i.e., areas exceeding established in-building margins). The Proposer shall identify all enhancements for in-building portable coverage as being options within the Technical Proposal and the Cost Proposal.

Actual selection and implementation of in-building portable radio coverage enhancements will be determined within the course of the project based on coverage testing of the VHF-57 site plan implementation and the status of any portable radio coverage enhancements.

10.6 DESIGN CRITERIA

10.6.1 VHF—Hi-Band

All WyoLink equipment will be capable of operating across the entire VHF high-band spectrum, from 136 to 174 MHz. Operation across this frequency range will be required to support flexible use of all potential VHF frequencies that may be included in the WyoLink frequency plan. This flexibility will also allow WyoLink radios to establish interoperability with federal, military, and commercial radio users operating in the VHF high-band spectrum. Radio synthesizers shall be programmable so that channel spacing used by City, County, State, and Federal agencies are available.

10.6.2 Narrowband

The FCC now has mandated requirements to eliminate all wideband equipment and systems. All new purchases of public safety equipment (radios and infrastructure) will be capable of operating in narrowband modes. Parts of WyoLink system may operate initially in wideband mode to give sufficient time during transition. The Statewide Mutual Aid channel is the primary example of wideband analog operation. The Statewide Mutual Aid channel will eventually be converted to narrowband operation; it will be retained to provide interoperability with analog conventional users.

10.6.3 Project-25 Digital

The WyoLink system will be designed to meet Project-25 standards. All new equipment (radios and infrastructure) purchases will be Project-25 compliant. WyoLink mandates compliance all applicable standards of Project-25 as only viable direction for enhancing interoperability, ensuring eligibility of cooperative Federal funding, achieving spectrum

efficiency, obtaining user-friendly equipment, ensuring competitive procurement, and providing for graceful forward migration.

Project-25 is the predominant public safety standard for mobile communications. Project-25 is defined under ANSI 102, supported and defined by APCO, NASTD, and Federal agencies. Phase-1 standards (certified by ANSI in 1998) are required. The standard allows a high level of interoperability between manufacturers and systems in today's modern digital radio environment. Phase-2 standards are still in development. They are will to be backward compatible with Phase-1 standards and will add an additional layer of multiplexing, thereby doubling the number of available talk channels.

WyoLink has adopted the suite of Project-25 open standards because it allows purchasing of interoperable subscriber equipment from any Project-25 manufacturer and provides the standard-based features needed by the user community as public safety radio technology evolves. All Federal agencies are in the process of upgrading their systems to Project-25.

The Proposer shall include in the proposal a statement verifying that the proposed system complies with Project-25 Phase-one standards. This statement shall indicate which of the specific standards apply to the system and the parts of the system to which the standards apply. This statement shall be in the form of the table listing: the Project-25 standard, the system subset to which applies, and the section and/or subsection of the proposal in which the system subset is described.

10.6.3.1 Project-25 (Phase 1) / ANSI 102 Standards

Project-25 standards documents are available from The Telecommunications Industry Association. They may be ordered online at > <http://www.tiaonline.org/standards> <

The version of Project-25 standards documents in effect at time of RFP publication shall apply.

10.6.3.2 Project-25 — Phase-1 Pending Standards

Currently pending adoption are Project-25 standards relating to: Inter-RF Subsystem Interface, Console Subsystem Interface, and Fixed-Station-Interface. Should these pending standards receive formal adoption during the course of the project, WyoLink will adopt the standards and apply them as solutions to interface issues addressed elsewhere in these requirements.

The implementation of newly adopted Project-25 standards shall be required, and will be treated as a project option for budget purposes that shall be offered by the contractor at cost reflecting the same discount rate used within the proposals.

10.6.3.3 Project-25 — Phase-2 Standards

It is recognized that Project-25 phase-2 standards are presently evolving. WyoLink may eventually adopt Project-25 phase-2 standards. Therefore, it is prudent to pre-position the WyoLink system technologically for eventual upgrade. (See §10.6.6)

The Proposer shall provide a brief analysis of the current state of Project-25 Phase-2 standards, and shall provide a best case / worst-case summary of the potential impact of the standards on the WyoLink system. During the course of the project, the selected Proposer shall keep the WyoLink Project team apprised of developments in this area.

10.6.3.4 Project-25 Features Declaration

The Proposer shall complete the Project-25 features declaration table below, adding table rows sufficient to address all conventional and a trunking features, including features not specifically addressed in these requirements but encompassed within the Proposal.

- **MN = Mandatory** — To be P25 compliant, equipment must incorporate the requirement.
- **SO = Standard Option** — A feature that, if offered by a manufacturer, must be built to the P25 standard (insures interoperability).
- **MO = Manufacturer’s Option** – A manufacturer specific feature, may be proprietary to that manufacturer, and is not required to be P25 compliant.
- **IPR = Intellectual Property Rights** — A feature proprietary to that manufacturer
- **IPR-L = IPR Licensed** — A proprietary feature that has been licensed by the manufacturer that other manufacturers may incorporate the feature.

List each feature — Put an X in each appropriate box — Add rows as needed.

| System Feature | MN | SO | MO | IPR | IPR-L |
|----------------|----|----|----|-----|-------|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| System Feature | MN | SO | MO | IPR | IPR-L |
|----------------|----|----|----|-----|-------|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

10.6.4 Multimode — Backward Compatibility

WyoLink requires that all subscriber equipment be capable of multimode operation. Multimode operation is defined as the ability to integrate Project-25 digital-conventional (CAI), Project-25 digital-trunking, analog conventional narrowband, and analog conventional wideband modes of operation into different user channels of a single radio template. Multimode operation is mandatory in order to support interoperability with existing public safety radio communications operating under each of the describe modes. The ability to operate with analog conventional modes will be essential to the smooth transition of user agencies onto the WyoLink system, without mandating a sweeping replacement of all current user radios. Operations within the WyoLink system will be carried out using trunking modes. Conventional mode Project-25 operations will be critical for certain interagency and interstate operations.

10.6.5 Reliability

The WyoLink system design shall emphasize the highest levels of reliability.

10.6.5.1 No Single-Point-of-Failure

Each element of the WyoLink system design will reflect a philosophy that the failure of or damage to no single component or system block shall result in a loss of mission-critical service to public safety users. This will require that critical system components be fully redundant. Likewise, dual transmit and receive antennas shall be used with half of the RF channels going to each antenna pair, so that the loss of one antenna will not render an entire site inoperable.

10.6.5.2 Automatic Database Backup

All WyoLink system-management databases shall be configured for automatic periodic backup. In the event of catastrophic failure, the availability of recent backup data will be a vital component of system recovery.

10.6.5.3 Fault Detection and Alarms

The WyoLink system shall self-monitor, detect faults, and generate alarms in response to fault conditions. The monitoring / telemetry subsystems shall include reporting of site condition information, such as: commercial power status, DC-power system status indications, building temperature, door alarms, etc.

System alarm reporting shall be displayed at a system-monitoring terminal at the master control site. System alarm and status information shall also be available through a dial-in connection, which will feature very robust security protocols to prevent possible system tampering through the dial-up connection.

10.6.5.4 Secondary Master Control Site

The consultant for the Wyoming Public-Safety Mobile Communications Plan recommended that WyoLink incorporate a fully redundant second master control site, perhaps located in Casper Wyoming. The function of this site would be to take over WyoLink system control in the event of a catastrophic failure, natural or man-made, at the primary master control site in Cheyenne. This site would automatically maintained a redundant master control database, and would function and they "hot standby" mode, so that WyoLink users would experience minimal loss of service in the event of a catastrophic event. It is recognized that developing and maintaining a secondary Master control site represents a significant fiscal impact.

The Proposer shall describe within this subsection the functions of and the development requirements for a fully redundant second master control site. This evaluation shall assume that WyoLink provides site infrastructure. This feature shall not be incorporated into the core system cost nor entered into the Cost Proposal. Describe the cost within this subsection of the Technical Proposal.

10.6.5.5 Disaster Recovery Plan

The Proposer shall describe within this section, as an alternative to developing a fully redundant second master control site, a Disaster Recovery Plan. The plan shall assume the catastrophic loss of the Cheyenne master control site and of the microwave link connecting it to the system.

Describe the sequence of events and resources required to return WyoLink to its full capabilities under conditions where (a) another building on the WyDOT Cheyenne campus could be utilized, and (b) where it was necessary to utilize a location at the WyDOT facility in Casper Wyoming that is served by the WyDOT microwave system.

Describe the cost, based on today's dollars, of such a disaster recovery event within this subsection of the Technical Proposal.

10.6.6 Upgradeability

WyoLink will adopt software and firmware upgrades in the course of ongoing system maintenance.

The Proposer shall describe the process for handling software and firmware upgrades. The description shall address

- Implementation procedures,
- Quality control and acceptance testing,
- Conformance to existing and emerging Project-25 standards, and
- A process to insure that software and firmware upgrades do not result in a loss of service to WyoLink user agencies employing subscriber units produced by other manufacturers.

10.7 FUNCTIONAL REQUIREMENTS

The following WyoLink features have evolved during the process of collecting information, interviews with stakeholders, discussions with the Project Team, and careful consideration of the Steering Committee during the development of the WyoLink Planning Report.

In describing WyoLink features and functions, it is critical to maintain the distinction between the WyoLink system and subscriber units. The WyoLink system, defined in this RFP, will support a variety of features and functions while the subscriber units are the actual devices that provide that function or feature to the user. While subscriber units will be procured as part of the pilot phase they are intended to serve as demonstration devices. Procurement of subscriber equipment will be the responsibility of WyoLink user agencies. Subscriber devices are described herein to provide a greater understanding of the system requirements.

10.7.1 Trunking

Due to the large number of subscriber units and the operational requirement for a large number of distinct communications channel, the necessity of trunking technology is clearly indicated.

WyoLink intends to implement open standards. WyoLink will be designed such that any subscriber unit manufactured to conform to Project-25 trunking standards, regardless of manufacture, will operate on the system. Therefore, WyoLink will operate in compliance with Project-25 trunking standards. WyoLink does not intend to implement

enhancements or additions to the Project-25 standards that exclude operation of subscriber equipment from other manufacturers, unless such enhancements or additions are licensed to multiple manufacturers. (See §10.6.6)

WyoLink shall support all mandatory Project-25 trunking features.

The Proposer shall identify and describe all Standard Optional Trunking Features (features that if provided must conform to Project-25 standards) provided within the proposed system. The description shall clearly identify the impact of implementing Standard Optional Trunking Features on the ability of WyoLink user agencies to operate subscriber equipment provided by other manufacturers.

10.7.1.1 Talk-Groups

WyoLink will support a large number of talk-groups, with some operating statewide and others utilize within regional operational areas. (See §11.2.2) Talkgroup features will allow WyoLink to prescribe certain talk-groups to operate within specified zones. Talkgroup operation will accommodate multiple types of operational calling, and shall provide features to insure communication in the event of system busy. Talkgroup management features will also allow flexible assignment of priorities, with emergency signals designated for overriding highest level of priority.

The Proposer shall describe the features and functions available in the talkgroup structure and talkgroup management system in incorporated into the proposed trunking system. The description shall specifically address any limitations on talkgroup planning or any specific beneficial features. (See §10.6.3.4)

The ability to establish exclusive use of certain talkgroups shall be inherent in the process of programming template development for individual radios.

10.7.1.2 Roaming

WyoLink will support statewide roaming. WyoLink will be designed to accommodate statewide roaming whereby any subscriber can communicate to their “home” area from anywhere within the state. It is anticipated that WyoLink will prohibit roamers from “dragging” their home traffic with them when roaming out of their home area. One suggested solution is to provide for individual talk-group programming by individual trunking site to enable this function to be tailored on an individual user agency talk-group basis. The system will provide a method to manage, monitor, limit, and/or temporarily disable this feature on a per user basis, based on system loading issues and the need to reallocate system resources.

10.7.1.3 Individual Unit Identification & Emergency Signal

As an essential data function, all subscriber units will transmit individual unit identification and provide a call button for generating an emergency signal. The system controller will be designed to handle such signaling. However, it is recognized that not

all user-agency console systems will fully support these features. (Upgrading user-agency console systems lies outside of the scope of the WyoLink development project.)

10.7.1.4 System Administration

The WyoLink central control will provide a full feature set of system administration tools and resources. The system administrator will be able to monitor system resource loading, traffic statistics, generate a wide variety of user activity reports, temporarily disable individual users, and perform a full range of system management duties.

The system administrator shall be configured to allow remote dial-in, with a robust security protocol, which shall include a remotely operated manual disconnect of the connecting telephone circuit — for remote access a call will be placed to the State Patrol dispatch center who will activate the circuit; the disconnect will reset when the access call is terminated.

The Proposer shall describe the full scope of system administration and the system security functions and features.

10.7.2 Data Communications

WyoLink data transmissions shall be consistent with Project-25 technical standards referenced elsewhere in this document. While WyoLink would only act as a conduit for many of these data applications, they are described here to provide an understanding of the overall system requirements. Data communication shall be accomplished utilizing the 9.6kbps Project-25 packet data service. (See §11.1.3.)

The Proposer may add credibility to the Proposal by providing reference information about the source and cost of actual applications that are in beneficial use and that would use WyoLink packet data as a conduit. Such information is desirable but not mandatory.

WyoLink shall support the following data applications either as an inherent function of the infrastructure or as an available option based on the selection of subscriber equipment:

10.7.2.1 Automatic Vehicle Location

It is estimated that between 80% and 100% of mobile radio users may equip their vehicles with AVL devices. The system shall provide a wide range of selectable polling rates, with accelerated polling available at dispatcher control during critical incidents such as police pursuits.

WyoLink user agencies will be responsible for implementing subscriber unit AVL and dispatch center GIS applications. However, WyoLink may elect to specify a single application for all agencies if this is doing so would be an advantage. The concept of establishing a centralized AVL-server as part of the WyoLink Master Control Site, with user agencies receiving AVL data on their specific units via a dedicated IP application, is

being considered. This could prove useful during events where emergency service responders from multiple agencies converge, by providing the on-scene commander with appropriate AVL data. Issues related to data security and user permissions must be fully addressed prior to implementing such a concept.

The Proposer shall incorporate into their design the appropriate data communications capacity based on the planning assumptions mentioned.

The Proposer shall describe the GPS interface to be provided and its standards related advantages.

The Proposer shall recommend AVL applications appropriate to the concepts described, shall address the technical issues involved, and shall include the costs as an optional item within the Cost Proposal.

10.7.2.2 Mobile Data Terminal (MDT)

User agencies have expressed significant interest in the use of MDT applications. The principal users would be law enforcement of officers in patrol vehicles; in which the use of data encryption would be highly advantageous. (Information related to specific data applications and interface requirements can be found within the Planning Assumptions section of this document.) Preliminary discussions indicate that Wyoming Department of Transportation field supervisors may consider utilizing MDT's to track the hourly road condition data mentioned in the subsection above. Likewise, the use of MDT's in paramedic units is under consideration. User choices may include provisions for mobile printers, associated with MDT devices.

The Proposer shall recommend MDT applications appropriate to the concepts described, shall address the technical issues involved, and shall include the costs as an optional item within the Cost Proposal. (See §11.2.3)

10.7.2.3 Limited Text Messaging Devices

User agencies have expressed interest in the use of Limited Text Messaging Devices as a means of reducing voice traffic. The ability to send limited text messages to the user vehicles has the potential to reduce the number requiring portable radios while increasing the probability that the message will be delivered. Applications may include bar-code or card-swipe devices, based on user choices.

One example it is that during snow removal operations the Wyoming Department of Transportation crews transmit hourly condition reports from multiple highway locations. Currently, this is done using voice messages, which are handwritten by dispatchers, and then entered into a computer database. Each message consists of the sending unit identity, location, and a dozen possible road conditions. It is envisioned that by combining Limited Text Messaging and AVL devices the entire road condition message could be handled automatically and directly input to a database. This application would

reduce voice traffic, dispatcher workload, and would generate the road report database more quickly.

The Proposer shall recommend Limited Text Messaging applications appropriate to the concepts described, shall address the technical issues involved, and shall include the costs as an optional item within the Cost Proposal. (See §11.2.4)

10.7.2.4 EKG Data Transmission

As emergency medical personnel may not administer certain medical procedures in the field without doctor supervision, the ability to transmit electrocardiogram data to a supervising hospital has the potential to be a lifesaving application.

This is currently identified as a desirable application. Specifications for implementing this feature have yet to be developed. It is addressed here as an indication of data applications that would be of value to WyoLink user agencies. Issues related to HIPAA confidentiality standards, and the advisability of such transmissions being encrypted will need to be addressed before such applications are implemented. In addition, issues related medical equipment electrical safety standards would need to be addressed in interfacing to healthcare equipment. Such interfaces lie outside the scope of this RFP. Assuming all issues are dealt with, this data application could be of great value. It is a reasonable assumption that, if available, this application would be implemented by most EMS units in the state.

The Proposer shall describe a conceptual implementation and describe the technical issues to be surmounted in so doing. Costs associated with such an implementation shall be identified as an option within the Cost Proposal.

10.7.2.5 Signaling / Casual Use

The Proposer shall describe a methodology for casual data use. Casual data use shall be defined as wireless applications that may be accomplished utilizing the 9.6kbps Project-25 packet data during idle periods for activation and/or monitoring various devices such as: SCADA and general data collection applications. The description shall include a cost benefit analysis of such uses.

WyoLink features shall support signaling uses such as activating warning sirens, roadside beacons, or dynamic message signs. Conceptually this would be a keypad operation, interface through the regional dispatch center, whereby a tornado watcher would be able to activate warning sirens directly from their radio. The interface should be programmed to only accept signals from specified users and provide programmable responses based on specific keypad inputs. As envisioned, the output would be a contact closure that could be used for various purposes.

The Proposer shall describe a conceptual implementation and describe the technical issues to be surmounted in so doing. Costs associated with such an implementation shall be identified as an option within the Cost Proposal.

10.7.3 Encryption

WyoLink shall be capable of transmitting and receiving encrypted signals in the P25 CAI conventional and trunking modes. The infrastructure shall support system-wide encryption capability from all sites and all channels. The Proposer shall identify and verify that the encryption features conform to the Project-25 standards for Encryption and Over-The-Air-Rekeying in effect at the time of Proposal. Where features outside Project-25 standards are proposed, such features shall be clearly identified and justified.

WyoLink encryption functions will utilize either the Advanced Encryption Standard (AES) algorithm or the Triple-DES algorithm, based on specific subscriber requirements. The Proposer shall describe the implementation and operational issues associated with the use of each encryption algorithm. Within the Cost Proposal, encryption shall be included within the Detailed Project Budget and within the Total System Infrastructure Cost on the Cost Proposal Summary Form, assuming the implementation of the DES algorithm. Implementation of dual algorithms (AES and DES) shall be addressed as a project option within the Cost Proposal.

The encryption of AVL and MDT data shall be addressed, as this represents a recently identified operations risk factor for critical law enforcement users and a HIPPA related confidentiality issue for EMS service providers.

10.7.4 Dispatch & Console Interfaces

WyoLink will interface to user-agency console systems but will NOT be responsible for upgrading or enhancing those console systems. (To facilitate system capacity design, refer to planning assumptions in §11.2.1.)

The Proposer shall describe the range of console interface options currently available. Based on the variety of console systems in use throughout the state the types of interfaces will vary and will not always support WyoLink functions and features. The minimum level console interface shall consist of a standard duplex (4-wire) tone remote interface of one console channel to one specified WyoLink talk-group. The ideal level console interface shall consist of a full digital interface that supports multiple talk-groups and all WyoLink functions and features. The intention will be to provide, within the interface, the feature set that the console is capable of supporting.

Outputs designed to serve logging records shall incorporate a data signal to provide unit-ID identifier for the active unit, either radio or console.

The Proposer shall address console interfaces as an optional item, describing multiple options within the Technical Proposal and addressing each on a per-unit basis as options within the Cost Proposal, as a complete tabulation of all console interface requirements is not available.

10.7.5 Interoperability Interfaces

WyoLink will support the ability of different WyoLink partner organizations and subscribers to communicate with one another when necessary as a function of the trunking talk-group structure.

Where necessary, additional interface connections will be developed. For Cost Proposal purposes, such interfaces, with the exception of the Motorola 800-Mhz system interfaces (§10.7.5.3), will be addressed as an optional item within the Cost Proposal.

10.7.5.1 Intra-State Interoperability

WyoLink will be designed to provide intrastate interoperability between WyoLink subscribers for normal day-to-day and emergency communications between local agencies, within regions (inter-county), among all state agencies, and Federal agencies (including Warren AFB, Yellowstone Park, and BLM) as determined by WyoLink user agencies.

In this subsection, the Proposer shall describe a recommended methodology by which to establish Intrastate Interoperability. A recommended minimum level and a recommended best approach methodology for such interfaces shall be described.

(This is distinct from the requirement in 10.7.5.5 in that it is assumed that a best approach methodology for Intra-State interfaces would occur at the control system level.)

10.7.5.2 Inter-State Interoperability

WyoLink will provide interstate interoperability to neighboring state and out-of-state radio systems during joint operations. WyoLink will be designed to interface with those mutually cooperating out-of-state agencies to allow interoperability between them and WyoLink users.

In this subsection, the Proposer shall describe a recommended methodology by which to establish Interstate Interoperability. A recommended minimum level and a recommended best approach methodology for such interfaces shall be described.

10.7.5.3 Motorola 800-Mhz Systems

Special attention to design shall be required to the WyoLink infrastructure to interface with the Casper and Cheyenne 800-Mhz systems. The systems either exist as or are propose as Motorola proprietary trunking systems, rather than Project-25 systems.

WyoLink RFP

WyoLink will acquire a VHF trunked system that will overlay the Casper and Cheyenne 800-Mhz trunked systems; WyoLink will buy the connections necessary to provide "seamless interoperability" between the WyoLink and these other systems. WyoLink will not upgrade the Casper and Cheyenne 800-Mhz systems beyond what is required for interoperability in areas where the existing systems' coverage overlaps the WyoLink coverage area. WyoLink will not extend 800-Mhz system coverage elsewhere in the state.

"Seamless interoperability" between WyoLink users and the Casper and Cheyenne 800-MHz users includes: shared talk-groups, talk-group merge, console priority override, and encryption functionality. WyoLink will interconnect such existing features with equivalent WyoLink features, but will not build them into the existing 800-Mhz systems if they do not already exist. Unit-ID functionality is desirable between users of the two systems, but is not vital for seamless interoperability.

Interconnect of the WyoLink system with the Casper and Cheyenne 800-Mhz systems must not degrade any function or feature now provided to users within the existing 800-Mhz system. These interfaces must not degrade any function or feature now provided to users within the existing 800-MHz system, and shall meet or exceed the following performance requirements:

- Interface shall create a functional connection between the master controller of each system with regard to the "seamless interoperability" requirement above
- Interface shall create no ground loop between equipment systems or subsystems
- Interface shall have flat frequency response +/- 0.8 dB from 300 Hz to 2800 Hz
- Interface shall add less than 3% Distortion
- Interface shall add less than 70 milliseconds of delay
- Interface delays shall not cause any loss of speech (a/k/a "audio time clipping")
- Interface shall include supplemental signal for console priority override
- Interface will include supplemental signal for encryption
- Interfaced talk-groups shall be "shared" or "merged"

The Proposer shall describe the methodology by which the Casper and Cheyenne 800-MHz trunked radio systems will be interfaced to WyoLink. The description shall provide system level detail of the interface architecture, shall clearly identify any obstacles to be resolved, and shall cite examples where the Proposer has developed similar or identical interfaces between radio systems to establish interoperability.

The Contractor shall conduct a full demonstration of the interface prior to implementation. The demonstration shall prove the operation of all talk-groups and

functions that will pass to through the interface. (This demonstration shall be integral part of the Factory Integration {Staging} Tests, addressed in section 10.8.3.)

10.7.5.4 Presumed Project-25 ISSI

As an alternative for each of the above interface applications, the Proposer shall describe in this subsection and include as an optional item in the Cost Proposal, a Project-25-compliant Intra-Subsystem Interface (ISSI) design, to be installed at a later date upon completion of the ISSI standard and production of ISSI Fixed Network Equipment (FNE).

10.7.5.5 Conventional Station Interfaces

WyoLink intends to implement the FCC specified VHF interoperability channels by interfacing analog conventional mode base stations into the WyoLink talk-group structure. Existing narrowband capable base stations will be used for this purpose, with additional base stations purchased as required. However, the option of providing simulcast VHF interoperability channels within specified regions is being considered.

The Proposer shall describe the methodology for integrating a conventional base station into the WyoLink talk-groups. The description shall include the details of functional and technical issues associated with conventional station interfaces. This feature shall address the issue as an option within the Technical Proposal and Cost Proposal. Cost information shall be provided for a representative installation using an existing base station and for a representative installation using a base station provided by the Proposer. The Proposer shall assume that existing base stations are configured for conventional 4-wire (tone remote) and 6-wire (E/M) type interfaces.

The Proposer shall describe the methodology, along with functional and technical issues, associated with developing conventional analog VHF interoperability channels using voting receivers and simulcast transmit within operational regions or zones. The description shall contain a recommendation for the appropriate size of such zones. This feature shall address the issue as an option within the Technical Proposal and Cost Proposal. Cost information shall be provided for a representative installation using an existing base station and for a representative installation using a base station provided by the Proposer.

10.7.6 Paging System Interface

WyoLink will not support paging as part of its infrastructure, but will provide an interface to support existing analog tone of voice paging systems. The interface shall allow audio from a selected talk-group to be rebroadcast on the existing paging system. The interface shall consist of an analog audio signal, conforming to current technical standards for level and distortion, and a keying signal.

The option of accomplishing this interface through the radio console at each user dispatch location is acceptable, as doing so would minimize the need to transmit the signal from the master control site to the user agency, and as the dispatch console systems are currently supporting the existing paging systems.

10.8 ACCEPTANCE TEST PLAN

10.8.1 Overview

The Proposer shall provide a set of comprehensive acceptance test procedures. By detailing specific test and measurement parameters expected, the acceptance test procedures provide an additional verification of the Proposer's understanding of and compliance with the RFP requirements and industry practices.

The Acceptance Test Plan shall provide a meaningful and repeatable set of baseline measurements to facilitate ongoing system performance evaluation and maintenance. Therefore, wherever possible, tests should be designed that can be repeated by and accomplished using test equipment available to field service personnel. (See §10.9.5)

It is envisioned that the test plan will feed information into the documentation and inventory control requirements addressed elsewhere in this document. As such, the Acceptance Test Plan shall contain an extensive documentation component. Un-documented tests shall be assumed to have not occurred.

The WyoLink radio system will be built one region at a time; therefore, acceptance testing will be on a per-region basis, with interoperability between multiple regions tested as the network is built out, and final acceptance when the overall WyoLink network is completed. The testing requirements include but are not limited to the following:

- Pre-Installation Inspections & Tests
- Factory Integration (Staging) Test
- Configuration Audits
- Installed Functionality Testing
- Coverage Testing
- Interoperability Regional / Statewide Performance Demonstrations

(In preparing the Technical Proposal, the Proposer shall use this section to summarize the Acceptance Testing proposal and may delete the Overview subsections if desired.)

10.8.1.1 Responsibilities

The Contractor shall be responsible to supply all necessary test equipment to perform the specified tests. This shall include supplying vehicles required to conduct coverage drive tests.

10.8.1.2 System Failure Level Definitions & Responses

Due to the complex nature of the WyoLink network, a certain number of errors and failures are inevitable during acceptance testing. The following is a list of Levels for such failures during acceptance testing:

- Level-1 failures are major system failures that render the system completely unusable or inoperable. Just one of these is unacceptable and requires a detailed explanation and a complete restart of the test period.
- Level-2 failures are major and minor system failures that significantly reduce system operability and usability. Just one of these is unacceptable and requires a detailed explanation and a complete restart of the test period.
- Level-3 failures are minor system failures that minimally reduce system operability or usability. These are undesired but acceptable and requires a detailed explanation. A complete restart of the test period is not required.
- Level-4 failures are minor system failures and punch-list items that have little effect on system operability and usability. These are undesired but acceptable and requires an explanation. A complete restart of the test period is not required.

10.8.1.3 Organization of Acceptance Test Plan

The Acceptance Test Plan will contain several sections indicating chronological sequence of test to be performed. Recognizing that certain tests will be repeated, and in an effort to reduce redundancy within the Proposal, the last section of the plan will be a catalog of tests defining the specific steps, conditions, and results for each test. As appropriate, within the Acceptance Test Plan, the Proposer shall identify the specified tests by name and shall reference the subsection number within the test catalog for that test.

10.8.2 Pre-Installation Inspections & Tests

10.8.2.1 Site Inspections

WyDOT is responsible for the site shelters. The Contractor shall schedule, early in the project, site visits to inspect each site to ensure conditions are proper and space is adequate for new equipment. Following the site inspections, the Proposer will detail where new equipment will be located, existing site equipment that needs to be relocated, modifications required to accommodate the new equipment, and any site/shelter/tower deficiencies that will be unacceptable for new WyoLink installation and/or operation.

The Proposer shall describe site criteria to be verified before the installation of equipment. It is recognized there may be redundancy between this section and section 10.4. In this section described the methodology that will be used to verify the site requirements.

10.8.2.2 Microwave Performance Tests

WyDOT will be responsible for the replacement digital microwave system. The Contractor will examine test data (and may conduct its own tests) to verify compliance with WyoLink backbone needs. It shall be the Contractor's responsibility to validate end-to-end performance of the control circuits, and report any deficiencies to WyoLink.

The Proposer shall specify performance testing be used to verify that the WyDOT microwave system provides sufficient circuit connectivity for system operation.

10.8.3 Factory Integration (Staging) Tests

This testing provides the ability to ensure that the equipment meets the minimum required level of specifications. The Proposer must provide factory integration (staging) tests and pre-ship acceptance on all equipment that will be provided to create a fully functional system, including interfaces to simulated non-WyoLink equipment and systems. This testing shall address all technical parameters, and functional and operational tests.

Testing will cover the full hardware and software functionality of all equipment. Testing shall be done using the equipment (hardware and software) fully integrated and configured, as it will be implemented in the field. Acceptance for shipment to the sites shall be granted only after WyoLink has received all test results and has verified that the equipment has passed all specified tests. The WyoLink Project Team may elect to witness factory tests.

The Proposer shall specify testing to be used at the completion of factory integration, before shipment. It is recognized that these tests will rely heavily upon simulations of field conditions. Therefore, the description should also indicate the limitations of factory integration testing.

10.8.4 Configuration Audit

A careful inspection must be done at each installation site to ensure workmanship consistent with best current practices.

The Contractor will perform a physical configuration audit at each equipment location to verify that the installed system is accurately documented, thereby creating the network management and configuration control database. WyoLink staff, at their option, shall

witness the audit. This audit will be conducted at each location immediately after installation of each site or service area, and will include:

- Verification that the WyoLink radio equipment is programmed on the frequencies identified in the system master frequency plan and as listed on the station license, a copy of which shall be posted at each site
- Verification of the tower latitude and longitude are as stated on the station license
- Verification that WyoLink antennas are mounted at the elevations specified on the respective station license and if directional that they are oriented to the correct azimuth and polarization identified in the system master frequency plan and the station license
- Verify that all site drawings correspond accurately to all installed equipment fixtures, racks, and cabinets
- Verify site wiring accurately corresponds to the cabling lists
- Inventory major material items comprising each site
- Document uncorrected discrepancies remaining at the site, to be completed before final site acceptance.

The Proposer shall describe the recommended steps to ensure that all equipment is properly installed and configured. The description shall include specific tests to measure battery impedance for batteries within DC power systems and for batteries within UPS systems.

10.8.5 Installed Functionality Testing

The Proposer shall conduct testing on each phase of WyoLink installation to verify the functionality of all equipment and systems deployed in the field. Major elements of the system include, but are not limited to, the following:

- Land-Mobile Radio (LMR) Tests
- Project-25 Conventional Mode Tests
- Project-25 Trunking Mode Tests
- Control System Testing
- Failure Mode Testing

The sequence of tests show began by verifying basic radio site parameters, and advance through the verification of high level Project-25 trunking features.

10.8.5.1 LMR Tests

The Proposer shall describe the sequence and order of tests to be performed to verify conventional radios site performance, such as:

- Transmitter Power
- Transmitter Frequency
- Transmitter Modulation
- Voltage Standing-Wave Ratio (VSWR)
- Receiver Sensitivity
- Receiver Desensitization
- Pre-amplifier gain (if used)
- Combiner Loss
- Multi-coupler Loss

LMR testing shall also verify performance and successful integration of existing conventional VHF equipment as part of the transition plan, and prescribed interoperability channel base stations as required.

10.8.5.2 Project-25 Conventional Mode Tests

The Proposer shall describe tests required to verify that each base station is performing according to specification for Project-25 transmission and reception.

10.8.5.3 Project-25 Trunking Mode Tests

The Proposer shall describe test required to verify that each site is performing according to specifications for Project-25 trunking operations. The tests shall include verification of all call types, data communications, encryption, user trunking-response tones, etc.

Talkgroup calls to be tested, but are not limited to:

- System All Call
- Talk-group Call
- Emergency Talk Group Call
- Multi-group Call
- Private or Individual Call
- Data Communications

Trunking system features to be tested in include, but are not limited to:

- Continuous Control Channel Update

- Transmission/Message Trunking
- Call Queuing
- Call Priority
- Emergency Call Priority
- Call Validation
- Confirmed Call
- Unconfirmed Call
- Multi-site Routing
- Digital Voter Functional Tests (if used)
- Analog Voter Functional (if used)

10.8.6 Master Control System Testing

The Proposer shall describe the sequence of tests required to verify all functions and performance criteria of the Master Control Site and the integration of control for each site. It is anticipated that this set of tests would involve extensive system loading in capacity testing as well as the verification of redundant operations.

Should a redundant master control site be developed, Master Control Site for test will be repaid and redundancy functions verified.

10.8.6.1 Failure-Mode Testing

The Proposer shall describe trunking system response to and recovery from system failures. Recognize potential failures in include, but are not limited to: individual base station/repeater failure, system switch failure, trunking control channel interference, and receive preamplifier failure.

The test plan will simulate each potential failure mode and demonstrate successful failure recovery. As a further part of failure-mode testing, automatic alarm reporting will be demonstrated, and the steps for reporting equipment failure and service problem escalation procedures will be tested.

10.8.7 Coverage Testing

The Proposer shall describe a detailed test methodology to verify that the WyoLink coverage goals have been met.

Coverage testing shall require extensive drive testing and shall use vehicle mounted antennas identical to those prescribed for subscriber units.

It is expected that the output of coverage testing, besides voluminous data, will be actual performance plots that appear identical to coverage prediction plots generated during the design work.

Coverage testing shall be performed and documented on a site-by-site basis, validating the coverage performance of each site. Coverage should also be evaluated regionally to indicate the composite performance of system sites. Coverage testing shall not be performed until all sites within a region are operational.

Separate sections of the test procedure shall be dedicated to verifying, via field measurements, data-transfer capability and voice communications. The voice communications section shall describe the regional area to be tested, the testing methodologies, the coverage availability requirements, and the desired channel performance (BER of 2.6% or better). The testing methodology used will be based on the Telecommunications Industry Association (TIA) Telecommunications Systems Bulletin TSB88-A, titled "Wireless Communications Systems, Performance in Noise- and Interference-Limited Situations, Recommended Methods for Technology-Independent Modeling, Simulation, and Verification."

Proposer supplied coverage test procedures will be used to verify that the required coverage availability performance is provided by the network for voice and data communications throughout the service areas within the State. Coverage testing will be performed on a regional area basis, as several sites usually contribute to the overall area coverage.

10.8.7.1 Responsibilities

The primary burden of resources is placed on the Proposer for this testing:

- The Proposer will prepare all drive-route planning and/or test-location planning, subject to approval by WyoLink
- The Proposer will provide all test equipment that is necessary to conduct its tests
- The Proposer will provide test vehicle(s), driver(s), test technician(s) and all ancillary equipment necessary to conduct the tests and record the data
- At least one WyoLink representative shall be present during testing
- If, for any reason(s), test measurements are deemed unusable or inaccurate by WyoLink, the test will be performed as many times as necessary to compile accurate and acceptable data
- As coverage is statewide for mobile and regional for portable, there will not be a requirement for a maximum acceptable number of nonconforming adjacent tiles, however these areas will be noted for future review.

10.8.7.2 Coverage Test Procedure

The coverage test procedure will be used to verify that the specified coverage availability and channel performance are provided by the radio system throughout the service areas specified for mobile communications within Wyoming. The Proposer is limited to three classifications of service areas as follows:

- Broad Service Area is any area that has a sufficient number of test ‘tiles’ that are uniformly distributed and that can be accessed by roads for coverage verification. A Broad Service Area may also contain Regional Service Areas, as well as portable coverage area requirements.
- Regional Service Area is any area that has a small proportion of roads in relation to the geographical area contained within the service area. These areas may or may not have sufficient road coverage to ensure that the required number of uniformly distributed test tiles can be accessed utilizing a conventional four-wheeled vehicle (automobile, truck, sport utility vehicle). A Regional Service Area may also contain Specific Service Areas, as well as portable coverage area requirements.
- Specific Service Area is any area deemed to require coverage, but may require special access methods to test. The Specific Service Areas will be based on a geographical area that can vary greatly in size. The area can be as small as a specific address, or may encompass a larger area such as a city or town. The Specific Service Areas will be tested separate from the test tiles used to validate Broad or Regional Service Area coverage.

The Proposer shall describe a methodology for validating coverage in each of the above described service area conditions.

10.8.7.3 Interference

In the course of all radiofrequency testing, including coverage testing, test personnel shall be observant for symptoms of interference. Where interference symptoms are observed they shall be recorded in the testing records, and every reasonable effort shall be made to identify the origin of the interference.

10.8.7.4 Bit-Error-Rate Testing

For both voice and data digital services, a Bit-Error-Rate (BER) test will be performed on both the talk-out and talk-in paths. Talk-in testing may be evaluated using the talk-out test with an agreed-to differential applied that corresponds to the difference in link budget between these paths. However, irrespective of the test/analysis method, satisfactory in-service two-way performance is required. Before starting drive tests, transmitter measurements from each network site in use shall be made and adjusted as necessary to site specifications.

The test equipment will measure BER while traveling in a drive-test vehicle or by alternative method approved by WyoLink, for all coverage verification. The test vehicle will be equipped with a mobile antenna system identical to that used by WyoLink users, and be mounted in the same location as a user vehicle antenna will be mounted. Gains/losses associated with the mobile antenna and cabling must be known, and the recorded data adjusted accordingly.

Mobile equipment used for testing must be representative of equipment that will be used by WyoLink users, and available to WyDOT Telecommunications radio service personnel. All equipment must be certified that it is performing within its specifications. At minimum, the data collected will consist of received signal strength (RSS), BER results, GPS position data (latitude & longitude), date and time stamp for all measurements, seasonal conditions (e.g., foliage), and general weather/environmental conditions. All data collected shall be made available to WyoLink staff for review and analysis.

10.8.7.5 Testing in Less-than-Full-Foliated Conditions

Full-foliated conditions are considered to occur from June 1 to October 1 inclusive. If testing is done under less-than-full-foliated conditions, coverage acceptance will only be conditional. Retesting of the service area using the same drive route shall be repeated to verify compliance during full-foliated conditions. Final acceptance will only be granted if no coverage-related problems occurred during the full-foliated conditions.

10.8.7.6 Re-testing Methodology

If a service area fails to meet the coverage performance requirements, the Proposer will correct the coverage problem, after which re-testing of the entire service area will be required, using the same drive route and/or test locations. This process will continue until the service area meets the criterion for passing.

10.8.7.7 Portable Service Area Testing

Selected areas of the State where portable subscriber unit operation is critical will require that drive test thresholds be adjusted for lower signal levels due to the lower antenna gain and transmit power. Portable operation will be spot checked along the drive route at locations mutually agreed to by the WyoLink and the Proposer. Additional margins for in-building testing may also be required and will depend on the actual coverage area.

10.8.7.8 Data Coverage Test Procedure

The Proposer shall propose a data-coverage test procedure based on the technology proposed by the Proposer. A modified process for testing the voice coverage will be followed to verify data coverage, as data communications incorporates the ability to retry is communications is not confirmed.

Data coverage definitions will include a message throughput component to ensure that data messages are delivered throughout the coverage reliably in an acceptable period of

time. A Message Success Rate within a particular number of retries over a defined service area will be specified.

10.8.8 Interoperability Testing

After complete WyoLink system testing, the Proposer shall move into interoperability testing. Interoperability testing shall include the ability of WyoLink subscriber radios to communicate to legacy VHF systems, joint inter-system testing (i.e., Casper/Cheyenne 800-Mhz systems, Federal systems such as Yellowstone National Park, Warren Air Force Base, and the Bureau of Land Management) and systems in participating neighboring states.

The following inter-site testing with other network sites will be performed after satisfactory completion of performance and coverage testing of each individual site:

10.8.8.1 Mobility Management

While communicating in the new site's area, the tester will travel into the adjacent site's coverage area and note that the communication continued without interruption as the service area changed from the new site's area to the adjacent site's area. It is desirable to perform this test in an area where the radio signal coverage transition to an adjacent region is more abrupt.

10.8.8.2 Internetworking with Legacy Systems

Test the predefined functionality to be provided through interfaces with WyoLink user units and consoles. This will also include tests of inter-regional communication with other systems through appropriate gateway interfaces.

10.8.9 Operational Testing by Users

After acceptance of regional areas such as the pilot system, selected WyoLink partner agency personnel will be issued subscriber units to perform functionality tests using portable radio units, consoles, and vehicles with installed WyoLink subscriber voice and data terminal devices. The operational system testing shall proceed with sufficient system loading to demonstrate actual working conditions and environment. Testing shall include interface testing to "foreign" systems (i.e., data servers, non-WyoLink sites or systems). As portions of WyoLink become operational, performance shall be monitored, including:

- Reported poor coverage areas
- Reported poor audio quality
- Reported poor data performance
- System/channel uptime and overall performance

10.8.10 Acceptance Test Catalog

The Proposer shall **insert a subsection** describing **each** test involved in the acceptance test process. The description shall include step-by-step details of how the tests are to be performed, the responsible party to perform the tests, the parameters to be tested, when the tests will be conducted, the expected result, and the data to be recorded. In describing each test, reference shall be made to the standards documents that prescribed details of the test. In a case of Project-25 trunking tests reference shall be made to tests described in the pending standards proposal.

10.9 MAINTENANCE

The Wyoming Department of Transportation, Telecommunications Program, will be responsible for the ongoing maintenance of the WyoLink system infrastructure, which includes the master control system and all mountaintop sites. WyDOT Telecommunications Program currently has a well-qualified 17-member technical staff. Individual user agencies will be responsible for the maintenance of subscriber equipment belonging to that agency.

10.9.1 Warranty

The minimum warranty period for equipment under this contract shall be two years. (See §3.3.7)

The Proposer shall describe the warranty provisions associated with the proposed system. The description, in plain language, shall identify the extent of warranty coverage, specific exclusions, and the sequence of steps required for service and support under the warranty provisions.

The Proposer shall describe the terms and cost of any extended warranty provisions available, with the latter identified as an option within the Cost Proposal.

10.9.2 Service Contract — Master Control Site

The Proposer shall describe the terms and cost of the Maintenance Support / Service Contract to provide remote monitoring and ongoing support of the WyoLink Master Control Site, with the latter identified as an option within the Cost Proposal. The support of software interfaces shall be an integral part of a service contract. The service contract terms shall clearly identify support response times based on failure criticality.

10.9.3 Module Exchange — Radio Site Equipment

The Proposer shall provide an ongoing module exchange program in support of system-module-level support of all radio site equipment beyond the warranty period.

The Proposer shall describe the recommended level of spare modules to be maintained in support of radio site equipment, the steps required to use the module exchange program, and the specified turnaround time for module exchange. The cost for module exchange shall be identified as an option within the Cost Proposal.

10.9.4 System Administration

The Proposer shall recommend a plan for ongoing system administration. The recommendations shall address the number in staff and the skill set required to perform these duties.

The Proposer shall also describe Contract Service to address this requirement, and shall provide cost information within the Cost Proposal.

10.9.5 Subscriber Unit Support

The Proposer shall provide a plan for subscriber unit support, beyond warranty. The plan, as envisioned, would be a statewide maintenance agreement to which user agencies could subscribe. Cost information shall be addressed as an option, on a per-unit basis within the Cost Proposal.

10.9.6 Test Equipment

The Proposer shall include in the proposal a complete listing of service test equipment that will be required to maintain the WyoLink system. The test equipment proposal shall include the make, model, and cost for the recommended equipment.

Purchase of test equipment proposed under this RFP will be at the discretion of the WyoLink project team. The recommended equipment and the cost of that equipment will not be a factor weighed in the evaluation of the proposals, but shall be listed as an element of a complete proposal.

10.9.7 Parts Availability

The Proposer shall include in the proposal a commitment to provide repair parts availability for a minimum of 10 years following the completion of WyoLink system development.

10.10 TRAINING

10.10.1 Radio Users / Dispatchers

It is currently proposed that WyoLink will collaborate with Wyoming community colleges to develop classroom and online interactive training programs for WyoLink

radio users. The Proposer's role in this partnership shall involve Train-the-Trainer activities and assistance in developing appropriate course materials.

The Proposer shall describe within the proposal the scope and methodology for user training. Assume that a Train-the-Trainer approach will be employed, with twenty trainers involved — two during Phase-1, ten during Phase-2, and two during Phase-3 through Phase 6. The Proposer shall provide costs within the Cost Proposal for additional Train-the-Trainer sessions.

The Proposer may attach, outside the proposal, relevant examples of lesson plans and/or interactive training resources. Only one copy of such training examples need be provided. The evaluation team may seek the assistance of a subject matter expert to evaluate training materials, and will weigh that experts report into the overall proposal evaluation.

Where interactive training resources are recommended, the Proposer shall provide cost for licensing multiple users / users for such material as an option within the Cost Proposal.

10.10.2 Technical Staff

The Proposer shall describe within the proposal the training required to equip the technical staff to maintain the new WyoLink system. The training proposal shall describe the training components that will be made available at WyDOT facilities and the training that will require out-of-state travel.

The Proposer shall include in the budget proposal line items specifically addressing technician training. The WyDOT Telecommunications Program currently has a 17 member field-technician staff. The training proposal shall address the need for and cost of future training, based on the possibility of staff changes.

10.10.3 System Administrators

The Proposer shall describe within the proposal the training required to equip those persons who will be designated as system administrators to effectively carryout those duties. The training proposal shall describe the training components that will be made available at WyDOT facilities and the training that will require out-of-state travel. The training proposal shall address the need for future training, based on the possibility of staff changes throughout the life of the system.

The Proposer shall include in the budget proposal line items specifically addressing system administrator training. For planning purposes, it is anticipated that four people will receive system administrator training.

10.11 OPTIONS

This section may be left blank or used to propose additional features or functions that the Proposer may recommend that further address the overall objectives of the WyoLink system.

10.12 SUBSCRIBER EQUIPMENT

The Proposer shall provide in this section, and address in the corresponding sections of the Cost Proposal, available subscriber equipment.

Subscriber equipment should be addressed in multiple levels.

- Tier 1 — a unit with entry-level features, supporting at least 48 modes/channels, unit ID, and emergency button (failure to offer a Tier 1 radio will not be considered a significant deficiency)
- Tier 2 — a unit with display and limited keypad, supporting at least 256 modes/channels, encryption, AVL, unit ID, and emergency button.
- Tier 3 — a unit with Tier 2 features and equipped with a full keypad

(The Proposer shall insert appropriate sub-sections to address the range of subscriber equipment offered.)

10.12.1 Mobile Radios

The Proposer shall describe mobile radio equipment that conforms to WyoLink requirements addressed previously in this section. Mobile radio offerings shall be addressed as a package incorporating a 100-watt radio, all standard installation hardware and cables, with a 3db gained antenna.

Proposers are encouraged to offer multiple installation configurations. Such installation configurations may include dash mount, remote mount, dual control head, discrete control head, etc.

Mobile radio specific accessories should be addressed within this subsection.

10.12.2 Portable Radios

The Proposer shall describe portable radio equipment that conforms to WyoLink requirements addressed previously in this section. Portable radio offerings shall be addressed as a package incorporating a 5-watt radio, an antenna, and a high-capacity battery. The choice of single unit and/or multi-unit chargers shall be offered on an "at time of purchase" basis. The package shall be completed with the selection of a rugged carrying case. (The use of belt clips is discouraged.)

Proposers are encouraged to offer multiple accessory options. Such accessories may include speaker microphones, AVL-equipped speaker microphones, clamshell battery packs, chest-pack carrying cases, ruggedized radio housings, and colored radio housings, etc. Where speaker microphones are offered, the preferred design would allow the replacement of the cord without special tools.

Battery maintenance systems are recommended for all WyoLink portable radio users. The Proposer may either include such systems within their offering or include a recommendation for a preferred third-party system.

10.12.3 Control Stations

The Proposer shall describe control station radio equipment that conforms to WyoLink requirements interest previously in this section and meets FCC requirements for 6.1-meter control station operation. Control station radio offerings shall be addressed as a package incorporating a 25-watt radio, power supply, speaker, and desk microphone. A headset interface shall be offered as an option.

10.12.4 Auxiliary Equipment

The Proposer shall describe auxiliary equipment not addressed in the previous to subsections. Such offerings may include AVL subscriber units, limited text-messaging and signaling devices, mobile-data terminals, etc.

10.13 SUMMARY OF COMPLIANCE

The Proposer shall state that the preceding Technical Proposal, addressed in sections 10.4 through 10.10 inclusively, fully complies, and meets the requirements named in the Request For Proposals, or shall specifically state each exception and provide the corresponding sub section reference.

10.13.1 Technical Verification

The Proposer shall provide a detailing of differences between Test Articles submitted for evaluation and WyoLink requirements. For each difference listed, an action plan shall be provided indicating the Proposer's intentions for meeting WyoLink requirements.

10.13.2 Signal Coverage

The Proposer shall provide a detailing of any exceptions taken to the Signal Coverage requirements.

10.13.3 Design Criteria

The Proposer shall provide a detailing of any exceptions taken to the Design Criteria requirements.

10.13.4 Functional Requirements

The Proposer shall provide a detailing of any exceptions taken to the Functional Requirements.

10.14 EVALUATION OF PLANNING ASSUMPTIONS

The Proposer shall state that the following planning assumptions have been reviewed, and understood as an effort to provide a common point of comparison between proposals.

The Proposer shall offer an evaluation of the Planning Assumptions. The evaluation shall include any recommendations for changes of planning assumptions to address fully the intended goals of WyoLink.

11 PLANNING ASSUMPTIONS

Information regarding the Public Safety Mobile Communications assessment and planning process, which is the foundation of planning assumptions for WyoLink, is available at the WyoLink web site — <http://WyoLink.state.wy.us> — under “Wyoming Public Safety Mobile Communications Plan (Nov 2003).” Binder #1 is survey and initial planning review information. Binder #2 is the final plan information, including the Business Case, Required Features, Timeline, VHF-57 Plan, and System Requirements and Testing documents. Documents posted at that web site should be evaluated, as they constitute important background information for the planning assumptions for this RFP.

Worthwhile and specific references to the Plan, including exceptions to it, may enhance the credibility of a proposal as an indication of the Proposer’s comprehension of the WyoLink requirements.

11.1 INTEROPERABILITY

The Incident Command Structure (ICS) model is the foundation for most emergency management planning in Wyoming.

Extensive information regarding interoperability planning is available at the above referenced Web location. Of particular note: "**Binder #2 — Phase 2 Planning**" section 4.7 of the **Business Case** document provides an interoperability matrix and scenarios.

11.2 PROJECTED SYSTEM LOADING

The initial design of WyoLink will incorporate a minimum of five channels at each site (one control channel, four talk channels). Additionally, 10% of sites shall have seven channels (one control channel, six talk channels). This additional capacity will be for areas where higher traffic is anticipated, such as urban areas. The equipment configuration (racks space and floor plan) for all sites shall provide for eventual expansion that would double the number of talk channels at each site (thus, nine channels at all sites with thirteen channels at 10% of the sites).

To provide for an equitable comparison, all Proposers shall base their planning on the following formulation:

- 57 sites; fifty-one configured as 5 channel (4 talk channels), six as 7 channel (6 talk channels)
- Transmit combiners and receive multi-couplers at thirty sites will be configured to accommodate the addition of the four conventional channels addressed in the Transition Plan (§11.2)

WyoLink RFP

The actual implementation levels may be adjusted based on additional study that is more detailed.

11.2.1 Subscriber Equipment Count

The following listing of subscriber units was derived during the planning process. It should be considered representative but not necessarily the final equipment count. As indicated, some data is missing from the table, but sufficient data exists to provide a reasonable planning assumption.

| Count | Agency Name | Agency Type | Base Stations | Portables | Mobiles | Dispatch Locations | Dispatch Consoles | Pagers | Control Stations |
|-------|-----------------------------------|-------------|---------------|-----------|---------|--------------------|-------------------|--------|------------------|
| 1. | 90th Medical Group (USAF) | Federal | 3 | 36 | 7 | 2 | 3 | | 1 |
| 2. | Albany County | R&B, Fire | 6 | 100 | 700 | 2 | 2 | 60 | 2 |
| 3. | Albany County | SO | 4 | | | 1 | 3 | | |
| 4. | Alpha Communications | Private | 3 | 8 | 18 | 1 | 2 | | 1 |
| 5. | Baggs | Fire | 1 | 5 | 5 | 1 | 1 | | 1 |
| 6. | Baggs | LG | 1 | 4 | 1 | 1 | 1 | | 1 |
| 7. | Bar Nunn | Fire | 2 | 25 | 12 | | | | |
| 8. | Basin | PD | 2 | 3 | 3 | 3 | 2 | | 2 |
| 9. | Bear River | Fire | 2 | 7 | 5 | 1 | | 18 | |
| 10. | Bear River | LG | | | | | | | |
| 11. | Big Horn County | SO | 5 | 14 | 13 | 1 | 2 | | 2 |
| 12. | Big Horn County | Fire | 2 | 10 | 9 | 1 | 1 | | 2 |
| 13. | BLM | Federal | | 350 | 350 | 3 | 9 | | 20 |
| 14. | Buffalo | PD | 6 | 57 | 55 | 6 | 6 | | 6 |
| 15. | Campbell County Memorial Hospital | EMS | 3 | 25 | 13 | | | | |
| 16. | Casper | Fire | 20 | 385 | 168 | 3 | 12 | 30 | 35 |
| 17. | Cheyenne | Fire | 2 | 100 | 30 | 1 | 3 | | 8 |
| 18. | Cheyenne | PD | 2 | 95 | 110 | 1 | 4 | | 0 |
| 19. | Cody | LG | | | | | | | |
| 20. | Converse County | EMA | 10 | 120 | 235 | 7 | 3 | 100 | |
| 21. | Converse County | School | 1 | | 15 | 1 | 1 | | 1 |

WyoLink RFP

| Count | Agency Name | Agency Type | Base Stations | Portables | Mobiles | Dispatch Locations | Dispatch Consoles | Pagers | Control Stations |
|-------|-------------------------------------|-------------|---------------|-----------|---------|--------------------|-------------------|--------|------------------|
| 22. | Daniel | Fire | 2 | 7 | 4 | | | 10 | |
| 23. | Diamondville | PD | 0 | 3 | 3 | | | | 0 |
| 24. | Edgerton | LG | 5 | 14 | 8 | 2 | 1 | | 2 |
| 25. | Elk Mountain | Fire | 1 | 12 | 4 | 2 | 1 | | 1 |
| 26. | Evanston | PD | 2 | 50 | 50 | 2 | 2 | | 2 |
| 27. | Evansville | Fire | 1 | 8 | 2 | 1 | 1 | 7 | |
| 28. | Fremont County | EMA | | | | | | | 2 |
| 29. | Gillette | PD | 9 | 56 | 51 | 1 | 3 | 17 | 9 |
| 30. | Goshen County | SO | 3 | 45 | 20 | 1 | 1 | 0 | 0 |
| 31. | Goshen County | R&B | 2 | | 30 | | | | |
| 32. | Goshen County | School | 1 | 2 | 63 | | 1 | | 1 |
| 33. | Green River | PD | 2 | 28 | 23 | 1 | 2 | | 2 |
| 34. | Hot Springs County | SO | 2 | 20 | 10 | 1 | 1 | | |
| 35. | Jackson (see data for Teton County) | Fire | | | | | | | |
| 36. | Johnson County | SO | 5 | 48 | 44 | 3 | 4 | 11 | 1 |
| 37. | Kemmerer | PD | | | | | | | |
| 38. | Kirby | LG | 0 | | 0 | | | | 0 |
| 39. | Laramie (City of) | PD | 2 | 50 | 25 | 1 | 4 | | |
| 40. | Laramie County | SO | 9 | 70 | 70 | 3 | 3 | 20 | |
| 41. | Laramie County | Fire | 6 | | | | | | |
| 42. | Lincoln County | SO | 8 | 100 | 60 | 2 | 4 | 100 | 4 |
| 43. | Lingle | PD | 0 | 2 | 2 | 0 | 0 | 0 | 0 |
| 44. | Lingle | Fire | 1 | 10 | 12 | 1 | 1 | 21 | |
| 45. | Lingle | EMA | | | | | | | |
| 46. | Lovell | LG | 1 | 2 | 9 | 1 | 1 | | 1 |
| 47. | Lyman | PD | 1 | | | | | | |
| 48. | Medicine Bow | Fire | | | | 1 | 1 | | |
| 49. | Meeteetse | Fire | 0 | 12 | 8 | 2 | | 20 | |
| 50. | Mills | PD | 1 | 10 | 7 | | | | |

WyoLink RFP

| Count | Agency Name | Agency Type | Base Stations | Portables | Mobiles | Dispatch Locations | Dispatch Consoles | Pagers | Control Stations |
|-------|-------------------|-------------------|---------------|-----------|---------|--------------------|-------------------|--------|------------------|
| 51. | Moorcroft | PD, EMS, Fire, LG | 8 | 20 | 20 | 3 | 2 | 35 | 1 |
| 52. | Natrona County | SO | 4 | 35 | 35 | 1 | | 35 | |
| 53. | Natrona County | Fire | | 16 | 43 | | | | |
| 54. | Newcastle | Fire | 1 | 15 | 14 | 1 | 1 | | 1 |
| 55. | Newcastle | PD | 3 | 11 | 7 | 2 | 2 | | 2 |
| 56. | Niobrara County | SO | 2 | 8 | 10 | 1 | 1 | 1 | 1 |
| 57. | North Albany | LG | Many | | | | | | |
| 58. | Park County | SO | 14 | 65 | 40 | 1 | 2 | 100 | |
| 59. | Park County | Fire | 1 | 26 | 25 | 1 | 2 | | |
| 60. | Pine Haven | Fire | | | | | | | |
| 61. | Platte County | SO, EMA | 3 | 36 | 25 | 1 | 1 | | 1 |
| 62. | Powder River | Fire | 3 | 20 | 20 | 1 | 1 | 20 | |
| 63. | Powell | PD | 1 | 16 | 11 | 2 | 2 | | 2 |
| 64. | Prairie Center | Fire | | 5 | 20 | | | 15 | |
| 65. | Rawlins | Fire | 2 | 16 | 12 | 3 | 1 | 30 | 2 |
| 66. | Rock River | LG | 0 | | | | | | |
| 67. | Rock Springs | Fire | | | | | | | |
| 68. | Rock Springs | PD | 3 | 43 | 43 | 1 | 2 | | 1 |
| 69. | Saratoga | PD | 1 | 7 | 7 | 1 | 1 | | 1 |
| 70. | Sheridan | Fire | 1 | 20 | 16 | 1 | 4 | | 9 |
| 71. | Sheridan | LG | 1 | 10 | 60 | 3 | 6 | | 9 |
| 72. | Sheridan | PD | 9 | 40 | 45 | 1 | 4 | | 9 |
| 73. | Sinclair | PD | 0 | 6 | 2 | | | | |
| 74. | Sublette County | SO | | | | | | | |
| 75. | Sundance | PD | | | | | | | |
| 76. | Sweetwater County | SO | 6 | 43 | 40 | 1 | 2 | 8 | |
| 77. | Sweetwater County | EMA | 2 | 30 | 4 | 6 | 0 | | 2 |
| 78. | Teton County | Fire | 4 | 50 | 34 | 1 | 4 | | |
| 79. | Teton County | SO | 15 | 136 | 116 | 2 | 8 | 40 | 7 |

WyoLink RFP

| Count | Agency Name | Agency Type | Base Stations | Portables | Mobiles | Dispatch Locations | Dispatch Consoles | Pagers | Control Stations |
|-------|--|-------------|---------------|-----------|---------|--------------------|-------------------|--------|------------------|
| 80. | Thermopolis | Fire | | | | | | | |
| 81. | Thermopolis | PD | 2 | 20 | 10 | 1 | 1 | | 1 |
| 82. | Torrington | LG | 2 | 39 | 46 | 2 | 1 | 2 | 2 |
| 83. | Torrington | EMS | | 6 | | 1 | | 22 | |
| 84. | Torrington | PD | 2 | 22 | 8 | 2 | 1 | | |
| 85. | Uinta County | SO | 3 | 50 | 50 | 2 | 3 | 10 | 3 |
| 86. | Uinta County | Fire | 5 | 100 | 50 | 2 | 2 | | 6 |
| 87. | University of WY | PD | 2 | 20 | 6 | 2 | | | |
| 88. | Wamsutter | PD | 1 | 18 | 9 | 0 | 0 | | 1 |
| 89. | Washakie County | SO | 3 | 11 | 8 | 2 | 2 | | 1 |
| 90. | Weston County | Fire | 31 | 100 | 100 | 1 | 1 | 20 | 4 |
| 91. | Weston County | So | 2 | 11 | 8 | 1 | 2 | 0 | 2 |
| 92. | Weston County | Health | | | | | | | |
| 93. | Worland | PD | 1 | 11 | 7 | 1 | 2 | | 1 |
| 94. | WY - Fire Prevention & Electrical Safety | Fire | 0 | 15 | 2 | 0 | 0 | 0 | 0 |
| 95. | WY - Health | Health | 3 | 45 | 5 | 0 | 0 | | |
| 96. | WY State Forestry Division | Fire | | 110 | 150 | 0 | 0 | | 1 |
| 97. | WYDOT | HP | | 185 | 189 | 1 | 10 | | |
| 98. | WYDOT | Mutual Aid | | 400 | 750 | | | | |
| 99. | WYDOT | WYDOT | | 650 | 1200 | 5 | 5 | | 47 |
| 100. | WYDOT | SALECS | | 200 | 300 | 24 | | | 30 |
| 101. | Wyoming Law Enforcement Academy | HP | 1 | 18 | 12 | 1 | 1 | | 1 |
| 102. | Yoder | LG | 1 | 20 | 15 | 1 | 1 | | 1 |
| 103. | Campbell County | | ? | ? | ? | ? | ? | ? | ? |
| 104. | Carbon County | | ? | ? | ? | ? | ? | ? | ? |
| 105. | Crook County | | ? | ? | ? | ? | ? | ? | ? |
| 106. | Fremont County | | ? | ? | ? | ? | ? | ? | ? |

WyoLink RFP

| Count | Agency Name | Agency Type | Base Stations | Portables | Mobiles | Dispatch Locations | Dispatch Consoles | Pagers | Control Stations |
|-------|-----------------------------|-------------|---------------|-------------|-------------|--------------------|-------------------|------------|------------------|
| 107. | Sheridan County | | ? | ? | ? | ? | ? | ? | ? |
| 108. | Sublette County | | ? | ? | ? | ? | ? | ? | ? |
| 109. | Cody | | ? | ? | ? | ? | ? | ? | ? |
| 110. | Albany County SO | | ? | ? | ? | ? | ? | ? | ? |
| 111. | Laramie County Fire | | ? | ? | ? | ? | ? | ? | ? |
| 112. | Rock River | | ? | ? | ? | ? | ? | ? | ? |
| 113. | Rock Springs - Fire | | ? | ? | ? | ? | ? | ? | ? |
| | TOTALS UNITS | | 282 | 4618 | 5828 | 144 | 164 | 752 | 256 |
| | PLANNING ASSUMPTIONS | | 350 | 5200 | 6500 | 165 | 185 | 900 | 300 |

The number of existing base stations should be viewed as indicative of the potential number of simultaneous conversations.

11.2.2 Talk Group Planning

Following table represents the initial talkgroup allocation plan.

| Talkgroup Range Lower | Talkgroup Range Upper | Government Level | Agency Name |
|-----------------------|-----------------------|------------------|-------------|
| 0101 | 0199 | Local | Natrona |
| 0201 | 0299 | Local | Laramie |
| 0301 | 0399 | Local | Sheridan |
| 0401 | 0499 | Local | Sweetwater |
| 0501 | 0599 | Local | Albany |
| 0601 | 0699 | Local | Carbon |
| 0701 | 0799 | Local | Goshen |
| 0801 | 0899 | Local | Platte |
| 0901 | 0999 | Local | Big Horn |
| 1001 | 1099 | Local | Fremont |
| 1101 | 1199 | Local | Park |
| 1201 | 1299 | Local | Lincoln |
| 1301 | 1399 | Local | Converse |

WyoLink RFP

| Talkgroup Range Lower | Talkgroup Range Upper | Government Level | Agency Name |
|----------------------------------|----------------------------------|-----------------------------|------------------------|
| 1401 | 1499 | Local | Niobrara |
| 1501 | 1599 | Local | Hot Springs |
| 1601 | 1699 | Local | Johnson |
| 1701 | 1799 | Local | Campbell |
| 1801 | 1899 | Local | Crook |
| 1901 | 1999 | Local | Uinta |
| 2001 | 2099 | Local | Washakie |
| 2101 | 2199 | Local | Weston |
| 2201 | 2299 | Local | Teton |
| 2301 | 2399 | Local | Sublette |
| 2401 | 2499 | Local | |
| 2501 | 2599 | Local | |
| 2601 | 2699 | Local | |
| 2701 | 2799 | Local | |
| 2801 | 2899 | Local | |
| 2901 | 2999 | Local | |
| | | | |
| 3001 | 3099 | Federal | |
| 3101 | 3199 | Federal | Transportation |
| 3201 | 3299 | Federal | BLM |
| 3301 | 3399 | Federal | USFS |
| 3401 | 3499 | Federal | SS |
| 3501 | 3599 | Federal | FBI |
| 3601 | 3699 | Federal | BIA |
| 3701 | 3799 | Federal | NPS |
| 3801 | 3899 | Federal | WAFB |
| 3901 | 3999 | Federal | VA |
| | | | |
| 4001 | 4099 | State | Environmental Quality |
| 4101 | 4199 | State | Family Services |
| 4201 | 4299 | State | Governor's office |
| 4301 | 4399 | State | Judicial |

WyoLink RFP

| Talkgroup Range Lower | Talkgroup Range Upper | Government Level | Agency Name |
|----------------------------------|----------------------------------|-----------------------------|------------------------------|
| 4401 | 4499 | State | WEMA |
| 4501 | 5499 | State | DCI |
| 4601 | 4699 | State | Health |
| 4701 | 4799 | State | Fire Marshall |
| 4801 | 4899 | State | Forestry |
| 4901 | 4999 | State | Game & Fish |
| | | | |
| 5001 | 5099 | State | Administration & Information |
| 5101 | 5199 | State | Agriculture |
| 5201 | 5299 | State | Attorney General |
| 5301 | 5399 | State | Auditor |
| 5401 | 5499 | State | Commerce |
| 5501 | 5599 | State | WyDOT |
| 5601 | 5699 | State | WHP |
| 5701 | 5799 | State | Education |
| 5801 | 5899 | State | Employment |
| 5901 | 5999 | State | Engineer |
| | | | |
| 6001 | 6099 | State | Library |
| 6101 | 6199 | State | PSC |
| 6201 | 6299 | State | Revenue |
| 6301 | 6399 | State | Sec of State |
| 6401 | 6499 | State | Parks & Cult |
| 6501 | 6599 | State | Treasurer |
| 6601 | 6699 | State | Veterinary |
| 6701 | 6799 | State | Tourism |
| 6801 | 6899 | State | Business Council |
| 6901 | 6999 | State | Livestock Board |

The following philosophy will drive the talkgroup plan development:

Specific and discrete County talk-groups shall be programmed to operate only with specific local WyoLink system sites. The local sites that serve a specific area or region are grouped together by the programming to carry a specific discrete talkgroup. The sites

in a local site group programmed for the talk-group can be set to operate in a multicast mode, since they are on different RF frequencies and channel sets. Those sites within the group that do not have an associated mobile registered on it do not need to simulcast.

A discrete local or County talk-group unit, when it roams out from its Home area, will not work in the WyoLink system. If so programmed, the mobile may select one of the 23 County Calling/Intercom talk-groups for local service while traveling, as desired. This is to intentionally limit the "foreign" out-of-County talk-group traffic from following a mobile and tying up radio channel resources in other areas.

Additional area-wide talk-groups may be assigned to specific agencies, for use on either semi-routine or emergency basis. This means that every site will need to be programmed for all of the specific talk-groups that are allowed to operate through it.

Every tower site in the WyoLink system will also need to be programmed to carry all 23 County Calling/Intercom talk-groups. The 23 County Intercom talk-groups are NOT to be used for mobile-to-mobile chitchat. Mobile-to-mobile coordination such as school buses traveling together is to be conducted on an appropriate simplex conventional channel.

An Interoperability Talkgroup Matrix for talkgroups to support interoperability across agency and jurisdictional lines (PD to SO, Local to State etc) is in development. It is expected that the Matrix will fully support the Incident Command System (ICS) and related similar operational planning efforts, as well as the interfaces to the Casper and Cheyenne 800 MHz radio systems.

It is apparent that any given specific tower site may be required to be authorized for several dozen talk-groups. Proposers should identify any limitations on talk-group programming

11.2.3 Data Traffic — MDT Applications

- **Types of applications to be supported** — Open-a Fox Message Switch - DMPP-2020 protocol.
- **Number of Users** — 900 users (Use Wyoming's population distribution as a model to represent the most likely user geographic distribution.)
- **Types of connections to the host system** — TCP/IP

11.2.3.1 Specific Applications

Specific applications and or components that facilitate access as necessary to the following interfaces:

- **Trusted Server Interface (CAD Systems)** — This interface will allow Interface Agencies to connect directly to the Wyoming Criminal Justice Network utilizing DMPP-2020 protocol specifications.
- **National Crime Information Center (NCIC) Interface** — This interface is to allow law enforcement users to gain access to the NCIC databases utilizing standard NCIC TCP/IP protocol utilizing both synchronous as well as asynchronous connections and will fully support all NCIC message formats and capabilities.
- **National Law Enforcement Telecommunications System (NLETS) Interface** — The purpose of the NLETS interface is to exchange criminal justice information between States. The interface to NLETS will utilize the standard NLETS TCP/IP protocol.
- **The Wyoming Division of Criminal Investigation Control Terminal Agency message switch** — This interface utilizes the Open-Fox messaging system to interface with NLETS/NCIC via NCIC and NLETS TCP/IP protocol. Access to Wyoming records and criminal history data is accessed via the Division of Criminal Investigation to a mainframe TCP/IP connection that also utilizes the Open-Fox Message Switch.

11.2.3.2 Security Requirements

All applications and components must comply with all security requirements for CJIS data transmission and storage as outlined in the FBI Criminal Justice Information Systems Security Policy. NLETS and WCJIN data security incorporates the FBI CJIS Security Policy for the security of NLETS and WCJIN data.

11.2.4 Data Traffic — Limited Text Messaging

A specific user assessment has yet to be completed. However, it should be assumed that WyDOT highway maintenance would be a primary user, and that most police, fire, paramedic units would opt for full MDT functionality. Therefore, assume 1500 users, utilizing non-encrypted packet data transmission, with messages 4 times per hour.

11.3 TRANSITION PLAN

Throughout the development of the WyoLink system, it will be necessary to maintain operations of existing radio channels. Radio systems belonging to WyoLink subscriber agencies will be maintained by those agencies during the transition. These radio systems do not share towers and the 57 sites currently selected for WyoLink. Four radio channels that are maintained by the Wyoming Department of Transportation, Telecommunications Program, will be integrated into the WyoLink radio sites, as they will share space in the shelter and will share antennas on the tower. Each repeater channel currently operates as

WyoLink RFP

a single statewide frequency employing multiple CTCSS tones to control repeater selection. These channels are:

- WHP - base transmit 155.445 / base receive 154.680 - multiple CTCSS access
- WyDOT - base transmit 156.105 / base receive 157.290 - multiple CTCSS access
- SALECS - base transmit 155.640 / base receive 154.740 - multiple CTCSS access
- Mutual Aid - base transmit 154.875 / base receive 154.875 - carrier squelch T&R

The transition plan, as developed by the WyoLink project team, calls for integrating the above listed channels into the WyoLink system transmit combiners and receive multi-couplers. Calculations for combining these channels have been included in the intermodulation studies that are being conducted as part of the separate FCC licensing work. Facilitating this transition plan will require configuring transmit combiners and receive multi-couplers for these additional ports, which shall be reflected in the Proposer budget proposal.

It is planned that selected VHF-Interoperability channels will be integrated into WyoLink as narrowband conventional-mode analog channels for interoperability with out-of-state emergency responders and in-state responders who have yet to participate in WyoLink.

11.4 VHF-57 SITE PLAN

The following data describes the site locations of the VHF-57 solution. (Sites to be implemented in Phase 1 are in bold.)

| Site # | Site Name | Latitude D-M-S | Longitude D-M-S | Antenna Height | Site Elevation |
|---------------|------------------|---------------------------|----------------------------|---------------------------|---------------------------|
| 1 | 1st Divide | 41° 16' 56.0" | 110° 46' 51.0" | 60 | 7633 |
| 2 | 9 Mile Hill | 41° 52' 51.9" | 107° 19' 21.0" | 60 | 7723 |
| 3 | 77 Hill | 42° 50' 38.9" | 104° 37' 00.9" | 80 | 5630 |
| 4 | Aspen Mountain | 41° 25' 33.9" | 109° 07' 40.0" | 80 | 8659 |
| 5 | Baggs Hill | 41° 00' 20.8" | 107° 37' 18.8" | 105 | 6686 |
| 6 | Casper Mountain | 42° 44' 52.0" | 106° 18' 08.9" | 120 | 8091 |
| 7 | Cedar Mountain | 44° 29' 51.0" | 109° 09' 10.0" | 121 | 7779 |
| 8 | Copper Mountain | 43° 26' 09.9" | 107° 59' 58.0" | 80 | 8200 |
| 9 | Dead Indian Hill | 44° 45' 18.0" | 109° 22' 28.0" | 80 | 8535 |
| 10 | Delaney Rim | 41° 33' 50.9" | 108° 16' 58.9" | 80 | 7549 |

WyoLink RFP

| Site # | Site Name | Latitude D-M-S | Longitude D-M-S | Antenna Height | Site Elevation |
|-----------|---|-------------------|--------------------|-------------------|-------------------|
| 11 | Hogsback Ridge | 42° 19' 33.0" | 110° 19' 08.0" | 80 | 9018 |
| 12 | Jade Mountain | 42° 24' 04.9" | 107° 57' 30.9" | 20 | 8191 |
| 13 | TBD — NW Sheridan County (possibly a Montana site) | | | | |
| 14 | Morton Hill | 42° 50' 25.0" | 105° 19' 59.0" | 180 | 5558 |
| 15 | Mount Pisgah | 43° 59' 37.0" | 104° 09' 00.0" | 80 | 6400 |
| 16 | Muddy Gap Hill | 42° 21' 15.8" | 107° 29' 21.1" | 80 | 6929 |
| 17 | Oyster Ridge | 41° 47' 24.9" | 110° 30' 29" | 80 | 7775 |
| 18 | Pine Ridge | 42° 20' 46.9" | 105° 02' 10.0" | 20 | 4645 |
| 19 | Pumpkin Buttes | 43° 43' 57.0" | 105° 53' 00.0" | 80 | 5990 |
| 20 | Sherman (Beacon) Hill | 41° 15' 42.0" | 105° 25' 53.0" | 112 | 8770 |
| 21 | Shirley Mountain | 42° 9' 51.8" | 106° 34' 36.8" | 80 | 8990 |
| 22 | Snow King / Jackson | 43° 27' 08.0" | 110° 45' 11.0" | 80 | 8005 |
| 23 | Torchlite Hill | 44° 22' 54.9" | 107° 59' 17.1" | 100 | 4335 |
| 24 | Virgin Hill | 42° 3' 34.9" | 104° 41' 45.9" | 120 | 5484 |
| 25 | Windy Ridge | 43° 29' 57.9" | 109° 41' 16.9" | 80 | 9896 |
| 26 | Warren Peak | 44° 28' 49.9" | 104° 27' 31.8" | 80 | 6655 |
| 27 | Sage | 41° 50' 55.8" | 110° 50' 54.7" | 100 | 7660 |
| 28 | Kismet Peak | 43° 5' 57.9" | 110° 15' 25.9" | 100 | 8375 |
| 29 | Banner Ridge | 44° 36' 29.0" | 106° 55' 23.1" | 100 | 5602 |
| 30 | Church Buttes | 41° 24' 55.0" | 110° 4' 54.8" | 100 | 7040 |
| 31 | Divide Hill | 44° 32' 56.0" | 107° 42' 59.0" | 100 | 7325 |
| 32 | Flat Top | 42° 49' 41.0" | 105° 3' 20.1" | 100 | 5537 |
| 33 | Lonetree | 43° 23' 30.9" | 105° 23' 58.9" | 100 | 5277 |
| 34 | Rozet Hill | 44° 20' 26.0" | 105° 14' 48.9" | 98 | 4813 |
| 35 | Strouss Hill | 41° 29' 17.9" | 106° 02' 57.8" | 100 | 7970 |
| 36 | Torrington | 42° 05' 21.9" | 104° 10' 40.0" | 100 | 4104 |
| 37 | Tisdale Divide | 44° 14' 00.9" | 106° 42' 00.0" | 100 | 5330 |
| 38 | Waltman Hill | 43° 02' 13.9" | 107° 17' 17.1" | 100 | 6434 |
| 39 | North Albin | 41° 28' 36.9" | 104° 06' 06.1" | 100 | 5368 |

WyoLink RFP

| Site # | Site Name | Latitude D-M-S | Longitude D-M-S | Antenna Height | Site Elevation |
|--------|--------------------------------|-------------------|--------------------|-------------------|-------------------|
| 40 | Russell Hill/Pine Bluff | 41° 15' 29.0" | 104° 06' 16.9" | 100 | 5345 |
| 41 | 85 South | 41° 1' 17.0" | 104° 47' 08.8" | 100 | 6277 |
| 42 | Whitcomb Hill/ County Line | 41° 39' 01.0" | 104° 54' 06.1" | 100 | 6035 |
| 43 | Latham | 41° 45' 15.6" | 107° 49' 51.7" | 100 | 7183 |
| 44 | TBD — no target area specified | | | | |
| 45 | Geneva Summit | 42° 19' 59.0" | 111° 08' 12.1" | 100 | 7013 |
| 46 | Salt Pass (new) | 42° 29' 20.0" | 110° 53' 34.0" | 100 | 8102 |
| 47 | Narrow Hill | 42° 51' 34.9" | 110° 56' 31.9" | 100 | 7064 |
| 48 | Rendezvous Peak | 43° 35' 49.9" | 110° 52' 12.0" | 100 | 9815 |
| 49 | Riverton | 42° 59' 00.0" | 108° 29' 04.9" | 100 | 5019 |
| 50 | Winkleman Dome | 43° 08' 44.7" | 108° 55' 37.8" | 100 | 6200 |
| 51 | Cedar Ridge | 43° 40' 14.0" | 108° 15' 41.0" | 100 | 5185 |
| 52 | Rattlesnake Ridge | 44° 04' 00.0" | 107° 51' 50.0" | 30 | 4669 |
| 53 | McCullough Peaks | 44° 35' 13.9" | 108° 51' 06.0" | 49 | 6549 |
| 54 | 3 Mile Hill | 44° 08' 22.9" | 108° 49' 18.9" | 89 | 6726 |
| 55 | Tisdale Mountain | 43° 30' 41.0" | 106° 35' 09.9" | 100 | 5810 |
| 56 | NW Campbell County | 44° 51' 00.0" | 105° 51' 51.8" | 100 | 4185 |
| 57 | South Pass | 42° 34' 04.0" | 108° 40' 19.9" | 100 | 8234 |

Note #1: This site plan is under development and may be amended. The Proposer may recommend additions or amendments as needed to address the overall system coverage goals.

Note #2: Where a site is listed as “TBD,” proposers have latitude in suggesting an appropriate site.

11.5 RF PLANNING

11.5.1 F.C.C. Licensing

WyoLink has established a contract with APCO International to accomplish radio frequency licensing, coordination, and associated engineering services. Work under that contract is well underway.

There has been some discussion underway on re-banding the 150 VHF band. A plan has been developed a plan calling for repeater input sub-bands at 150/151 and 158/159, to be paired with a repeater output sub-band at 154/155.

It is believed that this plan, or one very similar to it, is likely to be the foundation for the re-banding efforts at 150 MHz. Accordingly, our contract with APCO specifies that the WyoLink system is to follow the outlines of the proposed plan to the extent practicable.

11.5.2 Status of Current License Applications

APCO is moving along on Phase 1 of the RF systems design, coordination, and FCC licensing for the WyoLink system. It is expected that the rest of the system, in Phases 2-5, will be done by the end of the year. RF engineering design, coordination, and licensing activities are being done in Phase 1 for the following 13 high-level sites:

- Sherman Hill
- Strouss Hill
- Baggs Hill
- Shirley Mountain
- Muddy Gap Hill
- Divide Hill
- 9-Mile Hill
- North Albin
- 85 South
- Russell Hill
- Whitcomb Hill
- Virgin Hill
- Pine Ridge

APCO's contract also includes frequency searches, coordination and licensing to get radio channels for some of the future local, low-level radio sites. The following 5 low-level County seat sites are included in the Phase 1 work:

- Albany County - Laramie - WyDOT Dist 1 office on US-287
- Carbon County - Rawlins - WEMA office
- Goshen County - Torrington - WyDOT office on C street
- Laramie County - Cheyenne - WyDOT HQ at 5300 Bishop
- Platte County - Wheatland - County offices downtown

These sites are to enhance handheld coverage of the downtown areas of each city. Proposers are free to suggest alternate locations that would provide better hand-held coverage in these cities. These low-level sites are incorporated into the licensing plan as provisional sites to address portable radio and in-building coverage issues.

Frequencies have been determined for most of the 18 Phase-1 sites; these will be made available on completion of the Phase 1 frequency coordination work. Proposers are advised that the frequencies for the WyoLink system are following the proposed plan so

far, using repeater inputs at 150/151 and 158/159, paired with repeater outputs at 154/155.

11.5.3 Design Criteria

The following design criteria have been provided to APCO for use in license applications and for conducting intermodulation interference calculations.

- Transmit Combiner / Receive Multi-Coupler

Tx/Rx 73-38-05-2D-12 transmit combiners

Frequency Range: 132 - 174 MHz

Minimum Tx-Tx Separation: 95 KHz @ -1.5 dB loss, 50 KHz @ -2.5 dB loss

Cavity Size: 10"

Maximum Forward Power: 100 W

Maximum Reflected Power: 100 W

Insertion Loss / Channel: See Table

Antenna-Tx Isolation: -60 dB

Tx Noise Suppression: Depends on cavity loss (see curves)

Impedance: 50 Ohms

VSWR: 1.22:1 Maximum

Temperature Range: -30°C to +60°C

- Minimum Frequency Spacing = 50 KHz
- Antennas = 6db gain omni
- Effective Radiated Power = 200 watts ERP

11.6 WYDOT LOCATIONS

The Wyoming Department of Transportation will provide the supporting infrastructure for the WyoLink system. The supporting infrastructure will include a digital microwave backbone linking all radio sites and the central control site. Separate projects are currently underway that will complete conversion from analog to digital microwave, will develop additional radio sites, and will improve the quality of grounding and radio site resources to current technical standards.

11.6.1 Radio Sites

The Proposers shall inspect each radio site, to verify adequacy of equipment space and conformity to necessary technical standards, as part of the system design process. All deficiencies shall be reported in writing to the WyoLink Project Manager in accordance

with the communications plan. Deficiency reports shall include recommended solutions. WyoLink will be responsible to resolve deficiencies.

WyoLink responsibilities include:

- Buildings structure and space requirements
- HVAC
- Towers
- Grounding / Lightning Protection
- Security, including site monitoring and alarms
- Electrical Power, including generator, fuel capacity, UPS, and/or battery power systems

11.6.2 Radio Site Antennas / Feedlines

It is anticipated that the WyoLink system will use new 6 dB gain omni antennas at all sites. Some selected sites may utilize new 9 dB offset cardoid pattern antenna for specific areas. 7/8" feedlines will be used to accommodate the combined transmit power of the WyoLink trunking transmitters, which in the future might be as high as twelve 110-watt stations at any given site. 7/8" will be used on all antennas, so that there is no limitations on which can be used for transmit, if needed in a pinch.

It is expected that existing antennas, side-arms and feedlines will be stripped off the towers, and all-new antenna systems installed in their place. A master, expandable combiner layout will be developed, such that a site rack installed with 5 channels at the start may be easily added-to as more channels are implemented at the site over time.

Existing repeater stations will connect to the new antenna systems through ports on the new transmit combiners and receiver multi-couplers. This is intended to reduce wind loading during the transition to WyoLink by eliminating the need for duplicated antenna systems, and to give more filtering and intermodulation control of all of the channels.

The WyoLink system Contractor will be responsible for systems performance. Known-good antennas will be retained by WyDOT for service spares and for use at other locations such as Maintenance garages and Patrol offices.

11.6.3 Central Equipment Space

An equipment space has been designated within the telecommunications equipment space on the WyDOT campus. The space is suited for mounting equipment racks: overhead cable trays are provided, HVAC is in place, UPS electrical power, and grounding are provided.

11.7 MICROWAVE INTERCONNECT

WyoLink radios sites will be interconnected to the central controller via digital microwave. The redevelopment of the required microwave system is currently underway as a separate project.

A reference to the PSMC Plan, Phase 1, Section 1, exhibits 1.2 and 1.3 is appropriate.

The backbone of the system is an Alcatel 3-DS3 Hot-Standby / Space-Diversity 6 GHz Linear configuration. Small spurs and district shop access are via 16-DS1 Alcatel HSWO/SD or HSWO if the hop is short. Loop closure is being considered in the future, but the most advantageous routes would reside in the westernmost, more remote and rugged, part of the state. Future planning shall consider this.

Alcatel/Newbridge digital channel banks are used at the network and terminal ends. These 3624 channel banks are fully configurable for DS0, sub rate and full DS1 use. The Alcatel 3600+ Bandwidth Manager (mini DACS) resides in Cheyenne. It is presently configured to demultiplex DS3's to the DS1 level, with High Speed Access cards and Octal T1 cards, feeding the 3624 channel banks here in Cheyenne. DS1's are currently configured for B8ZS - AMI, with RJ-45 interface at the network and terminal ends. This smart DACS is configurable for disaster recovery, with the ability to provision for dynamic re-routing of critical circuits.

Cheyenne and all of the improved 2-way remote sites are equipped with emergency generator backup, feeding double or triple redundant switch-mode technology rectifiers that feed, at the least, 4 days of battery backup at -48VDC, as well as supporting all DC power requirements of the microwave and channel banks.

The following notes apply to the system diagram on the subsequent page.

Development Plan color codes:

- Lt. Blue is in-process for 2004/2005.
- Lt. Tan is scheduled for 2005/2006
- Lt. Lavender is scheduled for 2006/2007
- Lt. Green is scheduled for 2007/2008, or possibly accelerated into 2006/2007

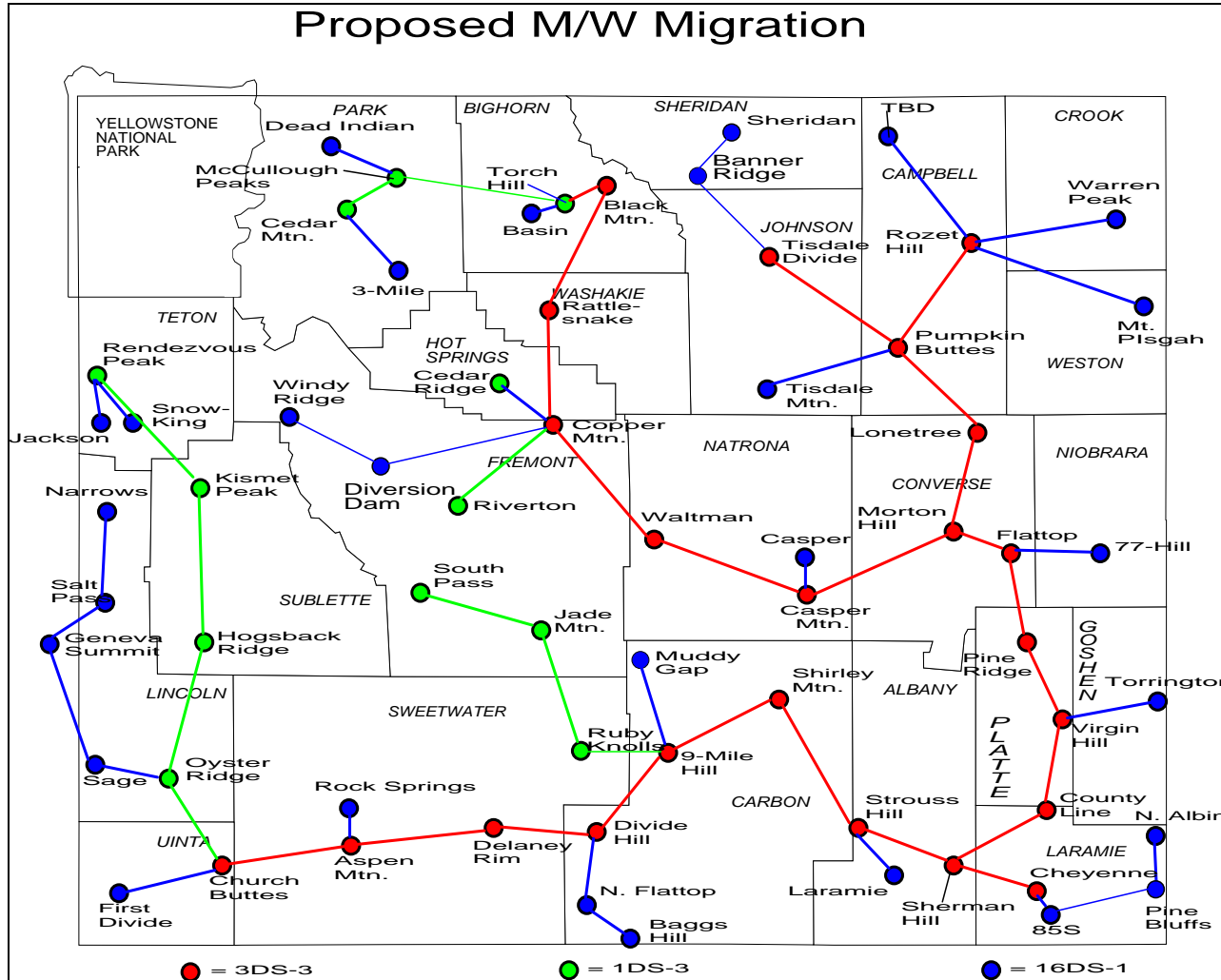
Additional Microwave Development Notes

- Projection as of Nov. 2003. Some of the sites shown are tentative, pending field validation and resolution of property, environmental, and other issues.
- Geneva Summit, Salt Pass, Narrows Hill, Kismet Peak and Rendezvous Peak, new in District – 3.

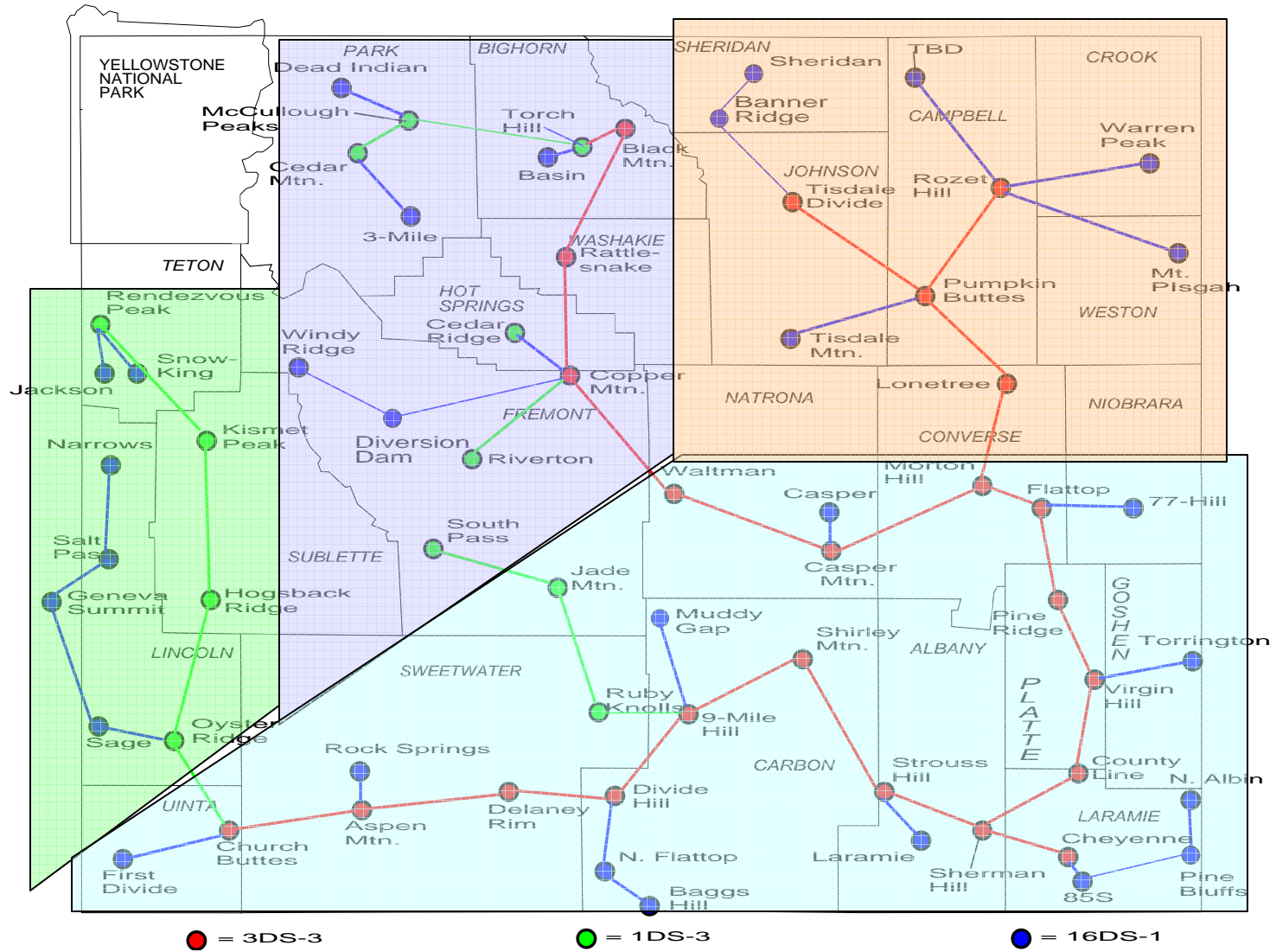
WyoLink RFP

- Tisdale Mountain, Warren Peak and another yet to be determined in the Arvada / Recluse area, new in District – 4
- Diversion Dam, Cedar Ridge, Rattlesnake Hill, Black Mountain, South Pass, 3 – Mile Hill and McCullough Peaks new in District – 5
- Not all new sites may be necessary, due to similar VHF Coverage Contours, old to new systems.
- Snow King in D-3 may need to be moved, possible new at Munger Mountain.
- Diversion Dam has a preferred new location of Winkleman Dome on BIA Lands, if possible.

WyoLink RFP



Proposed M/W Migration



11.8 TRACEABILITY MATRIX

Matrix still needs to be completed in relation to the RFP.

The following matrix provides a reference between elements of this RFP and the PSMC Plan documents. It is provided as tool by which Proposers may more fully understand the WyoLink requirements and the planning that underlies them. The PSMC plan documents are available for review at > <http://WyoLink.state.wy.us> <

| Appendix A and A(2) | | | | Business Case | Appendix S | WyoLink RFP |
|---------------------|----------------|-------------------------------------|------------------------|---|--|----------------------|
| Level 1 | Level 2 | Level 3 | Level 2 | | | |
| 1.0 TECHNICAL | 1.1 Technology | 1.1.1 Narrowband Radio Equipment | | 1.3 2.2.2 3.2 3.3.1 3.6.1.2 4.1.2 4.3.1 4.3.2.1 4.4.5 Exh 3.1 Exh 4.1 | 3.1.1 | 10.6.2 |
| 1.0 TECHNICAL | 1.1 Technology | 1.1.2 Project 25 | 1.1.2.1 P25 Phase I | 1.3 3.1.1 3.2 3.3.1 3.6 3.7 | 3.1 3.1.2 3.10 Table 1 - 6.1 (see also Appendix R) | 10.6.3.1 10.6.3.2 |

WyoLink RFP

| Appendix A and A(2) | | | | Business Case | Appendix S | WyoLink RFP |
|---------------------|----------------|------------------|-------------------------|--|--|-------------|
| Level 1 | Level 2 | Level 3 | Level 2 | | | |
| | | | | 4.1.1 4.1.2 4.3.2 4.4.4 4.4.6 4.5.1 4.5.2 4.8.1 4.8.2-3 5.1 5.1-4 Exh 3.1 Exh 3.6 Exh 4.1 | | |
| 1.0 TECHNICAL | 1.1 Technology | 1.1.2 Project 25 | 1.1.2.2 P25 Phase II | 4.4.4 4.4.6 4.8.2-3 | 3.1.2 Table 1 - 1.2 | 10.6.3.3 |
| 1.0 TECHNICAL | 1.1 Technology | 1.1.2 Project 25 | 1.1.2.3 High-speed data | 1.4 3.3.6.1-2 3.3.6.1-3 4.3.1 4.3.1.2 4.4.2 4.4.6 Exh 3.1 | 3.1.2 3.7 Table 1 - 7.1, 7.2 4.7 | 10.7.2.6 |

WyoLink RFP

| Appendix A and A(2) | | | | Business Case | Appendix S | WyoLink RFP |
|---------------------|-------------------------|---------------------------------|--------------------|--|--|----------------------------|
| Level 1 | Level 2 | Level 3 | Level 2 | | | |
| | | | | Exh 4.1 | | |
| 1.0 TECHNICAL | 1.1 Technology | 1.1.3 Analog/Digital Capability | | 3.3.1 4.1.1-2 4.1.2 4.3.1 4.7.1 4.9.9 5.1 Exh 4.1 | 3.1.1 3.1.2 3.10 3.12 Table 1 - 10.2 4.4.3 4.4.5 | 10.6.4 |
| 1.0 TECHNICAL | 1.2 Site Infrastructure | 1.2.1 Procedures | 4.3.3.1 | 3.5 3.6 3.9 3.10 3.11 3.12.2 4.5 5.0-1 | 1.2 Site Infrastructure | 3.3.2 11.6 |
| 1.0 TECHNICAL | 1.2 Site Infrastructure | 1.2.2 Power | 1.2.2.1 Generators | 3.3.2-7 3.3.3-1 3.3.3-6 3.5 Exh 3.3 Exh 3.4 | 5.0-2 | 10.4.2.1 11.6.1 11.7 |
| 1.0 TECHNICAL | 1.2 Site | 1.2.2 Power | 1.2.2.2 Fuel | 3.3.2-2 | 5.0-2b | 11.6.1 |

WyoLink RFP

| Appendix A and A(2) | | | | Business Case | Appendix S | WyoLink RFP |
|---------------------|-------------------------|---------------------------|-------------------|---|---|------------------|
| Level 1 | Level 2 | Level 3 | Level 2 | | | |
| | Infrastructure | | Capacity | 3.3.3-1 | | |
| 1.0 TECHNICAL | 1.2 Site Infrastructure | 1.2.2 Power | 1.2.2.3 UPS | 3.3.4-4 Exh 3.3 Exh 3.4 Exh 3.5 Exh 3.6 Exh 4.1 | 5.0-2c | 11.6.1 11.6.3 |
| 1.0 TECHNICAL | 1.2 Site Infrastructure | 1.2.3 Physical Structures | 1.2.3.1 Towers | 1.4.2 2.2.2 2.2.3 3.3.2-5 3.3.3-4 3.4.1 3.4.2 4.3.2.2 4.3.4 4.4.1 4.6.1 Exh 3.2 Exh 3.3 Exh 3.4 Exh 3.5 | Table 1 - 1.1 Table 1 - 2.1 Table 1 - 3.1 4.2 4.6 4.6.1 4.6.2 5.0-3a | 3.3.2 11.6 |
| 1.0 TECHNICAL | 1.2 Site Infrastructure | 1.2.3 Physical Structures | 1.2.3.2 Grounding | 3.3.2-4 3.3.3-3 | Table 1 - 1.1 4.6 | 3.3.2 11.6 |

WyoLink RFP

| Appendix A and A(2) | | | | Business Case | Appendix S | WyoLink RFP |
|---------------------|-------------------------|---------------------------|---------------------------|--|--|---------------|
| Level 1 | Level 2 | Level 3 | Level 2 | | | |
| | | | | Exh 3.3 Exh 3.4 Exh 3.5 | 4.6.1 4.6.2 5.0-3b | |
| 1.0 TECHNICAL | 1.2 Site Infrastructure | 1.2.3 Physical Structures | 1.2.3.3 Shelters | 3.3.2-6 3.3.3-5 Exh 3.3 Exh 3.4 Exh 3.5 4.3.4 | Table 1 - 1.1 Table 1 - 2.1 Table 1 - 3.1 4.0 4.2 4.6 4.6.1 4.6.2 5.0-3c | 3.3.2 11.6 |
| 1.0 TECHNICAL | 1.2 Site Infrastructure | 1.2.4 Physical Security | 1.2.4.1 Building Security | 4.3.4 Exh 3.3 Exh 3.4 Exh 3.5 | 3.6 3.9 5.0-4a | 3.3.2 11.6 |
| 1.0 TECHNICAL | 1.2 Site Infrastructure | 1.2.4 Physical Security | 1.2.4.2 Site Security | 1.4.1 3.3.4 4.3.4 Exh 3.3 Exh 3.4 Exh 3.5 | 3.6 3.9 5.0-4b | 3.3.2 11.6 |
| 1.0 TECHNICAL | 1.2 Site Infrastructure | 1.2.5 Environmental | | 3.3.2-8 3.3.3-7 | 4.2 5.0-5 | 3.3.2 11.6 |

WyoLink RFP

| Appendix A and A(2) | | | | Business Case | Appendix S | WyoLink RFP |
|---------------------|-----------------------------|------------------------------------|---------|---|---|----------------------------------|
| Level 1 | Level 2 | Level 3 | Level 2 | | | |
| | | | | Exh 3.3 Exh 3.4 Exh 3.5 | | |
| 1.0 TECHNICAL | 1.3 System wide Reliability | 1.3.1 Backbone Network Reliability | | 1.4.1 3.3.2-9 3.3.3-8 4.8.1 4.9.7 Exh 3.3 Exh 3.4 Exh 3.5 | 3.2 4.4.2 4.5.2 4.4 4.4.1 4.5 5.0-6 | 10.6.5.1 10.6.5.2 10.6.5.3 |
| 1.0 TECHNICAL | 1.3 System wide Reliability | 1.3.2 Network Control Reliability | | 3.3.4-6 3.3.5 4.3.2 4.3.3.1 4.8.1 4.8.2-2 4.8.2-3 5.1-9 Exh 3.3 Exh 3.4 Exh 3.5 | 3.1.1 3.5 3.8 3.10 Table 1- 5.1 Table 1- 5.2 4.4 4.4.5 4.4.6 4.5 | 10.6.5.4 10.6.5.5 |
| 2.0 FUNCTIONAL | 2.1 Low-speed Applications | 2.1.1 Text Messaging | | 3.3.1-15 3.3.6.2-5 | 3.6 3.8 | 10.7.2.3 |

WyoLink RFP

| Appendix A and A(2) | | | | Business Case | Appendix S | WyoLink RFP |
|---------------------|----------------------------|------------------------|---------|---|---------------------------------------|---------------|
| Level 1 | Level 2 | Level 3 | Level 2 | | | |
| | | | | 3.3.6.2-7 | | |
| 2.0 FUNCTIONAL | 2.1 Low-speed Applications | 2.1.2 Voice Mail | | | | Not supported |
| 2.0 FUNCTIONAL | 2.1 Low-speed Applications | 2.1.3 Database Queries | | 3.3.6.2-13 4.7.2.3 4.8.1 OCD 7 | 3.6 4.6.1 | 10.7.2.2 |
| 2.0 FUNCTIONAL | 2.1 Low-speed Applications | 2.1.4 Casual Use | | 1.4.1 3.3.1-3 3.3.6.2-1 Exh 4.1 | 3.9 Table 1- 9.1 Table 1- 9.2 | 10.7.2.5 |
| 2.0 FUNCTIONAL | 2.1 Low-speed Applications | 2.1.5 Emergency Button | | 2.2.4-6 3.3.1-7 Exh 4.1 | 3.10 | 10.7.1.3 |
| 2.0 FUNCTIONAL | 2.1 Low-speed Applications | 2.1.6 Paging | | 1.4 2.2.4-8 3.3.6.1-4 4.4.2 Exh 4.1 | 3.8 Table 1 - 8.1 Table 1 - 8.2 | 10.7.6 |
| 2.0 FUNCTIONAL | 2.2 High-Speed Data | 2.2.1 Mobile Video | | 1.4 2.2.4-4 3.3.6.1-2 4.3.1.2 4.3.2.4 | | Not supported |

WyoLink RFP

| Appendix A and A(2) | | | | Business Case | Appendix S | WyoLink RFP |
|---------------------|---------------------------|--------------------------------|---------|---|-------------------------|---------------|
| Level 1 | Level 2 | Level 3 | Level 2 | | | |
| | | | | 4.3.4 4.4.2 4.4.6 Exh 4.1 | | |
| 2.0 FUNCTIONAL | 2.2 High-Speed Data | 2.2.2 Intranet/Internet Access | | 3.1.1 3.1.2-4 3.3.6.1-3 4.3.1.2 4.4.6 | | Not supported |
| 2.0 FUNCTIONAL | 2.3 Transmission Security | 2.3.1 Encryption | | 1.4.1 2.2.4-5 3.1.1 3.1.3 3.3.1-7 3.3.4-7 3.3.6.2-3 4.1.1-9 4.1.2 4.3.2 4.6.1-10 5.1-9 Exh 3.3 Exh 3.4 Exh 3.5 Exh 3.6 | 3.1.2 3.10 3.12.2 | .10.7.3 |

WyoLink RFP

| Appendix A and A(2) | | | | Business Case | Appendix S | WyoLink RFP |
|---------------------|---------------------------|---------------------------|---------|--|------------|--|
| Level 1 | Level 2 | Level 3 | Level 2 | | | |
| | | | | Exh 4.1 OCD 2 OCD 3 OCD 4 OCD 5 OCD 7 | | |
| 2.0 FUNCTIONAL | 2.3 Transmission Security | 2.3.2 User Identification | | 1.4.1 2.2.4-3 3.3.1-4 4.1.1 Exh 4.1 OCD 3 OCD 7W | 3.10 | 10.7.1.3 |
| 2.0 FUNCTIONAL | 2.4 Computer Interfaces | 2.4.1 AVL | | 1.4.1 2.2.4-2 3.3.1 3.3.4-2 3.3.6.2-4 4.1.1-9 5.1-9 Exh 3.3 Exh 3.4 Exh 3.5 Exh 3.6 Exh 4.1 | 3.10 | 11.2.3 11.2.3.1 11.2.3.2 11.2.3.4 |

WyoLink RFP

| Appendix A and A(2) | | | | Business Case | Appendix S | WyoLink RFP |
|---------------------|-------------------------|-------------------|---------|--|---|-------------|
| Level 1 | Level 2 | Level 3 | Level 2 | | | |
| | | | | OCD 1W OCD 2W OCD 3 OCD 4W OCD 6aW OCD 7W | | |
| 2.0 FUNCTIONAL | 2.4 Computer Interfaces | 2.4.2 Card Inputs | | 2.2.4-4 3.3.1-5 3.3.6.2-2 | 3.6 | 10.7.2.3 |
| 2.0 FUNCTIONAL | 2.4 Computer Interfaces | 2.4.3 Printing | | | 3.6 | 10.7.2.2 |
| 3.0 COVERAGE | 3.1 Mobile Coverage | | | 1.4.1 2.2.1 2.2.3 3.3.1-14 3.3.6.2-6 3.4.1 3.4.2 3.5 3.7 4.1.1 4.1.2 4.3.2 4.3.2.2 | 3.2 3.12.2 4.0 4.5.2 4.7 4.7.1 Table 1 - 2.1 Table 1 - 2.2 | 10.5.3 |

WyoLink RFP

| Appendix A and A(2) | | | | Business Case | Appendix S | WyoLink RFP |
|---------------------|-----------------------|--------------------------------------|---------|---|--|-------------|
| Level 1 | Level 2 | Level 3 | Level 2 | | | |
| | | | | 4.4.1 4.4.2 4.8.1 4.8.3 4.9.7 4.9.8-5 4.9.8-6 4.9.9 5.1-10 Exh 3.2 Exh 3.9 Exh 4.1 | | |
| 3.0 COVERAGE | 3.2 Portable Coverage | 3.2.1 Limited Area Portable Coverage | | 1.4.1 2.2.1 3.3.4-8 4.1.1 4.4.2 4.6.1-10 4.8.1 4.8.3 5.1-11 Exh 3.2 Exh 3.3 Exh 3.4 Exh 3.5 | 3.3 3.12.2 4.0 Table 1 - 3.1 Table 1 - 3.2 4.7 4.7.1 4.7.2 4.7.3 4.7.3.1 4.7.3.2 4.7.3.3 4.7.3.4 | 10.5.4 |

WyoLink RFP

| Appendix A and A(2) | | | | Business Case | Appendix S | WyoLink RFP |
|---------------------|-----------------------|-------------------------------------|---------|--|---|---------------|
| Level 1 | Level 2 | Level 3 | Level 2 | | | |
| | | | | OCD 6a OCD 6aW | 4.9 | |
| 3.0 COVERAGE | 3.2 Portable Coverage | 3.2.2 Statewide Portable Coverage | | 2.2.1 3.1.1 3.3.6.2-1 4.4.2 4.6.1-10 4.8.3 Exh 3.2 Exh 4.1 OCD 6a OCD 6aW | 3.3 4.0 4.7 4.7.1 4.7.2 4.7.3 4.7.3.1 4.7.3.2 4.7.3.3 4.7.3.4 4.8 4.8.2 4.9 | Not supported |
| 3.0 COVERAGE | 3.2 Portable Coverage | 3.2.3 In-Building Portable Coverage | | 1.4 2.2.1 3.3.6.1-5 4.4.2 4.6.1-10 4.8.3 Exh 3.2 Exh 4.1 OCD 6a OCD 6aW | 3.4 3.12.2 4.0 4.7 4.7.1 4.7.2 4.7.3 4.7.3.1 4.7.3.2 4.7.3.3 | 10.5.5 |

WyoLink RFP

| Appendix A and A(2) | | | | Business Case | Appendix S | WyoLink RFP |
|----------------------|---------------------------------|-----------------------------------|------------------------------------|--|--|-------------|
| Level 1 | Level 2 | Level 3 | Level 2 | | | |
| | | | | | 4.7.3.4 4.8 4.8.2 4.9 Table 1 - 4.1 Table 1 - 4.2 | |
| 3.0 COVERAGE | 3.3 Roaming | | | 1.4.1 2.2.4-7 2.2.4-9 3.3.1-10 4.6.1-11 Exh 4.1 | 3.11 4.8.2 Table 1 - 11.1 Table 1 - 11.2 | 10.7.1.2 |
| 4.0 INTEROPERABILITY | 4.1 Intrastate Interoperability | 4.1.1 Day-to-Day Interoperability | 4.1.1.1 Statewide Interoperability | 1.2 1.3 1.4 1.4.1 2.2.1 2.2.4 3.1.1 3.3 3.3.1-1 3.3.1-11 3.6.3.4 3.7 4.1.1 | 3.11 3.12.1 3.12.6 4.0 4.8 Table 1 - 12.1 Table 1 - 12.2 | 10.7.5.1 |

WyoLink RFP

| Appendix A and A(2) | | | | Business Case | Appendix S | WyoLink RFP |
|---------------------|---------|---------|---------|---------------|------------|-------------|
| Level 1 | Level 2 | Level 3 | Level 2 | | | |
| | | | | 4.1.2 | | |
| | | | | 4.3.1.1 | | |
| | | | | 4.3.3 | | |
| | | | | 4.3.3.1 | | |
| | | | | 4.3.3.5 | | |
| | | | | 4.5.1 | | |
| | | | | 4.5.2 | | |
| | | | | 4.6.1-1 | | |
| | | | | 4.6.3 | | |
| | | | | 4.7.1 | | |
| | | | | 4.7.7.2 | | |
| | | | | 4.8.1 | | |
| | | | | 4.8.2 | | |
| | | | | 4.9.9 | | |
| | | | | 5.1-1 | | |
| | | | | 5.2 | | |
| | | | | Exh 3.2 | | |
| | | | | Exh 4.1 | | |
| | | | | Exh 4.2 | | |
| | | | | Exh 4.3 | | |
| | | | | OCD 1W | | |
| | | | | OCD 2W | | |
| | | | | OCD 3 | | |
| | | | | OCD 5W | | |
| | | | | OCD 7W | | |

WyoLink RFP

| Appendix A and A(2) | | | | Business Case | Appendix S | WyoLink RFP |
|----------------------|---------------------------------|-----------------------------------|-----------------------------------|--------------------------------|--|-------------|
| Level 1 | Level 2 | Level 3 | Level 2 | | | |
| 4.0 INTEROPERABILITY | 4.1 Intrastate Interoperability | 4.1.1 Day-to-Day Interoperability | 4.1.1.3 Regional Interoperability | See 4.1.1.1 | 3.11 3.12.6 4.0 4.8 Table 1 - 12.1 Table 1 - 12.2 | 10.7.5.1 |
| 4.0 INTEROPERABILITY | 4.1 Intrastate Interoperability | 4.1.1 Day-to-Day Interoperability | 4.1.1.4 State Interoperability | See 4.1.1.1 | 3.11 3.12.3 3.12.6 4.0 4.8 Table 1 - 12.1 Table 1 - 12.2 | 10.7.5.1 |
| 4.0 INTEROPERABILITY | 4.1 Intrastate Interoperability | 4.1.1 Day-to-Day Interoperability | 4.1.1.5 Federal Interoperability | See 4.1.1.1 | 3.12.6 4.0 4.8 Table 1 - 12.1 Table 1 - 12.2 | 10.7.5.1 |
| 4.0 INTEROPERABILITY | 4.1 Intrastate Interoperability | 4.1.2 Exclusivity | | Exh 4.3 | 3.12.4 3.12.6 | 10.7.1.1 |
| 5.0 OPERATIONAL | 5.1 Improved Capacity | 5.1.1 Additional Channels | | 1.3 2.2.1 2.2.4 3.1.1 | 3.13 Table 1 - 13.1 Table 1 - 13.2 | 10.7.1.1 |

WyoLink RFP

| Appendix A and A(2) | | | | Business Case | Appendix S | WyoLink RFP |
|---------------------|-----------------------|--------------------------|---------|--|---|-------------|
| Level 1 | Level 2 | Level 3 | Level 2 | | | |
| | | | | 3.3.1-1 3.3.1-9 4.1.1-4 4.1.2 4.3.1 4.3.1.1 4.3.2.1 4.4.6 4.6.1-12 4.6.1-13 4.7.1 4.8.2-4 4.9.9 5.1-8 5.1-9 Exh 4.1 Exh 4.3 OCD 7 | | |
| 5.0 OPERATIONAL | 5.1 Improved Capacity | 5.1.2 Channel Efficiency | | 2.2.1 3.1.1 3.3.1-1 3.3.1-8 4.1.1-11 4.1.2 4.3.1 | 3.13 4.4.2 4.4.5 4.5.2 Table 1 - 13.1 Table 1 - 13.2 | 10.7.1.1 |

WyoLink RFP

| Appendix A and A(2) | | | | Business Case | Appendix S | WyoLink RFP |
|---------------------|---------------------------|---------|---|---|------------|-------------|
| Level 1 | Level 2 | Level 3 | Level 2 | | | |
| | | | | 4.3.1.1 4.3.2.1 4.4.3 4.4.5 4.4.6 4.6.1-13 4.7.1 4.8.2-4 4.9.9 5.1-8 Exh 4.1 Exh 4.3 OCD 1W OCD 5W OCD 6 OCD 7 | | |
| 5.0 OPERATIONAL | 5.1.1 Additional Channels | | 1.3 2.2.1 2.2.4 3.1.1 3.3.1-1 3.3.1-9 4.1.1-4 4.1.2 4.3.1 | 3.13 Table 1 - 13.1 Table 1 - 13.2 | | 10.7.1.1 |

WyoLink RFP

| Appendix A and A(2) | | | | Business Case | Appendix S | WyoLink RFP |
|---------------------|---------------------------|--------------------------|---|---|---|-------------|
| Level 1 | Level 2 | Level 3 | Level 2 | | | |
| | | | 4.3.1.1 4.3.2.1 4.4.6 4.6.1-12 4.6.1-13 4.7.1 4.8.2-4 4.9.9 5.1-8 5.1-9 Exh 4.1 Exh 4.3 OCD 7 | | | |
| 5.0 OPERATIONAL | 5.1.1 Additional Channels | 5.1.2 Channel Efficiency | | 2.2.1 3.1.1 3.3.1-1 3.3.1-8 4.1.1-11 4.1.2 4.3.1 4.3.1.1 4.3.2.1 4.4.3 4.4.5 4.4.6 | 3.13 4.4.2 4.4.5 4.5.2 Table 1 - 13.1 Table 1 - 13.2 | 10.7.1.1 |

WyoLink RFP

| Appendix A and A(2) | | | | Business Case | Appendix S | WyoLink RFP |
|---------------------|------------------------|------------------------------|---------|---|------------|-------------|
| Level 1 | Level 2 | Level 3 | Level 2 | | | |
| | | | | 4.6.1-13 4.7.1 4.8.2-4 4.9.9 5.1-8 Exh 4.1 Exh 4.3 OCD 1W OCD 5W OCD 6 OCD 7 | | |
| 5.0 OPERATIONAL | 5.2 Upgrade Philosophy | 5.2.1 During System Upgrades | | 3.3.2.1-3 3.3.2.1-4 3.3.2.1-5 3.3.2.1-6 3.4.1 3.5 3.6.1.2 4.1.1-3 4.1.1-10 4.1.1-13 4.4.6 4.9.9 Exh 4.1 | | 10.6.6 |
| 5.0 OPERATIONAL | 5.2 Upgrade | 5.2.2 Short-term | | 3.3.2.1-3 | | 10.6.6 |

WyoLink RFP

| Appendix A and A(2) | | | | Business Case | Appendix S | WyoLink RFP |
|---------------------|------------|---------|---------|--|------------|-------------|
| Level 1 | Level 2 | Level 3 | Level 2 | | | |
| | Philosophy | | | 3.3.2.1-4 3.3.2.1-5 3.3.2.1-6 3.3.2-5 3.5 3.6.1.2 3.6.3.4 4.9.9 Exh 3.3 Exh 3.7 Exh 3.11 | | |