

City of Pullman  
Request for Proposal  
Microwave Radio Extension

I. Introduction

The City of Pullman is seeking the services of a contractor to design, install, and provide ongoing maintenance services for a digital microwave communications system to interconnect the City's leased office at Adams Mall (600 NE Colorado) with an existing microwave network on Webster Hall at WSU (installed 2011).

This project will be awarded to a successful contractor who will be responsible for the purchase, installation and ongoing support of the microwave system described within this request for proposals. A successful contractor will demonstrate system support and maintenance capabilities with an office and permanent technical support staff capable of responding to the city of Pullman, Washington within 24-hours.

Respondents to this request for proposals should demonstrate knowledge and expertise in microwave communications that will allow the City of Pullman to:

1. Extend a high performance, scalable enterprise microwave system to provide reliable high speed data communications to one additional facility.
2. Design and engineer a reliable microwave link to an availability of 99.995%.
3. Provide a high quality installation of all system components and associated infrastructure using industry best practices and standards in conformance to applicable codes and ordinances.
4. Provide ongoing support and maintenance.

All costs incurred by the contractor to complete this project must be included in the bid price. Prices provided in the response to this request for proposals will take into consideration all costs, including installation labor, materials, equipment, tools, delivery, transportation, insurance, shop drawings, project scheduling, and all other labor, materials and activities required to provide the microwave system and associated services including permits and Federal Communications Commission licensing where applicable.

II. Background

The City of Pullman has received a grant from DOJ for a series of cameras in support of public safety, to be installed in the vicinity of Adams Mall (600 NE Colorado Street), on College Hill. This system will be connected to the City microwave backbone currently installed on Webster Hall at WSU, for connection to the Internet and eventual viewing in police cars. The existing system installed 2011 uses Dragonwave Horizon Compact 23Gz radios. The optimal solution will use similar or identical equipment to leverage expertise in maintenance and training.

There is no access to the roof of Adams Mall from inside the building. The vendor will be required to provide their own equipment to reach the roof, and to coordinate access with representatives of Corporate Pointe Development.

A. Proposed Microwave Sites

Listed below are the proposed microwave sites.

1. Adams Mall, Roof, North side, line of sight to Webster Hall roof.
2. Webster Hall roof, East side, line of sight to Adams Mall roof.

B. Network Topology

The 2 sites will be connected by a point-to-point link, terminating in Ethernet switches, provided by the customer.

1. At Webster Hall the switch is located on the floor below the antenna.
2. At Adams Mall the switch will be located in the phone room on the 2<sup>nd</sup> floor.

C. Physical Installation

The roof of Adams Mall has existing HVAC and utilities. They typically feed thru the roof membrane using ports installed for that purpose. Proposed changes to the roof have been approved by Corporate Pointe.

1. The vendor will install a 3" conduit drop to the phone room, similar in appearance and routing to other existing conduits and entries. An approximate location has been identified (see supporting photos).
2. The additional space in the conduit will be used in other phases of the project. The conduit will be sealed against weather penetration in a temporary manner.

#### D. Cabinet Description

The vendor will install a wall mounted rack cabinet.

1. The cabinet will be mounted above the door of the phone room, inside the phone room, on the inside of the hallway wall.
2. The cabinet will be lockable, ventilated, of at least 12u capacity, at least 15” deep.
3. The cabinet will have at least 120# net weight capacity as designed and installed. A typical example would include the iStarUSA WM1260B .

#### E. Power to Cabinet

The vendor will install surface mount conduit, supplying a 110 v 15a circuit to a quad receptacle outlet adjacent to the cabinet, for use by components installed therein.

1. This outlet will have its own circuit breaker, with no other items on that circuit.
2. The circuit breaker will be clearly labeled.
3. The outlet will be clearly labeled with the circuit breaker information.

#### F. Ethernet to Office

The vendor will install (2) Ethernet connections thru the wall of the phone room, South, into the office space rented by the Pullman Police Department.

1. The Ethernet will terminate in RJ-45 keystones
2. The keystones will be mounted in wall plates on the wall.
3. The wall plates will be mounted on standard electrical boxes.
4. The wall plates and boxes in the phone room, will be mounted adjacent to the cabinet.
5. The Ethernet connections will be tested to 1Gb.
6. The Ethernet cables will be labeled on each end.

### III. Scope of Work

#### A. Turnkey

The contractor will furnish all materials, equipment, tools, engineering, and labor necessary to fully complete, in a professional and timely manner, the requirements of this request for proposals.

**B. Design**

The contractor will be responsible for the design and construction of the digital microwave system. In submitting a proposal for consideration the contractor acknowledges a full understanding of the scope of work and the system requirements.

The contractor guarantees that the microwave system will be furnished, designed, installed, and tested by the contractor to meet or exceed the City of Pullman's current and projected requirements as described in this request for proposals.

The contractor will provide any changes to the microwave system that are required to meet the performance criteria. Any changes in system components not included in the contractor's response to this request for proposals required to correct deficiencies because the contractor has failed to satisfy performance requirements stated in this request for proposals will be provided at the contractor's expense.

**C. Integration**

The contractor will be responsible for the proper installation and interfacing of all of the equipment provided pursuant to this request for proposals. In circumstances where existing equipment is being utilized in the overall network architecture, the contractor shall warrant that the microwave system will be compatible with City's existing communications infrastructure. The City will provide network routers and switches at each site that they are required to facilitate communications.

**D. Sites and Inspection**

The contractor will complete a thorough site inspection of each of the proposed sites. The contractor will provide, in writing, a list of improvements or alterations that are required at each site. Details provided in this request for proposals pertaining to sites must be verified by the contractor.

Should it become necessary that alternative sites and facilities be substituted for one or more of the proposed sites, the contractor, in addition to providing a narrative explaining the unsatisfactory condition(s) that exist(s), will inspect the proposed alternative sites and provide, in writing, a summary of the existing conditions at the proposed alternative site and a list of improvements or alterations that are required at each of the proposed alternative sites.

The contractor shall, prior to installation of the microwave system at each site, re-inspect the site, including structures located thereon and identify any changes in sites and facilities since the initial inspection that may affect performance of the microwave system. If the contractor fails to inspect the sites prior to installation of components of the microwave system, the contractor shall thereafter be liable for any failure of the microwave system to perform in conformance with this request for proposals.

The contractor shall conduct a load analysis study, if required, on existing structures proposed for microwave equipment to be installed to ensure that the integrity of the structure is not compromised.

E. Installation and Alterations

The contractor's work shall comply with applicable federal, state, and local codes and ordinances. Prior to installing any components of the microwave system, at any site, the contractor shall determine and ensure that the construction and alterations required for the microwave system to be properly installed are present, sufficient, and appropriate at each site.

F. Permits

The contractor shall obtain any City of Pullman building permit that may be required prior to beginning work. The City shall pay all building permit fees. The contractor is responsible to coordinate all required building inspections with the City of Pullman Protective Inspections Division.

The contractor shall obtain the necessary electrical permit for this work and shall pay all related fees. The contractor is responsible to coordinate all required electrical inspections with the State of Washington electrical inspector.

The contractor shall obtain the necessary FCC licenses for this work and shall pay all related fees. The City of Pullman is to be the Licensee for such licenses.

G. Prevailing Wages

For the on-site installation work on this project, laborers, workmen, or mechanics shall not be paid less than the hourly minimum rate of wage determined to be the prevailing rate by Washington State Department of Labor and Industries. The contractor will be required to obtain "Statement of Intent to Pay Prevailing Wage" and "Affidavit of Wages Paid" forms from the Washington State Department of Labor and Industries for his company and for all subcontractors. All fees for L & I forms are the contractor's responsibility and no separate reimbursement to the contractor by the City will be made.

H. Microwave Paths

The contractor shall engineer, design, and implement high-availability microwave paths that have path reliabilities of not less than 99.995% and a fade margin of not less than 30 dB for all microwave paths. The contractor shall apply for, coordinate and obtain FCC licenses for all microwave paths requiring licensing.

I. Service Interruptions

The contractor understands that the microwave system may at times be operating in conjunction with current two-way radio, voice, network, and other communications infrastructure.

If the work under this contract results in an unavoidable interruption of service to any of the City of Pullman equipment that is operational, the contractor shall first contact the City and describe in writing the following:

1. The nature of the work that will cause the unavoidable interruption
2. The nature of the interruption
3. The duration of the interruption
4. Detailed scope and sequence of the work to be performed during the interruption

If the contractor fails to follow the procedure described above or if the contractor's work causes an interruption to a greater extent or duration than was described in the written correspondence with the City of Pullman as described above, the contractor shall be liable for damages that are incurred as a result.

J. Staging

The contractor shall stage the microwave system prior to installation. All cabling, wiring, programming, and equipment configurations will be completely integrated in final configurations prior to delivery. It is understood that additional optimization (level setting, power adjustment, etc.) will be required on site.

K. Training

The contractor shall conduct a comprehensive training course with supporting training documentation to instruct personnel of the City in the proper operation, use, upgrade and maintenance of the microwave system.

L. Maintenance

The contractor shall provide all labor, parts, and tools required for the maintenance of the microwave system through the warranty period.

The contractor shall provide a maintenance program for one year, with extension options for a second and third year, including, but not limited to, detail describing response time, personnel training, number of technical staff available to perform maintenance, equipment

required for analysis and troubleshooting, optimization, and schedules for preventive maintenance.

M. Operations and Maintenance (O&M) Documentation

The contractor shall furnish three (3) hardcopies and one (1) electronic copy, in Adobe pdf format, of the systems O&M manuals including microwave system drawings for the project. The O&M manuals should have sufficient detail to allow a system technician or engineer, having basic electronic knowledge and experience, to understand the systems operations and perform corrective and preventive maintenance. The manuals should highlight any special circuitry, wiring, interfacing, and custom or non-standard procedures required to operate, maintain, and install any of the equipment furnished under this request for proposals and resulting contract. The electronic O&M manual should contain original, reproducible manufacturer supplied documents organized identical to the hardcopy O&M manuals. Drawings and/or schematics should be produced using a computerized CAD program. Scanned copies of facsimile documents should not be used.

N. Project Management

The contractor shall assign a project manager who will provide technical direction for the duration of this project.

IV. Design Standards

A. Solution Requirements

The microwave system should be designed and constructed to meet the following minimum specifications:

1. The solution will use Dragonwave Horizon Compact 23Gz radios.
2. Ethernet bandwidth (half duplex). A minimum of 75 Mbps will be supported on all microwave paths. All microwave paths shall be capable of being upgraded to provide a minimum of 400 Mbps. The contractor shall provide a narrative in the proposal that describes the upgrade path in detail including cost.
3. Integrated outdoor radio unit.
4. Minimum operating temperatures of -27°F (-33°C) to +131°F (+55°C).
5. Wind speeds of up to 90 mph.
6. Power requirements not to exceed 90–240 VAC, 50–60 Hz.
7. Ethernet IEEE 802.3.
8. 128/256-bit AES Encryption.

9. Adaptive Modulation.
10. Traffic Prioritization (QOS).
11. Automatic Power Control.
12. Web based/Telnet management, SNMP management preferred.

B. Applicable Standards

The applicable sections or portions of the standards, regulations, and codes of the entities listed below shall apply for site preparation and for the installation, operation, maintenance, and service of the microwave system proposed. In the event that the requirements of the standards, regulations, or codes differ, the more stringent will apply.

Federal Communications Commission (FCC)

National Fire Protection Association (NFPA)

National Electric Code (NEC)

Occupational Safety and Health Act (OSHA)

Institute of Electrical and Electronics Engineers (IEEE)

Underwriters Laboratories (UL)

American Institute of Steel Construction (AISC)

State or local ordinances and building, fire, and zoning codes

American Welding Society (AWS)

C. Installation Guidelines

The following installation guidelines represent minimum installation, cabling, and grounding guidelines:

1. Transmission line must be secured using stainless steel hangers and shall be grounded within five feet of the antenna and also at bottom of tank to equipment, to an appropriate ground bar with 2-hole lugs using stainless steel hardware.
2. All mounting and outdoor equipment is to be grounded using #6 AWG copper stranded wire.
3. Neither ladders nor ladder connection systems shall be used for a cable pathway, FAA lighting must remain un-obstructed and walkways must remain clear of cable runs.



4. All cables are to be secured every four feet.
5. Cables shall be labeled.
6. Weather-proofing will consist of Butyl, 2" vinyl tape, 3/4" vinyl tape and must be applied using shingle method.
7. Outdoor rated cable is to be used exterior of cabinets and shelters.
8. Cables subject to damage such as fiber-optic cables shall be protected in conduit or similar approved.
9. Grade level and tower top ground bars are to be bonded together using #2 AWG stranded insulated wire.
10. Shielded data cables shall be grounded to tower top ground bar as well as grade level if lengths are in excess of 50 feet.
11. All outdoor radio units must be properly grounded with #6 AWG wire using two-hole lugs (exceptions are only admitted if radio unit only allows for single-hole termination).
12. All ground lugs shall have heat shrink.
13. All exposed solid ground wires at grade level are to be protected with liquid tight and to be sealed with silicone and shall expose no more than two inches of wire at termination point.
14. All grounding and battery terminations are to have NO-OX applied.
15. All equipment including trays, conduit and ice bridges are to be grounded using #6 AWG stranded green ground wire, except ice bridges where a #2 AWG solid is to be used with two-hole lugs.
16. All conduits or pipes at grade level are to be capped.
17. Working around an RF environment that may exceed MPE specifications requires personnel to have appropriate RF site safety certifications and training.

#### IV. Project Timing

Proposals will be accepted until 5:00 PM on February 13, 2012. In order to consolidate inquiries from contractors City staff will be available to answer questions on January 30, 2012 at 10:00 am in the Large Conference Room in Pullman City Hall. Accompanied access to the Webster Hall site will be permitted during regular business hours 1:00 PM to 3:00 PM on February 30, 2012. Contractors should schedule site visits with Jerry Cork, Information Systems Specialist at (509) 338-3365 or by email at [jerry.cork@pullman-wa.gov](mailto:jerry.cork@pullman-wa.gov) at least 24-hours in advance. There will be no access to Adams Mall due to safety concerns with ladder use. Images will be made available electronically in support of this project. Other contact with City staff is discouraged.

It is the City's desire to construct this project by June 1, 2012.

#### V. Proposal Requirements

To facilitate the review process, proposals should follow the outline provided below as closely as possible. Proposals should include, as a minimum, the following information:

## Chapter 1 – Cover Letter and Proposal Summary

## Chapter 2 – Qualifications and References

### A. Company

1. An introduction to your company including principals who will be involved with this project
2. The name, title, address, and telephone number of individuals with authority to negotiate and execute contracts and who may be contacted during the evaluation process.
3. A list of projects similar to this project that your company has completed in the recent past. Provide references for this list.
4. Provide the City of Pullman with the company's most recent OSHA 300 report.

### B. Key Personnel

1. The names and qualifications of the key personnel who will be assigned to this project. Identify the project manager who will be responsible for this project and who will be your company's primary contact.
2. A list of similar projects the identified project manager has recently completed.

### C. Sub-Contractors

1. Provide the business name, description of work to be completed, key personnel, qualifications, and safety program records for all sub-contractors that will work on this project.
2. Provide the City of Pullman with the most recent OSHA 300 report for each of the proposed sub-contractors.

## Chapter 3 – Technical Solution

### A. Project Understanding

A discussion that demonstrates your understanding of this project, why your company is best qualified to perform this work and why you believe your project solution is the best solution for the City of Pullman. Elaborate on your understanding of the scope of work to be provided, particular challenges that you foresee this project presenting, and your approach for addressing those challenges.

### B. System Design

Provide a detailed narrative of your proposed solution in conformance with the conditions provided herein. Include a description of the upgrade path for the 75Mbps to 400 Mbps.

### C. Site Inspection Documents

### D. Path profiles and Path Calculations

- E. Network and Site Drawings (AutoCad™ DWG format)
- F. Infrastructure Inventory
- G. Catalog Data Submittal
- H. Operations and Maintenance Manuals

Provide a detailed outline and narrative for each section of the O&M manual that will be delivered to the City at the end of the project. Please refer to Section III.M.

- I. Manufacturer Warranty Information

#### Chapter 4 – Implementation Plan

- A. Proposed installation plan and schedule

#### Chapter 5 – Support Plan & Pricing

- A. Maintenance program with second and third year options
  - 1. Narrative discussing your ability to provide ongoing support.
  - 2. Narrative describing the process for seeking technical support services, including hours of operation and expected response times.
  - 3. Pricing.

#### Chapter 6 – Solution Pricing Plan

- A. Proposals shall be limited to 50 pages in length plus resumes and references. Proposals shall be developed from the contractor's understanding of and experience with this type of work, the information provided herein, accompanied site visits and the question and answer session at Pullman City Hall on January 30, 2012. Please do not contact City of Pullman staff at other times during this phase of the selection process for more particular information

## VI. Selection Criteria

Proposals will be reviewed by an evaluation committee comprised of individuals from various disciplines and experience with microwave radio systems. This committee will determine the extent to which each proposal best meets the City of Pullman's system objectives using a set of evaluation criteria.

The City of Pullman will use the following process to evaluate and rate proposals:

- A. Proposals will be evaluated for completeness and best fit to the requirements and objectives of this request for proposals. The City of Pullman reserves the right to waive minor informalities and discrepancies. Proposals will be evaluated to determine if they comply with the administrative, contractual and technical requirements of the request for proposals. If the proposal is unclear, proposers may be asked to provide further written clarification.
- B. The proposals will be evaluated using the points system described below.

- |                                     |                    |
|-------------------------------------|--------------------|
| a. Qualifications and References    | 15 points maximum. |
| b. Technical Solution               | 30 points maximum. |
| c. Operation and Maintenance Manual | 5 points maximum   |
| d. Implementation Plan              | 10 points maximum. |
| e. Support Plan & Pricing           | 10 points maximum. |
| f. Solution Plan Pricing            | 30 points maximum. |
- C. A proposer will be selected from the proposals submitted or, at the City's discretion, a short list of proposers may be invited to make a presentation in support of their proposal. These presentations will be made to the evaluation committee.
- D. The findings of the evaluation committee will be summarized and the summary and an award recommendation will be forwarded to the City of Pullman Police Chief who will then attempt to negotiate an agreement with the selected proposer. It is anticipated that a standard City of Pullman construction contract will be the base agreement and that a provision for 5% retainage pending completion of all contract close-out documents will be included.

## VII. Special Conditions

- A. General Terms. This request for proposals does not commit the City to enter into an agreement, to pay any costs incurred in the preparation of a proposal or subsequent negotiations, or to contract for the project. All information furnished in this request for proposals was gathered from sources deemed to be reliable. No representation or warranty is intended as to the accuracy or completeness of the information contained herein and the City reserves the right to alter or cancel this request for proposals.
- B. Reservation of Rights by the City. The issuance of this request for proposals does not constitute an agreement by the City that any agreement will actually be entered into by the City. The City expressly reserves the right to:

Waive any immaterial defect or informality in any proposal or procedure.

Reject any or all proposals.

Reissue the request for proposals.

Invite additional respondents to the request for proposals.

Complete the services contemplated by this request for proposals by any other means.

Request additional information and data from any or all respondents.

Extend the date for submission of the request for proposals.

Supplement, amend, or otherwise modify the request for proposals and cancel this request with or without the substitution of another request for proposal.

- C. Negotiation Rights. The acceptance of a proposal and invitation to negotiate an agreement does not commit the City to accept any or all of the terms of the proposal. Final terms of any agreement will be agreed upon during negotiations. Negotiations may be terminated for failure to reach mutually acceptable terms.
- D. Right to Disqualify. The City reserves the right to disqualify any respondent who fails to provide information or data requested herein or who provides inaccurate or misleading information or data. Further, the City reserves the right to disqualify any respondent on the basis of any real or apparent conflict of interest. By responding to this request for proposals, the respondent agrees that any finding by the City of any fact in dispute related to this request for proposals or the responses thereto shall be final and conclusive except as provided herein.
- E. Preparation Costs. Each respondent will be responsible for all costs incurred in preparing a response to this request for proposals. All materials and documents submitted by the respondents in response to this request for proposals will become the property of the City and will not be returned. As such, they constitute public records which may be delivered to a person making an appropriate request for public records. The selected respondent will be responsible for all costs incurred by it during negotiations.
- F. Affirmative Action Requirements. Respondent, by submission of a response, agrees to not discriminate against any worker, employee, subcontractor, or any member of the public because of race, creed, color, religion, sex, age, marital status, national origin, sensory or physical handicap, or otherwise commit an unfair employment practice and further agrees to comply with all Federal, State, and City equal employment opportunity requirements.
- G. Disadvantaged Business Enterprises. Disadvantaged Business Enterprises (DBE) and other small businesses are strongly encouraged to respond. Respondents should ensure that DBEs and other small businesses have the opportunity to participate in the work that is subject to this request for proposals. The city utilizes the Directory of Certified Minority, Women and Disadvantaged Business Enterprises produced by the Washington State Office of Minority and Women's Business Enterprises (OMWBE) for certification of DBE firms.

#### VIII. Submission Requirements

To be considered for this project, five copies of the proposal must be received at the office of the Pullman Police Department, 260 SE Kamiaken Street, Pullman WA 99163, no later than 5:00 PM on February 13, 2012. The appropriate mailing address is:

City of Pullman

ATTN: Jerry Cork

260 SE Kamiaken Street

Pullman, WA 99163