

AGREEMENT FOR SERVICES OF INDEPENDENT CONTRACTOR

THIS AGREEMENT (hereafter Agreement) is made by and between the County of Santa Barbara, a political subdivision of the State of California (hereafter COUNTY) and Federal Engineering, Inc. with an address at 10600 Arrowhead Drive, Fairfax, VA 22030 (hereafter CONTRACTOR) wherein CONTRACTOR agrees to provide and COUNTY agrees to accept the services specified herein.

WHEREAS, CONTRACTOR represents that it is specially trained, skilled, experienced, and competent to perform the special services required by COUNTY and COUNTY desires to retain the services of CONTRACTOR pursuant to the terms, covenants, and conditions herein set forth;

NOW, THEREFORE, in consideration of the mutual covenants and conditions contained herein, the parties agree as follows:

1. DESIGNATED REPRESENTATIVE

Carl Thornton at phone number (805) 681-5581 is the representative of COUNTY and will administer this Agreement for and on behalf of COUNTY. Rajit Jhaver at phone number (480) 650-7679 is the authorized representative for CONTRACTOR. Changes in designated representatives shall be made only after advance written notice to the other party.

2. NOTICES

Any notice or consent required or permitted to be given under this Agreement shall be given to the respective parties in writing, by personal delivery or facsimile, or with postage prepaid by first class mail, registered or certified mail, or express courier service, as follows:

To COUNTY: Carl Thornton, Communications Manager, 4568 Calle Real, Santa Barbara, CA 93110-1306,
(805) 681-5581

To CONTRACTOR: Ronald F. Bosco, President, 10600 Arrowhead Drive, Fairfax, VA 22030, (703) 359-8200

or at such other address or to such other person that the parties may from time to time designate in accordance with this Notices section. If sent by first class mail, notices and consents under this section shall be deemed to be received five (5) days following their deposit in the U.S. mail. This Notices section shall not be construed as meaning that either party agrees to service of process except as required by applicable law.

3. SCOPE OF SERVICES

CONTRACTOR agrees to provide services to COUNTY in accordance with EXHIBIT A attached hereto and incorporated herein by reference.

4. TERM

CONTRACTOR shall commence performance on December 20, 2017 and end performance upon completion, but no later than June 30, 2018 unless otherwise directed by COUNTY or unless earlier terminated.

5. COMPENSATION OF CONTRACTOR

In full consideration for CONTRACTOR's services, CONTRACTOR shall be paid for performance under this Agreement in accordance with the terms of EXHIBIT B attached hereto and incorporated herein by reference. Billing shall be made by invoice, which shall include the contract number assigned by COUNTY and which is delivered to the

address given in Section 2 NOTICES above following completion of the increments identified on EXHIBIT B. Unless otherwise specified on EXHIBIT B, payment shall be net thirty (30) days from presentation of invoice.

6. INDEPENDENT CONTRACTOR

It is mutually understood and agreed that CONTRACTOR (including any and all of its officers, agents, and employees), shall perform all of its services under this Agreement as an independent contractor as to COUNTY and not as an officer, agent, servant, employee, joint venturer, partner, or associate of COUNTY. Furthermore, COUNTY shall have no right to control, supervise, or direct the manner or method by which CONTRACTOR shall perform its work and function. However, COUNTY shall retain the right to administer this Agreement so as to verify that CONTRACTOR is performing its obligations in accordance with the terms and conditions hereof. CONTRACTOR understands and acknowledges that it shall not be entitled to any of the benefits of a COUNTY employee, including but not limited to vacation, sick leave, administrative leave, health insurance, disability insurance, retirement, unemployment insurance, workers' compensation and protection of tenure. CONTRACTOR shall be solely liable and responsible for providing to, or on behalf of, its employees all legally-required employee benefits. In addition, CONTRACTOR shall be solely responsible and save COUNTY harmless from all matters relating to payment of CONTRACTOR's employees, including compliance with Social Security withholding and all other regulations governing such matters. It is acknowledged that during the term of this Agreement, CONTRACTOR may be providing services to others unrelated to the COUNTY or to this Agreement.

7. STANDARD OF PERFORMANCE

CONTRACTOR represents that it has the skills, expertise, and licenses/permits necessary to perform the services required under this Agreement. Accordingly, CONTRACTOR shall perform all such services in the manner and according to the standards observed by a competent practitioner of the same profession in which CONTRACTOR is engaged. All products of whatsoever nature, which CONTRACTOR delivers to COUNTY pursuant to this Agreement, shall be prepared in a first class and workmanlike manner and shall conform to the standards of quality normally observed by a person practicing in CONTRACTOR's profession. CONTRACTOR shall correct or revise any errors or omissions, at COUNTY'S request without additional compensation. Permits and/or licenses shall be obtained and maintained by CONTRACTOR without additional compensation.

8. DEBARMENT AND SUSPENSION

CONTRACTOR certifies to COUNTY that it and its employees and principals are not debarred, suspended, or otherwise excluded from or ineligible for, participation in federal, state, or county government contracts. CONTRACTOR certifies that it shall not contract with a subcontractor that is so debarred or suspended.

9. TAXES

CONTRACTOR shall pay all taxes, levies, duties, and assessments of every nature due in connection with any work under this Agreement and shall make any and all payroll deductions required by law. COUNTY shall not be responsible for paying any taxes on CONTRACTOR's behalf, and should COUNTY be required to do so by state, federal, or local taxing agencies, CONTRACTOR agrees to promptly reimburse COUNTY for the full value of such paid taxes plus interest and penalty, if any. These taxes shall include, but not be limited to, the following: FICA (Social Security), unemployment insurance contributions, income tax, disability insurance, and workers' compensation insurance.

10. CONFLICT OF INTEREST

CONTRACTOR covenants that CONTRACTOR presently has no employment or interest and shall not acquire any employment or interest, direct or indirect, including any interest in any business, property, or source of income, which would conflict in any manner or degree with the performance of services required to be performed under this Agreement. CONTRACTOR further covenants that in the performance of this Agreement, no person having any such interest shall be employed by CONTRACTOR. CONTRACTOR must promptly disclose to COUNTY, in writing, any

potential conflict of interest. COUNTY retains the right to waive a conflict of interest disclosed by CONTRACTOR if COUNTY determines it to be immaterial, and such waiver is only effective if provided by COUNTY to CONTRACTOR in writing.

11. OWNERSHIP OF DOCUMENTS AND INTELLECTUAL PROPERTY

COUNTY shall be the owner of the following items incidental to this Agreement upon production, whether or not completed: all data collected, all documents of any type whatsoever, all photos, designs, sound or audiovisual recordings, software code, inventions, technologies, and other materials, and any material necessary for the practical use of such items, from the time of collection and/or production whether or not performance under this Agreement is completed or terminated prior to completion. CONTRACTOR shall not release any of such items to other parties except after prior written approval of COUNTY.

Unless otherwise specified in Exhibit A, CONTRACTOR hereby assigns to COUNTY all copyright, patent, and other intellectual property and proprietary rights to all data, documents, reports, photos, designs, sound or audiovisual recordings, software code, inventions, technologies, and other materials prepared or provided by CONTRACTOR pursuant to this Agreement (collectively referred to as "Copyrightable Works and Inventions"). COUNTY shall have the unrestricted authority to copy, adapt, perform, display, publish, disclose, distribute, create derivative works from, and otherwise use in whole or in part, any Copyrightable Works and Inventions. CONTRACTOR agrees to take such actions and execute and deliver such documents as may be needed to validate, protect and confirm the rights and assignments provided hereunder. CONTRACTOR warrants that any Copyrightable Works and Inventions and other items provided under this Agreement will not infringe upon any intellectual property or proprietary rights of any third party. CONTRACTOR at its own expense shall defend, indemnify, and hold harmless COUNTY against any claim that any Copyrightable Works or Inventions or other items provided by CONTRACTOR hereunder infringe upon intellectual or other proprietary rights of a third party, and CONTRACTOR shall pay any damages, costs, settlement amounts, and fees (including attorneys' fees) that may be incurred by COUNTY in connection with any such claims. This Ownership of Documents and Intellectual Property provision shall survive expiration or termination of this Agreement.

12. NO PUBLICITY OR ENDORSEMENT

CONTRACTOR shall not use COUNTY's name or logo or any variation of such name or logo in any publicity, advertising or promotional materials. CONTRACTOR shall not use COUNTY's name or logo in any manner that would give the appearance that the COUNTY is endorsing CONTRACTOR. CONTRACTOR shall not in any way contract on behalf of or in the name of COUNTY. CONTRACTOR shall not release any informational pamphlets, notices, press releases, research reports, or similar public notices concerning the COUNTY or its projects, without obtaining the prior written approval of COUNTY.

13. COUNTY PROPERTY AND INFORMATION

All of COUNTY's property, documents, and information provided for CONTRACTOR's use in connection with the services shall remain COUNTY's property, and CONTRACTOR shall return any such items whenever requested by COUNTY and whenever required according to the Termination section of this Agreement. CONTRACTOR may use such items only in connection with providing the services. CONTRACTOR shall not disseminate any COUNTY property, documents, or information without COUNTY's prior written consent.

14. RECORDS, AUDIT, AND REVIEW

CONTRACTOR shall keep such business records pursuant to this Agreement as would be kept by a reasonably prudent practitioner of CONTRACTOR's profession and shall maintain such records for at least four (4) years following the termination of this Agreement. All accounting records shall be kept in accordance with generally accepted accounting principles. COUNTY shall have the right to audit and review all such documents and records at any time during CONTRACTOR's regular business hours or upon reasonable notice. In addition, if this Agreement exceeds ten thousand dollars (\$10,000.00), CONTRACTOR shall be subject to the examination and audit of the California State

Auditor, at the request of the COUNTY or as part of any audit of the COUNTY, for a period of three (3) years after final payment under the Agreement (Cal. Govt. Code Section 8546.7). CONTRACTOR shall participate in any audits and reviews, whether by COUNTY or the State, at no charge to COUNTY.

If federal, state or COUNTY audit exceptions are made relating to this Agreement, CONTRACTOR shall reimburse all costs incurred by federal, state, and/or COUNTY governments associated with defending against the audit exceptions or performing any audits or follow-up audits, including but not limited to: audit fees, court costs, attorneys' fees based upon a reasonable hourly amount for attorneys in the community, travel costs, penalty assessments and all other costs of whatever nature. Immediately upon notification from COUNTY, CONTRACTOR shall reimburse the amount of the audit exceptions and any other related costs directly to COUNTY as specified by COUNTY in the notification.

15. INDEMNIFICATION AND INSURANCE

CONTRACTOR agrees to the indemnification and insurance provisions as set forth in EXHIBIT C attached hereto and incorporated herein by reference.

16. NONDISCRIMINATION

COUNTY hereby notifies CONTRACTOR that COUNTY's Unlawful Discrimination Ordinance (Article XIII of Chapter 2 of the Santa Barbara County Code) applies to this Agreement and is incorporated herein by this reference with the same force and effect as if the ordinance were specifically set out herein and CONTRACTOR agrees to comply with said ordinance.

17. NONEXCLUSIVE AGREEMENT

CONTRACTOR understands that this is not an exclusive Agreement and that COUNTY shall have the right to negotiate with and enter into contracts with others providing the same or similar services as those provided by CONTRACTOR as the COUNTY desires.

18. NON-ASSIGNMENT

CONTRACTOR shall not assign, transfer or subcontract this Agreement or any of its rights or obligations under this Agreement without the prior written consent of COUNTY and any attempt to so assign, subcontract or transfer without such consent shall be void and without legal effect and shall constitute grounds for termination.

19. TERMINATION

- A. **By COUNTY.** COUNTY may, by written notice to CONTRACTOR, terminate this Agreement in whole or in part at any time, whether for COUNTY's convenience, for nonappropriation of funds, or because of the failure of CONTRACTOR to fulfill the obligations herein.
1. **For Convenience.** COUNTY may terminate this Agreement in whole or in part upon thirty (30) days written notice. During the thirty (30) day period, CONTRACTOR shall, as directed by COUNTY, wind down and cease its services as quickly and efficiently as reasonably possible, without performing unnecessary services or activities and by minimizing negative effects on COUNTY from such winding down and cessation of services.
 2. **For Nonappropriation of Funds.** Notwithstanding any other provision of this Agreement, in the event that no funds or insufficient funds are appropriated or budgeted by federal, state or COUNTY governments, or funds are not otherwise available for payments in the fiscal year(s) covered by the term of this Agreement, then COUNTY will notify CONTRACTOR of such occurrence and COUNTY may terminate or suspend this Agreement in whole or in part, with or without a prior notice period.

Subsequent to termination of this Agreement under this provision, COUNTY shall have no obligation to make payments with regard to the remainder of the term.

3. **For Cause.** Should CONTRACTOR default in the performance of this Agreement or materially breach any of its provisions, COUNTY may, at COUNTY's sole option, terminate or suspend this Agreement in whole or in part by written notice. Upon receipt of notice, CONTRACTOR shall immediately discontinue all services affected (unless the notice directs otherwise) and notify COUNTY as to the status of its performance. The date of termination shall be the date the notice is received by CONTRACTOR, unless the notice directs otherwise.
- B. **By CONTRACTOR.** Should COUNTY fail to pay CONTRACTOR all or any part of the payment set forth in EXHIBIT B, CONTRACTOR may, at CONTRACTOR's option terminate this Agreement if such failure is not remedied by COUNTY within thirty (30) days of written notice to COUNTY of such late payment.
- C. Upon termination, CONTRACTOR shall deliver to COUNTY all data, estimates, graphs, summaries, reports, and all other property, records, documents or papers as may have been accumulated or produced by CONTRACTOR in performing this Agreement, whether completed or in process, except such items as COUNTY may, by written permission, permit CONTRACTOR to retain. Notwithstanding any other payment provision of this Agreement, COUNTY shall pay CONTRACTOR for satisfactory services performed to the date of termination to include a prorated amount of compensation due hereunder less payments, if any, previously made. In no event shall CONTRACTOR be paid an amount in excess of the full price under this Agreement nor for profit on unperformed portions of service. CONTRACTOR shall furnish to COUNTY such financial information as in the judgment of COUNTY is necessary to determine the reasonable value of the services rendered by CONTRACTOR. In the event of a dispute as to the reasonable value of the services rendered by CONTRACTOR, the decision of COUNTY shall be final. The foregoing is cumulative and shall not affect any right or remedy which COUNTY may have in law or equity.

20. SECTION HEADINGS

The headings of the several sections, and any Table of Contents appended hereto, shall be solely for convenience of reference and shall not affect the meaning, construction or effect hereof.

21. SEVERABILITY

If any one or more of the provisions contained herein shall for any reason be held to be invalid, illegal or unenforceable in any respect, then such provision or provisions shall be deemed severable from the remaining provisions hereof, and such invalidity, illegality or unenforceability shall not affect any other provision hereof, and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.

22. REMEDIES NOT EXCLUSIVE

No remedy herein conferred upon or reserved to COUNTY is intended to be exclusive of any other remedy or remedies, and each and every such remedy, to the extent permitted by law, shall be cumulative and in addition to any other remedy given hereunder or now or hereafter existing at law or in equity or otherwise.

23. TIME IS OF THE ESSENCE

Time is of the essence in this Agreement and each covenant and term is a condition herein.

24. NO WAIVER OF DEFAULT

No delay or omission of COUNTY to exercise any right or power arising upon the occurrence of any event of default shall impair any such right or power or shall be construed to be a waiver of any such default or an acquiescence

therein; and every power and remedy given by this Agreement to COUNTY shall be exercised from time to time and as often as may be deemed expedient in the sole discretion of COUNTY.

25. ENTIRE AGREEMENT AND AMENDMENT

In conjunction with the matters considered herein, this Agreement contains the entire understanding and agreement of the parties and there have been no promises, representations, agreements, warranties or undertakings by any of the parties, either oral or written, of any character or nature hereafter binding except as set forth herein. This Agreement may be altered, amended or modified only by an instrument in writing, executed by the parties to this Agreement and by no other means. Each party waives their future right to claim, contest or assert that this Agreement was modified, canceled, superseded, or changed by any oral agreements, course of conduct, waiver or estoppel.

26. SUCCESSORS AND ASSIGNS

All representations, covenants and warranties set forth in this Agreement, by or on behalf of, or for the benefit of any or all of the parties hereto, shall be binding upon and inure to the benefit of such party, its successors and assigns.

27. COMPLIANCE WITH LAW

CONTRACTOR shall, at its sole cost and expense, comply with all County, State and Federal ordinances and statutes now in force or which may hereafter be in force with regard to this Agreement. The judgment of any court of competent jurisdiction, or the admission of CONTRACTOR in any action or proceeding against CONTRACTOR, whether COUNTY is a party thereto or not, that CONTRACTOR has violated any such ordinance or statute, shall be conclusive of that fact as between CONTRACTOR and COUNTY.

28. CALIFORNIA LAW AND JURISDICTION

This Agreement shall be governed by the laws of the State of California. Any litigation regarding this Agreement or its contents shall be filed in the County of Santa Barbara, if in state court, or in the federal district court nearest to Santa Barbara County, if in federal court.

29. EXECUTION OF COUNTERPARTS

This Agreement may be executed in any number of counterparts and each of such counterparts shall for all purposes be deemed to be an original; and all such counterparts, or as many of them as the parties shall preserve undestroyed, shall together constitute one and the same instrument.

30. AUTHORITY

All signatories and parties to this Agreement warrant and represent that they have the power and authority to enter into this Agreement in the names, titles and capacities herein stated and on behalf of any entities, persons, or firms represented or purported to be represented by such entity(ies), person(s), or firm(s) and that all formal requirements necessary or required by any state and/or federal law in order to enter into this Agreement have been fully complied with. Furthermore, by entering into this Agreement, CONTRACTOR hereby warrants that it shall not have breached the terms or conditions of any other contract or agreement to which CONTRACTOR is obligated, which breach would have a material effect hereon.

31. SURVIVAL

All provisions of this Agreement which by their nature are intended to survive the termination or expiration of this Agreement shall survive such termination or expiration.

32. PRECEDENCE

In the event of inconsistency between the Exhibits attached to the Agreement, interpretation of the Agreement shall prevail over the Exhibits, Exhibits A, B, and C shall prevail over Exhibits E and D, and Exhibit E shall prevail of Exhibit D. Notwithstanding any statement in this Agreement, including the Exhibits, that any information contained therein is proprietary and/or confidential, any limitations on disclosure will be subject to disclosures that are otherwise required by law, including but not limited to disclosure pursuant to the Public Records Act (Cal. Gov. Code Section 6250 et seq.), as determined by COUNTY in its sole discretion.

33. NON-SOLICITATION

For a period of one (1) year from the expiration or termination of the Agreement, COUNTY and CONTRACTOR agree not to directly solicit the employment of any personnel or agent of the other party who has been directly involved with the delivery of services under the Agreement unless COUNTY or CONTRACTOR, whichever the case may be, grants its consent in writing. Direct solicitation will not include general solicitations by the parties through the use of advertisements in newspapers, trade publications, or other solicitations not directed at particular individuals.

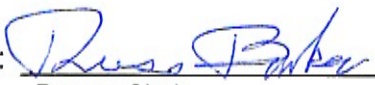
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Agreement for Services of Independent Contractor between the **County of Santa Barbara** and Federal Engineering, Inc.


IN WITNESS WHEREOF, the parties have executed this Agreement to be effective on the date executed by COUNTY.

ATTEST:

Mona Miyasato
County Executive Officer
Clerk of the Board

By: 
Deputy Clerk


COUNTY OF SANTA BARBARA:

By: 
Chair, Board of Supervisors

Date: 12-12-17

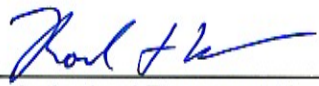
RECOMMENDED FOR APPROVAL:

Department of General Services

By: 
Janette D. Pell

CONTRACTOR:

Federal Engineering, Inc.

By: 
Authorized Representative

Name: Ronald F. Bosco

Title: President

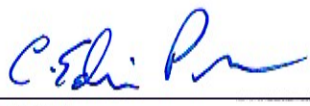
APPROVED AS TO FORM:

Michael C. Ghizzoni
County Counsel

By: 
Deputy County Counsel

APPROVED AS TO ACCOUNTING FORM:

Theodore A. Fallati, CPA
Auditor-Controller

By: 
Deputy

APPROVED AS TO FORM:

Risk Management

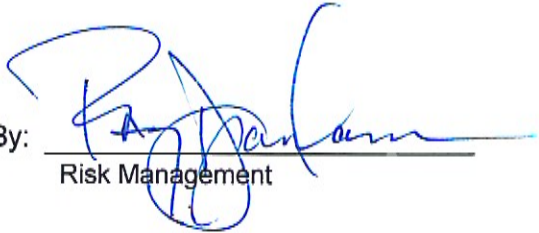
By: 
Risk Management

EXHIBIT A

STATEMENT OF WORK

This Statement of Work (hereafter SOW) is made by and between the COUNTY and CONTRACTOR to provide the services specified herein.

Background

The County of Santa Barbara has a diverse radio communications environment, with several different land mobile radio systems deployed to meet specific operational needs of County departments. These systems are in different stages of their lifecycle, and each have varying technologies and capabilities. The County needs to replace the Public Safety Radio System as it is nearing end-of-life. The replacement system must meet public safety standards for performance and reliability and provide robust radio communications for the next 10-20 years. The County would consider consolidating systems where it can provide efficiencies and reduce operating costs.

This Agreement only covers work performed in Phases 1 and 2, which is intended to be completed within the term stated in the Agreement at Article 4 (Term), and any earlier start dates or longer durations of work or later Phases of work referred to in Exhibits D or E are not covered by this Agreement, unless such work is expressly and separately agreed to in writing by the Parties.

The SOW is based on the CONTRACTOR response to the COUNTY's PUBLIC SAFETY RADIO SYSTEM REPLACEMENT PROJECT RFP # 18643 (Exhibit D, attached to the Agreement), Interview Clarifications (Exhibit E, attached to the Agreement); and includes the following phases:

Phase 1: Inventory and Needs Analysis

Phase 2: Design Criteria, Analysis of Alternative Designs, & Budget Projections

In the event the Agreement is terminated, and without limiting the terms of the Agreement, CONTRACTOR shall deliver to COUNTY, in printed and on electronic media, where applicable, all data, drawings, reports, and other materials that have been collected, created or developed pursuant to the SOW.

Phase 1: Inventory and Needs Analysis

This phase of the SOW shall be successfully completed upon CONTRACTOR's delivery to COUNTY of the Phase 1 deliverables in printed format and on softcopy media.

Following are the major tasks to be completed by CONTRACTOR in sixteen (16) weeks after execution of the Board Approved Agreement:

1 PROJECT START DATE

1.1 CONTRACTOR shall start work within 2 weeks of receiving notice of Board approval and assign a Project Manager.

2 PROJECT MANAGER

2.1 CONTRACTOR shall assign and provide a resume of the Project Manager.

2.2 CONTRACTOR shall arrange for a phone interview with COUNTY and the CONTRACTOR Project Manager. COUNTY must approve the Project Manager prior to the start of work.

3 PROJECT MEETINGS AND SCHEDULE

- 3.1 CONTRACTOR shall conduct weekly progress meetings either onsite and/or by web collaboration. Such meetings are to be conducted onsite twice a month. Meeting notes shall be prepared by CONTRACTOR for each of the weekly review meetings.
- 3.2 CONTRACTOR shall attend monthly Steering Committee Meetings , present at COUNTY Board of Supervisor Meetings, provide monthly status reports, and attend other stakeholder meetings as required.
- 3.3 CONTRACTOR shall present the first draft of the timeline at the start of Phase 1.

4 EQUIPMENT INVENTORY

- 4.1 CONTRACTOR shall conduct a detailed inventory of the land mobile radio (LMR) and microwave radio network subsystems to:
 - 4.1.1 Compare the COUNTY's existing inventory database for LMR and microwave radio infrastructure equipment to the inventory data collected at the site surveys, and update the database, as needed.
 - 4.1.2 Collect subscriber information during needs assessment activities and work with the COUNTY departments whose information is not current or complete to obtain an accurate inventory of subscriber equipment.
 - 4.1.3 CONTRACTOR will prepare a draft inventory report section, which will be included in the final Phase 1 report.

5 SITE SURVEYS

- 5.1 CONTRACTOR shall visit the COUNTY's 30 existing LMR and microwave radio sites to:
 - 5.1.1 Analyze the current condition of all COUNTY-owned radio systems.
 - 5.1.2 Assess current radio site facilities for space, power, HVAC, tower loading, structural needs, etc. taking into consideration the need for a seamless cutover plan.
- 5.2 COUNTY will escort the CONTRACTOR to all radio sites.
- 5.3 CONTRACTOR shall document the results of the site surveys in a draft existing system report section, which will be included in the final Phase 1 deliverable.

6 STAKEHOLDER INTERVIEWS

- 6.1 CONTRACTOR shall conduct Stakeholders Interviews, as follows:
 - 6.1.1 In each department, interview 5% of line staff that use the Radio Systems.
 - 6.1.2 Interview area mutual aid partners (a list of these partners will be provided at the start of the engagement).
 - 6.1.3 CONTRACTOR will conduct a maximum of twenty interviews.

- 6.2 CONTRACTOR shall develop and submit a questionnaire to the COUNTY stakeholders in advance of the interviews, to obtain feedback regarding current issues and concerns, as well as future requirements for the system upgrade or replacement. The interview sessions will be used to clarify and/or expand on questionnaire responses.
- 6.3 CONTRACTOR shall document the interview results in a draft needs assessment report section, which will be included in the final Phase 1 report.

7 REQUIREMENTS DEFINITION

- 7.1 CONTRACTOR shall define the County's future operational requirements for all users of the Microwave and Simulcast Systems.
- 7.2 CONTRACTOR shall:
 - 7.2.1 Assess use of radios, document existing limitations, and desired features
 - 7.2.2 Define coverage requirements by COUNTY Department/Agency
 - 7.2.3 Assess interoperability needs for all COUNTY Departments
 - 7.2.4 Provide required radio count - with asset type/model and growth projections
 - 7.2.5 Identify functional needs and requirements of radios for capabilities, including encryption, scanning, PTT priorities, paging, talk around, telephone interconnect, private conversation, emergency call, and patching/linking, etc.
- 7.3 CONTRACTOR shall document the requirements in a draft needs assessment report section, which will be included in the final Phase 1 report.

8 LMR VENDOR ROADMAP AND TECHNOLOGY SESSIONS

- 8.1 CONTRACTOR shall organize up to three full-day LMR vendor sessions for department representatives to understand new technologies and capabilities.
- 8.2 CONTRACTOR shall provide a summary of the vendors long-term roadmaps, and other emerging technologies and trends in public safety radio, including the Nationwide Public Safety Broadband Network (FirstNet) and LTE.

9 EXISTING SYSTEMS ANALYSIS

- 9.1 CONTRACTOR shall assess the current radio communications environment for all users of the Microwave and Simulcast Systems.
- 9.2 CONTRACTOR shall review system documentation, initiatives, prior reports, presentation material, FCC licenses and documentation to assess current environment.
- 9.3 CONTRACTOR shall review and analyze current and historical radio traffic data provided by COUNTY to evaluate existing radio traffic volume, type and peaks, and channel discipline.
 - 9.3.1 Assess the capacity of the COUNTY's VHF, UHF and 800 MHz systems based on the number of channels, technology and other system characteristics, which will provide a basis for evaluating whether the systems can handle future capacity requirements.

- 9.3.2 Prepare system usage and loading sections for inclusion in the final Phase 1 report.
- 9.4 CONTRACTOR shall review dispatching operations as they relate to radio system usage.
 - 9.4.1 Review dispatch operations procedural documents provided by COUNTY, and visit the COUNTY's primary dispatch center to observe operations and hold informal discussions with dispatch personnel.
 - 9.4.2 Document the analysis of current dispatch operations and future requirements, for inclusion in the final Phase 1 report.
- 9.5 CONTRACTOR shall review backup systems and system redundancy, availability and recovery procedures, based on system documentation provided by COUNTY and information collected during the stakeholder interviews.
 - 9.5.1 CONTRACTOR shall prepare a backup systems, redundancy and recovery procedures section for inclusion in the final Phase 1 report.

10 CONTRACTOR DELIVERABLES

- 10.1 CONTRACTOR shall prepare an Existing System Analysis, Needs Assessment and Requirements Report that summarizes the results of the Phase 1 tasks described above, and includes the following sections, at a minimum:
 - 10.1.1 Detailed inventory report
 - 10.1.2 Department and Stakeholders interview results
 - 10.1.3 Needs assessment and requirements definition report
 - 10.1.4 Radio site assessments
 - 10.1.5 System usage and loading reports
- 10.2 CONTRACTOR to provide tasks deliverables as identified above and complete the following Table 1 – Completion Checklist.

Table 1: Completion Checklist	
Deliverables	Completed (Y/N)
1. User Interview questionnaire	
2. Documentation review and project schedule	
3. Detailed inventory report	
4. Department and Stakeholders interview results	
5. Needs assessment and requirements definition report	
6. Radio site assessments	

Table 1: Completion Checklist

Deliverables	Completed (Y/N)
7. System usage and loading reports	

End of Phase 1.

Phase 2: Design Criteria, Analysis of Alternative Designs, & Budget Projections

Following are the major tasks to be completed by CONTRACTOR after COUNTY's Acceptance of Phase 1:

1 PROJECT MANAGER

1.1 CONTRACTOR shall assign the same Project Manager

2 MEETINGS AND SCHEDULE

2.1 CONTRACTOR shall conduct weekly progress meetings either onsite and/or by web collaboration. Such meetings are to be conducted onsite twice a month. Meeting notes shall be prepared by CONTRACTOR for each of the weekly review meetings.

2.2 CONTRACTOR shall present the first draft of the timeline at the start of Phase 2.

3 IDENTIFICATION OF ALTERNATIVES

3.1 CONTRACTOR shall work with COUNTY to develop a preliminary plan for the Public Safety Radio System Replacement Project, and options for the LG and OC3 network. The CONTRACTOR shall provide options for a system design, with a cutover plan, that best address the needs and issues discovered during Phase 1. The CONTRACTOR should develop options considering technology, regulatory and interoperability issues that are inherent to the project. The CONTRACTOR should research the possibility of moving to a regional P25 digital trunked system. The CONTRACTOR should also consider existing COUNTY investments, including radio communications sites, infrastructure and radios that can be leveraged in for the new systems.

3.2 The CONTRACTOR shall develop no less than two options for the Public Safety Radio System Replacement Project. These options (at a minimum) should be:

3.2.1 Upgrade the existing Alcatel/Motorola System

3.2.2 Construct a new system

3.3 The CONTRACTOR may offer an additional value-added solution for options on LG and OC3, beyond those defined above, for consideration by the COUNTY. The primary objective of the project is to develop a plan for the replacement or migration of the Public Safety Radio System Replacement Project. The OC3 and LG system migration will be an optional component that may or may not be implemented, or may be implemented later. The CONTRACTOR should take this into consideration when developing its plan, and develop options that allow for the Public Safety Radio System Replacement Project to take place as a standalone project.

- 3.4 The options developed in this Task shall ensure that the system is designed for reliable radio coverage and full interoperability as defined by the COUNTY's stakeholder departments. The options should take in to account the most effective cutover plan that will limit downtime of the system, and may run in parallel with the existing system. It shall have a high standard of reliability through redundant equipment and components. It shall be capable of a phased implementation and orderly expansion and provide the maximum amount of reuse in existing infrastructure. The development of options shall include an analysis of the advantages and disadvantages of each option, and 80% accurate cost estimates. System options and cost estimates should be based on information gathered by potential land mobile radio equipment vendors and integrators. Cost estimates should reflect both purchase and lease options.

4 LMR ALTERNATIVES ANALYSIS

- 4.1 For each of the LMR system alternatives, CONTRACTOR shall:
 - 4.1.1 Address near and long-term needs by considering system performance (coverage, capacity and interference), available technologies, network and site security, reliability, redundancy, quality assurance and functionality
 - 4.1.2 Address interoperability among COUNTY departments and with regional, state and federal agencies
 - 4.1.3 Utilize system usage and approved future requirements from Phase 1 to assess the expected system loading, and estimate the number of sites and channels needed to meet the COUNTY's current and future needs
 - 4.1.4 Develop coverage prediction maps
 - 4.1.5 Develop a phased migration and cutover plan
 - 4.1.6 Develop a phased implementation schedule
 - 4.1.7 Develop detailed costs for each option, based on anticipated payment milestones
 - 4.1.8 10-year projections of system maintenance requirements and costs
- 4.2 CONTRACTOR shall estimate COUNTY staffing and resource requirements (including legal, civil, planning & real estate, & user department assistance needed).
- 4.3 CONTRACTOR shall assist COUNTY with securing project funds and potential grants opportunities by providing detailed cost models and presentations to COUNTY stakeholders.

5 MICROWAVE RADIO ALTERNATIVES ANALYSIS

- 5.1 CONTRACTOR shall consider any microwave radio backhaul upgrades that may be required for each LMR alternative.
- 5.2 CONTRACTOR shall model microwave system backhaul paths for each alternative and assess the microwave backhaul needs based on the COUNTY's requirements.

6 CONTRACTOR DELIVERABLES

- 6.1 CONTRACTOR shall prepare an Alternatives Analysis, Conceptual Design and Recommendations Report that includes the following, at a minimum:
 - 6.1.1 System block diagram and coverage maps
 - 6.1.2 Migration/implementation plans and theoretical cutover plan
 - 6.1.3 Project schedule
 - 6.1.4 Itemized system costs, staffing recommendations and project budget
 - 6.1.5 System Alternatives Analysis, Conceptual Design, and Recommendations Report

7 CONTRACTOR to provide tasks deliverables as identified above and complete the following Table – Completion Checklist.

Table 2: Completion Checklist	
Deliverables	Completed (Y/N)
1. System block diagram and coverage maps	
2. Migration/implementation plans and theoretical cutover plan	
3. Project schedule	
4. Itemized system costs, staffing recommendations and project budget	
5. System Alternatives Analysis, Conceptual Design, and Recommendations Report	

End of Phase 2.

EXHIBIT B

**PAYMENT ARRANGEMENTS
Periodic Compensation at Selected Milestones**

- A. For CONTRACTOR services to be rendered under this Agreement, CONTRACTOR shall be paid a total contract amount, including cost reimbursements, not to exceed \$ **231,381**.

Table I contains the total not to exceed contract price.

Table I - Phase 1 & 2 Pricing	
Phase 1	\$129,367
Phase 2	\$102,014
Total Phase 1 & 2	\$231,381

- B. Payment for services and /or reimbursement of costs shall be made upon CONTRACTOR's satisfactory performance, based upon the scope and methodology contained in **EXHIBIT A** as determined by COUNTY.
- C. Upon completion of the work for each milestone and/or delivery to COUNTY of item(s) specified below, CONTRACTOR shall submit to the COUNTY DESIGNATED REPRESENTATIVE an invoice or certified claim on the County Treasury for the service performed in accomplishing each milestone. These invoices or certified claims must cite the assigned Board Contract Number. COUNTY DESIGNATED REPRESENTATIVE shall evaluate the quality of the service performed and/or item(s) delivered and if found to be satisfactory shall initiate payment processing. COUNTY shall pay invoices or claims for satisfactory work within 30 days of receipt of correct and complete invoices or claims from CONTRACTOR.

Percentage of Total Contract Amount	Milestone Description	Maximum Amount Chargeable
6.8% of Phase 1	1. Preparation and distribution of user questionnaire	Milestone 1: \$8,798.09
6.8% of Phase 1	2. Existing documentation review and project schedule	Milestone 2: \$8,798.09
15.5% of Phase 1	3. Department and Stakeholders interview results	Milestone 3: \$20,109.92
22.3% of Phase 1	4. Radio site assessments	Milestone: \$28,817.40
19.4% of Phase 1	5. System usage and loading reports	Milestone 5: \$25,137.40
19.4% of Phase 1	6. Needs assessment and requirements definition report	Milestone 6: \$25,137.40
9.7% of Phase 1	7. Detailed inventory report	Milestone 7: \$12,568.70
20% of Phase 2	1. System block diagram and coverage maps	Milestone 1: \$20,402.80
20% of Phase 2	2. Migration/Implementation plans and theoretical cutover plan	Milestone 2: \$20,402.80
20% of Phase 2	3. Project schedule	Milestone 3: \$20,402.80
20% of Phase 2	4. Itemized system costs, staffing recommendations and project budget	Milestone 4: \$20,402.80
20% of Phase 2	5. System Alternatives Analysis, Conceptual Design, and Recommendations Report	Milestone 5: \$20,402.80

The final milestone payment per phase above shall not be made until all services have been completed and item(s) as specified in **EXHIBIT A** have been delivered and found to be satisfactory.

- D. COUNTY's failure to discover or object to any unsatisfactory work or billings prior to payment will not constitute a waiver of COUNTY's right to require CONTRACTOR to correct such work or billings or seek any other legal remedy.

EXHIBIT C

Indemnification and Insurance Requirements (For Professional Contracts)

INDEMNIFICATION

CONTRACTOR agrees to defend, indemnify and hold harmless COUNTY and its officers, officials, employees, agents and volunteers from and against any and all claims, actions, losses, damages, judgments and/or liabilities arising out of the negligent performance or attempted performance of the provisions hereof; including any willful or negligent act or omission to act on the part of the CONTRACTOR or his agents or employees or other independent contractors directly responsible to him to the fullest extent allowable by law.

NOTIFICATION OF ACCIDENTS AND SURVIVAL OF INDEMNIFICATION PROVISIONS

CONTRACTOR shall notify COUNTY immediately in the event of any accident or injury arising out of or in connection with this Agreement. The indemnification provisions in this Agreement shall survive any expiration or termination of this Agreement.

INSURANCE

CONTRACTOR shall procure and maintain for the duration of this Agreement insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the CONTRACTOR, his agents, representatives, employees or subcontractors.

A. Minimum Scope of Insurance

Coverage shall be at least as broad as:

1. **Commercial General Liability (CGL):** Insurance Services Office (ISO) Form CG 00 01 covering CGL on an "occurrence" basis, including products-completed operations, personal & advertising injury, with limits no less than \$1,000,000 per occurrence and \$2,000,000 in the aggregate.
2. **Automobile Liability:** ISO Form Number CA 00 01 covering any auto (Code 1), or if CONTRACTOR has no owned autos, hired, (Code 8) and non-owned autos (Code 9), with limit no less than \$1,000,000 per accident for bodily injury and property damage.
3. **Workers' Compensation:** as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than \$1,000,000 per accident for bodily injury or disease.
4. **Professional Liability (Errors and Omissions)** Insurance appropriate to the CONTRACTOR'S profession, with limit of no less than \$1,000,000 per occurrence or claim, \$2,000,000 aggregate.

If the CONTRACTOR maintains higher limits than the minimums shown above, the COUNTY requires and shall be entitled to coverage for the higher limits maintained by the CONTRACTOR. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the COUNTY.

B. Other Insurance Provisions

The insurance policies are to contain, or be endorsed to contain, the following provisions:

1. **Additional Insured** – COUNTY, its officers, officials, employees, agents and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of the CONTRACTOR including materials, parts, or equipment furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to the CONTRACTOR's insurance at least as broad as ISO Form CG 20 10 11 85 or if not available, through the addition of both CG 20 10 and CG 20 37 if a later edition is used).
2. **Primary Coverage** – For any claims related to this Agreement, the CONTRACTOR's insurance coverage shall be primary insurance as respects the COUNTY, its officers, officials, employees, agents and volunteers. Any insurance or self-insurance maintained by the COUNTY, its officers, officials, employees, agents or volunteers shall be excess of the CONTRACTOR's insurance and shall not contribute with it.
3. **Notice of Cancellation** – Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to the COUNTY.
4. **Waiver of Subrogation Rights** – CONTRACTOR hereby grants to COUNTY a waiver of any right to subrogation which any insurer of said CONTRACTOR may acquire against the COUNTY by virtue of the payment of any loss under such insurance. CONTRACTOR agrees to obtain any endorsement that may be necessary to effect this waiver of subrogation, but this provision applies regardless of whether or not the COUNTY has received a waiver of subrogation endorsement from the insurer.
5. **Deductibles and Self-Insured Retention** – Any deductibles or self-insured retentions must be declared to and approved by the COUNTY. The COUNTY may require the CONTRACTOR to purchase coverage with a lower deductible or retention or provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention.
6. **Acceptability of Insurers** – Unless otherwise approved by Risk Management, Insurance shall be written by insurers authorized to do business in the State of California and with a minimum A.M. Best's Insurance Guide rating of "A- VII".
7. **Verification of Coverage** – CONTRACTOR shall furnish the COUNTY with proof of insurance, original certificates and amendatory endorsements as required by this Agreement. The proof of insurance, certificates and endorsements are to be received and approved by the COUNTY before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the CONTRACTOR's obligation to provide them. The CONTRACTOR shall furnish evidence of renewal of coverage throughout the term of the Agreement. The COUNTY reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.
8. **Failure to Procure Coverage** – In the event that any policy of insurance required under this Agreement does not comply with the requirements, is not procured, or is canceled and not replaced, COUNTY has the right but not the obligation or duty to terminate the Agreement. Maintenance of required insurance coverage is a material element of the Agreement and failure to maintain or renew such coverage or to provide evidence of renewal may be treated by COUNTY as a material breach of contract.
9. **Subcontractors** – CONTRACTOR shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and CONTRACTOR shall ensure that COUNTY is an additional insured on insurance required from subcontractors.
10. **Claims Made Policies** – If any of the required policies provide coverage on a claims-made basis:
 - i. The Retroactive Date must be shown and must be before the date of the contract or the beginning of contract work.

- ii. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of contract work.
- iii. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the contract effective date, the CONTRACTOR must purchase "extended reporting" coverage for a minimum of five (5) years after completion of contract work.

11. **Special Risks or Circumstances** – COUNTY reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

Any change requiring additional types of insurance coverage or higher coverage limits must be made by amendment to this Agreement. CONTRACTOR agrees to execute any such amendment within thirty (30) days of receipt.

Any failure, actual or alleged, on the part of COUNTY to monitor or enforce compliance with any of the insurance and indemnification requirements will not be deemed as a waiver of any rights on the part of COUNTY.

EXHIBIT D
RFP RESPONSE



**COUNTY OF
SANTA BARBARA,
CALIFORNIA**

RFP NO. 186043

**PUBLIC SAFETY RADIO SYSTEM
REPLACEMENT PROJECT**

Submitted to

**Mr. Mark Masoner
Purchasing Division
105 E. Anapamu Street, Room 304 S
Santa Barbara, CA 93101
805-568-2692**

Closing Date

May 17, 2017

Federal Engineering Contact

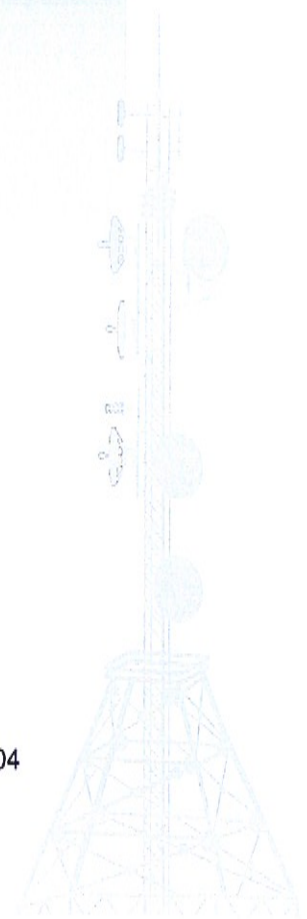
**Ronald F. Bosco, President
10600 Arrowhead Drive
Fairfax, VA 22030
703-359-8200**



**Federal
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10600 Arrowhead Drive
Fairfax, VA 22030
703-359-8200

1 INTRODUCTION AND EXECUTIVE SUMMARY (RFP PAGE 18.1)

May 17, 2017

Mr. Mark Masoner
Purchasing Division
105 E. Anapamu Street, Room 304 S
Santa Barbara, CA 93101

Federal Engineering has over 60 consultants, specialists, and former first responders dedicated to helping you achieve your goals for the County of Santa Barbara's public safety radio system replacement project. We have developed, over the past 34 years, the tools, methodologies, and experience necessary to deliver practical, affordable solutions that meet the needs of your first responders at the lowest cost. This proposal will demonstrate why **FE** is your best choice to fulfill the requirements called out in the County of Santa Barbara's RFP 186043, as amended and clarified by Addenda 1 and 2 dated March 31 and April 24, 2017 and the County's responses to questions dated April 24, 2017.

Radio System Project Understanding

The RFP succinctly states the problem and need facing the County as: "To replace the aging County of Santa Barbara Public Safety Radio System without impacting users." It will require specialized expertise to achieve the County's objectives, especially given the diversity and complexity of the County's radio communications environment and the challenges inherent in the County's geography, from islands to mountain peaks. The County seeks the services of a dedicated, locally based public safety consulting firm with significant experience with multi-band system interoperability and successful P25 upgrades from large legacy systems. As highlighted throughout our proposal, **FE** will offer that expertise to the County, with three of our core team members based in California, within driving distance to Santa Barbara, who have provided similar and successful consulting to California cities and counties including San Francisco, Kern County, San Diego, Imperial County, Marin, and Los Angeles.

The County of Santa Barbara has several different land mobile radio systems deployed to meet specific operational needs of County departments. These systems are in various stages of their lifecycle, and each has varying technologies and capabilities. The County's largest immediate concern is the age of its simulcast Public Safety Radio System and its microwave system. The County would also like to determine options for its non-public safety users as the system they use needs to be replaced within the next 5-10 years. The County is interested in consolidating systems where it can provide efficiencies and reduce operating costs.

As the County's consultant, **FE** will assess the existing radio systems owned and operated by the County and serving over 2,000 radio users, including simulcast systems operating in VHF, UHF, 800 MHz, microwave operating in 5.8, 6, and 11 GHz, and an OC3 microwave backup to data communications. We will provide detailed analysis, needs assessment, conceptual designs, and recommendations on a next generation system and migration plan.

The project will ultimately provide a road map for the long-term future of these systems as well as the systems that support public services. The County desires proven open-standards technologies, flexibility, scalability, and interoperability in a cost-effective manner that mitigates the risk of dependence on individual vendors and future technology obsolescence. At the County's option, we will provide technical and project management support during system procurement and implementation.

Our proposal demonstrates that we will manage this project in a businesslike manner and provide our services in compliance with the standards and objectives of the County, with minimal disruption to the operations of the agencies that use the radio system. Lifecycle management and cross-organizational consistency are integral to the success of the project and will receive thorough analysis during our needs assessment.

Why Federal Engineering?

Federal Engineering offers the County of Santa Barbara a combination of local knowledge, qualifications and experience unmatched by any other firm. FE has earned the reputation as a premier public safety communications consulting firm. Our 34 years of experience will enable the County to successfully and affordably meet its communications needs; ***FE's*** demonstrated knowledge will result in low risk and high user satisfaction for County first responders.

Our team exceeds the County's stated qualification criteria. We have consulted with government agencies similar in size, providing VHF/UHF/700/800 MHz P25 conventional, simulcast, trunked radio system planning, design, procurement, and implementation services since the inception of the APCO Project 25 specification to hundreds of agencies across the country.

Cognizant of the radio communications challenges, both existing and developing, we will assist the County in identifying the best path toward a more robust, fully integrated, scalable communications environment. Armed with our knowledge of existing issues, current technology and future trends we will assist the County in acquiring the best possible system for County first responder needs and cost effective lifecycle planning for the greatest longevity for the new system.

Our proposal defines solid, knowledgeable approaches for executing each of the tasks required by the County's project. ***FE*** brings the "best of both worlds" to this engagement: nationwide experience and deep knowledge of the County of Santa Barbara's regional challenges.

- ***Understanding of the County of Santa Barbara's Needs***—our local project manager and work with similar counties throughout California and across the country provide us with a comprehensive understanding of the County's needs.
- ***Integrity***—***FE*** has never had a contract end in default or litigation. Our radio system vendor neutrality is validated by client satisfaction and vendor feedback. No RFP written by ***FE*** has ever been successfully protested.
- ***Stability***—many communications consulting firms have been bought and sold several times; ***FE*** has had the same ownership since inception in 1983, who still actively lead the firm in the design, procurement, and implementation of public safety radio communications systems.
- ***Superior consulting***—***FE*** has completed projects left behind by other consulting firms.
- ***Consistency***—numerous ***FE*** customers testify to our consistent performance.

- **Deep staff bench**—*FE* has a deep staff bench that will address the services needed for the project and can be called upon to provide additional services should the need arise.
- **Practical solutions**—*FE* delivers practical solutions that can be implemented within operational, jurisdictional, and funding parameters.
- **Significant Cost Savings**—*FE* has participated in numerous contract negotiations and other transactions with major manufacturers on behalf of our clients. ***Because we are one of the largest independent public safety consulting firms, we leverage this experience to save our clients costs—on the order of millions of dollars—for radio systems.***

And most importantly, Federal Engineering's proven commitment, exhibited in our previous engagements, to provide the highest quality services and the most knowledgeable staff for the required tasks

Land mobile public safety and public service radio communications consulting is Federal Engineering's business. We are actively engaged and have helped "write the standards" guiding the industry's evolving technology, so that we can better serve our clients' needs. We provide "specialized professional services." *FE* will provide the County with local, knowledgeable skill sets in all aspects of the project. ***We are the right team for the County of Santa Barbara's project.***

FE's proposal is complete and fully compliant with all the requirements in the RFP as noted herein and describes, in detail, how we will accomplish the required tasks. *FE* possesses all permits, licenses, and professional credentials necessary to perform services as specified in the RFP. In addition, we unconditionally accept the project specifics, goals, and contractor responsibilities as delineated in this proposal and hereby express our commitment to work under the directives provided by the designated County project manager.

Because the County of Santa Barbara is considered a key client, I will be your contact regarding this proposal and will participate in the negotiation of contractual issues. By my signature below, I hereby authorize submission of this proposal and bind Federal Engineering, Inc. to the terms and conditions of this proposal for a period of 120 days, beginning on the due date for proposals.

FE looks forward to working with the County of Santa Barbara, California on this project.

Sincerely,



Ronald F. Bosco
President and Chief Executive Officer
Federal Engineering, Inc.



2 PROJECT APPROACH (RFP PAGE 18.2)

2.1 Project Management Philosophy

Exhibit 1 presents our overall approach to the Santa Barbara project. This approach is in full compliance to the County's RFP.

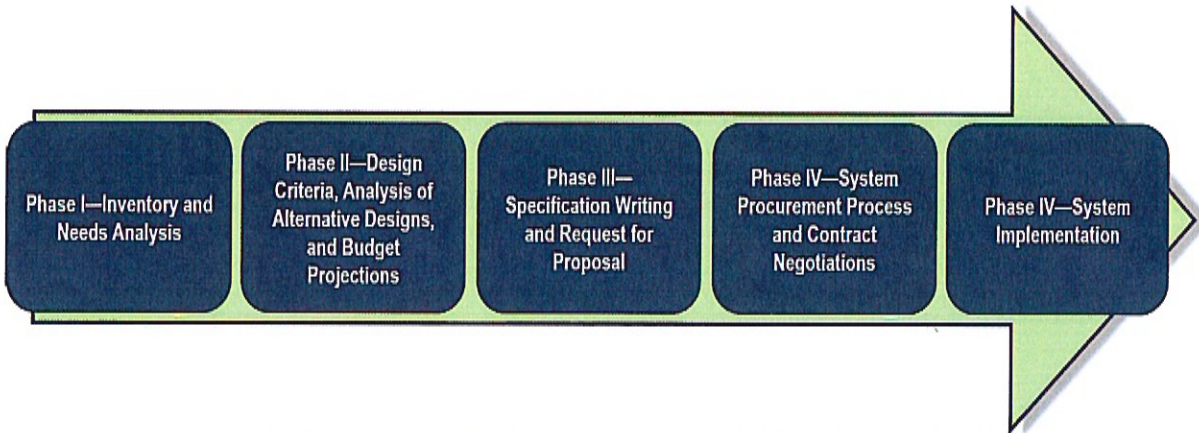


Exhibit 1—Federal Engineering's Systems Lifecycle Model

The County of Santa Barbara's requirements align with FE's systems lifecycle model.

FE recognizes that the County Santa Barbara, California's Public Safety Radio System Replacement Project requires effective project management to enhance the quality, functionality, economic feasibility, and usability of its radio system. **FE's** project management approach aligns closely with the Project Management Institute's (PMI) methodologies documented in the *Project Management Body of Knowledge* (PMBOK). PMI methodologies are well-known and accepted across the industry.

Through our adherence to these methodologies, **FE** maintains our record of providing deliverables on time, within budget, and that meet requirements. We actively hire and train exceptionally qualified project managers, with 10% of our staff certified as Project Management Professionals (PMP).

FE applies continual project management to support the entire system lifecycle, making sure that each phase is completed to our client's satisfaction before opening the 'gate' to the next phase. We will work closely with the County of Santa Barbara to establish requirements and specifications that reflect the County's needs. We recognize that these requirements and specifications are complemented with effective design review, implementation oversight and component testing, system testing, and system acceptance support activities with validation of requirements throughout.

FE's is proposing a robust program composed of lead and deputy program and project managers (PM)—Project Director Rajit Jhaver, Project Manager Keith Estes, PMP, and Deputy Project Manager Mr. Ron Wong. Our project managers, both based in California, will continually coordinate activities with the County's project manager, involve other stakeholders as needed, and serve as a primary resource to the participants. They will **focus on the County's needs**, establishing a baseline project management process that centers on risk discovery and mitigation, collaboration, open communications, and consensus building.





County of Santa Barbara, California

Public Safety Radio System Replacement Project

FE's Quality Assurance and Quality Control Manual is a compendium of industry best practices in quality management specific to public safety wireless systems, and was developed based on years of quality management experience.

2.1.1 Project Plan and Documentation

FE will adjust and maintain the project plan and schedule as necessary to reflect the nature of the project as it evolves through deliverables, approval processes, and meeting schedules. To facilitate program document distribution, maintain schedules, and delegate tasks, *FE* can use *FEClientNet™*, a productivity enhancement tool for the mutual benefit of our clients and our professional staff. *FEClientNet™* is a Web-enabled program management tool with a broad range of capabilities that provide real-time reporting of status and information, a repository for program documents, and a rapid and efficient method of collecting information or transferring sizeable reports. We will determine the use of this tool with the County during the project initiation meeting.

2.1.2 Status Reports and Meetings

FE's deputy project manager will attend face-to-face meetings with Steering Committee twice monthly to review deliverables and work products. He will conduct weekly teleconferences and provide monthly status reports to keep the County informed of progress.

2.2 Scope of Work Tasks (RFP Page 18.2.a)

2.2.1 Phase I—Inventory and Needs Analysis (RFP Appendix A—Phase I, Bullets 1 through 16)

Per the RFP, the most critical systems in need of replacement are the microwave and simulcast systems (VHF simulcast that serves the County Fire Department and UHF simulcast that serves the County Sheriff Department). The primary goal of Phase One is to help the County develop a Roadmap/Technical Plan to upgrade or replace this network, with little impact to the end users and with limited downtime. The secondary goal is to include evaluation of options for the County's OC3 microwave network.

The County requires assistance for *FE* to assess the current radio communications environment as well as to help stakeholders define future operational requirements for all users of the microwave and simulcast systems. The County requests our assistance in identifying new technologies and capabilities in the industry that will solve operational deficiencies in the current systems.

Phase 1 is the core foundation of this project, in which *FE* will gain a comprehensive understanding of the County's existing system, user needs and requirements, and alternatives for upgrading or replacing the Public Safety Radio System. Documentation Review

Prior to the project initiation meeting, *FE* will request and review County-supplied relevant documentation, including pertinent master plans, system documentation, initiatives, previous studies, prior reports, presentations, FCC licenses, site surveys, inventories, maintenance contracts, and other items to begin assessing the existing systems and current environment. Performing a detailed review of the current documentation provides our team with a common starting point and a foundation for a complete understanding of the current status of the communications system.





County of Santa Barbara, California

Public Safety Radio System Replacement Project

2.2.1.1 Project Initiation Meeting

FE will conduct a project initiation meeting with the County's project manager and other officials from participating agencies as identified by the County on a mutually agreed upon date following contract signing. This initial meeting will establish a common understanding of the project goals, objectives, and vision, items best understood through a close working relationship between our respective management teams and staffs. Based on the outcome of the meeting, **FE** will deliver a project plan and schedule that will serve as guiding documents throughout the program. We will also use this meeting as the first opportunity to establish the foundation for our ongoing relationship.

2.2.1.2 Existing System Analysis



Site Surveys— Leveraging our experience surveying thousands of radio sites across the country including sites in similar terrain in the Los Angeles area, San Diego and Imperial Counties, Oregon and Arizona, **FE** will review the documentation provided by the County to assess the status of each of the remote microwave, radio repeater, and receiver sites in the County (over 27). The use of existing site documentation for initial evaluations will result in significant cost savings to the project.

Our proposed work plan is for **FE** to visit each of the 27 sites as indicated in the network architecture map provided in the revised Questions and Answers Addenda. If desired by the County as a lower-cost alternative, we can modify this plan to conduct surveys of a sampling of these sites based on input from the County and our review of existing site documentation.

Our first week of site surveys will be focused on the core infrastructure of the LMR two-way radio systems: the Communications Control Center (County Jail), Mount Solomon, Comm. Hill, and the seven major high elevation radio sites: La Cumbre Peak, Rincon Peak, Santa Ynez Peak, Harris Grade, Tepusquet Peak, Plowshare Peak, and Sudden Peak. We have planned two subsequent weeks of site surveys to focus on the remaining secondary sites per the microwave network, indicated in the County's diagram in the "Revised Follow Up Questions Submittal and Response".

Our data review and site surveys will evaluate control equipment, backhaul equipment, repeaters, base stations, microwave equipment, dispatch equipment, and other critical communications infrastructure installations. Agency representatives may need to escort the assessment team to the sites to assure unencumbered access for the **FE** team's activities.

We will assess the condition, age, utility, reusability, capacity, and ownership of the LMR and microwave network sites and associated equipment. In addition, **FE** will determine if the current microwave equipment is upgradable and can be used with the recommended radio system. We will assess if the current microwave system is standards-based and visually appears robust enough to withstand a major event (earthquake, fire, terrorist event, etc.)

Project Initiation Meeting Agenda

- Introductions
- Clarify roles
- Review project objectives and expectations
- Review key issues
- Review key milestones and schedule
- Review and clarify deliverables
- Plan interviews and identify interview participants
- Determine site visit schedule
- Review status reporting methodologies
- Determine progress review meeting schedule
- Resolve immediate issues
- Build relationships





County of Santa Barbara, California

Public Safety Radio System Replacement Project

FE understands that many of the County tower sites are nearing full capacity. Physical surveys of the County sites will assess whether the existing physical infrastructure at each tower site can accommodate new/upgraded equipment or if site improvements to the shelter, tower, electrical, backup generator, and battery plant need to be made. If site improvements are necessary, the team will recommend whether standard components will meet requirements or if custom or permanent structural work is required. If necessary, **FE** can provide structural analysis services as an option to the County.

During our visits, we will compare the County-provided inventory data with our site findings and subsequently update the inventory database. **FE** will note the coordinates of each site including

FE will confirm the coordinates of each site including latitude, longitude, and elevation and will collect information about the following:

- Access road conditions
- General site conditions
- HVAC
- Antennas and mounts
- Availability of surrounding land
- Perimeter security
- Equipment shelter
- Emergency power
- AC and/or DC power
- Transmission line support structures
- Grounding and variances from standards
- Waveguide and dry air systems
- Electronic, both radio and microwave
- Nearby obstructions that may impact paths or coverage

FE will identify any issues that affect the modification and use of the sites for a new/upgraded County system. We will use results in subsequent system alternatives analysis tasks.

Deliverable—**FE** will document our findings and prepare a draft existing systems report section, which will be included in the final Phase 1 deliverable. **FE** has considerable survey experience in California, including recent site survey work for LA-RICS and for Kern County. Our subject matter experts have surveyed hundreds of tower and monopole sites of all sizes and construction.

2.2.1.3 Inventory Analysis

FE understands that the County maintains an inventory database. Based on our site assessments, we will review the inventory database to include infrastructure equipment, quantities, and locations by department and/or by subsystem. We will collect subscriber information during needs assessment activities and survey subscribers for those departments whose information is not current or complete.

Deliverable: **FE** will prepare a draft inventory report section, which we will review with the County during an onsite monthly meeting. It will be included in the final Phase 1 report deliverable.

2.2.1.4 Existing System Performance Analysis

Traffic/Capacity Analysis—**FE** has assisted many agencies determine the capacity of their existing voice and data networks, as well as plan for the traffic load of future systems, including very large systems such as Oregon's Statewide Radio Project network. We will review current and historical radio traffic data to be provided by the County. **FE** will analyze the information to evaluate radio traffic volume, type, time flow, traffic peak, and channel discipline.





County of Santa Barbara, California

Public Safety Radio System Replacement Project

We will also determine the current capacity of the various VHF, UHF, and 800 MHz systems based on the number of channels, technology, and other system characteristics. This analysis will provide a basis for evaluating whether the systems can handle the capacity of future incidents, especially where mutual aid is required.

Backup Systems, Redundancy and Recovery Procedures Review—From our vast experience, *FE* understands the criticality of adequate backup, availability, and recovery mechanisms. We will review the County's current backup systems equipment and interconnectivity, redundancy, availability and reliability, and recovery procedures provided in documentation from the County. We will also collect additional information and identify 'what's working and what's not' during stakeholder interviews.

Dispatch Operations Review—*FE* will review dispatch operations procedural documents provided by the County. We will visit the County's primary dispatch center that services the radio systems' users to observe operations and hold informal discussions with dispatch personnel, utilizing our experience evaluating dispatch operations in dozens of high-volume, urban PSAPs across the country. We will also collect relevant information during the stakeholder interviews described in the next section of this proposal.

Deliverable: We will prepare system usage and loading reports that will be part of the final Phase I report and will include our analysis of current dispatch operations and requirements for the future based on our findings.

2.2.1.5 Needs Assessment User Interviews

Stakeholder Interviews—Once *FE* has reviewed available documentation and any other applicable standards and guidelines, we will be able to discern gaps in the information as we prepare for stakeholder interviews. We will work with the County's project manager to define an assessment questionnaire that will be used during the interviews that highlights current issues and concerns, as well as future requirements for the replacement public safety radio system.

Because we recognize that this task establishes the foundation for all future work, we will gather sufficient information necessary to accurately document the County's needs. The questionnaire will cover the following areas:

- Functionality of system and subscribers including encryption, scanning, PTT priorities, paging, talkaround, telephone interconnect, private conversation, emergency call, patching/linking, submersible, intrinsically safe, and other key features
- Physical infrastructure
- Backhaul
- Daily and tactical operations/use of radios – radio programming and fleetmaps
- Performance including any coverage, capacity, and/or interference issues
- Spectrum use

Systems Stakeholders

- Office of Emergency Mgmt
- DGS Div. of Information Communications Tech.
- County Sheriff's Office
- County Fire
- Emergency Medical Svcs.
- Public Health / Animal Health
- Public Works Dept. Roads Division
- Public Works Dept. Flood Control Division
- Parks Department
- Probation
- Goleta City
- Guadalupe City
- Buellton City
- Solvang City
- California Fire Service
- US Fire Service





County of Santa Barbara, California

Public Safety Radio System Replacement Project

- Current and future interoperability among departments and with other jurisdictions, agencies, and organizations
- Number, type of subscriber units, and feature sets used; ten-year growth projections
- Dispatching and console needs
- User needs and expectations; current limitations
- New technologies and capabilities of vendors/integrators

Our proposed project plan is based on up to 20 interviews scheduled over two different weeks to collect information in each department from 5% of line staff that use the radio systems, as required by the RFP. The County will provide contact information for participants from each department. **FE** will meet with the designated personnel and, using the pre-approved assessment questionnaire as a basis for discussion, discover and document the users' issues, concerns, and expectations for the future. **FE** will conduct follow-up discussions with participants as necessary to complete the assessments.

Deliverable—We will document the collected information **FE** will document our findings and prepare a draft needs assessment report section, which will be included in the final Phase 1 deliverable. We will review this with the County's Steering Committee during one of the weekly conference calls, incorporate changes, then issue the final *Existing System Analysis, Inventory, and Needs Assessment Report*.

2.2.1.6 Vendor Roadmap and Technology Sessions

FE clients are justifiably concerned about the possible impacts that emerging technologies may have on their investments in new radio systems. During the onsite interviews, **FE** consultants will share information of current technology and options, especially regarding LTE, trunking, P25 Phase 1 and Phase 2, and other topics of special interest to the County. Our review of land mobile radio technologies will include trunking, simulcast, multicast, dual-mode (analog/digital), and dual-band radios. We will review available features and functionality of APCO P25 systems that provide enhanced communications, security/encryption, ease-of-use, and interoperability. Our team will present this information to system stakeholders and users during interview sessions providing a common understanding of current technology and options.

Having always maintained a position of vendor-neutrality, we have had experience working with projects involving virtually every system vendor. Under the direction of the Steering Committee, **FE** will organize full-day technology roadmap sessions and meetings with up to three radio system vendors. These vendor workshops will be designed for department representatives to better understand new technologies, capabilities and available functionality. It is important the vendors be required to provide clear roadmaps for their systems and technologies, clearly showing the planned upgrade path and calling out any significant (i.e. high cost) upgrades in that planned path.

Following the three vendor workshops, **FE** will provide to the County a brief summary of the major P25 radio system vendors planned roadmaps for the long term. We will also highlight other emerging technologies and trends of interest in the public safety industry, including the Nationwide Public Safety Broadband Network (FirstNet) and LTE applications in the public safety environment. We will share our experience and knowledge modeling coverage, system design, and testing in both LMR and LTE solutions, based on recent presentations delivered at the International Wireless Communications Expo (IWCE).





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2.2.1.7 Requirements Discovery

FE's requirements discovery methodology places considerable emphasis on *consensus building and accurately determining the needs of the system owners and system users.*

Following the interviews, we will catalog the collected information. At this point in the project, *FE* will develop a set of high-level requirements based on the documentation review, existing system analysis, and needs assessment and assumptions agreed to with the County. We will consider the desired and feasible use of the County's site and equipment investments for each applicable requirement. We will typically define requirements for the following:

- Basic functionality
- Mobile and portable coverage needs
- Mobile and portable roaming needs
- Infrastructure and backhaul components
- Number and basic functionality of subscribers
- Network management
- Capacity and spectrum
- Interoperability among local agencies and public service departments, adjacent counties, state and federal agencies
- Dispatch center capabilities
- Maintenance and service level

We will then meet with County representatives via conference call and validate the requirements.

Phase 1 Deliverable—*FE* will prepare a *County of Santa Barbara Existing System Analysis, Needs Assessment, and Requirements Report* comprising sections that contain the deliverables from the previous activities in Phase I, including a detailed inventory report, department interview results, needs assessment and requirements definition, radio site assessment, system usage and loading reports, and other analysis results. We will work with the County's project manager to determine the review points throughout Phase I; scheduling reviews of report deliverables when applicable. *FE* will submit draft report sections to the County, incorporate the County's comments and recommendations, and submit a final report.

2.2.2 Phase II—Design Criteria, Analysis of Alternative Designs, and Budget Projections (RFP Appendix A—Phase II, Bullets 1 through 8)

2.2.2.1 Identification of Alternatives

In close conjunction with the County, *FE* will develop a mutually agreed-upon number of viable alternatives for the County's Public Safety Radio Communications Replacement Project, understanding that the County desires a minimum of two alternatives and is interested in the possibility of a regional P25 digital trunked system that consolidates existing disparate systems. At a minimum, we will develop alternatives to upgrade the existing Alcatel/Motorola system or construct a new system.





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We help our clients determine what's right for them whether it be joining a regional or statewide system, funding a standalone system, procuring a system via competitive bid, or procuring from a sole source.

2.2.2.2 Technical Analysis of Alternatives

We will assess both land mobile radio and microwave technology alternatives that are currently available or will be in the near term for the replacement of the current radio and microwave networks. We will discuss the potential to reuse current investments and the desire for better coverage, performance, higher reliability, and redundancy.

As highlighted in this section, **FE** will address both near-term and long-term needs by considering system performance (coverage/capacity/interference), available technologies, network and site security, reliability, redundancy, quality assurance, and functionality defined in the requirements. We will also address interoperability among County departments/agencies, and with regional, state, and federal agencies.

Our alternatives will consider the potential impact on the system's backhaul network, tower facilities, and infrastructure, including the dispatch center. We will describe enhancements/replacements needed to accommodate the system requirements for the most cost-effective solution.

We will also consider migration alternatives (phased vs. all at once), cutover plans that limit downtime, and ongoing (ten-year projections) of maintenance requirements and costs. Our alternatives analysis will evaluate the most effective cutover plan to limit downtime of the system or potentially run in parallel with the existing system. We will assess each alternative's capability of a phased implementation and orderly expansion.

We will produce itemized costs and milestones based on current vendor and integrator information. **FE** will define advantages and disadvantages of each alternative based on our knowledge of LMR technologies and familiarity with the implementation of each. We will also estimate staffing and resource support needed from the County for each alternative.

FE will assess the pros and cons of each alternative and provide guidance to the County regarding our recommendation of the most appropriate replacement/upgrade technological alternative(s) to best meet the County's requirements. Our analysis will also present the implementation strategies and anticipated costs for each alternative.

Performance Analysis Tools—**FE** will use **FEPerformancePro™** to analyze coverage, capacity, and interference for each of the alternatives and to display maps, profiles, and other performance graphics. Our in-house integrated set of tools provides our consultants with state-of-the-art network modeling technology to analyze the performance of a system. These tools include the following:

- **FECoverage™** – complete coverage analysis tool
- **FEMapper™** – high-resolution mapping tool
- **FENetwork™** – reliable network capacity analysis tool
- **FEMitigate™ (optional)** – system-wide interference analysis tool

FEPerformancePro™ uses ATDI's powerful ICS Telecom industry standard network propagation and planning software as its engine. ICS Telecom's accuracy in modeling communications networks,





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performing interference analyses, and facilitating frequency planning has been validated by the federal government in field tests and is used by the DOD, FCC, NTIA, and APCO.

Our proficiency with coverage prediction applications allows us to perform thorough coverage analysis of systems built by any manufacturer. In all cases, we evaluate coverage and system performance by adhering to guidelines and recommendations outlined in the TIA publication, TSB-88. This document is an industry accepted and widely used reference for radio frequency coverage modeling and system performance validation.

Capacity Analysis—FE will use the Phase 1 capacity analysis and approved future requirements to assess the expected traffic load of the system. We will use this data to then estimate the number of sites and channels required to meet the County's current and future needs.

Coverage Analysis and Coverage Workshop—FE will prepare for and conduct an interactive Coverage Workshop with the County to assess coverage for the system alternatives. This hands-on session using **FECoverage™** allows County participants to immediately see the impacts of adding and/or deleting existing and greenfield sites, engaging the County early and often in the design process. **FE** will consider knowledge about existing sites (and potential future sites) and reported coverage issues brought up during the needs assessment (including in-building coverage), targeting those areas where gaps have been identified.

FE pioneered the concept of a coverage workshop over a decade ago. We have delivered the **FE Team Coverage™** experience to over 50 clients. Our interactive coverage methodology has set the standard and we were invited by IWCE in 2016 to deliver a real-time workshop, highlighting the effectiveness of our **FECoverage™** tool and workshop in modeling both LMR and LTE coverage parameters. Benefits of the **FE Team Coverage™** Workshop include the following:

- Visual demonstration of areas of coverage requirements
- Visual depiction of selected sites in the system
- Visual representation of coverage for each site
- **Fast, interactive system site, technology, and spectrum impact decisions**

The **FE Team Coverage™** experience builds consensus and facilitates "buy-in" of the eventual system. The adjacent text box highlights topics addressed during the workshop. As radio coverage is modeled and gaps are indicated, our subject matter expert will interactively and in real-time manipulate the model and display the effects of changing site equipment or placing additional sites in the network. Workshop attendees will immediately be able to evaluate the impact of these changes and determine what needs to be done to meet user requirements. Our project plan assumes **FE Team Coverage™** will be presented as a conference call. As an option, it can be presented onsite.

After the workshop, **FE** will produce a mutually agreed upon set of coverage maps, customized to the County's needs. **FE** will provide maps for both mobile and portable subscriber units depicting major geographical landmarks and the area topography, including scale, color schemes, highway/road data, jurisdictional boundaries, and desired performance characteristics. An example of this prediction capability is shown in Exhibit 2.

FE Team Coverage™ Workshop Topics

- System users' coverage needs
- Other participating jurisdictions' coverage needs
- Coverage problem areas identified during the needs assessment
- How to meet fire-ground and in-building coverage needs
- Areas where traditional tower-based coverage is not possible
- Leveraging existing sites and potential new sites to fill coverage gaps





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Dispatch—FE will consider the impacts of the recommended system on dispatch center technology and operations.

Interoperability and Operational Analysis—FE will consider interoperability among County of Santa Barbara agencies and departments, with local cities and municipalities, and with state and federal agencies. **FE's** analysis will use the SAFECOM lanes and the SAFECOM Interoperable Statement of Requirements as guides to provide a comprehensive recommendation for the County to attain the highest SAFECOM level practical at the most economical cost. For each alternative under consideration, the **FE** team will address the impact it would have on the operations of system users and identify ways to optimize the new system.

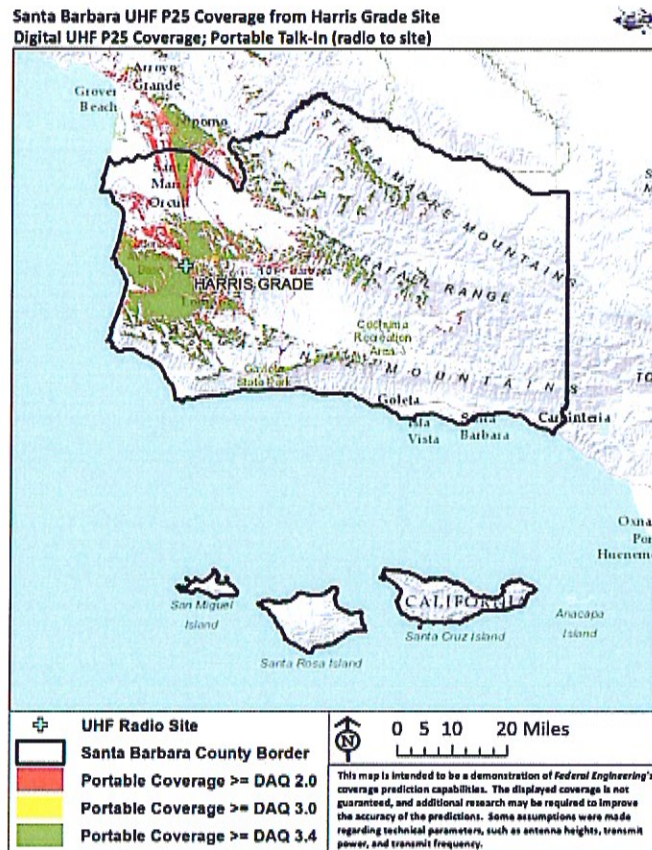


Exhibit 2—Sample Coverage Map—P25 Portable Talk-in from Harris Grade Site

This sample propagation map shows the capability of the FEPerformancePro™ toolset.

2.2.2.3 Identification and Technical Analysis of Microwave and Data Options

FE has extensive microwave knowledge. Practically every one of our over 500 public safety communications projects includes microwave backhaul planning, design, procurement, and/or implementation. Public safety radio system backhaul systems are no longer simply "radio support systems"; they must be considered as true IT networks. With this comes technologies typically associated with wireline and/or wireless carrier networks such as multi-protocol label switching (MPLS), SONET, and others.





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Backhaul Analysis—We will consider any backhaul upgrades that may be required for each alternative using *FENetwork*[™] to facilitate backhaul network analysis and design. We will model microwave system backhaul paths for the alternatives taking into consideration both urban (building) and terrain clutter/obstructions. Our consultants will assess the backhaul needs for the County based on requirements. As an option, we can use *FENetwork*[™] to graph individual path profiles for each link or provide a representation of the entire backhaul network.

We recognize that the County may wish to wait before making any changes to data communications. *FE* can, if requested, provide data network alternatives analysis, procurement, and implementation oversight services as an option. We understand the County's primary objective is to develop a plan for the replacement or migration of the public safety radio system, and the OC3 and LG system migration may or may not be implemented or may be implemented at a later date.

2.2.2.4 Migration and Implementation Strategies

FE will discuss and present the implementation strategies for each alternative in the Alternatives Analysis Report and Presentation deliverable (see below). *FE's* implementation strategies typically include the following implementation activities related to the overall new or upgraded system, so that internal planning can be done in a logical sequence well in advance of vendor contract award.

- Radio site development
- Dispatch center development
- Procurement
- Contract negotiations
- System deployment
- Training
- Testing
- Acceptance
- Cutover

2.2.2.5 Budget Projections

Using our in-house *FECostPro*[™] tool, *FE* will analyze the potential cost of each alternative based on our experience in other California counties, the design of systems comparable to the County's, and publicly available industry information. This high-level, quantitative analysis relies on our team's knowledge base and the *FECostPro*[™] historical pricing database that spans numerous projects.

Itemized costs for each alternative will be budgetary estimates. Even if one could develop a 100% accurate projection of what vendors would bid, the dynamics of the public safety mobile radio market are such that the actual bid prices can vary significantly. Factors such as where the vendor is in their fiscal cycle, their profit picture year-to-date, how they are doing against the competition, factory parts and labor costs, energy costs, and where they are along the learning curve for a particular product line have a major impact upon proposal pricing. It is not uncommon to see the price variance between two vendors vary more than 20% for the same system. In fact, we have seen the prices quoted from the same vendor vary by more than 10% for the exact same system between the initial quote and the best and final offer. *FE's* estimates will, therefore, be conservative in nature so the vendor proposal pricing does not exceed the estimates.

2.2.2.6 Cost Models/Assistance with Securing Funds

Our experience has shown that cost models are usually a combination of models, such as user-based subscription fees, grant funding, cost-sharing, new legislation, and others. In close conjunction with the County, *FE* will develop a cost model to sustain the selected alternative. To assist with securing these funds, *FE* will provide suggestions for outreach activities to garner subscription or cost-sharing support, funding requests to the legislature, and grant applications.





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Our team can also optionally conduct outreach activities, present to the legislature, complete grant applications, and perform other relevant activities as requested by the County.

Phase 2 Deliverable—*FE* will prepare and submit a draft *County of Santa Barbara Radio System Alternatives Analysis, Conceptual Design, and Recommendations Report* to the Steering Committee for review and comment. This report will include the analysis of each alternative, including system block diagrams, coverage maps, migration and implementation plans, project schedule, and estimated system costs, staffing recommendations, and project budget. Site drawings are usually prepared by the equipment vendors and are redundant at this point in the process. *FE* is, therefore, proposing site drawings as an option to reduce the costs for the County.

FE will present the results of our analysis to the County in an on-site session. During this session, we will collaborate with County representatives to select a solution for a future Public Safety Radio System Replacement and, potentially, a path for a new/upgraded microwave network. After the meeting, we will revise the report based on County comments and recommendations and issue the final *Radio System Alternatives Analysis, Conceptual Design, and Recommendations Report*.

2.2.3 Phase III—Specification Writing and Request for Proposal (RFP Appendix A—Phase III, Bullets 1 through 6)

2.2.3.1 Review City Purchasing Requirements and Develop Procurement Documents

FE has developed full procurement documents for numerous government entities, including San Francisco and the cities of Portland (Oregon), El Paso, and Virginia Beach as well as for LA-RICS, providing our team with experience understanding purchasing requirements and the integration of County-required RFP sections. We will review and develop the appropriate procurement documents for the selected solution and procurement method.

2.2.3.2 FCC Regulatory Efforts

FE has immediate access to FCC databases and is constantly apprised of all issues surrounding frequency acquisition and use. Further, *FE* has experts in the area of license research as exemplified by our proposed personnel. We monitor the FCC's rules and regulations, as well as the latest reports, orders, notices, and memoranda that pertain to the wireless regulatory arena. *FE* will initially research and then put the County on our watch list for any items that may affect FCC licensing in the County of Santa Barbara. We will also identify any regulatory issues that may affect the project.

FE will work with the County to determine what additional frequency planning is required based on the selected solution and identify a set of mutually agreed-upon spectrum-associated tasks that need to be completed for FCC compliance. Actual frequency planning is an iterative process based on the selected vendor's detailed design. Once the detailed design is accepted by the County (in Phase V), if required, *FE* can, optionally, develop any necessary applications for the Region 6 Regional Planning Committee and for a selected frequency coordinator, FCC Part 90 applications, and participate in RPC meetings on behalf of the County.

2.2.3.3 Technical Specifications, SOW, and Acceptance Testing Criteria

FE will develop a set of technical specifications, a vendor statement of work, and testing criteria for a County of Santa Barbara public safety P25 radio system and microwave system based on the County-approved requirements and selected solution for use in an RFP.





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Our specifications will describe the radio system's functional and performance requirements, as well as the system test criteria in sufficient detail for vendors to submit consistent proposals, will be verifiable through future acceptance testing, and will stress the use of existing investments wherever possible. The detailed design of the system will be left to the radio system vendor to allow for innovative approaches and to ensure the vendor remains responsible for system performance in accordance with the specifications. These specifications will be the foundation for vendor proposal evaluation and as acceptance criteria.

FE's specifications are properly crafted to tightly define performance and at the same time encourage competition and innovation. **FE** typically includes the following in our specifications:

- System functional, protocol, and operational requirements
- Regulatory and standards compliance
- Leverage existing resources
- Infrastructure equipment
- Suggested site locations and development
- Site subsystems (power, HVAC, etc.)
- Site/shelter modifications
- Dispatch equipment
- Subscribers (mobiles, portables, pagers)
- Required coverage and capacity
- Spectrum usage and restrictions
- Interoperability
- Local, regional, state, and federal interoperability
- Expandability to accommodate future growth
- Backhaul (microwave/fiber) connectivity
- Network management
- Network and physical security
- Migration and cutover/transition requirements, including continuity of operations
- System performance, system reliability, and redundancy
- System delivery and installation
- Required legacy and new interfaces
- User (operational) and technical staff training requirements
- Overall project schedule and migration/implementation/cutover plans
- Factory, interoperability, coverage, site, system, and acceptance test guidelines and criteria

The County will receive specifications that are well-structured and consider issues and concerns such as interoperability, adequate coverage, and capacity. Our staff understands the technical, financial, and funding challenges faced by our clients today. ***FE's past and current clients have expressed satisfaction and given prompt approval of the RFPs we have written. We have received feedback from system vendors that RFPs developed by FE are fair and allow them to prepare comprehensive, clear responses. No RFP written by FE has ever been successfully protested.***

Deliverable—**FE** will develop a complete *County of Santa Barbara Radio System RFP* incorporating the technical specifications, SOW, testing criteria, and other County purchasing requirements. We





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will submit the draft RFP to the County for review and comment and present the highlights of the RFP in an on-site meeting with the County. We will update the document based on requested suggestions and modifications, and submit a final specifications and RFP.

2.2.3.4 Proposal Evaluation Criteria

FE will work with the County to develop evaluation criteria for determining vendor qualifications and capabilities, compliance with functional/technical specifications, and any other evaluation factors. This will include criteria for assessing and comparing the cost of vendor proposals. Certain criteria we expect to be “pass/fail”. These include financial stability of the vendor, whether or not the vendor is debarred or suspended from doing business, and completeness of the vendor’s proposed response (evaluates whether all required items are included in the proposal).

Deliverable—We will finalize a set of evaluation criteria with the County that can be included in the RFP and used by evaluators during vendor proposal submission review.

2.2.3.5 Requirements Tracking Matrix

FE will create a Requirements Tracking Matrix (RTM) based on the approved specifications to monitor the selected vendor; assuring that all functional, performance, and operational requirements are included in the vendor’s detailed design, properly implemented, and adequately tested. An example from an existing **FE** matrix is provided in Exhibit 3. We will assign each requirement a unique identifier and classification, provide a brief requirement description, and track the requirement through design, implementation, and testing.

- Typical Proposal Evaluation Criteria**
- Feasible P25 design
 - Adequate coverage and capacity
 - Sites proposed—paying specific attention to new sites
 - Complete equipment list
 - Matches required features
 - Adequate factory, coverage, functional, performance, and acceptance test plans
 - Feasible cutover plan
 - Adherence to the technical specification and other requirements
 - Backhaul design or upgrade
 - Required interoperability
 - Reliability and redundancy
 - Viable schedule
 - Adequate project management and engineering

Requirement ID	Requirement Classification	Requirement Description	Design Document	System Component(s)	Test Case	Verification	Additional Comments
ER 1.0	Equipment Requirement	Mobile installation	Design V2.6	Mobiles	1.3, 1.8, 2.6	Passed	Issues resolved in Vehicle #2

Exhibit 3—Sample Requirements Tracking Matrix

FE has a Requirements Tracking Matrix format already developed.

This matrix will facilitate monitoring vendor compliance to each requirement. During each phase of system deployment (detailed design through acceptance testing), the County can easily track the phase deliverables against the RTM, checking to make sure each requirement is met. If a requirement is not met, the deliverable/product owner will be responsible for either correcting the deliverable/product or requesting a change be made to the requirement, if appropriate. The RTM also tracks testing results from acceptance testing against the requirements from the RFP.

Deliverable: **FE** will submit a draft of the RTM to the County for review and comment once the RFP has been approved. We will update based on County input and submit a final version. The RTM, however, is a “living” document that will be modified throughout the project to explicitly align with the potentially changing requirements.





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2.3 Schedule and Ability to Perform in a Timely Manner (RFP Page 18.2.b)

Federal Engineering follows a structured, yet flexible and responsive, approach to personnel deployment. To manage adequate staffing of our projects and adherence to schedules, Mr. John Murray, executive vice president/chief operating officer, meets regularly with the assistant vice presidents and operations directors to review the assignment of every resource in the company to provide the necessary skills and knowledge to succeed in the work ahead. Through these discussions, he is able to forecast resource needs for the upcoming 12-18 months.

Using this methodology, we take pride in consistently meeting and exceeding client commitments as evidenced by the fact that in 34 years, we have never had a project end in default and most of our projects result in repeat business.

Based on our work assignments for other currently active projects during the proposed contract period, along with our experience with similar projects, the **FE** team can commit the staff and resources needed to meet the County's scope and schedule. FE is ready to begin this project as soon as awarded and contract finalized, which the RFP's preliminary project plan indicates as August 2017.

FE recognizes that the timely completion of a project involves the interaction of the scope of work reviews, schedule tracking, and cost controls. We apply our techniques in assessing the status of our project completion activities, and are able to assess the performance of our projects on a continual basis. Our management techniques gauge project progress as well as predict future project performance enabling us to apply corrective actions before potential problem areas become an issue. Our techniques involve effective steps for resource planning, cost estimating, and project control. Using these project management methodologies, we are confident of our ability to meet the County's recommended time frame, as shown in the draft schedule below.

The below tentative schedule will be finalized in cooperation with the Steering Committee's project manager. It can be accelerated should the County desire.

<i>Estimated Project Schedule</i>			
Proposal Phase	Tasks/Deliverables	Months after Contract Execution	Target Completion Date
	Kickoff Meeting and Documentation Review		Aug. 2017
Phase 1	Inventory and Needs Analysis	3	Nov. 2017
Phase 2	Design Criteria, Analysis of Alternative Designs, and Budget Projections	6	Feb. 2018
Phase 3	Specification Writing and Request for Proposal	8	April 2018
Phase 4	System Procurement Process and Contract Negotiations	17	Jan. 2019
Phase 5	System Implementation Management	52	Feb. 2022





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6.3 Hourly Rates (RFP Page 18.5.c)

c. Hourly rates for all team members. Hourly rates and itemized costs may be used to negotiate changes in the Scope of Work if necessary.

If required by the County of Santa Barbara, **FE** can provide additional services in accordance with the rate schedule below.

SCHEDULE A

LONG-TERM CONSULTING RATES

Principal	\$ 305.00 per hour
Vice President	\$ 275.00 per hour
Assistant Vice President	\$ 245.00 per hour
Director/Chief Consultant	\$ 215.00 per hour
Senior Consultant	\$ 180.00 per hour
Consultant	\$ 155.00 per hour
Senior Analyst	\$ 130.00 per hour
Analyst	\$ 95.00 per hour
Administrative / Computer Services	\$ 65.00 per hour

TERMS AND CONDITIONS

1. Long-term rates do not include state or local taxes.
2. Subcontracts, travel, meals on a per diem basis, and other direct non-labor charges will be invoiced as actual cost plus 20 percent to account for general and administrative costs.
3. Hours expended for travel in support of any time and materials task orders are billable hours.
4. Invoices will be rendered monthly. All invoices are due and payable 30 days from issuance. Late balances are subject to a finance charge of 1.5 percent per month (or fraction thereof).

This document is proprietary to Federal Engineering, Inc. and shall not be disclosed to third parties without prior written permission from Federal Engineering, Inc.





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6.4 Basis of Our Proposal

1. This proposal assumes Federal Engineering, Inc. will perform all of the tasks as called out in the technical proposal (excluding optional tasks). The deletion of a task, a significant change in scope of one or more tasks, or use of a phased implementation approach may affect the overall price.
2. **FE** will provide draft and final deliverables electronically to the County of Santa Barbara, California.
3. Any optional or additional tasking will be authorized by mutual agreement of the County and **FE**. Such tasking will be performed on a time and materials basis in accordance with the rates in Schedule A or on a fixed price basis as mutually agreed up in a task order by the County and **FE**.
4. **FE's** ability to fulfill this task depends, in part, on the willingness and ability of the County of Santa Barbara, County participants, equipment vendors, service providers, third parties, and others to provide information in a timely manner, and upon the accuracy of the information as supplied. The accuracy of input data, whether provided in electronic or hard copy form, and the recommendations, actions, system designs, software, and license filings resulting therefrom cannot, therefore, be warranted by **FE** nor can the performance, suitability, or reliability of said systems be warranted by **FE**. **FE** accepts no responsibility or liability to any third party in respect to any information or related content delivered by **FE**. This information is subjective in certain respects, and, thus, susceptible to multiple interpretations and may be in need of periodic revisions based on actual experience and subsequent developments.
5. **FE** will review up to three radio system vendor proposals. If additional hours are required to review additional proposals, a mutually agreeable amendment to this SOW will be executed by both parties.
6. **FE** proposes to complete Phases I through III on a firm-fixed-price basis. Our project plan for Phases I through III calls for **FE's** deputy project manager to be on-site for two days twice a month for status meetings and other project-related tasks. In addition, our plan assumes up to two **FE** personnel to be on-site for three weeks of site surveys and for two weeks of user and stakeholder interviews. Our plan assumes an additional five **FE** personnel attend one-day deliverable review meetings.
7. The level of effort for Phase IV—System Procurement Process and Contract Negotiations can vary greatly depending upon the system vendors, their proposals, and the County's procurement practices. **FE** is proposing a Time & Material effort for this phase estimate to provide up to 120 hours of support to the County during the procurement and vendor contract negotiation process, including up to five on-site visits/meetings. If additional hours are required, a mutually agreeable amendment to the scope of work will be executed by both parties. "
8. The level of effort for Phase V—System Implementation can vary greatly depending upon the winning equipment vendor's proposal as well as the division of responsibilities among the equipment vendor, County, and Consultant. **FE** is, therefore, proposing a Time & Material effort estimate to provide up to 300 hours for planning, oversight, and basic project support. At the conclusion of Phase IV, the system to be implemented, vendor contract, and





County of Santa Barbara, California Public Safety Radio System Replacement Project

division of task will be solidified, at which point additional hours can be defined via a mutually agreeable amendment to this SOW, executed by both parties.

9. This proposal is based upon a start date on or before August 15, 2017 and assumes a five-year schedule to completion. The schedule for procurement and implementation oversight will be adjusted after determination of the County's procurement schedule and the vendor's final approved implementation schedule. Delays to the project schedule due to actions or lack of actions on the part of the County of Santa Barbara, County participants, third parties, and others including, but not limited to vendor protests, protracted contract negotiations, vendor delays that impact the program schedule and/or costs to the County will be brought to the attention of the County's project manager in a timely manner, and will be reduced to writing via a mutually agreed upon contract amendment.
10. This proposal assumes a mutually agreeable invoicing schedule for work completed.
11. Federal Engineering reserves the right to assign/reassign work efforts and associated costs across tasks and between our professional staff members in order to meet our contractual obligations to the County.



EXHIBIT E

INTERVIEW CLARIFICATIONS

County of Santa Barbara Radio System RFP #186043

Ref #	Interview Action Items	Federal Engineering Response	Fees	Fed Eng
1	Does Phase 1 include all pricing elements, such as labor and expenses?	Yes		
2	Does Phase 2 include all pricing elements, such as labor and expenses?	Yes	Phase 1	\$ 171,059
3	Are the two monthly onsite meetings included in the fees?	Yes, our firm fixed fee proposal for Phases 1, 2, and 3 includes two monthly onsite meetings. For the Phase 4 and 5 Time and Material (T&M) proposals, FE will develop specific Task Orders based on the County's requested scope of work at the beginning of these phases.	Phase 2	\$ 128,838
			Phase 3	\$ 41,147
			Phase 4	\$ 20,248
			Phase 5	\$ 43,214
4	Does your proposal include conducting site surveys for all (29) sites? If not, provide additional cost.	Yes, our proposal includes a two-person team conducting site surveys for all (29) sites.		
5	Proposal is valid till September 17, 2017, (120 days) from submission. Would the proposal still be valid after this date?	Yes	Total Phase 1 & 2	\$ 299,897
6	The fees are contingent on Federal Engineering conducting all the five phases. What happens, if the County chooses only 2?	FE understands that Phases 3, 4, and 5 are optional. The Phase 1 and 2 Firm Fixed Price proposal remains the same, if the County chooses only two.	Total All Phases	\$ 404,506
7	No hard copies of the reports will be provided. What is the cost to provide hard copies?	FE agrees to provide hard copies at no additional cost.		
8	The RFP response say, delays will result in a change order. What will constitute the delays and how much will it the change order be?	FE does not anticipate any delays or change orders in Phases 1-3. The primary factor constituting delays would be vendor delays in Phases 4 or 5 that significantly extend the project schedule beyond five years. Any change orders would be negotiated with the County. FE rarely issues change orders on our projects unless a client requests additional services to the original scope of work.		
9	The hourly rates do not include expenses, how are the expenses calculated and billed?	The firm fixed price for Phases 1-3 includes all labor, travel, and other expenses. Invoices for Phases 1 - 3 will be milestone based. For Phases 4 and 5, which are proposed on a time and materials basis, travel expenses will be calculated at the Federal GSA rates plus 20 percent to account for general and administrative costs. However, should Santa Barbara have specific travel policies and rates that are applicable to consultants, FE will comply. Invoices for Phases 4 and 5 will be issued monthly detailing the hours worked by individuals and any expenses with supporting documentation.		
10	Could the hourly rates be firm during the life of the project?	Yes		
11	Provide hourly rates breakdown by staff category for both Phase 4 and 5.	The Phase 4 and 5 T&M hourly rates are shown in the Schedule A Hourly Rate Chart included in Section 6.3 of our proposal. The work performed during these phases will be a mix of Project Manager, Senior Consultant, and Consultant resulting in an average hourly rate of \$168 for Phase 4 and \$144 for Phase 5.		
12	Provide email copy of the Interview PowerPoint.	See PDF of the Interview presentation, attached to this response.		
12	Confirm your pricing includes computer based propagation analysis as well as conducting actual field trials (using a spectrum analyzer or like manner measuring device) to show the difference in perceived audio quality, signal strength, and end-user functionality differences between the two, comparing them back to back in weak and strong signal areas.	See detailed response on the next page.		
	If pricing is not included for field trials, please update your pricing in Column C.	Federal Engineering's original cost proposal does not include field testing of the existing system since it was not required by the County's RFP. Should the County desire field coverage testing of a system, FE will be happy to conduct the tests, as we have for other clients, for an additional cost of \$6,880 for a total Phase 1 of \$177,939.		
13	End of List			

July 10, 2017

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