



**REQUEST FOR PROPOSALS
FOR
NARROWBANDING
OF
VOICE RADIO SYSTEM**

11-PCJPB-T-011

RFP Issued:	April 13, 2011
Pre-Proposal Conference:	April 27, 2011 at 9:00 a.m.
Questions, and Requests for Clarifications (RFCs) Due:	May 4, 2011 at 5:00 p.m.
Proposals Due:	May 25, 2011 at 2:00 p.m.

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NOTICE IS HEREBY GIVEN THAT Proposals will be received by the Contracts & Procurement Department of the Peninsula Corridor Joint Powers Board (JPB) at 1250 San Carlos Avenue, San Carlos, CA 94070-1306, until **2:00 p.m. May 25, 2011** for the following:

**REQUEST FOR PROPOSALS
11-PCJPB-T-011
NARROWBANDING OF VOICE RADIO SYSTEM**

The Contract to be let pursuant to this solicitation may be subject to a financial assistance contract between the JPB and the Federal Transit Administration (FTA) and may be partially funded by said financial assistance under capital grants. The successful Proposer will be required to comply with all terms and conditions prescribed for third party contracts in the grant contract between the FTA and the District.

A Pre-Proposal Conference will be held **April 27, 2011** commencing promptly at **9:00 a.m.** at the JPB/Caltrain Centralized Equipment Maintenance and Operations Facility (CEMOF), 585 Lenzen Avenue, San Jose, CA. JPB staff will review the requirements for this Solicitation and will be available to answer questions.

All prospective Proposers attending the meeting will be required to register at the CEMOF Way security guard station located at the corner of Cinnabar and North Autumn Streets, San Jose, CA. As there is a short walk from the parking lot to CEMOF, please allow 20 to 30 minutes to register prior to the meeting start time. Attendance at this meeting, while not mandatory, is **highly recommended**. JPB staff will meet prospective Proposers at the CEMOF Way parking lot to escort Proposers to the conference meeting room. The Pre-Proposal Conference should last approximately one to one and one-half hours.

Immediately following the Pre-Proposal Conference, there will be a site visit to the rail yard and/or shop area at CEMOF where representative locomotives, cab control cars, maintenance vehicles and base stations will be available for Proposers' inspection. JPB/Caltrain staff will be available to answer questions.

Prospective Proposers attending the meeting and site visit are required to provide their own Personal Protection Equipment (PPE) consisting at minimum of a reflective vest, hard hat, closed-toe boots/shoes, and safety glasses.

All Questions, Requests for Clarifications and Requests for Approved Equals during the solicitation phase of this project shall be directed in writing to Luis F. Velásquez, Contract Officer, in the Contracts & Procurement Department at 1250 San Carlos Avenue, San Carlos, CA 94070-1306 or by email to velasquezl@samtrans.com. Proposers may also fax written requests to 650-508-6498. All Questions, Requests for Clarifications, and Requests for Approved Equals concerning this project **must be received in writing by the JPB no later than 5:00 p.m. on May 4 2011**. The JPB's written response to Questions, Requests for Clarifications, and Requests for Approved Equal shall be posted on the JPB's Web site, www.caltrain.com, by midnight **March 11, 2011**.

Only signed Addenda issued by the Contracts & Procurement Department's authorized personnel are binding. Proposers are required to acknowledge receipt of all Addenda, if any, with their Proposals.

All written Proposals (**one original, three hard copies and six soft copies in a searchable Microsoft Word or Adobe PDF format on a CD-ROM**) shall be submitted in securely sealed packages, which shall include the name and address of the Proposer and shall reference solicitation number **11-PCJPB-T-011**.

Proposals shall be on the JPB's Proposal Forms included in the Solicitation Documents, be plainly marked with Proposer's name and contact information; and shall include signed acknowledgments of Addenda, if any.

Whether mailed or personally delivered, Proposals shall be addressed to Luis F. Velásquez, Contract Officer, Peninsula Corridor Joint Powers Board, Contracts & Procurement at 1250 San Carlos Ave., San Carlos, CA 94070-1306 by the date and time set forth in the Solicitation Documents and noted above. If hand delivering

Proposals, please allow adequate time to sign in at the JPB's security station located on the first floor of the Administrative offices.

Following the initial review and screening of all timely submitted, responsive and responsible proposals, one or more firms may be invited to participate in an oral interview. Oral interviews, if conducted, tentatively would take place **June 14, 2011**.

Submission of a proposal shall constitute a firm offer to the JPB. **No Proposer may withdraw its proposal for a period of 120 calendar days after the proposal submission due date.** Proposals will be examined and reported to the JPB Board of Directors within **120 calendar days of the proposal submission due date.**

The JPB reserves the right to reject any or all proposals, to waive any irregularity or informality in any proposal or in the proposal procedure; and reserves the right to negotiate with any qualified individual or firm. Each Proposer will be notified in writing of the JPB's intent to award a Contract prior to the JPB Board meeting.

The JPB hereby notifies all Proposers that it is the policy of the JPB to ensure nondiscrimination on the basis of race, color, sex, national origin, religion, age, disability, ancestry, medical condition, sexual orientation, or marital status in the award and administration of contracts that it awards.

Although no specific goal for Disadvantaged Business Enterprises (DBE) participation has been set for this Contract. The successful Proposer shall cooperate with the JPB in meeting its commitments and objectives with regard to insuring non-discrimination in the award and administration of JPB contracts and shall use its best efforts to insure that barriers to participation of Disadvantaged Business Enterprises do not exist. For DBE assistance, please contact the JPB, DBE Program Office at 650-508-7939.

In connection with the performance of this Contract, full compliance with all applicable Safety and Health Standards and with all applicable laws and regulations concerning Equal Employment Opportunity and DBEs will be required. The major provisions of the JPB policy are outlined in these Contract Specifications.

April 13, 2011
Date

/s/ Luis F. Velásquez
Contract Officer, Contracts & Procurement

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PART 1 – GENERAL REQUIREMENTS

1. INTRODUCTION

A. Purpose/Project Definition/Contract Type

The Peninsula Corridor Joint Powers Board (JPB), operator of Caltrain Commuter Rail Service, is seeking proposals from qualified firms (Contractor) to provide Narrowbanding Services of Caltrain's Voice Radio System from 25kHz channels to 12.5 kHz channels in order to comply with Federal Communications Commission (FCC) mandate(s) and January 1, 2013 cutover deadline.

The Narrowbanding Services shall include but not be limited to Contractor's provision, programming, installation and testing of 241 new narrowband-capable voice radios in Caltrain maintenance vehicles, locomotives and cab control cars; reprogramming and testing of 162 existing narrowband-capable voice radios in Caltrain maintenance vehicles, locomotives, cab control cars, base stations and repeaters; and conducting a System-Wide Coverage Test along the Caltrain railroad right-of-way to measure the downlink signal strength as further detailed in Part 2, Scope of Services of this RFP and the associated Exhibits.

The JPB anticipates awarding a **not to exceed price** Agreement for these services.

B. Background Information

Peninsula Corridor Joint Powers Board

The JPB is a joint powers agency whose membership is comprised of the San Mateo County Transit District, the City and County of San Francisco and the Santa Clara Valley Transportation Authority and provides passenger rail service between San Francisco and Gilroy known as Caltrain. During Fiscal Year 1992-93, the San Mateo County Transit District (District), the Santa Clara Valley Transportation Authority, and the City and County of San Francisco assumed full responsibility for Caltrain from the California Department of Transportation and appointed Amtrak as its Contract Operator. Acting as the JPB's operating arm, District staff took on the day-to-day and long-term responsibility for Caltrain management. The JPB owns the rolling stock, right-of-way, and station facilities between San Francisco and San Jose with operating rights on Union Pacific trackage to Gilroy. Through an operating agreement with the JPB, Amtrak provides train service on the corridor between San Francisco and Gilroy. Caltrain serves 32 stations along the 77-mile corridor, running 90 weekday trains which include baby bullet, limited, and local trains. Additional information about the agency can be found at www.caltrain.com.

C. Performance Period

The JPB anticipates awarding a contract for the Narrowbanding Services as detailed in these solicitation documents, and unless otherwise agreed to in writing, the Contractor shall have **270 contiguous calendar days** from receipt of the JPB's written **Notice to Proceed (NTP)** to complete the Narrowbanding Services under the Contract; and shall provide an onsite, one-year parts and labor warranty.

2. SOLICITATION PROCESS AND PROPOSAL EVALUATION

A. Solicitation Timeline

The JPB intends to adhere to the following timeline (subject to change at the discretion of the JPB):

<u>Activity</u>	<u>Date</u>
RFP Issued	April 13, 2011
Pre-Proposal Conference and Site Visit	April 27, 2011 at 9:00 a.m.
Questions/Requests for Clarifications (RFCs)	May 04, 2011 at 5:00 p.m.
JPB's Response to Questions/RFCs	May 11, 2011 at midnight
Proposals Due	May 25, 2011 at 2:00 p.m.
Interviews (tentatively).....	June 14, 2011
Contract Award (tentatively)	August 4, 2011
Notice to Proceed (tentatively)	September 1, 2011

B. Proposer's Qualifications and Experience

i. Company Qualifications, Experience & References

In order to be considered for selection for award of a contract, each Proposer must provide information about its company so that the JPB can evaluate the firm's stability and ability to support the commitments set forth in response to the RFP. The JPB, at its option, may require a Proposer to provide additional information and/or clarify requested information. To be considered qualified for consideration of award of a contract by the JPB, Proposer(s) shall have previous successful experience and verifiable history in providing, installing, testing, commissioning and maintaining **narrowband-capable two-way radios and systems** in the public transit industry with particular emphasis on vehicle and railroad locomotive systems similar in scope and technical specifications as those of this solicitation.

Proposers shall describe their experience in providing the specified services for similar operations and/or entities, including public transportation agencies, if any. Additionally, Proposers shall provide **three references** of recent clients for similar services. The Proposer must have provided services for the reference within the past five (5) years. For each client submitted as a reference, Proposers shall supply a brief description of the services provided, the timeframe services were provided, and client contact information (refer to Appendix D, Reference Form).

Proposers shall also provide the size and structure of the firm as evidenced by an organizational chart, relevant to its client base.

To be considered qualified, the Contractor must have at least one staff member who holds a FCC General Radiotelephone Operator's License. Experience in working on locomotives is desirable, though not required.

ii. Financial Qualifications

Each Proposer must possess sufficient financial strength, resources and capability to support and enable the work to be performed and to complete the Agreement in a satisfactory manner, as measured by Proposer's financial statements for the last **three years** prepared in accordance with generally accepted accounting principles (GAAP) of the jurisdiction in which the Proposer is located, and audited by an independent certified public accountant. Unaudited financial statements will be accepted if they are prepared in accordance with GAAP and accompanied by a statement from a duly authorized corporate officer stating that the statements accurately represent the Proposer's financial resources and capability.

Proposer's must demonstrate their ability to obtain required bonding and insurance with coverage values that meet minimum requirements evidenced by a letter or written statement or Certificate of Liability Insurance from an insurance underwriter, company, agent, or broker confirming that the Proposer can be insured for the required amounts (refer to Appendix C, Sample Agreement for Services, Section 12, Insurance).

iii. Qualifications and Experience of Key Personnel

Each Proposer shall submit resumes of Key Personnel and an organization chart that identifies the proposed team's structure and reporting responsibilities. If the Proposer is a multi-firm team, describe the organizational arrangement and roles and responsibilities between the firms. Work that subcontractors will perform, if any, should be indicated on a task basis.

This information shall indicate sufficient evidence satisfactory to the JPB that proposed staff of the Contractor have the skills, qualifications, and experience to successfully complete the requested services. Principal participants shall have previous experience in a similar position on **at least three other projects** similar in scope. Alternatively, Proposers may define and state depth and quality of experience in the narrowband radio industry of the identified principal participants and years performing the requested services.

For purposes of this clause, "Key Personnel" is defined as those principal participants who are essential to the successful completion and execution of this project. Key Personnel must be available for the duration of the engagement and may not be substituted without prior written approval by the JPB. The JPB reserves the right to direct the removal of any individual, including Key Personnel, assigned to this project.

iv. Use of Subcontractors/Subconsultants

A Proposer intending to use any subcontractors/subconsultants must identify them on the Designation of Sub-consultants and Sub-bidders/DBE and Subcontractor Questionnaire, and include these forms with its proposal (refer to Appendix E, DBE Forms). Use of any and all subcontractors/subconsultants must be approved in writing by the JPB's authorized representative.

v. Licenses and Certifications

The Contractor must hold and be able to provide proof of any necessary and required licenses/certifications necessary to successfully complete the work required by the JPB as contained in the solicitation documents and as further detailed in the Scope of Services, Installation and Cutover Plan, Railroad Vehicle Workmanship and Materials Guidelines; and Work Site Safety and Security Guidelines.

C. Pre-Proposal Conference

A Pre-Proposal Conference will be held **April 27, 2011** commencing promptly at **9:00 a.m.** at the JPB/Caltrain Centralized Equipment Maintenance and Operations Facility (CEMOF), 585 Lenzen Avenue, San Jose, CA (refer to Exhibit 11, Directions to CEMOF). JPB staff will review the requirements for this Solicitation and will be available to answer questions. All prospective Proposers attending the meeting will be required to register at the CEMOF Way security guard station located at the corner of Cinnabar and North Autumn Streets, San Jose, CA. As there is a short walk from the parking lot to CEMOF, please allow 20 to 30 minutes to register prior to the meeting start time. Attendance at this meeting, while not mandatory, is **highly recommended**. JPB staff will meet prospective Proposers at the CEMOF Way parking lot to escort Proposers to the conference meeting room.

Immediately following the Pre-Proposal Conference, there will be an Inspection Session/Site Visit to the rail yard and/or shop area at CEMOF where representative locomotives, cab control cars, maintenance vehicles and base stations will be available for Proposers' inspection. JPB/Caltrain staff will be available to answer questions.

Prospective Proposers attending the Inspection Session/Site Visit **will not be allowed to take photographs or video images inside the locomotives and cab control cars or of the inside of CEMOF.**

D. Submission of Questions and Requests for Clarification

Any questions and/or requests for clarification regarding this RFP shall be mailed to Luis F. Velásquez, Contract Officer, Peninsula Corridor Joint Powers Board, 1250 San Carlos Avenue, San Carlos, CA 94070, faxed to 650-508-5498, or emailed to velasquezl@samtrans.com for receipt no later than 5:00 p.m. **May 4, 2011.** The JPB's reply to questions and/or requests for clarification will be posted to the JPB's website (www.caltrain.com) by **May 11, 2011.**

E. Submission of Requests for Approved Equal

It is understood that specifying a brand name or specific types of components, equipment, and/or processes in these specifications shall not relieve the Proposer from its responsibility to furnish the end product in accordance with the warranty and contractual requirements. The Proposer is responsible for notifying the JPB of any inappropriate brand names, or types of components, equipment, and/or process that may be called for in these specifications, and to propose a suitable substitute for consideration. Unless otherwise specifically provided in the specifications, reference to any equipment, material, article, or patented process by trade name, make or catalog number shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. A Proposer may, at its option, use any equipment, material, article, or process which, in the judgment of the JPB, is equal to that designated. To do so a Proposer shall furnish, at its own expense, all test results, technical data and background information required by the JPB in making the determination as to whether the proposed equipment, material or article or process, in the judgment of the JPB, is equal to that designated. This shall be submitted on **Form AE-1, Approved Equal Form** included herewith as Appendix F.

The JPB shall be the sole judge as to the comparative quality and suitability of alternative equipment, articles, material, or process, and its decision shall be final. A "denial" response from the JPB on a properly submitted written approved equals request shall constitute a Proposer's acknowledgment and acceptance of all terms, conditions, specifications, and provisions contained in this solicitation. The absence of written requests for approved equals per the requirements and in the form set forth above, shall constitute a Proposer's acknowledgment and acceptance of all terms, conditions, specifications, and provisions contained in this solicitation.

Prospective Proposers may discuss these specifications with the JPB's Contract Officer. This, however, will not relieve Proposer from the procedure of submitting written documented requests as required below.

Requests for Approved Equal must be received by the JPB, in writing, **no later than 5:00 p.m., May 4, 2011.** No such requests will be considered by the JPB if received after this date. Any request for an Approved Equal must be fully supported with technical data, test results, or other pertinent information as evidence that the substitute offered is equal to or better than the specification requirement. In addition, any test requirements in the specifications that pertain to an item under consideration for Approved Equal must be submitted with the request for Approved Equal. All requests for Approved Equals shall be addressed to the Contract Officer, Contracts and Procurement at the address set forth in Section D above.

The JPB's reply to requests received pursuant to the procedure outlined above will be posted on the JPB's Web site at www.caltrain.com by midnight **May 11, 2011**

F. Ex-Parte Communications

Proposers and Proposers' representatives may not communicate with the JPB's Board members except in writing and if the communication is made public. Proposers and Proposers' representatives must communicate in the manner set forth in this RFP. All such communication shall be directed to the Contract Officer named in this RFP or the Director, Contracts and Procurement, until after a Letter of Transmittal of the Effective Date has been issued by the JPB. There shall be no communication with any officer, director, employee, or agent of the JPB, except as may be reasonably necessary to carry out the procedures specified in this RFP.

G. Addenda to RFP

The JPB reserves the right to amend this RFP at any time in accordance with Section 2.A., Solicitation Timeline. Any amendments to or interpretations of the RFP shall be described in written addenda.

Each prospective Proposer receiving these solicitation documents will be sent an electronic notification of the posting of clarifications. Failure of any prospective proposer to receive the notification or addenda shall not relieve the Proposer from any obligation under the RFP as clarified, interpreted or modified. All addenda issued shall become part of the RFP. Proposers shall acknowledge the receipt of each individual addendum in their proposals on the Acknowledgement of Addenda form. Failure to acknowledge in their proposals receipt of addenda may at the JPB's sole option disqualify the proposal.

If the JPB determines that the addenda may require significant changes in the preparation of proposals, the deadline for submitting the proposals may be postponed by the number of days that the JPB determines will allow Proposers sufficient time to revise their proposals. Any new due date shall be included in the addenda.

H. Evaluation of Proposals and Selection Process

i. Evaluation Committee

An Evaluation Committee (Committee), which will include members of JPB staff and possibly one or more outside experts, will review and screen the proposals submitted according to the weighted criteria set forth below. While cost is one basic determinant for award, it is not the sole consideration.

Each member of the Committee will first read, evaluate, and score all proposals by each of the criteria described in this section. The Committee will then discuss these evaluations, ultimately combining the individual scores to arrive at a composite score for each firm. Firms that receive the highest composite scores will be found to be in the "competitive range" and may be invited to an oral interview. However, a Proposer may be awarded a contract based solely on the competitiveness of its proposal.

ii. Evaluation Criteria

The capabilities of each Proposer will be evaluated in these specific areas:

a. Responsiveness of the Proposal..... 0 - 20 points

Proposals will be screened to ensure responsiveness to the requirements of the RFP. The JPB may reject as non-responsive any proposal that does not include the documents referenced in Part 3, Section 2, List of Required Forms. Proposers who are involved in current or pending bankruptcy

proceedings may be rejected at this stage of the process. The JPB reserves the right to request clarifications from any or all proposers regarding their proposals.

b. Understanding and Approach to Scope of Services..... **0 - 30 points**

The Proposer's overall approach to successfully providing services will be assessed for its feasibility, responsiveness to the Scope of Services, effectiveness and thoroughness. Proposals will be evaluated on the following:

- Project Management Plan and Schedule
- Radio hardware
- Installation and Testing Plans

c. Qualifications and Experience of Firm and Key Personnel **0 - 30points**

The capabilities of each Proposer will be evaluated in these specific areas:

- Knowledge in radio communications
- Experiences with narrowbanding
- Experience with radio installation and testing on Rolling Rail Equipment (RRE)
- Past experience with similar projects at Railroad Support Facilities and on RRE

d. Cost Proposal..... **0 - 20 points**

This portion of the proposal will be evaluated based on the **total not-to-exceed cost for the Contract for Narrowbanding Services (Total Cost Proposal)** as submitted by the Proposer on the Cost Proposal form provided in this solicitation. A Proposer's failure to submit a completed Cost Proposal may result in the JPB's determination that the proposal is non-responsive.

As specified below, the proposed price will be assigned a maximum of 20 points. The price will be evaluated in the following manner:

1. The responsive proposal with the lowest **Total Cost Proposal** will be given the full weight of 20 points assigned to the cost criterion.
2. Every other responsive proposal will be given points proportionately in relation to the lowest cost. This point total will be calculated by dividing the lowest proposed cost by the total proposed cost of the proposal being evaluated with the result multiplied by the maximum weight for cost (20 points) to arrive at a cost score of less than the full score for price.

Example:
$$\frac{\text{Lowest Total Proposed Cost}}{\text{Proposer's Total Proposed Cost}} \times \text{Total Points for Cost} = \text{Cost Score}$$

The application of the above formula will result in a fair and uniform assignment of points relative to the criterion of cost. Unless specifically requested in this RFP, Proposers shall not submit alternative cost proposals.

I. Interviews and Product Demonstrations

Following the initial review and screening of proposals, one or more Proposers may be invited to participate in the final selection process. The final selection process may include the submission of additional information, as described below, and/or participation in an oral interview which may include a demonstration of similar projects or deliverables as called for by these solicitation documents. If the JPB conducts interviews/demonstrations, it will do so with those Proposers found to be within the "competitive range."

Interviews/demonstrations, if held, are tentatively scheduled for **June 14, 2011** and will be held at the JPB's Administrative Offices, 1250 San Carlos Avenue, San Carlos, California. This date is subject to change. Attendees at an interview/demonstration should be restricted to those individuals who will have direct involvement with the project. The JPB expects that at a minimum the proposed project manager and key project personnel members will attend the oral interview.

J. Revised Proposals, Site Visits (as required), Negotiations, Best and Final Offers

The JPB reserves the right to negotiate with any individual or qualified firm, to request revised proposals, to visit the Proposer's site(s), to interview or not, or to request best and final offers if it is in the best interest of the JPB to do so. The JPB, however, may award a contract without conducting interviews or negotiations, so Proposers are encouraged to submit their best proposal.

Upon completion of this final selection process, the Committee will rank the remaining firms in accordance with the evaluation criteria set forth above. The JPB may accept the proposal or negotiate the terms and conditions of the agreement with the highest-ranked firm. If negotiations are unsuccessful, the JPB will terminate the negotiations with that firm and may open negotiations with the next-highest firm. If negotiations with this firm are also not successful, the JPB may repeat the negotiations process with the next-highest ranked firm or, at its sole discretion, the JPB may reject all remaining proposals.

K. Confidentiality

The California Public Records Act (Cal. Govt. Code Sections 6250 et seq.) mandates public access to government records. Therefore, unless the information is exempt from disclosure by law, the content of any request for explanation, exception, or substitution, response to these specifications, protest, or any other written communication between the JPB and Proposer, shall be available to the public.

If Proposer believes any communication contains trade secrets or other proprietary information that the Proposer believes would cause substantial injury to the Proposer's competitive position if disclosed, the Proposer shall request that the JPB withhold from disclosure the proprietary information by marking each page containing such proprietary information as confidential. **Proposer may not designate its entire Proposal as confidential nor designate its Cost Proposal as confidential.**

If Proposer requests that the JPB withhold from disclosure information identified as confidential, and the JPB complies with the Proposer's request, Proposer shall assume all responsibility for any challenges resulting from the non-disclosure, indemnify and hold harmless the JPB from and against all damages (including but not limited to Legal Counsel fees that may be awarded to the party requesting the Proposer information), and pay any and all cost and expenses related to the withholding of Proposer information. Proposer shall not make a claim, sue, or maintain any legal action against the JPB or its directors, officers, employees, or agents concerning the withholding from disclosure of Proposer information.

If Proposer does not request that the JPB withhold from disclosure information identified as confidential, the JPB shall have no obligation to withhold the information from disclosure and may release the information sought without any liability to the JPB.

L. JPB Rights

The JPB reserves the right to cancel the procurement in whole or in part, at its sole discretion, at any time before the Agreement is fully executed and approved on behalf of the JPB.

This RFP does not commit the JPB to award an Agreement(s), to pay any costs incurred in the preparation of the proposal for this request, or to procure or contract for services. The JPB reserves the right to modify or cancel in whole or in part this RFP, to reject any and all proposals, to accept the

proposal it considers most favorable to the JPB's interest in its sole discretion, and to waive irregularities or informalities in any proposal or in the proposal procedures. The JPB further reserves the right to reject all proposals and seek new proposals when the JPB considers such procedure to be in its best interest.

If there is any evidence indicating that two or more Proposers are in collusion to restrict competition or are otherwise engaged in anti-competitive practices, the proposals of all such Proposers shall be rejected, and such evidence may be a cause for disqualification of the participants in any future solicitations undertaken by the JPB.

M. Contract Award

The Committee will make a recommendation of award of a contract(s), if any, to the JPB's Board of Directors. All Proposers will be notified of the recommended award(s) by mail. No contract will be in force until issuance of a written transmittal issued by the Director, Contracts and Procurement, or a designee.

The Proposer to whom award is made, shall execute a written **Agreement for Services** and shall furnish required contract documents (e.g., certificates of insurance, performance bond) within **14 calendar days** after receiving from the JPB the Agreement for Services form for execution (reference Section 3. Contractual Information).

N. Protest Procedures

The JPB maintains written procedures that must be followed for all protests. Protests based upon restrictive specifications or alleged improprieties in the proposal procedure which are apparent or reasonably should have been discovered prior to receipt of proposals shall be filed in writing with the Director, Contracts & Procurement, at least 5 calendar days prior to receipt of proposals. The protest must clearly specify in writing the grounds and evidence on which the protest is based.

Protests based upon alleged improprieties that are not apparent or which could not reasonably have been discovered prior to submission date of the proposals, such as disputes over the staff recommendation for contract award, shall be submitted in writing to the Director, Contracts and Procurement, within 5 days from receipt of the notice from the JPB advising of staff's recommendation for award of contract. The protest must clearly specify in writing the grounds and evidence on which the protest is based. The Director, Contracts and Procurement, will respond to the protest in writing at least 3 days prior to the meeting at which staff's recommendation to the JPB's Board of Directors will be considered. Should Proposer decide to appeal the response of the Director, Contracts and Procurement, and pursue its protest at the Board meeting, it will notify the Director, Contracts and Procurement, of its intention at least 2 days prior to the scheduled meeting(s).

Because this contract is federally funded, the JPB's final determination of protests may also be appealed to the FTA in accordance with the procedures set forth in FTA Circular 4220.1F, as may be periodically updated. FTA's review will be limited to protests alleging that the JPB failed to have or follow its written protest procedures, failed to review a complaint or protest, or violated a federal law or regulation. The protest must be received by the FTA within five working days of the date the protester learned or should have learned of an adverse decision by the JPB.

Failure to comply with the rules set forth herein may result in rejection of the protest.

Copies of the complete protest procedures are available from the office of Contracts and Procurement.

- continued on next page -

3. **CONTRACTUAL INFORMATION**

A. **Agreement for Services**

The selected Proposer will be required to execute an Agreement for Services with the JPB describing the Scope of Services to be performed, the schedule for completion of work, compensation, insurance requirements and other pertinent provisions. This contract shall follow the sample form of Agreement attached hereto as Appendix C. All Proposers are directed to review all of the terms and conditions set forth in the sample Agreement, particularly the indemnification, insurance requirements and liquidated damages provisions.

Submittal of a proposal shall be deemed acceptance of all the terms and conditions set forth in this RFP and the sample Agreement for Services, Appendix C, unless the Proposer includes with their proposal, in writing, any amendments requested by the Proposer to the Agreement.

B. **Disadvantaged Business Enterprises (DBE) Policy**

The JPB is a recipient of Federal financial assistance from the Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA), and is committed to and has adopted a Disadvantaged Business Enterprise Program for Contracts in accordance with Federal regulations 49 CFR §26, issued by the U.S. Department of Transportation (DOT).

It is the policy of the JPB to ensure non-discrimination in the award and administration of all contracts and to create a level playing field on which Disadvantaged Business Enterprises (DBE) can compete fairly for contracts and subcontracts relating to the JPB's construction, procurement, and professional services activities. To this end, the JPB has developed procedures to remove barriers to DBE participation in the solicitation and award process and to assist DBEs to develop and compete successfully outside of the DBE Program. In connection with the performance of this contract, the Contractor will cooperate with the JPB in meeting these commitments and objectives.

Pursuant to 49 CFR §26.13, and as a material term of any Agreement with the JPB, the Contractor hereby makes the following assurance and agrees to include this assurance in any Agreements it makes with subcontractors in the performance of this contract:

“The Contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor or subcontractor shall carry out applicable requirements of 49 CFR §26 in the award and administration of U.S. DOT-assisted contracts. Failure by the Contractor or subcontractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as the JPB deems appropriate.”

Although no specific DBE goal has been established for this contract, Proposers shall cooperate with the JPB in meeting its commitments and objectives with regard to ensuring non-discrimination in the award and administration of contracts and shall use its best efforts to ensure that barriers to participation for DBEs do not exist. To better help the JPB record such information and encourage DBE participation, **all Proposers must complete the Subcontractor/DBE form included herewith as Appendix E, and submit it with their proposal.**

By submitting a proposal, a Proposer is deemed to have made the foregoing assurance and to be bound by its terms.

C. Performance Security

The Proposer awarded a Contract shall furnish at its own expense a Performance Bond completed on the JPB's form, a sample of which is included in this RFP as Appendix G. The Performance Bond shall be executed as surety by a corporation authorized to issue surety bonds in the State of California. The bond shall be in **an amount equal to 100% of the total amount of the Narrowbanding Services provided under the Contract**, as a guarantee of good faith on behalf of the Contractor that the terms of this Contract shall be complied with in every particular. Said bond shall remain in full force and effect in the appropriate amount until such time work is completed by the Contractor and the JPB inspects and issues its written Final Acceptance. Upon Final Acceptance of the updated, narrowbanded Voice Radio System, at Contractor's request, the Performance Bond **may be reduced to 50% of the original Performance Bond** amount and shall continue in force in that amount until the end of the one-year warranty period.

Proposers are notified that no additional compensation shall be paid to Contractor for the furnishing of Performance Bonds for the Base Services and Optional Services. Any and all costs for such bonds shall be incorporated into Proposers' Cost Proposals.

D. Levine Act

The Levine Act (Government Code 84308) is part of the Fair Political Practices Act. The Levine Act prohibits any JPB Board Member from participating in or influencing the decision on awarding a contract with the JPB to anyone who has contributed \$250.00 or more to the Board Member within the previous twelve months. The Levine Act also requires a member of the JPB Board who has received such a contribution to disclose the contribution on the record of the proceeding. In addition, JPB Board Members are prohibited from soliciting or accepting a contribution from a party applying for a contract while the matter of awarding the contract is pending before the JPB or for three months following the date a final decision concerning the contract has been made.

Proposers must complete and submit with their proposal the California Levine Act Statement, a copy of which is included in this RFP (refer to Appendix H).

E. Conflict of Interest

The JPB currently has long-term contracts with consulting firms that are assisting the JPB in areas related to the project that is the subject of this RFP. These consultants are **Xorail, Walnut Creek, CA** and **HNTB, San Francisco, CA**. These firms, as well as subcontractors supporting the firms on JPB projects, are not eligible to submit proposals in response to this RFP.

The firm selected to serve as the Proposer through this RFP shall not be prohibited from working under separate contract with the JPB, unless such work creates a conflict of interest, real or apparent, that would render the Proposer ineligible to undertake such work during the term of the Contract.

By submitting a proposal, the Proposer represents and warrants that no director, officer or employee of the JPB is in any manner interested directly or indirectly in the proposal or in the Contract which may be made under it or in any expected profits to arise therefrom, as set forth in Article 4, Division 4, Title I (commencing with Sec. 1090) of the Government Code of the State of California. The Proposer warrants and represents that it presently has no interest and agrees that it will not acquire any interest which would present a conflict of interest under California Government Code sections 1090 *et seq.* or sections 87100 *et seq.* during the performance of services under this Agreement. The Proposer further covenants that it will not knowingly employ any person having such an interest in the performance of this Agreement. Violation of this provision may result in this Agreement being deemed void and unenforceable. Additional Conflict of Interest requirements will apply during the term of any contract awarded; Proposer's attention is directed to the Sample Agreement for Services.

F. Disclosure of Governmental Positions

Depending on the nature of the work performed, a consultant to the JPB may be subject to the same conflict of interest prohibitions established by the Federal Transit Administration, Federal Highway Administration and California law that govern JPB employees and officers (Cal. Gov. Code Section 1090 et seq. and Cal Govt. Code Section 87100 et seq.). In order to analyze possible conflicts that might prevent a consultant from acting on behalf of the JPB or other governmental entity prior to contract award, the JPB requires that all prospective Proposers disclose in their proposals any positions that they hold as directors, officers, or employees of any governmental entity. Additional disclosure may be required prior to contract award or during the term of the contract. Responses will be kept confidential to the extent permitted by law.

Therefore, each Proposer shall disclose whether any owner or employee of the firm currently hold positions as directors, officers, or employees of a governmental entity or held such positions in the past twelve months using the attached "Disclosure of Government Positions Form." The JPB is responsible for retaining the certification records of the Consultant who is, in turn, responsible for keeping the disclosure forms of subconsultants/subcontractors.

G. Federal Requirements

This RFP is subject to financial assistance from the U.S. Department of Transportation, Federal Transit Administration (FTA). Attention is directed to the requirements set forth in Appendix A, Federal Requirements.

4. LIST OF APPENDICES

- Appendix A, Federal Requirements
- Appendix B. Cost Proposal Form
- Appendix C. Agreement for Services
- Appendix D. Reference Form
- Appendix E. DBE Forms
- Appendix F. Form AE-1, Request for Approved Equal
- Appendix G. Performance Security (sample)
- Appendix H. California Levine Act Statement
- Appendix I. Certificate of Liability Insurance (sample)
- Appendix J. Buy America Certification
- Appendix K. Disclosure of Governmental Positions
- Appendix L. Federal Lobbying Certification

Note: Appendices are located at end of Part 3, Proposal Content and Submission.

- END PART 1 – GENERAL REQUIREMENTS -

PART 2 – SCOPE OF SERVICES

1. INTRODUCTION

The successful Contractor shall supply any and all hardware, software, labor, expertise, test equipment, and documentation necessary to augment the existing Voice Radio System with narrowband-capable radios, and convert existing narrowband-capable elements of the radio system (as defined by this document) to narrowband operation. The successful Contractor shall provide all necessary personnel to conduct the testing of the narrowband Voice Radio System, as further described in the Detailed Test Plan (see Exhibit 5).

2. STATEMENT OF PURPOSE

In December 2004, the Federal Communications Commission (FCC) mandated that radio licensees operating in selected frequency bands convert their transmitters to narrowband channel operation (12.5 kHz) by January 1, 2013. As a licensee in one of the affected bands, the JPB must comply with the mandate, and is soliciting proposals from qualified companies to perform the work.

A. EXISTING VOICE RADIO SYSTEM

JPB's Voice Radio System consist of handheld portable radios, mobile radios, locomotive radios, radio base stations and repeaters, all of which operate on 25 kHz-wide analog channels. Of the existing radios, more than half shall be replaced, according to Table 1 below; the remaining radios shall be re-programmed. The base stations shall be modified by replacing key components and performing an alignment procedure as described in the Detailed Test Plan.

The table below summarizes the types and quantities of radios in use by JPB which must be narrowbanded:

Radio type	Currently in use	Replace	Re-program
Portables	255	130	125
Mobiles	61	54	7
Locomotive Radios	69	57	12
Base Stations	16	0	16
Repeaters	2	0	2
TOTALS	403	241	162

Table 1: Radio Types and Action Required

B. DESIRED SYSTEM, POST NARROWBANDING

At the end of the narrowbanding effort, all JPB radios must transmit and receive in narrowband mode. The Contractor must provide documentation indicating that each of the individual radios has been programmed and is operating correctly. The obsolete, i.e. non-compliant radios shall be held in reserve for potential fallback operation. JPB will be responsible for the disposal of all obsolete radios at a date of their choosing.

3. SCOPE OF WORK

The Contractor shall provide any and all hardware, software, labor; expertise, test equipment, and documentation needed to narrowband, test, and document JPB's Voice Radio System. The narrowbanding effort consists of the following tasks:

Task A: **Purchase** narrowband-capable radios and narrowbanding kits in the following quantities:

1. Portable radios: **130**
2. Mobile radios: **54**
3. Locomotive radios: **57**
4. Narrowbanding kits for base stations: **11**

Task B: **Program** new radios and existing radios in these quantities:

1. Portable radios: **130** new + **125** existing
2. Mobile radios: **54** new + **7** existing
3. Locomotive radios: **57** new + **12** existing
4. Base stations: **16** existing
5. Repeaters: **2** existing

Task C: **Install** the following hardware:

1. Install mobile radios in maintenance vehicles: **54**
2. Install locomotive radios in locomotives and cab cars: **57**
3. Install narrowbanding kits in existing base stations: **11**

Task D: **Test** newly-narrowbanded radios in the following quantities:

1. Portable radios: **255**
2. Mobile radios: **61**
3. Locomotive radios: **69**
4. Base stations: **16**
5. Repeaters: **2**

Task E: **Measure** downlink signal strength by conducting a **System-Wide Coverage Test** along the Caltrain right-of-way from Control Point (CP) 4th Street to CP Lick, and produce a report per the **Detailed Test Plan**.

Task F: **Provide** additional documentation as defined herein.

4. DETAILED REQUIREMENTS FOR WORK TASKS

TASK A: PURCHASE RADIOS AND ASSOCIATED HARDWARE

Portable Radios: The Contractor shall supply **Motorola model HT1250 radios or an equivalent**. The portable radios shall be of rugged construction, capable of 160 MHz analog operation, and programmable for 12.5 and 25 kHz channel spacing, and shall be capable of transmitting Automatic Numerical Identification (ANI) without physical modification by Caltrain/JPB. The portables radios shall come equipped with the manufacturer's lithium-ion battery.

Mobile Radios: The Contractor shall supply **Motorola model CM300 or equivalent**. The mobile radios shall be of rugged construction, capable of 160 MHz analog operation, and programmable for 12.5 kHz and 25 kHz channel spacing, and shall be capable of transmitting ANI without physical modification by Caltrain/JPB. The Contractor shall supply the manufacturer's vehicle mounting kits and all ancillary hardware needed to complete the installation.

Locomotive Radios: The Contractor shall supply **Ritron Clean Cab Radio or equivalent**. The locomotive radios shall be designed specifically for railroad use, and must be interchangeable with regards to cabling, mounting, and operation with the JPB's existing Motorola Astro Spectra radios. The radios shall be capable of 160 MHz analog operation, and programmable for 12.5 and 25 kHz channel spacing, and shall be capable of transmitting ANI without physical modification by Caltrain/JPB. The Contractor shall supply all ancillary hardware needed to install the locomotive radios.

Base Station Narrowbanding Kits: The Contractor shall supply narrowbanding kits for JPB's existing Harris MASTR III Conventional base stations. The components are listed in Harris Technical Services Memo Volume 31, Number 12A, dated May 14, 2010, and consist of the MASTR III System NB Transmit Module, the NB Receiver Synthesizer Module, RX IF Module, and special programming software.

TASK B: PROGRAM NEW AND EXISTING RADIOS

The Contractor shall be responsible to submit all necessary work plans and adhere to JPB's *Site Specific Work Plan* (SSWP) process prior to programming, installing, upgrading and/or testing any equipment on the locomotives, cab cars, maintenance vehicles, base stations, or repeaters. The Contractor shall submit and adhere to a Configuration Management Plan which shall control the version of programming software being used, and prevent the proliferation of multiple programming plans.

The Contractor shall obtain the radio manufacturer's programming software and any necessary cabling or interface devices needed to program the portable, mobile and locomotive radios, radio base stations, and repeaters. The Contractor shall program JPB's existing Motorola MTR2000 repeaters, Motorola HT1250 portables, the CM300 mobiles, and Motorola Astro Spectra locomotive radios.

The Motorola Astro Spectra locomotive radio may no longer be supported by the manufacturer. Should the programming software or ancillary programming equipment prove too difficult to obtain, the Contractor may propose to replace the Astro Spectras, rather than re-program them.

The Contractor shall program both new and existing radios for 12.5 kHz channel operation. New mobile and locomotive radios may be programmed first, and then installed. Existing narrowband-compliant mobile and locomotive radios shall be programmed in place.

The radio base stations and repeaters must be programmed in place. The locations of base stations and repeaters are as follows:

- continued on next page -

LOCATION	COORDINATES	EQUIPMENT	QTY	TX Freq (MHz)	RX Freq (MHz)	Install NB kit	Program only
4 th St. Tower	N 37° 46' 28.8" W 122° 23' 50.2"	CM300 mobile (operated as a fixed base station)	1	160.070	160.070		✓
4 th St. Tower	N 37° 46' 28.8" W 122° 23' 50.2"	MASTR III base station	1	160.815	160.815	✓	
Tunnel #1	N 37° 45' 30.7" W 122° 23' 33.4"	MASTR III base station	2	160.815 161.505	160.815 160.575	✓	
Tunnel #2	N 37° 45' 5.6" W 122° 23' 35.0"	MASTR III base station	2	160.815 161.505	160.815 160.575	✓	
Tunnel #3	N 37° 43' 46.9" W 122° 23' 45.8"	MASTR III base station	2	160.815 161.505	160.815 160.575	✓	
Tunnel #4	N 37° 42' 41.3" W 122° 24' 5.4"	MASTR III base station	2	160.815 161.505	160.815 160.575	✓	
Sign Hill	N 37° 39' 53.8" W 122° 25' 14.1"	MASTR III base station	1	160.815	160.815	✓	
San Carlos	N 37° 30' 23.4" W 122° 15' 43.1"	MASTR III base station	1	160.815	160.815	✓	
San Jose	N 37° 20' 20.3" W 121° 54' 29.2"	MASTR III base station	4	160.815 160.740 161.070 161.550	160.815 160.740 161.070 161.550		✓ ✓ ✓ ✓
San Bruno	N 37° 41' 14.5" W 122° 26' 5.6"	MTR 2000 repeater	1	161.505	160.575		✓
Monument Peak	N 37° 29' 5.3" W 121° 52' 0.4"	MTR 2000 repeater	1	161.505	160.575		✓

Table 2: Fixed Equipment Locations

The Contractor shall program all radios with the Association of American Railroad (AAR) 25 kHz frequency plan consisting of channels 7 through 97, and well as the new 12.5 kHz channels, numbered 107 through 197. The full AAR frequency plan is included in Exhibit 3.

Each of the base stations shall be programmed to operate in for either simplex mode or half-duplex mode per the table 2 above. The two repeaters shall be programmed to operate in half-duplex mode only. The portables, mobiles, and locomotive radios shall be programmed to operate in simplex mode on all channels except the MOW channel, which will be operated in half-duplex mode.

AAR Ch.	Designation	Frequency	Mode of use
25	Mobile Talk channel	160.485 MHz	Simplex. Mobile TX
31	MOW channel	160.575 MHz	Half-duplex. Mobile TX
42	U.P. channel	160.740 MHz	Simplex.
47	Road channel	160.815 MHz	Simplex. Base, mobile TX RX
64	Blue Flag channel	161.070 MHz	Simplex.
93	MOW channel	161.505 MHz	Half-duplex. Base Station TX

Table 3: Current Frequency Use

TASK C: INSTALL RADIOS AND NARROWBANDING KITS

The Contractor shall be responsible to submit all necessary work plans and adhere to JPB's SSWP process prior to programming, installing, upgrading and/or testing any equipment on the locomotives, cab cars, maintenance vehicles, base stations, or repeaters.

Mobile Radios: The Contractor shall remove 54 obsolete radios from maintenance vehicles, and install new mobile radios and all necessary hardware in their place. The pool of obsolete radios consists of 42 Motorola MaxTrac, 8 Motorola Radius, and 4 Motorola Spectra models (total = 54). Seven of the vehicles are already equipped with narrowband-capable Motorola CM300 radios which must be re-programmed for narrowband channels.

New mobile radios may be programmed on the bench first and then installed in the vehicles, or installed first and then programmed afterward. All in-vehicle installations shall be performed during regular maintenance cycles. *Existing* (already installed) mobile radios which are capable of being re-programmed for narrowband operation shall be re-programmed in the vehicles during regular maintenance cycles.

Locomotive Radios: The Contractor shall remove the non-complaint Motorola Spectra from locomotives or cab cars, and install the newly programmed narrowband radios. The Contractor may program the radios in place in the locomotives or on the bench, at their option. Up to two locomotives or Cab Control cars will be provided to the Contractor for installation of equipment at a given time. Work on the locomotive radios shall be performed at the CEMOF during the following hours (except holidays):

- Monday through Friday, 8 a.m. to 2 p.m.
- Monday through Thursday, 8 p.m. to 3 a.m. the following morning.
- Friday 8 p.m. through Monday 3 a.m.

Work on any given locomotive or cab car shall be completed a full hour prior to the required equipment turn-over time stated by Caltrain's contract operator.

The Contractor shall coordinate with JPB staff and the Caltrain contract operator to schedule the available of equipment. Generally, a greater number of locomotive and cab control cars will be available on the weekends than during the week.

Base Stations: The Contractor shall install narrowbanding kits on JPB's VHF base stations, per Harris Technical Services Memo Volume 31, Number 12A dated May 14, 2010. The Contractor shall also perform a station test and alignment per Section 9 of Harris Installation Manual MM102554V1 Rev. D, Aug/10. Work shall be performed on the base stations only on Sunday mornings between 2 a.m. and 7 a.m.

The Contractor shall provide completed data sheets (included in the Harris manual), as well as dated spectrum analyzer traces displaying the signal output of each base station transmitter.

Repeaters: The Contractor shall reprogram JPB's two existing Motorola MTR2000 repeaters located at San Bruno and Monument Peak. Work shall be performed on the repeaters only on Sunday mornings between 2 a.m. and 7 a.m.

The Contractor shall provide dated spectrum analyzer traces displaying the signal output of each repeater.

TASK D: TEST NEWLY-NARROWBANDED RADIOS

The Contractor shall submit all necessary work plans and adhere to JPB's SSWP process prior to programming, installing, upgrading and/or testing any equipment on the locomotives, cab cars, maintenance vehicles, base stations, or repeaters. The Contractor shall submit Detailed Test Procedures for testing the newly-narrowbanded radios.

The Contractor shall perform tests and submit documentation per the Detailed Test Plan in Exhibit 5. The Detailed Test Plan specifies a battery of tests found in TIA Standard 603-D *Land Mobile FM or PM Communications Equipment Measurement and Performance Standards*, as well as the product manuals for the devices under test. The Contractor shall obtain a current copy of TIA 603-D and the equipment manuals as listed in the Detailed Test Plan to complete the required tests. (Note that the Detailed Test Plan also requires tests of voting receivers and voting selector panel.)

Testing of radios in vehicles shall be performed during regular maintenance cycles. Locomotive testing must be completed between the hours of 12:01am to 4:00am Testing of base station radios shall be performed when no trains are running.

TASK E: PERFORM SYSTEM-WIDE COVERAGE TEST

The Contractor shall be responsible to submit all necessary work plans and adhere to JPB's SSWP process prior to programming, installing, upgrading and/or testing any equipment on the locomotives, cab cars, maintenance vehicles, base stations, or repeaters.

The Contractor shall perform a System-Wide Coverage Test per the Detailed Test Plan. The test involves collection and plotting on a map of signal strength data, which JPB will use in the design of future radio system enhancements.

The Contractor shall submit Detailed Test Procedures for the System-Wide Coverage Test.

TASK F: PROVIDE ADDITIONAL DOCUMENTATION

In addition to the documentation specified by the Detailed Test Plan, the Contractor shall submit the following documents:

- a. Bill of materials
- b. Inventory list for each radio and base station narrowbanding kit, to include make/model of each component, quantities, serial numbers, and firmware/software versions, associated locomotive or vehicle
- c. All manuals and parts catalogs for supplied equipment
- d. Detailed radio programming procedures
- e. Site Specific Work Plan (SSWP) for each Caltrain location where work will take place
- f. Installation procedures
- g. Installation drawings
- h. Test procedures (with test results sheet)
- i. Test results
- j. Installation drawings of locomotive radios, mobile radios, and dragging equipment detectors
- k. Configuration Management Plan for radio programming
- l. Proposed Schedule of Values --- due within 30 days of NTP.
- m. Recommended Maintenance Schedule
- n. Recommended list of spare hardware and specialized tools and test equipment
- o. Project Safety Plan
- p. Project Security Plan

5. PROJECT MANAGEMENT

Upon being given notice to proceed, the Contractor shall submit a Gantt chart showing start and end dates and key project milestones for all deliverables, and shall update the chart weekly. During the course of on-site work, the Contractor shall attend a weekly on-site status meeting with JPB. During non-concurrent off-site work, the Contractor shall be available to attend a weekly teleconference.

6. SAFETY AND SECURITY

All work on the Caltrain property shall be performed in compliance with the Caltrain On-Track Safety Program. Prior to beginning work, the Contractor's on-site staff become certified on Roadway Worker Protection and Blue Signal Protection by attending the Caltrain online training class. The Contractor will also submit Site Specific Work Plans (SSWPs) for JPB review and approval, which in part describe how the Contractor will comply with the Caltrain On-Track Safety Program.

7. EQUIPMENT SPARING

The Contractor shall submit a recommended list of spare parts; and specialized tools and test equipment. The contractor shall furnish JPB selected hardware and equipment. The following minimum spare parts shall be included in the recommended list:

- a. Hand-held portable radios
- b. Maintenance vehicle mobile radios
- c. Locomotive radios
- d. Mounting kits and any necessary ancillary hardware

8. FINAL ACCEPTANCE AND WARRANTY

Final acceptance will take place only after the Contractor installs, upgrades, tests, and converts all radios, base stations, and repeaters to narrowband operation. Final system acceptance shall occur after the Contractor has completed the following:

- a. Delivery of all radios and base station hardware, software, and software licenses
- b. Delivery of all interface hardware, programming software, and software licenses
- c. Successful installation of all required radios and base station components
- d. Successful completion of all required tests
- e. Delivery of all required documents to the JPB
- f. Acceptance by the JPB of all required documentation
- g. The system has successfully passed a 1 week owners acceptance test

The Contractor shall notify the JPB in writing when it has completed all required tasks. The JPB shall notify the Contractor in writing of any deviation from the specifications or from FCC rules and guidelines in effect as of the proposal submission due date. The Contractor shall make all modifications as necessary to correct such deviations, and advise the JPB of such corrections in writing.

After all required deliverables have been rendered and any deviations have been corrected, the system shall operate in normal service without failures for **one full week (seven contiguous calendar days)** following the JPB's successful acceptance testing. The JPB shall then issue its written final acceptance of the updated, narrowbanded Voice Radio System, at which time an on-site maintenance and repair warranty period (inclusive of equipment, materials and labor) shall commence and remain in effect for **one calendar year (365 contiguous calendar days)**.

-continued on next page -

9. TECHNICAL REFERENCES

The information indicated below is made available for the convenience of the Contractor. The Contractor shall perform due diligence on its own before relying on this information. All those listed herein are not necessarily used in these technical specifications, and it is the responsibility of the Contractor to determine that the version being used is current. JPB assumes no liability.

- a. Caltrain Design Criteria (available at www.caltrain.com)
- b. Caltrain Standard Specifications (available at www.caltrain.com)
- c. Caltrain Standard Drawings (available at www.caltrain.com)
- d. Caltrain CADD Manual (available upon request)
- e. Caltrain Standard Procedures for Track Maintenance & Construction (available upon request)
- f. Caltrain Track Charts, Right-of-Way and Rail Corridor Infrastructure Assets (available upon request)
- g. PCJPB Standards for Design and Maintenance of Structures (available at www.caltrain.com)
- h. PCJPB Standard Special Provisions (available upon request)
- i. Federal Communications Commission regulations found in Title 47 Code of Federal Regulations (47 CFR) Part 90 Federal Communications Commission regulations (<http://www.fcc.gov>)
- j. Federal Transit Administration (<http://www.fta.gov/>)
- k. Vehicle Mobile Radio Installation Guidelines, Hibbard, D., 06 August 2002, Vehicular Technology Conference, Vehicular Technology Conference 1991, 41st IEEE, available through the Institute of Electrical and Electronics Engineers
- l. American Railway Engineering and Maintenance of Way Association (AREMA) Communications and Signals Manual, Volume 5, Section 22 "Radio"
- m. Federal Railroad Administration (FRA) regulations found in 49 CFR, Part 213 "Track Safety Standards", and 49 CFR Part 214 "Railroad Workplace Safety"
- n. Peninsula Corridor Joint Powers Board (PCJPB) Railroad Test & Maintenance Manual, available at:

10. LIST OF EXHIBITS

- a. Exhibit 1: Maps
- b. Exhibit 2: Photos of Existing Radio Equipment
- c. Exhibit 3: AAR Frequency Plan
- d. Exhibit 4: Installation and Cutover Plan
- e. Exhibit 5: Detailed Test Plan
- f. Exhibit 6: Site Specific Work Plan (template sample)
- g. Exhibit 7: Railroad Vehicle Workmanship and Materials Specifications
- h. Exhibit 8: Work Site Safety and Security
- i. Exhibit 9: Milestone Payment Schedule
- j. Exhibit 10: Deliverables
- k. Exhibit 11: Directions to CEMOF

Note: Exhibits are located at end of Part 3, Proposal Content and Submission.

- END PART 2 – SCOPE OF SERVICES -

PART 3 – PROPOSAL CONTENT AND SUBMISSION

1. PROPOSAL CONTENT

The intent of this RFP is to encourage responses that clearly communicate the Proposer's understanding of the contract requirements and the Agreement for Services and its implementation. Submission of a proposal indicates acceptance by a firm of the conditions contained in this RFP unless clearly and specifically noted in the proposal submitted and confirmed in the Contract between the JPB and the firm(s) selected.

In order to facilitate the Proposer's preparation of its proposal and the JPB's review of same, all proposals shall be limited to **35 pages**, not including the cover letter, table of contents, single page resumes of key nominated personnel, and other required appendices. Proposals should provide the requested information in a concise, well-organized manner and should follow the format outlined below.

A. Cover Letter

The signed cover letter should be on company letterhead clearly stating the name of the Proposer's firm, business address, telephone and fax numbers, and email address. The following information should be provided:

- i. Introduce the firm and summarize its qualifications;
- ii. Indicate that the Proposer is prepared to sign the Agreement for Services (Appendix C) without alterations or exceptions or whether it is requesting modifications to the Agreement. Exceptions or modifications, if any, should be clearly identified and submitted as stated below in Section J.
- iii. A statement that binds the Proposer to the proposed Scope of Services and Cost Proposal for **120 contiguous calendar days** from the proposal submittal due date;
- iv. The letter must be signed by an individual(s) authorized to bind the Proposer to the proposal and contract, if awarded, and must affirmatively state that the individual(s) has read, understood, and will comply with all the terms and conditions set forth in these contract documents;
- v. Indicate whether the Proposer agrees to abide by the requirements of the JPB's DBE standards as detailed in Part 2, Section 3, DBE Policy and Appendix E.

B. Table of Contents

Include a Table of Contents displaying the organization of the proposal being submitted.

C. Proposer's Qualifications and Experience

The following information should be included in the proposal:

i. Company Qualifications, Experience and References

Describe the firm, its size and organization, the number and location of offices, and general operational structure, as well as its management and technical personnel. Identify similar projects the firm has performed for other entities. Describe those aspects of the firm that pertain to the ability to provide superior service for the scope of services described under this RFP.

Additionally, provide contact information for **three client references** for which the Proposer has provided similar services within the past **three years**. For each client submitted as a reference, Proposer shall supply a brief description of the work performed, including names of contact persons, addresses, telephone numbers and email addresses. Do not use the San Mateo County Transit District or the Peninsula Corridor Joint Powers Board as references. This section should be no longer than **one page per client**.

ii. Financial Qualifications

Provide evidence of your firm's financial strength, stability, capacity, and resources. Provide the last **three years** audited financial statement(s) and any other pertinent information, such as internal unaudited financial statements and financial references, to allow the JPB to reasonably formulate a determination about the financial stability and strength of your firm. Describe any administrative proceedings, claims, lawsuits, settlements, or other liability exposures pending against your firm (see Part 1, Section B. ii., Financial Qualifications).

iii. Qualifications and Experience of Key Personnel

Provide the names of individuals who would be directly engaged in performance of the scope of services. Identify the key personnel and outline the Proposer team's capacity to successfully perform the desired services. The Proposer's Project Manager and key individuals who will be assigned to the project will be an important factor considered by the Evaluation Committee. There can be no change of key personnel once the proposal is accepted for contract award without the prior approval of the JPB's Project Manager. For each of these individuals, please submit:

- a. The number of years of experience in providing the desired service.
- b. A list of references, including a brief description of the nature of the work performed by the individual; and
- c. A summary of their experience performing services for public agency clients, and transportation agencies, if any.
- d. Examples of similar projects completed by the Proposer's team members, key personnel and Proposer's Project Manager.
- e. Provide resumes for key nominated personnel. Resumes shall not count toward the **35-page proposal limit**.

iv. Use of Subcontractors/Subconsultants

If subcontractors/subconsultants are proposed for this RFP, describe the products or services provided by the subcontractor(s) /subconsultant(s), the value of each subcontract, and the consultant's contract management process for subcontractors/subconsultants included in the consultant's proposal.

v. Licenses and Certifications

Provide proof of any applicable and required licenses and certifications needed to complete the work called for under this RFP.

D. Evidence of Ability to Provide Insurance

Insurance requirements for this scope of services are detailed in Section 12 of the sample Agreement for Services. Exceptions to the insurance requirements, if any, must be specified in Proposer's proposal as further detailed in Section J, Exceptions to Agreement for Services.

This proof shall take the form of the current Certificate of Liability Insurance (COLI) or a letter from Proposer's insurance agent or broker certifying that such insurance requirements can be obtained. If the certificate does not cover the requirements as specified in the Sample Agreement for Services, verification of availability of required insurance must otherwise be provided.

E. Project Understanding and Approach

Include a statement and work plan that clearly shows and confirms the Proposer's understanding of the project scope and timeline. The work plan should also include a detailed explanation of the approach/methodology to be followed for performing the services required in Part 2, Section 2, Scope of Services.

Implementation and functionality tasks and deliverables should be addressed including, but not limited to:

- Project Management Plan
- Project Schedule
- Proposed Radio Hardware List
- Installation and Cutover Plan
 - Programming of new radios
 - Reprogramming of old radios, base stations, and repeaters
- Test Plan/Procedures
 - Individual Installations
 - System-Wide Coverage Test
- Warranty (see Section K, below)

F. Organization Chart

Provide an organization chart that identifies the proposed team. Identify the primary staff person who will oversee the JPB's account and a listing of the names and titles of the staff who will support the account, and the manner in which direction and supervision shall be exercised over the team by the firm's management.

G. Project Management Plan and Project Schedule

Provide an estimated master project timeline to complete the project services; use October 1, 2011 as an anticipated project start date.

H. Milestone Payment Schedule

Provide a statement confirming Proposer's agreement with and ability to comply with the Milestone Payment Schedule provided in the Sample Agreement and Exhibit 9.

Alternatively, Proposers may propose a schedule for JPB comment and acceptance.

I. Cost Proposal

Proposers must complete and submit the Cost Proposal form, attached to this RFP as Appendix B, Cost Proposal Form. Pricing should be based on **the Proposer's solution to the stated requirements of this solicitation**. Costs shall include, but not be limited to, labor, materials, supplies, taxes, overhead, insurance, software, bonding, training, warranty and profit. A Proposer's failure to submit a Cost Proposal may result in rejection of the proposal as non-responsive.

J. Exceptions to Agreement

Submittal of a proposal shall be deemed acceptance of all the terms set forth in this RFP and the sample Agreement for Services unless the Proposer includes with its proposal, in writing, any exceptions or modifications requested by the Proposer to the proposed Agreement.

K. Warranty

Describe your firm's warranty, including coverage for third-party equipment. At a minimum, the warranty must meet the requirements specified in Part , Section 8, Final Acceptance and Warranty of the RFP for **a period equal to or greater than one year** from date of the JPB's Final Project Closeout and Acceptance. Please provide copies of any applicable manufacturers' warranties.

All warranties shall commence upon the JPB's written Final Project Closeout and Acceptance of the installed, updated and narrowbanded Voice Radio System..

L. Joint Venture Agreement, if applicable

If the Proposer is a joint venture, an executed copy of the Joint Venture Agreement shall be included with the proposal. The specific areas of responsibility (including administrative, technical, and financial) for each member of the Joint Venture shall be outlined.

M. Acknowledgement of Addenda, if any

Submit the Acknowledgment of Addenda form.

N. All Other Required Forms

Submit all the required forms provided in this solicitation as set forth below in Section 2, List of Required Forms

O. NARROWBANDING EQUIPMENT, HARDWARE FIRMWARE/SOFTWARE

Describe your firm's reasoning for selection of proposed narrowbanding radios/equipment, hardware, firmware/software. Provide copies of equipments manuals and software license agreements.

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2. LIST OF REQUIRED FORMS

- Appendix B. Cost Proposal Form
- Appendix D. Reference Forms
- Appendix E. DBE Reporting Forms – Designation of Sub-consultants and Sub-bidders/DBE and Subcontractor Questionnaire
- Appendix F. Form AE-1, Request for Approved Equal, if any
- Appendix H. California Levine Act Statement
- Appendix I. Certificate of Liability Insurance or other proof of ability to provide/meet Insurance requirements of the JPB
- Appendix J. Buy America Certification
- Appendix K. Disclosure of Governmental Positions
- Appendix L. Federal Lobbying Certification
- Other Acknowledgement of Addenda, if any

3. PROPOSAL SUBMISSION

A. Submission of Proposals Information

Proposers shall submit their proposal, clearly identified with **RFP # 11-PCJPB-T-011**, in a sealed envelope or package to:

Luis F. Velásquez
Contract Officer
Contracts and Procurement Department
Peninsula Corridor Joint Powers Board
1250 San Carlos Avenue
San Carlos, CA 94070-1306

Proposals must be received in the Contracts and Procurement Department **before 2:00 p.m. on May 25, 2011**. If personally delivering your proposal, please allow adequate time for signing in at the security desk in the first floor lobby. Proposals received after this time or at any other location will not be accepted. Proposals will be prepared and presented at no cost to the JPB.

1. Hard Copies

Proposers must submit **ONE original** and **SIX hard copies** of their proposal.

2. CD-ROMs

Proposers shall submit **THREE** CD-ROM(s) containing the proposal document(s) in a searchable Microsoft Word and/or PDF format.

3. User and Technical Manuals

Proposers shall include all user and technical manuals, if any.

B. Cost of Proposal Development

This RFP does not commit the District to enter into an Agreement, to pay any costs incurred in the preparation or presentation of a proposal, nor to procure or contract for any services.

C. Validity of Proposals

Submission of a proposal shall constitute a firm offer to the District for **120 contiguous calendar days** from the submission deadline for proposals.

D. Withdrawal of Proposals

A Proposer may withdraw its proposal anytime before the date and time when proposals are due, without prejudice, by submitting a written request for its withdrawal to the Director, Contracts and Procurement, Peninsula Corridor Joint Powers Board, 1250 San Carlos Avenue, San Carlos, CA 94070. A telephone or email request is not acceptable. The withdrawal of a proposal does not prejudice the right of a Proposer to submit another proposal within the time set for receipt of proposals.

After the proposal due date, a proposal may be withdrawn only if the JPB fails to award the Agreement within the proposal validity period prescribed above in Section 3.C., Validity of Proposals, or any agreed-upon extension thereof.

E. District Holidays

The normal flow of operations at the JPB's Administrative Office, if applicable, and at CEMOF shall not be disrupted while Contractor is conducting the Narrowbanding Services.

Contractor shall observe only those holidays observed by the JPB, which are as follows:

1. New Year's Day (January 1)
2. Martin Luther King, Jr. Day (3rd Monday in January), North and South Base Maintenance and Operations Buildings excluded (Services to be Maintained).
3. Memorial Day (last Monday in May)
4. Independence Day (July 4)
5. Labor Day (1st Monday in September)
6. Thanksgiving Day (4th Thursday in November)
7. Christmas Day (December 25th)

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F. Proposal Content Checklist

The following checklist is provided as a guide to ensure all required documentation is included in Proposer's submittal:

- Cover Letter
 - o summarizing Proposer's qualifications, experience and unique service proposition
 - o binding the Proposer for 120 days
 - o confirming willingness to sign the Agreement of Services
 - o confirming willingness to abide by the District's DBE standards
- Table of Contents
- Proposers Qualifications and Experience
 - o qualifications, experience and references
 - o financial qualifications(see below)
 - o qualifications and experience of key personnel
 - o use of Subcontractors/Subconsultants, if applicable
 - o licenses, certifications and/or registrations
- Evidence of Ability to Provide Insurance
 - o letter or verification of insurance certificate from the Proposer's insurance agent or broker
- Project Understanding and Approach
- Organization Chart
- Project Schedule
- Milestone Payment Schedule
- Cost Proposal Form
- Exceptions to Agreement, if any
- Warranty
- Joint Venture Agreement, if applicable
- Acknowledgement of Addenda, if any
- Financial Statements (three-years, marked confidential, if applicable)
- All Other Required Forms (see Part 2, Section 2, List of Required Forms)
- Narrowband-capable Radio Equipment, Hardware, Firmware/Software
 - o User and Training Manuals
 - o Software License Agreements, if applicable

Proposer's are reminded to 1) submit **one original and six hard copies** of their proposal plus **three** CD-ROM(s) containing a copy of their complete Proposal in a searchable Microsoft Word and/or Adobe PDF format; and 2) identify any proprietary, trade secret or other confidential information in the Proposal.

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FEDERAL REQUIREMENTS

This project may be financed in part by funds from the Federal Transit Administration (FTA). Accordingly, Federal requirements apply to this Contract and, if those requirements change, then the most recent requirements shall apply to the project as required.

A. FLY AMERICA REQUIREMENTS.

The Contractor agrees to comply with 49 U.S.C. 40118 (the "Fly America Act") in accordance with the General Services Administration's regulations at 41 CFR Part 301 - 10, which provide that recipients and subrecipients of Federal funds and their Contractors are required to use U.S. flag air carriers for U.S. Government-financed international air travel and transportation of their personal effects or property to the extent such service is available, unless travel by foreign air carrier is a matter of necessity as defined by the Fly America Act. The Contractor shall submit, if a foreign air carrier was used, an appropriate certification or memorandum adequately explaining why service by a U.S. flag air carrier was not available or why it was necessary to use a foreign air carrier and shall, in any event, provide a certificate of compliance with the Fly America requirements, if used. The Contractor agrees to include the requirements of this Section in all subcontracts that may involve international air transportation.

B. BUY AMERICA REQUIREMENTS.

The Contractor agrees to comply with 49 U.S.C. 5323(j) and 49 CFR Part 661, which provide that Federal funds may not be obligated unless steel, iron, and manufactured products used in FTA-funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver.

All Proposers must submit the appropriate Buy America certification to the JPB with their proposals, except those subject to a general waiver. Proposals or offers that are not accompanied by a completed Buy America certification must be rejected as nonresponsive. This requirement does not apply to lower tier subcontractors.

C. CARGO PREFERENCE REQUIREMENTS.

The Contractor agrees: (a) to use privately owned United States Flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this Contract by ocean vessels to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels; (b) to furnish within 20 working days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, "on-board" commercial ocean bill-of-lading in English for each shipment of cargo described in the preceding paragraph to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590 and to the JPB (through the Contractor in the case of a subcontractor's bill-of-lading); and (c) to include these requirements in all subcontracts issued pursuant to this Contract when the subcontract may involve the transport of equipment, Material, or commodities by ocean vessel.

D. ENERGY CONSERVATION.

The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Federal Energy Policy and Conservation Act, 49 U.S.C. §§ 6321 et seq.

E. CLEAN WATER AND AIR REQUIREMENTS.

1. The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq., and the Clear Air Act, as amended, 42 U.S.C. 7401 et seq. The Contractor agrees to report each violation to the JPB and understands and agrees that the JPB will, in turn, report each violation as required to assure notification to the FTA and the appropriate EPA regional office.
2. The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in part or in whole with federal assistance provided by the FTA.

F. RECYCLED PRODUCTS.

The Contractor will comply with Section 6002 of the Resource Conservation and Recovery Act, 42 USC § 6962, as may be amended, including but not limited to the provisions of 40 CFR Part 247 and Executive Order 12873 as they apply to the procurement of recycled goods, specifically, those items enumerated in 40 CFR Part 247, Subpart B. The Contractor shall include this requirement in any subcontract under this Contract valued at over \$10,000.

G. LOBBYING.

Contractor shall file the certification required by 49 CFR Part 20, "New Restrictions on Lobbying." Contractor shall certify that it will not and has not used Federally appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Contractor shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. 1352. Such disclosures shall be forwarded to the JPB. Contractor shall ensure that all of its subcontractors under this Contract shall certify the same. The JPB is responsible for keeping the certification of the Contractor, who is in turn responsible for keeping the certification forms of subcontractors.

The Proposer shall complete Standard Form SF-LLL, "Disclosure of Lobbying Activities," which is included with the Proposal Documents, including instructions for completion.

H. ACCESS TO RECORDS AND REPORTS.

Contractor shall provide all authorized representatives of the JPB, the FTA Administrator, the State Auditor and the Comptroller General of the United States access to any books, documents, papers and records of the Contractor which are directly pertinent to this Contract for the purposes of making audits, copies, examinations, excerpts and transcriptions. Contractor also agrees to maintain all books, records, accounts and reports required under this Contract for a period of not less than three years after the date of termination or expiration of this Contract, except in the event of litigation or settlement of claims arising from the performance of this Contract, in which case Contractor agrees to maintain the same until the JPB, the FTA Administrator, the Comptroller General, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related thereto.

I. FEDERAL CHANGES.

Contractor shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the Agreement (Form FTA MA (17) dated October 1, 2010) between the JPB and the FTA, as they may be amended or promulgated from time to time during the term of this Contract. Contractor's failure to so comply shall constitute a material breach of this Contract.

J. NO GOVERNMENT OBLIGATION TO THIRD PARTIES.

1. The JPB and Contractor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this Contract and shall not be subject to any obligations or liabilities to the JPB, Contractor, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying contract.
2. The Contractor agrees to include the above clause in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

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K. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS AND RELATED ACTS.

1. The Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. § 3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 CFR Part 31, apply to its actions pertaining to this Project. Upon execution of the underlying contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the underlying contract or the FTA assisted project for which this Contract work is being performed. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.
2. The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FTA under the authority of 49 U.S.C. § 5307, the Government reserves the right to impose the penalties of 18 U.S.C. § 1001 and 49 U.S.C. § 5307(n)(1) on the Contractor, to the extent the Federal Government deems appropriate.
3. The Contractor agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

L. GOVERNMENT-WIDE DEBARMENT AND SUSPENSION.

This Contract is a covered transaction for purposes of 49 CFR Part 29. As such, the Contractor is required to verify that none of the Contractor, its principals, as defined at 49 CFR 29.995, or affiliates, as defined at 49 CFR 29.905, are excluded or disqualified as defined at 49 CFR 29.940 and 29.945.

The Contractor is required to comply with 49 CFR 29, Subpart C and must include the requirement to comply with 49 CFR 29, Subpart C in any lower tier covered transaction it enters into.

By signing and submitting its bid or proposal, Contractor certifies as follows:

"The certification in this clause is a material representation of fact relied upon by the JPB. If it is later determined that the proposer knowingly rendered an erroneous certification, in addition to remedies available to the JPB, the Federal Government may pursue available remedies, including but not limited to suspension

and/or debarment. The bidder or proposer agrees to comply with the requirements of 49 CFR 29, Subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.”

M. CIVIL RIGHTS REQUIREMENTS.

The following requirements apply to the underlying contract:

1. Nondiscrimination - In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12132, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, or disability. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.
2. Equal Employment Opportunity - The following equal employment opportunity requirements apply to the underlying contract:
 - (a) Race, Color, Creed, National Origin, Sex - In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e, and Federal transit laws at 49 U.S.C. § 5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 CFR Parts 60 et seq ., (which implement Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. § 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the Project. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, sex, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.
 - (b) Age - In accordance with section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. §§ 623 and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

- (c) Disabilities - In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. § 12112, the Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 CFR Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.
3. The Contractor also agrees to include these requirements in each subcontract financed in whole or in part with Federal assistance provided by FTA, modified only if necessary to identify the affected parties.

N. DISADVANTAGED BUSINESS ENTERPRISE (DBE) REQUIREMENTS.

The JPB, a recipient of Federal financial assistance from the Federal Transit Administration (FTA) and Federal Highway Administration (FHWA), is committed to and has adopted a Disadvantaged Business Enterprise (DBE) Program in accordance with Federal Regulations 49 CFR Part 26 issued by the U.S. Department of Transportation (DOT).

It is the policy of the JPB to ensure nondiscrimination in the award and administration of all contracts and to create a level playing field on which DBEs can compete fairly for contracts and subcontracts relating to the JPB's construction, procurement, and professional services activities. To this end, the JPB has developed procedures to remove barriers to DBE participation in the solicitation and award process and to assist DBEs to develop and compete successfully outside of the DBE Program. In connection with the performance of this contract, the Contractor will cooperate with the JPB in meeting these commitments and objectives.

Pursuant to 49 CFR Part 26.13, and as a material term of any agreement with the JPB, the Contractor hereby makes the following assurance and agrees to include this assurance in any agreements it makes with Subcontractors in the performance of this contract:

"The Contractor or Subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of U.S. DOT-assisted contracts. Failure by the Contractor or Subcontractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the JPB deems appropriate."

Although no specific DBE goal has been established for this contract, Contractor shall cooperate with the JPB in meeting its commitments and objectives with regards to ensuring non-discrimination in the award and administration of JPB contracts and shall use its best efforts to insure that barriers to participation of DBEs do not exist.

To better help the JPB record such information and encourage DBE participation, **all Proposers must complete the supplied DBE forms and submit them with their Proposal (see Exhibit B).** By submitting a Proposal, the Contractor is deemed to have made the foregoing assurance and to be bound by its terms.

Proposers requesting information regarding the JPB's DBE program may contact the DBE Office at (650) 508-7739.

O. INCORPORATION OF FEDERAL TRANSIT ADMINISTRATION (FTA) TERMS.

The preceding provisions include, in part, certain Standard Terms and Conditions required by U.S. DOT, whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by the U.S. DOT, as set forth in FTA Circular 4220.1F, dated November 1, 2008 as may be amended, are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Contract. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any the JPB requests which would cause the JPB to be in violation of the FTA terms and conditions.

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COST PROPOSAL FORM

Description	Qty	Unit Price	Total
Narrowband-capable portable radios	130	\$ _____	\$ _____
Narrowband-capable mobile radios and narrowbanding kits ¹	54	\$ _____	\$ _____
Narrowband-capable locomotive radios and narrowbanding kits ¹	57	\$ _____	\$ _____
Base Station Narrowband Upgrade Kits	11	\$ _____	\$ _____
Spare Parts ¹	1	\$ _____	\$ _____
SUBTOTAL			\$ _____
ADD SALES TAX (9.25%)			\$ _____
TOTAL EQUIPMENT COST (a)			\$ _____

Description	Qty	Unit Price	Total
Installing, programming and testing of new radios	241	\$ _____	\$ _____
Reprogramming and testing of existing radios, base stations, and repeaters	162	\$ _____	\$ _____
System-wide Coverage Test	1	\$ _____	\$ _____
Other Charges ¹	1	\$ _____	\$ _____
SUBTOTAL (b)			\$ _____
TOTAL COST PROPOSAL (a) + (b)			\$ _____

¹Attach detailed information as applicable

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AGREEMENT
BETWEEN THE PENINSULA CORRIDOR JOINT POWERS BOARD (JPB)
AND
_____ **(CONTRACTOR)**

AGREEMENT SUMMARY

Board of Directors' Date of Award: _____, 2011

Resolution Number: 2011- _____

Effective date of the Agreement: _____, 2011

Services to be Performed (Section 1)

The Services to be performed under this Agreement are hereinafter referred to as Narrowbanding Services and are comprised of:

1. provision, programming, installation and testing of 241 new narrowband-capable and narrowbanding kits in Caltrain maintenance vehicles, locomotives, and cab control cars;
2. reprogramming and testing of 162 existing narrowband-capable radios in Caltrain maintenance vehicles, cab control cars, base stations and repeaters; and
3. conducting a System-Wide Coverage Test along the Caltrain railroad right-of-way to measure the downlink signal strength.

Term of Agreement (Section 3):

The term of the provision of the Narrowbanding Services of this Agreement will commence upon the Effective Date of the Agreement and will expire upon the completion of a one-year warranty period following Final Acceptance.

Compensation (Section 5)

The aggregate amount of this Contract for the Narrowbanding Services shall not exceed the Board-Approved amount of \$_____.

Contractor's Key Representative (Section 7)

Name: _____ Title: _____

Address: _____

Tel. _____ Fax _____ eMail _____

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. SCOPE OF SERVICES

The Contractor agrees to provide, program, install, and test 241 narrowband-capable voice radios for JPB/Caltrain maintenance vehicles, locomotive and cab control cabs; to reprogram and test 162 existing narrowband-capable voice radios in JPB/Caltrain maintenance vehicles, locomotives, cab control cars, base stations, and repeaters; and to conduct a System-Wide Coverage Test along the JPB/Caltrain railroad right-of-way in accordance with the terms and conditions of this Agreement and as set forth in the RFP dated April 12, 2011 (including applicable appendices, exhibits and amendments, if any) incorporated herein as **Exhibit A**; as supplemented by CONTRACTOR's written proposal incorporated herein as **Exhibit B**.

In the performance of its work and provision of the Narrowbanding Services, the CONTRACTOR represents that it and any of its subcontractors (1) has and will exercise the degree of professional care, skill, efficiency, and judgment of contractors with special expertise in providing Narrowbanding Services to the railroad industry; (2) carries all applicable licenses, certificates, and registrations in current and good standing that may be required to perform the work; and (3) will retain all such licenses, certificates, and registrations in active status throughout the duration of this engagement.

2. AGREEMENT DOCUMENTS:

This Agreement consists of the following documents:

- (1) This Agreement
- (2) Exhibit A, Requests For Proposals
- (3) Exhibit B, Contractor's Written Proposal

In the event of conflict between or among the terms of the Agreement documents, the order of precedence shall be (1) this Agreement, (2) Exhibit A, and (3) Exhibit B.

3. TERM OF AGREEMENT

The term of the provision of the Base Services of this Agreement will commence upon the Effective Date of the Agreement, as determined by the Parties, and will expire upon the completion of a one-year warranty period. The one-year warranty period shall commence upon Final Acceptance issued by the JPB.

It is understood that the term of the Agreement as specified herein is subject to the JPB's right to terminate the Agreement in accordance with Section 23 of this Agreement.

4. SCHEDULE AND TIME OF COMPLETION

No site work shall begin prior to JPB's receipt of all properly executed Contract documents and JPB's issuance of a written Notice to Proceed. All Narrowbanding Services to be performed pursuant to this Agreement shall be completed within 270 contiguous calendar days of the JPB's issuance of its written Notice to Proceed unless the Agreement is terminated sooner in accordance with the terms this Agreement. Within **15 contiguous calendar days** of JPB issuance of a Notice to Proceed, and as set forth in Exhibit A, CONTRACTOR shall submit, for JPB review and approval, a detailed project schedule that will describe the detailed schedule for provision of the work.

The schedule and time of completion for the Narrowbanding Services shall be mutually agreed upon by the Parties within **30 contiguous calendar days** of the JPB's issuance of its written Notice to Proceed..

5. COMPENSATION

A. Narrowbanding Services

The CONTRACTOR agrees to perform all of the Narrowbanding Services, comprised of the provision, programming, installation, and testing of 241 narrowband-capable voice radios for JPB/Caltrain maintenance vehicles, locomotive and cab control cabs; reprogramming and testing of 162 existing narrowband-capable voice radios in JPB/Caltrain maintenance vehicles, locomotives, cab control cars, base stations, and repeaters; and conducting a System-Wide Coverage Test along the JPB/Caltrain railroad right-of-way, including a one-year warranty, for a fixed price of _____, (\$_____), in accordance with Exhibits A and B. The one-year warranty period shall commence upon written Final Acceptance, which will be issued by the JPB.

The total all inclusive sum shall include all labor, materials, taxes, profit, overhead, insurance, bonding, software, training, warranty subcontractor/subconsultant costs and all other costs and expenses incurred by the CONTRACTOR.

6. MANNER OF PAYMENT

JPB will pay CONTRACTOR according to the following **Milestone Payment Schedule**:

Milestone Payment Schedule				
MILESTONE	DESCRIPTION	DELIVERABLES	PERCENT OF TOTAL CONTRACT PRICE	CUMULATIVE PERCENT
1	<ul style="list-style-type: none"> Submittals 	<ul style="list-style-type: none"> Project Management Plan and Schedule Bill of Materials Installation and Cutover Plan Test Plan (individual installations and system-wide test) Safety and Security Plan 	_____%	_____%
2	<ul style="list-style-type: none"> Delivery of Equipment, Hardware, and Software 	<ul style="list-style-type: none"> Narrowband-capable Voice Radios Base Station Upgrade Kits 	_____%	_____%
3	<ul style="list-style-type: none"> Portable Narrowband-capable Voice Radios Programmed/Reprogrammed, Installed, and Tested 	<ul style="list-style-type: none"> Test Results for Portable Voice Radios 	_____%	_____%

MILESTONE	DESCRIPTION	DELIVERABLES	PERCENT OF TOTAL CONTRACT PRICE	CUMULATIVE PERCENT
4	<ul style="list-style-type: none"> Mobile Narrowband-capable Voice Radios Programmed/Reprogrammed, Installed, and Tested, 	<ul style="list-style-type: none"> Test Results for Mobile Voice Radios 	_____ %	_____ %
5	<ul style="list-style-type: none"> Locomotive and Cab Control Cars Narrowband-Capable Voice Radios Programmed/Reprogrammed 	<ul style="list-style-type: none"> Test Results for Locomotives and Cab Control Cars 	_____ %	_____ %
6	<ul style="list-style-type: none"> Base Stations and Repeaters reprogrammed and tested 	<ul style="list-style-type: none"> Test Results for Base Stations and Repeaters 	_____ %	_____ %
7	<ul style="list-style-type: none"> Perform System-Wide Coverage Test 	<ul style="list-style-type: none"> Test Results for System-Wide Coverage Test 	_____ %	_____ %
8	<ul style="list-style-type: none"> JPB Final Acceptance Test Project Close Out and Final Acceptance Warranty Period Begins 	<ul style="list-style-type: none"> As-built Drawings Manuals 	_____ %	_____ %
9	<ul style="list-style-type: none"> Warranty Period Completed 	<ul style="list-style-type: none"> Outstanding Warranty Issues (if any) Resolved 	_____ %	_____ %

Invoices shall be submitted to the JPB by CONTRACTOR based on the completion of the above tasks. Each invoice shall reference the contract number, specify the completed task number, describe with specificity the tasks completed for which payment is being requested and state the amount of payment requested. If work leading to a particular milestone includes items for which California sales tax is due, CONTRACTOR may add applicable sales tax to the invoice for that milestone.

CONTRACTOR shall only submit invoices for services performed and costs incurred in accordance with the above Milestone Payment Schedule, in the performance of this Agreement, not for advance costs. Upon payment for materials and equipment purchased, JPB is granted ownership and title to such materials and equipment. Transfer of title shall be free of all encumbrances. Furthermore, CONTRACTOR shall bear the risk of any loss or damage to the materials and equipment until the JPB issues its written Final Acceptance, even though the JPB holds title to the materials and equipment prior to said issuance. Notwithstanding the foregoing, the risk of any loss or damage to materials and equipment that is installed on JPB premises shall be borne by the JPB, with the exception of any loss or damage to materials or equipment resulting from Contractor's negligence. Transferring title and/or the risk of any loss or damage to the JPB for such materials and equipment does not trigger the commencement of the warranty term, which commences upon Final Acceptance.

JPB will pay approved invoices/billing statements within 30 calendar days of their receipt. JPB reserves the right to withhold payment to the CONTRACTOR if JPB determines that the quantity or quality of the work performed is unacceptable. JPB shall provide written notice to the CONTRACTOR within 10 business days of JPB's decision not to pay and the reason(s) for non-payment.

If work leading to a particular milestone includes items for which California sales tax is due, Contractor may add applicable sales tax to the invoice for that milestone.

Invoices should be sent to: Peninsula Corridor Joint Powers Board
Attn: Accounts Payable
1250 San Carlos Avenue
San Carlos, CA 94070-1306

or

AccountsPayable@smctd.com

7. CONTRACTOR'S KEY PERSONNEL

It is understood and agreed by the parties that at all times during the term of this Agreement that shall serve as the primary staff person of CONTRACTOR to undertake, render, and oversee all of the services under this Agreement. Upon written notice by the Contractor and approval by the JPB, which will not be unreasonably withheld, the CONTRACTOR may substitute this person with another person, who shall possess similar qualifications and experience for this position.

8. NOTICES

All communications relating to the day-to-day activities of the provided services shall be exchanged between the JPB's Project Manager or designee, and the CONTRACTOR's Project Manager or designee.

All other notices and communications deemed by either party to be necessary or desirable to be given to the other party shall be in writing and may be given by personal delivery to a representative of the parties or by mailing the same postage prepaid, addressed as follows:

If to the JPB: Executive Director
Peninsula Corridor Joint Powers Board
1250 San Carlos Avenue
San Carlos, CA 94070-1306

With a copy to: Director, Contracts and Procurement
Peninsula Corridor Joint Powers Board
1250 San Carlos Avenue
San Carlos, CA 94070-1306

If to the CONTRACTOR: _____
Attn: _____

9. OWNERSHIP OF WORK

A. General

All reports, designs, drawings, plans, specifications, schedules, and other materials prepared, or in the process of being prepared for the services to be performed by CONTRACTOR shall be and are the property of the JPB. The JPB shall be entitled to copies and access to these materials during the progress of the work. Any such materials remaining in the hands of the CONTRACTOR or in the hands of any subcontractor upon completion or termination of the work shall be immediately delivered to the JPB. If any materials are lost, damaged, or destroyed before final delivery to the JPB, the CONTRACTOR shall replace them at its own expense and the CONTRACTOR assumes all risks of loss,

damage, or destruction of or to such materials. The CONTRACTOR may retain a copy of all material produced under this Agreement for its use in its general business activities.

Any and all rights, title, and interest (including without limitation copyright and any other intellectual-property or proprietary right) to materials prepared under this Agreement are hereby assigned to the JPB. The CONTRACTOR agrees to execute any additional documents which may be necessary to evidence such assignment.

The CONTRACTOR represents and warrants that all materials prepared under this Agreement are original or developed from materials in the public domain (or both) and that all materials prepared under and services provided under this Agreement do not infringe or violate any copyright, trademark, patent, trade secret, or other intellectual-property or proprietary right of any third party.

B. Intellectual Property Provisions

1. Definitions

The term "Contractor Software" means any software reasonably necessary to operate or maintain any portions of the Narrowbanded Voice Radio System (System) that is a product or application of CONTRACTOR that pre-existed the execution of this Agreement.

The term "Contractor Software Customizations" means any software reasonably necessary to operate or maintain any portions of the System that is a customization, modification, or other change or addition of or to Contractor Software made under this Agreement.

The term "Third Party Software" means any software reasonably necessary to operate or maintain any portions of the System that does not constitute Contractor Software or Contractor Software Customizations.

The term "Materials" means any recorded information, whether or not copyrighted, that is delivered or specified to be delivered under the Agreement—with examples including, but not being limited to: computer software documentation; change logs; engineering drawings; specifications; standards; process sheets; manuals; technical reports; catalog item identifications; and related information—and for clarity, excluding financial, administrative, and cost and pricing information incidental to the work.

2. Grant of License

The CONTRACTOR grants to the JPB a perpetual, unlimited, royalty-free, non-exclusive and irrevocable license for JPB (including without limitation its officers, directors, employees, and agents) to install, use, copy, modify, and maintain the Contractor Software and the Contractor Software Customizations, with no limitation on the number of sites or users.

In providing the System, the CONTRACTOR will use only that Third Party Software that has been expressly approved in writing by JPB. CONTRACTOR will procure, maintain, and otherwise be responsible for all licenses for JPB, in JPB'S name, for any such Third Party Software reasonably necessary to operate or maintain the System. CONTRACTOR shall provide to JPB copies of such licenses, along with any related software or license documentation.

To the extent that any other licenses or permissions are reasonably desirable or necessary for JPB to operate or maintain the System, CONTRACTOR hereby grants to JPB to the maximum extent within its rights—or will procure for JPB, in JPB'S name, to the maximum extent reasonably negotiable—any such licenses and permissions.

All rights and licenses granted under or pursuant to this Agreement are and shall be deemed to be, for purposes of Section 365(n) of the U.S. Bankruptcy Code, licenses of rights to "intellectual property," as defined under Section 101 of the U.S. Bankruptcy Code. The parties agree that the JPB, as a licensee of such rights under this Agreement, shall retain and may fully exercise all of its rights and elections under the U.S. Bankruptcy Code; however, nothing herein shall be deemed to constitute a present exercise of such rights and elections.

3. Patent and Copyright Warranties

The CONTRACTOR represents and warrants that any use of the System (or any portion of the System) by JPB (or its officers, directors, agents, employees, or transit users) will not infringe or violate the patent, copyright, trade-secret, or other intellectual-property or proprietary rights of any third party.

The CONTRACTOR further represents and warrants that it has or will have all appropriate licenses, agreements, or ownership rights pertaining to all patent, copyright, trade-secret, or other intellectual-property or proprietary rights needed for the performance of its obligations under this Agreement—including without limitation that it will have all necessary rights to use patentable or copyrightable materials, equipment, devices, or processes not furnished by the JPB used on or incorporated in the work under this Agreement. The CONTRACTOR assumes all risks arising from the use of any such patented or copyrighted materials, equipment, devices, or processes.

4. Indemnification

The CONTRACTOR shall indemnify, defend and hold harmless the JPB, its directors, officers, agents, and employees against any liability, including costs and expenses, arising out of, resulting from, or in connection with any act or omission of the CONTRACTOR affecting the proprietary rights of third parties, including liability arising out of the publication, translation, reproduction, delivery, use, or disposition of any work furnished under this Agreement.

The CONTRACTOR shall indemnify, defend and hold harmless the JPB (and its officers, directors, agents, employees, or transit users) to the maximum extent permitted by law from and against any and all claims, liabilities, losses, damages or expenses (including attorneys' fees and related costs, whether or not litigation has commenced), whether direct or indirect, arising out of, relating to, or in connection with any claim or allegation that the ownership, possession, or use of any software, materials, equipment, devices, processes, or other materials provided by CONTRACTOR relating to the System infringe or violate the patent, copyright, trade-secret, or other intellectual-property or proprietary rights of any third party. In case any such software, materials, equipment, devices, processes, or other materials are held to constitute an infringement and their use enjoined, the CONTRACTOR, at CONTRACTOR'S sole cost and expense shall: (a) secure for the JPB the right to continue using the materials, equipment, devices or processes by suspension of the injunction or by procuring a royalty-free license, or licenses, or (b) replace such materials, equipment, devices, or processes with non-infringing materials, equipment, devices, or processes, or (c) modify them so that they become non-infringing or remove the enjoined materials, equipment, devices or processes and refund the sums paid for them without prejudice to any other rights of the JPB. If the amount of time necessary to proceed with one of these options is deemed excessive by the JPB, the JPB may direct the CONTRACTOR to select another option or risk default.

5. Source Code

The CONTRACTOR agrees that as a condition of final acceptance, it will deposit the source code for any Contractor Software and Contractor Software Customizations into escrow (including all updates, versions, releases, and upgrades licensed under this Agreement or any related maintenance

agreements between CONTRACTOR and JPB), with a source code agent capable of providing Level 2 certification/verification. Deposit shall be at reasonable periodic intervals based generally on the pace at which the software is being developed or changed and shall include any and all subsequent updates, versions, releases, and upgrades licensed under this Agreement or any related maintenance agreements between CONTRACTOR and JPB. The source code escrow agreement shall remain in place, and source code deposits shall be updated and maintained, for as long as the JPB and CONTRACTOR have entered into a software maintenance or support agreement. The applicable source code will be released to the JPB (or any contractor acting on its behalf) in the event of CONTRACTOR's nonperformance or the inability of CONTRACTOR to execute or maintain the portion of the System controlled by or through its applicable software. Such conditions of release include, but are not limited to (1) CONTRACTOR's bankruptcy, (2) CONTRACTOR's cessation of business, or (3) failure of CONTRACTOR to support, execute, maintain or provide enhancements in a timely manner to the portion of the System controlled by or through its applicable software. CONTRACTOR agrees that the JPB (or any contractor acting on its behalf) may use the source code to maintain, fix, or modify the Contractor Software and the Contractor Software Customizations as reasonably necessary to operate or maintain any portions of the System. CONTRACTOR and the JPB will separately document an escrow agreement concurrently with this Agreement. The CONTRACTOR shall be responsible for any costs related to the escrow.

6. Patent Rights

If any invention, improvement, or discovery of CONTRACTOR is conceived or first actually reduced to practice in the course of or under this Agreement, which invention, improvement, or discovery may be patentable under the Patent Laws of the United States or any foreign country, CONTRACTOR shall immediately notify JPB and provide a detailed report. The rights and responsibilities of JPB, CONTRACTOR [and the federal government (if federally-funded)] with respect to such invention will be determined in accordance with applicable federal laws, regulations, policies and any waivers thereof.

7. Non-Compete Clauses Waived

In the event that any of the release conditions set forth in any source code escrow agreement between the parties are satisfied and the source code is released to the JPB, the JPB shall have the right to hire CONTRACTOR's personnel or subcontractors for any reason related to the maintenance and operation of the System. The CONTRACTOR shall not interfere with any such efforts to hire any of CONTRACTOR's personnel. CONTRACTOR agreements with personnel and/or subcontractors that restrict employment by the JPB shall be waived under such circumstances.

8. Precedence

In the event of any conflict between the provisions of this Section 9 and the provisions of any separate software license, escrow, or otherwise related agreement, this Section 9 shall take precedence.

10. **CHANGES**

The JPB may at any time, by written order, make changes within the scope of work and services described in this Agreement. If such changes cause an increase or decrease in the budgeted cost of or the time required for performance of the agreed upon work, an equitable adjustment as mutually agreed shall be made in the limit on compensation as set forth in Section 5 or in the time of required performance as set forth in Section 3, or both. In the event that CONTRACTOR encounters any unanticipated conditions or contingencies that may affect the scope of work or services and result in an adjustment in the amount of compensation specified herein, or identifies any JPB conduct (including actions, inaction, and written or oral communications other than a formal contract modification) that the CONTRACTOR

regards as a change to the contract terms and conditions, CONTRACTOR shall so advise the JPB immediately upon notice of such condition or contingency. The written notice shall explain the circumstances giving rise to the unforeseen condition or contingency and shall set forth the proposed adjustment in compensation. This notice shall be given to the JPB prior to the time that CONTRACTOR performs work or services related to the proposed adjustment in compensation. The pertinent changes shall be expressed in a written supplement to this Agreement issued by the Contracts and Procurement Department prior to implementation of such changes. Failure to provide written notice and receive JPB approval for extra work prior to performing extra work may, at the JPB's sole discretion, result in nonpayment of the invoices reflecting such work.

11. RESPONSIBILITY; INDEMNIFICATION

The CONTRACTOR shall indemnify, keep and save harmless the JPB, the San Mateo County Transit District, the City and County of San Francisco, the Santa Clara Valley Transportation Authority, the National Railroad Passenger Corporation (Amtrak) or successor Operator of Record, the Union Pacific Railroad Company (collectively "Indemnities"), and their respective directors, officers, agents and employees against any and all suits, claims or actions arising out of any injury to persons or property that may occur, or that may be alleged to have occurred, arising from the performance of this Agreement by the CONTRACTOR caused by a negligent act or omission of the CONTRACTOR or its employees, sub-Contractors, or agents. The CONTRACTOR further agrees to defend any and all such actions, suits, or claims and pay all charges of attorneys and all other incurred costs and expenses. If any judgment is rendered against the Indemnities or any of the other individuals enumerated above in any such action, CONTRACTOR shall, at its expense, satisfy and discharge the same. This indemnification shall survive termination or expiration of the Agreement.

12. INSURANCE

The insurance requirements specified in this Section shall cover CONTRACTOR's own liability and any liability arising out of work or services performed under this Agreement by any subcontractors, subconsultants, suppliers, temporary workers, independent contractors, leased employees, or any other persons, firms or corporations (hereinafter collectively referred to as "Agents") that CONTRACTOR authorizes to work under this Agreement. CONTRACTOR is required to procure and maintain at its sole cost and expense the insurance coverages subject to all of the requirements set forth below. Such insurance shall remain in full force and effect throughout the term of this Agreement. CONTRACTOR is also required to assess the risks associated with work to be performed by Agents under subcontract and to include in every subcontract the requirement that the Agent maintain adequate insurance coverages with appropriate limits and endorsements to cover such risks; the limit for the Commercial General Liability insurance in each subcontract shall not be less than \$2 million. To the extent that any Agent does not procure and maintain such insurance coverage, CONTRACTOR shall be responsible for said coverage and assume any and all costs and expenses that may be incurred in securing said coverage or in fulfilling CONTRACTOR's indemnity obligation as to itself or any of its Agents in the absence of coverage. In the event CONTRACTOR or its Agents procure excess or umbrella coverage to maintain certain requirements outlined below, these policies shall also satisfy all specified endorsements and stipulations, including provisions that the CONTRACTOR's insurance be primary without any right of contribution from the JPB. Prior to beginning work under this Agreement, CONTRACTOR shall provide the JPB with satisfactory evidence of compliance with the insurance requirements of this Section.

A. MINIMUM TYPES AND SCOPE OF INSURANCE

1. Workers' Compensation and Employer's Liability Insurance.

- a. Workers' Compensation with Statutory Limits and/or Federal Employer's Liability ("FELA") coverage (whichever is applicable) to its employees, as required by the Federal Employer's Liability Act of 1908, applying to Interstate railroad employees,

or, as required by Section 3700 et seq. of the California Labor Code, or any subsequent amendments or successor acts thereto, governing the liability of employers to their employees.

- b. If FELA applies, it shall be in accordance with federal statutes and have minimum limits of \$10,000,000 per occurrence.
- c. If the California Labor Code requiring Workers' Compensation applies, the CONTRACTOR shall also maintain Employer's Liability coverage with minimum limits of \$2 million.
- d. Such insurance shall include the following endorsement as further detailed in the Endorsements Section below:
 - Waiver of Subrogation.

2. Commercial General Liability Insurance.

Commercial General Liability insurance for bodily injury and property damage coverage of at least \$2 million per occurrence or claim and a general aggregate limit of at least \$2 million. Such insurance shall cover all of CONTRACTOR's operations both at and away from the project site. Such insurance shall not have any exclusion for Cross Liability or Cross-Suits. In addition, for any construction and public works projects, the insurance shall not have any exclusion for Explosion, Collapse and Underground perils (xcu).

- a. This insurance shall include coverage for, but not be limited to:
 - Premises and operations.
 - Products and completed operations.
 - Personal injury.
 - Advertising injury.
- b. Such insurance shall include the following endorsements as further detailed in the Endorsements Section below:
 - Additional Insured.
 - Separation of Insureds Clause.
 - Primary and Non-Contributory wording.
 - Waiver of Subrogation.

Products and completed operations insurance shall be maintained for three (3) years following termination of this Agreement.

3. Business Automobile Liability Insurance.

Business Automobile Liability insurance providing bodily injury and property damage coverage with a combined single limit of at least \$2 million per accident or loss.

- a. This insurance shall include coverage for, but not be limited to:
 - All owned vehicles.
 - Non-owned vehicles.
 - Hired or rental vehicles.
- b. Such insurance shall include the following endorsements as further detailed in the Endorsements Section below:

- Additional Insured.
- Primary and Non-Contributory wording.
- Waiver of Subrogation.

4. Property Insurance.

Property insurance with Special Form coverage including theft, but excluding earthquake, with limits at least equal to the replacement cost of the property described below.

a. This insurance shall include coverage for, but not be limited to:

- CONTRACTOR's own business personal property and equipment to be used in performance of this Agreement.
- Materials or property to be purchased and/or installed on behalf of the JPB, if any.
- Builders risk for property in the course of construction.

b. Such insurance shall include the following endorsement as further detailed in the Endorsements Section below:

- Waiver of Subrogation.

5. Railroad Protective Liability Insurance.

Prior to commencing demolition, construction or remodeling, CONTRACTOR shall contact the JPB. The JPB shall obtain, at CONTRACTOR's sole cost and expense, Railroad Protective Liability insurance with limits of liability of \$2 million per occurrence and \$6 million in the aggregate. The named insureds shall be the Peninsula Corridor Joint Powers Board, the San Mateo County Transit District, the Santa Clara Valley Transportation Authority, the City and County of San Francisco, the National Railroad Passenger Corporation or any successor Operator of Record, and the Union Pacific Railroad Company.

Coverage shall be on the RIMA policy form and include, but not be limited to:

- Claims arising out of injury to or death of any person.
- Physical loss or damage to or destruction of property including the JPB's rolling stock and any resulting loss of use thereof.
- Coverage for supervisory acts of railroad employees.
- FELA coverage for railroad employees.
- All other railroads operating on the right-of-way.
- Pollution extension for fuels and lubricants brought onto the job location.

B. ENDORSEMENTS

1. Additional Insured.

The referenced policies and any Excess or Umbrella policies shall include as Additional Insureds the Peninsula Corridor Joint Powers Board, the San Mateo County Transit District, the Santa Clara Valley Transportation Authority, the City and County of San Francisco, the National Railroad Passenger Corporation or any successor Operator of Record, and the Union Pacific Railroad Company and their respective directors, officers, employees, volunteers and agents while acting in such capacity, and their successors or assignees, as they now, or as they may hereafter be constituted, singly, jointly or severally.

2. Waiver of Subrogation.

The referenced policies and any Excess or Umbrella policies shall contain a waiver of

subrogation in favor of the Peninsula Corridor Joint Powers Board, the San Mateo County Transit District, the Santa Clara Valley Transportation Authority, the City and County of San Francisco, the National Railroad Passenger Corporation or any successor Operator of Record, and the Union Pacific Railroad Company and their respective directors, officers, employees, volunteers and agents while acting in such capacity, and their successors or assignees, as they now, or as they may hereafter be constituted, singly, jointly or severally.

3. Primary Insurance.

The referenced policies and any Excess and Umbrella policies shall indicate that they are primary to any other insurance and the insurance company(ies) providing such policy(ies) shall be liable thereunder for the full amount of any loss or claim, up to and including the total limit of liability, without right of contribution from any of the insurance effected or which may be effected by the JPB.

4. Separation of Insureds.

The referenced policies and any Excess or Umbrella policies shall contain a Separation of Insureds Clause and stipulate that inclusion of the Peninsula Corridor Joint Powers Board, the San Mateo County Transit District, the Santa Clara Valley Transportation Authority, the City and County of San Francisco, the National Railroad Passenger Corporation or any successor Operator of Record, and the Union Pacific Railroad Company as Additional Insureds shall not in any way affect the JPB's rights either as respects any claim, demand, suit or judgment made, brought or recovered against the CONTRACTOR. The purpose of this coverage is to protect CONTRACTOR and the JPB in the same manner as though a separate policy had been issued to each, but nothing in said policy shall operate to increase the insurance company's liability as set forth in its policy beyond the amount or amounts shown or to which the insurance company would have been liable if only one interest had been named as an insured.

C. EVIDENCE OF INSURANCE

1. All Coverages except Railroad Protective.

Prior to commencing work or entering onto the Property, CONTRACTOR shall provide the JPB's Contracts and Procurement Department with a certificate evidencing coverage, and upon request, a certified duplicate original of the policy. The certificate shall also show that the CONTRACTOR's policy(ies) will not be cancelled without 30 days' prior written notice to the JPB's Contracts and Procurement Department.

2. Railroad Protective.

Prior to commencing work or entering onto the Property, CONTRACTOR shall confirm that it has paid the premium for said insurance. If the Railroad Protective coverage has not been purchased under the JPB's program, the original policy, or insurance binder with the policy to follow, must be delivered to the JPB's Contracts and Procurement Department prior to work beginning under this Agreement.

D. GENERAL PROVISIONS

1. Notice of Cancellation.

The policies shall provide that the CONTRACTOR's policies will not be cancelled without 30 days' prior written notice to the JPB's Contracts and Procurement Department.

2. Acceptable Insurers.

All policies will be issued by insurers acceptable to the JPB (generally with a Best's Rating of A- 10 or better).

3. Self-insurance.

Upon evidence of financial capacity satisfactory to the JPB and CONTRACTOR's agreement to waive subrogation against the JPB respecting any and all claims that may arise, CONTRACTOR's obligation hereunder may be satisfied in whole or in part by adequately funded self-insurance.

4. Failure to Maintain Insurance.

All insurance specified above shall remain in force until all work to be performed is satisfactorily completed, all of CONTRACTOR's personnel and equipment have been removed from the JPB property, and the work has been formally accepted. The failure to procure or maintain required insurance and/or an adequately funded self-insurance program will constitute a material breach of this Agreement.

5. Claims Made Coverage.

If any insurance specified above shall be provided on a claim-made basis, then in addition to coverage requirements above, such policy shall provide that:

- (a) Policy retroactive date coincides with or precedes the CONTRACTOR's start of work (including subsequent policies purchased as renewals or replacements).
- (b) CONTRACTOR shall make every effort to maintain similar insurance for at least three (3) years following project completion, including the requirement of adding all additional insureds.
- (c) If insurance is terminated for any reason, CONTRACTOR agrees to purchase an extended reporting provision of at least three (3) years to report claims arising from work performed in connection with this Agreement.
- (d) Policy allows for reporting of circumstances or incidents that might give rise to future claims.

6. Deductibles and Retentions.

CONTRACTOR shall be responsible for payment of any deductible or retention on CONTRACTOR's policies without right of contribution from the JPB. Deductible and retention provisions shall not contain any restrictions as to how or by whom the deductible or retention is paid. Any deductible or retention provision limiting payment to the Named Insured is unacceptable.

In the event that the policy of the CONTRACTOR or any subcontractor contains a deductible or self-insured retention, and in the event that the JPB seeks coverage under such policy as an additional insured, CONTRACTOR shall satisfy such deductible or self-insured retention to the extent of loss covered by such policy for a lawsuit arising from or connected with any alleged act or omission of CONTRACTOR, subcontractor, or any of their officers, directors, employees, agents, or suppliers, even if CONTRACTOR or subcontractor is not a named defendant in the lawsuit.

13. CONTRACT BONDS

13.1 Performance Bond. Prior to JPB issuance of a Notice to Proceed, the CONTRACTOR shall provide a Performance Bond in an amount of not less than 100% of the Total Contract Price. The Performance Bond shall guarantee the CONTRACTOR's faithful performance of the Contract in compliance with all terms, conditions and requirements specified in this Agreement. The Performance Bond shall remain in full force and effect until completion of the warranty period, and satisfactory resolution of all outstanding warranty claims. Upon reaching the milestone of **Project Closeout and Final**

Acceptance, the CONTRACTOR, upon receipt of written agreement from the JPB, may reduce the Performance Bond such that it is in an amount of not less than 50% of the Total Contract Price.

13.2 The Performance Bond shall be on forms approved by JPB and shall be executed as surety by a corporation or corporations acceptable to JPB which is admitted and authorized to issue surety bonds in the State of California. The bond must allow for all alterations, extensions of time, extra and additional work, and other changes authorized by the Agreement to be made without securing the consent of the surety or sureties on the Contract bonds while continuing to provide security for such work.

Proposers are notified that no additional compensation shall be paid to Contractor for the furnishing of Performance Bonds for the Base Services and Optional Services. Any and all costs for such bonds shall be incorporated into Proposers' Cost Proposals.

14. USE OF SUBCONTRACTORS

The CONTRACTOR shall not subcontract any services to be performed by it under this Agreement without the prior written approval of the JPB, except for service firms engaged in drawing, reprographics, typing, and printing. Any subcontractors/subconsultants must be engaged under written contract with the CONTRACTOR with provisions allowing the CONTRACTOR to comply with all requirements of this Agreement, including without limitation the "Ownership of Work" provisions in Section 8. The CONTRACTOR shall be solely responsible for reimbursing any subcontractors/subconsultants and the JPB shall have no obligation to them.

- continued on next page -

15. CONTRACTOR'S STATUS

Neither the CONTRACTOR nor any party contracting with the CONTRACTOR shall be deemed to be an agent or employee of the JPB. The CONTRACTOR is and shall be an independent CONTRACTOR and the legal relationship of any person performing services for the CONTRACTOR shall be one solely between that person and the CONTRACTOR.

16. ASSIGNMENT

The CONTRACTOR shall not assign any of its rights nor transfer any of its obligations under this Agreement without the prior written consent of the JPB.

17. JPB WARRANTIES

The JPB makes no warranties, representations, or agreements, either express or implied, beyond such as are explicitly stated in this Agreement.

18. JPB REPRESENTATIVE

Except when approval or other action is required to be given or taken by the Board of Directors of the JPB, the JPB's Executive Director or Deputy CEO, or such person or persons as they shall designate in writing from time to time, shall represent and act for the JPB.

19. WARRANTY OF SERVICES

A. CONTRACTOR warrants that its services will be performed in accordance with the standards of practices of comparable DVRS design and installation firms at the time the services are rendered. In addition, CONTRACTOR shall provide such specific warranties as may be set forth by the manufacturers of the equipment, parts, materials, firmware, and software provided as part of the services under this Agreement.

B. In the event that any services provided by the CONTRACTOR hereunder are deficient because of CONTRACTOR's or subcontractors failure to perform said services in accordance with the warranty standards set forth above, the JPB shall report such deficiencies in writing to the CONTRACTOR within a reasonable time. The JPB thereafter shall have:

1. The right to have the CONTRACTOR re-perform such services at the CONTRACTOR's expense; or
2. The right to have such services done by others and the costs thereof charged to and collected from the CONTRACTOR if within 30 days after written notice to the CONTRACTOR requiring such re-performance, CONTRACTOR fails to give satisfactory evidence to the JPB that it has undertaken said re-performance.
3. The right to terminate the Agreement for default.

CONTRACTOR shall be responsible for all errors and omissions and is expected to pay for all warranty and/or required third-party repair work as a result of errors and omissions.

20. CLAIMS OR DISPUTES

The CONTRACTOR shall be solely responsible for providing timely written notice to JPB of any claims for additional compensation and/or time in accordance with the provisions of this Agreement. It is

the JPB's intent to investigate and attempt to resolve any CONTRACTOR claims before the CONTRACTOR has performed any disputed work. Therefore, CONTRACTOR's failure to provide timely notice shall constitute a waiver of CONTRACTOR's claims for additional compensation and/or time.

The CONTRACTOR shall not be entitled to the payment of any additional compensation for any cause, including any act, or failure to act, by the JPB, or the failure or refusal to issue a modification, or the happening of any event, thing, or occurrence, unless it has given the JPB due written notice of a potential claim. The potential claim shall set forth the reasons for which the CONTRACTOR believes additional compensation may be due, the nature of the costs involved, and the amount of the potential claim.

If based on an act or failure to act by the JPB, such notice shall be given to the JPB prior to the time that the CONTRACTOR has started performance of the work giving rise to the potential claim for additional compensation. In all other cases, notice shall be given within 10 days after the happening of the event or occurrence giving rise to the potential claim.

If there is a dispute over any claim, the CONTRACTOR shall continue to work during the dispute resolution process in a diligent and timely manner as directed by the JPB, and shall be governed by all applicable provisions of the Agreement. The CONTRACTOR shall maintain cost records of all work that is the basis of any dispute.

If an agreement can be reached which resolves the CONTRACTOR claim, the parties will execute an Agreement modification to document the resolution of the claim. If the parties cannot reach an agreement with respect to the CONTRACTOR claim, they may chose to pursue a dispute resolution process or termination of the Agreement.

21. REMEDIES

In the event the CONTRACTOR fails to comply with the requirements of this Agreement in any way, the JPB reserves the right to implement administrative remedies which may include, but are not limited to, withholding of progress payments and contract retentions, and termination of the Agreement in whole or in part.

22. TEMPORARY SUSPENSION OF WORK

The JPB, in its sole discretion, reserves the right to stop or suspend all or any portion of the work for such period as JPB may deem necessary. The suspension may be due to the failure on the part of the CONTRACTOR to carry out orders given or to perform any provision of the Agreement or to factors that are not the responsibility of the CONTRACTOR. The CONTRACTOR shall comply immediately with the written order of JPB to suspend the work wholly or in part. The suspended work shall be resumed when the CONTRACTOR is provided with written direction from JPB to resume the work.

If the suspension is due to the CONTRACTOR's failure to perform work or carry out its responsibilities in accordance with this Agreement, or other action or omission on the part of the CONTRACTOR, all costs shall be at CONTRACTOR's expense and no schedule extensions will be provided by JPB.

In the event of a suspension of the work, the CONTRACTOR shall not be relieved of the CONTRACTOR's responsibilities under this Agreement, except the obligations to perform the work which the JPB has specifically directed CONTRACTOR to suspend under this section.

If the suspension is not the responsibility of the CONTRACTOR, suspension of all or any portion of the work under this Section may entitle the CONTRACTOR to compensation and/or schedule extensions subject to the Agreement requirements.

23. TERMINATION

The JPB shall have the right to terminate this Agreement at any time for cause or convenience by giving written notice to the CONTRACTOR. Upon receipt of such notice, the CONTRACTOR shall not commit itself to any further expenditure of time or resources.

If the Agreement is terminated for any reason other than a breach or default by CONTRACTOR, the JPB shall pay to the CONTRACTOR in accordance with the provisions of Sections 5 and 6 of this Agreement all sums actually due and owing from the JPB for all services performed and all expenses incurred up to the day written notice of termination is given, plus any costs reasonably and necessarily incurred by CONTRACTOR to effect such suspension or termination. If the Agreement is terminated for breach or default, the JPB shall remit final payment to CONTRACTOR in an amount to cover only those services performed and expenses incurred in full accordance with the terms and conditions of this Agreement up to the effective date of termination.

The JPB shall not in any manner be liable for the CONTRACTOR's actual or projected lost profits had the CONTRACTOR completed the services required by this Agreement.

24. LIQUIDATED DAMAGES

TIME IS OF THE ESSENCE IN THIS AGREEMENT. In accordance with the Request for Proposals, and pursuant to Government Code Section 53069.85, the parties agree that the JPB will incur damages that are difficult to ascertain in the event that CONTRACTOR does not. Accordingly, CONTRACTOR agrees to pay, as liquidated damages and not as a penalty, \$2,000 per calendar day for each day of delay of individual programming/reprogramming, installation, and testing of narrowbanding radios on locomotives, cab control cars, maintenance vehicles, base stations, and repeaters; and for each day of overall project delay, if in the JPB's sole determination, such delays negatively impact or interrupt Caltrain service.

The CONTRACTOR will be granted an extension of time and will not be assessed with liquidated damages for delays caused by acts of God or of the public enemy, fire, floods, epidemics, quarantine, restrictions, strikes, labor disputes, shortage of materials and freight embargoes, or other causes deemed by the JPB to be beyond the reasonable control of the CONTRACTOR, provided CONTRACTOR notifies the Director, Contracts & Procurement in writing of the causes of delay within **five calendar days** from the beginning of any such delay.

The Director, Contracts & Procurement, shall ascertain the nature of the delay and determine whether an extension of time is warranted, which determination shall be final and conclusive. CONTRACTOR has the burden of proof that the delay was beyond its control.

The JPB shall deduct from any money due or to become due the Contractor the accrued liquidated damages. Such deductions shall occur with the submission of each invoice by the Contractor, and each invoice shall be reduced by the amount of accrued liquidated damages. Should the money due the Contractor be insufficient, then the Contractor shall promptly pay the insufficiency to the JPB.

Such deductions shall not be considered to be a penalty, but as agreed-upon monetary damages sustained by the JPB because the Contractor was unable to provide the DVRS units, parts, material, software and related items, and product support in accordance with this Contract.

The liquidated damages set forth in this Section 24 shall be the JPB's exclusive remedy for any damages resulting from the failure of CONTRACTOR to meet the deadlines set forth herein.

25. MAINTENANCE, AUDIT AND INSPECTION OF RECORDS

All CONTRACTOR and subcontractor/subconsultant costs incurred in the performance of this Agreement will be subject to audit. The CONTRACTOR and its subcontractors/subconsultants shall permit the JPB, or its authorized representatives to inspect, examine, make excerpts from, transcribe, and copy the CONTRACTOR's books, work, documents, papers, materials, payrolls records, accounts, and any and all data relevant to the Agreement at any reasonable time, and to audit and verify statements, invoices or bills submitted by the CONTRACTOR pursuant to this Agreement. The CONTRACTOR shall also provide such assistance as may be required in the course of such audit. The CONTRACTOR shall retain these records and make them available for inspection hereunder for a period of four years after expiration or termination of the Agreement.

If, as a result of the audit, it is determined by the JPB's auditor or staff that reimbursement of any costs including profit or fee under this Agreement was in excess of that represented and relied upon during price negotiations or represented as a basis for payment, the CONTRACTOR agrees to reimburse the JPB for those costs within sixty (60) days of written notification by the JPB.

26. NON-DISCRIMINATION ASSURANCE - TITLE VI OF THE CIVIL RIGHTS ACT

The CONTRACTOR shall not discriminate on the basis of race, color, creed, national origin, sex, or age in the performance of this Agreement. The CONTRACTOR shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of U.S. DOT-assisted contracts. Further, the CONTRACTOR agrees to comply with all provisions prohibiting discrimination on the basis of race, color, or national origin of Title VI of the Civil Rights Act of 1964, as amended, 42 U.S.C. §§ 2000d *et seq.*, and with U.S. DOT regulations, "Nondiscrimination in Federally-Assisted Programs of the Department of Transportation – Effectuation of Title VI of the Civil Rights Act," 49 C.F.R. Part 21. The CONTRACTOR shall obtain the same assurances from its joint venture partners, subcontractors, and subconsultants by including this assurance in all subcontracts entered into under this Agreement. Failure by the CONTRACTOR to carry out these requirements is a material breach of this Agreement, which may result in the termination of this Agreement or such other remedy as the JPB deems appropriate.

27. EQUAL EMPLOYMENT OPPORTUNITY (EEO)

In connection with the performance of this Agreement the CONTRACTOR shall not discriminate against any employee or applicant for employment because of race, color, religion, national origin, ancestry, sex, gender, sexual orientation, age (over 40), marital status, pregnancy, medical condition, or disability as specified in federal, State, and local laws. The CONTRACTOR shall take affirmative actions to ensure that applicants are employed, and that employees are treated during their employment, without regard to their race, religion, color, sex, disability, or national origin. Such actions shall include, but not be limited to, the following: employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. CONTRACTOR further agrees to insert a similar provision in all subcontracts, except subcontracts for standard commercial supplies or raw materials.

28. CONFLICT OF INTEREST

Exhibit A sets forth important Conflict of Interest rules that will be in force throughout the term of this Agreement. In addition to those provisions, the following also apply:

A. General

Depending on the nature of the work performed, a CONTRACTOR of the JPB may be subject to the same conflict of interest prohibitions established by California law that govern JPB's employees and officials (Cal. Govt. Code Section 1090 et seq. and Cal. Govt. Code Section 87100 et seq.). During the proposal process or the term of the Agreement, CONTRACTOR and its employees may be required to disclose financial interests.

The CONTRACTOR warrants and represents that it presently has no interest and agrees that it will not acquire any interest that would present a conflict of interest under California Government Code §1090 et seq. or §87100 et seq. during the performance of services under this Agreement. The CONTRACTOR further covenants that it will not knowingly employ any person having such an interest in the performance of this Agreement. Violation of this provision may result in this Agreement being deemed void and unenforceable.

Depending on the nature of the work performed, CONTRACTOR may be required to publicly disclose financial interests under the JPB's Conflict of Interest Code. Upon receipt, the CONTRACTOR agrees to promptly submit a Statement of Economic Interest on the form provided by JPB.

No person previously in the position of Director, Officer, employee or agent of the JPB shall have any interest, direct or indirect, in this Agreement or the proceeds under this Agreement, nor may any such person act as an agent or attorney for, or otherwise represent the CONTRACTOR by making any formal or informal appearance, or any oral or written communication, before the JPB, or any Officer or employee of the JPB, for a period of twelve (12) months after leaving office or employment with the JPB if the appearance or communication is made for the purpose of influencing any action involving the issuance, amendment, award or revocation of a permit, license, grant, or contract.

B. Organizational Conflicts of Interest

CONTRACTOR shall take all reasonable measures to preclude the existence or development of an organizational conflict of interest in connection with work performed under this Agreement and other solicitations. An organizational conflict of interest occurs when, due to other activities, relationships, or contracts, a firm or person is unable, or potentially unable, to render impartial assistance or advice to the JPB; a firm or person's objectivity in performing the contract work is or might be impaired; or a firm or person has an unfair competitive advantage in proposing for award of a contract as a result of information gained in performance of this or some other Agreement.

CONTRACTOR shall not engage the services of any Subconsultant or independent consultant on any work related to this Agreement if the Subconsultant or independent consultant, or any employee of the Subconsultant or independent consultant, has an actual or apparent organizational conflict of interest related to work or services contemplated under this Agreement.

If at any time during the term of this Agreement CONTRACTOR becomes aware of an organizational conflict of interest in connection with the work performed hereunder, CONTRACTOR immediately shall provide the JPB with written notice of the facts and circumstances giving rise to this organizational conflict of interest. CONTRACTOR's written notice will also propose alternatives for addressing or eliminating the organizational conflict of interest.

If at any time during the term of this Agreement, JPB becomes aware of an organizational conflict of interest in connection with CONTRACTOR's performance of the work hereunder, JPB shall similarly notify CONTRACTOR.

In the event a conflict is presented, whether disclosed by CONTRACTOR or discovered by JPB, the JPB will consider the conflict presented and any alternatives proposed and meet with the CONTRACTOR to determine an appropriate course of action. The JPB's determination as to the manner in which to address the conflict shall be final.

During the term of this Agreement, CONTRACTOR must maintain lists of its employees, and the Subconsultants and independent consultants used and their employees. CONTRACTOR must provide this information to the JPB upon request. However, submittal of such lists does not relieve the CONTRACTOR of its obligation to assure that no organizational conflicts of interest exist. CONTRACTOR shall retain this record for five (5) years after the JPB makes final payment under this Agreement. Such lists may be published as part of future JPB solicitations.

CONTRACTOR shall maintain written policies prohibiting organizational conflicts of interest and shall ensure that its employees are fully familiar with these policies. CONTRACTOR shall monitor and enforce these policies and shall require any subconsultants and affiliates to maintain, monitor and enforce policies prohibiting organizational conflicts of interest.

Failure to comply with this section may subject the CONTRACTOR to damages incurred by the JPB in addressing organizational conflicts that arise out of work performed by CONTRACTOR, or to termination of this Agreement for breach.

29. PROHIBITED INTEREST

No member, officer, or employee of the JPB during his or her tenure or for one year after that tenure shall have any interest, direct or indirect, in this Agreement or the proceeds under this Agreement.

30. ATTORNEYS' FEES

If any legal proceeding should be instituted by either of the parties to enforce the terms of this Agreement or to determine the rights of the parties under this Agreement, the prevailing party in said proceeding shall recover reasonable attorneys' fees, in addition to all court costs.

31. WAIVER

Any waiver of any breach or covenant of this Agreement must be in a writing executed by a duly authorized representative of the party waiving the breach. A waiver by any of the parties of a breach or covenant of this Agreement shall not be construed to be a waiver of any succeeding breach or any other covenant unless specifically and explicitly stated in such waiver.

32. SEVERABILITY

If any provision of this Agreement shall be deemed invalid or unenforceable, that provision shall be reformed and/or construed consistently with applicable law as nearly as possible to reflect the original intentions of this Agreement, and in any event, the remaining provisions of this Agreement shall remain in full force and effect.

33. NO THIRD PARTY BENEFICIARIES

This Agreement is not for the benefit of any person or entity other than the parties.

34. CONFIDENTIALITY

Any JPB materials to which the CONTRACTOR has access or materials prepared by the CONTRACTOR during the course of this Agreement ("confidential information") shall be held in confidence by the CONTRACTOR, who shall exercise all reasonable precautions to prevent the disclosure of confidential information to anyone except the officers, employees and agents of the CONTRACTOR as necessary to accomplish the rendition of services set forth in Section 2 of this Agreement.

The CONTRACTOR, its employees, subcontractors and agents, shall not release any reports, information, or other materials prepared in connection with this Agreement, whether deemed confidential or not, without the approval of the JPB's Executive Director or designee.

Additionally, the California Public Records Act (Cal. Govt. Code Sections 6250 et seq.) mandates public access to government records. Therefore, unless the information is exempt from disclosure by law, the content of any written communication between the JPB and CONTRACTOR shall be available to the public.

If CONTRACTOR requests that the JPB withhold from disclosure information identified as confidential, and the JPB complies with the CONTRACTOR's request, CONTRACTOR shall assume all responsibility for any challenges resulting from the non-disclosure, indemnify and hold harmless the JPB from and against all damages (including but not limited to Legal Counsel fees that may be awarded to the party requesting the CONTRACTOR information), and pay any and all cost and expenses related to the withholding of CONTRACTOR information. CONTRACTOR shall not make a claim, sue, or maintain any legal action against the JPB or its directors, officers, employees, or agents concerning the withholding from disclosure of CONTRACTOR information.

If CONTRACTOR does not request that the JPB withhold from disclosure information identified as confidential, the JPB shall have no obligation to withhold the information from disclosure and may release the information sought without any liability to the JPB.

35. APPLICABLE LAW

This Agreement, its interpretation and all work performed under it shall be governed by the laws of the State of California. Venue of any action brought with regard to this Agreement shall be in San Mateo County, California. The CONTRACTOR must comply with all federal, State, and local laws, rules, and regulations applicable to the Agreement and to the work to be done hereunder, including all rules and regulations of the JPB.

36. RIGHTS AND REMEDIES OF THE JPB

The rights and remedies of the JPB provided herein shall not be exclusive and are in addition to any other rights and remedies provided by law or under the Agreement.

37. BINDING ON SUCCESSORS

All of the terms, provisions, and conditions of this Agreement shall be binding upon and inure to the benefit of the parties and their respective successors, assigns and legal representatives.

38. ENTIRE AGREEMENT; MODIFICATION

This Agreement for Services, including any attachments, constitutes the complete Agreement between the Parties and supersedes any prior written or oral communications. This Agreement may be modified or amended only by written instrument signed by both the CONTRACTOR and the JPB. In the event of a conflict between the terms and conditions of this Agreement and the attachments, the terms of this Agreement will prevail.

REFERENCE FORM

Proposers shall list the company name and contact information as well as the status of contract(s) where the firm has either provided services as a prime contractor or as a subcontractor during the past five years. A separate form must be provided for each contract the Proposer held/holds with the same company. A minimum of three different references/companies must be provided for whom similar products and/or services were provided.

If contract was terminated, Proposer shall list the reason for termination. Proposer also must identify and state the status of any litigation, claims or settlement agreements related to any of the identified contracts. Each form must be signed by an officer of the Proposing firm confirming that the information is true and accurate.

Company

Project Description

Address

\$
Project / Contract Value

City, State, Zip

Award Date / End Date

Contact Name

() Telephone () Fax

Contact Title

Email

Term and Status of Contract: _____

Other: _____

By signing this Form entitled, I affirm that all information provided herein is true and accurate.

Signature

Date

Name

Title

Note: *please complete this form for each reference provided.*

IN WITNESS WHEREOF, the parties hereto have executed this Agreement by their duly authorized officers as of the Effective Date.

PENINSULA CORRIDOR JOINT POWERS BOARD:

CONTRACTOR: (See footnote below)*

By: _____

By: _____

Title: Executive Director

Title: _____

ATTEST:

By: _____

By: _____
JPB Secretary

Title: _____

APPROVED AS TO FORM:

By: _____
Attorney for the JPB

Note: If the CONTRACTOR is a Corporation, this Agreement must be executed by two Corporate Officers, consisting of:

- (1) the President, Vice President or Chair of the Board, and
- (2) the Secretary, Assistant Secretary, Chief Financial Officer, Assistant Chief Financial Officer, Treasurer, or Assistant Treasurer.

In the alternative, this Agreement may be executed by a single Officer or a person other than an Officer provided that evidence satisfactory to the JPB is provided demonstrating that such individual is authorized to bind the Corporation (e.g. a copy of a certified resolution from the Corporation's Board or a copy of the Corporation's bylaws).

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DBE Questionnaire

1. Is your firm a registered Disadvantaged Business Enterprise (DBE)?

Yes _____ No _____

If the answer is "Yes", please fill in your DBE Certification Number: _____

2. Does your firm plan to subcontract any of the work or services required under this contract to any subcontractors or sub-consultants, or procure items from suppliers?

Yes _____ No _____

If the answer is "Yes", please continue with completing this questionnaire.

If the answer is "No", you may stop here and you do not need to continue to Question 3. Please sign and submit this page and return the *Designation of Subcontractors and Sub-bidders* form marked "No Subcontractors".

3. Describe briefly how your firm solicited small businesses, including DBEs, to participate on this contract.

4. Identify the portion(s) of the work or service that were selected for subcontracting and explain why these portions of work were selected:

5. Explain the reasons for rejecting bids and accepting the bids from the selected subcontractor, subconsultant or supplier:

6. Describe any efforts your firm made to assist small businesses, including DBEs, in obtaining (1) adequate information about this solicitation, and (2) necessary equipment, supplies, bonding, or insurance, among other requirements, to perform this contract:

7. Describe any other steps your firm used to encourage or select small businesses, including DBEs:

The undersigned certifies that the above narrative is true and accurate and may be relied upon by the Agency in evaluating the Proposer's compliance with the proposal requirements.

Signature of Owner or Authorized Representative

Title

Date

Designation of Subcontractors and Sub-bidders

Proposer's Name: _____ Is your firm a Disadvantaged Business Enterprise: Yes _____ No _____
 Address: _____ Firm's Annual Gross Receipts: _____ Age of Firm: _____
 Phone: () _____ Fax: () _____

Instructions: Bidder MUST provide information below for ALL subcontractors/subconsultants/suppliers ("sub-bidders") that provided Bidder a bid, quote, or proposal for work, services or supplies associated with this contract. This information shall be provided for all sub-bidders regardless of tier for both DBEs and non-DBEs alike. Include all bid acceptance(s) AND rejection(s). Please state "None" if there are no sub-bids, sign and return this form.

	Subcontractor/Subconsultant/Supplier Firm Name/Address/Phone/Fax/Contact Person	DBE? (Yes/No)	Description of Work, Services, or Supplies	Dollar Amount of Work, Services, or Supplies	Bid/Quote Accepted? (Yes/No)
1					
2					
3					
4					
5					

Note: Do not indicate more than one "Yes" in the column "Bid/Quote Accepted" for alternative subcontractors for the same work. Use additional sheets if necessary.

The undersigned will enter into a formal agreement with the subcontractor(s), subconsultant(s) and/or supplier(s) whose bid/quote was accepted conditioned upon execution of a contract with the AGENCY. The undersigned certifies that any DBE listed whose quote was accepted will be performing a commercially useful function on the contract. I certify under penalty of perjury that the information included on this form is accurate and true.

 Signature of Owner or Authorized Representative

 Print Name

 Date

FORM AE-1 APPROVED EQUAL FORM

IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST! COPY THIS FORM AS NEEDED.

Submitted by: _____ (Company Name)

The District requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Equal pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. a. Approved equal is being requested for _____,
to be used in place of _____ (list
technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
b. page no. _____
c. Section Number and Heading _____
2. Description of approved equal request/substitution: _____
_____.
3. Product purpose: _____
_____.
4. Does this proposed approved equal request/substitution meet all applicable federal, state and local laws and regulations? _____ (If NO, please explain): _____
_____.
5. List three commercial firms within the United States, which have used the proposed approved equal request/substitution (list California properties first):
 - A. Company Name _____
Street Address _____
City/State/Zip Code _____
Area Code/Telephone No. (_____) _____
Name of Contact Person _____
 - B. Company Name _____
Street Address _____
City/State/Zip Code _____
Area Code/Telephone No. (_____) _____
Name of Contact Person _____
 - C. Company Name _____
Street Address _____
City/State/Zip Code _____
Area Code/Telephone No. (_____) _____
Name of Contact Person _____
6. List the benefits and any other reasons why the District should approve this request for approved equal/substitution: _____
_____.
7. **Attach pertinent test data, technical data, and background information on the approved equal/substitution request.**

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PERFORMANCE GUARANTY – SAMPLE

KNOW ALL PERSONS BY THESE PRESENTS, that

WHEREAS THE PENINSULA CORRIDOR JOINT POWERS BOARD (hereinafter referred to as JPB) has entered into a Contract with _____ (hereinafter referred to as Principal) for the provision of **Narrowbanding Services which shall include but not be limited to Contractor's provision, programming, installation and testing of new narrowband-capable radios and narrowbanding kits in JPB/Caltrain maintenance vehicles, locomotives and cab control cars; reprogramming of existing narrowband-capable radios in JPB/Caltrain maintenance vehicles, locomotives, cab control cars, base stations and repeaters; and conducting a System-Wide Coverage Test along the Caltrain right-of-way to measure the downlink signal strength. Narrowbanding Services shall be performed primarily at the JPB/Caltrain Centralized Equipment Maintenance and Operations Facility (CEMOF) (the Contract);** and

WHEREAS said Principal is required under the terms of said Contract to furnish a bond of faithful performance of said Contract,

NOW, THEREFORE, we, the undersigned Principal, and _____, as Surety, are held and firmly bound unto the JPB, in the sum of _____ Dollars (\$ _____) lawful money of the United States, to be paid to the JPB or its successors and assigns; for which payment, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the above-bound Principal, or its heirs, executors, administrators, successors, or assigns approved by the JPB, shall promptly and faithfully perform the covenants, conditions and agreements in the Contract, including Principal's obligations to defend, indemnify, and hold harmless the JPB from intellectual property infringement claims, during the original term and any extensions thereof as may be granted by the JPB, with or without notice to Surety, and during the period of any guarantees or warranties required under the Contract, and shall also promptly and faithfully perform all the covenants, conditions, and agreements of any alteration of the Contract made as therein provided, notice of which alterations to Surety being hereby waived, on Principal's part to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify, defend, protect, and hold harmless the JPB as stipulated in the Contract, then this obligation shall become and be null and void; otherwise it shall be and remain in full force and effect.

No extension of time, change, alteration, modification, or addition to the Contract, or of the work required thereunder, shall release or exonerate Surety on this bond or in any way affect the obligation of this bond; and Surety does hereby waive notice of any such extension of time, change, alteration, modification, or addition.

As a condition precedent to satisfactory completion of the said Contract, the above obligations may be reduced to the amount of _____ Dollars, (\$ _____ USD), being not less than fifty percent (50%) of the total amount payable under the Contract, and shall hold for a period of one (1) calendar year after the Final Acceptance of said work, during which time if the above bounded Principal shall fail to make full, complete and satisfactory repair and replacement or totally protect the JPB from loss or damage made evident during said period of one (1) calendar year from the date of Final Acceptance of said work, and resulting from or caused by defective materials or faulty workmanship in the prosecution of the work done, the above obligations in the said sum of (\$ _____ USD) shall remain in full force and virtue; otherwise the above obligation shall be void.

Whenever Principal shall be and declared by the JPB to be in default under the Contract, Surety shall promptly remedy the default, or shall promptly do one of the following at the JPB's election:

1. Undertake through its agents or independent Contractors, reasonably acceptable to the JPB, to complete the Contract in accordance with its terms and conditions and to pay and perform all obligations of Principal under the Contract, including without limitation, all obligations with respect to warranties, guarantees, and the payment of liquidated damages.
2. Reimburse the JPB for all costs the JPB incurs in completing the Contract, and in correcting, repairing or replacing any defects in materials or workmanship and/or materials and workmanship which do not conform to the specifications in the Contract.

Surety's obligations hereunder are independent of the obligations of any other surety for the performance of the Contract, and suit may be brought against Surety and such other sureties, jointly and severally, or against any one or more of them, or against less than all of them without impairing the JPB's rights against the others.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the JPB or its successors or assigns.

In the event suit is brought upon this bond by the JPB, Surety shall pay reasonable attorney's fees and costs incurred by the JPB in such suit.

IN WITNESS WHEREOF, the above-bound parties have executed this instrument under their seals this _____ day of _____, 20____, the name and corporate seal of each corporate party being hereto affixed and these presents duly executed by its undersigned representative, pursuant to authority of its governing body.

(Principal)

By _____

Note:

*To be executed by Principal
and Surety with acknowledgment
and notarial seal attached.*

By _____

(Surety)

Address)

By _____

By _____

STATE OF CALIFORNIA)
)
CITY AND COUNTY OF _____) ss.

On _____, 20__ before me, _____, Notary Public, personally appeared _____, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

Witness my hand and official seal.

Notary Public

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CALIFORNIA LEVINE ACT STATEMENT

California Government Code Section 84308, commonly referred to as the "Levine Act," prohibits any Peninsula Corridor Joint Powers Board (JPB) Board Member from participating in any action related to a contract if he or she receives any political contributions totaling more than \$250 within the previous twelve months, and for three months following the date a final decision concerning the contract has been made, from the person or company awarded the contract. The Levine Act also requires a member of the JPB Board who has received such a contribution to disclose the contribution on the record of the proceeding.

The JPB's 2011 Board Members are:

Omar Ahmad	Liz Kniss
Jose Cisneros	Arthur L. Lloyd
Sean Elsberno	Adrienne Tissier
Nathaniel P. Ford, Sr.	Ted Yeager
Ash Kalra	

1. Have you or your company, or any agent on behalf of you or your company, made any political contributions of more than \$250 to any JPB Board Member in the 12 months preceding the date of the submission of your proposals or the anticipated date of any Board action related to this contract?

 YES NO

if yes, please identify the Board Member(s): _____

2. Do you or your company, or any agency on behalf of you or your company, anticipate or plan to make any political contribution of more than \$250 to any JPB Board Member in the three months following any Board action related to this contract?

 YES NO

if yes, please identify the Board Member(s): _____

Answering yes to either of the two questions above does not preclude the District from awarding a contract to your firm or any taking any subsequent action related to the contract. It does, however, preclude the identified Board Member(s) from participating in any actions related to this contract.

Date

Signature of authorized individual

Type or write name of authorized individual

Type or write name of company

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CERTIFICATE OF LIABILITY INSURANCE - SAMPLE

ACORD CERTIFICATE OF LIABILITY INSURANCE				DATE (MM/DD/YYYY) 10/3/2008		
PRODUCER (415) 957-0600 FAX: (415) 957-0577 MOC Insurance Services License No. 0589960 44 Montgomery St., 17th Fl. San Francisco CA 94104			THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.			
INSURED ABC Company 123 Main Street San Carlos, CA 94070			INSURERS AFFORDING COVERAGE		NAIC #	
			INSURER A: Everest Indemnity Ins.			
			INSURER B: Allied Group			
			INSURER C: Everest National			
			INSURER D: Hartford			
			INSURER E:			
COVERAGES						
THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.						
INSR ADD'L LTR	INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A		GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Professional Liab. GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC	51GL001814081	5/5/2008	5/5/2009	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 50,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 5,000,000 PRODUCTS - COMP/OP AGG \$ 1,000,000
B		AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS <input checked="" type="checkbox"/> Comp Ded \$500 <input checked="" type="checkbox"/> Coll Ded \$500	ACP 7803433895	6/1/2008	6/1/2009	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
		GARAGE LIABILITY <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT \$ OTHER THAN EA ACC \$ AUTO ONLY: AGG \$
A		EXCESS/UMBRELLA LIABILITY <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> DEDUCTIBLE RETENTION \$10,000	51CC001038-081	09/18/2008	5/5/2009	EACH OCCURRENCE \$ 1,000,000 AGGREGATE \$ 1,000,000 \$ \$ \$
C		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below	5300000911071	11/16/2007	11/16/2008	<input checked="" type="checkbox"/> INC STATE/TOVY LIMITS <input type="checkbox"/> OTA-SEP E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
D		OTHER Commercial Crime	57BDEPF3550	9/25/2008	9/25/2009	Limit \$500,000 Deductible \$5,000
D		Commercial Property	57SBAAZ2072	7/5/2008	7/5/2009	Business Person Prop \$100,000
DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS Peninsula Corridor Joint Powers Board, respective Directors, Officers, Employees, Volunteers & Agents are named as Additional Insured with respect to the insured's operations. Per endt CG2010 10/01 attached. Waiver of Subrogation applies. RE:						
Contract 10-PJCPB-M-0XX						

CERTIFICATE HOLDER Peninsula Corridor Joint Powers Board, respective Directors, Officers, Employees Volunteers & Agents 1250 San Carlos Avenue San Carlos, CA 94070	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES. AUTHORIZED REPRESENTATIVE Loretta Pearson/LPE
---	--

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BUY AMERICA CERTIFICATE OF COMPLIANCE
(Steel, Iron or Manufactured Goods used in a project subject to 49 USC 24401 et seq)

11-PCJPB-T-011

IMPORTANT: SELECT AND COMPLETE ONLY ONE OF THE FOLLOWING CERTIFICATES:

Certificate of Compliance with 49 USC 5323(j)(2)(C)

The proposer hereby certifies that it will comply with the requirements of 49 USC 5323(j)(2)(C) and the applicable regulations in 49 CFR 661.

_____ Firm Name
_____ Signature of Authorized Official
_____ Name and Title of Authorized Official
_____ Date

OR:

Certificate for Non-Compliance with 49 USC 5323(j)(2)(C)

The proposer hereby certifies that it cannot comply with the requirements of 49 USC 5323(j)(2)(C), but it may qualify for an exception pursuant to 49 USC 5323(j)(2)(B) or (j)(2)(D) and the regulations in 49 CFR 661.7.

_____ Firm Name
_____ Signature of Authorized Official
_____ Name and Title of Authorized Official
_____ Date

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DISCLOSURE OF GOVERNMENT POSITIONS

The PROPOSER hereby discloses that the following officers and employees of the PROPOSER's firm currently hold the following positions with the identified governmental agency or held such position in the past 12 months.

<u>Name of Owner/Employee</u>	<u>Name of the Governmental Agency</u>	<u>Complete Address of Gov't Agency</u>	<u>Governmental Position</u> (e.g. Director, Officer, or Employee)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Signature: _____
Title: _____
Firm: _____
Date: _____

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**LOBBYING CERTIFICATION FOR CONTRACTS GRANTS, LOANS AND
COOPERATIVE AGREEMENTS (Pursuant to 49 CFR Part 20, Appendix A)**

11-PCJPB-T-011

The undersigned certifies, to the best of their knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for making lobbying contacts to an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form--LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions and as amended by "Government wide Guidance for New Restrictions on Lobbying," 61 Fed. Reg. 1413 (1/19/96).

(3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The proposer, _____(Company), certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Proposer understands and agrees that the provisions of 31 U.S.C. A 3801, et. seq. apply to this certification and disclosure, if any.

Signature of Authorized Official

Name and Title of Authorized Official

Date

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

Approved by OMB
 13520348-0046

1. Type of Federal Action: <input type="checkbox"/> a. contract <input type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance	2. Status of Federal Action: <input type="checkbox"/> a. bid/offer/application <input type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award	3. Report Type: <input type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change For Material Change Only: Year _____ quarter date of last report
4. Name and Address of Reporting Entity: <input type="checkbox"/> Prime <input type="checkbox"/> Subawardee Tier _____, if known. Congressional District, if known:	5. If Reporting Entity in No. 4 is Sub-awardee, Enter Name and Address of Prime: Congressional District, if known:	
6. Federal Department/Agency:	7. Federal Program Name/Description: CFDA Number, if applicable:	
8. Federal Action Number, if known:	9. Award Amount, if known: \$ _____	
10.a. Name and Address of Lobbying Entity (if individual, last name, first name, MI):	10.b. Individuals Performing Services (including address if different from No.10a) (last name, first name, MI.): <i>Attach Continuation Sheet if necessary.</i>	
11. Amount of Payment (Check all that apply) \$ _____ <input type="checkbox"/> actual <input type="checkbox"/> planned	13. Type of Payment (Check all that apply) <input type="checkbox"/> a. retainer <input type="checkbox"/> b. one-time fee <input type="checkbox"/> c. commission <input type="checkbox"/> d. contingent fee <input type="checkbox"/> e. deferred <input type="checkbox"/> f. other, specify _____	
14. Brief Description of Services Performed or to be Performed and Date(s) of Service, including Officer(s), Employee(s), or Member(s) Contacted for Payment Indicated in Item 11. Attach continuation sheet if necessary.		
15. Continuation Sheet(s) SF-LLL-A attached: <input type="checkbox"/> YES <input type="checkbox"/> NO		
16. Information requested through this form is authorized by title 31 U.S.C. 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each failure.	Signature: _____ Print Name: _____ Title: _____ Telephone No.: _____ Date: _____	
Federal Use Only:	Authorized for Local Reproduction Standard Form-LLL	

**DISCLOSURE OF LOBBYING ACTIVITIES
CONTINUATION SHEET SF-LLL-A**

Reporting Entity: _____

Page ____ of ____

Authorized for Local Reproduction
Standard Form - LLL-A

BILLING CODES 3410-01-C; 6450-01-C; 6690-01-C; 8025-01C; 7510-01-C; 3510-FE-C; 8120-01-C; 4710-24-C;
6116-01-C; 6051-01-C; 8230-01-C; 3210-01-C; 4210-32-C; 4410-18-C; 4510-23-C; 4810-25-C; 3001-01-C; 4000-
01-C; 3820-01-C; 6560-50-C; 6820-61-C; 4310-RF-C; 6718-01-C; 4150-04-C; 7555-01-C; 7537-01-C; 7536-01-C;
6050-28-C; 4910-62-C

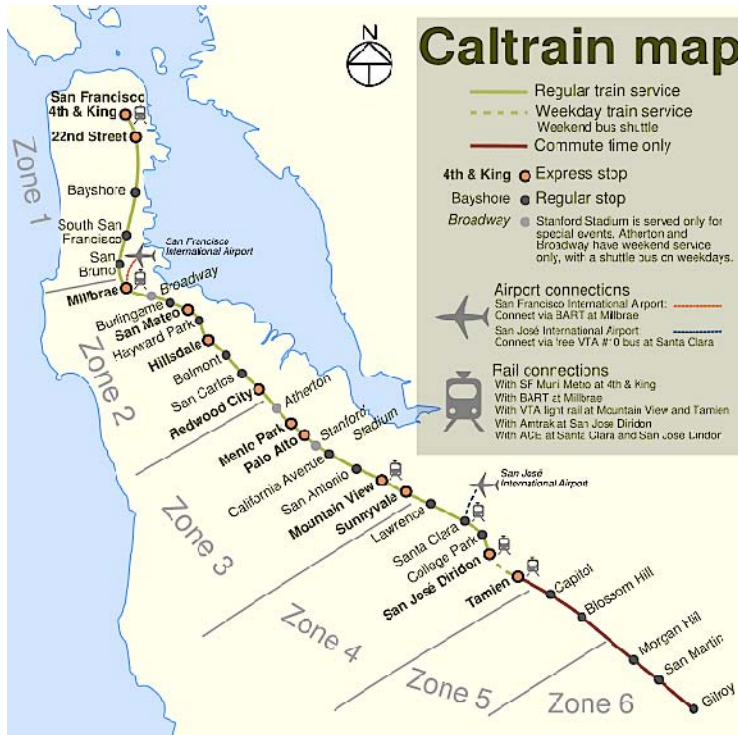
INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Use the SF-LLL-A Continuation Sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

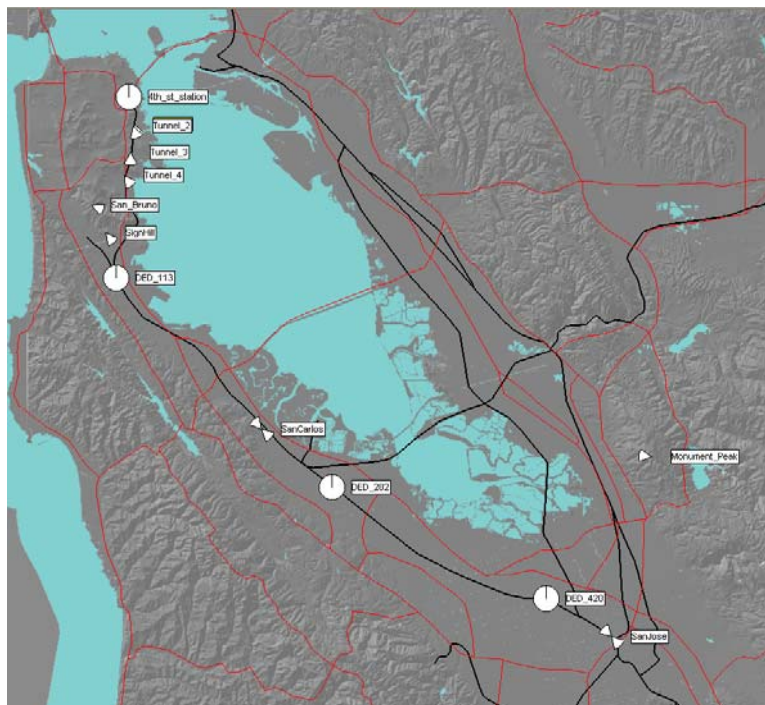
1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a follow-up report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, state and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in item 4 checks "Subawardee", then enter the full name, address, city, state and zip code of the prime Federal recipient. Include Congressional District, if known.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency. Include prefixes, e.g., "RFP-DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.
10. (a) Enter the full name, address, city, state and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influence the covered Federal action.
(b) Enter the full names of the individual(s) performing services, and include full address if different from 10 (a).
(c) Enter Last Name, First Name, and Middle Initial (MI).
11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.
12. Check the appropriate box(es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.
13. Check the appropriate box(es). Check all boxes that apply. If other, specify nature.
14. Provide a specific and detailed description of the services that the lobbyist has performed, or will be expected to perform, and the date(s) of any services rendered. Include all preparatory and related activity, not just time spent in actual contact with Federal officials. Identify the Federal official(s) or employee(s) contacted or the officer(s), employee(s), or Member(s) of Congress that were contacted.
15. Check whether or not a SF-LLL-A Continuation Sheet(s) is attached.
16. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, D.C. 20503

EXHIBIT 1 - MAPS



Caltrain Service Map



Fixed Transmitter Locations

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EXHIBIT 2: EXISTING RADIO EQUIPMENT



HT1250 Portable Radio



CM300 Mobile Radio



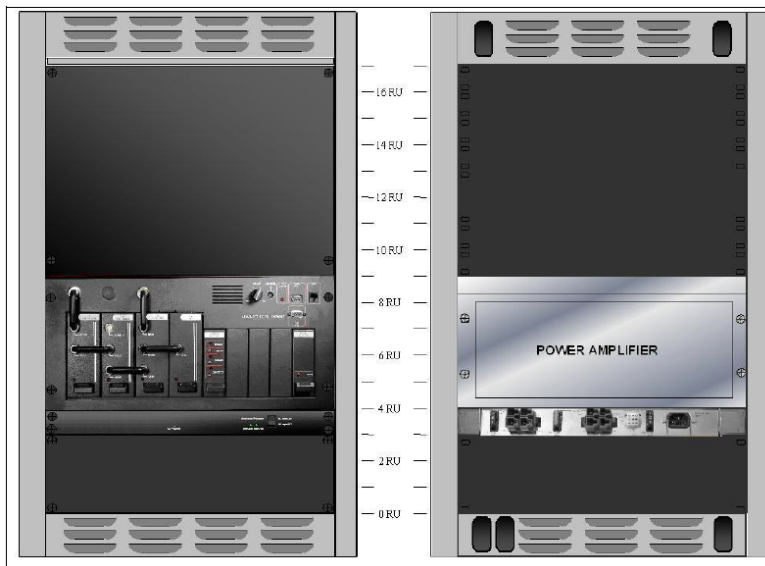
Typical Locomotive Motorola Astro Spectra radio



EXHIBIT 2: EXISTING RADIO EQUIPMENT (continued)



Typical Maintenance Vehicle Radio



Harris MASTR III Radio Base Station and power amplifier

EXHIBIT 3: AAR FREQUENCY PLAN

Channel	Freq MHz	BW kHz	Channel	Freq MHz	BW kHz
7	160.2150	25	107	160.2225	12.5
8	160.2300	25	108	160.2375	12.5
9	160.2450	25	109	160.2525	12.5
10	160.2600	25	110	160.2675	12.5
11	160.2750	25	111	160.2825	12.5
12	160.2900	25	112	160.2975	12.5
13	160.3050	25	113	160.3125	12.5
14	160.3200	25	114	160.3275	12.5
15	160.3350	25	115	160.3425	12.5
16	160.3500	25	116	160.3575	12.5
17	160.3650	25	117	160.3725	12.5
18	160.3800	25	118	160.3875	12.5
19	160.3950	25	119	160.4025	12.5
20	160.4100	25	120	160.4175	12.5
21	160.4250	25	121	160.4325	12.5
22	160.4400	25	122	160.4475	12.5
23	160.4550	25	123	160.4625	12.5
24	160.4700	25	124	160.4775	12.5
25	160.4850	25	125	160.4925	12.5
26	160.5000	25	126	160.5075	12.5
27	160.5150	25	127	160.5225	12.5
28	160.5300	25	128	160.5375	12.5
29	160.5450	25	129	160.5525	12.5
30	160.5600	25	130	160.5675	12.5
31	160.5750	25	131	160.5825	12.5
32	160.5900	25	132	160.5975	12.5
33	160.6050	25	133	160.6125	12.5
34	160.6200	25	134	160.6275	12.5
35	160.6350	25	135	160.6425	12.5
36	160.6500	25	136	160.6575	12.5
37	160.6650	25	137	160.6725	12.5
38	160.6800	25	138	160.6875	12.5
39	160.6950	25	139	160.7025	12.5
40	160.7100	25	140	160.7175	12.5
41	160.7250	25	141	160.7325	12.5
42	160.7400	25	142	160.7475	12.5
43	160.7550	25	143	160.7625	12.5
44	160.7700	25	144	160.7775	12.5
45	160.7850	25	145	160.7925	12.5
46	160.8000	25	146	160.8075	12.5
47	160.8150	25	147	160.8225	12.5
48	160.8300	25	148	160.8375	12.5
49	160.8450	25	149	160.8525	12.5
50	160.8600	25	150	160.8675	12.5

EXHIBIT 3: AAR FREQUENCY PLAN (continued)

Channel	Freq MHz	BW kHz	Channel	Freq MHz	BW kHz
51	160.8750	25	151	160.8825	12.5
52	160.8900	25	152	160.8975	12.5
53	160.9050	25	153	160.9125	12.5
54	160.9200	25	154	160.9275	12.5
55	160.9350	25	155	160.9425	12.5
56	160.9500	25	156	160.9575	12.5
57	160.9650	25	157	160.9725	12.5
58	160.9800	25	158	160.9875	12.5
59	160.9950	25	159	161.0025	12.5
60	161.0100	25	160	161.0175	12.5
61	161.0250	25	161	161.0325	12.5
62	161.0400	25	162	161.0475	12.5
63	161.0550	25	163	161.0625	12.5
64	161.0700	25	164	161.0775	12.5
65	161.0850	25	165	161.0925	12.5
66	161.1000	25	166	161.1075	12.5
67	161.1150	25	167	161.1225	12.5
68	161.1300	25	168	161.1375	12.5
69	161.1450	25	169	161.1525	12.5
70	161.1600	25	170	161.1675	12.5
71	161.1750	25	171	161.1825	12.5
72	161.1900	25	172	161.1975	12.5
73	161.2050	25	173	161.2125	12.5
74	161.2200	25	174	161.2275	12.5
75	161.2350	25	175	161.2425	12.5
76	161.2500	25	176	161.2575	12.5
77	161.2650	25	177	161.2725	12.5
78	161.2800	25	178	161.2875	12.5
79	161.2950	25	179	161.3025	12.5
80	161.3100	25	180	161.3175	12.5
81	161.3250	25	181	161.3325	12.5
82	161.3400	25	182	161.3475	12.5
83	161.3550	25	183	161.3625	12.5
84	161.3700	25	184	161.3775	12.5
85	161.3850	25	185	161.3925	12.5
86	161.4000	25	186	161.4075	12.5
87	161.4150	25	187	161.4225	12.5
88	161.4300	25	188	161.4375	12.5
89	161.4450	25	189	161.4525	12.5
90	161.4600	25	190	161.4675	12.5
91	161.4750	25	191	161.4825	12.5
92	161.4900	25	192	161.4975	12.5
93	161.5050	25	193	161.5125	12.5
94	161.5200	25	194	161.5275	12.5
95	161.5350	25	195	161.5425	12.5
96	161.5500	25	196	161.5575	12.5
97	161.5650	25	197	161.5725	12.5

EXHIBIT 4: INSTALLATION AND CUTOVER PLAN



12.5 kHz NARROWBANDING PROJECT

**Installation and Cutover Plan
Revision 1
November 16, 2010**



C&S Systems Group – XRL/CAD Rev1

11/16/2010

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1.0 SUMMARY

1.1 Purpose

The purpose of this document to provide instructions for the cutover of Caltrain's voice radio system from 25 kHz channels to "narrowbanded" 12.5 kHz channels to comply with the FCC's mandate and January 1st, 2013 deadline.

1.2 Project Scope

Caltrain has over 400 radios in its inventory consisting of portables, mobiles, locomotive radios, and base stations, all of which must be narrowbanded. Modifying such a large number of radios will require a phased approach, conducted over the course of several weeks.

1.3 Project Goal / Measure of Success

When executed correctly, the narrowbanding cutover will result in full compliance with the FCC mandate for narrowband radio operation, with minimal disruption of Caltrain's voice communications and train operations, and minimal effort on the part of Caltrain staff.

2.0 REFERENCE DOCUMENTS

Assessment of Compatibility between 25 and 12.5 kHz Channelized Marine VHF Radios, Department of Commerce, NTIA TR97-343
Ritron RCCR Clean Cab Locomotive Radio Owner's Manual Rev. B
Harris Technical Service Memo TSM31-12A, May 14, 2010
Harris base station Installation Manual MM102554V1, Rev. D, Aug 2010

3.0 PROJECT SAFEGUARDS

3.1 Mixed Mode Operations

During the cutover, wideband and narrowband radios *can* be operated together, but users may experience low audio and reduced clarity from one end of the radio link, as shown in the following table* :

	TX = 25 kHz	TX = 12.5 kHz
RX = 25 kHz	No change	Lower/degraded audio
RX = 12.5 kHz	Possible improvement	Slightly lower audio

Table 1: Effect of TX/RX Bandwidth on Audio Quality

* Derived from "Assessment of Compatibility Between 25 & 12.5 kHz Channelized Marine VHF Radios", Department of Commerce, National Telecommunications & Information Administration, NTIA TR97-343

For example, a narrowbanded (12.5 kHz) portable would have no problem receiving signals from a wideband (25 kHz) base station. However, in areas of already marginal signal coverage, that same narrowbanded portable might have trouble talking *in* (transmitting back to and reaching) the wideband base station.

The uncertainty of talk-in range depends on the degree of environmental signal fading and the prevalence of multipath propagation. Signal fading would be more pronounced in radios with antennas positioned close the ground, i.e. portables and mobiles, and less pronounced for the locomotive radios.

3.2 Mixed-Mode Field Trial

Before the narrowbanding cutover begins in earnest, Caltrain should narrowband a sample batch of portable, mobile, and locomotive radios, and deploy them to the field. Such a field trial would allow users to evaluate mixed mode radio service in actual faded signal conditions.

Recommended quantities for a mixed mode field trial are as follows. These numbers represent approximately 3% of the total radios in stock:

- 8 Portables
- 2 Mobiles
- 2 Locomotive Radios

Subjective feedback should be solicited from Caltrain narrowband radio users after two or more weeks of normal field use. Based on that feedback, Caltrain may choose to proceed with the full narrowbanding cutover, or choose to immediately implement system enhancements, such as deployment of high gain base station antennas.

3.3 Mixed-Mode Portables Test

In addition to the mixed-mode field trial, a supplemental test of narrowbanded portables is recommended. Portables are chosen for this test because of the three radio types used by Caltrain, portables already have the worst talk-in capability --- mainly due to their relatively inefficient antennas and low transmitting height above ground level.

Two portables should be tested side-by-side at any time, one wideband portable and one narrowbanded portable. The two radios should be of the same make and model and should be in the same condition, including the age and charging condition of the batteries. Because this test must occupy scarce airtime on the Road Channel, it is best conducted on the *weekend* when normal radio voice traffic is light, or during the weekday between the hours of 10 a.m. to 2 p.m.

To conduct the test, a wideband and a narrowband portable should be taken to an area of known marginal coverage, and test calls should be made to the dispatcher at the CCF. Audio quality of each end of the radio link should be rated on a scale of 1 to 5. Transmissions should be kept brief. The results of several such calls should be compiled for 5 to 10 test locations.

As in the mixed-mode field trials, Caltrain would use the test results to decide whether to proceed with narrowbanding the entire fleet of radios or to implement base station enhancements as a next step.

3.4 Order of Narrowbanding Conversion

During the cutover, in order to minimize the impact of reduced audio quality, it is recommended that radios be narrowbanded in the following order. (Radio types are shown with their quantities.)

New portables (130)

Old portables (125)

New mobiles (46)

Old mobiles (13)

New locomotive radios (12)

Old locomotive radios (57)

Base stations (18)

4.0 CUTOVER OF PORTABLES

4.1 Magnitude of Task

Nine different models of portable radio are currently in use by Caltrain.
Quantities are as follows:

- 255 total portables in use
- 125 which can be reprogrammed (mostly Motorola HT1250s)
- 130 portables which must be replaced

The most like replacement model will be the Motorola HT1250.



Figure 1: Motorola HT1250 Portable

4.2 Estimated Effort

Receive, unpack, inspect, and charge 130 new portables: 2 days

Program, bench test, field test prototype portable: 3 days

Program and bench test remaining new portables: 5 days

Deploy new portables to field, solicit feedback: 2 days

Reprogram and bench test old HT1250 portables: 5 days

4.3 Programming Process

The Motorola HT1250 portables must be programmed (or reprogrammed in the case of old portables) using proprietary software available from the manufacturer. First-time setup of a programming shop typically requires a day or more of user familiarization, after which, radios can be programmed quickly in an assembly line-style process.

During the programming effort, Caltrain should continue to use their 125 old, non-reprogrammable wideband portables in the field. These same portables should not be retired until after the narrowbanding cutover of the base stations.

5.0 CUTOVER OF MOBILE RADIOS

5.1 Magnitude of Task

Four different models of mobile radio are installed in Caltrain vehicles. Quantities are as follows:

- 59 total mobiles in use
- 13 Motorola CM300s which can be reprogrammed
- 46 mobiles which must be replaced

The most like replacement model will be the Motorola CM300.



Figure 2: Motorola CM300 Mobile

5.2 Estimated Effort

Receive and program 46 new mobile radios: 5 days

Swap mobiles in vehicles: 5-10 days

Program and bench test 13 old mobiles: 3 days

5.3 Programming Process

The Motorola CM300 mobiles must be programmed in a manner similar to the portables. To minimize down time of the service vehicles, the radios are typically programmed and tested on the bench top, and then quickly installed in an out-of-service vehicle.

5.4 Mobiles Deployment

Old mobile radios, if they are of the programmable type, should be logged by serial number and stored at the shop for later re-programming. If the mobile is not programmable, it should be logged and stored for contingency use or for later resale by Caltrain.

As an additional fallback contingency, users of a vehicle with a newly-installed narrowband mobile should be issued one of the old wideband portables.

6.0 CUTOVER OF LOCOMOTIVE RADIOS

6.1 Magnitude of Task

Two different models of locomotive radio are in service with Caltrain. Quantities are as follows:

- 69 total locomotive radios in use
- 12 Motorola Astro Spectras which can be reprogrammed
- 57 locomotive radios which must be replaced

The most like replacement model will be the Ritron Clean Cab radio.



Figure 3: Ritron Clean Cab Radio

6.2 Estimated Effort

Receive and program 57 new locomotive radios: 5 days

Swap mobiles in locomotives: 4-5 days

Program and bench test 12 old mobiles: 3 days

6.3 Programming Process

The replacement Ritron Clean Cab radios are programmed via Ritron software and a serial interface cable to a PC. The old Motorola Astro Spectra radios must be programmed in a manner similar to the portables.

6.4 Deployment

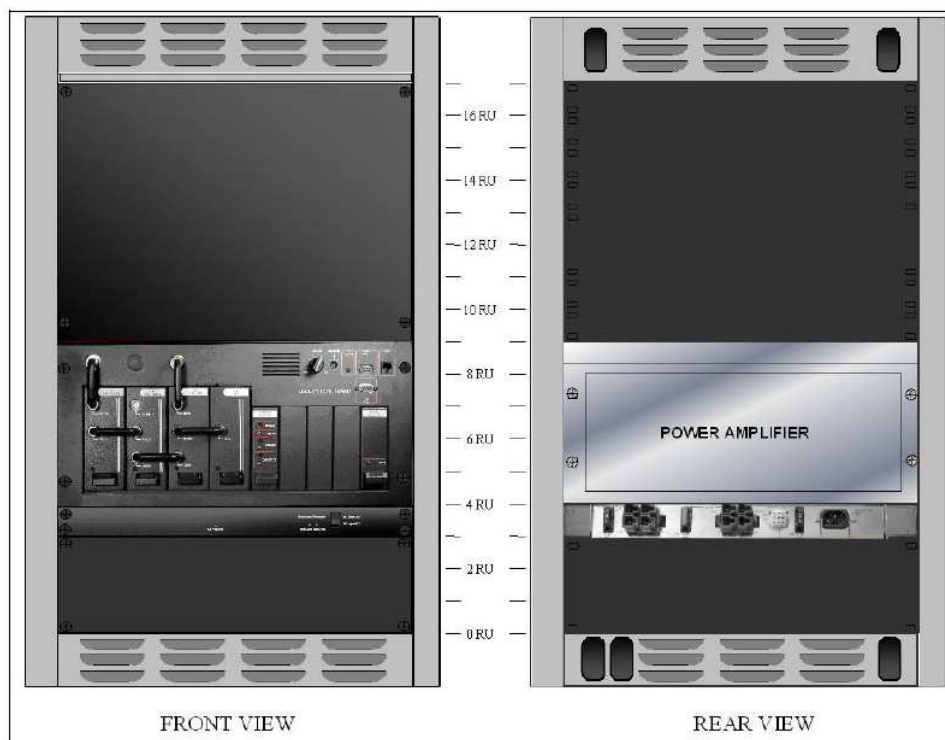
No changes in cabling or mounting hardware in the locomotives are required to accommodate the new radios. The time required to swap out the old wideband radios for the newly programmed narrowband radios will be minimal.

7.0 CUTOVER OF BASE STATIONS

7.1 Magnitude of Task

Caltrain operates 18 Harris Master III radio base stations. Each base station must be narrowbanded by swapping out components, updating the operating software, and running an alignment and test procedure.

The base stations are rack-mounted and heavy, and interface with other rack-mounted modules such as voting receivers. Therefore, base station narrowbanding should be completed on-site, rather than on the bench top.



Single Channel MASTR III ADC Conventional Base Station in 37" Cabinet

Figure 4: Harris Master III Base Station

7.2 Preliminary Effort

Test equipment sourcing and familiarization: 2-3 days

Narrowband, test and align first base station: 5 days

Narrowband subsequent base stations: 15 days (1-2 base stations per day, considering travel time to and from sites)

7.3 Special Tools and Test Equipment

Base station narrowbanding is considerably more complex and time-consuming compared to the previously described tasks. In addition to an

IBM-compatible PC, the following special tools and test equipment are required:

- Radio service monitor
- RF power meter
- Dual directional coupler
- RF Dummy load

Specific steps in the station test and alignment are covered in Harris document MM102554V1, Rev. D. All warnings and instructional notes contained therein must be obeyed to avoid permanent damage to the base stations and test instruments, or injury to personnel.

NOTE: Barring any unforeseen technical problems, base station narrowbanding and cutover represent the last critical step in the narrowbanding cutover process.

7.4 System Acceptance Tests

After performing manufacturer-specified alignment and test procedures, the following additional test should be performed:

- Received signal measurement at 50 feet
- Talk-out, talk-in audio quality
- Voting receiver functionality
- (Optional) System coverage tests

More details on these tests would be included in a Detailed Test Plan --- not part of this document.

8.0 CONTINGENT COMMUNICATION AND FALLBACK

8.1 Contingency Communications

Starting with the narrowbanding of the mobiles until the successful completion of the System Acceptance Tests, locomotive engineers and other critical field staff should have an independent means of communication to the Central Control Facility (CCF).

Among the commercial wireless services, the recommended choice for backup communications would be Nextel. Other cellular/PCS services connect so slowly on an initial push-to-talk call (including Sprint which owns Nextel) that they should be considered inadequate for Caltrain's purposes. Nextel service has been criticized in the past for having weak coverage areas, so Nextel coverage should be verified inside the CCF and along the Caltrain alignment before Nextel phones are purchased and deployed.

8.2 Backup Role of Wideband Portables

Prior to base station narrowbanding, should it become necessary to revert to wideband (25 kHz), the old wideband portables will play a key role. For this reason, all portables taken out of service should be kept in a charged and ready-to-issue condition.

Records should be maintained throughout the narrowbanding cutover to track the whereabouts of all “retired” portables and prevent their loss and their inability to be re-issued. Similar recordkeeping should be maintained for mobiles and locomotive radios.

8.3 Special Considerations for Base Stations

Base station narrowbanding had been reserved as the last step in the cutover process, as it is the most complex, most system-affecting, and the most difficult to undo. Should the project manager give the order to revert back to 25 kHz operation, Caltrain should restore the base stations as a first step.

Base station restoration will include replacing the original PROMS and I.F. modules, updating the base station firmware, and realigning the base station per the OEM’s referenced procedure. As a precaution, original and replacement hardware modules should be safely stored in static protection packaging, preferably on site with the respective base stations.

8.4 Considerations for Portables, Mobiles, and Locomotive Radios

Portable, mobile, and locomotive radios can be restored to wideband service if necessary by reprogramming. The programming shop software and hardware (i.e. interface cables and Radio Interface Box) should be kept at the ready, should it become necessary to restore the radios to wideband operation.

9.0 PROJECT COMPLETION

The Caltrain 12.5 kHz Narrowbanding Project should be considered complete when all of Caltrain’s narrowband-capable radios have been programmed, and the last wideband radio removed from service. Post-cutover audio and signal strength testing and system optimization are recommended.

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EXHIBIT 5: DETAILED TEST PLAN



12.5 kHz NARROWBANDING PROJECT

Detailed Test Plan
November 22, 2010



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1.0 INTRODUCTION

1.1 Purpose:

Caltrain must narrowband its 160 MHz-band radios by January 1st, 2013 to comply with the Federal Communications Commission mandate. Due to the magnitude of the narrowbanding task, Caltrain will need to assign the work to an outside contractor or radio shop. Certain tests will be required to verify the Contractor's work, to ensure the narrowbanded radios are functioning correctly, and to guarantee that the radio system as a whole is performing at its optimal level. This document specifies the tests needed to achieve the aforementioned goals.

1.2 Recommended Tests:

The recommended tests are the following:

Test	Purpose
Benchtop TX/RX Test	Verify narrowband function of locomotive, mobile and portable radios
Base Station Test and Alignment	Verify base station narrowband operation; optimize narrowband transmit functioning; prevent generation of harmful interference
Far-field Base Station Test	Check the radio base stations' TX capability with actual antenna, under normal field conditions
Voting Receiver Alignment	Optimize system talk-in capability
System-Wide Coverage Test	Document the coverage of the narrowbanded base stations and identify areas for improvement.

1.3 Expected Effort:

The testing process is expected to last from six to ten weeks, and will require the full-time efforts of two to three staff members experienced with mobile radio operation and testing.

1.4 Special Working Conditions:

Due to the 24/7 operation of Caltrain, the radio test as defined herein shall be coordinated with JPB, and conducted in such a manner as to not disturb train operations. It should be expected that some work tasks may need to be conducted during nighttime and/or weekend hours. Live transmitter testing may also require the use of a screen room. The Contractor shall adhere to JPB's Site-Specific Work Plan (SSWP) process prior to commencing any onsite work.

2.0 REFERENCE DOCUMENTS

The following documents were used in the preparation of this Detailed Test Plan:

- Ritron RCCR Clean Cab Locomotive Radio Owner's Manual Rev. B
- Harris Base Station Installation Manual MM102554V1, Rev. D, August 2010
- Ma-Com Analog Voter System Maintenance Manual LBI-38676C, 2002
- Theodore S. Rappaport, *Wireless Communications: Principles and Practice (2nd Edition)*, Dec 31, 2007
- W.C.Y. Lee and Y. S. Yeh, "On the Estimation of the Second-Order Statistics of Log Normal Fading in Mobile Radio Environment", IEEE Trans. Comm., vol. 22, June 1974
- Telecommunications Industry Association TSB88.1-C: Wireless Communications Systems Performance in Noise and Interference Situations, February 2008
- TIA-603-D, *Land Mobile FM or PM Communications Equipment Measurement and Performance Standards*, June 2010

3.0 BENCHTOP TESTS OF LOCOMOTIVE, MOBILE, AND PORTABLE RADIOS

3.1 Purpose

The purpose of the benchtop radio test is to check the narrowband performance of the locomotive, mobile, and portable radios prior to their deployment to the field. At the discretion of Caltrain, the tests may be performed on *every* locomotive, mobile, and portable radio, or just on a representative sample.

3.2 Recommended Test Equipment

Communications Test Set	HP8920B or equivalent
Dual Directional Coupler	20dB, Narda, HP, or equivalent
RF Dummy Load	50Ω, 150 Watts
Coaxial Attenuator	50Ω, 10dB, 100 watts
Test Antenna	50Ω, 0dBd gain, tuned for 160 MHz resonance

3.3 Receiver Tests

The following TIA-603-D receiver tests are recommended:

- 2.1.4 Reference Sensitivity (SINAD)
- 2.1.5 Signal Displacement Bandwidth

3.4 Transmitter Tests

The following TIA-603-D transmitter tests are recommended:

- 2.2.1 Conducted Carrier Output Power Rating
- 2.2.2 Carrier Frequency Stability
- 2.2.3 Modulation Limiting
- 2.2.17 Radiated Power Output
- 2.4.10 Transmitter Modulation Limiting

4.0 BASE STATION TEST AND ALIGNMENT

4.1 Overview

This section describes the procedures for the test and alignment of Caltrain's radio base stations after the completion of narrowbanding. The procedures are based on the sections of the Harris Base Station Installation Manual which are applicable to Caltrain's analog base stations. The work shall be performed on-site at each of Caltrain's base station locations.

4.2 Scope

Caltrain currently operates 18 Harris MASTR III radio base stations. The manufacturer-recommended tests for these base stations are: Line Output Level, Line Input Level, and Line Cancellation. The domain for these three settings is the Interface Board, and all adjustments are "softpot" settings.

4.3 Recommended Test Equipment*

Communications Test Set	HP8920B or equivalent
Dual Directional Coupler	20dB, Narda, HP, or equivalent
RF Dummy Load	50Ω, 150 Watts
Coaxial Attenuator	50Ω, 10dB, 100 watts
IBM-compatible computer	Equipped with serial port
Programming cable	RS-232, with 9-pin connectors
Harris Extender Boards	188D5338G1, 188d5338G2, EA24877-0001
MASTR III Programmer	Harris TQ3353 software
MASTR Utility Programmer	Harris TQ0619 (MASTRUTL) software

4.4 Test and Alignment Steps

The testing and alignment of the Harris base stations consists of setting a series of potentiometers to adjust frequency deviation, line output, and transmitted power output. Step-by-step instructions on how to perform these tests can be found in the referenced Harris document.

The following tests from the Harris manual are applicable to the Harris MASTRIII base stations in service with Caltrain:

Section	Title/Description
• 9.5.1	Preparation
• 9.5.2	Station Potentiometer Defaults
• 9.5.4	Setting the Transmit Limiter Repeated Audio – Transmit Pot (TX)
• 9.5.6	Setting the Line Input Sensitivity – DSP Line Input (DLI)
• 9.5.7	Setting the DSP Compressor Limits
• 9.5.9	Line Output (LO) Pot
• 9.5.12	SINAD Test
• 9.5.13	Squelch Adjustment

- 9.5.14 Transmit Forward and Reverse Power

* Where the manual also recommends the use of an RF power meter capable of 3% accuracy, but the same tests can be performed by the Communications Test Set in conjunction with a 1dB, 100 watt attenuator.

4.5 Documentation Method

Section 12.6 of the referenced Harris document “Repeater Test Data” includes a printable page for the operator to record levels and potentiometer settings. This data sheet should be filled out as the tests are performed, and kept as a reference for testing the next base station. A copy of the completed data sheet should be left on site with the base station.

5.0 FAR FIELD RADIO TESTS FOR RADIO BASE STATIONS

5.1 Purpose

The far-field radio test is conducted to verify the effective radiate power (ERP) and audio quality produced by the individual base station transmitter, while eliminating performance variables such as propagation obstructions and interference.

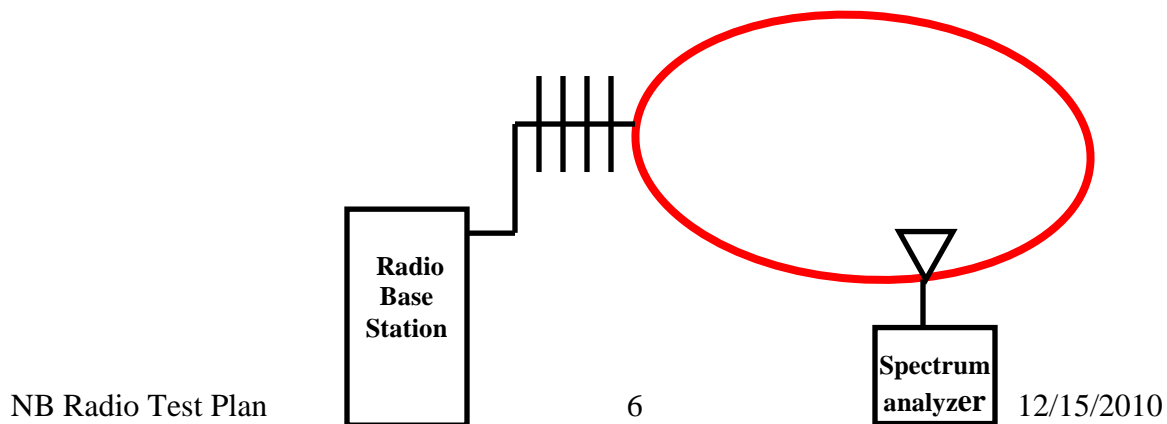
5.2 Required Test Equipment

Communications Test Set or Spectrum Analyzer
Antenna, known gain (preferably 0 dBd), 160 MHz-resonant
Narrowbanded portable radio (for doing audio checks)
Measuring tape, wheel, or laser rangefinder

5.3 Test Set-up

To measure signal strength accurately, the test receiver (or spectrum analyzer) must be positioned in the main radiating lobe of the transmitting antenna. Caltrain’s base stations transmit on Yagi antennas which can have a vertical half-power beamwidth of as little as 46 degrees. For a test receiver to be in the main lobe, it must be positioned at a horizontal distance from the tower of 2.5 times the antenna height. For example, if the base station antenna is 50 feet above ground level, the test receiver would have to be positioned 125 feet away from the tower to obtain an accurate reading.

Figure 1: Far Field Test Set-up



5.4 Received Signal Strength Calculation

The formula to calculate received signal strength (RSS), given a certain transmitter power and antenna gain is given as:

$$\text{RSS} = \text{TX power} - \text{Feedline Loss} + \text{Antenna Gain} - \text{Free Space Loss (FSL)}$$

$$\text{Where FSL @ 160.815 MHz} = 20 * \log(\text{distance in feet}) + 2 \text{ dB}$$

Given a base station transmit power of 10 watts (+40 dBm), feedline loss of 1 dB, base station antenna gain of 6 dBd, and a receiver antenna gain of 0 dBd, the theoretical RSS would be:

$$\begin{aligned} \text{RSS} &= 40 \text{ dBm} - 1 \text{ dB} + 6 \text{ dBd} - [20 * \log(125 \text{ ft}) + 2 \text{ dB}] \\ &= \mathbf{+1 \text{ dBm}} \end{aligned}$$

Therefore, if the received signal strength differs from the above level by more than 3 dB, the test technician should suspect a problem with the base station antenna or feedline.

6.0 VOTING RECEIVER ALIGNMENT

6.1 Purpose

The purpose of the Voting Receiver Alignment is to optimize the talk-in radio coverage of the system by checking the receivers and the leased telephone lines connecting them to the Voting Selector Panel. This procedure is conducted by two test technicians, one stationed at the voting receiver (collocated with one of the base stations), and the other at the CCF.

6.2 Required Test Equipment Manufacturer/model

RF Signal Generator	HP8920B Communications Test Set or equivalent
Wideband Audio Voltmeter	HP8903B Audio Distortion Analyzer or equivalent or Distortion Analyzer

6.3 Test Procedure

Step-by-step instructions for the Voting Receiver Alignment are found in reference document *Ma-Com Analog Voter System Maintenance Manual*. The procedure is summarized here.

The technician at the voting receiver injects a signal into the receiver (160.815 MHz, at -47 dBm, at 1.5 kHz deviation). A second technician at the voting selector adjusts the line level to 0 dBm.

Next, the voting receiver is unscelched to produce noise. The line level at the voting selector is adjusted to -20 dBm. The voting receiver is scelched again at the desired level, and the line level at the voting selector for the resultant 2175 Hz

“idle” tone at the voting selector is set for -20 dBm. These steps are repeated for each of the voting receivers.

7.0 SYSTEM-WIDE COVERAGE TEST

7.1 Overview

In the system-wide coverage test, continuous signal strength and audio quality data are collected along the Caltrain alignment, and that data is later plotted onto an area map. The system-wide coverage test will allow Caltrain to evaluate and document radio coverage, and to determine the best locations for any additional transmitters or receivers.

The system-wide coverage test is intended to duplicate the experience of the end user by checking all performance-affecting system variables, i.e. transmitters, receivers, antennas, and radio propagation conditions.

<u>Transmitters</u>	<u>Receivers</u>	<u>Antennas</u>	<u>Propagation</u>
TX power	UL Interference	Gain	Terrain
Modulation	Voting selector	Feedlines	Buildings
Center Freq	Line levels	Splitters	Multi-path
Deviation	Line noise	Azimuths	Trees
DL Interference	Squelch operation	Obstructions	Tunnels

Table 1: Performance-Affecting System Variables

7.2 Drive Test Equipment

The two most popular drive test software kits for land mobile radio drive testing are made by Summitek Instruments and by Survey Technologies. The Summitek Instruments offering, called “Oasis” requires the use of a third party signal prediction/plotting software, e.g. EDX SignalPro. By comparison, the more costly Survey Technologies product, called “Field Test 6” has built-in mapping and data plotting capability. Both the Summitek and Survey Technologies products require the use of a laptop computer, a spectrum analyzer, and a GPS receiver.

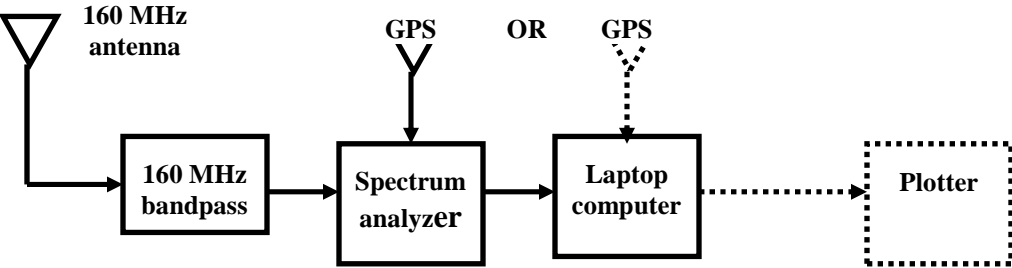


Figure 2: Field Test Hardware Set-up

7.3 Data Collection

In the system-wide coverage test, a technician would take measurements of received signal strength (RSS) and subjective audio quality along the entire 77 mile Caltrain alignment. The technician can set up the test equipment in a train or in a high-rail vehicle. The high-rail option has the advantage of being able to travel at lower speeds, and to possibly repeat data points.

Unlike cellular and PCS networks whose base stations continuously transmit on a control or pilot channel, Caltrain's base stations must be keyed, i.e. made to transmit, for every measurement. For this purpose, a staff member located at the CCF can transmit either a tone or voice message, and the technician in the field would respond by transmitting a brief acknowledgement.

7.4 Data Sample Size

In a land mobile radio environment, where multi-path propagation is prevalent, the operator can expect to see a deep "Rayleigh" signal fade at travel intervals of $\frac{1}{2}$ wavelength (represented by λ), or every 3 feet for a 160 MHz radio signal. For portable radios, a Rayleigh fade will cause the received radio signal to dip approximately 9dB from its maximum value. (Fading may be less severe for locomotive radios, whose antennas are located higher above ground level.)

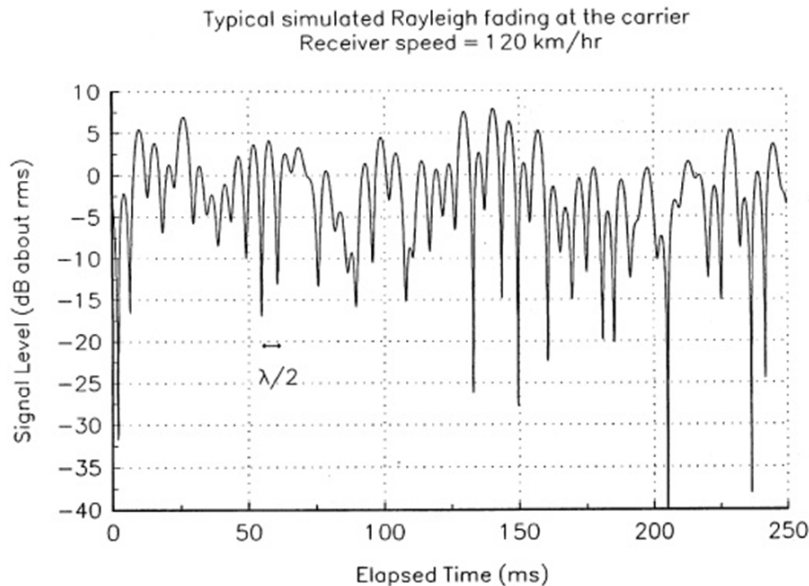


Figure 2: Rayleigh Fading[†]

Data points taken where received signal is experiencing a short Rayleigh fade may not paint a true picture of available coverage. Therefore, several samples of

[†] Theodore S. Rappaport, *Wireless Communications: Principles and Practice (2nd Edition)*, Dec 31, 2007

received signal must be taken and averaged. Following Lee's Method[‡], the recommended sampling distance is every 40λ .

For the Caltrain radios which operate at approximately 160 MHz, this distance of 40λ will be traveled in 163 seconds *for every mile per hour of speed*. For example, if the test vehicle is traveling at 30 miles/hour, the base station transmitter must be keyed for 5-1/2 seconds (163 seconds/30 mph) in order to obtain a representative signal sample.

7.5 Data Resolution

In order to plot a sufficient amount of data points on a map, i.e. provide for sufficient resolution, a new sample reading should be taken approximately every 1/8th mile, or every 450 seconds for every mile per hour of speed. For example, for a test vehicle traveling at 30 miles/hour, data samples should be recorded every 15 seconds (450sec/30 mph).

Regardless of the speed of the test vehicle, the transmitter must be keyed about 1/3 of the time ($163 \text{ s}/450 \text{ s} = 36\%$) in order to obtain both representative sampling and sufficient data resolution.

7.6 Subjective Audio Testing

Audio quality can be tested by conducting a series of two-way radio calls at regular intervals along the Caltrain alignment. Talk-out or talk-in coverage can be evaluated by having one operator either (in the field or at the dispatch center) transmitting a series of spoken 5-counts over the air, for example, "Radio Service testing 1, 2, 3, 4, 5 . . . 5, 4, 3, 2, 1. End of test." A second operator at the other end of the radio link would record his/her perception of the audio quality.

The table below describes the recommended subjective audio ratings, using a scale of 1 to 5.

DAQ Delivered Audio Quality	Faded Subjective Performance Description
1	Unusable. Speech present but unreadable
2	Understandable with considerable effort. Frequent repetition due to Noise/Distortion
3	Speech understandable with slight effort. Occasional repetition necessary due to Noise/Distortion
4	Speech easily understood. Occasional Noise/Distortion
5	Speech easily understood

Table 2: Ratings for Subjective Audio Testing

[‡] W.C.Y. Lee and Y. S. Yeh, "On the Estimation of the Second-Order Statistics of Log Normal Fading in Mobile Radio Environment", IEEE Trans. Comm., vol. 22, June 1974

The recorded subjective ratings would be compiled and plotted on a map, or used as a cross-check to validate signal strength readings.

A SINAD test can also be conducted to evaluate received audio quality. SINAD, an abbreviation for “Signal / Noise And Distortion”, is used primarily on the benchtop as a test of receiver sensitivity, and is generally not recommended for an assessment of performance under signal-faded conditions.

7.7 Data Post Processing

After collection, the drive test data should be plotted on a reference map, both for the purpose of immediate analysis, and as a baseline record of coverage. Software tools such as EDX SignalPro can also be used to plot the in-field signal measurements.

EDX SignalPro will accept drive data in the following formats:

- EDX format
- Chase Electronics format
- Survey Technologies format
- Grayson Electronics format
- Comarco Wireless Technologies Inc. (CWT) format

Once the data file has been imported into the software plotting tool, it can be plotted by colors to represent threshold values. The following threshold values and plot colors are recommended:

RSS	Plotted color
< -110 dBm	Blue
-110 to -100 dBm	Violet
-100 to -90 dBm	Red
-80 to -80 dBm	Orange
-80 to -70 dBm	Yellow
> -70 dBm	Green

Table 3: Received Signal Strength (RSS) Plotting Thresholds

If a SINAD is performed in the field, the following plotting thresholds are recommended:

SINAD	Plotted color
< 12 dB	Blue
12 to 17 dB	Red
17 to 20 dB	Orange
> 20 dB	Green

Table 4: SINAD Plotting Thresholds

A SINAD value of 17 corresponds to a Delivered Audio Quality (DAQ) rating of 3. Therefore, using the above table, any plotted data points appearing in red or blue font would indicate areas needing improvement.

7.8 Data Post Processing

After collection, the drive test data should be plotted on a reference map, both for the purpose of immediate analysis, and as a baseline record of coverage.

Software tools such as EDX SignalPro can also be used to plot the in-field signal measurements.

8.0 CONCLUSION

The system-wide coverage test is the logical last step in certifying the performance of Caltrain's narrowbanded radio system. If coverage is inadequate, remedies can be implemented such as upgrading of base station antennas or deploying new base stations in the areas of weakest coverage. Ongoing coverage tests are also recommended as part of regular system maintenance.

EXHIBIT 6: SITE SPECIFIC WORK PLAN (SSWP) – TEMPLATE

SITE SPECIFIC WORK PLAN

Work Plan #				
Site Specific Work Plan				
Work Date				
Duration				
Scope of Work				
Location				
Traffic				
Track				
Work Window				
Additional Conditions				
Nearest Dist. To Track				
Emergency Contact:				
Basic Crew		Equipment		
Foreman				
Watchman				
Operator				
Painter				
Laborer				
Additional Crew				
Amtrak Flagman				
Subcontractor		Equipment		
Additional Equipment				
Tools				
Materials				
Work Procedures				
1				
2				
3				
4				
Description of Work				

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NARROWBANDING OF VOICE RADIO SYSTEM

EXHIBIT 7

RAILROAD VEHICLE WORKMANSHIP AND MATERIALS SPECIFICATIONS

Final Draft
March 31, 2011

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SECTION ONE - GENERAL

1. OBJECT

- 1.1. Peninsula Corridor Joint Powers Board (JPB) requires that work performed on its railroad vehicles to be done in a manner that assures a high level of reliable performance, ease of maintainability with low lifecycle cost. The Contractor shall conform to applicable standards, APTA guidelines and these specifications in designing and implementing its application of Cameras On Trains equipment to Caltrain's fleet of railroad vehicles.

2. GENERAL

- 2.1. The various types of railroad vehicle rolling stock used by Caltrain are identified in the Contract Scope of Work and further described in Part X, Exhibit X of the RFP package. The requirements provided by this specification are applicable to all of the identified vehicle types.
- 2.2. All locomotive work shall be performed at a Caltrain facility that will be in accordance with schedule determined by Caltrain. The Contractor shall plan work to minimize transportation and travel charges.
- 2.3. The Contractor shall clean and inspect for correct operation all components in the cabinets and areas of the train where it will be performing work to implement Cameras on Trains equipment on the vehicles, as agreed with Caltrain/JPB.
- 2.4. The Contractor shall be responsible for the disposal and/or disposition of any equipment permanently removed from the locomotives and cabcars. The Contractor shall submit a Materials Disposal/Disposition plan to Caltrain/JPB for approval. The Contractor shall bear all disposal fees.
- 2.5. The Contractor shall supply updates to Caltrain documentation which shall include, but are not be limited to, the operating manual, maintenance manuals, parts catalog, schematics, drawings, and piping diagrams, if different from the original design.

3. INSTALLATION

- 3.1. All installation work shall be performed in accordance with the requirements of the Workmanship, Process, Materials, and applicable standards and the APTA guidelines.

4. CARBODY REPAIRS

- 4.1. Any damage to carbody panels and/or hatches caused by the Contractor at any time during the removal, replacement, and testing of the Cameras on Trains equipment until acceptance by Caltrain/JPB, shall be the responsibility of the Contractor to repair, replace, and/or repaint as required.

5. ABBREVIATIONS USED IN THE SPECIFICATION

AAR	Association of American Railroads
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
APTA	American Public Transportation Association
ASA	American Standards Association
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing Materials
AWS	American Welding Society
EPA	Environmental Protection Agency
FRA	Federal Railway Administration
LDVR	Locomotive Digital Video Recorder
IEEE	Institute of Electrical and Electronics Engineers
IFI	Industrial Fasteners Institute
LAHT	Low Alloy High Tensile
MIL-STD	Military Standard
NECS	National Electrical Code Standard
NFPA	National Fire Protection Association
OEM	Original Equipment Manufacture
SAE	Society of Automotive Engineers

END OF SECTION ONE

SECTION TWO -WORKMANSHIP, PROCESS, MATERIALS, AND STANDARDS

1. GENERAL

1.1. Quality

- 1.1.1. All materials used in the manufacture and construction of the new Cameras On Trains equipment shall be generally accepted in the industry and conform to the requirements of this specification.
- 1.1.2. All workmanship shall conform to the best manufacturing practices in all respects.
- 1.1.3. This section shall be applicable to all new work applied to or installed on the locomotive whether furnished by the Contractor or by any of its suppliers. Replacement of parts in kind from OEM or other authorized suppliers with ISO 9000 certification is deemed to be in compliance with this section.
- 1.1.4. Accordingly, all of the requirements of this Section shall apply to the internal design and construction of equipment furnished by suppliers.
- 1.1.5. Materials or equipment substitutions proposed by the Contractor shall be secured by written approval of Caltrain prior to making the substitution.

1.2. Standard

- 1.2.1. Unless otherwise specified, all materials shall conform to AAR, APTA, ANSI, ASME, AISI, FRA, IEEE and/or ASTM Specifications.
- 1.2.2. Threaded fastenings and other standard machine elements shall conform to ANSI standards.
- 1.2.3. Metric threads shall not be used without written Caltrain approval for each specific application.
- 1.2.4. Inclusion of a material or method in this Section does not indicate approval for application or use in a specific situation. When a material or method is specified in this Section, this Section shall be applicable. However, specific requirements detailed in appropriate Technical Specifications take precedence over this Section.

1.3. Marking

- 1.3.1. All new materials intended for use in the application of Cameras On Trains equipment to Caltrain's railroad vehicles shall be marked or stored so as to be readily identified, and shall be adequately protected during handling and storage.
- 1.3.2. Rejected material shall be clearly marked and stored in an area specifically designed for that purpose. Rejected material shall remain "unavailable for use" until documented disposition is approved by Caltrain.

2. JOINTING AND FASTENINGS

2.1. General

- 2.1.1. Certain combinations of materials shall require particular care in joining to avoid the possibility of dissimilar corrosion materials.
- 2.1.2. Extreme care shall be exercised in joining materials or components to ensure that the finished product is free from rattles and objectionable noises.

2.2. Fastenings

- 2.2.1. All new fasteners must meet the requirements of 15 CFR Part 280, Fastener Quality.
- 2.2.2. No protruding screws, mounting bolts or similar items shall be permitted on the cameras, LDVRs, and microphones, other than those appointments, which can be built into the structure in no other manner.
- 2.2.3. All exposed flat, pan, or oval head screws shall be stainless steel, unless otherwise specified, and shall be of the cross-recessed type.
- 2.2.4. At least 1½ screw threads shall be visible beyond all nuts. When used without elastic stop nuts, bolts shall not project more than 1½ threads plus ¼ inch (6 mm) for bolts ¼ inch (6 mm) diameter or less and shall not project more than eight (8) threads for larger diameter bolts. With elastic stop nuts, bolt threads shall not project more than ¼ inch (6.4mm), regardless of bolt size.
- 2.2.5. Screws, bolts and nuts shall conform to ANSI and shall be zinc plated or approved equivalent, unless otherwise specified. Cadmium plating is prohibited.
- 2.2.6. Self-locking nuts shall be used throughout where practical.
- 2.2.7. Self-tapping screws shall not be used in the areas requiring dismantling for servicing.
- 2.2.8. When bolts are used to secure apparatus and the bolt head is inaccessible, a mechanical locking device shall be used to prevent the bolt head from turning when the nut is being applied or removed.
- 2.2.9. When nuts are inaccessible, a mechanical locking device shall be used or the nuts may be carefully welded in place.
- 2.2.10. Where rows of inaccessible bolt fastenings are required, a tapped stainless steel plate with a minimum thickness of 0.375 inches (10 mm) shall be welded to the supporting structure.
- 2.2.11. All holes shall be drilled using the minimum practical hole size compatible with fastener employed.

2.3. Torque Specs

- 2.3.1. All safety related fasteners, including all fasteners exposed to fatigue loads shall be torqued to a minimum preload equal to seventy-five (75) percent of

their proof load and “torque striped” by paint or other approved method after being torqued. All other fasteners shall be torqued so that they do not loosen in service.

2.3.2. Fastener installation torque for standard bolts with standard or heavy hex nuts may be calculated from IFI Fastener Standards, 5th Edition, 1970 equations using torque coefficient (“K”) values of 0.18 for unplated, oiled, or waxed threads and 0.15 for plated threads that are also waxed or oiled. Locknuts shall be torqued in accordance with their manufacturer’s recommendations or the Contractor may conduct tests to determine installation torque. For special nuts or bolts requiring “torque striping”, bolt torque-tension tests may be required to verify that the installed preload is equivalent to seventy-five (75) percent of the proof loads.

2.4. Plating

2.4.1. Zinc plating conforming to the latest revision of ASTM Specification A165, Type NS, shall be required on fasteners not exposed to view.

2.4.2. Cadmium plating is prohibited.

2.5. Cleaning

2.5.1. Where metal is welded, riveted, or bolted to metal in the locomotive structure, contact surfaces shall be free of dirt, grease, rust, and scale and shall be coated, except for stainless steel parts, with a suitable metal base primer which will not interfere with later enamel or lacquer paint applications.

2.6. Coating

2.6.1. When refurbishment, modification and/or replacement results in exposed surfaces of uncoated metal except for stainless steel, it shall be given one (1) heavy coat of an approved base primer and one (1) coat of an approved sealer.

2.7. Sealant

2.7.1. Unless otherwise recommended by the sealant manufacturer, a single general purpose sealing compound shall be used.

2.7.2. The sealant shall have superior metal adhesive properties over which the specified paints can be successfully applied.

3. STAINLESS STEEL

3.1. Type

3.1.1. This Specification covers AISI Types 201, 202, 301, 302, 304, 430 and Allegheny Ludlum Type 363 stainless steels.

3.1.2. Only low carbon stainless steel shall be used for major structural fabrications and other highly stressed components.

3.1.3. Certifications by the stainless steel supplier and its application by the Contractor (or fabricator) shall be required.

3.2. Physical Properties

3.2.1. It shall be the responsibility of the Contractor to ensure that all material for each use shall be of uniform strength and quality in accordance with AISI Standards.

3.3. Gauge Tolerance

3.3.1. Standard industrial tolerances or better shall be acceptable in material coils and sheets.

3.4. Buffing and Polishing

3.4.1. Buffing and polishing of stainless steel, where required, shall be done in an approved manner and without the use of any composition containing iron or iron oxide.

3.5. Finish

3.5.1. Stainless steel in locations to be painted shall be given a #36 grit finish using a belt sander or similar tool.

3.5.2. Stainless steel in locations to be unpainted shall be arranged with a brush finish.

3.5.3. Unpainted stainless steel frames, boxes, and other assemblies shall be constructed from No. 1 or No. 2 matte finish sheets.

4. LOW ALLOY HIGH TENSILE STEEL

4.1. General

4.1.1. Low-alloy high-tensile (LAHT) steel shall be a nickel-containing low alloy, corrosion-resistant steel with a high tensile strength.

4.1.2. LAHT steel shall conform to ASTM Specification A-242, and shall have a smooth surface free from pitting.

4.2. Manufacture

4.2.1. Cor-Ten, furnished by United States Steel Corporation; Mayari R., as manufactured by the Bethlehem Steel Company; Yoloy, as manufactured by the Youngstown Sheet and Tube Company; Armco HT50, as manufactured by the Armco Corporation; Republic 65, as manufactured by Republic Steel Corporation; or accepted equal, shall be acceptable for such applications, except where a particular low-alloy high-tensile steel is called for in this Specification.

5. STEEL CASTINGS

5.1. Quality

- 5.1.1. All new castings, unless otherwise specified, shall meet the requirements of AAR Specification M-201 Grade B.
- 5.1.2. Steel castings shall be sound throughout within Specification requirements and/or for the purpose intended.
- 5.1.3. The Manufacturer shall prove his manufacturing procedure by either destructive or non-destructive means.
- 5.1.4. Following the establishment of a satisfactory test procedure, quality control shall be maintained by testing one or more of each lot at a frequency mutual acceptable to the Engineer, the Contractor, and the foundry. The test frequency shall be influenced by the critical requirements of the part.
- 5.1.5. If new castings are found to be porous or otherwise unsound, the castings shall be destroyed and replacements shall be provided at no cost to Caltrain.

5.2. Heat Treating

- 5.2.1. All new steel castings shall be made of heat-treated electric furnace or controlled open-hearth steel.
- 5.2.2. Where physical strength is gained by heat-treating, a physical test shall be conducted on each treating charge, of each heat of castings.
- 5.2.3. Where more than one (1) heat is represented in a treating charge, a physical test shall be conducted on each heat represented in each treating charge.

5.3. Castings

- 5.3.1. Steel castings used in locations not referred to herein shall be selected for composition and characteristics best suited to the application, by the Manufacturer or Contractor concerned, but shall be subject to review by the Caltrain.

5.4. Magnetic Particle Inspection

- 5.4.1. Magnetic particle inspections of all surfaces of each casting to be conducted in accordance with ASTM E personnel certified to MIL-STD-410. With respect to structural castings, the maximum permissible magnetic particle indication shall be one-quarter ($\frac{1}{4}$) inch in the direction transverse to the usual direction of loading, and three-quarter ($\frac{3}{4}$) inch in the direction parallel to the usual direction of loading.

5.5. Radiographic Inspection

- 5.5.1. Radiographic inspection shall be conducted in accordance with the requirements of standard ASTM E 94 using reference radiograph to ASTM E 446. A sampling frequency shall be proposed by the Contractor and submitted for Engineer approval. Structural castings shall not exceed severity level three

(3) of ASTM E 446 in all critical areas of such castings and shall not exceed level five (5) in all other areas of the castings.

5.6. Welding

5.6.1. Welding required on castings is permitted provided the Contractor performs all weld repairs in accordance with an approved written procedure and uses AWS certified welders or welders qualified to ASTM A 488.

5.6.2. Prior to receiving approval, the supplier shall provide certified results for Weld Procedure Qualifications, Personnel Qualifications, and Materials and Equipment Qualifications.

6. ELASTOMERS

6.1. General

6.1.1. All elastomeric parts specified herein shall be of neoprene so compounded and cured that it will perform satisfactorily in locomotive operation at any temperature between -40°F and 120°F (-40°C and 48.9°C) and shall have the longest possible commercial life consistent with the characteristics specified.

6.2. Metal Parts

6.2.1. Unless otherwise specifically provided or agreed upon between the Contractor and Caltrain, metal parts to which neoprene is cured shall be made of SAE 1020 hot rolled steel and shall be suitable for brass plating after pickling.

6.3. Substitute Materials

6.3.1. Alternative materials will be considered provided the Contractor demonstrates to Caltrain that the alternative material shall provide equal or better performance than the specified material.

7. PIPING

7.1. Threaded Connections

7.1.1. The use of sealing tape (plumber's tape, Teflon tape, etc.) is forbidden in threaded pipe connections.

8. WIRE AND CABLE

8.1. General

8.1.1. All conductors shall be soft annealed copper tinned and stranded per AAR Specification S502 (former No. 589), and jacketed with cross-linked polyethylene (Flammanol XL), radiation cross linked polyolefin (Exane) or Caltrain approved equal and shall have properties and characteristics as specified in AAR Specification S501.

8.2. Heater Connections

8.2.1. Only high temperature insulated wire shall be used for interconnection of heater elements and units.

8.2.2. Heater connections shall be of silicone insulated wire conforming to AAR Standard S-503.

8.3. Resistor Connections

8.3.1. Wire shall be silicone insulated conforming to AAR Standard S-503.

8.4. Aluminum Wire and Cable

8.4.1. The use of aluminum wire and/or cable shall be prohibited.

9. WIRING

9.1. Application and Installation of wire:

9.1.1. All wiring shall be performed by or under the direction of experienced wiremen.

9.1.2. Wiremen shall be provided with appropriate tools for skinning insulation, cutting, tinning, soldering, and attaching mechanical or compression type terminals to the conductors.

9.1.3. Care must be taken in removing insulation from the conductor to avoid nicking of the wire or strands of the conductor cable.

9.1.4. Wire in ducts and conduit shall be free of kinks, insulation abrasions and insulation skinning.

9.1.5. Locomotive wiring methods and materials shall be in accordance with Chapter 3 of the NFPA Publication NFPA No. 70 (NECS) current issue, except where otherwise required by the Specification, or where approved by Caltrain, and except that all wire shall be stranded.

9.1.6. The layout of wiring shall be designed in advance of its installation and in cooperation with those furnishing the related equipment.

9.1.7. Insofar as practicable, all wiring shall be fabricated on the bench into convenient units and installed in prefabricated groupings and standardized locations.

9.1.8. All wire and cabling shall have appropriate service loops, drip loops, strain relief and sufficient material for a minimum of three (3) re-terminations.

9.1.9. Spare terminations and conductors should be provided on terminal boards, in connectors, and in wire bundles and multi-conductor cables between major panels and junction boxes. A minimum of ten (10) percent, but not less than one (1), shall be provided.

9.1.10. Grounding connection pads shall be brazed, welded, or silver soldered to the frame. Connections shall be stud or bolt mounted.

- 9.1.11. All equipment enclosures and shock-mounted equipment shall be grounded with flexible, strap-type, grounding leads bolted between a car body grounding pad and the Cameras on Trains equipment grounding pads.
- 9.1.12. Mounting bolts or other connections shall not be used for grounding connections.
- 9.2. Solder
 - 9.2.1. Solder for electrical connections, where permitted, shall be in accordance with ANSI No. 1, Class B.
 - 9.2.2. Non-corrosive flux shall be applied immediately before soldering.
 - 9.2.3. An automatic temperature controlled solder pot shall be used.
- 9.3. Tape
 - 9.3.1. Polyvinyl chloride or Nomex electrical tapes with Buna "S" type adhesive, 0.010 inches (0.254 mm) in over-all thickness, or approved equal, shall be applied.
 - 9.3.2. The above materials shall be suitable for use with the conductor insulation without discoloring or corroding the copper wire and shall provide 600 V minimum insulation.
- 9.4. Splices
 - 9.4.1. Splices shall not be permitted.
- 9.5. Terminals
 - 9.5.1. Conductors shall be fastened to terminals and connectors by accepted mechanical methods. Soldering of conductors shall be allowed at selected locations only with prior written approval of Caltrain.
 - 9.5.2. Conductors, which will be subjected to motion relative to the terminal, shall be protected by suitable means to minimize breakage of the conductor at or near the terminal.
 - 9.5.3. Crimp terminals shall be used on all wiring operating at 64 V or higher.
 - 9.5.4. In general, connections shall be made by means of terminal blocks.
 - 9.5.5. Only ring tongue terminals are acceptable unless specifically approved by Caltrain. The use of spade type and "fast-on" terminals shall be prohibited.
 - 9.5.6. Solder connections shall be permitted on printed circuit boards.
- 9.6. Terminal Manufacturer
 - 9.6.1. Mechanical or compression type connectors and terminals shall be AMP standard connectors and terminals.

9.7. Conduit

- 9.7.1. Existing conduit requiring replacement or reconfiguration shall be of similar composition as that removed.
- 9.7.2. All conduit couplings shall be of an ANSI approved type. Conduit shall be standard weight, galvanized steel with threaded fittings. All conduit ends shall be deburred inside and out to remove sharp edges and all pieces shall be blown out with compressed air and cleaned before installation to remove filings and other foreign material.
- 9.7.3. Rigid aluminum conduit shall consist of seamless, rigid aluminum alloy conforming to ANSI C-80.5 and to the requirements of Standard UL-6. All threads shall be covered with an oxidation-inhibiting compound. Aluminum fittings shall be used to assemble aluminum conduit and shall be made to the same grade and alloy as the conduit.
- 9.7.4. Steel conduit shall be mild steel in standard lengths with threaded ends and hot-dipped zinc-coated exterior and interior surfaces. It shall be free of burrs and projections, circular in cross-section, of uniform wall thickness and shall conform to the requirements of ANSI Standard 80.1. The threads per inch and length of threading shall conform to ANSI Standard B-2.1 on pipe threads.
- 9.7.5. Steel fittings shall be used to assemble steel conduit. Elbows, nipples, and couplings shall be made of the same grade of steel as that employed in the conduit. All fittings shall be treated, coated, and threaded according to the requirements for zinc-coated, rigid steel conduit and shall conform to Underwriters Laboratory Standard UL-6.
- 9.7.6. Flexible conduit shall be an ANSI approved type, and shall be of the highest grade and quality. It shall be watertight, interlocking steel strip-protected, with an approved rust resistive coating.
- 9.7.7. The internal diameter of conduit shall be selected such that the sum of the cross-sectional areas of the conductors and their insulation does not exceed forty (40) percent of the cross-sectional area of the conduit for three (3) or more conductors. For two (2) conductors, a limit of thirty-one (31) percent shall be used, while for a single conductor a limit of fifty-three (53) percent will be permitted. For conduits having a length not exceeding twenty four (24) inches without bends of more than fifteen (15) degrees between enclosures, a maximum fill of sixty (60) percent shall be permitted.
- 9.7.8. A run of conduit between junction boxes and/or pulling outlets shall not contain more than the equivalent of four (4) quarter bends (360 degrees total) including the outlet fittings. Bend radii at the inner surface of the bend shall be no less than eight (8) times the nominal inside diameter of the conduit.
- 9.7.9. All conduit bends and offsets used shall be made by the use of special forms or tools and shall have the largest radius possible so that wires can be drawn in and out without the use of tackle or power.
- 9.7.10. Conduits shall be securely clamped with all runs electrically grounded to make a continuous ground. Suitable insulation shall be provided to prevent electrolysis where aluminum may come in contact with other metals.

- 9.7.11. All conduits shall be arranged to prevent moisture traps and shall drain toward control boxes, except that all open-ended conduits shall be installed in a manner to ensure gravity drainage of moisture out of the end.
- 9.7.12. The conduit fittings and junction boxes shall be as manufactured by the Contractor or by a supplier of a comprehensive line of parts. All conduit fittings and junction boxes shall be provided with gaskets.
- 9.7.13. All exterior junction boxes shall be fabricated of steel with a minimum wall thickness of fourteen (14) gauge. All exterior junction boxes shall be waterproof and shall be connected in such a way that drainage shall not pass through the conduit into the junction boxes. Interiors of all junction boxes shall be primed and then protected with a white, insulating epoxy powder coating.
- 9.7.14. The open ends of conduits shall be provided with strain relief type fittings with extended rubber bushings, bell-mouth fittings or insulated throat box connections. All conduit entries into removable equipment boxes shall be made through watertight access panels secured by captive screw fasteners.
- 9.7.15. All junction box covers shall be secured with compressive spring-type latches or captive screws. All fasteners used in junction boxes shall be stainless steel. All covers shall be designed to accept or mate with a bulb-type clamp-on seal.

10. WELDING

10.1. Responsibility

- 10.1.1. The Contractor shall be responsible for the quality of the welding done by its organization and subcontractors. All welders employed in the making of welds on structures or products built under this Specification shall be tested to determine their ability to operate the welding equipment used during production and to determine their ability to produce satisfactory welds of the types required herein.
- 10.1.2. The Contractor shall submit test procedures for Caltrain review and approval.
- 10.1.3. Welders shall have minimum qualifications as identified by ASME Code "Welding and Brazing Procedures and Performance Qualifications" or equivalent AWS procedures.

10.2. Weld Rod

- 10.2.1. Welding rod, wire, or filler metal shall be chosen with respect to make, type, and size by the Contractor for the specific application.
- 10.2.2. Should the suitability of welding rods, wire electrodes, or filler metal be questioned, the provisions of Chapter 95 of the AWS Welding Handbook shall govern.

10.3. Heat Treating

- 10.3.1. Parts rotating at high speeds or parts subject to shock and/or vibration shall be stress relieved after welding.

10.4. Welding Procedure

- 10.4.1. All welded connections shall be described on the construction drawings prepared by the Contractor and submitted for Caltrain review and approval.
 - 10.4.2. Standard weld symbols shall be used to define type, pattern, and size for each weld.
 - 10.4.3. Stainless steel parts shall be joined by resistance welding or by arc welding.
 - 10.4.4. Resistance welding procedures shall employ accurate control of current, time, electrode, size and shape, and tip force to produce uniform welds of specified strength, which will not be subject to surface corrosion.
 - 10.4.5. The strength of all resistance welds shall exceed the AWS Standards by a minimum of twenty (20) percent.
 - 10.4.6. The Contractor shall treat surface marks resulting from welding to eliminate, to the extent possible, visible defects and discoloration in the finish surface.
- 10.5. In areas where space is restricted, resistance welding of components may be replaced with Huck bolted connections. Each location shall be subject to prior Caltrain review and approval.
- 10.6. The Contractor shall submit the design of individual connections for acceptance.
- 10.7. Torch cutting holes is prohibited.

11. PAINT AND PAINTING

- 11.1. Painting including symbols, lettering, and logos shall be in accordance with requirements of this Specification.

12. CLEANING AND PREPARATION MATERIALS

- 12.1. All debris from mechanical cleaning of components such as sandblast grit, and all debris resulting from building operations, such as scrap, shavings, and insulation, shall promptly be removed.
- 12.2. All compounds and liquids used in cleaning and preparation operations shall be promptly removed, and flushed.
- 12.3. Every effort shall be made to remove all debris at regular intervals to prevent it from becoming lodged in inaccessible areas.

13. ASBESTOS

- 13.1. The use of asbestos or asbestos-based products is prohibited.

END OF SECTION TWO

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EXHIBIT 8

WORK SITE SAFETY AND SECURITY

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Section includes work site safety and security requirements for work performed in or about the PCJPB/Caltrain's property(ies) and the PCJPB/Caltrain railroad-right-of way.

1.02 GENERAL

- A. The Contractor shall comply with all safety and security requirements included in this section and in the solicitation documents which are incorporated by reference herewith and as otherwise provided from time-to-time by the JPB Project Manager or his designee.
- B. Compliance with requirements of this section shall not relieve the Contractor from other obligations imposed elsewhere in the Contract, by law and by regulation.

1.03 SUBMITTALS

- A. Roadway Worker Protection (RWP) Training Records: Submit within **two (2) business days** after each RWP training session.
- B. Health and Safety Plan (HASP): Submit within **21 business days** of effective date of Notice to Proceed for review and acceptance by the Project Manager or his designee.
- C. Material Safety Data Sheet (MSDS): Submit prior to delivery or use of hazardous material at work site.

1.04 REGULATIONS FOR WORKING WITHIN RAILROAD RIGHT-OF-WAY

- A. The codes and regulations listed herein apply to work at the PCJPB's property(ties) and within the Caltrain railroad-right-of-way. Contractor shall comply with the requirements contained in the latest edition of the listed publications. Updates for Caltrain On-Track Safety Plan are available at www.CaltrainTraining.com.
- B. PCJPB:
 - 1. Caltrain On-Track Safety Plan consisting of the following current documents:
 - a. Caltrain Roadway Worker On-Track Safety Protection Plan
 - b. Caltrain On-Protection Good Faith Challenge Form

- c. Peninsula Caltrain District Timetable
 - d. Peninsula Caltrain District Timetable Special Instructions for Air Brake and Train Handling Rules
 - e. Peninsula Caltrain District General Orders
 - f. General Code of Operating Rules for Maintenance of Way Employees
 - g. Peninsula Caltrain District Maintenance of Way General Orders
 - h. Zero Tolerance – Joint Policy Statement
 - i. Individual Train Detection Statement of On-Track Safety
 - j. Federal Railroad Administration (FRA) Part 220 – Railroad Communications
 - k. Caltrain Advisory
 - l. PCJPB Bridge Worker Safety Policy
- C. Others:
- 1. FRA Track Safety Standards, and FRA Railroad Workplace Safety, Title 49 CFR 213 and 214
 - 2. California Public Utilities Commission General Orders 26-D and 118
 - 3. UPRR Roadway Worker Protection Rules

1.05 CONSTRUCTION AND SAFETY PROCEDURES

- A. Each Manager, Superintendent, Supervisor, Foreman or Contractor personnel responsible for the safety of employees engaged in the work must have readily available to himself, and to those for which he is responsible, a copy of an up-to-date Caltrain On-Track Safety Plan. The contents of this Manual will be made available to the Contractor at the Kick-Off meeting or within seven (7) business days thereafter. The regulations and instructions contained in these documents must be strictly adhered to in the performance of the work. This manual must be made available to the Contractor's employee(s) and to the Project Manager or his designee for review at any time during working hours.
- B. Contractor's site personnel, including Subcontractors, suppliers, and visitors, may not enter or work on Caltrain's railroad right-of-way without prior Roadway Worker Protection training in accordance with 49CFR Part 214 Subpart C.
- C. The Contractor may be required to stop work when trains are passing on adjacent tracks in accordance with Roadway Worker Protection rules. Work may resume when trains have passed.

- D. Standard Operating Procedures (SOP): At Project Manager or his designee's request, Contractor shall provide SOP's with respect to its work tasks and related procedures that are deemed by the PCJPB to be safety critical. SOP's shall be submitted in accordance with the PCJPB's format for SOP's, to be provided upon request.

1.06 ROADWAY WORKER PROTECTION (RWP) TRAINING

- A. The Contractor shall be responsible for providing RWP training to all site personnel, including Subcontractors, suppliers, and visitors. Contractor shall designate personnel as trainers to be responsible for RWP training. RWP training curriculum and materials shall be provided by the PCJPB. The PCJPB shall provide Advance Roadway Worker Protection training for Contractor's trainer(s) within seven (7) business days of the effective date of the Notice to Proceed or as otherwise mutually agreed by the Contractor and the PCJPB provided that such training is held prior to commencement of any work within Caltrain's railroad right-of-way. Contractor's trainers shall assume responsibility for RWP training prior to proceeding with any work within the PCJPB's right-of-way.
- B. The Contractor shall provide hard hat stickers to each worker trained for RWP. The stickers shall be numbered and shall identify the training expiration date. The sticker shall be displayed on each worker's hard hat when entering the worksite or the Owner's right-of-way. The Contractor shall provide a copy of the current RWP training records to the Project Manager or his designee after each training session. The RWP training records shall be a summary log form and at a minimum list each employee's name, sticker number, latest date trained, and level or type of training received. The records shall be listed alphabetically by employee's last name.

1.07 CONTRACTOR'S HEALTH AND SAFETY PROGRAM

- A. Submit written Health and Safety Plan (HASP), developed in accordance with California Health and Safety Code, including Contractor's standard safety practices and procedures, and emergency response procedures. Contractor is responsible for worker health and safety as provided for in the Contractor's Health and Safety Plan.
- B. The Contractor's standard HASP shall be amended to include project specific conditions and procedures, including organizational structure, special work procedures, local emergency response procedures, and project specific training requirements.
- C. The HASP shall be amended to incorporate any changed conditions as they occur. All amendments shall be submitted to the Project Manager or his designee for review and acceptance.

1.08 MATERIAL SAFETY DATA SHEET (MSDS)

- A. The Material Safety Data Sheet is prepared by manufacturers and suppliers of products that contain hazardous materials. Hazardous material is defined as any substance which is a physical or health hazard, or is included in the Cal-OSHA Director's List of Hazardous Substances, or is listed in Title 22 of the California Code of Regulations, Section 12000, Chemicals Known to the State to Cause Cancer or Reproductive Toxicity (Proposition 65 Substances).
- B. No hazardous materials shall be delivered, stored, or used at any work site or facility unless they are properly labeled, tagged, or marked and a copy of the MSDS has been provided to the Project Manager or his designee. A copy of any new or updated MSDSs shall be provided to the Project Manager or his designee immediately.
- C. The Contractor shall maintain a current file of relevant MSDSs at the work site.

1.09 NOTICE OF INCIDENT OR INJURY

- A. Report immediately to the Project Manager or his designee any incident occurring on or in the vicinity of the work site(s) involving any employees or equipment of the Contractor, its Subcontractors, suppliers, or visitors; PCJPB's employees, representatives or equipment; or any other personnel, property or equipment associated with the Work which results in personal injury to any person or damage to any property. Also, report immediately to the Project Manager or his designee any incident resulting in no injury or no damage, but which had potential to result in injury or damage to persons or property ("close call" incidents).
- B. Fully investigate all incidents, injuries, accidents, or "close call" incidents, document facts, develop and take appropriate corrective or disciplinary action. A notice summarizing the incident, injury, or accident shall be submitted to the Project Manager or his designee **within twelve (12) hours of the occurrence, followed by submittal of a detailed written report seventy-two (72) hours from the time of the occurrence.** A safety meeting shall be held by the Contractor at the earliest opportunity to discuss the incident or injury and to determine preventative measures to preclude recurrences of such incident or injury. The Project Manager or his designee shall be included at the meeting.
- C. Maintain a log of all reportable incidents, accidents or injuries, listing all pertinent data associated with the occurrence as well as preventative measures taken. This log shall be made available for review by the Project Manager or his designee at any time.
- D. The Contractor shall be responsible for reporting to OSHA any injuries found reportable under OSHA regulations. A copy of all reports shall be submitted to the Project Manager or his designee. The PCJPB will be responsible for reporting of incidents to FRA under 49 CFR Part 225.

1.10 TAILGATE HEALTH AND SAFETY MEETINGS

- A. Conduct a daily tailgate health and safety meeting for Contractor personnel including mandatory Job Briefing by the Contractor or it's designee as set forth in the Caltrain On-track Safety Plan.

1.11 WORK SITE SECURITY

- A. The Contractor shall assume full responsibility for protection and safekeeping of tools, materials, equipment, and the Work under this Contract. Contractor shall not be entitled to reimbursement for incidents of vandalism and theft.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF EXHIBIT 8 - WORK SITE SAFETY AND SECURITY

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EXHIBIT 9: MILESTONE PAYMENT SCHEDULE

MILESTONE PAYMENT SCHEDULE				
MILESTONE	DESCRIPTION	DELIVERABLES	PERCENT OF TOTAL CONTRACT PRICE	CUMULATIVE PERCENT
1	<ul style="list-style-type: none"> Submittals 	<ul style="list-style-type: none"> Project Management Plan and Schedule Bill of Materials Installation and Cutover Plan Test Plan (individual installations and system-wide test) Safety and Security Plan 	_____ %	_____ %
2	<ul style="list-style-type: none"> Delivery of Equipment, Hardware, and Software 	<ul style="list-style-type: none"> Narrowband-capable Voice Radios Base Station Upgrade Kits 	_____ %	_____ %
3	<ul style="list-style-type: none"> Portable Narrowband-capable Voice Radios Programmed/Reprogrammed, Installed, and Tested 	<ul style="list-style-type: none"> Test Results for Portable Voice Radios 	_____ %	_____ %
4	<ul style="list-style-type: none"> Mobile Narrowband-capable Voice Radios Programmed/Reprogrammed, Installed, and Tested, 	<ul style="list-style-type: none"> Test Results for Mobile Voice Radios 	_____ %	_____ %
5	<ul style="list-style-type: none"> Locomotive and Cab Control Cars Narrowband-Capable Voice Radios Programmed/Reprogrammed 	<ul style="list-style-type: none"> Test Results for Locomotives and Cab Control Cars 	_____ %	_____ %
6	<ul style="list-style-type: none"> Base Stations and Repeaters reprogrammed and tested 	<ul style="list-style-type: none"> Test Results for Base Stations and Repeaters 	_____ %	_____ %
7	<ul style="list-style-type: none"> Perform System-Wide Coverage Test 	<ul style="list-style-type: none"> Test Results for System-Wide Coverage Test 	_____ %	_____ %
8	<ul style="list-style-type: none"> JPB Final Acceptance Test Project Close Out and Final Acceptance Warranty Period Begins 	<ul style="list-style-type: none"> As-built Drawings Manuals 	_____ %	_____ %
9	<ul style="list-style-type: none"> Warranty Period Completed 	<ul style="list-style-type: none"> Outstanding Warranty Issues (if any) Resolved 	_____ %	_____ %

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EXHIBIT 10: DELIVERABLES

DELIVERABLES	
MILESTONE	DELIVERABLES
1	<ul style="list-style-type: none">• Project Management Plan and Schedule
2	<ul style="list-style-type: none">• Bill of Materials (including spare parts)
3	<ul style="list-style-type: none">• Installation and Cutover Plan
4	<ul style="list-style-type: none">• Test Plan and Procedures (individual installations & system-wide test)
5	<ul style="list-style-type: none">• Safety and Security Plan
6	<ul style="list-style-type: none">• Radio Equipment, Hardware, and Software (Narrowband-capable Voice Radios; Base Station Upgrade Kits)
7	<ul style="list-style-type: none">• Site-Specific Work Plans (SSWP)
8	<ul style="list-style-type: none">• Radio Programming and Reprogramming Procedure
9	<ul style="list-style-type: none">• Test Results and Documentation (Portable, Mobile, Locomotive/Cab Control Cars, Base Stations and Repeaters)
10	<ul style="list-style-type: none">• As-built Drawings
11	<ul style="list-style-type: none">• User Manuals

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EXHIBIT 11: DIRECTIONS TO CEMOF



**DIRECTIONS TO PENINSULA CORRIDOR JOINT POWERS BOARD'S/CALTRAIN
CENTRALIZED EQUIPMENT MAINTENANCE AND OPERATIONS FACILITY (CEMOF)**

The "CEMOF Way" entrance to the JPB Centralized Equipment Maintenance and Operations Facility (CEMOF) is located at the corner of Cinnabar Street and N. Autumn St in San Jose, CA. 95110:

FROM SAN FRANCISCO

-  1. Merge onto US-101 S toward SAN JOSE
-  2. Merge onto CA-87 S/GUADALUPE PKWY
-  3. Take the JULIAN ST exit, EXIT 6B, toward ST JAMES ST
-  4. Turn RIGHT onto W JULIAN ST
-  5. Turn RIGHT onto N AUTUMN ST, proceed to end of street
-  6. CINNABAR ST & N AUTUMN ST (Entrance to CEMOF Way; see photo on page 2)

- continued on next page -

EXHIBIT 11: DIRECTIONS TO CEMOF - continued
FROM SOUTH SAN JOSE



1. Take the CAPITOL EXPY WEST ramp



2. Merge onto E CAPITOL EXPY



3. Turn RIGHT onto NARVAEZ AVE.



4. Merge onto CA-87 N via the ramp on the LEFT



5. Take the SANTA CLARA ST/JULIAN ST exit, EXIT 6, toward CA-82/SAN CARLOS ST/AUZERAIS AVE



6. Take the SANTA CLARA ST/JULIAN ST ramp



7. Take the CA-87/GUADALUPE PKWY exit on the LEFT



8. Take EXIT 6B toward JULIAN STREET



9. Turn LEFT onto W JULIAN ST



10. Turn RIGHT onto N AUTUMN ST, proceed to end of street



11. CINNABAR ST & N AUTUMN ST (Entrance to CEMOF Way; see picture page on 2)

Entrance to CEMOF Way at Corner of Cinnabar and N. Autumn Streets

