ELIGIBLE PURCHASER ORDER NO.

BETWEEN
THE CITY OF LOS ANGELES AND
MOTOROLA SOLUTIONS INC.

THIS ELIGIBLE PURCHASER ORDER ("Eligible Purchase Order") is made and entered into by and between the CITY OF LOS ANGELES, a municipal corporation ("City"), acting by and through its Board of Harbor Commissioners ("Board") and MOTOROLA SOLUTIONS INC. (MOTOROLA), a Delaware Corporation, 500 W. Monroe Street., 44th Floor, Chicago, IL, 60661 ("CONTRACTOR").

WHEREAS, City requires services for the upgrade of the Ultra High Frequency ("UHF") T-Band system to include the design and implementation of a four-site, three-channel simulcast system incorporating Los Angeles Harbor Department's ("Harbor Department") currently licensed UHF T-Band conventional channels in order to increase communications capabilities and interoperability with the Harbor Department's existing 700 MHz radio system; and

WHEREAS, the Services to be provided herein are of a professional, expert, technical, and of a temporary and occasional character; and

WHEREAS, City requires the professional, expert and technical services of CONTRACTOR on a temporary or occasional basis to assist the City in providing the components of and installing the system upgrades and decommissioning of equipment previously used for the now obsolete system as well as modifications and programming updates to subscribers and dispatching consoles; and

WHEREAS, CONTRACTOR possesses extensive experience in the existing 700 MHz radio system, allowing for the seamless integration of the two systems; and

WHEREAS, CONTRACTOR, as the provider of the original ASTRO system and subsequent upgrades, is uniquely well qualified to provide such services to City; and

WHEREAS, the proprietary nature of the ASTRO communications system platform, especially the software, require the support, expertise, proprietary knowledge and tools of the CONTRACTOR, and there are no known Harbor Department personnel or City job classifications with the expertise to perform the proposed Services nor is it feasible to employ such personnel on a temporary or occasional basis; and

WHEREAS, CONTRACTOR is the provider of the original ASTRO System and subsequent system upgrades and is the only vendor capable of upgrading the software of the radio platform due to its proprietary nature; and

WHEREAS, the Harbor Department meets the definition of "Eligible Purchasers" under the terms of City Contract No. C-123897 and Motorola Contract No. 1000409608 (the "Master Services Agreement") as amended, as a department within the City other than LAPD, and therefore has the same rights and responsibilities as LAPD under the Original Agreement with respect to its purchase of services thereunder

NOW, THEREFORE, IT IS MUTUALLY AGREED AS FOLLOWS:

1. SERVICES TO BE PERFORMED BY CONTRACTOR

A. CONTRACTOR hereby agrees to render to City, as an independent contractor, certain professional, technical and expert services of a temporary and occasional character as set forth in Exhibit A ("Proposal") dated August 6, 2024.

B. CONTRACTOR, at its sole cost and expense, shall furnish all services, materials, equipment, subsistence, transportation and all other items necessary to perform the Proposal. As between City and CONTRACTOR, CONTRACTOR is solely responsible for any taxes or fees which may be assessed against it or its employees resulting from performance of the Proposal, whether social security, payroll or other, and regardless of whether assessed by the federal government, any state, the City, or any other governmental entity.

C. CONTRACTOR acknowledges and agrees that it lacks authority to perform any services outside the Proposal. CONTRACTOR further acknowledges and agrees that any services it performs outside the Proposal are performed as a volunteer and shall not be compensable under this Eligible Purchaser Order.

D. The Proposal shall be performed by personnel qualified and competent in the sole reasonable discretion of the Executive Director or his or her designee ("Executive Director"), whether performance is undertaken by CONTRACTOR or third-parties with whom CONTRACTOR has contracted ("Subcontractors"). Obligations of this Eligible Purchaser Order, whether undertaken by CONTRACTOR or Subcontractors, are and shall be the responsibility of CONTRACTOR. CONTRACTOR acknowledges and agrees that this Eligible Purchaser Order creates no rights in Subcontractors with respect to City and that obligations that may be owed to Subcontractors, including, but not limited to, the obligation to pay Subcontractors for services performed, are those of CONTRACTOR alone. Upon Executive Director's written request, CONTRACTOR shall supply City's Harbor Department ("Department") with all agreements between it and its Subcontractors.

Further, where the Consultant employs Subconsultants under this Agreement, the Consultant shall submit to City, with each monthly invoice, a Monthly Subconsultant Monitoring Report Form (Exhibit B) listing SBE/VSBE/MBE/WBE/DVBE/OBE amounts. CONTRACTOR shall provide an explanation for any item that does not meet or exceed the anticipated participation levels for this Agreement, with specific plans and recommendations for improved Subconsultant utilization. Invoices will not be paid without a completed Monthly Subconsultant Monitoring Report Form. All invoices are subject to audit. CONTRACTOR is not required to submit support for direct costs items of $25 or less.

2. SERVICES TO BE PERFORMED BY CITY

A. City shall furnish CONTRACTOR, upon its request, all documents and papers in possession of City which may lawfully be supplied to CONTRACTOR and which are necessary for it to perform its obligations.

B. The Executive Director or his or her designee is designated as the contract administrator for City and shall also decide any and all questions which may arise as to the quality or acceptability of the services performed and the manner of performance, the interpretation of instructions to CONTRACTOR and the acceptable completion of this Eligible Purchaser Order and the amount of compensation due.

C. CONTRACTOR shall provide Executive Director with reasonable advance written notice if it requires access to premises of Department. Subsequent access rights, if any, shall be granted to CONTRACTOR at the sole reasonable discretion of Executive Director, specifying conditions CONTRACTOR must satisfy in connection with such access. CONTRACTOR acknowledges that such areas may be occupied or used by tenants or contractors of City and that access rights granted by Department to CONTRACTOR shall be consistent with any such occupancy or use.

3. EFFECTIVE DATE AND TERM OF ELIGIBLE PURCHASER ORDER

A. Subject to the provisions of Charter Section 245, the effective date of this Eligible Purchaser Order shall be the date of its execution by Executive Director upon authorization of the Board. CONTRACTOR is aware that the City Council, pursuant to Charter Section 245 of the City of Los Angeles, has the right to review this Eligible Purchaser Order. Accordingly, in no event shall this Eligible Purchaser Order become effective until after the expiration of the fifth Council meeting day after Board action, or the date of City Council's approval of the Eligible Purchaser Order.

B. This Eligible Purchaser Order shall be in full force and effect commencing from the date of execution and shall continue until the earlier of the following occurs:

1. Three (3) years have lapsed from the effective date of this Eligible Purchaser Order notwithstanding the potential earlier expiration or termination of the Master Services Agreement or Master Equipment Agreement underlying this Eligible Purchaser Order;

or

2. Board, in its sole discretion, terminates and cancels all or part of this Eligible Purchaser Order for any reason upon giving to CONTRACTOR thirty (30) days' notice in writing of its election to cancel and terminate this Eligible Purchaser Order in accordance with the terms of Section 4.3, "Termination for Convenience" of Master Services Agreement, as amended.

4. TERMINATION DUE TO NON-APPROPRIATION OF FUNDS

This Eligible Purchaser Order is subject to the provisions of the Los Angeles City Charter which, among other things, precludes the City from making any expenditure of funds or incurring any liability, including contractual commitments, in excess of the amount appropriated thereof.

The Board, in awarding this Eligible Purchaser Order, is expected to appropriate sufficient funds to meet the estimated expenditure of funds through June 30 of the current fiscal year and to make further appropriations in each succeeding fiscal year during the life of the Eligible Purchaser Order. However, the Board is under no legal obligation to do so.

The City, its boards, officers, and employees are not bound by the terms of this Eligible Purchaser Order or obligated to make payment thereunder in any fiscal year in which the Board does not appropriate funds therefore. The CONTRACTOR is not entitled to any compensation in any fiscal year in which funds have not been appropriated for the Eligible Purchaser Order by the Board.

Although the CONTRACTOR is not obligated to perform any work under the Eligible Purchaser Order in any fiscal year in which no appropriation for the Eligible Purchaser Order has been made, the CONTRACTOR agrees to resume performance of the work required by the Eligible Purchaser Order on the same terms and conditions for a period of sixty (60) days after the end of the fiscal year if an appropriation therefore is approved by the Board within that 60-day period. The CONTRACTOR is responsible for maintaining all insurance and bonds during this 60-day period until the appropriation is made; however, such extension of time is not compensable.

If in any subsequent fiscal year funds are not appropriated by the Board for the work required by the Eligible Purchaser Order, the Eligible Purchaser Order shall be terminated. However, such termination shall not relieve the parties of liability for any obligation previously incurred.

5. COMPENSATION AND PAYMENT

A. As compensation for the satisfactory performance of the services required by this Eligible Purchaser Order, City shall pay and reimburse CONTRACTOR at the rates set forth in Exhibit A.

B. The maximum payable under this Eligible Purchaser Order, including reimbursable expenses, shall be One Million Seven Hundred Seventy-Two Thousand One Hundred Sixty-Four Dollars ($1,772,164.00).

C. CONTRACTOR shall submit invoices in quadruplicate to City monthly following the effective date of this Eligible Purchaser Order for services performed during

the preceding month. Each such invoice shall be signed by the CONTRACTOR and shall include the following certification:

> "I certify under penalty of perjury that the above bill is just and correct according to the terms of Eligible Purchaser Order No. _____ and that payment has not been received. I further certify that I have complied with the provisions of the City's Living Wage Ordinance.
>
> _____"
> (CONTRACTOR's Signature)

D. CONTRACTOR must include on the face of each itemized invoice submitted for payment its Business Tax Registration Certificate number. No invoice will be processed for payment by City without this number shown thereon. All invoices shall be approved by the Executive Director or his or her designee prior to payment.

A statement describing the services performed, deliverable, or milestone completed, as applicable, must accompany each invoice. Funds shall not be released until City has approved the services performed, deliverable, or milestone completed which approval shall not be unreasonably withheld or delayed. The payments to CONTRACTOR shall thereafter be made upon submission of invoices as follows:

Invoices, on CONTRACTOR's letterhead (and if a Project Manager has been assigned, signed by the Project Manager for CONTRACTOR) shall be delivered to the authorized representative for City within fifteen (15) calendar days after the services have been performed, the deliverable has been provided, or the milestone has been completed, as applicable. If the services will be performed over a time period exceeding three (3) months, then Motorola may invoice monthly on an estimated percentage of completion basis or in accordance with the payment milestone schedule if one is included in the Proposal. CONTRACTOR must include the following information on each invoice:

Date of invoice
Invoice number
Agreement number
Date and description of the ordered services that have been performed
Amount of invoice
Taxes, if any

City payments to CONTRACTOR shall be paid within 30 days after receipt by City of an accurate invoice; provided however, that City may withhold any portion of an invoice that it disputes in good faith. If an invoice or portion thereof is disputed, City shall notify CONTRACTOR of the potential disapproval action and afford it an opportunity to be heard prior to official disapproval. City shall pay all undisputed portions of invoices in accordance with this Section.

Invoices and supporting documentation, if any, shall be prepared at the sole expense and responsibility of the CONTRACTOR. The City will not compensate the CONTRACTOR for any costs incurred for invoice preparation. The City may reasonably request, in writing, changes to the content and format of the invoice and supporting documentation at any time. City reserves the right to request additional supporting documentation to Substantiate the invoiced amount is correct and actually due at any time; however, CONTRACTOR will not be required to submit any confidential or proprietary documentation, such as but not limited to cost data.

E. For payment and processing, all invoices should be mailed to the following address:

Accounts Payable Section
Harbor Department, City of Los Angeles
P.O. Box 191
San Pedro, CA 90733-0191

6. INSURANCE

A. In addition to and not as a substitute for, or limitation of, any of the indemnity obligations of the Master Services Agreement, CONTRACTOR shall procure and maintain at its sole cost and expense and keep in force at all times during the term of this Eligible Purchaser Order the form and amount of insurance no less than that identified in Exhibit C.

B. Accident Reports

CONTRACTOR shall report in writing to Executive Director within fifteen (15) calendar days after it, its officers or managing agents have knowledge of any accident or occurrence involving death of or injury to any person or persons, or damage in excess of Five Hundred Dollars ($500.00) to property, occurring upon the premises, or elsewhere within the Port of Los Angeles if CONTRACTOR's officers, agents or employees are involved in such an accident or occurrence. Such report shall contain to the extent available (1) the name and address of the persons involved, (2) a general statement as to the nature and extent of injury or damage, (3) the date and hour of occurrence, (4) the names and addresses of known witnesses, and (5) such other information as may be known to CONTRACTOR, its officers or managing agents.

7. NOTICES

In all cases where written notice is to be given under this Eligible Purchaser Order, service shall be deemed sufficient if said notice is deposited in the United States mail, postage prepaid. When so given, such notice shall be effective from the date of mailing of the same. For the purposes hereof, unless otherwise provided by notice in writing from the respective parties, notice to the Department shall be addressed to Executive Director,

Los Angeles Harbor Department, P.O. Box 151, San Pedro, California 90733-0151, and notice to CONTRACTOR shall be addressed to it at the address set forth above. Nothing herein contained shall preclude or render inoperative service of such notice in the manner provided by law.

8. INCORPORATION BY REFERENCE

The terms and conditions of City Contract No. C-123897 and Motorola Contract No. 1000409608 Master Services Agreement, as amended, and City Contract No. ARC 40 230000000019 ("Master Equipment Agreement") while not attached hereto as exhibits, are hereby fully incorporated into this Eligible Purchaser Order by reference and the parties agree to be bound by its terms as contemplated by Section 2.3 and Section 2.4 of the Master Services Agreement.

9. STATE TIDELANDS GRANTS

This Eligible Purchaser Order is entered into in furtherance of and as a benefit to the State Tidelands Grant and the trust created thereby. Therefore, this Eligible Purchaser Order is at all times subject to the limitations, conditions, restrictions and reservations contained in and prescribed by the Act of the Legislature of the State of California entitled "An Act Granting to the City of Los Angeles the Tidelands and Submerged Lands of the State Within the Boundaries of Said City," approved June 3, 1929 (Stats. 1929, Ch. 651), as amended, and provisions of Article VI of the Charter of the City of Los Angeles relating to such lands. CONTRACTOR agrees that any interpretation of this Eligible Purchaser Order and the terms contained herein must be consistent with such limitations, conditions, restrictions and reservations.

////

////

//// (Signature page follows)

IN WITNESS WHEREOF, the parties hereto have executed this Eligible Purchaser Order on the date to the left of their signatures.

THE CITY OF LOS ANGELES, by its Board of Harbor Commissioners

Dated: _____, 2024

By: _____
EUGENE D. SEROKA
Executive Director

Attest: _____
AMBER M. KLESGES
Board Secretary

MOTOROLA SOLUTIONS INC.

Dated: 9/26/2024, 2024

By: Jerry Burch

Jerry Burch MSSSI Vice President
(Print/type name and title)

By: Amy L. Rasor

Amy Rasor, NA Regional Counsel
(Print/type name and title)

APPROVED AS TO FORM AND LEGALITY

2/5, 2025

HYDEE FELDSTEIN SOTO, City Attorney
STEVEN Y. OTERA, General Counsel

By: _____
JOHN T. DRISCOLL, Deputy

Attachments

Date: December 19, 2024
Contractor/Vendor Name: Motorola Solutions, Inc. (UHF)

Account#	161305	Project#	2581000
Ctr/Div#	00000	Task#	

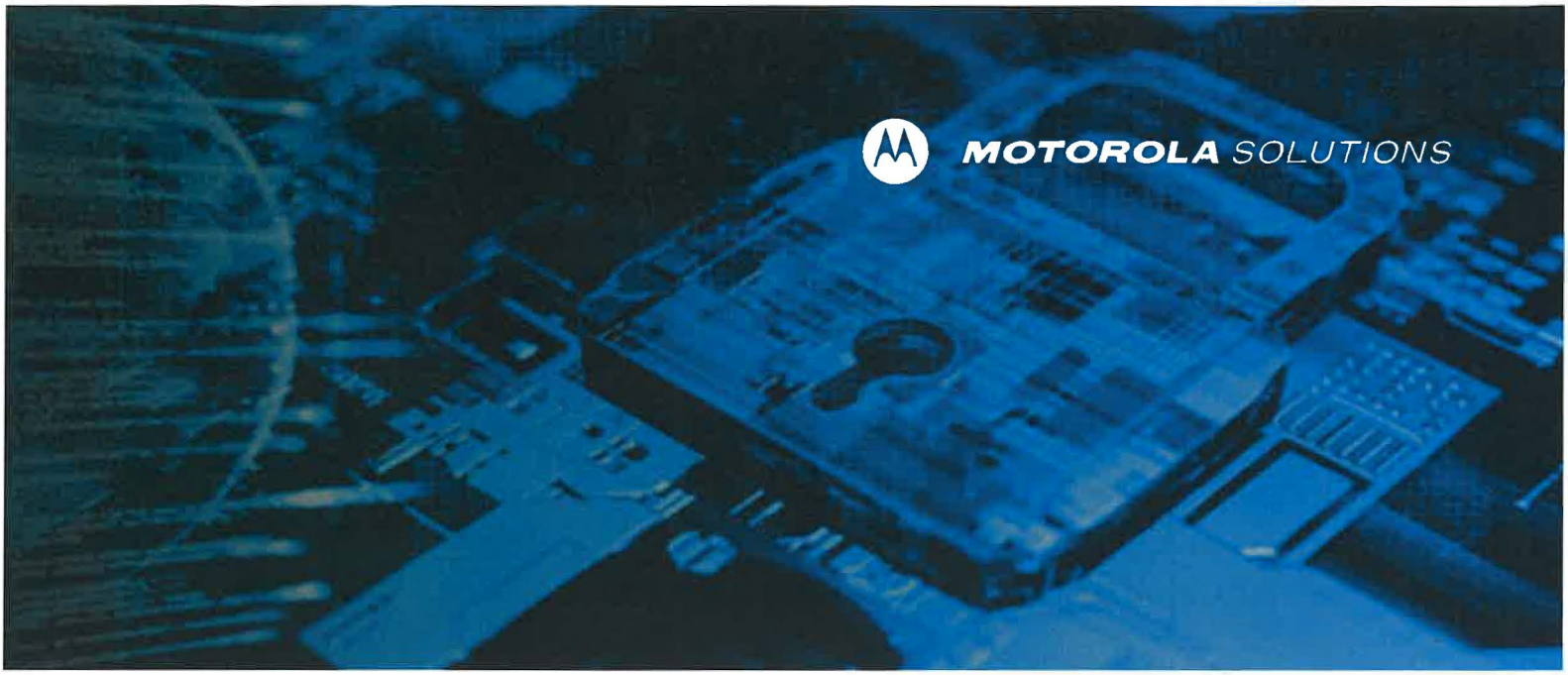
Budget FY:	Amount:
2024-25	$1,506,394
2025-26	$265,770
2026-27	$0
TOTAL:	$1,772,164

For Acct/Budget Div. Use Only

Verified By: Melody M Ugalde Melody Ugalde 2024.12.19 13:09:06 -08'00'

Verified Funds Available: Digitally signed by Frank Liu Date: 2024.12.30 10:13:24 -08'00'

Date Approved: 12/30/24



Port of Los Angeles Police

T-Band Addition

August 6, 2024

EXHIBIT A

MOTOROLA SOLUTIONS

Motorola Solutions, Inc.
500 W Monroe Street, Ste 4400
Chicago, IL 60661-3781
USA

August 6, 2024

Captain Daniel Cobos
Port of Los Angeles Police
330 S. Centre St.
San Pedro, CA 90731

Subject: T-Band Addition

Dear Captain Cobos,

Motorola Solutions, Inc. ("Motorola") is pleased to have the opportunity to provide Port of Los Angeles Police with quality communications equipment and services. The Motorola project team has taken great care to propose a solution that will meet your needs and provide unsurpassed value.

To best meet the functional and operational specifications of this solicitation, our solution includes a combination of hardware, software, and services. Specifically, this solution is for a four (4)-site simulcast solution incorporating The Port of Los Angeles currently licensed UHF T-band conventional channels and includes decommissioning of obsolete infrastructure as well as programming updates to subscribers.

This proposal is subject to the terms and conditions in the existing contracts between the City of Los Angeles and Motorola, contract number ARC 40 230000000019 (formerly 190000000037) for the equipment portion of the proposal and contract number C-123897 for the services portion of the proposal (collectively, the "Contracts"), as further described in this document and shall remain valid for a term of 60 days from the cover date. POLA may accept this proposal by issuing a purchase order incorporating the Contracts and this proposal. Motorola Solutions would be pleased to address any concerns POLA may have. Any questions the Port of Los Angeles Police Department has regarding this proposal can be directed to Michael Conrey, Senior Account Manager at 310-991-4688, Michael.Conrey1@motorolasolutions.com

We thank you for the opportunity to furnish Port of Los Angeles Police with "best in class" solutions and we hope to strengthen our relationship by implementing this project. Our goal is to provide you with the best products and services available in the communications industry.

Sincerely,

Motorola Solutions, Inc.

Jerry Burch
MSSSI Vice President

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Section 1

System Description

The Port of Los Angeles (POLA) has requested a design for a four (4)-site simulcast solution incorporating their currently licensed UHF T-band conventional channels.

Motorola Solutions has prepared this quote to provide POLA with the costs for equipment and services to design and implement a four (4) site, three (3) channel UHF T-band conventional simulcast system with the prime site located at Marine Exchange and TX/RX simulcast subsites located at Marine Exchange, MLETC, KBUE & Mt Lukens.

This design utilizes the existing networking equipment located at these sites to connect this new simulcast cell to the ASTRO 25 Master site being implemented as a part of the ongoing POLA Trunking System Replacement project.

This proposal also includes the services to program POLA's existing all-band Consolettes with the T-Band channels to provide backup in the event that the connection to the core is lost.

1.1 Solution Components

The proposed solution comprises of the following components at each of the listed locations:

Prime Site at Marine Exchange:
- Three (3) GRV Comparators

RF Subsite at Marine Exchange:
- Three (3) GTR 8000 Base Radios
- One (1) new Omni Antenna & Antenna line
- Tx Combiner & Rx Multicoupler (to combine all 4 UHF Channels onto the existing UHF antenna and the new proposed antenna)

RF Subsite at MLETC:
- Three (3) GTR 8000 Base Radios
- One (1) new Omni Antenna & Antenna line
- Tx Combiner & Rx Multicoupler (to combine all 4 UHF Channels onto the existing UHF antenna and the new proposed antenna)

RF Subsite at KBUE:
- Three (3) GTR 8000 Base Radios
- One (1) new Omni Antenna & Antenna line
- Tx Combiner & Rx Multicoupler (to combine all 4 UHF Channels onto the existing UHF antenna and the new proposed antenna)

RF Subsite at Mt Lukens:
- Three (3) GTR 8000 Base Radios
- Two (2) new Directional Antennas & Antenna lines
- Tx Combiner & Rx Multicoupler (to combine the 3 UHF T-band Channels onto the two new proposed antennas)

1.2 Solution Diagrams

The diagrams below depict the existing UHF equipment as well as the new equipment being added to the listed sites. The red circles in the diagram highlight the new equipment being proposed in this quote.

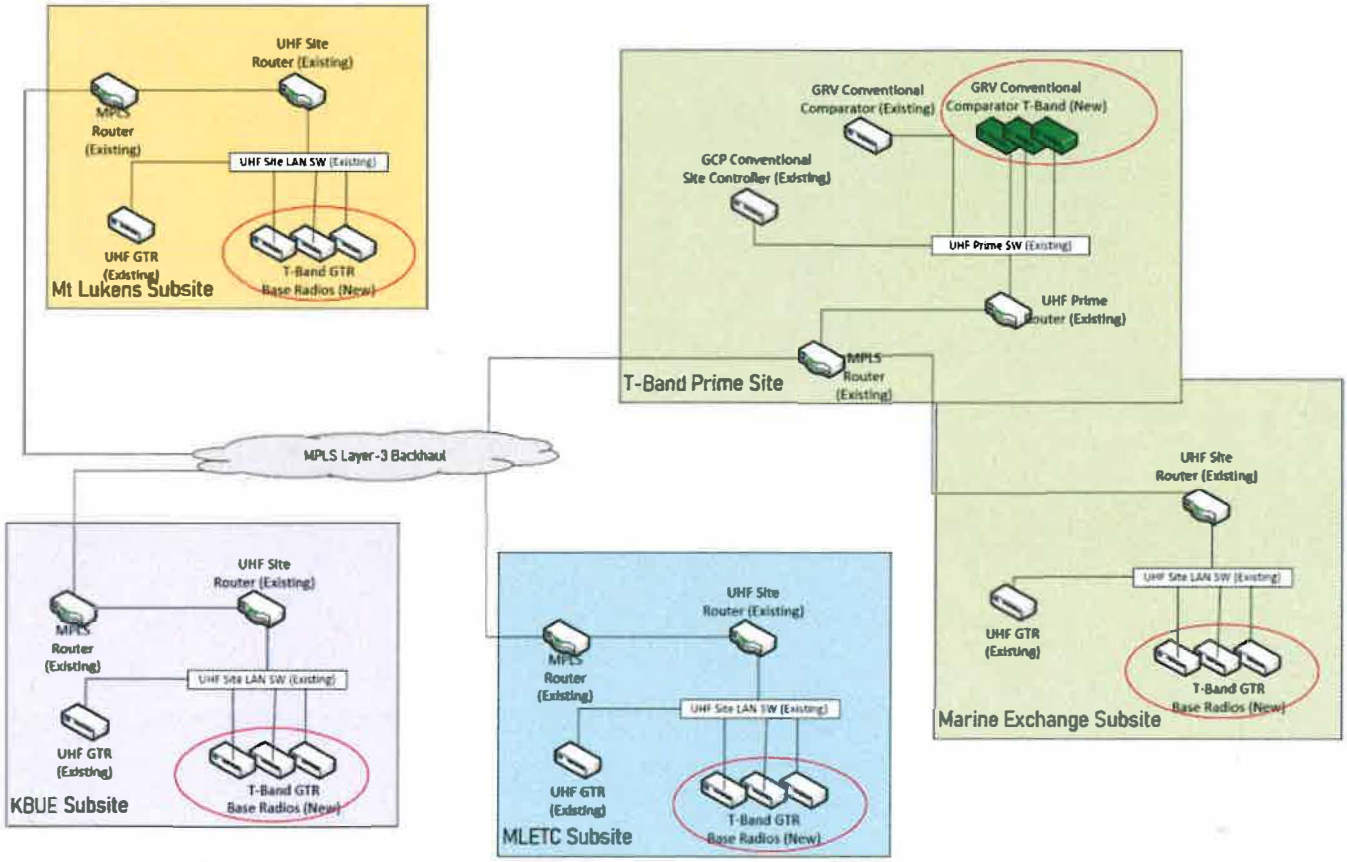
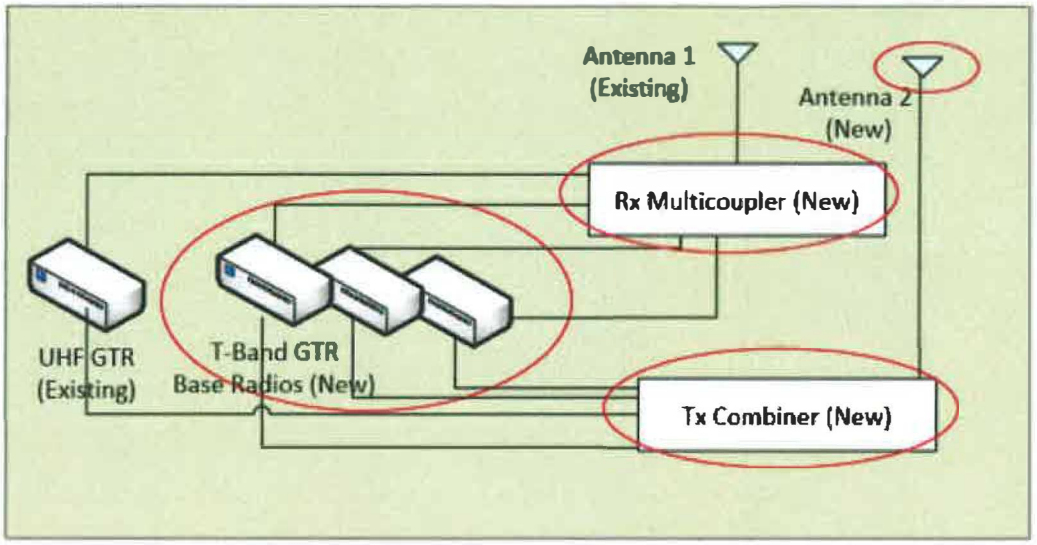
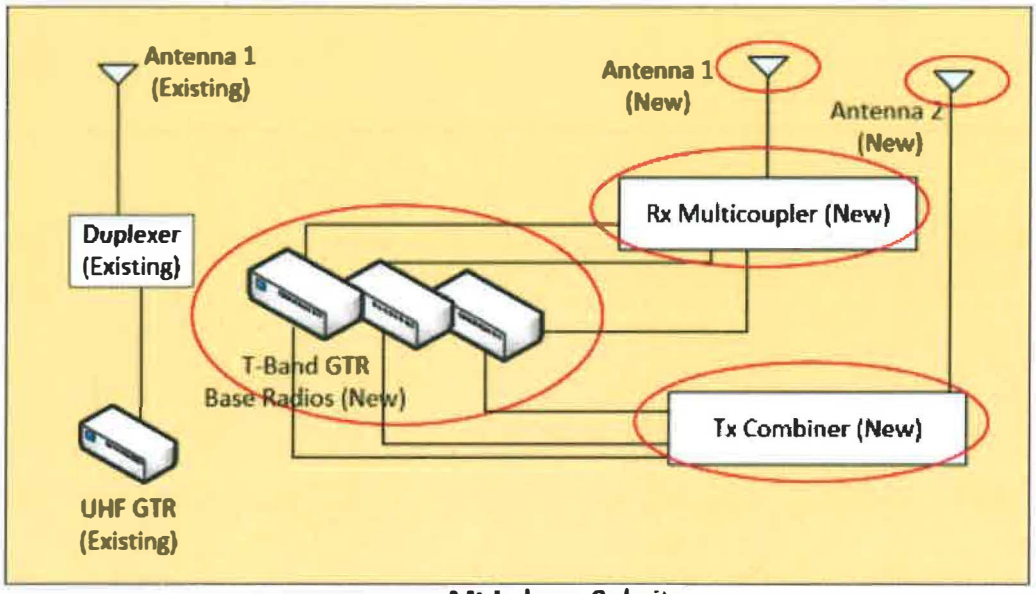


Figure 1-1: System Block Diagram



MLETC, Marine Exchange and KBUE Subsites



Mt Lukens Subsite

Figure 1-2: Antenna System Diagram

1.3 Preliminary Coverage Maps

1.3.1 Guaranteed Coverage Maps

The on-roads coverage indicated in the following maps will be verified via a Coverage Acceptance Test Plan.

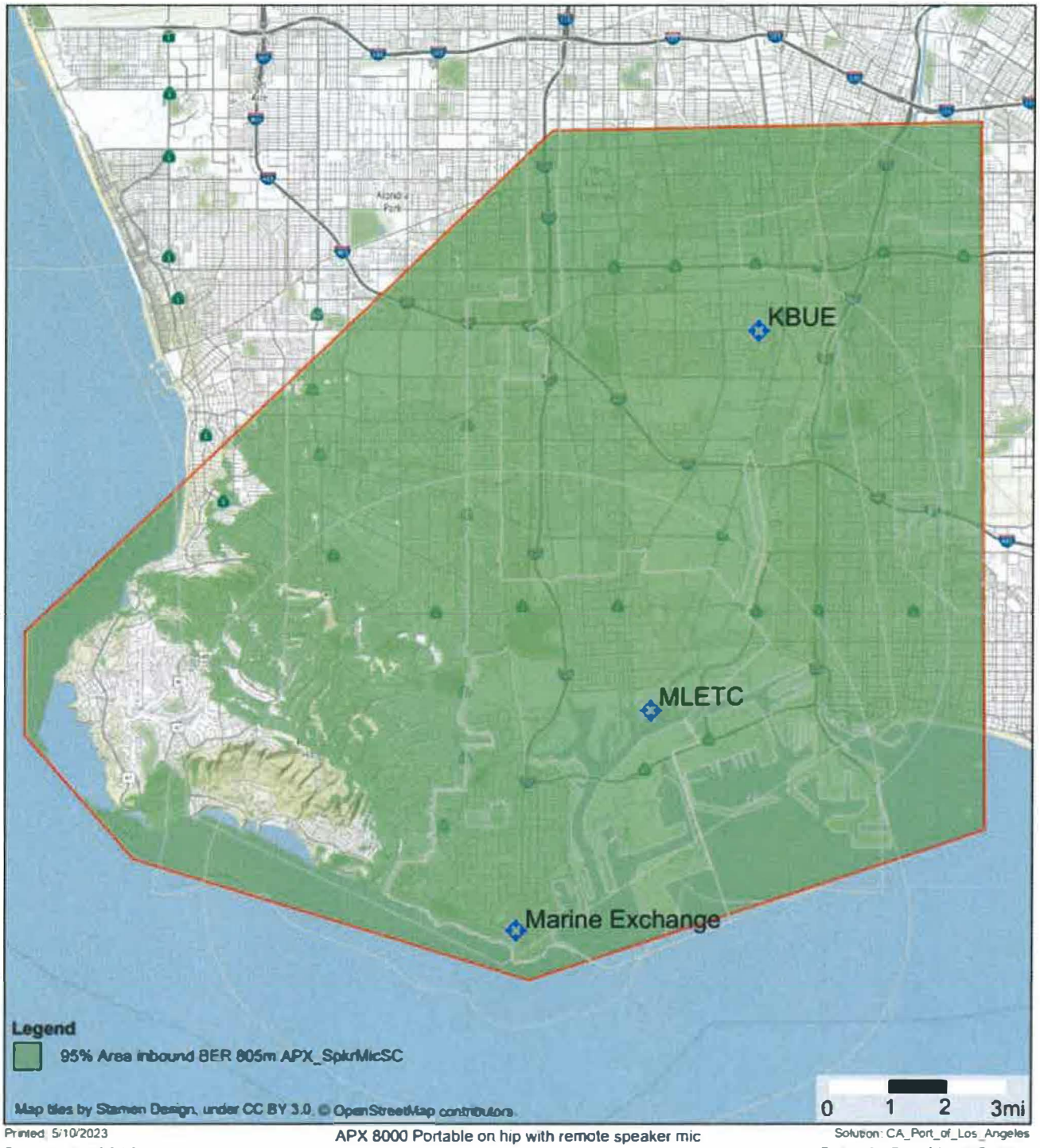
Note that the service area indicated in these maps does not include the areas around Mt Lukens. A separate information only map has been provided in section 1.3.2 showing the coverage in a greater service area that will not be tested or guaranteed.

MOTOROLA SOLUTIONS

POLA UHF T-Band Simulcast Inbound Coverage Map

For Information Only

4-Site Simulcast Cell using Omni Antennas at MLETC, Marine Exchange, KBUE and Directional Antennas at Mt Lukens.



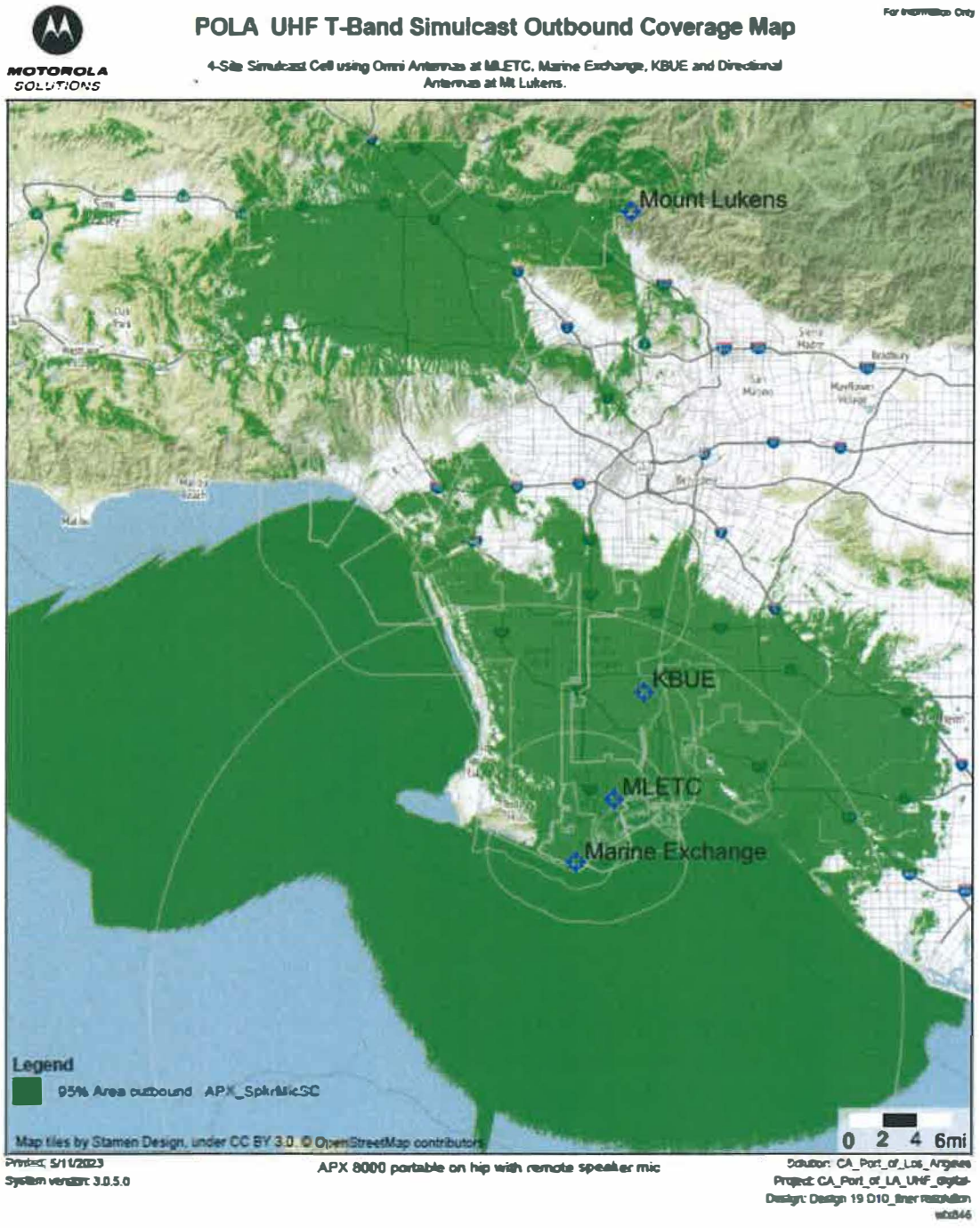
Printed: 5/10/2023
System version: 3.0.4.0

APX 8000 Portable on hip with remote speaker mic

Solution: CA_Port_of_Los_Angeles
Project: CA_Port_of_LA_UHF_digital-
Design: Design 17 D10+smaller polygon
wfx846

1.3.2 Information only Coverage Maps

This following coverage maps are provided for Informational purposes only. No coverage guarantee has been included for the area outside of the guaranteed coverage maps shown in section 1.3.1.

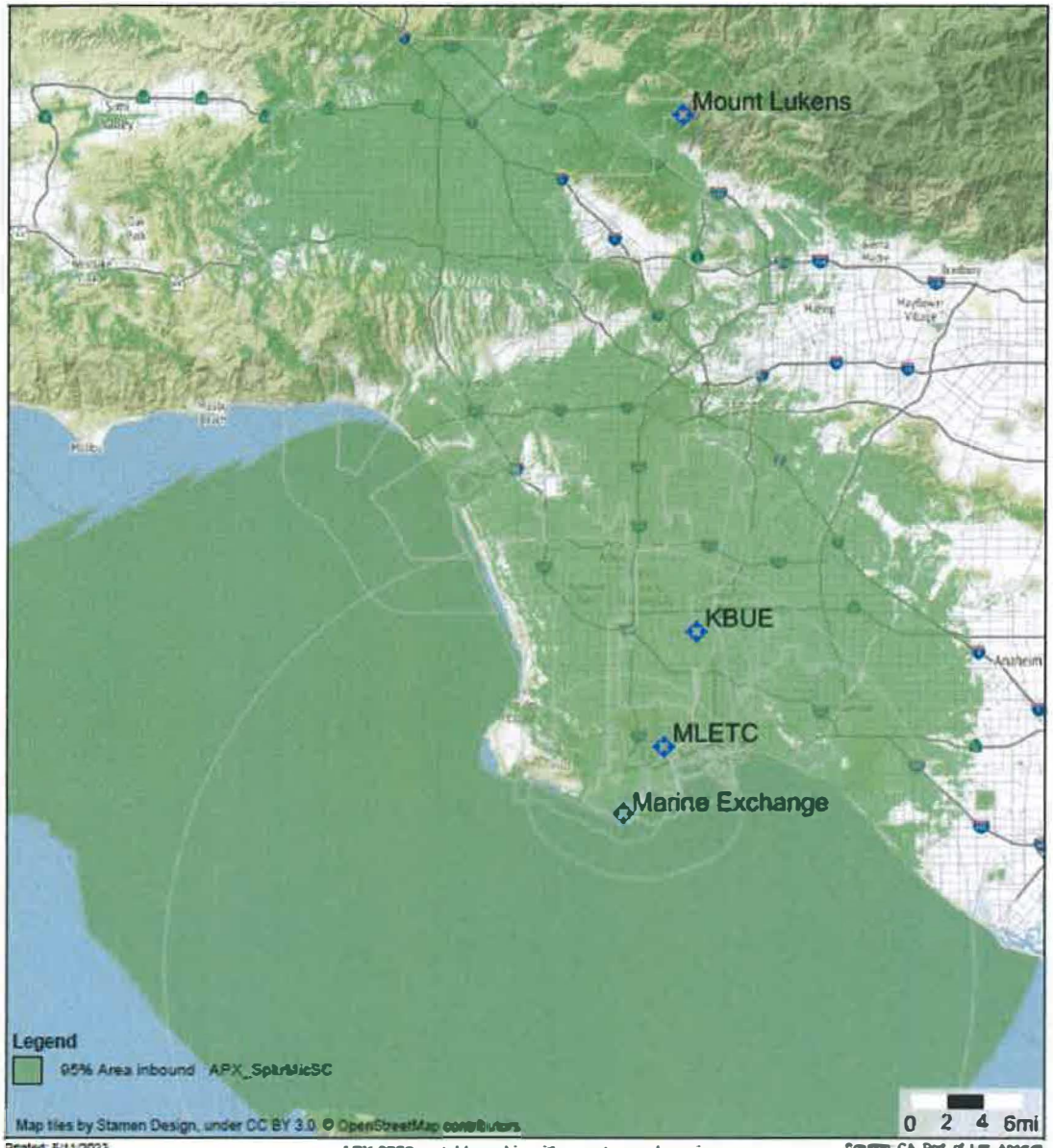


MOTOROLA SOLUTIONS

POLA UHF T-Band Simulcast Inbound Coverage Map

For Information Only

4-Site Simulcast Cell using Omni Antennas at MLETC, Marine Exchange, KBUE and Directional Antennas at Mt Lukens.



Printed: 5/11/2023
System version: 3.0.5.0

APX 8000 portable on hip with remote speaker mic

Solution: CA_Port_of_Los_Angeles
Project: CA_Port_of_LA_UHF_digital-
Design: Design 19 D10_finer resolution
wx846

This map is intended solely for the equipment configuration stated above. Coverage can vary significantly if different configurations are used.

1.4 Decommissioning

As part of this proposal, Motorola will remove and decommission racks and RF antennas from various Port of Los Angeles locations as listed below. Microwave dishes will be removed as part of the existing radio upgrade project. Upon decommissioning, Motorola will coordinate and drop off all of the removed equipment to Berth 93 (with the exception of the batteries from MLETC) and ensure an inventory hand-off sheet is executed and signed. The Port will then take possession of the equipment and dispose of it as they see fit. The MLETC Battery Racks, RF cabling, jumpers, and various installation materials will be decommissioned and disposed of by Motorola Solutions.

- **Marine Exchange**
  - One (1) Equipment rack/cabinet located in the Marine Exchange HQ building
  - One (1) Omni Antenna

- **POLA Port Police Headquarters**
  - Microwave equipment from the equipment room rack.

- **Los Angeles Maritime Law Enforcement Training Center (MLETC)**
  - Six (6) Equipment racks located in the MLETC building
  - Battery Racks
  - One (1) Omni Antenna

- **Badger Bridge (Henry Ford Bridge)**
  - One (1) ¼ rack wall mounted with microwave rack equipment

Section 2

Implementation Plan

This Statement of Work (SOW) describes the tasks and deliverables to be furnished to the Port of Los Angeles Police

The tasks described herein will be performed by Motorola, its subcontractors, and POLA to implement the solution described in the System Description. This SOW describes the actual work involved and clarifies the responsibilities for both Motorola and POLA during project implementation. Specifically, this SOW provides:

- A summary of the phases and tasks to be completed within the project lifecycle.
- A list of the deliverables associated with the project.
- A description of the responsibilities for both Motorola and POLA.
- The qualifications and assumptions taken into consideration during the development of this project.
- A preliminary project schedule.

This SOW provides the most current understanding of the work required by both parties to ensure a successful project implementation. Should any of the configurations change, a revision to the SOW and associated pricing will be required. It is understood that this SOW is a working document, and that it will be revised as needed to incorporate any changes associated with contract negotiations, Detailed Design Review (DDR), and any other change orders that may occur during the execution of the project.

2.1 Statement of Work

Tasks	Motorola	POLA
PROJECT INITIATION		
Contract Finalization and Team Creation		
Execute contract and distribute contract documents.	X	X
Assign a Project Manager as a single point of contact.	X	X
Assign resources.	X	X
Schedule project kickoff meeting.	X	X
Deliverable: Signed contract, defined project team, and scheduled project kickoff meeting.		
Project Administration		

Tasks	Motorola	POLA
Ensure that project team members attend all meetings relevant to their role on the project.	X	X
Set up the project in the Motorola Solutions information system.	X	
Record and distribute project status meeting minutes.	X	
Maintain responsibility for third-party services contracted by Motorola Solutions.	X	
Complete assigned project tasks according to the project schedule.	X	X
Submit project milestone completion documents.	X	
Upon completion of tasks, approve project milestone completion documents.		X
Conduct all project work Monday thru Friday, 7:30 a.m. to 5:00 p.m.).	X	
Deliverable: Completed and approved project milestones throughout the project.		
Project Kickoff		
Introduce team, review roles, and decision authority.	X	X
Present project scope and objectives.	X	
Review SOW responsibilities and project schedule.	X	X
Schedule Design Review.	X	X
Deliverable: Completed project kickoff and scheduled Design Review.		
Design Review		
Review the Customer's operational requirements.	X	X
Present the system design and operational requirements for the solution.	X	
Present installation plan.	X	
Present preliminary transition plan and methods to document final transition process.	X	
Present configuration and details of sites required by system design.	X	
Validate that customer sites can accommodate proposed equipment.	X	X
Provide approvals required to add equipment to proposed existing sites.		X

Tasks	Motorola	POLA
Review safety, security, and site access procedures.	X	
Finalize site acquisition and development plan.	X	X
Present equipment layout plans and system design drawings.	X	
Provide heat load and power requirements for new equipment.	X	
Provide information on existing system interfaces.		X
Provide frequency and radio information for each site.		X
Assume liability and responsibility for providing all information necessary for complete installation.		X
Assume responsibility for issues outside of Motorola Solutions' control.		X
Complete the required forms required for frequency coordination and licensing.	X	
Ensure that frequency availability and licensing meet project requirements, and pay licensing and frequency coordination fees.		X
Review and update design documents, including System Description, Statement of Work, Project Schedule, and Acceptance Test Plan, based on Design Review agreements.	X	
Provide minimum acceptable performance specifications for customer provided hardware, software, LAN, WAN and internet connectivity.	X	
Execute Change Order in accordance with all material changes to the Contract resulting from the Design Review.	X	

Deliverable: Finalized design documentation based upon "frozen" design, along with any relevant Change Order documentation.

SITE PREPARATION AND DEVELOPMENT		
Site Access		
Provide site owners/managers with written notice to provide entry to sites identified in the project design documentation.		X
Maintain access roads in order to provide clear and stable entry to sites for heavy-duty construction vehicles, cement trucks and cranes. Ensure that sufficient space is available at the site for these vehicles to maneuver under their own power, without assistance from other equipment.		X
Obtain site licensing and permitting, including site lease/ownership, zoning, permits, regulatory approvals, easements, power, and telco connections.		X

Tasks	Motorola	POLA
Deliverable: Access, permitting, and licensing necessary to install system equipment at each site.		
Site Planning		
Provide necessary buildings, equipment shelters, and towers for installation of system equipment.		X
Provide the R56 requirements for space, power, grounding, HVAC, and connectivity requirements at each site.	X	
Provide adequate electrical power in proper phase and voltage at sites. Preliminary power requirements are included in Section "Site Infrastructure".	X	
Provide as-built structural and foundation drawings of the structures and site locations, along with geotechnical reports, in order to facilitate a structural analysis. (to best of ability)		X
Perform structural analysis of towers, rooftops, or other structures to confirm that they are capable of supporting proposed and future antenna loads. Preliminary antenna type and mounting heights are included in Section "Coverage Projections".	X	
Confirm that there is adequate utility service to support the new equipment and ancillary equipment.	X	
If applicable, modify towers or other structures at Mt. Lukens, or relocate sites in the system, to ensure that they are capable of supporting proposed and future antenna loads	X	
Conduct site walks to collect pertinent information (e.g. location of telco, power, structures, etc.)	X	
Ensure that each site meets the R56 standards for space, grounding, power, HVAC, and connectivity requirements.	X	
Ensure that required rack space is available for installation of the new equipment. Preliminary rack requirements are described in the Implementation Section.	X	
Deliverable: Information and permitting requirements completed at each site.		
General Facility Improvements		
Provide adequate HVAC, grounding, lighting, cable routing, and surge protection based upon Motorola Solutions' Standards and Guidelines for Communication Sites (R56)	X	
Ensure that electrical service will accommodate installation of system equipment, including isolation transformers, circuit breakers, surge protectors, and cabling.	X	
Provide obstruction-free area for the cable run between the demarcation point and system equipment.		X

Tasks	Motorola	POLA
If applicable, provide structure penetrations (wall or roof) for transmission equipment (e.g. antennas, microwave radios, etc.).	X	
Supply interior building cable trays, raceways, conduits, and wire supports.	X	
Pay for usage costs of power and generator fueling, both during the construction and installation effort, and on an ongoing basis.	X	
Provide one-time mobilization of installation crews.	X	
Transport removed site equipment to a location designated by Customer and within Customer's jurisdiction.	X	
Deliverable: Sites meet physical requirements for equipment installation.		
SYSTEM INSTALLATION		
Equipment Order and Manufacturing		
Create equipment order and reconcile to contract.	X	
Manufacture Motorola Solutions-provided equipment necessary for system based on equipment order.	X	
Procure non-Motorola Solutions equipment necessary for the system.	X	
Deliverable: Equipment procured and ready for shipment.		
Equipment Shipment and Storage		
Provide secure location for solution equipment. (MSS Shop)	X	
Pack and ship solution equipment to the identified, or site locations.	X	
Receive solution equipment.	X	
Inventory solution equipment.	X	X
Deliverable: Solution equipment received and ready for installation		
General Installation		
Deliver solution equipment to installation location.	X	
Coordinate receipt of and inventory solution equipment with designated contact.	X	

Tasks	Motorola	POLA
Install all proposed fixed equipment as outlined in the System Description based upon the agreed-upon floor plans, connecting audio, control, and radio transmission cables to connect equipment to the power panels or receptacles, and audio/control line connection points. Installation performed in accordance with R56 standards and state/local codes.	X	
Provide system interconnections that are not specifically outlined in the system design.		X
Install and terminate all network cables between site routers and network demarcation points, including microwave, leased lines, and Ethernet.	X	
Ensure that Type 1 and Type 2 AC suppression is installed to protect installed equipment.	X	
Connect installed equipment to the provided ground system.	X	
Label equipment, racks, and cables.	X	
Perform preliminary audit of installed equipment to ensure compliance with requirements and R56 standards.	X	
Note any required changes to the installation for inclusion in the "as-built" system documentation.	X	
Remove, transport, and dispose of old equipment when delivered to POLA warehouse.		X

Deliverable: Equipment installed.

Antenna and Transmission Line Installation		
Install antennas, including supplying and installing new side arm mounts	X	
Install transmission lines required for system.	X	
If applicable, provide structure penetrations for transmission equipment (e.g. antennas & microwave line.).	X	
Perform sweep tests on transmission lines.	X	
Provide and install attachment hardware for supporting transmission lines on antenna support structure.	X	
Supply and install ground buss bar at the bottom of each antenna support structure.	X	

Deliverable: Antenna and Transmission Line installed.

Site Installation and Configuration		
Install fixed equipment contained in the equipment list and system description.	X	

Tasks	Motorola	POLA
Configure ASTRO 25 system to support the new RF sites.	X	
Verify site link performance, prior to the interconnection of the solution equipment to the link equipment.	X	
Integrate the RF sites into the system to ensure proper operation.	X	
Deliverable: ASTRO 25 core and remote site equipment installation completed.		
Refresh Console and User Radio Codeplugs		
Review and determine modifications to existing codeplugs.	X	X
Designate user group representatives for the user groups, to make timely decisions on their behalf.		X
Provide advisory input during codeplug re-evaluation.		X
Develop templates.	X	
Participate in a meeting to finalize any changes among user groups.	X	X
Review and approve codeplug templates.		X
Program the approved templates into a radio-programming template tool.	X	
Program approved templates into console.	X	
Evaluate sample radios and provide feedback.		X
Approve templates.		X
Deliverable: codeplug plan completed and approved by Customer.		
Portable Radio Programming and Distribution		
Verify features and functionalities of the portable radio template according to the approved fleetmap	X	
Program test portable radios with each template version and activate them on the system.	X	
Provided radios to Motorola for programming at customers facility.		X
Update programming on all customer subscribers. (110 mobiles, 270 portables and 6 consolettes)	X	
Acknowledge receipt of portable radio and verify proper operation of a sampling of delivered portable radios.		X
Distribute portable radios to end users.		X

Tasks	Motorola	POLA
Deliverable: Portable radios accepted and distributed.		
Consolette Programming		
Update the existing All-band Consolette Codeplugs to include the T-band Channels.	X	
Program and test the existing All-band Consolettes with the T-band channels	X	
Deliverable: Existing all-band consolettes programmed to include the T-band channels		
Decommissioning		
Removal of all equipment as detailed in section 1.4 of this proposal	X	
Transport of removed equipment to Berth 93	X	
Decommissioning of rack equipment, antennas, and microwave links		X
Decommissioning and disposal of MLETC battery racks, cables, connectors and various installation materials	X	
Deliverable: Decommissioning Completed.		
SYSTEM OPTIMIZATION AND TESTING		
R56 Site Audit		
Perform R56 site-installation quality-audits, verifying proper physical installation and operational configurations.	X	
Create site evaluation report to verify site meets or exceeds requirements, as defined in Motorola Solutions' R56 Standards and Guidelines for Communication Sites.	X	
Deliverable: R56 Standards and Guidelines for Communication Sites audits completed successfully.		
Functional Acceptance Testing		
Verify the operational functionality and features of the solution supplied by Motorola Solutions, as contracted.	X	
Witness the functional testing.	X	X
Document all issues that arise during the acceptance tests.	X	
If any major task for the system as contractually described fails during the Customer acceptance testing or beneficial use, repeat that particular task after Motorola Solutions determines that corrective action has been taken.	X	
Document the results of the acceptance tests and present for review.	X	

Tasks	Motorola	POLA
Review and approve final acceptance test results.		X
Deliverable: Completion of functional testing and approval by Customer.		
Coverage Acceptance Testing		
Perform coverage testing according to the Coverage Acceptance Test Plan (CATP). Based on the number of estimated tiles, Motorola plans to deploy one test team.	X	
For any area that fails, take corrective action.	X	
Retest any areas for which corrective action has been taken.	X	
Document all issues that arise during the coverage testing.	X	
Submit final test reports, according to the agreed period	X	
Provide the required number of resources to witness the coverage testing.		X
Review and approve test results.		X
Deliverable: Completion of coverage testing and approval by Customer.		
PROJECT TRANSITION		
System Transition		
Finalize Transition Plan.	X	X
Conduct transition meetings with relevant personnel to address both how to mitigate technical and communication problem impacts to the users during transition and during the general operation of the system.	X	X
Notify the personnel affected by the transition of the date and time planned for transition.		X
Provide ongoing communication with users regarding the project and schedule.	X	X
Transition users and ensure that user radios are operating on system.		X
Resolve punchlist items, documented during the Acceptance Testing phase, in order to meet all the criteria for final system acceptance.	X	
Assist Motorola Solutions with resolution of identified punchlist items by providing support, such as access to the sites, equipment and system, and approval of the resolved punchlist items.		X

Tasks	Motorola	POLA
Deliverable: Migration to new system completed, and punchlist items resolved.		
Transition to Warranty		
Review the items necessary for transitioning the project to warranty support and service.	X	
Motorola Solutions to provide services during year 1 warranty which align with the proposed services.	X	
Provide a Customer Support Plan detailing the warranty support associated with the contract equipment.	X	
Participate in the Transition Service/Project Transition Certificate (PTC) process.		X
Deliverable: Service information delivered and approved by Customer		
Finalize Documentation and System Acceptance		
Provide manufacturer's installation material, part list and other related material to Customer upon project completion.	X	
Provide an electronic as-built system manual on CD or other Customer preferred electronic media. The documentation will include the following: - Site Block Diagrams. - Site Floor Plans. - Site Equipment Rack Configurations. - Antenna Network Drawings for RF Sites (where applicable). - ATP Test Checklists. - Functional Acceptance Test Plan Test Sheets and Results. - Equipment Inventory List. - Maintenance Manuals (where applicable). - Technical Service Manuals (where applicable). Drawings will be delivered in Adobe PDF format.	X	
Receive and approve documentation.		X
Execute Final Project Acceptance.	X	X
Deliverable: All required documents are provided and approved. Final Project Acceptance.		

2.2 Assumptions

Motorola has made several assumptions in preparing this proposal which are noted below.

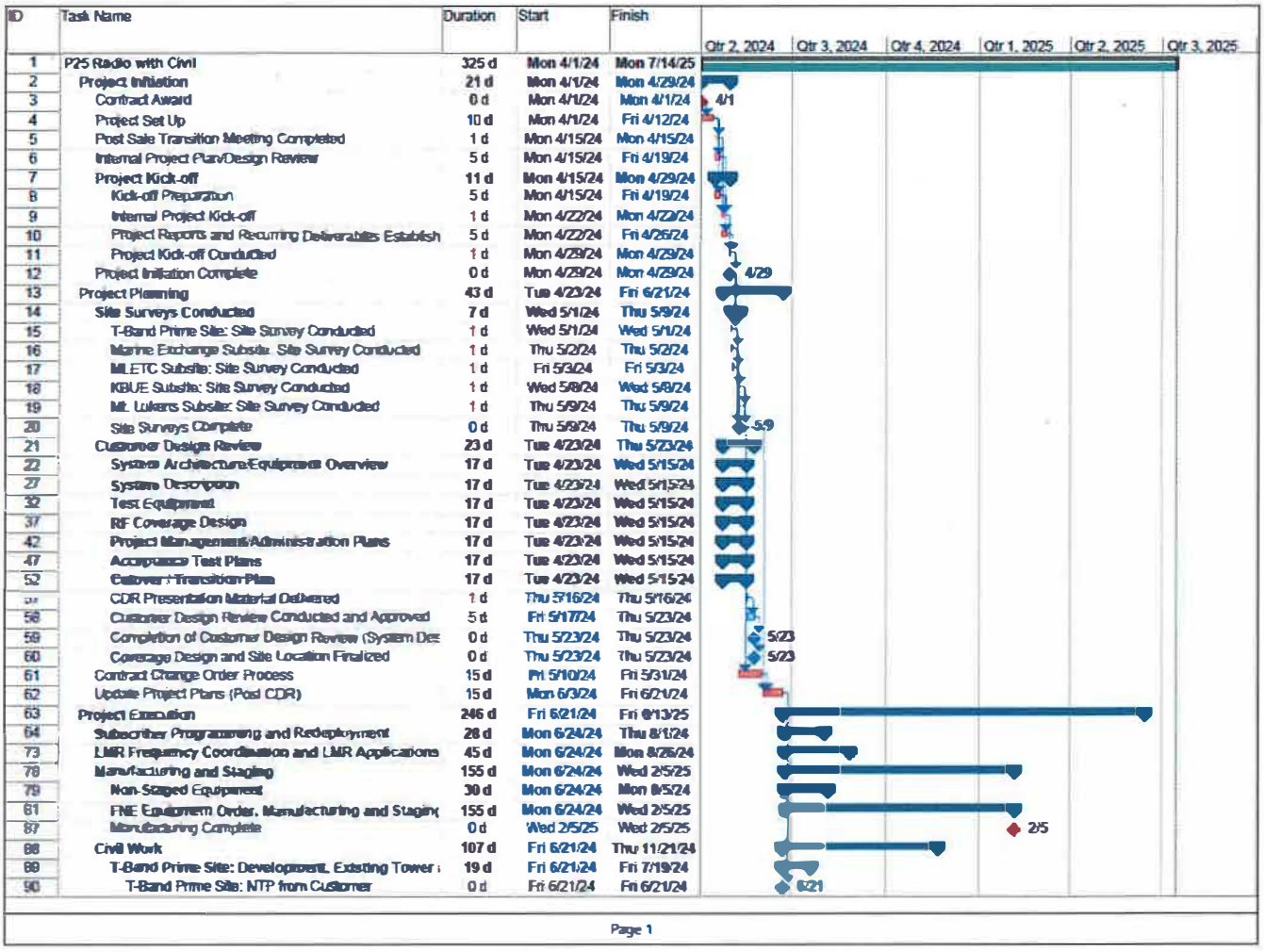
- The proposed equipment will be placed in the existing racks at the sites that are being implemented as a part of the ongoing Trunking upgrade project. It has been verified that the

existing racks at Marine Exchange, MLETC and KBUE have sufficient space to install the proposed equipment. The current T-band equipment at the Mt Lukens site will be removed and replaced with the proposed equipment in existing equipment racks. MSI assumes that existing rack space will continue to be available during project execution.

- The proposed equipment will connect to the existing DC power subsystem at each location. It has been verified that the current DC rectifiers and backup batteries have sufficient capacity to incorporate the proposed system. Additional breakers have been included to facilitate this connection. MSI assumes that existing DC capacity and ancillary components will continue to be available during project execution.
- The current duplexer that is being implemented at Marine Exchange, MLETC & KBUE will be removed and replaced with a custom Combiner/Multiplexer so that the 4 UHF Channels at these sites can be combined onto 2 Antennas. The existing antenna will be re-used along with the new antenna is proposed.
- Tower studies have been included in this quote to ensure that all existing towers at the proposed site locations have enough space to accommodate the proposed antennas. MSI assumes that existing towers will continue to have the same antenna loading profile during project execution.
- It has been verified that the sites in the proposal have sufficient space available for the system described. MSI assumes that existing sites will continue to have the same space availability during project execution.
- Any necessary FCC licensing will be provided by POLA. This proposal does not include the cost for any modification to the existing licenses.
- There are two types of coverage maps presented in this proposal. "Guaranteed Coverage Maps" and "Information only" Coverage maps. While the guaranteed coverage map will be verified via an ATP, No coverage guarantee or coverage acceptance test has been included in this quote for the service area shown in the larger Information only coverage maps.
- All existing sites or equipment locations will have sufficient space available for the system described as required/specified by R56.
- All existing sites or equipment locations will have adequate electrical power in the proper phase and voltage, and site grounding to support the requirements of the system described.
- Moderate site/location upgrades or modifications for Mt Lukens have been priced in this proposal.
- Approved local, State, or Federal permits as may be required for the installation and operation of the proposed equipment are the responsibility of Port of Los Angeles Police.
- Motorola is not responsible for interference caused or received by the Motorola-provided equipment except for interference that is directly caused by the Motorola-provided transmitter(s) to the Motorola-provided receiver(s). Should the Port of Los Angeles Police system experience interference, Motorola can be contracted to investigate the source and recommend solutions to mitigate the issue.

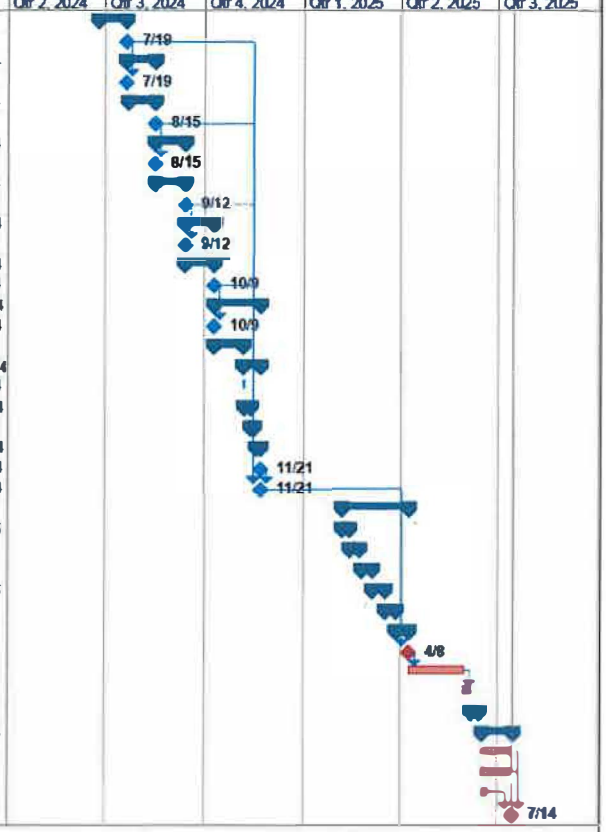
2.3 Preliminary Project Schedule

Motorola has estimated an approximate 16 month commitment for this project from Project Kickoff through Final Project Acceptance. A snapshot of the estimated schedule is provided below. This estimate considers current fluid and dynamic equipment lead times and product shortages outside of Motorola's control. This schedule does not include any further unforeseen supply chain equipment procurement delays. A detailed project schedule will be completed and reviewed for approval with POLA during the detailed design review.



ID	Task Name	Duration	Start	Finish
1	P25 Radio with Civil	325 d	Mon 4/1/24	Mon 7/14/25
2	Project Initiation	21 d	Mon 4/1/24	Mon 4/29/24
3	Contract Award	0 d	Mon 4/1/24	Mon 4/1/24
4	Project Set Up	10 d	Mon 4/1/24	Fri 4/12/24
5	Post Sale Transition Meeting Completed	1 d	Mon 4/15/24	Mon 4/15/24
6	Internal Project Plan/Design Review	5 d	Mon 4/15/24	Fri 4/19/24
7	Project Kick-off	11 d	Mon 4/15/24	Mon 4/29/24
8	Kick-off Preparation	5 d	Mon 4/15/24	Fri 4/19/24
9	Internal Project Kick-off	1 d	Mon 4/22/24	Mon 4/22/24
10	Project Reports and Recurring Deliverables Establish	5 d	Mon 4/22/24	Fri 4/26/24
11	Project Kick-off Conducted	1 d	Mon 4/29/24	Mon 4/29/24
12	Project Initiation Complete	0 d	Mon 4/29/24	Mon 4/29/24
13	Project Planning	43 d	Tue 4/23/24	Fri 6/21/24
14	Site Surveys Conducted	7 d	Wed 5/1/24	Thu 5/9/24
15	T-Band Prime Site: Site Survey Conducted	1 d	Wed 5/1/24	Wed 5/1/24
16	Marine Exchange Substa: Site Survey Conducted	1 d	Thu 5/2/24	Thu 5/2/24
17	MLETC Substa: Site Survey Conducted	1 d	Fri 5/3/24	Fri 5/3/24
18	KBUE Substa: Site Survey Conducted	1 d	Wed 5/8/24	Wed 5/8/24
19	Mt. Lukens Substa: Site Survey Conducted	1 d	Thu 5/9/24	Thu 5/9/24
20	Site Surveys Complete	0 d	Thu 5/9/24	Thu 5/9/24
21	Customer Design Review	23 d	Tue 4/23/24	Thu 5/23/24
22	System Architecture/Equipment Overview	17 d	Tue 4/23/24	Wed 5/15/24
27	System Description	17 d	Tue 4/23/24	Wed 5/15/24
32	Test Equipment	17 d	Tue 4/23/24	Wed 5/15/24
37	RF Coverage Design	17 d	Tue 4/23/24	Wed 5/15/24
42	Project Management/Administration Plans	17 d	Tue 4/23/24	Wed 5/15/24
47	Acceptance Test Plans	17 d	Tue 4/23/24	Wed 5/15/24
52	Cutover / Transition Plan	17 d	Tue 4/23/24	Wed 5/15/24
57	CDR Presentation Material Delivered	1 d	Thu 5/16/24	Thu 5/16/24
58	Customer Design Review Conducted and Approved	5 d	Fri 5/17/24	Thu 5/23/24
59	Completion of Customer Design Review (System Des	0 d	Thu 5/23/24	Thu 5/23/24
60	Coverage Design and Site Location Finalized	0 d	Thu 5/23/24	Thu 5/23/24
61	Contract Change Order Process	15 d	Fri 5/10/24	Fri 5/31/24
62	Update Project Plans (Post CDR)	15 d	Mon 6/3/24	Fri 6/21/24
63	Project Execution	246 d	Fri 6/21/24	Fri 6/13/25
64	Subscriber Programming and Redeployment	28 d	Mon 6/24/24	Thu 8/1/24
73	LMR Frequency Coordination and LMR Applications	45 d	Mon 6/24/24	Mon 8/26/24
78	Manufacturing and Staging	155 d	Mon 6/24/24	Wed 2/5/25
79	Non-Staged Equipment	30 d	Mon 6/24/24	Mon 8/5/24
81	FNE Equipment Order, Manufacturing and Staging	155 d	Mon 6/24/24	Wed 2/5/25
87	Manufacturing Complete	0 d	Wed 2/5/25	Wed 2/5/25
88	Civil Work	107 d	Fri 6/21/24	Thu 11/21/24
89	T-Band Prime Site: Development, Existing Tower	19 d	Fri 6/21/24	Fri 7/19/24
90	T-Band Prime Site: NTP from Customer	0 d	Fri 6/21/24	Fri 6/21/24

ID	Task Name	Duration	Start	Finish
91	T-Band Prime Site: Pre Construction	19 d	Mon 6/24/24	Fri 7/19/24
99	T-Band Prime Site: Existing Site Improvement Rea	0 d	Fri 7/19/24	Fri 7/19/24
100	Marine Exchange Subsite: Development, Existing	19 d	Fri 7/19/24	Thu 8/15/24
101	Marine Exchange Subsite: NTP from Customer	0 d	Fri 7/19/24	Fri 7/19/24
102	Marine Exchange Subsite: Pre Construction	19 d	Mon 7/22/24	Thu 8/15/24
110	Marine Exchange Subsite: Existing Site Improvem	0 d	Thu 8/15/24	Thu 8/15/24
111	MLETC Subsite: Development, Existing Tower an	19 d	Thu 8/15/24	Thu 9/12/24
112	MLETC Subsite: NTP from Customer	0 d	Thu 8/15/24	Thu 8/15/24
113	MLETC Subsite: Pre Construction	19 d	Fri 8/16/24	Thu 9/12/24
121	MLETC Subsite: Existing Site Improvement Ready	0 d	Thu 9/12/24	Thu 9/12/24
122	KBUE Subsite: Development, Existing Tower and	19 d	Thu 9/12/24	Wed 10/9/24
123	KBUE Subsite: NTP from Customer	0 d	Thu 9/12/24	Thu 9/12/24
124	KBUE Subsite: Pre Construction	19 d	Fri 9/13/24	Wed 10/9/24
132	KBUE Subsite: Existing Site Improvement Ready fo	0 d	Wed 10/9/24	Wed 10/9/24
133	Mt. Lukens Subsite: Development, Existing Tower	31 d	Wed 10/9/24	Thu 11/21/24
134	Mt. Lukens Subsite: NTP from Customer	0 d	Wed 10/9/24	Wed 10/9/24
135	Mt. Lukens Subsite: Pre Construction	19 d	Thu 10/10/24	Tue 11/5/24
143	Mt. Lukens Subsite: Site Construction	12 d	Wed 11/6/24	Thu 11/21/24
144	Mt. Lukens Subsite: Pre-Construction Meeting / I	1 d	Wed 11/6/24	Wed 11/6/24
145	Mt. Lukens Subsite: Shelter Electrical and Gr	4 d	Thu 11/7/24	Tue 11/12/24
148	Mt. Lukens Subsite: Site Restoration	3 d	Wed 11/13/24	Fri 11/15/24
151	Mt. Lukens Subsite: Close-Out	4 d	Mon 11/18/24	Thu 11/21/24
154	Mt. Lukens Subsite: Existing Site Improvement Rea	0 d	Thu 11/21/24	Thu 11/21/24
155	Civil Work Complete	0 d	Thu 11/21/24	Thu 11/21/24
156	System Installation	44 d	Thu 2/6/25	Tue 4/8/25
157	Receipt and Inventory of Equipment	5 d	Thu 2/6/25	Wed 2/12/25
160	T-Band Prime Site: Equipment Installation	7 d	Thu 2/13/25	Fri 2/21/25
171	Marine Exchange Subsite: Equipment Installation	8 d	Mon 2/24/25	Wed 3/5/25
182	MLETC Subsite: Equipment Installation	8 d	Thu 3/6/25	Mon 3/17/25
193	KBUE Subsite: Equipment Installation	8 d	Tue 3/18/25	Thu 3/27/25
204	Mt. Lukens Subsite: Equipment Installation	8 d	Fri 3/28/25	Tue 4/8/25
215	System Installation Complete	0 d	Tue 4/8/25	Tue 4/8/25
216	Perform System Acceptance Testing	36 d	Wed 4/9/25	Thu 5/29/25
217	Perform Coverage Acceptance Testing	5 d	Fri 5/30/25	Thu 6/5/25
218	Cut-Over	6 d	Fri 6/6/25	Fri 6/13/25
221	Project Close	20 d	Mon 6/16/25	Mon 7/14/25
222	Punch List Resolution	20 d	Mon 6/16/25	Mon 7/14/25
223	Finalize Documentation and Deliver As-Builts	20 d	Mon 6/16/25	Mon 7/14/25
224	Complete Service Transition Meeting	5 d	Mon 6/16/25	Fri 6/20/25
225	Final System Acceptance	0 d	Mon 7/14/25	Mon 7/14/25



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Section 3

Site Development Statement of Work

3.1 Site Development for the UHF T-Band Conventional Simulcast System

Structural analysis and tower mapping only on existing Self supporting towers. Assumes current tower as-built documentation can be provided. Excludes any dispersive wave testing of the foundation or ultrasonic measurements of the tower structure.

Site Scope Summary

- Engineering services for site drawings and regulatory approvals – Included.
- Site acquisition services – Not included.
- Zoning Services – Not included.
- Existing tower to be used for antennas –
  - Marine Exchange – 100' Self support
  - MLETC – 115' Self support
  - KBUE-FM – 399' Self support
  - Mt. Lukens – 120' Self support

3.2 Detailed Description: Marine Exchange and MLETC Structural Analysis Report

Motorola Responsibilities:

Site Engineering

- Complete a tower appurtenance mapping and site investigation necessary to develop structural analysis for existing structures. Mapping does not include tower foundation mapping or geotechnical investigation that may be required for a rigorous structural analysis per TIA-222. Tower mapping is not a maintenance and condition assessment of the structure.

Site Preparation

- Provide one-time mobilization costs for the construction crews. Any remobilization due to interruptions/delays that are out of Motorola's control will result in additional costs

Customer Responsibilities: Marine Exchange - MLTEC

- Provide to best of ability as-built structural and foundation drawings of the structure and site location(s) along with geotechnical report(s) for Motorola to conduct a structural analysis.

3.3 Detailed Description: KBUE-FM Structural Analysis Report

Motorola Responsibilities:

Site Engineering

- Complete a tower appurtenance mapping and site investigation necessary to develop structural analysis for existing structures. Mapping does not include tower foundation mapping or geotechnical investigation that may be required for a rigorous structural analysis per TIA-222. Tower mapping is not a maintenance and condition assessment of the structure

Site Preparation

- Provide one-time mobilization costs for the construction crews. Any remobilization due to interruptions/delays that are out of Motorola's control will result in additional costs
- Power reduction on some antennas, as well as down time, should be expected during tower inspections. MSI is responsible to coordinate with owner all access and power reductions to be within OSHA safe acceptable levels.

Customer Responsibilities:

- Assist in providing as-built structural and foundation drawings of the structure and site location(s) along with geotechnical report(s) for Motorola to conduct a structural analysis.

3.4 Detailed Description: Mt. Lukens – Raycom, California

Motorola Responsibilities:

Site Engineering

- Complete a tower appurtenance mapping and site investigation necessary to develop structural analysis for existing structures. Mapping does not include tower foundation mapping or geotechnical investigation that may be required for a rigorous structural analysis per TIA-222. Tower mapping is not a maintenance and condition assessment of the structure
- Should the tower fail the structural analysis, the tower remediation engineering and a design shall be performed and provided for the Mt. Lukens – Raycom tower.

A remediation allowance has been set aside in the amount of $86,390 to address the remediation design, and the implementation of the required improvements. If the allowance is exhausted, the customer is responsible for the additional costs. A quote / proposal will be provided via the Contract Change Order process.

Site Preparation

- Provide one-time mobilization costs for the construction crews. Any remobilization due to interruptions/delays that are out of Motorola's control will result in additional costs

3.5 Assumptions

- No certified payroll, mandatory union workers or mandatory minority workers are required for this work
- All work is assumed to be done during normal business hours as dictated by time zone (Monday thru Friday, 7:30 a.m. to 5:30 p.m.).
- Assumes current tower as-built documentation can be provided.
- Assumes that all work is to be done in a turn-key and contiguous manner and there will be no segregation or de-scoping of any of the proposed work.
- Excludes any dispersive wave testing of the foundation or ultrasonic measurements of the tower structure.
- Hazardous materials are not present at the work location. Testing and removal of hazardous materials, found during site investigations, construction or equipment installation will be the responsibility of the Port of Los Angeles.
- If extremely harsh or difficult weather conditions delay the site work for more than a week, Motorola will seek excusable delays rather than risk job site safety

Section 4

Functional Acceptance Test Plan

System Acceptance of the proposed solution will occur upon successful completion of a Functional Acceptance Test Plan (FATP), which will test the feature and functions for the installed equipment in order to verify that the solution operates according to its design. This plan will validate that the Port of Los Angeles Police solution will operate according to its design, and increase the efficiency. An FATP will be developed during the design review. A sample of the tests covered in the Acceptance Test Plan are provided below:

4.1 Radio to Radio Features

Conventional Radio Resource Call – Clear Mode
Subscribers can communicate to each other through a repeater that is selected via the channel selector on the individual radio.
The signals that are received from the subscriber radio are repeated so that other radios on that channel will be able to hear and participate in the conversation.

Conventional ASTRO Emergency
Users in life threatening situations can use the Emergency button on the radio to notify the dispatch and other radio users on the channel of an Emergency.

Conventional Radio Resource Via Comparator
A comparator will vote all receive capable sites and transmit on specified transmit capable sites. Because a comparator will construct a signal from multiple sites, it is necessary to test each site individually.

4.2 Conventional Tests

Conventional Radio Priority Scan
With Priority Scan, a radio user can scan pre-programmed channels in the scan list. Activity on the channels are monitored on a first-come first-served basis. A conversation in process will only interrupted by activity on channels marked as Priority in the scan list.

Subscriber Transmits Conventional Talkgroup
This test will demonstrate the capability of the console to receive a conventional talkgroup call from a subscriber. The console operator will see a cross busy due to subscriber on other talkgroups on that conventional talkgroup channel. The cross busy due to subscriber indicates that the console operator should avoid transmitting on that cross busy talkgroup. Subscribers using a different talkgroup on the conventional talkgroup channel will see LED light indicating channel busy.

This test also will demonstrate that a console transmitting on a cross busy due to subscriber talkgroup will take the outbound channel away from the transmitting subscriber.

Conventional Comparator Force Vote Using Customer Service Software (CSS)

The user has the ability to send a "Force Vote" command to a Conventional Comparator. Force voting allows the user to customize or test the audio paths of the system.

Section 5

Coverage Acceptance Test Plan

5.1 Overview

This Coverage Acceptance Test Plan (CATP) is designed to verify that the voice radio system implemented by Motorola Solutions for the Port of Los Angeles (POLA) meets or exceeds the required reliability as shown on Motorola Solutions' maps. The CATP defines the coverage testing method and procedure, the coverage acceptance criterion, the test documentation, and the responsibilities of both Motorola Solutions and POLA

Coverage Acceptance Testing is based upon a coverage prediction that accurately represents the implemented infrastructure and parameters that are consistent with the contract agreements. To characterize system performance accurately, the actual user equipment radio series deployed for Port of Los Angeles will be used to conduct the coverage test.

Subsequent sections define the coverage acceptance test configuration(s) and test criteria.

5.2 CATP Definitions

Several definitions are needed to accurately describe the coverage acceptance test method and criteria. Where cited, these terms or methods are defined in TIA TSB-88.1-F[1] or TSB-88.3-F[2].

5.2.1 Defined Test Area

The defined test area is the geographical area in which communications will be provided that meet or exceed the specified Channel Performance Criterion (CPC) at the specified reliability for the specified equipment configuration(s). The defined test area is shown in the maps below.

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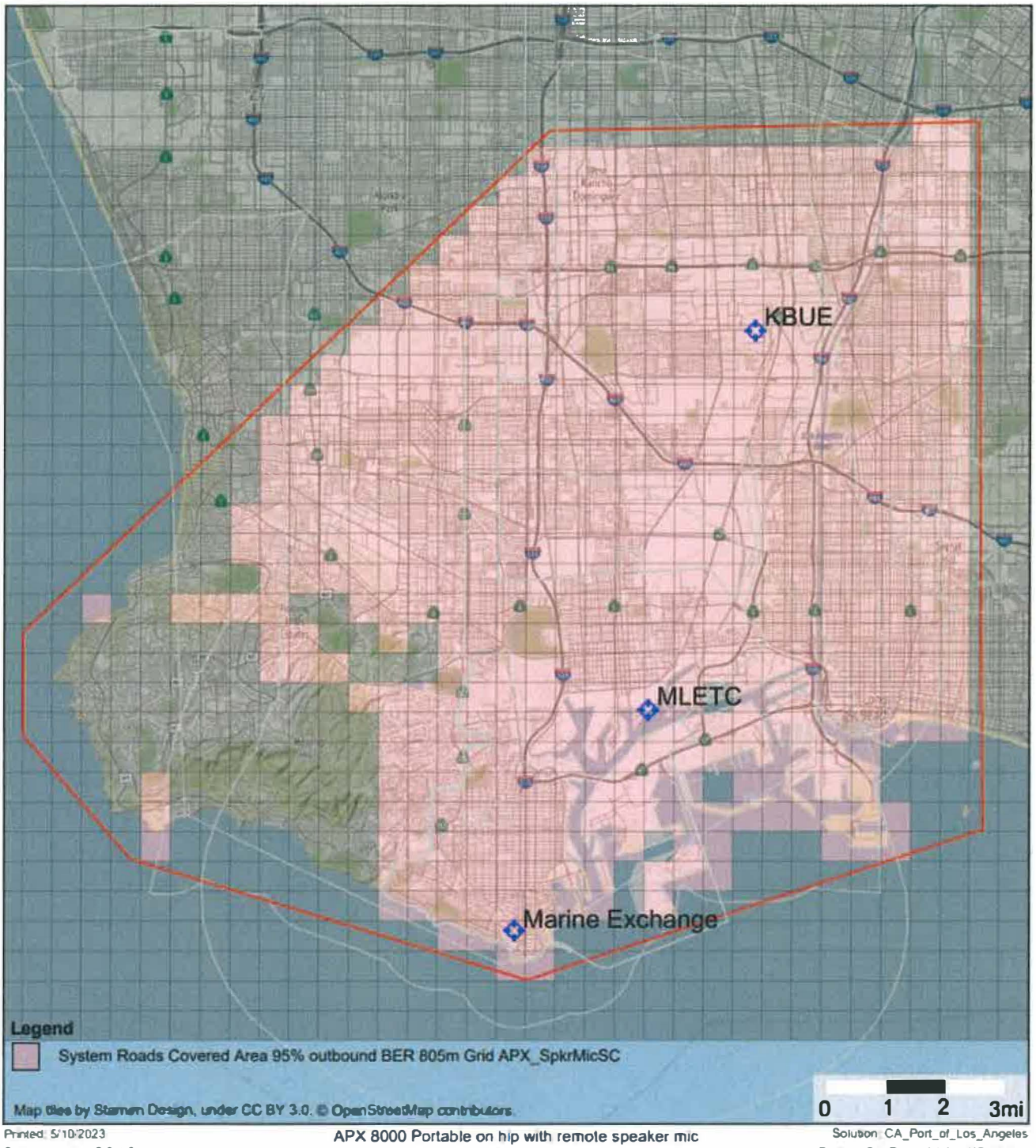
1 *Wireless Communications Systems --- Performance in Noise- and Interference-Limited Situations --- Part 1: Recommended Methods for Technology-Independent Narrowband Performance Modeling,* Technical Service Bulletin TSB-88.1-F, Telecommunications Industry Association (TIA), Arlington VA, April 2022.

2 *Wireless Communications Systems --- Performance in Noise- and Interference-Limited Situations --- Part 3: Recommended Methods for Technology-Independent Narrowband Performance Verification,* Technical Service Bulletin TSB-88.3-F, Telecommunications Industry Association (TIA), Arlington VA, March 2022.

POLA UHF T-Band Simulcast CATP Grid Map - Outbound

CATP Grid Map - On Roads - Smaller Service Area - Outbound



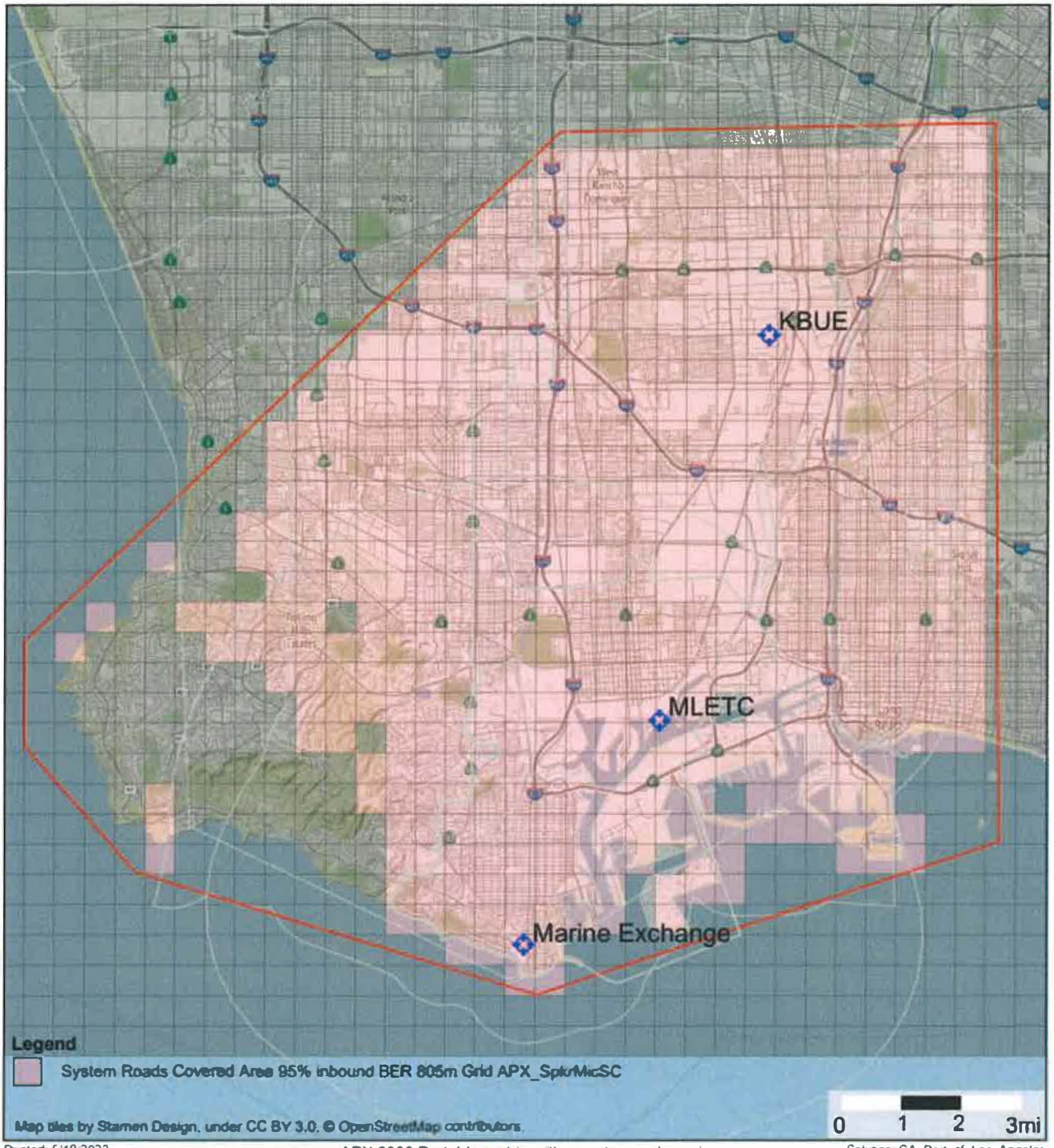
Printed: 5/10/2023
System version: 3.0.4.0

APX 8000 Portable on hip with remote speaker mic

Solution: CA_Port_of_Los_Angeles
Project: CA_Port_of_LA_UHF_digital-
Design: Design 17 D10+smaller polygon
wfx846

POLA UHF T-Band Simulcast CATP Grid Map - Inbound

CATP Grid Map - On Roads - Smaller Service Area - Inbound



Printed: 5/10/2023
System version: 3.0.4.0

APX 8000 Portable on hip with remote speaker mic

Solution: CA_Port_of_Los_Angeles
Project: CA_Port_of_LA_UHF_digital-
Design: Design 17 D10+smaller polygon
wfx846

This test area map will be updated using the final as-built system configuration when the system is

implemented. This will provide the most accurate test grid and will account for any variations encountered during the implementation phase.

For coverage testing, each defined test area will be divided into a grid pattern by Motorola Solutions to produce at least the number of uniformly sized test locations (or tiles) required by the Estimate of Proportions formula. [TSB-88.3-F, §5.2.1, equation 2] The minimum number of test tiles required varies, from a hundred to many thousands, depending on the size of the defined test area, desired confidence in results, type of coverage test, and the predicted versus required reliability.

5.2.2 Channel Performance Criterion (CPC)

The CPC is the specified minimum design performance level in a faded channel. [TSB-88.1-F, §5.2] For this system, the CPC is the Delivered Audio Quality (DAQ) as stated in Table 1-2 Coverage Acceptance Test Summary. The DAQ definitions are provided in Table 1-2 [TSB-88.1-F, §5.4.2, Table 3].

Table 5-1: DAQ Definitions

DAQ	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 required due to noise/distortion.
3.4	Speech understandable with repetition only rarely required. Some noise/distortion.
4	Speech easily understood. Occasional noise/distortion.
4.5	Speech easily understood. Infrequent noise/distortion.
5	Speech easily understood.

The CPC pass/fail criterion is the faded performance threshold, plus any adjustments for antenna performance, external noise, and in-building or in-vehicle losses. [TSB-88.1-F, §5.4.2, Figure 6] The faded performance threshold for the specified CPC is determined using the receiver's static reference sensitivity adjusted by the projected CPC parameters for the applicable Modulation Type and DAQ as listed in the current version of TSB-88.1, Annex A, Table A-1. For coverage testing of digital voice radio systems, the faded performance threshold is the applicable Bit Error Rate (BER) from the projected CPC parameters.

5.2.3 Reliability

The Covered Area reliability is the percentage of locations within the defined test area that are predicted to meet or exceed the specified CPC. The Motorola Solutions map(s) indicate the Covered Area(s) within which this system is predicted to provide at least the reliability of meeting or exceeding the CPC as stated in Table 5-2 Coverage Acceptance Test Summary.

For the defined test area(s) guaranteed for Covered Area reliability, only the painted covered area on Motorola Solutions' maps will be tested for coverage acceptance. No acceptance testing will be performed in locations predicted on Motorola Solutions' maps to be below the required Covered Area reliability.

Table 5-4: Attenuator Values to Evaluate Each Equipment Configuration

User Equipment	Attenuator Value (dB)
Portable Outdoors	Portable radio with external vehicle antenna will be attenuated to reflect the Portable with belt-clip at hip level.

Site Name	Latitude	Longitude	Transmit Antenna System				Receive Antenna System				
			Height	Azimuth	Antenna Model	ERP (watts)	Height	Azimuth	Antenna Model	External Noise assumed (relative to KToB)	EFS (dBm)
					LtdCC450-09 @481 V1.0_CCDT]				09 @481 V1.0_CCDT]		
Marine Exchange	33° 42' 45.6" N	118° 17' 38.8" W	60 ft	0°	[RF Industries Pty LtdCC450-09 @481 V1.0_CCDT]	22.3 watts	100 ft	0°	[RF Industries Pty LtdCC450-09 @481 V1.0_CCDT]	1 dB	-117.17 dBm
MLETC	33° 45' 58" N	118° 15' 19" W	60 ft	0°	[RF Industries Pty LtdCC450-09 @481 V1.0_CCDT]	22.3 watts	115 ft	0°	[RF Industries Pty LtdCC450-09 @481 V1.0_CCDT]	1 dB	-117.03 dBm
Mount Lukens	34° 16' 9" N	118° 14' 19.3" W	86 ft	270°	[dbSpectra Inc.DS4K10PP65UD_495_0_CCDT]	10.9 watts	86 ft	270°	[dbSpectra Inc.DS4K10PP65UD_495_0_CCDT]	1 dB	-118.4 dBm

5.2.6 Outdoor Only Coverage

Motorola Solutions' portable coverage prediction is for outdoor locations only. Portable coverage inside buildings and vehicles is not a design requirement of this system and is, therefore, not guaranteed

5.2.7 CPC Pass/Fail Criteria for a Test Tile

For each equipment configuration, the CPC pass/fail criteria for a test tile is stated in Table 5-2 Coverage Acceptance Test Summary each equipment configurations[s] will have only one CPC pass or fail criterion for a test tile.

Coverage for the portable outdoor equipment configurations will be verified for acceptance by attenuation of the test radio for BER tests. The attenuation will be the difference between the test radio's antenna system and the additional loss used in Motorola Solutions' coverage prediction to account for portable antenna performance . The attenuator values are provided in Table 5-4: Attenuator Values to Evaluate Each Equipment Configuration.

This provides a method of verifying that the radio system provides the required BER for the specified CPC for each of the defined equipment configurations.

Below are the attenuator values required to evaluate each equipment configuration. The methodology to determine the attenuator value is demonstrated in TSB-88.1-F §5.4.2, Figure 6. The attenuator value includes the proper values for the equipment configuration requirement plus adjustments for the test equipment setup. Should the test equipment setup losses (e.g. cable length) vary, an adjustment to the attenuator value may be required to represent the required equipment configuration accurately.

After all accessible tiles in the defined test area have been tested, the Covered Area reliability will be determined by dividing the number of tiles tested that meet or exceed the CPC pass/fail criterion by the total number of tiles tested. [TSB-88.3-E, §5.1, equation 1]

5.2.4 Direction(s) of Test

The direction(s) of test in Table 5-2 Coverage Acceptance Test Summary defines the direction(s) which will be tested for coverage acceptance. Outbound (also called forward link, downlink, or talk-out) is the path from the fixed equipment outward to the mobile or portable radios. Inbound (also called reverse link, uplink, or talk-in) is the path from the mobile or portable radios inward to the fixed equipment.

5.2.5 Equipment Configurations

This section defines the equipment configurations and infrastructure design parameters upon which the coverage guarantee and the coverage acceptance test are based. The equipment configurations are defined in Table 5-2 Coverage Acceptance Test Summary, and include user equipment, outdoor/in-building definition, defined test area, number of test tiles, reliability, CPC, CPC pass/fail, and direction(s) of test. The infrastructure design parameters are defined in Table 5-3 Infrastructure Design Parameters, and include site names, site locations, and antenna system parameters. If the implemented system equipment configuration and/or infrastructure design parameters vary from these configurations and/or parameters, a revised coverage map will be used to define the test configuration and potential areas from which test tiles will be included in the revised coverage acceptance test.

Coverage testing will be conducted with equipment installed per the configurations in Table 5-2 Coverage Acceptance Test Summary, and with antennas in unobstructed locations that are not adjacent to other large objects or metallic items which would distort the antenna patterns.

Table 5-2: Port of Los Angeles Coverage Acceptance Test Summary

User Equipment	Outdoor / In-Building	Defined Test Area & Map Name	Number of Test Tiles	Reliability	CPC	CPC Pass/Fail	Direction(s) of Test
APX Portable with -10.5 db loss at a height of 3.3 ft for transmit and -10.5 db loss at a height of 3.3 ft for receive	Outdoor	[Covered Area Map AA] (On-Roads Only)	539 (0.5002 mile tiles)	95%	DAQ-3.4	2.0% BER Inbound	Inbound Only

Table 5-3: Port of Los Angeles Infrastructure Design Parameters

Site Name	Latitude	Longitude	Transmit Antenna System				Receive Antenna System				
			Height	Azimuth	Antenna Model	ERP (watts)	Height	Azimuth	Antenna Model	External Noise assumed (relative to KToB)	EFS (dBm)
Trunking Simulcast Subsystem											
KBUE	33° 51' 29" N	118° 13' 27" W	95 ft	0°	[RF Industries Pty	44.7 watts	140 ft	0°	[RF Industries Pty LtdCC450-	1 dB	-117.03 dBm

5.2.8 Required Number of Test Tiles in the Defined Test Area

The method used to test coverage is a statistical sampling of the defined test area to verify that the CPC is met or exceeded at the required reliability for each of the defined equipment configurations. It is impossible to verify every point within a defined test area, because there are infinite points; therefore, coverage reliability will be verified by sampling a statistically significant number of randomly selected locations, quasi-uniformly distributed throughout the defined test area. There is one test sample per test tile, where a sample consists of multiple sub-samples.

Coverage acceptance testing will be performed in the defined test area as indicated on Motorola Solutions-provided maps. To verify that the reliability requirement is met, the defined test area indicated on Motorola Solutions' maps will be divided into uniformly sized test tiles, with at least the number of test tiles indicated in Table 5-2 Coverage Acceptance Test Summary. The number of test tiles indicated in **Error! Reference source not found.** is at least the minimum required by the Estimate of Proportions formula as stated in section 5.2.1 (Defined Test Area) of this document.

Per TSB-88.3-F, the stated minimum outdoor test tile size is 100 by 100 wavelengths; however, the *practical* minimum size of test tiles is typically about 400 by 400 meters (about 0.25 by 0.25 miles). The minimum practical tile size for any system is determined by the distance traveled at the speed of the test vehicle while sampling, GPS error margin, and availability of road access within very small test tiles. A related consideration is the time, resources, and cost involved in testing very large numbers of very small tiles. For a given defined test area, all test tiles must be of equal size. The maximum test tile size is 2 by 2 km (1.24 by 1.24 miles) [TSB-88.3-F, §5.5.1]. In some wide-area systems, this constraint on maximum tile size may dictate a greater number of test tiles than the minimum number required by the Estimate of Proportions formula.

No acceptance testing will be performed in locations outside the defined test area as indicated on the Motorola Solutions-provided CATP coverage maps. Motorola Solutions and Port of Los Angeles may agree to perform "information only" tests in locations outside the defined test area; however, these "information only" test results will not be used for coverage acceptance. Any "information only" test locations must be defined before starting the test. If the added locations require significant additional time and resources to test, a change order will be required and Motorola Solutions may charge Port of Los Angeles on a time-and-materials basis.

5.2.9 Accessibility to Test Tiles

Prior to testing, Motorola Solutions and Port of Los Angeles will plan the route for the test vehicle(s) through the defined test area, to ensure that at least the minimum required number of tiles is tested. While planning the route (if possible) or during the test, Motorola Solutions and Port of Los Angeles will identify any test tiles that are inaccessible for the coverage test (due to lack of roads, restricted land, etc.). Inaccessible tiles will be eliminated from the acceptance test calculation. [TSB-88.3-F, §5.5.4]

If elimination of inaccessible test tiles results in less than a statistically significant number of test tiles or substantially alters the defined test area, Motorola Solutions reserves the right to adjust the committed reliability based on the reduced number of accessible test tiles within the altered test area and the Estimate of Proportions formula. [TSB-88.3-F, §5.2.1, equation 2]

5.2.10 Random Selection of a Test Location in Each Tile

This CATP provides an objective method of randomly selecting and tracking test locations using Motorola Solutions' Voyager℠ coverage testing tool. The method follows TIA TSB-88.3-F §5.0, "Performance Confirmation", and has direct correlation with Motorola Solutions' coverage prediction methodology.

Using Voyager, the actual test location within each test tile will be randomly selected by the test vehicle crossing into the tile at an arbitrary point, with an arbitrary speed and direction. If the selected test location is in a shielded area such as a tunnel or underground parking garage, the data from that test location must be eliminated and a replacement test location must be used.

5.2.11 CPC Measurements in Each Tile

For Outbound BER in each test tile, a series of sequential subsample measurements will be made while the test vehicle is moving at a typical speed for the surrounding environment. This test tile measurement, containing a number of subsamples, constitutes the test sample for this location. The test sample will establish the mean BER within the test tile. The BER subsamples will typically be measured for at least 1 second. A mean of multiple BER subsamples is used rather than a single measurement to ensure that the measurement is not biased by taking a single sample that might be at a peak or null point on the radio wave.

For Inbound BER testing, complementary timing profiles will be used by Voyager and the Voyager Fixed Network application, VFNE-2, to interleave the inbound and outbound testing. VFNE-2 will be used to gather inbound test statistics . The mobile application, Voyager, will gather outbound test statistics and will send an inbound test pattern to VFNE-2.

5.3 Responsibilities and Preparation

This section identifies the responsibilities of Port of Los Angeles and Motorola Solutions regarding requirements for equipment, personnel, and time during the coverage test.

Port of Los Angeles will provide the following for the duration of the coverage test:

- Exclusive use of the test channels required by Motorola Solutions during the test (2 channels).
- User radios required for the test.

Motorola Solutions will provide the following for the duration of the coverage test:

- At least one Motorola Solutions Voyager coverage testing tool.

As required, Motorola Solutions will provide a receiver signal strength calibration file for the test radio(s) used with the Voyager coverage testing tool.

Before starting the test, Port of Los Angeles and Motorola Solutions will agree upon the time frame for Motorola Solutions' submission of a report containing the coverage test results.

5.4 CATP Procedures

A coverage acceptance test will be performed using Motorola Solutions' Voyager tool to randomly select test locations , and to manage BER data collection.

Voyager consists of the following:

- A Global Positioning System (GPS) receiver, which will provide the computer with the location and speed of the test vehicle.
- A laptop computer with Voyager software and a mapping database, which includes highways and local streets.
- Any tile that fails the objective BER test described above will be re-tested using a subjective DAQ test. Any tile that fails the objective BER test, but passes the subjective DAQ re-test will be declared passed.

The procedure for the subjective DAQ re-test of failed BER tiles (if needed) will be as follows:

- A subjective listening re-test will be performed on tiles that fail the objective BER test, to verify undefined DAQ performance of those tiles.
- Talk-out and talk-in will be evaluated independently
- To perform a statistically valid subjective DAQ test, a large group of people is required to ensure high confidence in the results. However, obtaining a large group of people for a subjective listening test is usually impractical; therefore, several (three to seven) people in a car or van must be used for the test. Since a group this small cannot provide statistically significant results, it is very important that the personnel participating in the subjective test be familiar with the sound of radio conversations. Before subjectively testing, all personnel who will evaluate audio quality must be "calibrated" by listening to examples of audio that pass and fail the subjective DAQ test.
- A fixed dispatch location will be established. Prior to testing, Port of Los Angeles and Motorola Solutions will agree upon a procedure to allow each audio transmission to be evaluated for approximately five seconds.
- The test participants will be divided into teams, each consisting of personnel from both Port of Los Angeles and Motorola Solutions. Each team will have members that operate a portable radio in the field, and members that are stationed at the fixed dispatch location.
- As the field test team(s) drive through the coverage area, test locations within each re-test tile will be selected randomly by Voyager's GPS location indication. Voyager will be used to log the talk-in and talk-out pass/fail result as well as any pertinent notes for the location.
- At each re-test tile location, each field test team member will listen to a talk-out audio transmission, and will record his or her subjective pass/fail evaluation of the DAQ for the tile. Team members stationed at the dispatch location will evaluate talk-in audio quality of transmissions from the test radio(s) in that tile. Each team member will maintain a test

log to record date, time, and subjective pass/fail evaluation for each re-test tile location. Subjective pass/fail evaluation will be based on the DAQ descriptions in Table 5-1: DAQ Definitions. The determination of whether each re-test tile passes or fails the required DAQ value will be the majority vote of all team members' pass/fail subjective evaluations for that tile. An odd number of team members are required to avoid ties for the pass/fail majority vote.

5.5 CATP Documentation and Coverage Acceptance

During the coverage acceptance test, the Voyager computer(s) generate comma separated value (.CSV) files that include the coverage test data. A copy of the .CSV files will be provided to Port of Los Angeles at the conclusion of the coverage test. Motorola Solutions will process this data to produce a map detailing the coverage test results, and to determine whether the coverage test was passed for each user equipment configuration.

The coverage acceptance criterion for a user equipment configuration will be that the voice radio system implemented by Motorola Solutions for Port of Los Angeles meets or exceeds the reliability stated in **Error! Reference source not found.** for that user equipment configuration. The system coverage acceptance criterion will be the successful passing of each of the user equipment configurations defined in **Error! Reference source not found.**.

Motorola Solutions reserves the right to review any test tiles that fail. If a coverage test, or a portion thereof, is suspected by Motorola Solutions to have failed due to external interference, those tiles suspected of being affected by an interferer may be re-tested. If the test tiles re-tested are confirmed to have failed due to interference or external noise, those test tiles will be excluded from all acceptance calculations and Motorola Solutions will work with Port of Los Angeles to identify potential solutions to the interference issues.

Motorola Solutions will conduct this Coverage Acceptance Test only once. If any portion of the test is determined to be affected by proven equipment malfunctions or failures, Motorola Solutions will repeat the portion of the test affected by the equipment malfunction or failure. Port of Los Angeles will have the option to accept the coverage at any time prior to completion of the coverage test or documentation process.

Motorola Solutions will submit to Port of Los Angeles a report detailing the coverage test results. This report will include a document, which is to be signed by both Port of Los Angeles and Motorola Solutions, indicating the test was performed in accordance with this CATP and the results of the test indicate the acceptance or non-acceptance of the coverage portion of the system.

Section 6

Service/Warranty

6.1 Standard Warranty

Motorola Solutions will provide the Port of Los Angeles Police our 1 year standard commercial warranty as set forth in the service contractual agreement between Motorola and the City of Los Angeles.

Section 7

Equipment List

This section lists the equipment necessary for the proposed solution.

QTY	NOMENCLATURE	DESCRIPTION
1	T8341	GRV 8000 COMPARATOR
1	CA01953AB	ADD: POWER EFFICIENCY PACKAGE
1	CA00719AA	ADD: ASTRO SYSTEM RELEASE 2019.2
1	CA03084AA	ADD: COMPARATOR
1	CA03320AA	ADD: ASTRO 25 CONVENTIONAL SOFTWARE
1	CA03317AA	ADD: DIGITAL CONV SIMULCAST SOFTWAR
1	X153AW	ADD: RACK MOUNT HARDWARE
1	T8341	GRV 8000 COMPARATOR
1	CA01953AB	ADD: POWER EFFICIENCY PACKAGE
1	CA00719AA	ADD: ASTRO SYSTEM RELEASE 2019.2
1	CA03084AA	ADD: COMPARATOR
1	CA03320AA	ADD: ASTRO 25 CONVENTIONAL SOFTWARE
1	CA03317AA	ADD: DIGITAL CONV SIMULCAST SOFTWAR
1	X153AW	ADD: RACK MOUNT HARDWARE
1	T8341	GRV 8000 COMPARATOR
1	CA01953AB	ADD: POWER EFFICIENCY PACKAGE
1	CA00719AA	ADD: ASTRO SYSTEM RELEASE 2019.2
1	CA03084AA	ADD: COMPARATOR
1	CA03320AA	ADD: ASTRO 25 CONVENTIONAL SOFTWARE
1	CA03317AA	ADD: DIGITAL CONV SIMULCAST SOFTWAR
1	X153AW	ADD: RACK MOUNT HARDWARE
3	DSMA1M146101A162J	DC EDGE III (1101-1051) BREAKERS 10
1	DSCC45009P	OMNI, CORPORATE COLLINEAR, 8.5DBD,
15	DSAT012J50	AT012J50, 1/2" TRANSMISSION LINE,50
2	DS43MA01250B	4.3-10 MALE FOR 1/2" CABLE, OPTIMIZ
2	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT
120	DSAT078J50	AT078J50, 7/8" TRANSMISSION LINE,50
4	DSGKS78AC	GK-S78AC, STD GROUND KIT FOR 7/8" A

QTY	NOMENCLATURE	DESCRIPTION
2	DS43FA07850B	4.3-10 FEMALE FOR 7/8" CABLE, OPTIM
4	DSSHU78	SH-U78, UNIVERSAL SNAP-IN HANGER FO
25	DSAT012J50	AT012J50, 1/2" TRANSMISSION LINE,50
1	DSDMA01250B	7/16 DIN MALE FOR 1/2 CABLE (USE WI
1	DS43MA01250B	4.3-10 MALE FOR 1/2" CABLE, OPTIMIZ
1	DSVHF50B43MEBU	4.3-10 F/M RF SPD, 100-520MHZ, DC B
1	DSCC45009P	OMNI, CORPORATE COLLINEAR, 8.5DBD,
15	DSAT012J50	AT012J50, 1/2" TRANSMISSION LINE,50
2	DS43MA01250B	4.3-10 MALE FOR 1/2" CABLE, OPTIMIZ
2	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT
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4	DSSHU78	SH-U78, UNIVERSAL SNAP-IN HANGER FO
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1	DSVHF50B43MEBU	4.3-10 F/M RF SPD, 100-520MHZ, DC B
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1	DSDMA01250B	7/16 DIN MALE FOR 1/2 CABLE (USE WI
1	DS43MA01250B	4.3-10 MALE FOR 1/2" CABLE, OPTIMIZ
1	DSVHF50B43MEBU	4.3-10 F/M RF SPD, 100-520MHZ, DC B
1	DSDS4K10PP65UD	450-512 MHZ,UHF ANTENNA-DIRECTIONAL
15	DSAT012J50	AT012J50, 1/2" TRANSMISSION LINE,50
2	DS43MA01250B	4.3-10 MALE FOR 1/2" CABLE, OPTIMIZ

QTY	NOMENCLATURE	DESCRIPTION
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1	DSVHF50B43MEBU	4.3-10 F/M RF SPD, 100-520MHZ, DC B
1	DSDS4K10PP65UD	450-512 MHZ,UHF ANTENNA-DIRECTIONAL
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1	DSDMA01250B	7/16 DIN MALE FOR 1/2 CABLE (USE WI
1	DS43MA01250B	4.3-10 MALE FOR 1/2" CABLE, OPTIMIZ
1	DSVHF50B43MEBU	4.3-10 F/M RF SPD, 100-520MHZ, DC B
1	DQ746809047TA4WS3	MULTCPLR TXRX 450-512 MHZ 19" MT, P
1	DQ746809047TA4WS3	MULTCPLR TXRX 450-512 MHZ 19" MT, P
1	DQ746809047TA4WS3	MULTCPLR TXRX 450-512 MHZ 19" MT, P
1	DQ746809047TA4WS3	MULTCPLR TXRX 450-512 MHZ 19" MT, P
1	T7039	GTR 8000 Base Radio
1	CA00719AA	ADD: ASTRO SYSTEM RELEASE 2019.2
1	CA01400AA	ADD: POWER CABLE, DC
1	CA01502AA	ADD: ASTRO 25 CONVENTIONAL SIMULCAS
1	CA01953AA	ADD: POWER EFFICIENCY PACKAGE
1	X153AW	ADD: RACK MOUNT HARDWARE
1	X640AL	ADD: UHF R2 (435-524 MHZ)
1	CA01503AA	ADD: FALL BACK IN SIMULCAST CABINET

QTY	NOMENCLATURE	DESCRIPTION
1	CA01948AA	ADD: DIGITAL CONVENTIONAL SOFTWARE
1	T7039	GTR 8000 Base Radio
1	CA00719AA	ADD: ASTRO SYSTEM RELEASE 2019.2
1	CA01400AA	ADD: POWER CABLE, DC
1	CA01502AA	ADD: ASTRO 25 CONVENTIONAL SIMULCAS
1	CA01953AA	ADD: POWER EFFICIENCY PACKAGE
1	X153AW	ADD: RACK MOUNT HARDWARE
1	X640AL	ADD: UHF R2 (435-524 MHZ)
1	CA01503AA	ADD: FALL BACK IN SIMULCAST CABINET
1	CA01948AA	ADD: DIGITAL CONVENTIONAL SOFTWARE
1	T7039	GTR 8000 Base Radio
1	CA00719AA	ADD: ASTRO SYSTEM RELEASE 2019.2
1	CA01400AA	ADD: POWER CABLE, DC
1	CA01502AA	ADD: ASTRO 25 CONVENTIONAL SIMULCAS
1	CA01953AA	ADD: POWER EFFICIENCY PACKAGE
1	X153AW	ADD: RACK MOUNT HARDWARE
1	X640AL	ADD: UHF R2 (435-524 MHZ)
1	CA01503AA	ADD: FALL BACK IN SIMULCAST CABINET
1	CA01948AA	ADD: DIGITAL CONVENTIONAL SOFTWARE
3	DSMA1M146101A162J	DC EDGE III (1101-1051) BREAKERS 10
1	T7039	GTR 8000 Base Radio
1	CA00719AA	ADD: ASTRO SYSTEM RELEASE 2019.2
1	CA01400AA	ADD: POWER CABLE, DC
1	CA01502AA	ADD: ASTRO 25 CONVENTIONAL SIMULCAS
1	CA01953AA	ADD: POWER EFFICIENCY PACKAGE
1	X153AW	ADD: RACK MOUNT HARDWARE
1	X640AL	ADD: UHF R2 (435-524 MHZ)
1	CA01503AA	ADD: FALL BACK IN SIMULCAST CABINET
1	CA01948AA	ADD: DIGITAL CONVENTIONAL SOFTWARE
1	T7039	GTR 8000 Base Radio
1	CA00719AA	ADD: ASTRO SYSTEM RELEASE 2019.2
1	CA01400AA	ADD: POWER CABLE, DC
1	CA01502AA	ADD: ASTRO 25 CONVENTIONAL SIMULCAS

QTY	NOMENCLATURE	DESCRIPTION
1	CA01953AA	ADD: POWER EFFICIENCY PACKAGE
1	X153AW	ADD: RACK MOUNT HARDWARE
1	X640AL	ADD: UHF R2 (435-524 MHZ)
1	CA01503AA	ADD: FALL BACK IN SIMULCAST CABINET
1	CA01948AA	ADD: DIGITAL CONVENTIONAL SOFTWARE
1	T7039	GTR 8000 Base Radio
1	CA00719AA	ADD: ASTRO SYSTEM RELEASE 2019.2
1	CA01400AA	ADD: POWER CABLE, DC
1	CA01502AA	ADD: ASTRO 25 CONVENTIONAL SIMULCAS
1	CA01953AA	ADD: POWER EFFICIENCY PACKAGE
1	X153AW	ADD: RACK MOUNT HARDWARE
1	X640AL	ADD: UHF R2 (435-524 MHZ)
1	CA01503AA	ADD: FALL BACK IN SIMULCAST CABINET
1	CA01948AA	ADD: DIGITAL CONVENTIONAL SOFTWARE
3	DSMA1M146101A162J	DC EDGE III (1101-1051) BREAKERS 10
1	T7039	GTR 8000 Base Radio
1	CA00719AA	ADD: ASTRO SYSTEM RELEASE 2019.2
1	CA01400AA	ADD: POWER CABLE, DC
1	CA01502AA	ADD: ASTRO 25 CONVENTIONAL SIMULCAS
1	CA01953AA	ADD: POWER EFFICIENCY PACKAGE
1	X153AW	ADD: RACK MOUNT HARDWARE
1	X640AL	ADD: UHF R2 (435-524 MHZ)
1	CA01503AA	ADD: FALL BACK IN SIMULCAST CABINET
1	CA01948AA	ADD: DIGITAL CONVENTIONAL SOFTWARE
1	T7039	GTR 8000 Base Radio
1	CA00719AA	ADD: ASTRO SYSTEM RELEASE 2019.2
1	CA01400AA	ADD: POWER CABLE, DC
1	CA01502AA	ADD: ASTRO 25 CONVENTIONAL SIMULCAS
1	CA01953AA	ADD: POWER EFFICIENCY PACKAGE
1	X153AW	ADD: RACK MOUNT HARDWARE
1	X640AL	ADD: UHF R2 (435-524 MHZ)
1	CA01503AA	ADD: FALL BACK IN SIMULCAST CABINET
1	CA01948AA	ADD: DIGITAL CONVENTIONAL SOFTWARE

QTY	NOMENCLATURE	DESCRIPTION
1	T7039	GTR 8000 Base Radio
1	CA00719AA	ADD: ASTRO SYSTEM RELEASE 2019.2
1	CA01400AA	ADD: POWER CABLE, DC
1	CA01502AA	ADD: ASTRO 25 CONVENTIONAL SIMULCAS
1	CA01953AA	ADD: POWER EFFICIENCY PACKAGE
1	X153AW	ADD: RACK MOUNT HARDWARE
1	X640AL	ADD: UHF R2 (435-524 MHZ)
1	CA01503AA	ADD: FALL BACK IN SIMULCAST CABINET
1	CA01948AA	ADD: DIGITAL CONVENTIONAL SOFTWARE
3	DSMA1M146101A162J	DC EDGE III (1101-1051) BREAKERS 10
1	T7039	GTR 8000 Base Radio
1	CA00719AA	ADD: ASTRO SYSTEM RELEASE 2019.2
1	CA01400AA	ADD: POWER CABLE, DC
1	CA01502AA	ADD: ASTRO 25 CONVENTIONAL SIMULCAS
1	CA01953AA	ADD: POWER EFFICIENCY PACKAGE
1	X153AW	ADD: RACK MOUNT HARDWARE
1	X640AL	ADD: UHF R2 (435-524 MHZ)
1	CA01503AA	ADD: FALL BACK IN SIMULCAST CABINET
1	CA01948AA	ADD: DIGITAL CONVENTIONAL SOFTWARE
1	T7039	GTR 8000 Base Radio
1	CA00719AA	ADD: ASTRO SYSTEM RELEASE 2019.2
1	CA01400AA	ADD: POWER CABLE, DC
1	CA01502AA	ADD: ASTRO 25 CONVENTIONAL SIMULCAS
1	CA01953AA	ADD: POWER EFFICIENCY PACKAGE
1	X153AW	ADD: RACK MOUNT HARDWARE
1	X640AL	ADD: UHF R2 (435-524 MHZ)
1	CA01503AA	ADD: FALL BACK IN SIMULCAST CABINET
1	CA01948AA	ADD: DIGITAL CONVENTIONAL SOFTWARE
1	T7039	GTR 8000 Base Radio
1	CA00719AA	ADD: ASTRO SYSTEM RELEASE 2019.2
1	CA01400AA	ADD: POWER CABLE, DC
1	CA01502AA	ADD: ASTRO 25 CONVENTIONAL SIMULCAS
1	CA01953AA	ADD: POWER EFFICIENCY PACKAGE

QTY	NOMENCLATURE	DESCRIPTION
1	X153AW	ADD: RACK MOUNT HARDWARE
1	X640AL	ADD: UHF R2 (435-524 MHZ)
1	CA01503AA	ADD: FALL BACK IN SIMULCAST CABINET
1	CA01948AA	ADD: DIGITAL CONVENTIONAL SOFTWARE
3	DSMA1M146101A162J	DC EDGE III (1101-1051) BREAKERS 10

Section 8

Pricing Summary

8.1 Pricing Table

The pricing below is valid for 60 days from the date of this proposal.

Description	Price (USD)
Infrastructure Equipment	
- T Band Simulcast Prime and Subsite upgrade equipment to Marine Exchange - Three (3) T Band simulcast trunking subsites (Mt Lukens, MLETC, and KBUE)	$558,050
Equipment Discount (City of LA Contract)	-$98,075
Equipment Total	**$459,974**
Project Services	
- Design Review Services - Field Staging - Project Management - Post Sale Engineering Services - Systems Technologist Integration Support - Infrastructure Installation - Codeplug Revision - Subscriber Programming Refresh - FATP System Testing - Year 1 Warranty	$924,550
- Decommissioning (Marine Exchange, MLETC, POLA PD HQ, Badger Bridge)	$42,545
- Site Survey Evaluations (Marine Exchange, Mt. Lukens, MLETC, KBUE)	$75,472
- Mt. Lukens Tower Remediation	$86,390
- Coverage Acceptance Testing	$91,078
Project Services Total	**$1,220,035**
Pre-tax Project Total	$1,680,009
Estimated Tax on Equipment (9.5%)	$43,698
Project Grand Total (after Discount)	**$1,723,707**

8.2 Payment Terms

8.2.1 System Payment Terms

Except for a payment that is due on the Effective Date, POLA will make payments to Motorola within thirty (30) days after the date of each invoice. Customer will make payments when due in the form of a check, cashier's check, or wire transfer drawn on a U.S. financial institution. If Customer has purchased additional Professional or Subscription services, payment will be in accordance with the applicable addenda. Payment for the System purchase will be in accordance with the following milestones.

System Purchase (excluding Subscribers, if applicable)

1. **25% of the Contract Price due upon contract execution (due upon effective date);**
2. **60% of the Contract Price due upon shipment of equipment from Staging;**
3. **10% of the Contract Price due upon installation of equipment; and**
4. **5% of the Contract Price due upon Final Acceptance.**

If Subscribers are purchased, 100% of the Subscriber Contract Price will be invoiced upon shipment (as shipped).

Motorola shall make partial shipments of equipment and will request payment upon shipment of such equipment. In addition, Motorola shall invoice for installations completed on a site-by-site basis or when professional services are completed, when applicable. The value of the equipment shipped/services performed will be determined by the value shipped/services performed as a percentage of the total milestone value. Unless otherwise specified, contract discounts are based upon all items proposed and overall system package. For invoicing purposes only, discounts will be applied proportionately to the FNE and Subscriber equipment values to total contract price. Overdue invoices will bear simple interest at the maximum allowable rate by state law.

MATERIALS AND LABOR PRICE INCREASE. In the event that there are significant increases in the prices that Motorola pays for materials and supplies for the work to be performed between the date the Agreement is signed and the date that materials are purchased for the work to be performed, Motorola shall be entitled to additional compensation from Customer as described herein. A significant increase in price is defined herein as an increase as to any specific items of materials of three percent (3%) or more from original proposal. In such a case, Customer shall pay to Motorola, on request, all sums by which the cost to Motorola for any such items of materials has increased beyond 3%. This would apply, but not be limited to price increases in any components included in the Bill of Materials or Scope of Work as well as manufactured products and equipment or third party manufactured products and equipment. Motorola shall not be responsible for increased prices of materials when caused by delays, shortages or unavailability of materials due to conditions not caused by Contractor. Any pricing change would be documented in a change order executed with the Customer.

Section 9

Contractual Documentation

The City of Los Angeles (the "City") and Motorola Solutions, Inc. ("Motorola") have two master agreements that are relevant to this Motorola Proposal. Concerning Radio Communications Equipment, the City and Motorola have previously entered into Contract No. ARC 40 230000000019, F/K/A No. 190000000037 (the "Master Equipment Agreement"). Concerning services and systems, the City and Motorola have previously entered into a Master Services Agreement identified as City Contract No. C-123897 and Motorola Contract No.1000409608 (the "Master Services Agreement").

The Master Services Agreement contains a Communications System Agreement, including its exhibits, as Exhibit C (referred to as the "Communications System Agreement"). Because in some respects this Project has system-like attributes, the Proposal includes various documents such as a Project Description, Equipment List, Statement of Work, Project Schedule, Payment Schedule, etc. Further, this Proposal is based upon the Communications System Agreement, the other applicable provisions of the Master Services Agreement, and the Master Equipment Agreement (to the extent necessary, applicable and not covered by the Communications System Agreement and the Master Services Agreement).

Pricing for the Equipment offered in the Motorola Proposal is based off of the Master Equipment Agreement and pricing for the services offered in the Motorola Proposal is based off of the Master Services Agreement, although the Motorola Proposal does contain additional discounts in favor of the City as permitted by Section 2.2 of the Master Services Agreement.

The City prefers to issue a Purchase Order for the equipment and a Contract Amendment for the services. Therefore, the City may accept this Proposal by issuing (i) a Purchase Order for the equipment that specifically refers to City Contract No. ARC 40 230000000019 and incorporates by reference the Proposal by date and general description, and (ii) a Contract Amendment that specifically refers to City Contract No. C-123897 and Motorola Contract No. 1000409608 and incorporates by reference the Proposal by date and general description.

Section 10

Our Commitment

Motorola Solutions creates innovative, mission-critical communication solutions and services that help public safety and commercial customers build safer cities and thriving communities. You can find our products at work in a variety of industries including law enforcement, fire, emergency medical services, national government security, utilities, mining, energy, manufacturing, hospitality, retail, transportation and logistics, education, and public services.

Founded in 1928, Motorola Solutions has a history of innovation that has revolutionized communications. From pioneering mobile communications in the 1930s and making equipment that carried the first words from the moon in 1969, to supporting modern-day emergency response equipment for disaster relief efforts around the world, Motorola Solutions has a global footprint with products that demonstrate its thought leadership.

Throughout its history, Motorola Solutions has transformed innovative ideas into products that connect people to each other and the world around them. Moving forward, the company strives to keep its commitment of make things better and life easier, to make sound recommendations that will guide you in linking your current and future communication needs and objectives with technology's ever-evolving promise.

MONTHLY SUBCONSULTANT MONITORING REPORT

Instructions: Please indicate the SBE/VSBE/MBE/WBE/OBE/DBE participation levels achieved for the month of _____covered by the referenced contract number.

Contract No. | Division | Contractor Administrator

Contractor | *Group | Contract Title/Project

Contract Amount | Start Date | End Date

Total Amount Invoiced to Date

SBE Mandated Participation Percentage | SBE | VSBE

Proposed Subcontractor Percentage | MBE | WBE | OBE | DVBE

				PROPOSED		ACTUALS		
	Name of Subcontractor	Type of Work Performed	Group SBE/VSBE/MBE/WBE/OBEDVBE	Original Proposed Amount	Original Proposed Percentage	Amount Paid to Date	Amount Paid to Date Percentage	Contract Amount Percentage
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

Directions:

Original Proposed Percentage: Original Proposed Percentage of Total Contract Amount

Amount Paid to Date Percentage: Percentage of Total Amount Invoiced to Date

Contract Amount Percentage: Percentage Paid to Date of Total Contract Amount

* Group = (SBE/VSBE/MBE/WBE/OBE/DVBE/DBE)

EXHIBIT B

Rev 09/21/11

INSURANCE ASSESSMENT REQUEST FORM

This form is to be used only for authorities initiated outside of POLA Fusion. Send completed form in Word format to polariskmgmt@portla.org for processing. Allow up to 10 business days for processing. Contact Risk Management at 310-732-3758 or via email to polariskmgmt@portla.org for status inquiries.

This page to be completed by Risk Management

NO INSURANCE OR CHANGE TO EXISTING REQUIREMENTS:	
☐ No insurance required, only indemnification ☐ Amendment does not require change to existing contract's insurance requirements	
INSURANCE REQUIREMENTS	**LIMITS (Per Occurrence)**
■ General Liability ☐ Deletion of railroad exclusion ☐ Terminal Operator's Liability ☐ Garage keepers Legal Liability ☐ Host Liquor Liability ☐ Explosion, collapse and underground hazards ☐ Fire Legal Liability (Limits $500K per occ) ☐ Other: _____	$5M
■ Auto Liability (all autos) ☐ Other: _____	$5M
■ Workers' Compensation/Employer's Liability ☐ USL&H ■ Waiver of Subrogation	
■ Professional Liability ☐ Medical Malpractice ☐ Law Enforcement Legal Liability ☐ Technology Errors & Omissions (E&O)	$1M
☐ Railroad Protective Liability	
☐ Ocean Marine Liability ☐ Protective & Indemnity ☐ Jones Act ☐ Hull & Machinery ☐ Ship Builders/Repairers Liability ☐ Other: _____	
☐ Property/All Risk Insurance	
■ Environmental Impairment Liability	$1M
☐ Builder's Risk (Reference Specification for exclusions)	
☐ Aircraft Liability ☐ Passenger Liability for manned aircraft (Limit $1M per seat) ☐ Airport Liability	
☐ OTHER REQUIRED COVERAGE: _____	

Date Reviewed:11/1/2024 **By:** Marie Gutierrez for:
Risk Manager

RM Staff: JU

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Form IAR006062024

EXHIBIT C