



EXECUTIVE OFFICE OF TECHNOLOGY SERVICES & SECURITY

COMMONWEALTH OF MASSACHUSETTS | 1 ASHBURTON PLACE, 8TH FLOOR, BOSTON, MA 02108

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Governor

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November 22, 2023

Frank Pozniak
Executive Director
State 911 Department
151 Campanelli Dr., Suite A
Middleborough, MA 02346

RE: FISCAL YEAR 2023 COMIRS ANNUAL REPORT (CORRECTED)
(Reporting Period: July 1, 2022 – June 30, 2023)

Dear Director Pozniak:

In accordance with Department of Telecommunication and Cable (hereinafter D.T.C.) Order 18-2 dated June 29, 2018, D.T.C. Order 20-1 dated May 26, 2020, D.T.C. Order 21-3 dated May 26, 2021, D.T.C. Order 22-1 dated June 1, 2022, D.T.C. Order 23-2 dated June 14, 2023, the State 911 Department's Guidance Document as issued to the Executive Office of Technology Services and Security (hereinafter EOTSS) on or about September 9, 2020, and the Interdepartmental Service Agreement executed by and between the State 911 Department and EOTSS, as amended, I respectfully submit the Fiscal Year 2023 Annual Report for the Commonwealth's project to modernize, improve and expand its interoperable public safety radio system (hereinafter the Project, or CoMIRS Project).

The Fiscal Year 2023 CoMIRS Project Annual Report represents the fourth annual report prepared and submitted by EOTSS to the State 911 Department. The annual report is intended to provide the State 911 Department an overview of the expenditures and program activities that took place during Fiscal Year 2023. This report serves to consolidate the project achievements previously reported in the respective year's quarterly reports and to provide a summary accounting of the expenditures authorized and paid during Fiscal Year 2023. Going forward and for the time during which Enhanced 911 Trust funds are used to support the CoMIRS Project, EOTSS will continue to file quarterly and annual reports with the State 911 Department consistent with the above referenced D.T.C. orders, guidance documents and Interdepartmental Service Agreement.

CoMIRS Project BUSINESS PROFILE:

The CoMIRS Project is a public safety communication system modernization project. The project is managed and funded through a formal collaborative business relationship created by and between the Executive Office of Public Safety and Security's (EOPSS) State 911 Department and the Executive Office of Technology Services and Security (EOTSS). This business relationship has been recognized and is

annually evaluated by the Department of Telecommunications and Cable in its capacity as statutory oversight agent for the State 911 Department's Enhanced 911 Trust Fund.

Project management for the CoMIRS initiative has been conferred upon the Interoperable Communications Bureau (ICB) of EOTSS¹ while oversight of \$125M in dedicated funds from the Enhanced 911 Trust Fund sits squarely with the State 911 Department². This binary governance model ensures that project milestones and deliverables are attained while providing for independent oversight of the expenditures made from the State 911 Enhanced Trust Fund.

As stated by the D.T.C. in its 20-1 Order, "[t]he Commonwealth of Massachusetts Interoperable Radio System ("CoMIRS") is an existing state-wide interoperable radio network that serves as the primary communications tool for many public safety first responders including the Massachusetts State Police. As such, PSAPs utilize the CoMIRS network to quickly and efficiently dispatch and relay emergency 911 information to first responders. Because of PSAPs' direct reliance on CoMIRS and the fact that CoMIRS is used for 911 dispatch, the D.T.C. has ruled that certain dispatch-related costs of the CoMIRS network are appropriately reimbursed by the [Enhanced 911 Trust] Fund." Consistent with this order, EOTSS is actively engaged in the process of designing, engineering, and constructing the Commonwealth's next generation public safety radio network. This report, and those that follow, serve to memorialize the financial, programmatic, and technical achievements and challenges that define the CoMIRS Project.

FY2023 COMIRS PROJECT PERFORMANCE BY TOPIC:

1. COMIRS STRATEGIC PLAN ROADMAP MAJOR ACTIVITY 6.2.7, "ACQUIRE TDMA DIGITAL RADIOS FOR CURRENT [NETWORK] USERS".

In FY2023 the CoMIRS Program Management Office (PMO) completed all purchase activities for the replacement of 2,600 portable radios and 3,846 mobile radios for the one-hundred and fourteen (114) municipal operable users³ and the fourteen (14) state/county operable users. All 6,446 replacement radios were purchased through the CoMIRS Radio Upgrade Grant Program (RUP) at a cost of ~\$17.48M. It should be noted that the purchase of these replacement radios through the CoMIRS RUP grant program yielded exceptional cost savings for system users. But for the CoMIRS pricing agreement, the cost of the replacements would have easily exceeded ~\$30M⁴.

The below data table identifies each municipal, county and state first responder operable user that received grant funding, the amount of the grant and the amount expended. Moreover, the data table includes the number and type of replacement radios that each grantee was authorized to purchase. Grant payments were issued over a three-year period beginning in Fiscal Year 2021. Although the grant program was originally designed to be completed in two years, supply chain and production challenges resulted in unforeseen production and delivery delays. Notwithstanding these pandemic era delays, the PMO is pleased to report

¹ The Interoperable Communication Bureau of the Executive Office of Technology Services and Security" or "ICB" is often referred to as the CoMIRS Project "Program Management Office" or, "PMO". References to the "ICB" and the "PMO" can be used interchangeably throughout this report.

² The balance of the total projected expenditure for the COMIRS+P25 Modernization Initiative (\$134.8M - \$125M = \$9.8M), remains the subject of administrative review and an out-year decision regarding the source of revenue that will be used to satisfy the balance. On September 1, 2023 the State 911 Department filed a petition with the D.T.C for the continuation of the \$1.50 surcharge. *The petition was docketed* by the D.T.C as 23-3 and includes in its justification, consideration for the pending balance necessary to complete the CoMIRS Project.

³ There are 61 operable user departments represented by the Franklin Regional Council of Governments (FRCOG).

⁴ The CoMIRS negotiated price for a Motorola portable radio was \$2,127.90, compared to the Commonwealth's negotiated price of \$4,530.21. Likewise the CoMIRS negotiated price for a Motorola mobile radio was \$2,267.51, compared to the Commonwealth's negotiated price of \$5,014.08.

that all approved replacement radios have been received and paid for. Accordingly, this aspect of the CoMIRS Project has been successfully completed.

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Municipal Government Replacements					
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STANDARD CONTRACT GRANTEE	TOTAL PAYMENTS FY21 - FY23	TOTAL GRANT AMOUNT	GRANT \$\$ RETURNED	PORTABLES PURCHASED	MOBILES PURCHASED
FRCOG	\$ 2,904,832.39	\$ 3,008,489.77	\$ 103,657.38	844	438
Barnstable Harbormaster	\$ 61,565.78	\$ 62,779.94	\$ 1,214.16	12	14
Barnstable Police	\$ 311,003.17	\$ 314,678.17	\$ 3,675.00	88	47
Bourne Fire	\$ 216,283.28	\$ 225,743.28	\$ 9,460.00	70	28
Bourne Harbormaster	\$ 10,993.72	\$ 11,768.72	\$ 775.00	3	2
Bourne Police	\$ 106,221.64	\$ 112,871.64	\$ 6,650.00	35	14
Brewster Fire	\$ 4,535.02	\$ 5,235.02	\$ 700.00	0	2
Brewster Police	\$ 29,103.15	\$ 32,269.19	\$ 3,166.04	4	9
Brimfield Police	\$ 26,093.24	\$ 27,893.24	\$ 1,800.00	8	4
Brookfield Police	\$ 2,512.51	\$ 2,617.51	\$ 105.00	0	1
Chatham Fire	\$ 47,014.49	\$ 47,514.49	\$ 500.00	11	9
Chatham Police	\$ 44,910.96	\$ 46,235.96	\$ 1,325.00	2	16
COMM Fire	\$ 154,019.57	\$ 162,144.57	\$ 8,125.00	42	27
Cotuit Fire	\$ 86,065.37	\$ 88,015.37	\$ 1,950.00	32	7
Dennis Fire	\$ 99,960.67	\$ 103,260.67	\$ 3,300.00	39	7
Dennis Police	\$ 33,314.60	\$ 41,860.01	\$ 8,545.41	5	10
East Brookfield Police	\$ 18,988.86	\$ 24,416.66	\$ 5,427.80	2	6
Eastham Fire	\$ 32,712.33	\$ 33,987.33	\$ 1,275.00	12	3
Eastham Police	\$ 70,847.34	\$ 75,847.34	\$ 5,000.00	18	14
Falmouth Fire	\$ 87,277.55	\$ 91,572.55	\$ 4,295.00	12	25
Falmouth Harbormaster	\$ 24,165.53	\$ 27,034.17	\$ 2,868.64	4	7
Falmouth Police	\$ 4,535.02	\$ 5,235.02	\$ 700.00	0	2
Greenfield Dispatch	\$ 55,509.02	\$ 58,900.52	\$ 3,391.50	0	9
Hardwick Police	\$ 34,185.77	\$ 35,745.77	\$ 1,560.00	8	7
Harwich Fire	\$ 32,616.55	\$ 133,831.87	\$ 101,215.32	10	5
Harwich Police	\$ 150,873.79	\$ 163,023.79	\$ 12,150.00	40	29
Holland Police	\$ 12,907.01	\$ 13,507.01	\$ 600.00	5	1
Huntington Police	\$ 32,544.60	\$ 35,306.16	\$ 2,761.56	9	6
Hyannis Fire	\$ 182,625.84	\$ 187,000.84	\$ 4,375.00	45	34
Mashpee Fire	\$ 98,309.78	\$ 99,384.78	\$ 1,075.00	24	18
Mashpee Harbormaster	\$ 31,064.97	\$ 31,389.97	\$ 325.00	6	7
Mashpee Police	\$ 135,932.13	\$ 138,607.13	\$ 2,675.00	36	23
New Braintree Police	\$ 22,327.44	\$ 23,537.44	\$ 1,210.00	6	4
North Brookfield Police	\$ 29,288.75	\$ 30,510.75	\$ 1,222.00	8	5
Orleans Fire	\$ 161,648.10	\$ 163,423.10	\$ 1,775.00	51	20
Orleans Harbormaster	\$ 18,399.56	\$ 19,181.64	\$ 782.08	4	4
Orleans Police	\$ 39,282.11	\$ 39,682.11	\$ 400.00	5	11
Petersham Police	\$ 10,779.11	\$ 11,329.11	\$ 550.00	4	1
Provincetown Fire	\$ 56,813.06	\$ 59,263.06	\$ 2,450.00	20	6
Provincetown Police	\$ 134,163.56	\$ 142,063.56	\$ 7,900.00	46	16
Rehoboth Police	\$ 91,516.47	\$ 92,411.47	\$ 895.00	22	17
Russell Police	\$ 2,447.51	\$ 2,617.51	\$ 170.00	0	1
Sandwich Fire	\$ 30,105.16	\$ 30,405.16	\$ 300.00	7	5
Sandwich Harbormaster	\$ 4,255.80	\$ 4,355.80	\$ 100.00	2	0
Sandwich Police	\$ 26,114.02	\$ 27,014.02	\$ 900.00	10	2
Truro Fire	\$ 35,810.38	\$ 36,185.38	\$ 375.00	7	8
Truro Police	\$ 15,872.57	\$ 26,175.10	\$ 10,302.53	0	7
Wales Police	\$ 29,790.60	\$ 30,490.60	\$ 700.00	14	0
Wellfleet Fire	\$ 69,356.78	\$ 71,031.78	\$ 1,675.00	23	8
Wellfleet Police	\$ 66,924.66	\$ 67,974.66	\$ 1,050.00	24	6
West Barnstable Fire	\$ 21,558.22	\$ 22,658.22	\$ 1,100.00	8	2
West Brookfield Police	\$ 21,918.61	\$ 22,218.61	\$ 300.00	9	1
Yarmouth Fire	\$ 170,431.43	\$ 175,631.43	\$ 5,200.00	53	23
Yarmouth Police	\$ 123,090.42	\$ 125,140.42	\$ 2,050.00	19	32
	\$ 6,325,419.97	\$ 6,671,469.39	\$ 346,049.42	1,768	1,010

State and County Government Replacements					
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ISA GRANTEE	TOTAL PAYMENTS FY21 - FY23	TOTAL GRANT AMOUNT	GRANT \$\$ RETURNED	PORTABLES PURCHASED	MOBILES PURCHASED
Barnstable HOC	\$ 354,179.53	\$ 387,129.53	\$ 32,950.00	78	83
Essex HOC	\$ 17,023.20	\$ 17,423.20	\$ 400.00	8	0
Franklin HOC	\$ 30,023.62	\$ 31,410.12	\$ 1,386.50	0	12
Hampshire HOC	\$ 15,872.57	\$ 18,322.57	\$ 2,450.00	0	7
Plymouth HOC	\$ 61,041.65	\$ 61,041.65	\$ -	10	15
Worcester HOC	\$ 53,337.11	\$ 54,887.11	\$ 1,550.00	24	1
Norfolk HOC	\$ 50,756.63	\$ 55,806.63	\$ 5,050.00	10	13
DOC	\$ 175,503.43	\$ 195,353.43	\$ 19,850.00	26	53
Environmental	\$ 88,995.34	\$ 88,995.34	\$ -	0	34
DFS	\$ 39,900.25	\$ 41,400.25	\$ 1,500.00	13	5
MEMA	\$ 363,663.79	\$ 380,813.79	\$ 17,150.00	140	29
MIL	\$ 100,179.50	\$ 104,579.50	\$ 4,400.00	36	10
PAR	\$ 10,889.50	\$ 10,889.50	\$ -	5	0
MSP	\$ 4,842,300.23	\$ 4,871,006.06	\$ 28,705.83	482	1,000
MSP	\$ 4,954,196.54	\$ 4,954,196.54		0	1,574
Hampden HOC	0	\$ 2,617.51	\$ 2,617.51	0	0
	\$ 11,157,862.89	\$ 11,275,872.73	\$ 118,009.84	832	2,836

Whereas all replacement subscriber units have been purchased and deployed, the PMO will no longer report on the replacement aspect of Major Activity 6.2.7. The PMO will however, continue to report on the related task of upgrading the software of nearly 4,000 additional subscriber units currently being used by municipal and state/county operable users. These units are newer radios, requiring a software enhancement rather than replacement. The purchase and installation of these software upgrades will ensure that these radios can communicate on the CoMIRS+P25 network while at the same time saving millions of dollars when compared to the cost of a replacement. The PMO is currently finalizing a procurement strategy for these digital radio upgrades. Although the cost of the software licenses is far less than the purchase of a new radio, the logistics associated with the deployment of the software does create unique challenges. The PMO and the Massachusetts State Police are coordinating on how these software upgrades will be purchased and installed.

In addition to the subscriber unit replacements and upgrades funded through the RUP Grant, an additional \$5.34M was expended on program specific radio equipment. This equipment included network digital capable console units, subscriber units, software and programming tools that were purchased between FY18 and FY22. All equipment was purchased for the benefit of CoMIRS, and the Massachusetts State Police as an operable user of the network. These purchases allowed CoMIRS and the State Police to replace failing analog equipment and address system immediate need backhaul issues and were consistent with approved expenditure criteria.

2. CoMIRS STRATEGIC PLAN ROADMAP MAJOR ACTIVITIES 6.2.8, “PREPARE FOR TDMA RADIO NETWORK IMPLEMENTATION”. THE CoMIRS PROGRAM MANAGEMENT OFFICE (PMO) CONTINUES TO PURSUE THE ACTIVITIES CENTRAL TO THE PREPARATION AND IMPLEMENTATION OF THE COMMONWEALTH’S TDMA RADIO NETWORK: OTHER KEY ACTIVITIES INCLUDED HEREIN ARE 6.2.6, 6.2.8, 6.2.9, 6.2.10, 6.2.11 AND 6.2.12

During the 2nd Quarter of Fiscal Year 2022, EOTSS awarded a maximum obligation contract for the CoMIRS Project to Motorola Solutions Inc., of Chicago, Illinois. The maximum obligation of the contract is \$97,632,394.00. The contract apportions the maximum obligation between “fixed price deliverables” and “allowances”. Of the maximum obligation, \$79,155,840.00 has been allocated to fixed price deliverables and \$18,476,554.00 to allowances. The fixed price deliverables include the specific tasks to be completed by Motorola Solutions, the milestones for payment and the timeline for delivery. These deliverables will be satisfied and paid for in accordance with a set of well-defined milestones. The fixed price deliverable matrix features a “set-up” phase, an “integration” phase and multiple “work phases”. The work phases allow for a rolling implementation paradigm, defined largely by geographic regions. Work phase 1A includes western Massachusetts and portions of Worcester County; work phase 1B includes Barnstable, Bristol, Plymouth, and Norfolk Counties; work phase 1C includes Metro Boston, Essex County, and portions of Middlesex County and, work phase 1D includes all remaining portions of Middlesex and Worcester Counties. The following milestones serve as the framework for all work phases and are defined in the CoMIRS modernization procurement documents and the resulting contract with Motorola:

- Staging and delivery
- Installation
- Acceptance testing
- Punch-list resolution
- Final acceptance
- Cutover

These work phases and milestones shadow the “CoMIRS Digital Modernization Roadmap” that was originally presented to the Department of Telecommunications and Cable in the Department’s Fiscal Year 2018 petition for expenditure approval (see D.T.C. Docket 18-2). The five activities from the *2017 Commonwealth of Massachusetts Interoperable Radio System* blueprint that guided the development of the work phases and milestones are:

- 6.2.8: Prepare for TDMA radio network implementation,
- 6.2.9: Upgrade radio network core,
- 6.2.10: Build lease or upgrade radio sites,
- 6.2.11: Enhance and expand backhaul network, and,
- 6.2.12: Coordinate transition to digital radio network

PROJECT MILESTONES		
DESCRIPTION	COST	ESTIMATED DUE DATE ⁵
System Setup	\$10,908,106.00	FY22 Q3 – FY26 Q3
Integrations	\$2,784,989.00	FY26 Q1

⁵ “Estimated Due Date” are based on project planning projects provided by Motorola Solutions in Attachment 13 of Change Order 003. Actual implementation date may vary. Current project plans look to “go live” with Work Phase 1A in early 2025. Work Phases 1B, 1C, and 1D are being planned and implemented concurrently and will likely “go live” at the same time (currently forecast for mid-2026).

Work Phase 1A	\$33,784,960.00	FY22 Q2 – FY25 Q2
Work Phase 1B	\$14,689,114.00	FY24 Q2 – FY25 Q2
Work Phase 1C	\$7,344,558.00	FY24 Q3 – FY25 Q4
Work Phase 1D	\$9,644,113.00	FY23 Q2 – FY26 Q3

In addition to the fixed price deliverables, the contract provides for specific allowances. These allowances are pre-approved, variably priced tasks that Motorola may be required to deliver, subject to written instruction by the Commonwealth. As part of the contract with Motorola Solutions, a portion of the overall contract price was reserved for project expenses that could not be fully identified or costed at the time of contract signing. These include large expenditures like tower remediations and smaller expenditures like required NEPA studies. During contract negotiations, Motorola Solutions proposed a set of sixteen (16) allowance categories. The CoMIRS PMO has since consolidated many of these allowance groupings into six (6) new allowance categories to be used for project budget and expenditure tracking. Below is a table that shows the mapping of the allowance categories from contract signing to those being used by the PMO for budgeting and reporting:

CONTRACT CATEGORY	NEW CATEGORY		SUBTOTAL
FCC RF Site Licensing	Frequency Licensing	\$	88,174.00
Training Subscription	Approved Additional Expenses	\$	28,752.00
Structure Reinforcement	Tower Remediation	\$	9,304,632.00
Grounding Upgrades	Site Improvements	\$	565,156.00
Electrical service upgrades	Site Improvements	\$	553,868.00
Floor loading upgrades	Site Improvements	\$	392,412.00
Removal of rock	Site Improvements	\$	276,543.00
Soil resistance upgrade	Site Improvements	\$	24,321.00
NEPA findings	Permitting, NEPA & Compliance	\$	74,074.00
Permitting/Zoning/Inspections	Permitting, NEPA & Compliance	\$	78,125.00
Tower Foundation Remediation	Site Improvements	\$	4,960,375.00
Existing Conditions (Hand Digging)	Site Improvements	\$	142,967.00
Regulatory/Environmental (i.e. NEPA, Lead Paint))	Permitting, NEPA & Compliance	\$	398,125.00
Site Access/Staging	Site Improvements	\$	74,063.00
Implementation (OT, Preferred Contractors)	Site Improvements	\$	4,375.00
Fiber Buildout	Backhaul Improvements	\$	1,510,592.00
Totals:		\$	18,476,554.00

Below is the summary budget for each Allowance category. The full value of all Allowances is still \$18,476,554.00. Through the end of the 4th Quarter of Fiscal Year 2023, \$640,950.97 has been authorized to be expended from Allowances, and \$435,992.03 has been expended. \$17,835,603.03 remains in the Allowances.

Allowance Category	Baseline Budget	Authorized	Expended	Remaining (Baseline - Authorized)	Remaining Percent
Frequency Licensing	\$ 88,174.00	\$ -		\$ 88,174.00	100%
Tower Remediation	\$ 9,304,632.00	\$ 364,654.05	\$ 213,048.77	\$ 8,939,977.95	96%
Site Improvements	\$ 6,994,080.00	\$ 222,943.26	\$ 222,943.26	\$ 6,771,136.74	97%
Permitting, NEPA & Compliance	\$ 550,324.00	\$ 53,353.66		\$ 496,970.34	90%
Backhaul Improvements	\$ 1,510,592.00	\$ -		\$ 1,510,592.00	100%
Approved Additional Expenses	\$ 28,752.00	\$ -		\$ 28,752.00	100%
	\$ 18,476,554.00	\$ 640,950.97	\$ 435,992.03	\$ 17,835,603.03	97%

During the 2nd Quarter of Fiscal Year 2023, EOTSS and Motorola Solutions executed Change Order 002. This amendment memorialized the scope and pricing modifications that ensued from the differences between the preliminary and final CDR. Change Order 002 did not result in a change to the total contract amount; however, it did allocate \$218,918.87 in net charges to the Allowance budget (authorized for payment under Task Order 005).

As part of Change Order 002 the project schedule was modestly adjusted. These schedule adjustments resulted from the unavailability of certain components, significant supply change delays (of up to a year) in project orders, and the significant size of Phase 1A relative to other phases. Notwithstanding the changes to Phases 1A, 1B and 1C, the target date for the completion of the full CoMIRS+P25 system remains at the end of FY2026. The CoMIRS PMO is working with Motorola Solutions to mitigate any delays and to assure the timely and successful implementation of the new digital system.

Payment milestone dates affected by these schedule changes have been correspondingly adjusted.

Change Order 002 is posted at the CoMIRS SharePoint site and available for inspection.

3. THE JOINT CoMIRS-MOTOROLA PROJECT TEAM COMPLETED A PROOF OF CONCEPT AND PHASE 1A STAGING: *(CoMIRS Strategic Plan Roadmap Major Activity 6.2.9, "Upgrade radio network Core")*

In the 2nd Quarter of Fiscal Year 2023, the PMO completed an on-site staging and Proof of Concept demonstration of the network's core equipment, management tools, and Phase 1A radio frequency (RF) equipment. The staging and Proof of Concept was conducted at Motorola Solutions facilities in Elgin, Illinois. This demonstration was conducted in accordance with the requirements of Sections 8-3 and 8-5 of the RFR, "System Staging and Delivery" and "Proof of Concept Testing," respectively. The equipment that was staged included core servers, LAN switches, backhaul switches, edge routers, firewalls, RF components, terminal servers, four prime sites, 10 radio subsites and 6 TDMA transceivers, virtual servers and radio management servers and tools. The joint EOTSS-MSP team approved the Proof of Concept and confirmed the ordering and proper staging of equipment to be installed as part of the initial installation of the CoMIRS+P25 system.

Upon acceptance of the first phase of staging and Proof of Concept, the PMO received and approved the following milestones and associated invoices:

- Staging Completion Phase 1A: \$5,630,827.00
- Proof of Concept Testing – Part 1: \$ 451,230.00
- One-time payment for Licenses: \$9,253,596.00

The second phase of testing, specifically checklist items that can only be demonstrated properly in the field, will be confirmed after field installation. There are separate payment milestones for the second phase of

staging (largely battery plants and microwave systems) and Proof of Concept testing. All discrepancies or checklist failures will be resolved by Motorola Solutions or will have an approved resolution plan, prior to authorization for payment.

4. THE JOINT CoMIRS-MOTOROLA PROJECT TEAM COMPLETED MICROWAVE STAGING AND PROOF OF CONCEPT: *(CoMIRS Strategic Plan Roadmap Major Activity 6.2.11, “Enhance and expand backhaul network”)*

In the 4th Quarter of Fiscal Year 2023, the PMO and the Motorola Solutions project team completed a multi-day, on-site microwave staging and proof of concept event at Aviat Networks Inc., in Austin, Texas. This event included the staging of microwave backhaul equipment for forty (40) communications sites. Twelve (12) of these sites require new full microwave equipment racks. Microwave equipment for twenty-eight (28) sites will be placed on existing racks once installed in the field. There are seven (7) paths that are planned to reuse existing radios, leveraging prior investments in the current CoMIRS backhaul infrastructure.

Below is a summary of the equipment staged:

Total Microwave (MW) Paths	43
Total 6 GHz MW Paths	23
Total 11 GHz MW Paths	20

Total Radios	102
Total 6 GHz MW Radios	52
Total 11 GHz MW Radios	50

Total INUe Chassis Staged	27
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The Factory Acceptance Test included visual inspections and inventories of planned equipment, long-term bit rate error (BER) testing, verification of proper software installation and licensing, verification of transmitter and receiver frequencies, demonstration of control of transmit power and receiver thresholds, verification of protection switching, demonstration of end-to-end circuit assignments and continuity checks, testing of ethernet throughput, auxiliary card testing for alarm inputs and relays, verification of the proper setup of the Aviat ProVision NMS software, and demonstration of “ad hoc” and standardized reporting capabilities. The successful demonstration of the staged equipment was recorded in an Aviat Networks Factory Acceptance Test Plan (Aviat Networks Project #NA140807-34840) and yielded the issuance of a Certificate of Factory Acceptance, with checklist items identified for appropriate follow-up.

5. THE PMO ISSUED MOTOROLA SOLUTIONS A NOTICE TO PROCEED FOR THE CoMIRS’ FIVE YEAR MAINTENANCE SERVICE AGREEMENT: *(CoMIRS Strategic Plan Roadmap Major Activity 6.2.10, “Build, lease, or upgrade radio sites”)*

In the 2nd Quarter of Fiscal Year 2023, the PMO issued a formal notice to proceed (NTP) to Motorola Solutions for maintenance services, as described in Section 5.3 of the governing Statement of Work, and by reference, Section 6 of the RFR. Maintenance services for the CoMIRS+P25 digital radio system will follow the successful completion of the contract-defined two-year warranty period and are projected to start

in Fiscal Year 2029. Provisions of the maintenance agreement were negotiated as part of the overall contract negotiations with Motorola Solutions in the fall of 2021.

When ripe, the maintenance agreement will define the scope of hardware, system components, and software covered under the agreement. It will include descriptions of services and costs, including system management, on-site infrastructure response with system technicians, dispatch services, infrastructure repair, technical support, legacy system or integration support, network performance monitoring, network security monitoring, network preventative maintenance, generator servicing, HVAC servicing, software/feature updates, battery maintenance, subscriber and accessory maintenance, FCC license management, and inventory management, among others. Additionally, the agreement will include a detailed support plan, response goals, and payment terms.

By issuing an NTP for a maintenance agreement that is subject to a future “start date” and successful completion of the warranty period, the PMO was able to secure 7,500 user licenses for the Motorola radio management application, modify the size of fourteen (14) communication site shelters, and obtain eleven (11) additional tower mappings at no additional cost. The licenses for the Motorola radio management application will be used to remotely program and update subscriber radios in support of the transition to the new digital radio system.

6. THE JOINT CoMIRS-MOTOROLA PROJECT TEAMS CONDUCTED SITE VISITS: (CoMIRS Strategic Plan Roadmap Major Activity 6.2.10, “Build, lease, or upgrade radio sites”)

During Fiscal Year 2023, the CoMIRS PMO and the Motorola Solutions teams conducted numerous site visits to inventory existing communications sites, evaluated new communications sites, and planned an effective backhaul network to support the new radio system. Field visits were conducted utilizing joint Commonwealth and Motorola teams. In total, 192 initial site, foundation mapping, geotechnical analysis, microwave path, and tower mapping visits have been conducted to support the implementation of CoMIRS+P25 network. Resulting in part from these site visits is a collection of project deliverables, including inventories of equipment, compound and tower diagrams, and microwave path reports. These deliverables are being used to support lease applications, obtain owner approval for compound and tower changes, and inform civil engineers conducting tower structural analyses. Project deliverables continue to be posted to the Commonwealth’s Microsoft SharePoint site.

7. THE PMO ISSUED NOTICES TO PROCEED TO CONDUCT TOWER MAPPINGS AND STRUCTURAL ANALYSIS OF COMMUNICATIONS TOWERS: (CoMIRS Strategic Plan Roadmap Major Activity 6.2.10, “Build, lease, or upgrade radio sites”)

There are fifty (50) communications sites in Phase 1A of the CoMIRS Project. Forty-two (42) Phase 1A communications sites will require a structural analysis to assure that the added or changed load can be properly handled by the tower and its foundation. If the added load exceeds national standard engineering thresholds for the designated tower class, then the tower must be remediated to handle the additional load. These remediations may include such repairs or improvements as reinforcing tower legs with steel, repouring or expanding tower or anchor foundations, replacing or adding guyed wires, or, if needed and financially viable, replacing an existing tower. Much of the Allowances planned for “Tower Remediation” are reserved to fund these required tower improvements.

Shortly after contract execution the PMO directed that Motorola Solutions map all Commonwealth owned and many municipal or county owned towers planned for use in Phase 1A. These tower mappings involve

detailed recording of all equipment installed on a tower, specific measurements regarding the location of installed equipment, and a series of photos or videos that record the existing state of the communications tower. These pictures and mapping details are subsequently used in part to evaluate the structural integrity of each communications tower.

During the 1st Quarter of FY2023, the PMO issued notices to proceed to Motorola Solutions to conduct structural analysis at four (4) communications sites planned for use in Phase 1A. Payment for the structural analysis was included in the fixed costs for the project. Any required remediation of these towers will be funded by Allowances and tracked against the budget category “Tower Remediation”.

In the 2nd Quarter of Fiscal Year 2023 the PMO executed two Task Orders authorizing \$4,024.39 for a floor loading analysis (Task Order 002) and \$63,414.63 for tower remediation design work (Task Order 004). Task Order 002 was intended to provide engineering evaluations to determine when flooring support may be needed inside communications shelters. Task Order 004 funded the design of tower enhancements that were recommended or required by structural analysis reports.

Through the end of the 4th Quarter of Fiscal Year 2023, thirty-six (36) tower sites had been mapped and tower mapping reports issued. Twenty-one (21) towers had an authoritative structural analysis on file. For towers not having a passing structural report with the planned equipment loading, remediation designs were authorized, and three (3) remediation designs (with passing structurals) were received.

In Fiscal Year 2023, the PMO instructed Motorola Solutions to begin mapping activities for the forty-nine (49) tower sites affiliated with Phases 1B, 1C and 1D. The consolidation of project implementation activities, including tower mappings, geotechnical analysis, and foundation mappings, for Phases 1B, 1C, and 1D will help assure the timely completion and roll-out of the CoMIRS+25 system.

8. THE PMO CONTINUED THE MAPPING OF TOWER FOUNDATIONS AND THE GEOTECHNICAL EVALUATION OF SOIL UNDER COMMUNICATIONS SITES: (*CoMIRS Strategic Plan Roadmap Major Activity 6.2.10, “Build, lease, or upgrade radio sites”*)

For planned communications sites that are owned by the Commonwealth or for which the Commonwealth acts on behalf of the municipal or other owner of the communications tower, the CoMIRS Project is responsible for conducting a structural analysis of the impacts of changes proposed by the CoMIRS+P25 system on the tower structure, including identifying whether tower structural reinforcements are needed. There are three (3) primary prerequisites to conducting these structural analysis: (1) a complete mapping of the equipment currently installed on the tower and the planned changes to that equipment list, including exact locations and mounting approaches; (2) a complete understanding of the nature, size, and quality of the foundation that supports the existing communications tower; and (3) a geotechnical survey of the soil underneath the current or planned tower and/or shelter.

The CoMIRS PMO has compiled existing documentation on the communication sites planned for Phase 1A. These documents included previous structural analyses, tower mappings, foundation mappings, lease agreements, and geotechnical reports. Task Order 001 “Foundation Mapping and Geotechnical Analysis (Phase 1A)” was issued during the 1st Quarter of Fiscal Year 2023. This task order authorized Motorola Solutions and its subcontractors to conduct foundation mappings and geotechnical analysis at specified locations planned for use by the CoMIRS+P25 system in Phase 1A. In total, there were sixteen (16) sites authorized for foundation mappings at a total cost of \$141,097.56, and twelve (12) sites authorized for geotechnical analysis for a total of \$136,829.27. After the issuance of that task order, sufficient

documentation was obtained for several sites on the Task Order 001 lists. Those sites were removed from the authorized list and will not be reimbursed. All reimbursement for this task order will be tracked against Allowance category "Tower Remediation".

In the 2nd Quarter of Fiscal Year 2023, the PMO accepted and authorized payment for foundation mapping at twelve (12) sites at a cost of \$109,024.39. Likewise, in the 3rd Quarter the PMO accepted and authorized payment for geotechnical analyses or foundation mappings at nine (9) sites at a cost of \$98,536.58.

By the end of the 3rd Quarter, twenty-three (23) non-commercial Phase 1A sites had both tower foundations and geotechnical analyses completed or there was sufficient documentation on file.

By the end of the 4th Quarter, all non-commercial Phase 1A sites had both tower foundations and geotechnical analyses completed or there was sufficient documentation on file.

9. ADMINISTRATION AND MANAGEMENT OF A RFR FOR COMMERCIAL COMMUNICATIONS SITES PROVIDERS: (*CoMIRS Strategic Plan Roadmap Major Activity 6.2.10, "Build, lease, or upgrade radio sites"*)

The communications sites planned for the CoMIRS+P25 system include a combination of Commonwealth agency owned sites, county or municipality owned sites, and commercial or privately-owned sites. For Phase 1A of the CoMIRS+P25 system implementation, the majority of the planned sites are already leased with the respective communications site owner or manager. The approach for communications sites with existing leases focuses on amending existing leases pursuant to existing agreements with the site owner.

In Fiscal Year 2022, EOTSS and the Massachusetts State Police jointly issued a request for response to establish a contract mechanism for the leasing of new commercial sites. The Land Mobile and Microwave Radio Communication Equipment Site and Tower Installation Rights Procurement (COMMBUYS Bid# BD-22-1060-ITD00-ITD00-70921) was structured to have two parts. Part 1 established a list of pre-approved communications sites vendors. Part 2 solicited bids for the use of communications sites within seventeen (17) specific geographic areas. After review and evaluation, four (4) apparent successful bidders were identified.

In order to enhance the PMO's ability to identify and leverage additional communication sites the PMO reopened the RFR in the 3rd Quarter of Fiscal Year 2023. By reopening the RFR the PMO (1) established contractual relationships with multiple successful Bidders for the use of tower and site ground or shelter space at Bidder-owned communications sites, and (2) created the opportunity to enter into multi-year agreements for the installation of communications equipment to support the modernized Commonwealth of Massachusetts Interoperable Radio System (CoMIRS) in the vicinity of named, preferred locations. The reopened RFR solicited bids for 26 communications sites throughout the Commonwealth.

During Fiscal Year 2023, the PMO, with the assistance of the EOTSS Contracts Unit, committed significant time and resources to the negotiation of master service agreements with those tower owners who were declared successful bidders pursuant to the Commonwealth's competitive procurement regulations. A Master Service Agreement with Industrial Tower and Wireless LLC of Marshfield, MA has already been executed. Negotiations with the remaining prospective vendors remain on-going and will be reported when complete.

10. CONTINUED THE MIGRATION OF FRANKLIN COUNTY PUBLIC SAFETY AGENCIES ONTO THE CoMIRS NETWORK: (*CoMIRS Strategic Plan Roadmap Major Activity 6.3.1,*

During Fiscal Year 2023 the PMO continued to work with the Franklin Regional Council of Governments' (FRCOG) on its transition to the CoMIRS+P25 radio system and to coordinate the decommissioning of the existing Franklin County Emergency Communications System (FCECS). FCECS is the legacy radio system in Franklin County that has been determined to be end-of-life. Most Franklin County public safety agencies and users have transitioned over to the CoMIRS system. The FCECS is still operational and used to provide radio coverage in areas not currently covered by the existing CoMIRS system. Additionally, many fire departments in the county use the legacy system for local paging needs. The CoMIRS PMO continues to work with FRCOG to plan the decommissioning of the FCECS and the transition of paging operations to the CoMIRS+P25 system. FRCOG and Franklin County public safety agencies are responsible for the purchasing of digital paging devices that will work on the planned CoMIRS+P25 system.

Additionally, the CoMIRS PMO and FRCOG further developed the proposition of assigning or transferring ownership of an existing lease and communications tower to the Department of State Police. Once transferred or assigned, to the Department of State Police, this resource will then be available for use in the planned CoMIRS+P25 system. The Massachusetts State Police Communications Division also continues to provide technical support to FRCOG concerning the use of the CoMIRS system and the transition of users and agencies to the system.

11. THE PMO CONTINUED TO MEET WITH CoMIRS STAKEHOLDERS AS A MEANS TO KEEP THEM INFORMED OF THE PROJECT'S PROGRESS AND IMPLEMENTATION SCHEDULES:

During Fiscal Year 2023, the PMO prepared a draft agreement intended to regulate and define the sharing of network assets by CoMIRS and the municipalities of Worcester and Shrewsbury. The draft agreement has been approved by EOTSS, EOPSS and the MSP. The PMO will present the draft to Worcester and Shrewsbury in the 2nd Quarter of Fiscal Year 2024 for their review.

Additionally, the PMO has successfully engaged both DCR and MassDOT in preliminary discussions and negotiations about system access and cost and infrastructure sharing. Site specific use agreements are being developed, shared and reviewed by the respective program and legal representatives. Once the parties execute these time sensitive agreements there is a mutual desire to transition to a more comprehensive governance document and incorporate the site-specific agreements into the master service agreement. The PMO has develop a SharePoint site through which the respective participants will begin to share artifacts and drafts as a means of formalizing terms and conditions of use.

As an overriding matter, the PMO continues to actively encourage and promote the participation of the Executive Office of Public Safety and Security (EOPSS) in the development of all governance agreements and strategic decision making.

12. JOINED THE STATE 911 DEPARTMENT AT ITS ANNUAL HEARING IN FRONT OF THE DEPARTMENT OF TELECOMMUNICATION AND CABLE:

On May 11, 2023, Assistant Secretary Matthew Moran, and members of the PMO joined the State 911 Department at its annual oversight hearing in front of the Department of Telecommunication and Cable. At the request of the State 911 Department, the PMO prepared responses to the D.T.C.'s information requests and responded to specific project questions. On June 14, 2023, the D.T.C. issued its final order in the matter of D.T.C. 23-2.

13. MONITORING AND AUDITING OF THE PROJECT BUDGET AND EXPENDITURES:

Notwithstanding modest deviations between cost projections and actual costs the estimate for the CoMIRS Project continues to track below \$135M. As reported in the Fiscal Year 2022 Annual Report, the project estimate was \$134.8M; through the end of Fiscal Year 2023 the project estimate remains at \$134.8M.

Expenditures for Fiscal Year 2023 were less than projected and budgeted. Although the CoMIRS Project expenditures for Fiscal Year 2023 were expected to reach \$41.66M, persistent issues regarding supply chain and equipment availability, changes to project approach intended to assure the completion of the full system in 2026, and the PMO's insistence that all contract deliverables fully comport with contractual requirements U07 payments were significantly less than projected. Much of this difference is driven by the shifting of payment timelines for contract milestones across budgetary fiscal years. The completion of contract milestones is expected to accelerate in FY2024.

The delay in the acceptance of network milestones mitigated the need to purchase certain FCC licenses and microwave circuits in Fiscal Year 2023. It is expected that these licenses and circuits will be needed in Fiscal Year 2024, accordingly the PMO has moved these allotments into the Fiscal Year 2024 budget.

The PMO, the Director of Finance for the State 911 Department and the Director of Finance for EOTSS continue to collaborate on all budget matters and remain committed to jointly monitoring program expenditures.

All Fiscal Year 2023 expenditures were paid from the Enhanced 911 Trust account. The Enhanced 911 Trust was the exclusive source of funding for these expenditures.

The table below illustrates the difference between the Fiscal Year 2023 budgeted allotments and actual year end expenditures:

FY 2023					
Object Class	Object Code	Description	Budgeted	Actual Expenditures	Difference
AA	A01	State Payroll	\$ 85,000.00	\$ 22,156.00	\$ 62,844.00
BB	B01	Employee Expenses	\$ 7,350.00	\$ 7,349.57	\$ 0.43
DD	D09	Fringe/Payroll Tax	\$ 35,000.00	\$ 9,161.51	\$ 25,838.49
EE	E16	Indirect Cost	\$ 25,000.00	\$ 21,330.82	\$ 3,669.18
EE	E19	FCC Licenses	\$ 250,000.00	\$ 7,125.00	\$ 242,875.00
EE	E30	FIA Card Services	\$ -		\$ -
PP	P01	Municipal Payments for Subscriber Units	\$ 911,836.00	\$ 911,836.10	\$ (0.10)
UU	U01	Microwave circuits	\$ 150,000.00	\$ 6,840.00	\$ 143,160.00
UU	U03	Software Licenses	\$ -		
UU	U05	IT Staff Augmentation	\$ 200,000.00	\$ 186,143.24	\$ 13,856.76
UU	U07	Subscriber Units IT Equipment Purchase	\$ 6,147,546.00	\$ 6,123,198.55	\$ 24,347.45
UU	U07	Network IT Equipment Purchase	\$ 33,250,981.00	\$ 15,929,051.03	\$ 17,321,929.97
UU	U09	IT Equipment Lease (Fiber)	\$ -		\$ -
UU	U11	PMO Professional consulting services	\$ 600,000.00	\$ 592,614.30	\$ 7,385.70
UU	U98	Reimbursement for Travel and Expenses for IT Professionals	\$ 2,000.00	\$ 5,008.98	\$ (3,008.98)
			\$ 41,664,713.00	\$ 23,821,815.10	\$ 17,842,897.90

14. FISCAL YEAR 2024 BUDGET:

The current project budget is now estimated to be ~\$134.8M. A copy of the current project budget, by fiscal year and object classification, is attached hereto.

In the event there are any questions or if clarification concerning any aspect of this report would be helpful, the PMO would be pleased to assist. Inquiries may be directed to Assistant Secretary Matthew Moran at (617)-626-4400 or email at Matthew.E.Moran@mass.gov.

Respectfully,



Matthew Moran
Assistant Secretary of Technology Services and Security
Chief Engagement Officer



EXECUTIVE OFFICE OF TECHNOLOGY SERVICES & SECURITY

COMMONWEALTH OF MASSACHUSETTS | 1 ASHBURTON PLACE, 8TH FLOOR, BOSTON, MA 02108

Object Class	Object Code	Description	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Object Code SubTotals
AA	A01	Payroll			\$ 10,720	\$ 74,952	\$ 111,252	\$ 22,156	\$ -	\$ -	\$ -	\$ 219,080
BB	B01	Employee Expenses			\$ -	\$ -	\$ -	\$ 7,350	\$ -	\$ -	\$ -	\$ 7,350
DD	D09	Fringe			\$ 4,064	\$ 28,722	\$ 43,867	\$ 9,162	\$ -	\$ -	\$ -	\$ 85,814
EE	E16	Indirect Cost	\$ 42,423	\$ 15,364	\$ 67,049	\$ 24,668	\$ 29,075.81	\$ 21,331	\$ -	\$ -	\$ -	\$ 199,911
EE	E19	FCC Licenses				\$ 236,162	\$ 2,250	\$ 7,125	\$ 200,000			\$ 445,537
EE	E30	Card Services					\$ 800					\$ 800
NN	N16	Major Building Renovation			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -
PP	P01	Municipal Payments for Subscriber Units				\$ 1,766,448	\$ 3,647,135	\$ 911,836				\$ 6,325,420
UU	U01	Circuits			\$ 10,351	\$ 7,107	\$ 7,002	\$ 6,840	\$ 125,000	\$ 125,000	\$ 125,000	\$ 406,300
UU	U03	Software licenses					\$ 115,830					\$ 115,830
UU	U05	IT Staff Augmentation Professionals		\$ 107,210	\$ 585,995	\$ 171,727	\$ 179,506	\$ 186,143	\$ 300,000	\$ 325,000	\$ 325,000	\$ 2,180,582
UU	U07	IT Equipment Purchase (Subscriber Units)	\$ 1,713,323	\$ 968,313	\$ 2,452,306	\$ 3,178,579	\$ 1,831,619	\$ 6,123,199	\$ -	\$ -	\$ -	\$ 16,267,339
UU	U07	IT Equipment Purchase (Network)		\$ -	\$ 830,978	\$ 79,723	\$ 300,820	\$ 15,929,051	\$ 27,376,826	\$ 39,965,004	\$ 4,222,332	\$ 88,704,734
UU	U07	IT Equipment Purchase (Network) (Alternative Funding Source)							\$ -	\$ 4,919,178	\$ 4,919,178	\$ 9,838,356
UU	U09	IT Equipment Lease (Fiber)					\$ 147					\$ 147
UU	U10	Radio Software Upgrades				\$ 24,348			\$ 4,800,000	\$ -	\$ -	\$ 4,824,348
UU	U11	IT Contract Services	\$ 199,169	\$ 237,453	\$ 641,348	\$ 1,189,107	\$ 500,109	\$ 592,614	\$ 800,000	\$ 650,000	\$ 400,000	\$ 5,209,801
UU	U98	Reimbursement for Travel and Expenses for IT Professionals			\$ -	\$ -	\$ -	\$ 5,009	\$ 2,000	\$ -	\$ -	\$ 7,009
TOTALS			\$ 1,954,915	\$ 1,328,341.26	\$ 4,602,811	\$ 6,781,543	\$ 6,769,413	\$ 23,821,815	\$ 33,603,826	\$ 45,984,182	\$ 9,991,510	\$ 134,838,356
Subscriber Percentage by FY			7.6%	4.3%	10.9%	21.9%	24.3%	31.1%	0.0%	0.0%	0.0%	100.0%
Network Percentage by FY			0.0%	0.0%	0.9%	0.1%	0.3%	18.0%	30.9%	45.1%	4.8%	100.0%