

RECIPIENT NAME: Los Angeles Regional Interoperable Communications System Authority

AWARD NUMBER: NT10BIX5570158

DATE: 02/21/2017

OMB CONTROL NUMBER: 0660-0037

EXPIRATION DATE: 6/30/2015

### QUARTERLY PERFORMANCE PROGRESS REPORT FOR BROADBAND INFRASTRUCTURE PROJECTS

#### General Information

1. Federal Agency and Organizational Element to Which Report is Submitted

Department of Commerce, National Telecommunications and Information Administration

2. Award Identification Number

NT10BIX5570158

3. DUNS Number

962696089

4. Recipient Organization

Los Angeles Regional Interoperable Communications System Authority 2525 Corporate PL Ste 200, Monterey Park, CA 91754-7672

5. Current Reporting Period End Date (MM/DD/YYYY)

12-31-2016

6. Is this the last Report of the Award Period?

Yes  No

7. Certification: I certify to the best of my knowledge and belief that this report is correct and complete for performance of activities for the purposes set forth in the award documents.

7a. Typed or Printed Name and Title of Certifying Official

Lam Tran

Grant Analyst

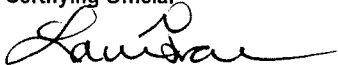
7c. Telephone (area code, number and extension)

(323) 881-8318

7d. Email Address

lam.tran@la-rics.org

7b. Signature of Certifying Official



7e. Date Report Submitted (MM/DD/YYYY):

2/21/17

**Project Indicators (This Quarter)**

**1. Please describe significant project accomplishments completed during this quarter (600 words or less).**

Through the final approach of 2016, the Los Angeles Regional Interoperable Communications System (LA-RICS) program has been in a holding pattern in regards to the LTE phase 2 or Project Implementation Plan (PIP) and primarily focused on closing out the first 75 site of the Long Term Evolution (LTE) program, Operations and onboarding new users. Motorola Solutions, Inc. (MSI), is currently sifting through all the project documentation collected from the contractors to enter into the close out books. These efforts along with the final completion of the Southern California Edison's (SCE) Cell-On-Wheels (COWs) are targeted objectives recognized by the team to be key elements required to be completed, enabling the operations team to fully diagnose and maintain the LTE Network.

The Operations team, which consists of Los Angeles County employees, are starting to take hold of developing operational patterns as well as setting expectations for providing a concrete platform as the Public Safety Broadband Network (PSBN) Network Operations Communication Center (NOCC) becomes more engaged on a day to day basis. The daily training from real time experiences has set a positive tone amongst the team allowing the past 7-8 months of class room preparation to come to light. Pressing forward, with the Operations meetings now occurring (3) times a week the team's main focus is to provide the following:

1. Engage and train County operations employees
2. Translate Terminology
3. Provides Enhanced Network Management
4. Develop Policies
5. Develop change management Process

The nine (9) SCE's COWs are 90% completed awaiting final power and fiber connectivity. The break out for the services awaiting final configuration or installation are:

1. Fiber connection from the COW's to the Core
2. DC Power from the COW to the SCE's point of connection (POC)
3. Commissioning of EnodeB (Radio cabinet) and Transition Microwave Radio (TMR) cabinet
4. Integration and cluster tuning
5. Operational acceptance

Of the fifteen (15) COWs, two (2) units have been moved to a County facility awaiting to be placed within the Network.

The LA-RICS team performed detailed LTE PSBN drive testing in support of on-boarding and special event activities. In addition, these drive tests allowed the team to identify potential problem areas and characterize current coverage and areas lacking coverage which will be improved by LTE phase 2 builds. Our drive testing focused:

- Along the parade routes and surrounding areas for the Hollywood Halloween Carnival and the Rose Parade. During these series of drive tests, we identified coverage gaps caused by faulty equipment not directly impacting the Rose Parade but important to identify and resolve. MSI is currently fixing the issue.
- The L.A. Basin areas of El Segundo, Long Beach, Signal Hill, Claremont, Pasadena, Monterey Park, Alhambra, Baldwin Park, Whittier, Norwalk, Paramount, Lakewood, LAX Airport and Covina.

We will continue drive testing during first quarter of 2017 to cover the San Fernando Valley, Manhattan Beach, Torrance, Carson, La Brea, and Palmdale areas

**KPI Projections.**

The estimates provided in 3rd Quarter (Q3) report have gone unchanged as well for 4th quarter (Q4). 606 Community Anchor Institutions (CAI) (schools, hospitals, public safety entities) could be directly connected to the completed network. The CAI estimated number will be updated with actual once the network is fully operational. It is expected 156 New Miles to be deployed, Zero New Miles to be leased, 100-110 Existing Miles to be upgraded, 77 Wireless Transmission Sites, 527 Existing Network Miles to be leased and Zero Improved CAIs.

**Halloween Parade**

The Carnival also known as the West Halloween Parade was a functional test for all involved. The team was comprised of LA County Sheriff, LA County Fire, First Net, LARICS operations and technicians. Included is a host of other staff members required to implement, monitor and control the Network during the event. The number of devices (70 plus) were circulated to chosen agencies to utilize during the parade providing the needed data or test results for operations to better understand the systems capabilities. This data gathering was collected through the use of the handheld devices and video feeds (6) placed throughout the parade route including the LA County Fire Strongwatch vehicle. All in all, the event was a success as KPI's previously undetermined were recognized, e.g. Resource Block Utilization - meaning: the video feeds were maxed out due to incorrect configurations.

**On Boarding Agencies**

Agency	Units Installed/Demo Kit Received
LASD	588
LACoFD	104
Pasadena Police Department (PD)	4
Claremont PD	1

El Segundo Fire	1
Signal Hill	1

Five Agencies (Pasadena PD, UCLA PD, Inglewood PD, Claremont PD, and Signal Hill) are a primary focus to support and engage by implementing an outreach program to provide basic knowledge and benefits of the PSBN Network. This program will enhance communications and allow for the necessary education with an emphasis towards Public Safety to broaden their understanding of the LTE technology. The Authority's approach is based on these areas of service:

- Drive Kits – In-Vehicle Routers (IVR) Including test Kits to illustrate coverage areas
- Providing Hand Held Devices
- The utilization of the devices to recognize the benefits
- Continued Drive testing in each of the Agencies Areas

These five (5) Agencies are targeted to be activated on the system by the end of March 2017.

**2. Please provide the percent complete for the following key milestones in your project. Write "0" in the Percent Complete column and "N/A" in the Narrative column if your project does not include this activity. If you provided additional milestones in your baseline plan, please insert them at the bottom of the table. Unless otherwise indicated in the instructions, figures should be reported cumulatively from award inception to the end of the most recent reporting quarter. Please provide a narrative description if the percent complete is different from the target provided in your baseline plan (300 words or less).**

	Milestone	Percent Complete	Narrative (describe reasons for any variance from baseline plan or subsequent written updates provided to your program officer)
2a.	Overall Project	93	Awaiting final close out binders and Acceptance Test Plan (ATP) of all PSBN sites.
2b.	Environmental Assessment	100	No construction activities occurred that required monitoring.
2c.	Network Design	100	Network design is complete. No change in the site configuration. All sites have both power and backhaul delivered (including all microwave paths) and have visibility to the core.
2d.	Rights of Way	100	Complete.
2e.	Construction Permits and Other Approvals	100	Complete.
2f.	Site Preparation	100	Complete.
2g.	Equipment Procurement	100	Complete.
2h.	Network Build (all components - owned, leased, IRU, etc)	100	Complete.
2i.	Equipment Deployment	100	Complete.
2j.	Network Testing	95	Cluster tuning has been completed. Wide Area Testing is under review.
2k.	Other (please specify): N/A	0	N/A

**3. To the extent not covered above, please describe any challenges or issues faced during this past quarter in achieving planned progress against the project milestones listed above. In particular, please identify any areas or issues where technical assistance from the BTOP program may be useful (600 words or less).**

The Core development has pressed on but not without obstacles. The Revision ver.9 (R9) to Revision ver.11 (R11) upgrades have been delayed thus pushing the completion date out to the later part of February 2017. After the Core upgrade for Revision rev. R11 has been through its Acceptance Test Plan (ATP) the Design Build Team (DB) from MSI will begin the SCE's COWs site commissioning and integration process scheduled to start in late March beginning of April.

**In-Vehicle Routers Installation Update**

Throughout 4th quarter (Q4) of 2016, Los Angeles County Sheriff's Department (LASD) has kept a steady stream of installations of routers in all their existing and new vehicles. By the end of the year, LASD expects to have an estimated 500 In Vehicle Routers (IVR) installed and adding approximately 100 vehicles per month. LASD is currently field testing solutions to previously identified network mapping and integration issues hoping to have a resolution by First quarter of next year.

**STATUS**

Los Angeles County Fire Department (LCFD) is on pace to installed over 100 in vehicle modems (IVM) into its emergency vehicles by end of Q4 2016. These continued efforts have provided the platform needed to encourage the County and preserve the momentum going into 2017. With 35 vehicles now on the PSBN system, LCFD is pushing to escalate those numbers to 4-8 additional users every week starting in January. LCFD is averaging around six (6) vehicles on a weekly basis.

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**HOLD UPS**

**Testing:**

At this time, testing and validating the Vehicular Modems LTE (VML 750) functionality with the Mobile Digital Computers (MDC) have caused interruptions and delays in the roll out of these units. Testing should be completed by the end of January and results show positive functionalities with the MDC's.

**Backhaul:**

Verizon Backhaul at County Fire FCCF should be completed by the first week of February 2017.

**Close-Out Books**

Finalizing close out books (phase 1) are scheduled to have completed by end of March. Critical documentation has been a struggle to obtain from the many contractors who worked or constructed the PSBN sites. Based on the past 12-18 months the Authority has considered different avenues available to it in hopes to expedite these services aligning with MSI to meet our deadline.

**4. Please report the following information regarding network build progress. Write "0" in the Total column and "N/A" in the Narrative column if your project does not include this activity. Unless otherwise indicated in the instructions, figures should be reported cumulatively from award inception to the end of the most recent reporting quarter. Please provide a narrative description if the total is different from the target provided in your baseline plan (600 words or less).**

Indicator	Total	Narrative (describe your reasons for any variance from the baseline plan or any other relevant information)
New network miles deployed	156	It includes all 15 point to point microwave links, including Intermediate hops going to the non-LTE sites.
New network miles leased	0	No new network miles.
Existing network miles upgraded	100	Calculates distance between nodes used on Los Angeles County and City of LA fiber.
Existing network miles leased	494	Existing network miles leased from Time Warner Cable and AT&T to LACO Fire Command Control Facility.
Number of miles of new fiber (aerial or underground)	0	Essentially less than a mile for site communication.
Number of new wireless links	12	New PSBN microwave links.
Number of new towers	30	There are currently 30 Towers installed.
Number of new and/or upgraded interconnection points	0	N/A

**For questions 5 and 6 please include information relating to agreements that you are negotiating or have entered into, or that your sub recipient, contractor or subcontractor is negotiating or entered into.**

**5a. If applicable, please provide the following information with regard to agreements with broadband wholesalers and/or last mile providers as a result of your project.**

Indicators	
Number of signed agreements with broadband wholesalers or last mile providers	0
Number of agreements currently being negotiated with broadband wholesalers or last mile providers	0
Average term of signed agreements (in quarters)	0

**5b. Please list the names of the wholesale and last mile providers with whom you have signed agreements (100 words or less). Providers:**  
N/A

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5d. If you have designated a third party to operate all or a portion of your network, please provide the name and contact information for this third party, indicate if this entity is a sub recipient, contractor, and/or subcontractor, and describe with specificity the portion of your network this third party operates (600 words or less).  
N/A

6. Please provide the data according to the type of subscriber. Write "0" in the Total column and "N/A" in the Narrative column if your project does not pass or serve a particular subscriber type. Unless otherwise indicated in the instructions, figures should be reported cumulatively from award inception to the end of the most recent reporting quarter. Please provide a narrative description if the total is different from the target provided in your baseline plan (300 words or less).

Subscriber Type	Access Type	Total	Narrative (describe your reasons for any variance from the baseline plan or any other relevant information)
Broadband Wholesalers or Last Mile Providers	Providers with signed agreements receiving new access	0	N/A
	Providers with signed agreements receiving improved access	0	N/A
	Providers with signed agreements receiving access to dark fiber	0	N/A
	Please identify the speed tiers that are available and the number of subscribers for each	0	N/A
Community Anchor Institutions (including Government institutions)	Total subscribers served	0	It is estimated that 606 CAIs will be added to the completed Network.
	Subscribers receiving new access	0	Pending system acceptance.
	Subscribers receiving improved access	0	Pending system acceptance.
	Please identify the speed tiers that are available and the number or subscribers for each	0	Pending system acceptance.
Residential / Households	Entities passed	0	N/A
	Total subscribers served	0	N/A
	Subscribers receiving new access	0	N/A
	Subscribers receiving improved access	0	N/A
	Please identify the speed tiers that are available and the number of subscribers for each	0	N/A
Businesses	Entities passed	0	N/A
	Total subscribers served	0	N/A
	Subscribers receiving new access	0	N/A
	Subscribers receiving improved access	0	N/A
	Please identify the speed tiers that are available and the number of subscribers for each	0	N/A

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7. Please describe any special offerings you may provide (600 words or less).

N/A

8a. Have your network management practices changed over the last quarter?  Yes  No

8b. If so, please describe the changes (300 words or less).

N/A

9. Community Anchor Institutions:

Using the table below, please provide a list by service area of the community anchor institutions (including Government institutions) connected to your network as a result of BTOP funds. Figures should be reported for the most recent reporting quarter only (NOT cumulatively). Also indicate whether your organization is currently providing broadband service to the anchor institution. Finally, provide a short narrative description with examples of how institutions are using BTOP-funded infrastructure (300 words or less).

Institution Name	Service Area (town or county)	Type of Anchor Institution (as defined in your baseline)	Are you also the broadband service provider for this institution? (Yes / No)	Narrative description of how anchor institutions are using BTOP-funded infrastructure
N/A	N/A	N/A	N/A	N/A

Project Indicators (Next Quarter)

1. Please describe significant project accomplishments planned for completion during the next quarter (600 words or less).

LTE Phase 1 – Initial 75 Site Program

The Project Management (PM) team along with MSI will be focusing on processing technical documentation essential to the project closure. Continue focus on technical upgrades to the Core from revision R9 to revision R11, including areas such as Operations Support Platform (OSP) Support Maintenance Management System (SMMS) and other key functionalities throughout the Network. A focus interest will be emphasize on the completion of the COW's and the SCE fiber ring in preparation to integrate these sites into the Network. Drive testing will be continuing during first quarter of 2017 to cover the San Fernando Valley, Manhattan Beach, Torrance, Carson, La Brea, and Palmdale areas.

LTE Phase 2 – Project Implementation Plan (PIP)

The Authority will be awaiting a response from the National Telecommunications and Information Administration (NTIA) on the decision to move forward with the project plan. The Authority provided responses to the thirty-six (36) questions received for NTIA, including the request to incorporate specific answers into the Project Implementation Plan (PIP) and the remainder of questions/answers to be placed in an addendum. The Authority had completed the request and uploaded the revised PIP into Grants Online website.

Once a formal approval is received, the Authority will begin planning out the first steps incorporating the five (5) objectives outlined in the PSBN Round 2 Project Implementation Plan (PIP).

In-Vehicle Routers Installation

LASD has a planned schedule to add up to 500 new router installations by the end of Q1 2017.

Backhaul:

County Fire is currently working with Verizon to provide the needed connectivity into FCCF and hopes to have this work completed by February 2017.

Projections for 2017:

County Fire has estimated its installation program to excel to 65 vehicles per month starting in February 2017 and a projected completion of over 500 by July 2017.

LA-RICS New Executive Director:

The new Executive Director Scott D. Edson will replace the Interim Executive Director John Radeleff starting March 26, 2017.

Outreach

These activities including demonstrations with key partners such as the department of Health and the Los Angeles (LA) – Marathon

including our continued efforts focused around the Rose Parade.

Planned Outreach to potential users including ongoing contact and discussions with the Department of Veterans Affairs, Department of Defense (DOD) and Metropolitan Transportation Authority (MTA).

Continued meetings with member agencies who opted out are ongoing. Memorandum of Understanding (MOU) for test equipment was approved by the LA-RICS JPA Authority at its meeting of July 7th.

KPI Projections.  
 It is estimated that 606 Community Anchor Institutions (CAI) (schools, hospitals, public safety entities) could be directly connected to the completed network. The CAI estimated number will be updated with actual once the network is fully operational. It is expected 156 New Miles to be deployed, Zero New Miles to be leased, 100-110 Existing Miles to be upgraded, 77 Wireless Transmission Sites, 527 Existing Network Miles to be leased and Zero Improved CAIs.

**2. Please provide the percent complete for the following key milestones in your project. Write "0" in the Planned Percent Complete column and "N/A" in the Narrative column if your project does not include this activity. If you provided additional milestones in your baseline plan, please insert them at the bottom of the table. Unless otherwise indicated in the instructions, figures should be reported cumulatively from award inception to the end of the next reporting quarter. Please provide a narrative description if the percent complete is different from the target provided in your baseline plan (300 words or less).**

	Milestone	Planned Percent Complete	Narrative (describe reasons for any variance from baseline plan or any other relevant information)
2a.	Overall Project	95	Operations classes will be ongoing.
2b.	Environmental Assessment	100	No variance from baseline.
2c.	Network Design	100	Complete.
2d.	Rights of Way	100	Complete.
2e.	Construction Permits and Other Approvals	100	Complete.
2f.	Site Preparation	100	Complete.
2g.	Equipment Procurement	100	Complete.
2h.	Network Build (all components - owned, leased, IRU, etc.)	100	Complete.
2i.	Equipment Deployment	100	Complete.
2j.	Network Testing	100	Complete.
2k.	Other (please specify): N/A	0	N/A

**3. Please describe any challenges or issues anticipated during the next quarter that may impact planned progress against the project milestones listed above. In particular, please identify any areas or issues where technical assistance from the BTOP program may be useful (600 words or less).**

The final close out documentation is ongoing for all sites is scheduled for delivery to the by March 2017. This will provide final closure for all development of PSBN 1. Operational training/classes for all county engineers and county technicians will continue throughout 2017 along with special events.

**Infrastructure Budget Execution Details**

**Activity Based Expenditures (Infrastructure)**

1. Please provide details below on your total budget, cumulative actual expenditures (for the period ending the current quarter), and cumulative anticipated expenditures (for the period ending next quarter) for each line item, including detailed disbursements of both matching funds and federal funds from project inception through end of this quarter (actual) or next quarter (anticipated). Actual and anticipated figures should be reported cumulatively from award inception to the end of the applicable reporting quarter.

Budget for Entire Project				Actuals from Project Inception through End of Current Reporting Period			Anticipated Actuals from Project Inception through End of Next Reporting Period		
Cost Classification	Total Cost (plan)	Matching Funds (plan)	Federal Funds (plan)	Total Cost	Matching Funds	Federal Funds	Total Costs	Matching Funds	Federal Funds
a. Administrative and legal expenses	\$21,638,208	\$9,051,435	\$12,586,773	\$23,971,870	\$10,016,610	\$13,955,260	\$24,095,620	\$10,023,684	\$14,071,936
b. Land, structures, right-of-ways, appraisals, etc.	\$13,924,063	\$6,503,266	\$7,420,797	\$6,955,852	\$6,955,852	\$0	\$6,955,853	\$6,955,853	\$0
c. Relocation expenses and payments	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
d. Architectural and engineering fees	\$31,932,812	\$1,405,994	\$30,526,818	\$32,014,223	\$1,569,511	\$30,444,712	\$32,674,205	\$1,569,511	\$31,104,694
e. Other architectural and engineering fees	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
f. Project inspection fees	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
g. Site work	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
h. Demolition and removal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
i. Construction	\$22,375,009	\$0	\$22,375,009	\$23,070,943	\$0	\$23,070,943	\$23,996,385	\$0	\$23,996,385
j. Equipment	\$41,713,113	\$1,927,892	\$39,785,221	\$38,918,736	\$3,243,660	\$35,675,076	\$39,680,996	\$3,409,214	\$36,271,782
k. Miscellaneous	\$6,318,019	\$1,870,500	\$4,447,519	\$3,755,780	\$336,902	\$3,418,878	\$3,807,450	\$364,977	\$3,442,473
<b>l. SUBTOTAL (add a through k)</b>	<b>\$137,901,224</b>	<b>\$20,759,087</b>	<b>\$117,142,137</b>	<b>\$128,687,404</b>	<b>\$22,122,535</b>	<b>\$106,564,869</b>	<b>\$131,210,509</b>	<b>\$22,323,239</b>	<b>\$108,887,270</b>
m. Contingencies									
<b>n. TOTALS (sum of l and m)</b>	<b>\$137,901,224</b>	<b>\$20,759,087</b>	<b>\$117,142,137</b>	<b>\$128,687,404</b>	<b>\$22,122,535</b>	<b>\$106,564,869</b>	<b>\$131,210,509</b>	<b>\$22,323,239</b>	<b>\$108,887,270</b>

2. Program Income: Please provide the program income you listed in your application budget and actuals to date through the end of the reporting period.

a. Application Budget Program Income: \$0

b. Program Income to Date: \$0