

QUARTERLY PERFORMANCE PROGRESS REPORT FOR BROADBAND INFRASTRUCTURE PROJECTS

General Information

<p>1. Federal Agency and Organizational Element to Which Report is Submitted</p> <p>Department of Commerce, National Telecommunications and Information Administration</p>	<p>2. Award Identification Number</p> <p>NT10BIX5570158</p>	<p>3. DUNS Number</p> <p>962696089</p>
<p>4. Recipient Organization</p> <p>Los Angeles Regional Interoperable Communications System Authority 2525 Corporate PL Ste 200, Monterey Park, CA 91754-7672</p>		
<p>5. Current Reporting Period End Date (MM/DD/YYYY)</p> <p>03-31-2017</p>	<p>6. Is this the last Report of the Award Period?</p> <p><input type="radio"/> Yes <input checked="" type="radio"/> No</p>	
<p>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.</p>		
<p>7a. Typed or Printed Name and Title of Certifying Official</p> <p>Lam Tran Grant Analyst</p>	<p>7c. Telephone (area code, number and extension)</p> <p>(323) 881-8318</p>	<p>7d. Email Address</p> <p>Lam.tran@la-ricisa.org</p>
<p>7b. Signature of Certifying Official</p> <p><i>Lam Tran</i></p>	<p>7e. Date Report Submitted (MM/DD/YYYY):</p> <p>05/15/2017</p>	

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

The Long Term Evolution (LTE) Round 1 program progressed during the first quarter (Q1) of 2017 with continued efforts to complete Radio Access Network (RAN) and Core Upgrades, Acceptance Test Plan (ATP) tests for equipment, feature and system functionality and final documentation delivery. Efforts by Motorola Solutions Inc. (MSI) to complete the gathering of documentation over the past two quarters has provided specific photos and critical information required to complete the closeout binders.

The nine SCE's COWs are nearly completed awaiting final power and fiber connectivity to one final site, SCESTUD. This site has been slowed up due to Caltrans and the permit (filed in early Q1) to install a power conduit approximately (250') from an existing transformer to the location where the meter is. The final construction activities are scheduled for completion in Q2 of 2017. Two (2) units were moved and have not yet found a home.

The key component of the Public Safety Broadband Network (PSBN) Round 2 plan is the development of new PSBN sites including coverage augmentation, additional objectives were included to provide benefits to the LA-RICS deployment and on-boarding efforts. The objectives are as follows:

1. Coverage Augmentation
2. Rapid Response Vehicles
3. Applications and Network Operations Centers (NOC) Infrastructure
4. Public Safety Enterprise Network (PSRN)
5. Testing and Validation Center

LA-RICS received approval from NTIA for objectives 2, 4 and 5. Funding for these objectives will serve to facilitate increased system usage, network support and application development while providing immediate benefits to the expanding public safety community relying on this crucial network.

NOCs Implementation:

Construction is complete at two of the three NOCs locations (FCCF & LA-RICS office). Ongoing efforts continue with the final configurations for the Sheriff Command Center (SCC) NOC including an upgrade to the facilities power and server room that is expected to complete in Q2 of 2017.

Network Optimization

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 areas. Areas lacking coverage will be improved by Round 2 LTE builds.

Key Learning Conditions (KLCs)

- KLC 1 - Secondary Responders: Establish partnership agreements with utilities and secondary responder agencies that define asset usage, valuation, and service level agreements (SLAs) between the parties.
 - o Currently targeting Metropolitan Transit Authority (MTA) as a secondary user. Discussions are underway.
- KLC 2 - Quality of Service (QoS) Network alert mechanisms: Ensure network alert mechanisms are in place to alert operators of network congestion events impacting user perceived degradation of QoS.
 - o On March 21, 2017 LA-RICS conducted testing to complete the KLC requirements to test & demonstrate Quality and Priority capabilities of the PSBN.
- KLC 3 - Performance Statistics
 - o Pretesting for Rose Parade - A total of 6 fixed cameras and 1 mobile camera including 100 handsets to provide Push-To-Talk (PTT) services using the MSI WAVE system. Scope was to test Aggregate Maximum Bit Rate (AMBR) on Fixed Video cameras as well as Guaranteed Bit Rate (GBR) on WAVE handsets for PTT services.
 - GBR was set and then rejected to support the WAVE system during the Rose Parade. Initial studies showed that setting GBR for 200kbps per subscriber created congestion so was not used for the WAVE system.

Status of PSBN Agency Onboarding

Active engagement continued with interested agencies via demonstrations, providing test Demo Kits, and technical coordination meetings with the participation of the Los Angeles County Sheriff's Department (LASD) and County of Los Angeles Fire Department (LACoFD).

- LASD: 136 routers configured with 120 of those routers activated in the field as of March 28, 2017 & 99 handheld devices using the PSBN system. Additional 1136 vehicles had PSBN antennas installed and pending router installation & activation.
- LACoFD: 109 units installed in vehicles.
- Inglewood Police Department: Demo Kit Pending
- Claremont Police Department: Demo Kit Received
- Pasadena Police Department concluded their coverage evaluation and will discuss further use of routers and cell phones once

pricing/subscriber fees are made available.

LA-RICS Special Events – Los Angeles Marathon

On March 19, 2017, LA-RICS partnered with the Los Angeles County Department of Public Health (DHS) to provide emergency medical services for the Los Angeles Marathon. LA-RICS provided access to the Public Safety Broadband Network for health services workers to access and manage hospital data. Public Health employees used their dedicated emergency medical communications network, REDDINET, to coordinate medical aid for 14 injured runners who were transported to local hospitals. DHS Mobile Medical System (MOMS) team members were stationed in Santa Monica and used the LA-RICS land mobile radio to connect with Motorola WAVE system users at the command post and other locations.

Outreach Status

The LA-RICS Technical Team

- Met with members of UCLA Health to discuss service to the Mobile Stroke Unit via Demo Kits. LA-RICS is on target to provide internet access and Push-to-Talk services for Health Services/EMS during the Los Angeles Marathon on March 19, 2017.
- Met with the cities of El Segundo and Signal Hill. Both cities have completed their testing of our demonstration kits and are requesting information regarding subscriber fees before they proceed with securing and installing routers.
- Attended a Super Bowl After Action Review in Houston, Texas with members of the Houston Police and Fire Departments, along with members of FirstNet to discuss lessons learned.

On March 26, 2017, Scott Edson replace John Radeleff as the new Executive Director of LA-RICS.

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	95	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. Failover and equipment and functional ATP testing is ongoing and scheduled to be complete in May 2017.
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).

In-Vehicle Routers Installation Update

The proposed schedule provided to all for vehicle installations have outlined the number of on-boarding agencies consisting of Los Angeles County Fire Department (LACoFD) and Los Angeles County Sheriff Department (LASD) planned by quarter in 2017. The LASD's Information Technology (IT) division as well as the LACoFD's IT have developed and implemented processes to streamline the installation and provisioning of the antennas as well as the In-Vehicle-Routers (IVR) to achieve the aggressive schedule set forth in a previous narrative provided to NTIA from L.A. Sheriff and County Fire.

Current schedule by quarter:

- Q2 2017
 - o LASD – 237
 - o LACoFD – 100
- Q3 2017
 - o LASD – 537
 - o LACoFD – 360

The installation progress reported for In-Vehicle-Router (IVR) shown above is cumulative projections by LASD and LACoFD. Additional numbers/goals for future quarters will be added as the year progresses indicating the headway achieved by both agencies in addition to providing valuable data for future agencies and the challenges they may experience during this process.

Core and Radio Access Network (RAN)

The RAN and Core development is progressing but has encountered obstacles. MSI is scheduling change requests and Method of Procedure (MOP) reviews for each upgrade. Once each upgrade Change Request (CR) and MOP is reviewed, updated and approved MSI/Ericson is scheduling that CR upgrade to be installed, tested and verified to Revision ver.11 (R11). The Revision ver.9 (R9) to Revision ver.11 (R11) upgrades originally scheduled, to complete by the end of December 2016 have been delayed due to software installation, system bugs and timing issues, thus pushing the completion date out to the later part of May 2017. After the Core upgrade for Revision R11 has been through its Acceptance Test Plan (ATP) the Design Build Team (DB) from MSI will begin the Southern California Edison's (SCE) Cell-On-Wheels (COWs) site commissioning and integration process scheduled to start in late April beginning of May. These 9 sites will provide the benefits of Radio Frequency (RF) coverage and capacity in these key locations for the PSBN Network.

LA-RICS:

Band 14 phones:

- Deployed: 66 phones
- Estimate another 33 phones by June

Mobile and Fixed Band 14 Cameras:

- Deployed: 2 Band 14 cameras
- Estimate another 8 Band 14 cameras deployed within 6 months.

Close-Out Books

The close out books for (phase 1) have been completed and delivered to the LA-RICS office for review and acceptance. The LA-RICS internal team will be reviewing all the information and documentation to assure each site has all the required certifications, photos and critical warranty information required as part of the PSBN contract.

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	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 leased.
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 Los Angeles County 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	PSBN microwave links.
Number of new towers	30	There are currently 30 Towers installed.

Indicator	Total	Narrative (describe your reasons for any variance from the baseline plan or any other relevant information)
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

5c. What wholesale services are being provided by this project? Please describe below. As an attachment to this report, please provide pricing plans (in \$ per month) associated with each wholesale service provided by your product (100 words or less). Wholesale services description:
N/A

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 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.

Subscriber Type	Access Type	Total	Narrative (describe your reasons for any variance from the baseline plan or any other relevant information)
	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

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 Round 1– Initial 76 Sites Program
The Project Management (PM) team along with MSI will focus on final review and approval of all technical documentation for the close

out books. Continued focus on technical upgrades to the Core will continue throughout second quarter (Q2) of 2017 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 focused interest will be emphasized on the completion of the COW's and the SCE fiber ring in preparation to integrate these sites into the Network. Drive testing will continue during first quarter (Q1) of 2017 to cover the San Fernando Valley, Manhattan Beach, Torrance, Carson, La Brea, and Palmdale areas.

LTE Round 2 – Project Implementation Plan (PIP)

The Los Angeles Regional Interoperable Communications System (LA-RICS) was tasked with developing a Project Information Plan (PIP) for the LA-RICS Public Safety Broadband Network (PSBN) for LTE Round 2. This new Plan outlined the benefits and additional coverage to enhance network performance provided through the implementation of approximately 26 primary candidates chosen by the project management team.

The Authority focused on five objectives to enhance the overall performance and coverage for LTE Round 2:

1. Coverage objective
2. Rapid response vehicles
3. Applications and Network Operations Command Center (NOCC) Infrastructure
4. Interconnection of the Public Safety Enterprise Network (PSEN)
5. Testing and Verification Center

At the end of Q1 of 2017 we received a response from the National Telecommunications and Information Administration (NTIA) on the decision to move forward with the project plan. NTIA approved the following objectives to move forward:

2. Rapid response vehicles
4. Interconnection of the Public Safety Enterprise Network (PSEN)
5. Testing and Verification Center

The Authority received the formal approval and the funding for these objectives and will begin the planning, design and implementation of these objectives during second quarter of 2017 with completions of each based on the schedules developed for each objective through 2017 and 2018.

In-Vehicle Routers Installation

LASD has a planned schedule to add up to 237 new router installations and activations by the end of Q2 2017.

LA County Fire has a planned schedule to add up to 100 new router installations and activations by the end of Q2 2017.

Backhaul

County Fire along with Televate has furthered the discussions with Verizon to provide the needed connectivity into FCCF. The installation of additional backhaul through Verizon doesn't have a schedule at this time but all are prepared to complete these services by end of Q2 2017.

Outreach

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

CAIs

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.

Key Learning Conditions (KLCs)

Current status of the following KLCs:

- KLC 1 - Secondary Responders: Establish partnership agreements with utilities and secondary responder agencies that define asset usage, valuation, and service level agreements (SLAs) between the parties.
 - KLC 1 report to FirstNet will be provided during Q2 of 2017
- KLC 2 - Quality of Service (QoS) Network alert mechanisms: Ensure network alert mechanisms are in place to alert operators of network congestion events impacting user perceived degradation of QoS. The team has setup a system test to study the QPP configurations to test this KLC on Quality of Service. Initial study was conducted and ran into several issues.
 - KLC 2 report to FirstNet will be provided during Q2 of 2017
- KLC 3 – Performance statistics
 - KLC 3 report to FirstNet will be provided during Q2 of 2017

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	96	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):	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 completion of the SCE COW's is hinging on the upgrade of the core by MSI and the conclusion of the SCE fiber ring and connectivity. All of which has been a planned focus for the team in preparation for the installation and commissioning of these sites.

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	\$25,022,975	\$10,016,610	\$15,006,365	\$25,192,050	\$10,022,270	\$15,169,780
b. Land, structures, right-of-ways, appraisals, etc.	\$14,662,063	\$6,626,266	\$8,035,797	\$9,444,852	\$9,444,852	\$0	\$9,610,786	\$9,610,786	\$0
c. Relocation expenses and payments	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
d. Architectural and engineering fees	\$34,092,812	\$1,765,994	\$32,326,818	\$32,160,497	\$1,569,511	\$30,590,986	\$32,698,234	\$1,569,511	\$31,128,723
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	\$23,399,285	\$0	\$23,399,285	\$24,161,528	\$0	\$24,161,528
j. Equipment	\$42,363,513	\$2,036,292	\$40,327,221	\$39,601,273	\$3,243,660	\$36,357,613	\$40,256,583	\$3,376,103	\$36,880,480
k. Miscellaneous	\$6,339,619	\$1,874,100	\$4,465,519	\$3,947,940	\$529,062	\$3,418,878	\$4,002,087	\$564,333	\$3,437,754
l. SUBTOTAL (add a through k)	\$141,471,224	\$21,354,087	\$120,117,137	\$133,576,822	\$24,803,695	\$108,773,127	\$135,921,268	\$25,143,003	\$110,778,265
m. Contingencies									
n. TOTALS (sum of l and m)	\$141,471,224	\$21,354,087	\$120,117,137	\$133,576,822	\$24,803,695	\$108,773,127	\$135,921,268	\$25,143,003	\$110,778,265

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