AWARD NUMBER: NT10BIX5570158
DATE: 11/21/2017

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	2. Award Identification Number	3. DUNS Number
Department of Commerce, National Telecommunications and Information Administration	NT10BIX5570158	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)	6. Is this the last Report of the Award Period?
09-30-2017	○ 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	7c. Telephone (area code, number and extension)
Lam Tran Grant Analyst	(323) 881 - 8318

7d. Email Address

lam.tran@la-rics.org

7b. Signature of Certifying Official	7e. Date Report Submitted (MM/DD/YYYY):
[signature]	11/21/2017

Project Indicators (This Quarter)

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

Long Term Evolution (LTE) Round 1
The LTE Round 1 program progressed during the third quarter (Q3) of 2017 with continued efforts to complete the remaining Cells-On-Wheels (COWs) for the Radio Access Network (RAN) and final documentation delivery. Motorola Solutions Inc. (Motorola) continued their efforts of gathering of documentation over the past Q3 have provided specific photos and critical information required completing the closeout binders.

The Project Management (PM) team along with Motorola will focus on final review and approval of all technical documentation for the close out books. Close out of remaining outstanding items has been agreed to by Motorola and the Authority. Final closeout of those remaining items should happen during the fourth quarter (Q4) of 2017 for all items except for the COWs. A focused interest will be emphasized on the completion of the COW located on Southern California Edison (SCE) property and the SCE fiber ring in preparation to integrate these sites into the Network. The nine (9) SCE's COWs utility installation both power and fiber connections are completed. Those services awaiting final configuration or installation to the COW's are Virtual Local Area network (VLAN) connections, LTE system upgrades to bring them current equipment in line with the rest of the network, power and meter connections, golden parameters, cluster tuning and final operational acceptance.

Data warehouse servers are installed and configured. Performance data is being collected and stored for performance and usage. Access to all counters has been established with detailed reports being generated in Q4 of 2017.

LTE Round 2
The LTE Round 2 program objectives 2, 4 and 5 shown below, were approved by the National Telecommunications and Information Administration (NTIA) in the first quarter (Q1) of 2017.
    2. Rapid response vehicles
    4. Interconnection of the Public Safety Enterprise Network (PSEN)
    5. Testing and Verification Center

As part of the Round 2 objectives, the Televate team has been working through third party vendors to request quotes for the rapid response vehicles. Additionally, progressed were made on the completion of 3 of 4 PSEN Access Point Name (APN) connections for Claremont Police Department, Bell Police Department, and the Inglewood Police Department. The fourth APN connection is for UCLA Health Services which is still outstanding due to scheduling for resources time with UCLA health.

The LA-RICS team has also provided to NTIA a request to modify the requirements and funding levels for the Test and Validation Center to become a Mobile Test and Validation Center instead of fixed location. The request included the benefits, resources and equipment financials to accomplish this modification. The request also included an update and funding request increase for the Rapid Response Vehicles. The update on the Rapid Response Vehicle program included specification changes to meet the FirstNet/AT&T COLT requirements, a financial update based on the detailed research, new specification information/requirements to build the COLTs to meet the new specifications and the resources required to complete the program. The request for both modifications was denied by NTIA. Due to the funding denial and the announcement by FirstNet of their selected vendor AT&T to provide FirstNet Services, the Test and Validation Center has been put on hold to determine how to proceed should the State opt-in or opt-out. The COLT program is moving forward and is the process of finishing bid requirements.

Network Operations Centers (NOCs) Implementation:
Three (3) locations have been designated for the NOCs to house equipment for monitoring of the Public Safety Broadband Network (PSBN):
1. Fire Command and Control Facility (FCCF),
2. Sheriffs Communication Center (SCC)
3. Los Angeles Regional Interoperable Communications System (LA-RICS) office
Construction is complete at all three locations (FCCF, SCC and LARICS office), with LARICS being the temporary primary NOC location. Ongoing efforts continue with the final configurations for the SCC Primary NOC including an upgrade to the facility's power and server room that completed in Q3 of 2017. All facility work, power, cabling, cabinets and furniture have been installed.

Network Optimization
The LA-RICS team performed detailed LTE PSBN drive testing in support of onboarding 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.
- KLC 1 report has been completed and provided to FirstNet for review to ensure it is meeting all KLC reporting requirements.
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.
- LA-RICS will be collecting usage data and provide reports as addendums to the KLC 2 report during upcoming Q4 events.
KLC 3 – Testing/Validation of NPSTC Priority and QoS Requirements and management alternatives.
- LA-RICS and FirstNet team has tested to the QPP configurations for KLC 3 on QoS. Initial study was conducted and an internal report has been generated on the findings.

Q3 Outreach Reporting
• Members of the LA-RICS Team have met with representatives from FirstNet and AT&T to discuss AT&T's role to build out the National PSBN and the degree to which they plan to absorb and reuse the LA-RICS PSBN and how they will transition existing users to the FirstNet/AT&T system.

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	98	Awaiting final close out binders, completion of COWs and Acceptance Test Plan (ATP) for 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.
2k.	Other (please specify):	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 (IVR) 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 IVR to achieve the aggressive schedule set forth in a previous narrative provided to National Telecommunications and Informaiton Administration (NTIA) from LASD and LACoFD.

The cumulative year-to-date (YTD) In-Vehicle routers installation as of the end of Q3 2017 are as follows:
o LASD – 589 routers installed with 529 active on the network.
o LACoFD – 347 routers installed with 231 active on the network.

Active engagement continued with interested agencies via demonstrations, providing test Demo Kits, and technical coordination meetings with the participation of the LASD and the LACoFD. Both LASD and LACoFD continued installing modems in vehicles at an accelerated pace and are collectively meeting or exceeding their quarterly goals.

Core and Radio Access Network (RAN)
The RAN and Core development is progressing but has encountered obstacles. Motorola is scheduling change requests and Methods of Procedure (MOP) reviews for each upgrade. Once each upgrade Change Request (CR) and MOP is reviewed, updated and

approved Motorola/Ericson is scheduling that CR upgrade to be installed, tested and verified to R11. The last upgrade for the system is implementing the Golden Parameters throughout the system and was completed by August 2017. Final golden parameter changes were made by Motorola to ensure consistency at each site and optimize network performance. Motorola will begin the SCE COWs site commissioning and integration process scheduled to start in Mid-August. These nine (9) sites will provide the benefits of Radio Frequency (RF) coverage and capacity in these key locations for the PSBN Network. Other RAN work included a modification at Site DWP243 for the addition of LMR to the site. The modification included the movement of the LTE sites Antennas from the top of the mast to the middle of the mast and LMR antennas to the top of the mast and an increase in the size of the generator. This change has actually improved the performance of the site by reorienting the antennas to better match the terrain covered. There was significant network interference issue being caused by the site due to its height, this has now been mitigated. Motorola and LA-RICS are currently finalizing a MOP for final tests and verifications of the site to complete this change in the fourth quarter 2017.

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	Calculates distance between nodes used on Los Angeles County and City of LA fiber.
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.
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.
	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 Motorola will focus on final close out of the remaining outstanding items that has been agreed to by MSI and the Authority. Final close out of those remaining items should happen during Q4 of 2017.

SCE COWs
The nine (9) SCE's COWs are nearly completed. SCE has finished their testing of the ring and circuits. Motorola, LA-RICS, and SCE are working on completing the connectivity with odd and even VLANs for each site redundancy. This is scheduled to complete in the Q4 of 2017. Once the VLAN connectivity is completed, Motorola will do final transport tests to ensure integrity of the ring, VLANs and failover modes to the PSBN Core.

NOC Implementation
The remaining items to be completed in Q4 2017 includes network equipment and video wall installation, turn-up and test to bring the NOC online.

Network Optimization
Drive testing will continue during Q4 of 2017 to cover any specific areas needed for on-boarding in the San Fernando Valley after the Land Mobile Radio (LMR) change at site LADWP243, CCT, USC and Palmdale areas.

In-Vehicle Routers Installation
LASD is forecasting to have 837 routers installed by the end of Q4 2017.
LACFD is forecasting to have 540 routers installed by the end of Q4 2017.

KLC Reports
The KLC 2 and KLC 3 reports will be created and issued during the 4th quarter 2017.
Upcoming events during the Q4 of 2017 and Q1 of 2018 will be the Carnival in West Hollywood during October and the Rose Parade in Pasadena during end of December and the beginning of January 2018. During these events, LA-RICS will be collecting data for the KLC reports.

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.

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	99	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).

Completion of the COWs, specific site optimization efforts and the KLC reports will be the focus of the next quarter.

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.

Cost Classification	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		
	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	$27,667,725	$11,177,115	$16,490,610	$27,917,814	$11,243,575	$16,674,239
b. Land, structures, right-of-ways, appraisals, etc.	$14,662,063	$6,626,266	$8,035,797	$9,444,852	$9,444,852	$0	$9,583,130	$9,583,130	$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	$33,227,240	$1,569,511	$31,657,729	$33,436,833	$1,569,511	$31,867,322
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	$23,864,884	$0	$23,864,884
j. Equipment	$42,363,513	$2,036,292	$40,327,221	$39,693,916	$3,336,303	$36,357,613	$40,187,922	$3,431,678	$36,756,244
k. Miscellaneous	$6,339,619	$1,874,100	$4,465,519	$5,237,358	$903,478	$4,333,880	$5,349,017	$953,672	$4,395,346
l. SUBTOTAL (add a through k)	$141,471,224	$21,354,087	$120,117,137	$138,670,376	$26,431,259	$112,239,117	$140,339,600	$26,781,566	$113,558,035
m. Contingencies	$0	$0	$0	$0	$0	$0	$0	$0	$0
n. TOTALS (sum of l and m)	$141,471,224	$21,354,087	$120,117,137	$138,670,376	$26,431,259	$112,239,117	$140,339,600	$26,781,566	$113,558,035

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