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?
06-30-2017	○ 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]	8/22/2017

Project Indicators (This Quarter)

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

The 2nd Quarter (Q2) of 2017 has proven to be very productive with the conclusion of the Core upgrades including feature and system functionality. The continued efforts from Motorola (MSI) and the Los Angeles Regional Interoperable Communication System (LA-RICS) team paid off with the recent completion of the site books. MSI is currently gathering the outstanding equipment documentation for the system book expected to be finished and ready to review by the end of August 2017.

The Long Term Evolution (LTE) Round 2 program objectives 2, 4 and 5 shown below, were approved by the National Telecommunications and Information Administration (NTIA) in the 1st Quarter (Q1) of this year.
2. Rapid response vehicles
4. Interconnection of the Public Safety Enterprise Network (PSEN)
5. Testing and Verification Center

The Authority began the planning, design and implementation of these objectives during Q2 of 2017. In this quarter, the Round 2 program has progressed on the implementation of PSEN connections with Work Orders submitted to MSI for the build of 4 Access Point Names (APNs) (Claremont PD, Bell PD, Health Services / EMS, Inglewood PD).
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 also included an update and funding request increase for the Rapid Response Vehicles. Completions time frames for program are based on the schedules developed for each objective through 2017 and 2018.

During this quarter, MSI was able to complete the construction for all nine (9) Southern California Edison's (SCE)'s COWs. SCESTUD the final site requiring SCE to complete the power connection is scheduled for the conductors to be installed and meter set sometime in August. All outstanding permits from Cal Trans were issued from the State to the contractor in late June, providing the vehicle to push this site over the finish line. SCE's engineers have completed all of their installations for the fiber ring, including routers and other hardware at the Sheriff Command Center (SCC) building also known as the LTE Network Operations Center (NOC) to provide the connectivity from the Radio Access Network (RAN) to the CORE. Final site testing, cluster tuning and commissioning are tentatively scheduled for the end of August for all nine (9) SCE sites.

Operations:
The LA-RICS Operations team continues its efforts working alongside MSI to provide oversight on the LTE network. Implementing the already existing procedures to gather pertinent data for gathering Key performance indicators (KPI's) to better assist the team to improve the user experience in areas needed and keeping the performance of the Network at the level required for Public Safety.

Network Operations Centers (NOC) Implementation:
Three 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) (Currently on hold)
3. Los Angeles Regional Interoperable Communications System (LA-RICS) office
Construction is complete at two of the three locations (FCCF & LARICS office). Ongoing efforts continue with the final configurations for the SCC NOC including an upgrade to the facilities power and server room that is expected to complete in 3rd Quarter (Q3) 2017.

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. We will continue drive testing during 3rd and 4th Quarter of 2017 to cover any specific areas needed for on-boarding.

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 draft report has been 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.
 - The 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. KLC 2 Report will be developed and delivered to FirstNet during the 3rd quarter 2017.
• KLC 3 – Performance Statistics
 - LA-RICS is in the process of adding in a data warehouse for all network and system counters, logs and operational data. LA-RICS is working directly with FirstNet and Motorola to turn the data warehouse up and begin collecting data during the 3rd quarter 2017.

LA-RICS Special Events – Los Angeles Pride Festival:

The Pride Festival took place during June 10-12, primarily situated in and around the LA-RICS LASD West Hollywood Sheriff's Station. The performance of the PSBN Network was very good with an average throughput of 50Mb/s downlink (DL) and 2 Mb/s on the uplink (UL) at the height of the event. The six cameras performed well over the PSBN network with minor connectivity issues. Overall the Pride Festival was a success without any major incidents.

Q2 Outreach Reporting:
Members of the LA-RICS Team met with representatives from FirstNet and AT&T to discuss AT&T's role to build out the National Public Safety Broadband Network and how they plan to absorb and reuse the LA-RICS PSBN.

The website redesign was completed and the new website went live on May 25, 2017, in concurrence with Volume 2, Issue 4 of the LA-RICS Newsletter.

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	97	Awaiting final close out binders, completion of COW's 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.
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).

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 Motorola/Ericson is scheduling that CR upgrade to be installed, tested and verified to Revision v.11 (R11). The last upgrade for the system is implementing the Golden Parameters throughout the system, this will be accomplished by the end of July 2017. Motorola will begin the SCE COWs site commissioning and integration process scheduled to start in mid-August 2017. These 9 sites will provide the benefits of Radio Frequency (RF) coverage and capacity in these key locations for the PSBN Network.

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 Sheriff IT division as well as the County Fire 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.
• Q2 2017
  - LASD – 350 routers installed with 290 active on the network.
  - LACoFD – 228 routers installed with 138 active on the network.

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 also providing valuable data for future agencies and the challenges they may experience during this process.

Close-Out Books
The LA-RICS internal team has completed their reviewed of the close out books for Phase 1. MSI is currently collecting documentation for the system book including all the required certifications, photos and critical warranty information required as part of the PSBN contract. The system book is scheduled to be completed for review by the end of August.

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.
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:
At this time, the Authority along with Motorola is entering the final phase/close out of Round 1 LTE. All (63) static sites including some of the COW's have been integrated into the network and are now being monitored (24/7) by the LA-RICS local and Motorola Schaumburg Network Operations Command Center (NOC)'s. Final aspects of the system acceptance include working towards completion of all Core, and Operation Support System (OSS) upgrades and ATPs for each system and overall system functionality testing including failover tests, Quality, Priority and Preemption (QPP) and new OSS features. The final update to the system will be the deployment of the Golden Parameters across the system that will be completed in the Q3.

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 operations team is focused on the three objectives previously approved in Q1 by NTIA.
2. Rapid response vehicles
4. Interconnection of the Public Safety Enterprise Network (PSEN)
5. Testing and Verification Center
The Authority recently received the formal approval and the funding at the end of Q1 of 2017 for the above objectives and will begin the planning, design and implementation of these objectives during Q2 of 2017 with completions of each based on the schedules developed for each objective through 2017 and 2018.

Backhaul:
Connectivity to all the SCE COWs is currently being tested on 8 of the 9 COWs. The last COW is waiting on a permit to complete the power upgrade. This is scheduled to complete in mid-August. Once the final COW site is powered up, SCE will close the ring and do final transport tests to ensure integrity of the ring and failover modes. The VLANs for the COWs will be completed in July 2017 ready for the turn up of the SCE COW rings.

In-Vehicle Routers Installation Projection
Below is the projected number for vehicle installations of on-boarding agencies consisting of Los Angeles County Fire Department (LACoFD) and Los Angeles County Sheriff Department (LASD) planned for the 3rd quarter of 2017.
• Q3 2017
 - LASD – 537 routers install with 500 active on the network.
 - LACoFD – 360 routers install with 300 active on the network.
The projected installation progress reported for In-Vehicle-Router (IVR) shown above is cumulative projections by LASD and LACoFD.

Outreach
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 and the Los Angeles County Fire Department.

CAIs
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.

KLCs
- Expected completion of KLC 1 will be 3rd quarter 2017.
- KLC 2 Report will be developed and delivered to FirstNet during the 3rd quarter 2017.
- LA-RICS is working directly with FirstNet and Motorola to turn the data warehouse up and begin collecting data during the 3rd quarter 2017. This system can then be provisioned to provide data to FirstNet based on direct request data pulls. LA-RICS has been providing FirstNet with Data on a consistent basis during the 2016 and 2017 years to date.

Upcoming Planned Activities
- Upcoming events during the 3rd and 4th quarter 2017 and 1st quarter 2018 that will be monitored using the information from KLC 2 will be the State fair in Pomona during September 2017, the Carnival in West Hollywood during October and the Rose Parade in Pasadena during end of December and the beginning of January 2018. The KLC 3 report will be generated with update reports after each special event.

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	98	Operations classes will be ongoing through the end of the year of 2017.
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.

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	$26,881,983	$11,075,587	$15,806,396	$27,129,708	$11,148,571	$15,981,137
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	$32,828,298	$1,569,511	$31,258,787	$33,053,214	$1,569,511	$31,483,703
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	$23,958,004	$0	$23,958,004
j. Equipment	$42,363,513	$2,036,292	$40,327,221	$39,601,272	$3,243,659	$36,357,613	$40,187,903	$3,351,933	$36,835,970
k. Miscellaneous	$6,339,619	$1,874,100	$4,465,519	$4,884,212	$790,334	$4,093,878	$4,994,660	$843,023	$4,151,637
l. SUBTOTAL (add a through k)	$141,471,224	$21,354,087	$120,117,137	$137,039,902	$26,123,943	$110,915,959	$138,934,275	$26,523,824	$112,410,451
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	$137,039,902	$26,123,943	$110,915,959	$138,934,275	$26,523,824	$112,410,451

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