



# AGENDA

## LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM AUTHORITY

### BOARD OF DIRECTORS MEETING

Thursday, July 11, 2019 • 9:00 a.m.

Los Angeles County Sheriff's Department  
The Hertzberg Davis Forensic Science Center  
Conference Room 223 through 227  
1800 Paseo Rancho Castilla, Los Angeles, CA 90032

Los Angeles Regional Interoperable Communications System Authority (the "Authority")

#### **AGENDA POSTED: July 3, 2019**

Complete agendas are made available for review at the designated meeting location. Supporting documentation is available at the LA-RICS Office located at 2525 Corporate Place, Suite 100, Monterey Park, CA 91754 during normal business hours and may also be accessible on the Authority's website at <http://www.la-rics.org>.

---

#### **Members:**

1. **Sachi Hamai**, CEO, County of Los Angeles
2. **Daryl L. Osby**, Vice-Chair, Fire Chief, County of Los Angeles Fire Dept.
3. **Alex Villanueva**, Chair, Sheriff, Los Angeles County Sheriff's Dept.
4. **Cathy Chidester**, Dir., EMS Agency, County of LADHS
5. **Chris Donovan**, Fire Chief, City of El Segundo Fire Dept.
6. **Joe Ortiz**, Chief of Police, City of South Pasadena Police Dept.
7. **Mark R. Alexander**, City Manager, CA Contract Cities Assoc.
8. **Mark Fronterotta**, Chief of Police, City of Inglewood Police Dept.
9. **Chris Nunley**, Chief of Police, City of Signal Hill Police Dept.
10. **John Curley**, Chief of Police, City of Covina Police Dept.

#### **Alternates:**

**John Geiger**, General Manager, CEO, County of Los Angeles  
**Tony Ramirez**, Asst., Fire Chief, County of Los Angeles Fire Dept.  
**Mark Glatt**, Chief, Los Angeles County Sheriff's Dept.  
**Kay Fruhwirth**, Asst., Dir., EMS Agency, County of LADHS  
**Scott Haberle**, Fire Chief, City of Monterey Park Fire Dept.  
**Brian Solinsky**, Captain, City of South Pasadena Police Dept.  
**Marcel Rodarte**, Executive Dir., CA Contract Cities Assoc.  
**Louis Perez**, Deputy Chief, City of Inglewood Police Dept.  
**Brian Leyn**, Captain, City of Signal Hill Police Dept.  
**David Povero**, Captain, City of Covina Police Dept.

---

#### **Officers:**

**Scott Edson**, Executive Director  
**Arlene Barerra**, County of Los Angeles Acting Auditor-Controller  
**Joseph Kelly**, County of Los Angeles, Treasurer and Tax Collector  
**Priscilla Dalrymple**, Board Secretary



**NOTE: ACTION MAY BE TAKEN ON ANY ITEM IDENTIFIED ON THE AGENDA**

**I. CALL TO ORDER**

**II. ANNOUNCE QUORUM – Roll Call**

**III. APPROVAL OF MINUTES (A)**

**A. June 11, 2019 – Special Meeting Minutes**

Agenda Item A

**IV. PUBLIC COMMENTS**

**V. CONSENT CALENDAR – (None)**

**VI. REPORTS (B-E)**

**B. Director's Report – Scott Edson**

- Executive Summary

Agenda Item B

**C. Project Manager's Report – Justin Delfino**

Agenda Item C

**D. Joint Operations and Technical Committee Chairs Report – No Report**

**E. Finance Committee Report – John Geiger**

**VII. DISCUSSION ITEMS (F-G)**

**F. Technical Presentation: System Capacity**

**G. Outreach Update**

Agenda Item G



## **VIII. ADMINISTRATIVE MATTERS (H-K)**

### **H. APPROVE THE FISCAL-YEAR 2019-20 PROPOSED LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM AUTHORITY OPERATING BUDGET**

It is recommended that the Authority approve the Enclosed Fiscal-Year 2019-20 Proposed Operating Budget of \$108,881,000 to be utilized for the continued operation of the Authority.

Agenda Item H

### **I. APPROVE AMENDMENT NO. 37 FOR AGREEMENT NO. LA-RICS 008 FOR LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM PUBLIC SAFETY BROADBAND NETWORK**

It is recommended that your Board:

1. Make the following findings:
  - a. Find that the design, construction, implementation, operation, and maintenance of one (1) PSBN Site (Scholl Canyon [SCHCYN]) to be included as an additional potential buildable site to the 35 PSBN potential buildable sites that your Board has previously approved on January 24, 2019, from which twenty-six (26) PSBN Round 2 Sites will be selected, and execution of Amendment No. 37 to Agreement for the PSBN is categorically exempt from review under the California Environmental Quality Act (CEQA) pursuant to 14 Cal. Code Regs. §§ 15303, 15304, and 15332 for the reasons stated in this Board Letter and as noted in the record of the project.
  - b. Find that the reconciliation of certain equipment for the PSBN Round 2 sites is within the scope of the design, construction, implementation, operation, and maintenance of the PSBN at these twenty-six (26) Round 2 sites, which your Board previously found categorically exempt from review under CEQA pursuant to 14 Cal. Code Regs. §§ 15301, 15303, 15304, and/or 15332 on January 24, 2019.
2. Delegate authority to the Executive Director to execute Amendment No. 37, in substantially similar form to the Enclosed Amendment, which revises the Agreement to reflect the following:



- a. Reconcile certain equipment for PSBN Round 2 Sites for a cost increase in the amount of \$20,254.
  - b. Increase the Maximum Contract Sum by \$20,254 from \$138,611,575 to \$138,631,829.
3. Delegate Authority to the Executive Director to execute Amendment No. 37, in substantially similar form to the Enclosed Amendment.

Agenda Item I

**J. APPROVE AMENDMENT NO. 39 TO AGREEMENT NO. LA-RICS 007 FOR LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM LAND MOBILE RADIO SYSTEM**

It is recommended that your Board:

1. Make the following finding:
  - a. Find that the inclusion of two (2) LMR System Sites (Rancho Palos Verdes Tee [RPVT] and East Sunset Ridge [ESR]) into the scope of Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR Components), and Phase 4 (LMR System Implementation) to align with the updated LMR System Design to allow the design, construction, implementation, operation and maintenance activities for the LMR System at the RPVT and ESR sites, including the design, construction, implementation, operation and maintenance of the NMDN Subsystem, and approval of the NMDN reconciliation for these two sites are categorically exempt from the California Environmental Quality Act (CEQA) pursuant to 14 Cal. Regs. ("CEQA Guidelines") §§ 15303 and 15304 for the reasons stated in this Board Letter and as noted in the record of the project.
  - b. Find that (a) approval of NMDN reconciliation for one (1) LMR System Site (Hauser Peak [HPK]) is within the scope of the activities previously authorized at HPK on November 13, 2014, which your Board previously found statutorily exempt from review under CEQA pursuant to Public Resources Code Section 21080.25, the exemption adopted specifically for the Los Angeles Regional Interoperable Communications System (LA-RICS) project.
  - c. Find that (a) approval of the NMDN reconciliation for eight (8) LMR System Sites (Black Jack Peak [BJM], Burnt Peak 1 [BUR1], Castro Peak [CPK],





Dakin Peak [DPK], Frost Peak [FRP], Grass Mountain [GMT], Green Mountain [GRM], Johnstone Peak 2 [JPK2]) are (a) within the scope of the Final Environmental Impact Report (EIR) prepared for the LA-RICS LMR System, which was previously certified under CEQA on March 29, 2016; and (b) there are no changes to the project at this site(s) or to the circumstances under which the project is undertaken that require revisions to the previous EIR due to new significant effects or a substantial increase in the severity of previously identified significant effects.

2. Approve Amendment No. 39 Enclosure to Agreement No. LA-RICS 007 for a LMR System with Motorola Solutions, Inc. (Motorola), which revises the Agreement to reflect the following:
  - a. Reconcile the NMDN Subsystem to align with the updated LMR System design for a cost decrease in the amount of \$720,207.
  - b. Make changes necessary to incorporate LMR Change Order Modifications for a cost increase in the amount of \$73,606.
3. Authorize a decrease to the Maximum Contract Sum in the amount \$646,601 from \$298,178,459 to \$297,531,858 when taking the cost increases and decreases into consideration.
4. Allow for the issuance of one or more Notices to Proceed for the Work contemplated in Amendment No. 39.
5. Delegate authority to the Executive Director or his designee to execute Amendment No. 39, in substantially similar form, to the Enclosed Amendment Enclosure.

Agenda Item J

**K. DELEGATE AUTHORITY TO EXECUTIVE DIRECTOR TO NEGOTIATE AGREEMENT FOR LONG TERM EVOLUTION ROUND 2 SYSTEM SITE**

It is recommended that the Board:

1. Find that the approval and execution of the Amendment No. 1 to Land Mobile Radio (LMR) Site Access Agreement with the County and a Sublicense Agreement with AT&T NCW Wireless at Enclosure 1 for one LTE Round 2 System site with the County at Monte Vista Sheriff's Training Academy and Regional Services (STARS) Center (MVS2) site to allow for the design,



construction, implementation, operation and maintenance of the LTE Round 2 System infrastructure at this one site is within the scope of the activities your Board previously found categorically exempt from CEQA on January 24, 2019 pursuant to CEQA Guidelines sections 15301, 15303, and 15304 for the reasons set forth in this letter and as noted in the record of the project, and that the determination that these activities are exempt from CEQA remains unchanged.

2. Delegate authority to the Executive Director, or designee, to finalize and execute (i) a Site Access Agreement (SAA) with the County, and (ii) Sublicense Agreement with AT&T NCW Wireless, substantially similar in form to the agreements Enclosed hereto, all subject to review and approval by County Counsel.

Agenda Item K

**IX. MISCELLANEOUS – NONE**

**X. ITEMS FOR FUTURE DISCUSSION AND/OR ACTION BY THE BOARD**

**XI. CLOSED SESSION REPORT**

1. CONFERENCE WITH LEGAL COUNSEL – Anticipated Litigation (subdivision (d) of Government Code Section 54956.9) (1 case)

**XII. ADJOURNMENT and NEXT MEETING:**

Thursday, August 1, 2019, at 9:00 a.m., at the Los Angeles Sheriff's Department, Scientific Services Bureau, located at 1800 Paseo Rancho Castilla, Los Angeles, CA 90032.



## BOARD MEETING INFORMATION

Members of the public are invited to address the LA-RICS Authority Board on any item on the agenda prior to action by the Board on that specific item. Members of the public may also address the Board on any matter within the subject matter jurisdiction of the Board. The Board will entertain such comments during the Public Comment period. Public Comment will be limited to three (3) minutes per individual for each item addressed, unless there are more than ten (10) comment cards for each item, in which case the Public Comment will be limited to one (1) minute per individual. The aforementioned limitation may be waived by the Board's Chair.

*(NOTE: Pursuant to Government Code Section 54954.3(b) the legislative body of a local agency may adopt reasonable regulations, including, but not limited to, regulations limiting the total amount of time allocated for public testimony on particular issues and for each individual speaker.)*

Members of the public who wish to address the Board are urged to complete a Speaker Card and submit it to the Board Secretary prior to commencement of the public meeting. The cards are available in the meeting room. However, should a member of the public feel the need to address a matter while the meeting is in progress, a card may be submitted to the Board Secretary prior to final consideration of the matter.

Parking passes for attendees of the LA-RICS Joint Powers Authority Board Meeting can be obtained at the main entrance office of the Hertzberg Davis Forensic Science Center, located at 1800 Paseo Rancho Castilla, Los Angeles, CA 90032.

It is requested that individuals who require the services of a translator contact the Board Secretary no later than the day preceding the meeting. Whenever possible, a translator will be provided. Sign language interpreters, assistive listening devices, or other auxiliary aids and/or services may be provided upon request. To ensure availability, you are advised to make your request at least 72 hours prior to the meeting you wish to attend. (323) 881-8291 or (323) 881-8295

SI REQUIERE SERVICIOS DE TRADUCCION, FAVOR DE NOTIFICAR LA OFICINA CON 72 HORAS POR ANTICIPADO.

The meeting is recorded, and the recording is kept for 30 days.



# **BOARD OF DIRECTORS SPECIAL MEETING MINUTES**

**LOS ANGELES REGIONAL  
INTEROPERABLE COMMUNICATIONS SYSTEM AUTHORITY**

Tuesday, June 11, 2019 • 9:00 a.m.  
Los Angeles County Sheriff's Department  
The Hertzberg Davis Forensic Science Center  
Conference Room 263  
1800 Paseo Rancho Castilla, Los Angeles, CA 90032

---

**Board Members Present:**

**Cathy Chidester**, Dir., EMS Agency, County of LADHS  
**Joe Ortiz**, Chief of Police, City of South Pasadena Police Dept.  
**Mark Alexander**, City Manager, CA Contract Cities Assoc.  
**John Curley**, Chief of Police, City of Covina Police Dept.

**Alternates For Board Members Present:**

**John Geiger**, General Manager, CEO, County of Los Angeles  
**Kyle Zuniga**, Battalion Chief, County of Los Angeles Fire Dept.  
**Mark Glatt**, Chief, Los Angeles County Sheriff's Dept.  
**Louis Perez**, Deputy Chief of Police, City of Inglewood Police Dept.  
**Brian Leyn**, Captain, City of Inglewood Police Dept.

**Officers Present:**

**Scott Edson**, LA-RICS Executive Director  
**Priscilla Dalrymple**, LA-RICS Board Secretary

---

**Absent:**

**Chris Donovan**, Fire Chief, City of El Segundo Fire Dept.

---



**NOTE: ACTION MAY BE TAKEN ON ANY ITEM IDENTIFIED ON THE AGENDA**

**I. CALL TO ORDER**

Alternate Chair, Mark Glatt called the Special Meeting of the Board to order at 9:00 a.m.

**II. ANNOUNCE QUORUM – Roll Call**

Alternate Chair, Glatt asked for a roll call and acknowledged a quorum was present.

**III. APPROVAL OF MINUTES (A)**

**A. April 3, 2019 – Special Meeting Minutes**

Alternate Chair, Glatt asked if there were any questions or comments from the Board.

There were none.

Board Member Cathy Chidester motioned first, seconded by Alternate Board Member Kyle Zuniga.

Ayes 9: Geiger, Zuniga, Glatt, Chidester, Ortiz, Alexander, Perez, Leyn, and Curley.

**MOTION APPROVED**

**IV. PUBLIC COMMENTS – (NONE)**

**V. CONSENT CALENDAR – (NONE)**

**VI. REPORTS (B-E)**

**B. Director's Report – Susy Orellana-Curtiss**

Administrative Deputy Susy Orellana-Curtiss provided the Director's Report on behalf of Executive Director Scott Edson and thanked the Board for their continued flexibility as we calendar these special meetings. This one in particular allowed us to bring Site License Agreements for six (6) Long Term Evolution (LTE) Round 2 sites with Southern California Edison (SCE), which were successfully negotiated this past Friday, before your Board as (Agenda Item L).

Administrative Deputy Orellana-Curtiss thanked Finance Committee Chair John Geiger and the Site Access Team who were instrumental in securing SCE's commitment to negotiate these three (3) party agreements, which include LA-RICS,



site owner, and AT&T as the National Public Safety Broadband Network (NPSBN) operator. As we move forward with approximately 12 to 15 months remaining in the grant performance period, we need to complete construction on LTE Round 2 sites by June 30, 2020, which leaves us with 12 months deploy sites and three (3) months to close out the grant. We thank you for your support and flexibility.

Administrative Deputy Orellana-Curtiss stated the team has continued working with AT&T to finalize the Round 2, 26-site list, successfully negotiating access agreements for the initial six (6), which are the SCE sites before your Board today. We have continued to work diligently with the Environmental Team and the AT&T Site Acquisition Team to finalize for the remaining sites with several SAAs coming to your Board in the next Board meetings.

We are happy to report the System Environmental Assessment (SEA) No. 3, received a Finding of No Significant Impact (FONSI) from the Federal grantor on May 15, 2019, which gives us the environmental clearance to move forward on construction/deployment of 13 of the 26 LTE Round 2 sites.

The LA-RICS Telecom Facility Construction and Installation Project Request for Statement of Qualifications (RFSQ) was issued on May 13, 2019, with a Bidders Conference held on May 30, 2019. Statement of Qualifications (SOQ) were due yesterday evening on June 10, 2019, and the formal notification of the initial list of prequalified bidders will be released on June 17, 2019. The initial feedback we received from County of Los Angeles Department of Public Works, whom is administrating this procurement, is we have six (6) qualifying bidders.

The team worked closely with AT&T and Motorola to finalize the equipment list and bill of materials for deployment at the certain LTE Round 2 sites. Again, this is a significant feat given AT&T's role as the National Public Safety Broadband Network (NPSBN) operator. Amendment No. 36, (Agenda Item K) details the updated bill of materials / equipment list for your consideration.

Your Program Manager Delfino will provide additional details on the LTE Round 2 project.

In regards to Land Mobile Radio (LMR) Overall, the project is moving forward under the currently open Urban Areas Security Initiative (UASI) 2017 grant, with (Agenda Item J) before your Board today to accept UASI 18 grant award of \$35,000,030.

Administrative Deputy Orellana-Curtiss went on to state since our last meeting; we have met with Department Heads from the Los Angeles County Chief Executive Office Real Estate Division (CEO RED) as well as Department of Regional Planning to obtain dedicated resources to our project. In addition, we are working to identify efficient



path forward on remaining sites requiring either access agreement and/or use permit (coastal sites). These meetings have proven successful and Project Manager Delfino will touch on project highlights and projected dates in his report as well. We have received a commitment from Regional Planning to identify paths moving forward to compress the lengthy use permit process where we can identify some parallel path reviews to compress the timeline to achieve permits at those sites within our schedule.

Administrative Deputy Orellana-Curtiss stated LA-RICS continues to work with Motorola and the Jacobs team to finalize the LMR schedule. Executive Director Edson plans to update your Board at the July meeting and asked us to convey, he plans to meet with your Board individually to update you in detail on the status of the project and progress made to date.

Per your request at our last meeting, we have included a copy of the report shared by the Finance Ad-Hoc Committee to discuss a subscription rate setting, which is in your packet (Agenda Item F).

Lastly, Administrative Deputy Orellana-Curtiss stated Agenda Item I is a receive and file only, the Annual Single Audit Report for the year ended June 30, 2018. The Authority's fiscal agent was unable to attend and present the item at today's meeting. We would be happy to continue this item to the July meeting if your Board requires discussion.

Board Member Mark Alexander stated the funding for the subscription rates refer to the Funding Plan of 2014. Is there a plan to revise/update the Funding Plan? Administrative Deputy Orellana-Curtiss stated yes the plan is to update the Funding Plan. Board Member Alexander asked when the update would take place. Administrative Deputy Orellana-Curtiss stated the team is targeting a proposed revision by this summer.

This concludes the Director's Report.

There was no further discussion.

### **C. Project Manager's Report – Justin Delfino**

Project Manager Justin Delfino presented a map of the LTE sites according to batches. The map depicted color-coded sites relating to their category.

#### **LTE Round 2 Highlights:**

##### **FIRST 13**

- FONSI Received

- All sites in CD development
- SAA for the 6 SCE Sites presented in this agenda
- All other SAAs currently under negotiation

#### USFS

- A&E onboarded as sub to MSI
- No application formally made to USFS at this time.

#### OTHERS

- Evaluating pool of approximately 20 sites to round out delivery of 26 to FirstNet ATT

### **LMR Highlights**

#### BUILDING PERMITS

- In Plan Check: UCLA
- (4) USFS sites have been submitted for plan check at LA County Public Works.
- New Building Permits Received: BKK, MIR, and BHS

#### PROGRAM SUMMARY

- Build out of 58 sites: 50% (29 sites)
- In Construction: MIR, BKK, OAT, DPW038, AGH, INDWT
- Next to Start: UCLA, RHT, LACFDEL

#### USFS SITES

- 6/14: Meeting with USFS to determine NEPA path forward

#### COASTAL SITES

- 6/19: Meeting with DRP to submit all packages and expedite path forward

#### SAA and CONTRACT AMENDMENTS

- BHS and GRM – July Board Meeting Targeted
- RIH – July Board Meeting Targeted
- UNIV: Split site design – Targeting August Board Meeting
- Channel 15 and deployment impacts
- NMDN

### **LMR Field Highlights**

First Image – AGH photo on the left is a progress photo of the monopole erection and the photo on the tower installed. The shelter is installed and the chain-link is protecting some infrastructure, despite vandalism attempts.



Second Image – BKK photo on the left is black tar looking substance is a vapor barrier from the underground gases for our foundation, and the photo on the left is a progress photo of the slab on grade installation, the rebar cage tied and concrete is placed.

Third Image – OAT photo on the left is finished generator pad. Center photo is a progress photo of the shelter foundation where the conduit sleeves are visible for future cabling installs. Right photo is the lattice tower erected.

Fourth Image – POM photo on the left was a progress photo taken during the equipment placement on the rooftop of the building, center photo is interior of the existing shelter for the communications room, and photo on the right is a progress photo during the abatement activities of the communications shelter.

Fifth Image – INDWT tower is now erected and the equipment shelter is installed as well.

Sixth Image – MVS photo on the left is a before photo, which depicts the two towers immediately adjacent to each other, the shorter tower has been taken down and discarded. The photo on the right shows the area cleaned-up after the demolition. ISD has migrated their equipment onto the new LA-RICS tower. This concludes the Project Manager's Report.

**D. Joint Operations and Technical Committee Chairs Report – Lieutenant Hiroshi Yokoyama**

The Joint Operations and Technical Committee (Joint Committee) report was provided by Operations Committee Chair Lieutenant Hiroshi Yokoyama stating there were several discussion items at the last Joint Committee Meeting on May 21, 2019. The first discussion item was regarding Mutual Roaming Access Agreements. This topic should not be confused with Mutual Aid Agreements, where mutual aid is meant to extend access to non-subscribers during times of emergency.

Mutual Roaming Access Agreements extends the coverage of the home LMR system, allowing the subscriber seamless extension of coverage between the home LMR system and a visited LMR system.

One way of enabling roaming is through an Inter-Radio Frequency (RF) Subsystem Interface (ISSI), where the ISSI connection is between two Radio Frequency Subsystems (RFSSs). The operational use cases for roaming includes when the Los Angeles Sheriff's Department (LASD) prisoner transportation bus travels up the I-5 Freeway through the state to deliver or pickup prisoners between Los Angeles County and State Prisons. Roaming would enable the deputies to communicate with the LASD Communication Center.



Operations Chair Lieutenant Yokoyama stated another operational use situation could be when State Parole from Bakersfield is working in the Los Angeles area, roaming would enable their units to communicate on their home talk group channels.

The roundtable discussion included the technical requirements, which would enable roaming to occur on the LA-RICS LMR system.

The second discussion item was regarding the encryption of digital trunked radio system talk groups. An informal survey was conducted with some of the LMR systems in the Southern California region, which we discovered both Orange County and Riverside County are 100% encrypted.

San Diego and Imperial County leaves the decision to encrypt to the respective agencies. Fire agencies in San Diego and Imperial County are all in the clear. San Diego Sheriff's Department, which comprises 40% of their system, operate with their patrol dispatch talk groups in the open, but each patrol station has an encrypted tactical talk group. One agency has an option to switch to an encrypted dispatch talk group in case a call is of a sensitive nature. All law agencies in San Diego have a wants and warrants encrypted talk group to run persons so personal criminal information is not open to the public.

The purpose of this discussion regarding encryption was to formulate a recommendation on encryption for LA-RICS talk groups. The consensus was for law agencies to be given their own decision whether to encrypt their talk groups. The consensus input from fire agencies was to not encrypt their talk groups, but saw the need to have one encrypted talk group on each of their zones in case of a need to interoperate with law agencies on an incident which calls for discretion.

Operations Chair Lieutenant Yokoyama also stated the third discussion item was regarding the outreach to the Coast Guard Investigative Service (CGIS). On April 11, 2019, Battalion Chief Kyle Zuniga, Deputy Dana Gower, and Operations Chair Lieutenant Yokoyama met with members of the CGIS Sector Los Angeles-Long Beach (LA/LB). They were very appreciative of the outreach, as their eight-loaner radios had stopped working. We reached out to them and retrieved the eight-loaner APX 7000XE radios back to run diagnostics and upgrade firmware.

It was interesting to note the portables could not reach Rolling Hills Transit (RHT) from their office, as San Pedro Hill (SPH) shadowed it. We noticed, as we got farther away from their offices, we were able to use the radio without much difficulty. LA-RICS will have a site at both SPH and Signal Hill, which will provide robust coverage for the entire Port area, but will not be until 2020.

Lastly, the workaround would be to move forward with the ESChat App for the CGIS cell phones, through a “donor radio” setup. A connection with the ESChat servers directly to the LA-RICS core would allow CGIS to use both of their LA-RICS talk groups via the smartphone app at their headquarters.

Board Member Alexander stated on the topic to encrypt or not to encrypt is there an advantage to not encrypting and why not use encrypting as a default. Chair Lieutenant Yokoyama stated there is a public need to know question, which has been brought up in legislation. Currently, legislation has been retracted, which we expect to be presented again next year. There is a need to know versus preserving confidential information for law enforcement and fire agencies. Board Member Alexander asked this is not a cost issue, it is a transparency issue. Chair Lieutenant Yokoyama confirmed.

This concludes the Joint Committee Chair Report.

#### **E. Finance Committee Report – John Geiger**

The Finance Committee Chair Geiger stated at the direction of your Board, the Ad-Hoc Subscription Rate Setting Sub-Committee was established in late 2018. The Ad-Hoc Sub-Committee has been working regularly and has presented reports back to the Finance Committee; at this point as predicted the numbers look good. We are looking at per radio cost to subscribers in the low to mid \$20 per radio. We are not ready to submit a formal recommendation for adoption to the Board of Directors (BOD) yet. As you may know in terms of the recommendation vetting and workflow, the Finance Committee has been working closely and calibrating with the Joint Technical and Operations Committee (Joint Committee) to address some of the issues impacting the rate setting. The issues include what to do with cache radios, which are radios not used actively in day-to-day operation, but maybe rotated in and/or reserved for emergency operations. Finance Committee Chair, Geiger stated he is happy to report he has been in discussions with the Joint Committee on how to treat these radios and the goal remains focus is on ensuring broad system use. The maintenance cost is another item, which may weigh in on the rate setting. There have been changes to the system and we want to ensure we are capturing any system functionality as robustly as possible. Until we know the actual terms and conditions and scope relative to maintenance, it would be somewhat imprecise to have a maintenance number.

Lastly, Finance Committee Chair Geiger stated per Board Member Alexander earlier question about what will ultimately occur with the June 2014 Funding Plan (Agenda Item F); the expectation is a subscription user rate plan, which includes not only the numbers but the terms and condition of use. This will be vetted through the Subcommittee, Finance Committee, Joint Committees, Executive Officer, and the BOD for consideration and ultimately adoption. We will continue to report on the

progress and continue to discuss open issues and some items are agenized today for discussion.

## **VII. DISCUSSION ITEMS (F-H)**

### **F. Finance Ad-Hoc Committee Report Subscription Rate Setting**

Administrative Deputy Orellana-Curtiss presented Discussion Item F and provided additional details to Alternate Member Geiger's Finance Committee Report. The Adopted Funding Plan was included in the Ad-Hoc Committee report because the Ad-Hoc committee members wanted to address some of the issues they found problematic with the existing Adopted Funding Plan

The Ad-Hoc Committee highlighted one of the major issues was the unpredictability of each individual agencies' rates as they were subject to the member makeup. Administrative Deputy Orellana-Curtiss stated another item identified as problematic in the existing Adopted Funding Plan was the timing of capital replacement or life cycle cost's inclusion into the cost factors, estimated as a \$55 million cost spread out over a number of years. However, in the existing Adopted Funding Plan introduces the capital replacement cost suddenly causing member rates to spike. The Ad-Hoc Committee recommended annualizing the cost over a number of years without a rate spike. The Ad-Hoc Committee also discussed administrative, operations, and maintenance cost utilizing cost provided by Motorola from their contract bid in 2013. The number serves as an estimate given there have been changes to our system makeup, subsystems, changes to the sites, so there will be revisions . Other discussions included as Finance Chair Geiger mentioned the treatment of cache radios, as well as treatment of billing to the Contract Cities. LASD Contract Law addressed the Ad-Hoc Committee detailing how their existing cost model bills Contract Cities as well as steps required in order to make any change to the contract cities billing model, which ultimately would require County Board action.

The Operations Team, led by Lieutenant Yokoyama is looking into onboarding timeline, which will detail users coming on the system at go live. This plays a huge role in the rate setting discussion, as we need to understand the number of radios on the system in order to guarantee fully offset baseline Operations & Maintenance (O&M) costs. The onboarding timeline will help us understand if we have sufficient number of radios to fully offset the O&M costs, otherwise we will need to consider a guarantor to offset any shortfall in funds required to maintain the LMR system. The scenario recommended by the Ad-Hoc Committee can be found in (Agenda Item F) – Attachment Table 3, Scenario 1B, which considers a fixed rate with lifecycle costs annualized over ten (10) years beginning at year six (6), requiring approximately 23,000 radios on the system at Year 1 and 44,000 radios at Year 6.

In addition, the Ad-Hoc Committee discussed the System Value Add Options. As Executive Director Edson meets with various agencies in the region, they have asked if LA-RICS offers CAD, document management system, and/or any other value adds which would be included in the subscription rate. The feasibility of including certain value-add items to the LMR offerings is also being discussed in parallel amongst the Authority's Advisory Committees. The Ad-Hoc committee also addressed Revenue Surplus and recommended a policy be in place addressing use of revenue surplus beyond baseline costs to maintain the system. Another item discussed by Ad-Hoc Committee was system capacity. Motorola, subject matter experts as well as members of the Jacobs team and the Technical Team from LA-RICS provided a presentation to both the Joint Technical and Operations Committees and Finance Committee on capacity limit of users on the system. This is a presentation the team can also provide to your Board.

Alternate Board Member Geiger stated we are seeking to have a realistic fixed rate. The avalanche variable from the 2014 Funding Plan and opt out actually created a problem as agencies dropped the burden shifted to those other agencies that remained users on the system. Speaking as the Los Angeles County CEO representative what is targeted is a realistic fully burdened rate to prevent the unfortunate situation requiring a guarantor; we want to avoid a shortfall. With a realistic rate, it does introduce a possibility of a surplus. There are many system needs, both in terms of current operation as well as ongoing longevity of the system, we can appropriately use any surplus at the direction of the membership and approved by the BOD. We are in a good position looking toward go live.

Board Member Alexander stated in regards to the Funding Plan are we and/or should we be reaching out to the agencies who opted-out due to the uncertainties, if there is an incentive for agencies to become members now should we be reaching out to those agencies to get them back. Board Member Geiger stated yes and the focus has been on not so much members but on the concept of users. We want users on the system and we do not want to put limitations necessarily dictated by the nature of Joint Powers organization under government code. The consideration and treatment of non-governmental organization (NGO) and whether we can include them as "members" as we really do not know who is and/or who should be a user until there is a real emergency. We want to make sure the system has a large enough footprint with robust use for as many users as possible and this expands looking beyond just the concept of membership. Users pay their fair share and no one is double billed.

Chief Glatt asked does the Board think we need a briefing on system capacity, especially with discussions of non-agencies using the system. Board Member Alexander stated yes because we need to know what our capacity is if we are going to open membership up to others.



Chief Glatt asked to agenize a capacity item for next Board meeting:

Board Member John Curley asked in connection with the ad-hoc subscription rate setting report, is there is a Marketing/Educational Plan for early onboarding targeting those potential subscribers in the region, especially those who previously opted-out. Administrative Deputy Orellana-Curtiss stated yes, we refer to it as an educational component and the LA-RICS team has developed a plan, which includes an agency questionnaire addressing the individual agencies 'technical and operational needs as well as existing telecom use. The team is reaching out to the agencies within our region, not just our members but also those who previously opted out.

There was no further discussion.

#### **G. Outreach Update**

Executive Assistant Wendy Stallworth-Tait presented Agenda Item G and stated the Outreach Update consist of ongoing meetings with AT&T and members of the Administrative Team and various meetings with the County of Los Angeles CEO Real Estate Division, Regional Planning, and ISD to discuss critical LMR SAA's and the transition of LTE 1 sites to AT&T FirstNet.

Executive Assistant Stallworth-Tait went on to state Executive Director Edson attended the Los Angeles Area Fire Chiefs Association Conference, and met with representatives from the City of El Monte to discuss the transition of LTE 1 sites to AT&T FirstNet and early LMR onboarding. Lastly, LA-RICS Communications Team released Volume 4, Issue 14 of the Newsletter on May 30, 2019.

There was no further discussion.

#### **H. NPSBN Onboarding Update**

Executive Assistant Stallworth-Tait presented Agenda Item H and stated it reflects the number of FirstNet routers allocated to LASD and Los Angeles County Fire Department, with 34 sites transitioning during this reporting period, with full transitioned expected by the end of July 2019.

There was no further discussion.





## **VIII. ADMINISTRATIVE MATTERS (I-L)**

### **I. FINANCIAL STATEMENTS AND INDEPENDENT AUDITOR'S REPORT FOR THE YEAR ENDED JUNE 30, 2018 – BCA WATSON RICE LLP**

Alternate Chair Glatt presented Agenda Item I and recommended the Board take the following action to Receive and File or continue this item to have a chance to meet with the Independent Auditor's.

Board Member Cathy Chidester asked if this is the same company reported last time. Administrative Deputy Orellana-Curtiss states yes it is the same company retained via a contract with Los Angeles County Department of Auditor-Controller.

Board Member Mark Alexander motioned first to accept the file, seconded by Alternate Board Member John Geiger.

Ayes 9: Geiger, Zuniga, Glatt, Chidester, Ortiz, Alexander, Perez, Leyn, and Curley.

**MOTION APPROVED**

### **J. ACCEPT 2018 URBAN AREAS SECURITY INITIATIVE FUNDS**

Alternate Chair, Glatt presented Agenda Item J and recommended the Board take the following actions:

1. Accept \$35,000,030 in grant funds from the Fiscal-Year 2018 UASI funds as distributed through the California Office of Emergency Services (Cal OES); and
2. Authorize the Executive Director to execute the enclosed 2018 UASI Sub-recipient Agreement between the City of Los Angeles and the Authority; and
3. Delegate authority to the Executive Director to execute any subsequent amendments to the Agreement that do not impact the award amount.

Alternate Board Member John Geiger motioned first, seconded by Board Member Cathy Chidester.

Ayes 9: Geiger, Zuniga, Glatt, Chidester, Ortiz, Alexander, Perez, Leyn, and Curley.

**MOTION APPROVED**



**K. APPROVE AMENDMENT NO. 36 FOR AGREEMENT NO. LA-RICS 008 FOR LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM PUBLIC SAFETY BROADBAND NETWORK**

Contracts Manager Jeanette Arismendez presented Agenda Item K and recommended the Board take the following actions:

1. Find that the reconciliation of certain equipment for the PSBN Round 2 sites is within the scope of the design, construction, implementation, operation, and maintenance of the PSBN at these 26 Round 2 sites, which your Board previously found categorically exempt from review under the California Environmental Quality Act (CEQA) pursuant to 14 Cal. Code Regs. §§ 15301, 15303, 15304, and/or 15332 by your Board on January 24, 2019.
2. Delegate authority to the Executive Director to execute Amendment No. 36, in substantially similar form to the amendment enclosed with Agenda Item K, which revises the Agreement to reflect the following:
  - a. Reconcile certain equipment for twenty-six (26) PSBN Round 2 Sites for a cost increase in the amount of \$647,790.
  - b. Increase the Maximum Contract Sum by \$647,790 from \$137,963,785 to \$138,611,575.
3. Delegate Authority to the Executive Director to execute Amendment No. 36, in substantially similar form to the amendment enclosed with Agenda Item K.

Administrative Deputy Orellana-Curtiss read a correction into the record, in particular to the Purpose/Justification of Recommended Action portion of the Board Letter, noting the increase to the Maximum Contract Sum is \$647,790.

Board Member Alexander inquired if the reconciliation is it part of the surplus equipment or excess equipment. Administrative Deputy Orellana-Curtiss responded some of the equipment from our un-deployed inventory from PSBN Round 1 is being utilized in Round 2. This amendment captures the equipment cost for the equipment to be deployed at the sites. The amendment reflects both un-deployed equipment and new equipment.

Board Member John Curley motioned first, seconded by Alternate Board Member Brian Leyn.

Ayes 9: Geiger, Zuniga, Glatt, Chidester, Ortiz, Alexander, Perez, Leyn, and Curley.





**MOTION APPROVED**

**L. APPROVE SITE LICENSE AND GENERATOR AGREEMENTS FOR LONG TERM EVOLUTION ROUND 2 SYSTEM SITES WITH SOUTHERN CALIFORNIA EDISON (SCE)**

Executive Assistant Stallworth-Tait presented Agenda Item L and recommended the Board take the following two actions to approve Site License and Generator Agreement for LTE Round 2 with SCE at six (6) sites:

1. Find that the approval and execution of the SLAs with SCE to allow LTE System Round 2 Work at six (6) SCE-owned sites for the design, construction, implementation, operation and maintenance of the LTE System Round 2 equipment at the sites attached as Enclosure 1, are within the scope of the activities your Board previously found categorically exempt from review under the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines sections 15301, 15303, 15304, and/or 15332, for the reasons set forth in this letter and as noted in the record of the project, and the determination that these activities are exempt from CEQA remains unchanged.
2. Authorize the Executive Director to finalize and execute Site License and Generator Agreements with SCE, substantially similar in form to the agreements attached hereto.

In addition, Executive Assistant Wendy Stallworth-Tait stated as Administrative Deputy Orellana-Curtiss and Project Manager Delfino mentioned County Counsel Roberto Saldana, Deputy Project Manager Tanya Roth, and Alternate Board Member Geiger are to be commended and acknowledged for successfully negotiating the Agreement with SCE. Alternate Board Member Geiger thanked Executive Assistant Stallworth-Tait for the acknowledgement, colleagues at County Counsel, support from Jacobs, AT&T, and SCE.

Board Member Mark Alexander motioned first, seconded by Alternate Board Member John Geiger.

Ayes 9: Geiger, Zuniga, Glatt, Chidester, Ortiz, Alexander, Perez, Leyn, and Curley.

**MOTION APPROVED**



**IX. MISCELLANEOUS – NONE**

**X. ITEMS FOR FUTURE DISCUSSION AND/OR ACTION BY THE BOARD**

**XI. CLOSED SESSION REPORT - NONE**

**XII. ADJOURNMENT and NEXT MEETING:**

Board Member Curley expressed his solidarity on behalf of law enforcement and the region to the LASD on the tragic shooting, which occurred yesterday evening. Chair, Chief Glatt acknowledge and thanked Board Member Curley.

Thursday, July 11, 2019, at 9:50 a.m., at the Los Angeles Sheriff's Department, Scientific Services Bureau, located at 1800 Paseo Rancho Castilla, Los Angeles, CA 90032.

## Executive Summary

July 11, 2019

### LTE Update

- PSBN Round 1 site assignment agreement is nearing completion between AT&T and LA-RICS legal counsel. The Authority is accompanying AT&T to all sites to determine what needs to be accomplished at each site in order to ensure a seamless transition onto the NPSBN. Furthermore, AT&T is conducting field work to upgrade sites for integration into AT&T network operating center.
- PSBN Round 2 continues to progress on the A&E design work for the first grouping of 15 sites. The environmental team has submitted the third Supplemental Environmental Assessment (SEA) to NTIA and a finding of no significant impact (FONSI) was determined. SEA 4 is currently being packaged for formal submission.

### LMR Update

- Zoning Drawing – 8 Sites are at ZD level.
- 50% Construction Drawings – 0 Site is at 50% level.
- 75% Construction Drawings – 0 Sites are at 75%.
- 100% Construction Drawings – 13 site is at 100% level.
- Building Permit Received – 31 Sites to date.
- Sites Eligible to Construct: (Includes Completed Sites, Sites Under Construction and/or Equipment Installs & Locations).

- |   |   |
|---|---|
| 1. APC – Junction of I-105 and I-405            | 16. PHN – Puente Hills                  |
| 2. BMT – Angeles, overlooking CA-138 and I-5    | 17. PLM – Palmdale                      |
| 3. CCB – Compton                                | 18. SDW – San Dimas Water Tank          |
| 4. CCT – Downtown                               | 19. TPK – Gorman                        |
| 5. CLM – Claremont                              | 20. VPK – Verdugo Peak – Glendale       |
| 6. FCCF – 1320 Eastern Ave                      | 21. SGH – Signal Hill                   |
| 7. HPK – Northern Angeles,                      | 22. MIR – Mirador                       |
| 8. LAN – Lancaster Sherriff Station             | 23. BKK - West Covina                   |
| 9. LDWP243 – Junction of I-5 and CA-14          | 24. OAT – Nike                          |
| 10. LASDTEM – Temple City                       | 25. AGH – Agoura Hills                  |
| 11. LA-RICS HQ, - Monterey Park                 | 26. INDWT – Industry Water Tank         |
| 12. MLM – Mira Loma Detention Center            | 27. BHS – Baldwin Hills                 |
| 13. MMC – Palmdale – Sierra Pelona Mountain Way | 28. RIH – Rio Hondo                     |
| 14. MVS – Whittier                              | 29. CRN – Cerro Negro                   |
| 15. ONK – Oat Nike                              | 30. POM – Pomona Courthouse             |
|   | 31. DPW038 – Water Works Substation 038 |

LA-RICS GRANT STATUS					
Grant	Award	Costs Incurred/NTP Issued	Invoiced / Paid	Remaining Balance	Performance Period
UASI 12	\$18,263,579	\$18,263,579	\$18,263,579	\$-	3/31/17
UASI 13	\$13,744,067	\$13,744,067	\$13,744,067	\$-	3/31/18
UASI 14	\$4,997,544	\$4,997,544	\$4,997,544	\$-	7/31/17
UASI 16	\$5,240,455	\$5,240,455	\$5,240,455	\$-	5/31/19
UASI 17	\$34,763,750	\$32,300,697	\$14,811,762	\$19,951,988	5/31/20
UASI 18	\$35,000,030	\$27,429,359	\$-	\$-	Not yet awarded
UASI 19	\$35,000,000	\$7,430,051	\$-	\$-	Not yet awarded
BTOP	\$154,640,000	\$123,551,390	\$121,521,637	\$33,118,863	9/30/20

## AGENDA ITEM B

# Los Angeles Regional Interoperable Communications System

## PROJECT DESCRIPTION

Events of September 11, 2001 highlighted the need for first responders to be able to communicate with each other. Emergency communications primarily address local jurisdictional needs and most agencies utilize separate radio towers, equipment, and radio frequencies. LA-RICS is designed to address each of these concerns.

Currently, there is duplication of systems which leads to increased costs while continuing to inhibit first responders' ability communicate with each other. Many legacy systems around the County are obsolete and well beyond their useful life. The LA-RICS Project vision is to provide innovative solutions for the public safety community by removing barriers to interoperable voice and data communications and allow individuals and agencies to focus on accomplishing their mission with the tools necessary to provide excellent service to their communities. To accomplish this vision, the program is implementing a County-wide public safety wireless voice and data radio system for all first and secondary responders. Existing radio frequencies will be pooled, and the current infrastructure utilized wherever practical.

Design, construction, and deployment of a County-wide Land Mobile Radio (LMR) voice network utilizes 59 sites. Additionally, the Authority is analyzing twenty-six (26) sites for the purpose of augmenting the FirstNet deployment in the region. All sites in both the LMR and LTE augmentation will comply with CEQA and NEPA standards.

Project and Construction Management Services will provide network, infrastructure, project, and advisory services across four of the five program phases (Phase 5 – Maintenance is excluded) for each of the LMR and LTE projects:

- Phase 1 - System design
- Phase 2 - Site construction and modification
- Phase 3 - Supply telecommunication system components
- Phase 4 - Telecommunications system implementation
- Phase 5 - Telecommunications system maintenance

### *Location:*

2525 Corporate Place, Suite 100  
Monterey Park, CA 91754

### *Authority:*

Los Angeles Regional Interoperable  
Communications System

### *Management:*

LA-RICS Project Team

### *Consultant:*

Jacobs Program Management Company

### *Communications Vendor:*

LMR - Motorola Solutions, Inc.

LTE - Motorola Solutions, Inc. and David  
Evans & Associates



**Monthly Report No. 86**

**For June 2019**

**Submitted July 1, 2019**

**Confidentiality Notice:** This document may contain confidential or legally privileged information that is intended only for the individual or entity to whom it was addressed. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution, or reliance upon the contents of this report is strictly prohibited. This document is covered by the Electronic Communications Privacy Act, 18 U.S.C. §§ 2510-2521 and is legally protected.

©Copyright 2016 LA-RICS Authority. All Rights Reserved

**AGENDA ITEM C**

## LTE UPDATES

- No new activity

### Operations/Governance

- The LA-RICS Operations team is holding meetings three (3) times a week to focus on the following:

1. Manage network migration from LA-RICS PSBN to AT&T FirstNet
2. Ensure internal LA-RICS operational aspects are in place
3. Develop and Implement Policies

### LTE Round 1 Updates

- Construction and testing of LTE Round 1 (LTE1) sites are complete. Final SAA negotiations continue with AT&T and site owners as AT&T continues their efforts to complete site improvements to tie the LTE1 sites into the NPSBN System.

### Special Events

- No new activity.

### LTE Round 2 Updates

- LA-RICS is currently engaged on LTE Round 2 (LTE2) sites as approved by NTIA. Of the intended 26 LTE2 sites, the 9 sites in the Angeles National Forest (AFN) will be designed and built by Motorola, the contract for this scope was executed on January 24 with an NTP for Phase 1 design activities issued on March 5. A kickoff meeting was held on May 1. Motorola has contracted with an A&E firm to design the nine sites. The remaining 17 sites will be designed by David Evans and Associates, 17 of which have been NTP'd to date. Of the 17 sites that have been NTP'd, construction drawings (CDs) have been begun on thirteen, the remaining 5 are in the design document stage. Submittals have been made to Southern California Edison (SCE) for their site plan review. Geotechnical drilling has been conducted for 3 sites so far, with 8 more to follow in the coming months. Once completed, the data from the drilling activity will provide essential information needed to complete foundation designs which will be captured in the construction drawings.
- Efforts to secure site access agreements for LTE2 sites are ongoing. AT&T has assigned their Site Acquisition department to negotiate long-term agreements for operation of the sites after construction has been completed and the assets are transferred. Additionally, the Authority is engaged in the Q4 COLT (Cell on Light Truck) work refining the COLT specifications with AT&T as well as reviewing, modifying and agreeing to Standard Operating Procedures. LA-RICS will be working with Fire and Sheriff to refine the COLT specifications, operating and maintenance procedures.
- The Authority continues its efforts in coordinating and participating in multiple weekly meetings with AT&T RAN, and AT&T Construction and Engineering to ensure the schedule and scope of work are identified appropriately. A major focus for the month of June is the definition of key site design and site acceptance standards to be formally memorialized. Statements of Qualifications (SOQ's) have been received from antenna site construction firms interested in participating in LTE Round 2. Staff is reviewing and evaluating these submissions in order to pre-qualify firms to receive Invitations to Bid (IFBs) for construction work. This will ensure that sites are designed and constructed by the Authority and accepted by AT&T in an efficient and cost-effective manner.

Other items under discussion include:

- Site Design and Layout
- Bill of Materials
- Real Estate Acquisition/Site Access Agreements
- Utility Location
- Environmental Surveys
- Land Surveys
- Architectural & Engineering Processes
- Zoning Drawings
- Construction Drawings
- Jacobs' environmental team has conducted site visits, records searches, and analysis of sites in support of NEPA, CEQA, National Historic Preservation Act, and Endangered Species Act compliance.
- The final version of Supplemental EA #3 (SEA3) was submitted to NTIA on April 30 2018, a FONSI was issued on 5/17/2019.
- The environmental team continues to evaluate sites for subsequent SEA groups, including U.S. Forest Service (USFS) sites (potential collocation to LMR-built towers). Correspondence with the USFS has been initiated regarding the feasibility of an LTE2 build in the Angeles National Forest (ANF).
- Site walks for the remaining sites (i.e., those not in SEA3 or in the ANF) are being scheduled. The environmental team continues to meet with NTIA management to optimize the environmental review process.

**AGENDA ITEM C**





## LMR UPDATES

### Environmental Update

- Continued to review PNS' and FCS' pre-construction forms and weekly and daily compliance reports and attend a weekly compliance meeting.
- Attended a meeting with LA County Department of Regional Planning to discuss coastal zone permitting requirements on May 6.
- Conducted a records search at the South Coast Information Center for cultural resource sites at Site RPVT.
- Have accomplished Worker Environmental Awareness Program (WEAP) training for 991 persons as of June 3

### Permitting Support

- LA-RICS, Jacobs, and MSI personnel met with DRP coastal planning staff on May 6 2019 to finalize needs for coastal development permit (CDP) packages for LACF072 and SPN, and to discuss exemption packages for CPK and TOP. Pre-application meetings for these sites pending finalization of permit packages by MSI. WWY was submitted to LA County Department of Regional Planning (DRP) on September 26, 2018 and is currently under DRP review. MSI is preparing CDP package for GRM for submission to the City of Los Angeles for coastal review. Authority, Jacobs, and MSI personnel met with DRP staff to review CDP submission packages for BJM, LACF072, and SPN, and the coastal exemption package for CPK on June 19, 2019. At the meeting the communications plan between DRP and LA-RICS as applicant was established. In addition, DRP introduced the dedicated plan reviewers, discussed the expected review times dictated that each site will be given a tailored application checklist to ensure less defects in quality and more expedient review durations.
- The application for special use permit (SUP) for construction and operation of 13 LMR sites on the ANF was submitted on November 18, 2018. A meeting was held with ANF staff on February 27, where the Authority had been notified that the Forest Supervisor believed a categorical exclusion for NEPA compliance purposes may be appropriate, however, Authority staff received an email May 6 that indicated the Washington Office's preference for an EA for the project. Jacobs finalized biological, cultural and visual resources technical documents to meet ANF compliance needs. Subsequently, the decision process was returned to the ANF Supervisor. ANF staff are meeting internally June 14 to make a final decision regarding the NEPA process for the LMR sites. Geotechnical drilling is complete at 11 of the 12 sites in the ANF. The one site remaining, MTL2, is pending road repair in order for the crews to safely access the site. Radio spectrum fingerprinting and noise floor monitoring studies are complete for all but one site, FRP, which is closed due to snow.

### Budget

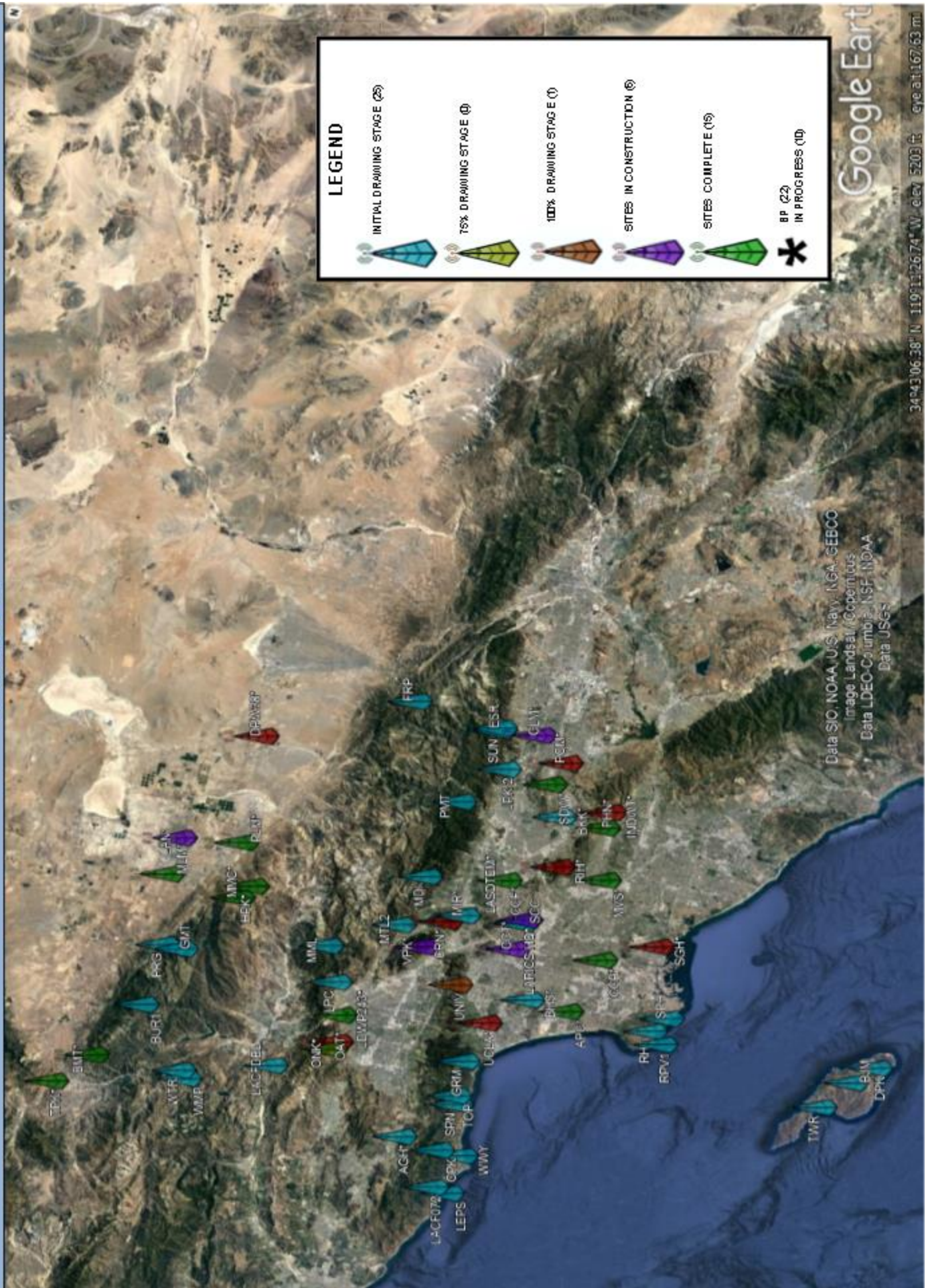
- ESR is the final LMR site pending True-up. The structural foundations and tower structure were tested at ESR to determine usefulness, but the testing suggests a substantial cost to re-build the structure. MSI engineer and estimators are needed to determine the time and cost values, so that a true-up can be completed, still pending from MSI.

### Site/Civil

- The Authority and MSI met the UASI 16 spending requirements and have also begun construction and equipment orders on UASI 17 sites ie. INDWT, OAT, AGH, and DPW038.
- Three of the sites in the LMR network are undergoing design changes due to proposed tower relocations for UNIV and SPH and a new site location for RPV1, which has now moved from the Civic Center to Los Verdes Golf Course in Rancho Palos Verdes, and the site identification changed to RPVT.
- The LMR Radio Frequency (RF) System Design is currently undergoing minor adjustments as final antenna orientations are established. All gathered data is currently under review by MSI engineers. All microwave links are confirmed except for the three sites undergoing redesign SPH, UNIV and RPVT. MSI and the Authority continue to meet to review findings and any lingering issues.
- MSI efforts to complete drawings and submit sites into the jurisdiction for building permits are on-going. Thirty-two (32) building permit applications (PHN, BMT, HPK, LDWP243, LASDTEM, FCCF, APC, CCB, CCT, PLM, MLM, MVS, ONK, LARICSHQ, CLM, MMC, TPK, VPK, POM, LAN, CRN, SDW, SGH, DPW038, OAT, UCLA, INDWT, AGH, BKK, MIR, BHS, and RIH) have been submitted and approvals have been received for thirty one (31) of the thirty-two sites.
- Below is an update of the remaining LMR sites and their projected permit submission dates based on Motorola's P6 schedule dated 05/07/2019.  
  
SPN 10/11/19, TWR 6/4/20, TOP 8/26/19, CPK 8/26/19, DPK 6/4/20, BJM 6/4/20, WWY 2/4/20, LACF072 7/8/20, RPVT 10/18/19, JPK2 9/9/19, LACFDEL 6/21/19, LPC 9/9/19, WMP 9/9/19, PMT 9/9/19, FRP 9/9/19, MDI 9/9/19, WTR 9/9/19, ESR 9/9/19, BUR1 9/9/19, MML 9/9/19, MTL2 9/9/19, GMT 9/9/19, PRG 9/9/19, GRM 6/1/20, RHT 7/3/19, SPH 12/10/19, UNIV TBD.
- As of 6/27/2019 thirty-seven (37) executed SAA's are in place.



## LMR SITES







## **Monthly Report #70**

**Reporting Period: 5/23/19 thru 6/20/19**

**Los Angeles Regional Interoperable Communications  
System (LA-RICS) - Land Mobile Radio System**

**Motorola Solutions, Inc.**



**AGENDA ITEM C**

## Table of Contents

1. Executive Summary.....	3
2. Project Status .....	10
2.1 Tasks In Progress or Completed .....	10
2.2 Tasks Planned for Next Period .....	11
3. Project Risk Register.....	13
4. Areas of Concern.....	14
5. Disputes and Claims .....	14
6. Financial Status .....	15
7. LA-RICS Master Schedule .....	15

## 1. Executive Summary

The Los Angeles Regional Interoperable Communications System Land Mobile Radio (LA-RICS LMR) program consists of the following five (5) phases; Phase 1 LMR System Design, Phase 2 LMR Site Construction and Site Modifications, Phase 3 Supply LMR System Components, Phase 4 LMR System Implementation, and Phase 5 LMR System Maintenance. Phases 1-4 span over a five (5) year period which includes one (1) year of system warranty. Phase 5 provides the Authority with fifteen (15) one-year options for Motorola Solutions Inc. (MSI) to provide system monitoring and maintenance services.

The LA-RICS LMR program is currently in Phase 1 LMR System Design, Phase 2 Site Construction and Site Modifications, and Phase 3 Supply LMR System Components. Notices-To-Proceed numbers 1 through 16 have been issued authorizing distinct work for system Design services, the design and implementation of the initial deployment of the LMR system elements termed “Early Equipment”, “Specified Equipment and System on Wheels”, and “Station B Equipment”, “Frequency Licensing”, “UPS System”, and “Portable Radios, Consolettes and Consoles”, “Portable Radio Equipment”, alternate sites “Project Descriptions”, “Frequency Licensing for the Base System”, “Bridge Warrant for Early”, “Retuning of SOW & Station B UHF Frequencies”, “Project descriptions for Nine Potential Replacement Sites” and “LMR System Redesign and Relocation of Core 2”.

On April 25 the Authority executed **Amendment 17** to make necessary changes to Phase 1 for additional project descriptions, to make changes to reflect the Work in the applicable Phases for the change in the number of sites in the LMR system, to exercise the Unilateral Options for all Work pertaining to Phases 2-4.

On April 27, 2016 the Authority issued **NTP17** authorizing specific Work-related Phases 2, 3, and 4 for ten (10) LMR sites.

On May 4, 2016 the Authority executed **Amendment 18** to make necessary changes to Phase 1 for additional project descriptions and to make adjustments to Phase 1 services to accommodate additional sites.

On May 5, 2016 the Authority Board of Directors approved **Amendment 19** to remove one (1) site from the system and to reconcile equipment quantities for certain LMR sites. **Amendment 19** was executed with an effective date of May 5, 2016.

On June 2, 2016 the Authority issued **NTP18** authorizing Work to develop Project Descriptions for two LMR sites.

On September 8, 2016 the Authority Board of Directors approved **Amendment 20** to reconcile nine (9) LMR Sites to reflect the updated LMR System Design, inclusion of 3D modeling drawings, and remove certain Site Lease Exhibits from the contract.

On October 6, 2016 the Authority Board of Directors approved **Amendment 21** to reconcile ten (10) LMR sites to reflect the updated LMR System Design, replace one (1) LMR site with a new site, remove five (5) Project Descriptions from the contract, and make administrative cost changes to one (1) LMR site.

On October 11, 2016 the Authority issued **NTP 19** authorizing specified Work related to Phases 2-4 for nine (9) LMR sites.

On November 3, 2016 the Authority Board of Directors approved **Amendment 22** to reconcile three (3) LMR sites to reflect the updated LMR System Design and to make administrative changes to Exhibit F (Administration of Agreement). On December 12, 2016 the Authority issued **NTP 20** authorizing specified Work related to Phases 2-4 for two (2) replacement LMR sites along with Special Operations Testing for DTVRS, ACVRS, LARTCS, and NMDN.

On December 12, 2016 the Authority Board of Directors approved **Amendment 23** to authorize specified Work related to Phases 2-4 for ten (10) LMR sites.

On December 2, 2016 the Authority issued **NTP 20** authorizing Phase 2-4 work at two (2) sites; and specified pre-installation acceptance testing for DTVRS, ACVRS, LARTCS, NMDN, and final core staging and SOT Prep.

On December 19, 2016 the Authority issued **NTP 21** authorizing specified Work related to Phases 2-4 for Six (6) LMR sites; all remaining work in Phase 2-4 at one (1) site; and all work related to ACVRS equipment in Phase 3 for six (6) sites.

On January 12, 2017 the Authority Board of Directors approved **Amendment 24** reconciling the following five (5) LMR System Sites (CLM, LACFDEL, LARICSHQ, WMP, and WTR) to align with the updated System Design.

On March 2, 2017 the Authority Board of Directors approved **Amendment 25** reconciling the following six (6) LMR System Sites (AGH, VPK, BMT, CRN, MVS, and ONK) to align with the updated System Design. This Amendment also acknowledges three (3) sites (BHS, DPW38, and RPV1) into the scope of Phases 2, 3, and 4 to align with the updated LMR System Design.

On March 31, 2017 the Authority issued a Supplemental **NTP 21** authorizing specified Work related to Phases 2-4 for Seven (7) LMR sites (AGH, CRN, MVS, ONK, TPK, VPK, and LDWP243).

On April 6, 2017 the Authority Board of Directors approved **Amendment 26** reconciling the following seven (7) LMR System Sites (BUR1, JPK2, LPC, MDI, MML, MTL2, and PRG) to align with the updated System Design. This Amendment also acknowledges one (1) site (LAN) into the scope of Phases 2, 3, and 4 to align with the updated LMR System Design.

On June 1, 2017 the Authority Board of Directors approved **Amendment 27** reconciling the following two (2) LMR System Sites (FRP and PLM) to align with the updated System Design. This Amendment also includes two (2) sites (BKK and UCLA) into the scope of Phases 2, 3, and 4 to align with the updated LMR System Design.

On June 29, 2017 the Authority issued **NTP 22** authorizing specified Work related to work for Task A.1.9.1 (Mitigation Monitoring and Reporting Plan (MMRP)).

On August 3, 2017 the Authority Board of Directors approved **Amendment 28** reconciling one (1) LMR System Site (BMT) to align with the updated System Design.

On September 7, 2017 the Authority Board of Directors approved **Amendment 29** reconciling one (1) LMR System Site (POM) to align with the updated System Design and to make changes necessary to reflect LMR Change Order Modifications.

On September 14, 2017 the Authority issued **NTP 23** authorizing specified Work related to Phases 2-4 for Five (5) LMR sites.

On September 25, 2017 the Authority issued **NTP 24** authorizing specified Work related to Phases 2-4 for Five (5) LMR sites.

On November 9, 2017 the Authority Board of Directors approved **Amendment 30** reconciling seven (7) LMR System Sites (BUR1/DPW38/FRP/JPK1/MIR/MML/RHT) to reflect the updated LMR System Design for these sites. This Amendment also includes one (1) LMR System Site (UNIV) into the scope of Phases 2, 3, and 4 to align WITH THE UPDATED LMR SYSTEMN Design.

On December 20, 2017 the Authority issued **NTP 25** authorizing specified Work related to Phases 2-4 for Eighteen (18) LMR sites – with the exception of ACRVS and NMDN equipment order. This NTP also authorized Motorola to proceed with Work for Task 6 Multiprotocol Label Switching (MPLS) Mobile Backhaul.

On February 28, 2018 the Oversight Committee approved **Amendment 31** approving Change Order Modifications in the amount of \$19,573.00.

On March 6, 2018 the Authority Board of Directors approved **Amendment 32** reconciling three (3) LMR System Sites to align with the updated LMR System Design for a cost decrease in the amount of \$4,131,931; (b) a cost neutral administrative reconciliation in connection with the Narrowband Mobile Data Network (NMDN) Subsystem to align all corresponding per site NMDN costs to a single line item cost, impacting thirty-three (33) LMR System Sites; (c) decrease the Maximum Contract Sum by \$4,131,931 from \$300,051,310 to \$295,919,379 when taking the cost decrease into consideration; and (d) make other certain changes as set forth in this Amendment No. 32.

On May 30, 2018 the Authority Board of Directors approved **Amendment 33** to make changes necessary to reflect (a) certain LMR Change Order Modifications for a cost increase in the amount of \$17,490.

On June 15, 2018 the Authority issued **NTP 26** authorizing all Work related to Phases 3 for Twelve (12) LMR sites – with the exception of the Phase 3 ACRVS equipment which was previously captured in NTP25. This NTP also authorized Motorola to proceed with Work for Task 6 Multiprotocol Label Switching (MPLS) Mobile Backhaul.

On July 31, 2018 the Authority Board of Directors approved **Amendment 34** to make changes necessary to reflect (a) the inclusion of one (1) LMR System Site into the scope of Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR Components), Phase 4 (LMR System Implementation), and exercise the Unilateral Options of the same, to align with the updated LMR System Design for a cost increase in the amount of \$1,016,780; (b) certain LMR Change Order Modifications for a cost increase in the amount of \$90,744; (c) the removal of certain Authority equipment, in particular an Uninterruptible Power Supply (UPS), from the Los Angeles Police Department's Valley Dispatch Center (LAPDVDC) for a cost increase in the amount of \$6,010; (d) an extension of a bridge warranty for the certain Early Deployment/Specified Equipment purchased and deployed under previously approved Amendments to

bridge the warranty gap for this equipment until December 31, 2019, for a cost increase in the amount of \$430,800; (e) increase the Maximum Contract Sum by \$1,544,334 from \$295,936,869 to \$297,481,203 when taking the cost increase into consideration; and (f) make other certain changes as set forth in this Amendment No. 34.

On August 28, 2018 the Authority issued **NTP 27** authorizing Work related to Phases 2-4 for the LMR INDWT LMR site, extension of the bridge warranty for certain deployed/specified equipment under previously approved Amendments until December 31, 2019.

On October 11, 2018 the Authority Board of Directors approved **Amendment 35** to make changes necessary to reflect (a) the reconciliation of one (1) LMR System Site Olinda (OLI) from the scope of Phase 1 (System Design), Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR System Components), and Phase 4 (LMR System Implementation), respectively, and all associated Work of the same for a cost decrease in the amount of \$701,234; (b) the inclusion of one (1) LMR System Site Winding Way (WWY) into the scope of Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR Components), Phase 4 (LMR System Implementation), and exercise the Unilateral Options of the same, to align with the updated LMR System Design for a cost increase in the amount of 1,064,388; (c) certain LMR Change Order Modifications for a cost increase in the amount of \$13,115 (d) make changes necessary to reflect an administrative reconciliation, a reconciliation related to the removal of certain Authority equipment, in particular an Uninterruptible Power Supply (UPS), from the Los Angeles Police Department's Valley Dispatch Center (LAPDVDC) for a cost increase in the amount of \$601; (e) increase the Maximum Contract Sum by \$376,870 from \$297,481,203 to \$297,858,073 when taking the cost decrease and increase into consideration; and (f) make other certain changes set forth in this Amendment No. 35.

On November 1, 2018 the Authority Board of Directors approved **Amendment 36** to make changes necessary to reflect (a) the reconciliation of five (5) LMR System Sites to align with the updated LMR System Design; (b) the inclusion of one (1) LMR System Site San Pedro Hill (SPH) into the scope of Phase 2 (Site Construction and Site Modification), Phase 3(Supply LMR Components), Phase 4 (LMR System Implementation), exercising the Unilateral Options of the same, to align with the updated LMR System Design; (c) incorporate an LMR Change Order Modification; (d) increase the Maximum Contract Sum by \$311,442 from \$297,858,073 to \$298,169,515 when taking the cost decreases and increases into consideration; and (e) make other certain changes as set forth in this Amendment No. 36.

On December 20, 2018 the Authority issued **NTP 28** authorizing Work related to Phases 2-4 for seventeen (17) sites – BJM, DPK, GMT, GRM, LPC, MDI, MTL2, PRG, PMT, RIH, RPV1, SPH, SPN, TWR, WMP, WTR, and WWY. This amendment reiterated the directive to suspend the purchase of UHF DTVRS equipment and corresponding work tied to the UHF DTVRS equipment.

On February 26, 2019 the Authority Board of Directors approved **Amendment 37** to make changes necessary to reflect (a) incorporate certain LMR Change Order Modifications for a cost increase in the amount of \$56,337; (b) increase the Maximum Contract Sum by \$56,337 from \$298,169,515 to \$298,255,852 when taking the cost increases into consideration; and (c) make other certain changes as set forth in this Amendment No. 37.

On June 11, 2019 LARICS executed **Amendment 38** to make changes necessary to reflect (a) incorporate certain LMR Change Order Modifications resulting in a net cost decrease in the amount of \$47,393; (b)

decrease the Maximum Contract Sum by \$47,393 from \$298,225,852 to \$298,178,459 when taking the cost increases and decreases into consideration; and (c) make other certain changes as set forth in this Amendment No. 38.

**This report covers the period from 5/23/19 thru 6/20/19**

During this reporting period associated Phase 1 tasks were performed to include A&E activities, site and network design, frequency planning, site scope reviews, Site Access Agreement drawings, backhaul/microwave path surveys, and Environmental Reviews. A&E activities included site walks, site sketch development, site surveys, and development of the Zoning Drawings, geotechnical plans, and Construction Drawings development. The expedited drawing process is still in effect, whereas LA-RICS does not receive drawings at the prescribed intervals for review. This method is being used to allow for the fastest possible duration between drawing development and submission to Authority having jurisdiction for building permit issuance. The LA-RICS Authority has not yet requested a deductive contract amendment to account for remaining 26 sites which have not yet been submitted to Authorities having jurisdiction for building permits.

The primary Phase 1 activities for this period include:

**LMR System Design**

System design activities for this period included frequency identification and planning, backhaul network design, narrowband mobile data network design, fleet mapping, Spectrum Fingerprinting and Noise Floor Monitoring site measurements and data evaluation, evaluating the potential for condensed testing and training, and incorporation of system design parameters into the construction drawing process. MSI is utilizing the Design of Record dated 9/6/16 to support the site True-Up process as well as information as it is refined and determined weekly. As site changes develop (fallout or are added) MSI and the Authority continue to refine the backhaul design and are working together to resolve areas of concern and incorporate the corresponding solutions into the system design.

**Site Design Activities**

Spectrum Fingerprinting – Noise Floor Monitoring activities continue. Data collection has been completed for 47 sites. 34 reports have been submitted to LA-RICS to date. MSI/TxRx is currently processing reports for 3 sites and reviewing the reports for an additional 8 sites. 8 sites remain untested, of which 2 are access restricted due to road conditions. The Authority has reached access agreements at sites like RIH, which was a concern in the last report... Emissions Studies have been submitted to LA-RICS for 3 sites - GRM, WMP, and LACFDEL.

MSI resubmitted a Change Order Request on 3/28 for the NMDN solution. MSI received a response from the Authority affirming the value of the change is agreeable and included mark-ups for MSI's adherence. An NTP is forthcoming...

**LA-RICS Deliverables - Authority Site Access Agreements**

Authority's efforts to develop and execute the applicable Right of Entry and Site Access Agreements for the required sites in the LMR design are ongoing. This activity is primarily being driven by the

Authority's Site Access Team in conjunction with LA County CEO Real Estate Division. As of this reporting period (37 out of 59) Site Access Agreements have been executed.

In late February, feedback was received on the US Forest Service's evaluation of the 13-site SF299 Application and Environmental Tech Memos. The Forest Service is expected to deliver a decision memo in the upcoming period for all 13 sites.

The Authority continues to work with FEMA to obtain independent site environmental approvals which are required prior to the start of construction at a site.

The primary Phase 2 activities for this period include:

#### **Pre-Construction Activities**

Pre-construction activities were undertaken at BKK and MIR.

#### **Construction Activities**

During this reporting period, Phase 2 tasks continue. 29 of 59 sites are constructed or under construction. The central focus are the sites listed as follows (INDWT, DPW38, BKK, AGH, OAT and MIR). To-date, 9 of 41 new towers have been erected - FCCF, MLM, MVS, ONK, TPK SDW, MMC, VPK, and CRN. 9 of 21 Pre-fab shelters have been installed - BMT, HPK, LASDTEM, MLM, TPK, MMC, SDW, VPK and CRN. 10 of 15 Existing Tenant Improvement shelters are complete and 1 of 23 Cinder-block CMU shelters are complete.

The primary Phase 3 activities for this period include:

#### **Equipment Installation**


Equipment installation (FNE and MW) work has been completed or is in progress at the following sites – BMT, LDWP243, POM, PLM, LAN, CCT, FCCF, SGH, CCB, MVS, LASDTEM, APC, PHN, MLM, VPK, ONK, LARICHQ, OAT, and CLM.

The primary Phase 4 activities for this period include:




#### **Optimization**

2-site Downtown cell optimization (FCCF and CCT) was completed.

The following table provides a dashboard snapshot of the projects' health signs.

LMR Project Dashboard			
Category	Rating	Change	Comments
Schedule			Revisions to the baseline schedule for all phases (1-4) are reviewed monthly by LA-RICS. MSI's A&E drawing progress is a weak point in the program. MSI and the Authority



LMR Project Dashboard			
Category	Rating	Change	Comments
			continue to see slips in individual site schedules that impact its overall Program schedule due to delays in A&E drawings, A&E drawing revisions, Building Permit Submissions plancheck review issues and resolution thereof, and construction duration slippage, particularly Ph.4a. .. MSI and LA-RICS spent the last six weeks analyzing the P6 schedule. The goal was to re-baseline a realistic, achievable, mutually agreed schedule that aligned with the 2020 plan developed by MSI in May of 2018. However, MSI has not yet delivered the revised IMS. Phase 4a/4b activity detailing and refinements were a particular weak point and non-existent in the IMS up until this point in time. MSI plans to submit a revised IMS that is mutually agreeable by 7/3/19. Recently identified interference from Mexico is impacting the implementation of the Channel 15 equipment, LA-RICS and MSI have worked together to tailor UASI 18 equipment ordering as a result.
			The construction drawing, review, and approval process continues to be challenging for MSI. Specifically, the County of Los Angeles DPW has instituted a new process whereby MSI must complete a drawing checklist before the documents can be submitted for review. This process was created to reduce the repetitive defects in quality that the department had routinely commented on. This process is a mutually agreed modification of the contractual drawing submission and review process, to which the Authority has agreed in the interest of achieving the shortest possible duration between construction document creation and submission for building permit
Risk			Risk items have been identified regarding: Spectrum, Site Access Agreements, Plan-Checker approval process, Channel 15 interference, and Site Conditions. FEMA independent site environmental approvals required. Damaged roads at MML and MTL2 have not been quantified from a cost standpoint and are currently unscheduled and unbudgeted.
Budget			Current budget reflects contract pricing and include the sites that have gone through the true-up review. Revised budgets for each site will be determined at the completion of each true-up. Discussions continue, at the executive level, regarding cost overruns beyond December 2020.

## 2. Project Status

The following sections identify task activities during the reporting period and the planned activities for the next reporting period.

### 2.1 Tasks in Progress or Completed

The following depict the task activity that occurred during the current reporting period.

Activity Name	Activity Status
<b>LA-RICS Deliverables</b>	
Lease Negotiations & Site Access Use Agreements	In Process
FEMA Environmental Site Approvals & Construction Waivers	In Process
SAA's (or EMIS 6b) for USFS & Coastal Sites (22 sites)	In Process
Notice To Proceed for remaining sites	In Process
Channel 15 Interference resolution	In Process
Respond to NMDN COR allowing MSI to move forward with RadioMobile	In Process
Respond to Accelerated Schedule (condensed testing & training) provided 10/19/18	In Process
<b>LMR System Design</b>	
Design baseline site parameters & Design development	In Process
Contract True-up of site designs and equipment for each site	In Process
Spectrum Fingerprinting and Noise Floor Monitoring Measurements – 47 sites complete	In Process
Provided updated USFS tower elevations	In Process
<b>Site Design, Zoning and Permitting</b>	
Site Walks and Site Sketch Development & Approvals	In Process
Site Surveys	In Process
Develop Zoning Drawings & Approvals	In Process
Geotechnical Boring	In Process
Develop Construction Drawings & Approvals	In Process
Submit Permits Drawings and Approvals (35/59 Sites submitted; 31/59 Sites Received)	In Process
<b>Pre- Construction</b>	
Pre- Construction Plans in review	In Process
Pre-Proposal meeting with USFS representatives	In Process
<b>Construction</b>	
29/59 Sites Construction Complete or Under Construction	
AGH – Work continues on shelter's interior wall build-out. Fuel tank/generator CMU wall grout filling is in progress.	
CRN – CRN. DC install ongoing.	
DPW38 – FDS piping completed, and passed pressure test. Tower supplement approved by plan check. Crew remobilization today for commencement of caisson drilling, 6/18.	In Process
INDWT – Generator/fuel tank CMU wall grouting complete. Drilling of caisson for monopole currently forecast for next week, 6/25.	
MIR – Continuing to investigate location of underground water main under work area with utility. Contracted specialty equipment and resources to locate water main.	
Scheduled exploratory work with Pasadena utility representatives this Wednesday, 6/19.	

Activity Name	Activity Status
<p>OAT – Fence installed. DC power plant installation underway.</p> <p>POM – AWC re-located equipment from staging area in coordination with re-roofing activities. Proposed antenna locations marked by crew.</p> <p>BKK – Fuel tank/generator CMU wall construction ongoing.</p> <p>SDW – Finished spreading of gravel and site clean-up. Awaiting SCE final inspection.</p>	
<b>FNE Installation</b>	
Airwave had four additional crew members attend WEAP training last week.	
INDWT: Rack installs tomorrow, 6/19. Battery delivery on Fri, 6/21.	
MVS: Rack cabling started Monday, 6/10, and will resume on Mon, 6/24.	
OAT: Rack installs this Thu, 6/20.	
SGH: Bio monitor completed the bird survey on Wed, 6/12 and determined 4 of the 5 birds flying. We are holding for now and planning tower activities for Mon, 6/24.	In Process
VPK: Rack cabling continuing this week and due complete Fri, 6/28	
<b>FNE Optimization</b>	
2-site Downtown 700 cell optimization (FCCF and CCT) up and under test. 4 weeks to optimize this 2-site 700MHz cell	In Process

## 2.2 Tasks Planned for Next Period

The following depict the task activity that is planned for the next reporting period.

Activity Name	Planned Status
<b>LA-RICS Deliverables</b>	
Lease Negotiations & Site Access Use Agreements	In Process
FEMA Environmental Site Approvals & Construction Waivers	In Process
SAA's (or EMIS 6b) for USFS & Coastal Sites (22 sites)	In Process
Notice To Proceed for remaining sites	In Process
Channel 15 Interference resolution - Provided ROM costs on 6/5.	
Jointly discussed and review with LA-RICS team yesterday, 6/17.	In Process
Updated ROM to be submitted as a COR today, 6/18.	
<b>Environmental Review &amp; Documentation (Authority)</b>	
Additional Sites for Consideration Environmental Reviews	In Process
<b>LMR System Redesign</b>	
Redesign Baseline site parameters & redesign development	In Process
<b>Site Design</b>	
Site Walks and Site Sketch Development & Approvals	In Process
Site Surveys	In Process
Develop Zoning Drawings & Approvals	In Process
Submittal of Zoning Drawings	In Process

Activity Name	Planned Status
Develop Construction Drawings and Approvals	In Process
Submit Permits Drawings and Approvals	In Process
<b>Pre-Construction</b>	
Geotech drilling	In Process
Pre- Construction Packages & Site Monitoring (where applicable)	In Process
<b>Site Construction</b>	
Outreach to Neighborhoods for Applicable Sites	On Going
Pre- Construction Packages Review & Approval	On Going
Site Construction & Site Monitoring (where applicable)	On Going
A&L, Microwave Dishes, Equipment Racks,	In Process
<b>Staging</b>	
UASI18 Sites – Q3 or Q4, 2019 (forecast)	In Process
<b>FNE Installation</b>	
A&L, Microwave Dishes, Equipment Racks,	In Process
<b>FNE Optimization</b>	
Equipment, Microwave Phase 4a	In Process

## 2.3 Authority Look-Ahead Tasks (120-Day)

For the Authority planning purposes the following table provides a one hundred twenty (120) Day look-ahead of the Authority-specific activities to conduct coordination, inspections, approvals, consents, and or provide decisions necessary from the Authority to facilitate Contractor's progress.

Activity Name	Planned Status
<b>LA-RICS Deliverables</b>	
Lease Negotiations & Site Access Use Agreements	In Process
FEMA Environmental Site Approvals & Construction Waivers	In Process
SAA's (or EMIS 6b) for USFS & Coastal Sites (22 sites)	In Process
Notice To Proceed for remaining sites	In Process
Channel 15 Interference resolution	In Process
<b>Environmental Review &amp; Documentation (Authority)</b>	
Additional Sites for Consideration Environmental Reviews	In Process
<b>LMR System Redesign</b>	
Redesign Baseline site parameters & redesign development	In Process
Contract True-up of site designs and equipment for each site	In Process
<b>Site Design</b>	
Site Walks and Site Sketch Development & Approvals	In Process
Zoning Drawings & Approvals	In Process

Activity Name	Planned Status
Construction Drawings and Approvals	In Process
<b>Pre-Construction</b>	
Geotech drilling	In Process
Pre- Construction Packages & Site Monitoring (where applicable)	In Process
<b>Site Construction</b>	
Outreach to Neighborhoods for Applicable Sites	On Going
Pre- Construction Packages Review & Approval	On Going
Site Construction & Site Monitoring (where applicable)	On Going
Site Construction Inspection Approvals	On Going
<b>FNE Installation</b>	
A&L, Microwave Dishes, Equipment Racks,	In Process
Early Shipment Equipment will need to be re-located to their planned versus current interim locations.	In Process
<b>FNE Optimization</b>	
Equipment, Microwave Phase 4a	In Process

### 3. Project Risk Register

Title	Assigned	Impact	Risk Description	Status
Site Parameters	Authority	High	Site parameters (e.g. tower heights, RF equipment configurations) are different from the baseline agreement and may impact System performance.	Active
Environmental Process	Authority	High	The individual determination of environmental impacts or mitigation may impact the schedule for site work (e.g., bird nesting season). Individual environmental releases from FEMA are required to start work at sites.	Active
Delayed Drawings and Permit Release	Motorola & Authority	High	Delay in permit submission and release has impacted the construction schedule and ability to meet grant spending guidelines. Site changes and System redesign elements are impacting drawing progress for certain sites. MSI continues to struggle to incorporate Authority comments, creating a quality control issue which requires additional rounds of review at jurisdictions having authority to issue building permits.	Active

Title	Assigned	Impact	Risk Description	Status
Site Access Agreements	Authority	Med	Lease holders approvals are needed in order to implement LA-RICS improvements.	Active
Project Schedule	Authority & Motorola	High	Overall project schedule has yet to reach an acceptable standard. The MSI 20/20/20 plan was accepted by the Authority in May of 2018, but the high-level plan failed to demonstrate lower level planning details as required in the Agreement.	Active

#### 4. Areas of Concern

This section describes any events and or circumstances of which the Contractor is aware that has delayed or may delay project activities and what corrective or remedial actions was taken or will be taken to resolve the issue. Outstanding Issues Log (the “OIL Log”) entries are also tabulated and monitored in this section. “OIL Log” items include, for example, sequencing, infrastructure, site access, coordination issues, congestion of workers and equipment, time requirements for design, procurement, and installation.

ID	Event / Circumstance	Remedial Action Taken or Required
02-02	System Design impacts due to changes in site conditions	Motorola and the Authority have analyzed probable site changes and suitable site replacement candidates. Adjusted tower heights and undetermined site parameters at several of the sites will impact the coverage. System design efforts will determine system impacts. Impact includes, microwave backhaul, equipment reconfigurations, channel plan changes, system coverage, licensing, and site design and permitting.

#### 5. Disputes and Claims

This section describes any disputes, potential claims, and claims made during the reporting period.

Dispute / Claim / Potential Claim	Status / Actions	Resolution Date
None at this time		

## 6. Financial Status

The following represents the invoice payments that were completed during the reporting period and the remaining amount to be invoiced and paid.

Invoice Payment Category	Invoice Payment Totals (\$)
Contract Sum Full Payable Amount (Amendment 36)	167,625,504
Cumulative Invoice Payments from Last Report	84,946,520
Total Invoice Payments This Period	418,236
Remaining Amount to be Paid	82,260,748

## 7. LA-RICS Master Schedule

The current P6 baseline schedule is titled "LMR IMS and Site Project Schedule\_DD21-Oct-2017". Variance reports are distributed weekly, reviewed, and discussed at weekly meetings.



(See attached LMR Executive Project Summary Snapshots)



## LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM AUTHORITY

2525 Corporate Place, Suite 100  
Monterey Park, California 91754  
Telephone: (323) 881-8291  
<http://www.la-rics.org>

SCOTT EDSON  
EXECUTIVE DIRECTOR

July 11, 2019

To: LA-RICS Authority Board of Directors

From: Scott Edson  
Executive Director

### OUTREACH UPDATE

The purpose of this discussion item is to update your Board on the status of outreach activities pertaining to the LA-RICS Public Safety Broadband Network (PSBN) and Land Mobile Radio (LMR) project. The below meetings occurred since our last report to you:

Municipality	Meeting Date
<i>Meetings with representatives from AT&amp;T</i>	June 10, 19, 20 and July 1, 2019
<i>Meeting with representatives from the City of Inglewood</i>	June 10, 2019
<i>Executive Director Scott Edson attended the National Sheriff's Association (NSA) Conference</i>	June 12 – 18, 2019
<i>Meeting with representatives from CEO Real Estate Division</i>	June 13, 2019
<i>Meeting with representatives from LA County Dept. of Regional Planning</i>	June 19, 2019
<i>Meeting with United States Forest Service (USFS) Supervisor</i>	June 19, 2019
<i>Meeting with CEO Chief Operating Officer</i>	June 20, 2019
<i>Meeting with representatives from Rand Corporation</i>	June 20, 19
<i>Meeting with Motorola Solutions, Inc. Leadership</i>	June 24, 2019

Various meetings continued in the months of June and July with AT&T to discuss ongoing Technical and Program Management concerns, Transfer Transition logistics, Checkpoint Calls, Round 2 Specifications, Assignment & Assumption Agreements, Partnership Review and quarterly progress review.

Members of the LA-RICS Team met with representatives from Inglewood to discuss LTE2 technical logistics and early onboarding opportunities.

**AGENDA ITEM G**

Executive Director Edson attended the NSA Conference in Louisville, KY.

Members of the LA-RICS Team continued to meet with representatives from Los Angeles Chief Executive Office Real Estate Division (CEO RED) to discuss critical path sites that require LMR and LTE2 Site Access Agreements.

Members of the LA-RICS Team met with representatives from Los Angeles County Department of Regional Planning to meet dedicated staff assigned to work with LA-RICS and Motorola Solutions, Inc (Motorola) to allow a streamlined process to obtain required permits for the LMR sites requiring California Coastal Commission approval.

Executive Director Edson and members of the LA-RICS Team met with USFS Supervisor Jerome Perez to discuss the critical path for the 13 LMR sites requiring Special Use Permits from the USFS.

Executive Director Edson and Administrative Deputy Susy Orellana-Curtiss attended an introductory meeting with CEO Chief Operating Officer Fesia Davenport and provided her with an update on LA-RICS program, critical paths for County owned/operated LMR and LTE2 sites, and fiscal related issues.

Executive Director Edson met with representatives from Rand Corporation who are researching the National Public Safety Broadband Network (NPSBN) contract between AT&T and public safety needs.

Lastly, Executive Director Edson met with Motorola Leadership.

WST:pdd



**LOS ANGELES REGIONAL INTEROPERABLE  
COMMUNICATIONS SYSTEM AUTHORITY**

2525 Corporate Place, Suite 100  
Monterey Park, California 91754  
Telephone: (323) 881-8291  
<http://www.la-rics.org>

SCOTT EDSON  
EXECUTIVE DIRECTOR

July 11, 2019

Board of Directors  
Los Angeles Regional Interoperable Communications System ("LA-RICS") Authority  
(the "Authority")

Dear Directors:

**APPROVE THE FISCAL-YEAR 2019-20 PROPOSED LOS ANGELES REGIONAL  
INTEROPERABLE COMMUNICATIONS SYSTEM AUTHORITY  
OPERATING BUDGET**

**SUBJECT**

The Fiscal-Year 2019-20 Proposed Los Angeles Regional Interoperable Communications System Authority (Authority) Operating Budget.

**RECOMMENDED ACTION**

It is recommended that the Authority approve the Enclosed Fiscal-Year 2019-20 Proposed Operating Budget of \$108,881,000 to be utilized for the continued operation of the Authority.

**PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION**

The Enclosed Proposed Operating Budget will allow the Authority to expend funding on, among other things, the County of Los Angeles (County) project team, as well as executed consultant contracts, travel and training, services and supplies, equipment, Lease, Liability, and Commercial Property Insurance.

**FISCAL IMPACT/FINANCING**

Federal grants will fund \$99,768,000 of grant-funded expenditures. In addition to Federal Grant revenue, \$3,000,000 will be contributed by members in Fiscal-Year 2019-20. Member contributions are made up of Member Funded Joint Power Authority (JPA) Operations in the amount of \$1,300,000, Long Term Evolution (LTE) Administrative Costs in the amount of \$850,000 and Land Mobile Radio (LMR)

**AGENDA ITEM H**

LA-RICS Board of Directors  
July 11, 2019  
Page 2

Administrative Costs in the amount of \$850,000 in accordance with the Adopted Funding Plan. In addition, this years' proposed budget includes \$1,865,000 in services supporting LTE router replacement services, identified as AT&T Business Agreement Services in your budget summary. In addition, the proposed budget includes \$4,248,000 provided by the County to pay for equipment ordered and not deployed under Public Safety Broadband Network Round 1.

**FACTS AND PROVISIONS/LEGAL REQUIREMENT**

The Finance Committee met on June 27, 2019, and voted unanimously to recommend adoption of the proposed budget. The Authority's Fiscal Agent/Los Angeles County Auditor-Controller reviewed the recommended action.

Respectfully submitted,



SCOTT EDSON  
EXECUTIVE DIRECTOR

SOC:GS:pdd

Enclosure

c: Counsel to the Authority





**FISCAL-YEAR 2019-20 PROPOSED BUDGET  
EXECUTIVE SUMMARY**

**PROJECT OVERVIEW**

The Los Angeles Regional Interoperable Communication System (LA-RICS) is a modern collaborative effort of law enforcement, fire service, and health service professionals with the goal to provide a single, unified voice and data communication platform for all regional public safety agencies. When completed, LA-RICS will cover over 4,000 miles of diverse terrain and serve as the hub for over 34,000 first responders working across 85 municipalities. LA-RICS is deploying a Land Mobile Radio (LMR) system utilizing both digital trunked and analog conventional subsystems as well as deploying state and federal interoperability channels. The System is scheduled for system acceptance in 2021. LA-RICS will allow interagency coordination and response to routine, emergency, and catastrophic events.

A Joint Powers Authority ("Authority") was established in January 2009, to engage in regional and cooperative planning and coordination of governmental services. The Authority Board includes ten (10) Directors who represent a cross-section of first responder stakeholders who all share in the decision-making process, and has responsibility for setting policy and providing oversight on behalf of the Authority's Members.

The following details the proposed Fiscal-Year 2019-20 LA-RICS Operating Budget.

**LA-RICS RECOMMENDED OPERATING BUDGET FISCAL-YEAR 2019-20  
SOURCES**

**Grant Funded Expenditures**

- **LMR:** Expenditures reimbursable under the Urban Area Securities Initiative (UASI).
- **LTE:** Expenditures reimbursable under Broadband Technologies Opportunity Program (BTOP).

**Member Funded Joint Powers Authority Operations, LTE Administrative Cost, and LMR Administrative Cost**

Member Funded Authority Operations, LTE Administrative Cost, and LMR Administrative Cost will be paid for out of the LA-RICS AT&T Business Agreement Funds in accordance with the LA-RICS Adopted Funding Plan.



### **AT&T Business Agreement Services**

Services relating to router replacement services in accordance with the executed Business Agreement between LA-RICS and AT&T.

### **LTE Equipment Payment**

Funds provided by the County of Los Angeles to pay for equipment ordered and not deployed under the Public Safety Broadband Network (PSBN) Round 1.

## **LA-RICS RECOMMENDED OPERATING BUDGET FISCAL-YEAR 2019- 20 USES**

### **LA-RICS Project Team**

This section contains costs associated with salaries and employee benefits of project staff from various County of Los Angeles (County) departments, assigned to the LA-RICS project through a Master Agreement and Memorandum of Understanding between the Authority and the County Chief Executive Officer (CEO). Project staff provide support relating to daily operations of the project, including Operations, Technical, and Administrative Support. Costs are projected and will not be incurred unless funds are secured for the same.

### **Travel and Training**

This section contains costs associated with travel and training of project staff and executive management to support the project goals and mission. Projected travel includes public education, outreach meetings, airfare charges, transportation charges, per diem, and related conference fee/meeting registration charges.

### **Admin and Other Contractors**

This section contains costs associated with grant and member funded professional services agreements and contracts between the Authority and consultants for various services, including: This section contains costs associated with grant and member funded professional services agreements and contracts between the Authority and consultants for various services, including: LA-RICS Executive Director, County of Los Angeles Department of Public Works for Building and Safety and other construction/permit-related support as well as construction related procurement support, CEO Real Estate Division for site access negotiations and execution, and the Department of Regional Planning for zoning and construction support, as well as others as needed.

### Miscellaneous

This section contains cost associated with miscellaneous fees, including utilities, LMR Notices of Exemption (NOE) as well as escort and permit fees.

### Capital Assets & Furniture

This section contains costs associated with fixed asset purchases made by the Authority to support daily operations.

### Other Charges

This section contains costs associated with LA-RICS Authority Insurance, Commercial Property Insurance and FCC Licensing.

### Lease, Tenant Improvements & Other Services – Suite 100

This section contains cost associated with Lease of LA-RICS office at 2525 Corporate Place, Suite 100, Monterey Park, California 91754.

### Contractors/Consultants Services

This section contains costs associated with projected contract expenditures for project management, broadband engineering, environmental studies, outreach, and deployment of the system (LMR and LTE).

### LMR & LTE Administrative Costs

This section includes certain costs associated with the management and administration of the LTE and LMR system and their implementation in accordance with the Adopted Funding Plan.

### LTE Equipment Payment

This section contains costs associated with equipment ordered and not deployed under the Public Safety Broadband Network Round 1.

## **CONCLUSION**

Total Grant Funded Expenditures – \$99,768,000 projected in Fiscal-Year 2019-20.

Member Funded JPA Operations – \$1,300,000 projected in Fiscal-Year 2019-20.

Member Funded Authority Operations includes projected costs associated with activities supporting the Authority that cannot be funded by BTOP and UASI Grants as they are

considered management and administration, support operations and maintenance operations and/or are unallowable under the grant guidance/regulations.

This includes:

- Certain travel and training supporting the project goals;
- Supplies required for daily operations;
- Certain Admin and Other Contractors (Executive Director);
- Miscellaneous fees including utilities fees for deployed sites, NOE and Escort and Permit Fees, etc.;
- Liability Insurance for LA-RICS JPA and Commercial Property Insurance; and
- Fixed asset, furniture purchase, and lease of LA-RICS office.

**LTE Administrative Cost** – \$850,000 projected in Fiscal-Year 2019-20.

LTE Administrative Costs includes costs associated with certain Project Team members as well as other expenditures (S&S, Travel, Miscellaneous and Lease for Suite 100) required to deploy, implement and operate the PSBN Round 2 Project Implementation Plan including grant management as well as other tasks not funded by grants.

**LMR Administrative Cost** – \$850,000 projected in Fiscal-Year 2019-20.

LMR Administrative Costs includes costs associated with certain Project Team members as well as other expenditures (S&S, Travel, Miscellaneous and Lease for Suite 100) required to deploy, implement and operate the LMR system including contract and grant management as well as other tasks not funded by grants.

**AT&T Business Agreement Services** – \$1,865,000 captures the projected balance remaining in the Business Agreement Services fund to be used in Fiscal-Year 2019-2020.

AT&T Business Agreement Services costs include costs relating to router replacement services in accordance with the executed Business Agreement between LA-RICS and AT&T.

**LTE Equipment Payment** – \$4,248,000 cost provided by Los Angeles County in Fiscal-Year 2019-2020 to pay for equipment ordered and not deployed under PSBN Round 1.

**Los Angeles Regional Interoperable Communications System (LARICS)**  
**Proposed Operating Budget**  
**Fiscal Year 2019-20**

	FY 2017-18	FY 2018-19	FY 2018-19	FY 2019-20
FINANCING USES	ACTUALS	ADOPTED BUDGET	ESTIMATED	PROPOSED
<b><u>Grant Funded Expenditures</u></b>				
<b>Project Team</b>	<b>2,685,401</b>	<b>6,008,000</b>	<b>2,453,050</b>	<b>6,029,000</b>
BTOP (1)	315,441	3,947,000	541,109	3,481,000
UASI Grant	2,369,960	2,061,000	1,911,941	2,548,000
<b>Travel &amp; Training</b>	<b>18,731</b>	<b>90,000</b>	<b>22,186</b>	<b>41,000</b>
BTOP	9,407	20,000	17,186	10,000
UASI Grant	9,324	70,000	5,000	31,000
<b>Admin and Other Contractors</b>	<b>49,287</b>	<b>300,000</b>	<b>131,552</b>	<b>316,000</b>
BTOP (1)	0	220,000	71,552	236,000
UASI Grant	49,287	80,000	60,000	80,000
<b>Miscellaneous * (3)</b>	<b>77,958</b>	<b>630,000</b>	<b>266,515</b>	<b>630,000</b>
BTOP	0	0	0	0
UASI Grant	77,958	630,000	266,515	630,000
<b>Other Charges* (4)</b>	<b>110,127</b>	<b>384,000</b>	<b>12,195</b>	<b>759,000</b>
BTOP	0	0	0	0
UASI Grant	110,127	384,000	12,195	759,000
<b>Contractors/Consultants Services</b>	<b>19,145,873</b>	<b>67,706,000</b>	<b>22,855,630</b>	<b>91,993,000</b>
BTOP (1)	4,061,684	14,037,000	5,543,067	24,189,000
UASI	15,084,189	53,669,000	17,312,563	67,804,000
<b>Total Grant Funded Expenditures</b>	<b>22,087,377</b>	<b>75,118,000</b>	<b>25,741,128</b>	<b>99,768,000</b>
<b><u>Member Funded JPA Operations (2)</u></b>				
<b>Project Team</b>	<b>223,961</b>	<b>276,000</b>	<b>276,000</b>	<b>491,000</b>
<b>Travel &amp; Training</b>	<b>17,464</b>	<b>50,000</b>	<b>8,083</b>	<b>40,000</b>
<b>Services &amp; Supplies</b>	<b>58,988</b>	<b>60,000</b>	<b>60,000</b>	<b>60,000</b>
<b>Admin and Other Contractors</b>	<b>172,200</b>	<b>119,000</b>	<b>119,000</b>	<b>116,000</b>
<b>Miscellaneous *(3)</b>	<b>72,232</b>	<b>135,000</b>	<b>50,000</b>	<b>138,000</b>
<b>Capital Assets &amp; Furniture</b>	<b>0</b>	<b>20,000</b>	<b>0</b>	<b>20,000</b>
<b>Other Charges *(4)</b>	<b>26,296</b>	<b>60,000</b>	<b>60,000</b>	<b>70,000</b>
<b>Lease &amp; Other Services - Suite 100</b>	<b>0</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>
<b>Contractors/Consultants Services</b>	<b>0</b>	<b>460,000</b>	<b>245,000</b>	<b>245,000</b>
<b>Total Member Funded JPA Operations</b>	<b>571,141</b>	<b>1,300,000</b>	<b>938,083</b>	<b>1,300,000</b>
<b>LMR Administrative Cost (2) (5)</b>	<b>507,456</b>	<b>850,000</b>	<b>850,000</b>	<b>850,000</b>
<b>LTE Administrative Cost (2) (5)</b>	<b>676,530</b>	<b>850,000</b>	<b>850,000</b>	<b>850,000</b>
<b>LTE Operation &amp; Maintenance (2)</b>	<b>5,951,323</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>AT&amp;T Business Agreement Services (BAS)</b>	<b>0</b>	<b>2,500,000</b>	<b>635,340</b>	<b>1,865,000</b>
<b>LTE Equipment Payment (6)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4,248,000</b>
<b>Total LTE &amp; LMR Member Funded, AT&amp;T BAS and LTE Equipment</b>	<b>7,135,309</b>	<b>4,200,000</b>	<b>2,335,340</b>	<b>7,813,000</b>
<b>TOTAL FINANCING USES</b>	<b>29,793,827</b>	<b>80,618,000</b>	<b>29,014,551</b>	<b>108,881,000</b>
<b><u>FINANCING SOURCES</u></b>				
<b>Federal Grant Revenue</b>		<b>75,118,000</b>		<b>99,768,000</b>
<b>Member Contribution</b>		<b>3,000,000</b>		<b>3,000,000</b>
<b>AT&amp;T Business Agreement Services</b>		<b>2,500,000</b>		<b>1,865,000</b>
<b>LTE Equipment Payment</b>		<b>0</b>		<b>4,248,000</b>
<b>Total Available Financing</b>		<b>80,618,000</b>		<b>108,881,000</b>

Note 1: BTOP Award in FY 19-20 includes the remaining funds in PSBN Round 2 budget.

Note 2: Member Funded JPA Operations, LTE Administrative Cost, and LMR Administrative Cost will be paid for out of the LA-RICS AT&T Business Agreement Funds

Note 3: Fees including utilities, Notices of Exception, Escort and permit fees, etc.

Note 4: Liability Insurance for LA-RICS JPA, Commercial Property Insurance and FCC Licensing.

Note 5: LTE Administrative Cost and LMR Administrative Cost include certain costs associated with the management & implementation of the LTE & LMR Systems in accordance with the Adopted Funding Plan.

Note 6: LTE Equipment Payment is provided by the County of Los Angeles as a loan.

**LA-RICS  
FY 2019-2020**

PROJECT TEAM	BTOP	UASI/SHSGP Funding	Member Funded JPA Operations	LTE Admin Cost	LMR Admin Cost	Yearly Costs (Salary & Employee Benefits)
<b><u>DISTRICT ATTORNEY (DA)</u></b>						
Administrative Deputy II *	132,000	0	68,000	20,000	44,930	264,930
Fiscal Officer II *	124,904	0	58,274	20,000	27,392	230,570
<b>DA Total</b>	<b>256,904</b>	<b>0</b>	<b>126,274</b>	<b>40,000</b>	<b>72,322</b>	<b>\$ 495,501</b>
<b><u>TREASURER &amp; TAX COLLECTOR (TTC)</u></b>						
Administrative Services Manager I *	84,830	30,000	20,000	11,996	22,000	168,826
<b>TTC Total</b>	<b>84,830</b>	<b>30,000</b>	<b>20,000</b>	<b>11,996</b>	<b>22,000</b>	<b>\$ 168,826</b>
<b><u>PUBLIC WORKS (PW)</u></b>						
Senior Management Secretary III *	68,000	22,000	20,000	1,988	25,958	137,946
<b>PW Total</b>	<b>68,000</b>	<b>22,000</b>	<b>20,000</b>	<b>1,988</b>	<b>25,958</b>	<b>\$ 137,946</b>
<b><u>SHERIFF (SH)</u></b>						
Operations Assistant III *	36,461	52,297	20,000	7,784	8,000	124,542
<b>SH Total</b>	<b>36,461</b>	<b>52,297</b>	<b>20,000</b>	<b>7,784</b>	<b>8,000</b>	<b>\$ 124,542</b>
<b><u>PROBATION (PB)</u></b>						
Administrative Services Manager I	82,960	53,000	0	7,182	22,000	165,142
Executive Assistant	108,143	85,000	0	9,448	15,071	217,662
<b>PB Total</b>	<b>191,103</b>	<b>138,000</b>	<b>0</b>	<b>16,630</b>	<b>37,071</b>	<b>\$ 382,804</b>
<b><u>ISD</u></b>						
Administrative Services Manager III *	116,015	76,000	10,000	20,278	10,000	232,293
<b>ISD Total</b>	<b>116,015</b>	<b>76,000</b>	<b>10,000</b>	<b>20,278</b>	<b>10,000</b>	<b>\$ 232,293</b>
<b><u>MENTAL HEALTH (MH)</u></b>						
Administrative Services Manager I	79,321	38,000	20,000	21,246	0	158,567
<b>MH Total</b>	<b>79,321</b>	<b>38,000</b>	<b>20,000</b>	<b>21,246</b>	<b>0</b>	<b>\$ 158,567</b>
<b><u>REGISTRAR RECORDER COUNTY CLERK (RRCC)</u></b>						
Accounting Officer II *	75,905	0	20,000	20,524	50,000	166,429
<b>RRCC Total</b>	<b>75,905</b>	<b>0</b>	<b>20,000</b>	<b>20,524</b>	<b>50,000</b>	<b>\$ 166,429</b>
<b><u>AUDITOR CONTROLLER (A/C)</u></b>						
<b>S&amp;EB</b>						
Principal Accountant	0	0	3,700	7,575	0	11,275
Supervising Accountant	0	0	10,000	14,833	0	24,833
Senior Accountant	0	0	22,584	40,936	20,000	83,520
<b>S&amp;S</b>						
Travel Administrative Cost	0	0	0	1,000	2,000	3,000
Single Audit	0	0	0	15,000	50,000	65,000
<b>A/C Total</b>	<b>0</b>	<b>0</b>	<b>36,284</b>	<b>79,344</b>	<b>72,000</b>	<b>\$ 187,627</b>
<b><u>COUNTY COUNSEL</u></b>						
Principal/Senior County Counsel (4)	241,041	180,210	20,000	0	10,000	451,251
Environmental Legal Services	44,500	40,000	0	0	0	84,500
<b>County Counsel Total</b>	<b>285,541</b>	<b>220,210</b>	<b>20,000</b>	<b>0</b>	<b>10,000</b>	<b>\$ 535,751</b>

**LA-RICS  
FY 2019-2020**

PROJECT TEAM	BTOP	UASI/SHSGP Funding	Member Funded JPA Operations	LTE Admin Cost	LMR Admin Cost	Yearly Costs (Salary & Employee Benefits)
<b><u>INTERNAL SERVICES DEPARTMENT (ISD)</u></b>						
Information Technology Manager III	124,219	116,732	0	4,676	10,000	255,627
Sr. Telecom Systems Engineer (3)	361,012	206,049	0	0	10,000	577,061
Supervising Telecom System Engineer	108,710	107,817	0	0	0	216,527
Communication Tower & Line Supervisor (2)	181,336	115,005	0	0	0	296,341
Sr. Electronics Communications Technician (2)	147,352	145,207	0	10,000	0	302,559
<b>ISD Total</b>	<b>922,629</b>	<b>690,810</b>	<b>0</b>	<b>14,676</b>	<b>20,000</b>	<b>\$ 1,648,115</b>
<b><u>LOS ANGELES COUNTY FIRE (FR)</u></b>						
Fire Captain (2)	200,626	237,026	0	0	4,348	442,000
Fire Fighter Specialist (2)	180,873	180,127	0	0	15,000	376,000
<b>FR Total</b>	<b>381,499</b>	<b>417,153</b>	<b>0</b>	<b>0</b>	<b>19,348</b>	<b>\$ 818,000</b>
<b><u>LOS ANGELES COUNTY SHERIFF (LASD)</u></b>						
<b>S&amp;EB</b>						
Lieutenant (1)	210,000	182,104	0	10,000	0	402,104
Sergeant (1)	151,587	159,580	0	0	7,877	319,044
Deputy (5)	621,466	521,511	0	28,534	0	1,171,511
<b>S&amp;EB Total</b>						<b>\$ 1,892,659</b>
<b>S&amp;S</b>						
Human Resources & Procurement Services	0	0	0	10,000	9,424	19,424
<b>LASD Total</b>	<b>983,053</b>	<b>863,195</b>	<b>0</b>	<b>48,534</b>	<b>17,301</b>	<b>\$ 1,912,083</b>
<b>Total</b>	<b>3,481,261</b>	<b>2,547,665</b>	<b>292,558</b>	<b>283,000</b>	<b>364,000</b>	<b>6,968,483</b>
<b>Total Budgeted Project Team for FY 19-20</b>						<b>\$ 6,968,483</b>
<b>* These Positions are Underfills</b>						



**LA-RICS  
FY 2019-2020**

<b>ADMIN AND OTHER CONTRACTORS</b>		<b>Maximum Contract Sum</b>	<b>Funding Source</b>
Executive Director		232,000	50% BTOP & 50% Member Funded JPA
MISC County Contracts ( DPW, CEO, CEO RED, RP, & ISD )		200,000	60% BTOP & 40% UASI/SHSGP
<b>Total Admin and Other Contractors</b>	<b>\$</b>	<b>432,000</b>	
<b>CONTRACTORS/CONSULTANTS</b>		<b>Maximum Contract Sum</b>	<b>Funding Source</b>
Project Construction Management		3,349,000	BTOP
		3,603,000	UASI 17
		3,250,000	UASI 18
Broadband Engineering		404,000	BTOP
		245,000	LTE Admin
		245,000	Member Funded
Telecommunications & Devices Contractors		20,436,000	BTOP
		31,060,000	UASI 17
		29,891,000	UASI 18
		4,248,000	LTE Equipment Payment
<b>Total Contractors/Consultants Services</b>	<b>\$</b>	<b>96,731,000</b>	
<b>MEMBER FUNDED JPA OPERATIONS</b>			<b>Funding Source</b>
Project Team		491,000	Member Funded
Travel & Training		40,000	Member Funded
Services & Supplies		60,000	Member Funded
Admin and Other Contractors		116,000	Member Funded
Miscellaneous		138,000	Member Funded
Capital Assets & Furniture		20,000	Member Funded
Other Charges		70,000	Member Funded
Lease & Other Services - Suite 100		120,000	Member Funded
Contractors/Consultants Services		245,000	Member Funded
<b>Total Member Funded JPA Operations</b>	<b>\$</b>	<b>1,300,000</b>	
<b>LMR ADMINISTRATIVE COST (MEMBER FUNDED)</b>			<b>Funding Source</b>
Project Team & Professional Consultants		614,000	Member Funded
Services, Supplies, Travel, lease & Misc		236,000	Member Funded
<b>Total LMR Administrative Cost</b>	<b>\$</b>	<b>850,000</b>	
<b>LTE ADMINISTRATIVE COST (MEMBER FUNDED)</b>			<b>Funding Source</b>
Project Team & Professional Consultants		528,000	Member Funded
Services, Supplies, Travel, lease & Misc		322,000	Member Funded
<b>Total LTE Administrative Cost</b>	<b>\$</b>	<b>850,000</b>	
<b>AT&amp;T Business Agreement Services</b>			<b>Funding Source</b>
Professional Consultants & Swap Services Providers		1,874,000	AT&T Business Agreement Services
<b>Total AT&amp;T Business Agreement Services</b>	<b>\$</b>	<b>1,874,000</b>	
<b>LTE Equipment Payment</b>			<b>Funding Source</b>
Telecommunications Contractor		4,248,000	LTE Equipment Payment
	<b>\$</b>	<b>4,248,000</b>	



## LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM AUTHORITY

2525 Corporate Place, Suite 100  
Monterey Park, California 91754  
Telephone: (323) 881-8291  
<http://www.la-rics.org>

SCOTT EDSON  
EXECUTIVE DIRECTOR

July 11, 2019

LA-RICS Board of Directors  
Los Angeles Regional Interoperable Communications System Authority (the "Authority")

Dear Directors:

### **APPROVE AMENDMENT NO. 37 FOR AGREEMENT NO. LA-RICS 008 FOR LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM PUBLIC SAFETY BROADBAND NETWORK**

#### **SUBJECT**

Board approval is requested to authorize the Executive Director to execute Amendment No. 37 to Agreement No. LA-RICS 008 (Agreement) for the Public Safety Broadband Network (PSBN) to include one (1) site as a potential buildable PSBN Round 2 Site; and to reconcile equipment for the PSBN Round 2 Sites, increasing the Maximum Contract Sum by \$20,254.

#### **RECOMMENDED ACTIONS**

It is recommended that your Board:

1. Make the following findings:
  - a. Find that the design, construction, implementation, operation, and maintenance of one (1) PSBN Site (Scholl Canyon [SCHCYN]) to be included as an additional potential buildable site to the 35 PSBN potential buildable sites that your Board has previously approved on January 24, 2019, from which twenty-six (26) PSBN Round 2 Sites will be selected, and execution of Amendment No. 37 to Agreement for the PSBN is categorically exempt from review under the California Environmental Quality Act (CEQA) pursuant to 14 Cal. Code Regs. §§ 15303, 15304, and 15332 for the reasons stated in this Board Letter and as noted in the record of the project.

**AGENDA ITEM I**

- b. Find that the reconciliation of certain equipment for the PSBN Round 2 sites is within the scope of the design, construction, implementation, operation, and maintenance of the PSBN at these twenty-six (26) Round 2 sites, which your Board previously found categorically exempt from review under CEQA pursuant to 14 Cal. Code Regs. §§ 15301, 15303, 15304, and/or 15332 on January 24, 2019.
2. Delegate authority to the Executive Director to execute Amendment No. 37, in substantially similar form to the Enclosed Amendment, which revises the Agreement to reflect the following:
  - a. Reconcile certain equipment for PSBN Round 2 Sites for a cost increase in the amount of \$20,254.
  - b. Increase the Maximum Contract Sum by \$20,254 from \$138,611,575 to \$138,631,829.
3. Delegate Authority to the Executive Director to execute Amendment No. 37, in substantially similar form to the Enclosed Amendment.

### **BACKGROUND**

On January 24, 2019, your Board approved Amendment No. 35 to the Agreement to extend the Term and expand the network to incorporate twenty-six (26) additional sites (collectively, "PSBN Round 2 Sites") in connection with the National Telecommunications and Information Administration (NTIA) and National Oceanic and Atmospheric Administration (NOAA) approval of the Authority's PSBN Round 2 Project Implementation Plan (PIP) objective to augment coverage. On June 11, 2019, your Board approved Amendment No. 36 to the Agreement to reconcile certain equipment for PSBN Round 2 sites.

### **PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION**

Approval of the recommended actions will authorize the Executive Director to execute Amendment No. 37 to revise the Agreement to include one (1) additional PSBN Round 2 Site into the site list of potential buildable sites; and reconcile certain equipment for PSBN Round 2 Sites, increasing the Maximum Contract Sum by \$20,254.

It is necessary to reconcile certain equipment (e.g. antennas, monopoles, etc.) to align with updated design requirements. Further reconciliations contemplate the inclusion of the SCHCYN site into the potential buildable sites.



## **ENVIRONMENTAL DOCUMENTATION**

Approval of the design, construction, implementation, operation, and maintenance of Site SCHCYN at which PSBN infrastructure may be installed is exempt from review under CEQA pursuant to 14 Cal. Code Regs. ("CEQA Guidelines") §§ 15303, 15304, and 15332. This determination is based on a detailed analysis of the site, available in the Authority's files, which demonstrates that the communication equipment proposed at the site (1) consists of construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures; and/or the conversion of existing small structures from one use to another where only minor modifications are made in the exterior of the structure (Guidelines § 15303); (2) consists of minor alterations in the condition of land, water, and/or vegetation, which do not involve removal of healthy, mature, scenic trees (Guidelines § 15304); and (3) qualifies as in-fill development (Guidelines § 15332). The analysis also demonstrates that none of the activities proposed at this site triggers any applicable exception to the identified categorical exemption(s). (Guidelines § 15300.2.). Specifically, the project would not impact any environmental resources of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state or local agencies. Further, the cumulative impact of successive projects of the same type in the same place over time would not be significant; there is no reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances; the project would not result in damage to scenic resources within a highway officially designated as a state scenic highway; the site is not located on a site included on any list compiled pursuant to Section 65962.5 of the Government Code; and the project would not cause a substantial adverse change in the significance of a historical resource.

With respect to the equipment reconciliation work, as the CEQA lead agency, the Authority determined on January 24, 2019, that design, construction, implementation, operation and maintenance of the PSBN at 35 potential buildable PSBN sites from which the 26 PSBN Round 2 Sites will be selected is exempt from review under CEQA pursuant to CEQA Guidelines §§ 15301, 15303, 15304, and/or 15332. Approval of reconciliation of certain equipment for the PSBN Round 2 sites is within the scope of the previously authorized activities, and the determination that these activities are exempt from CEQA remains unchanged. This determination is supported by substantial evidence in the custody of the Authority, which is incorporated in relevant part into the record of proceedings for the PSBN Round 2 site equipment reconciliation.

Upon the Board's approval of the recommended actions, the LA-RICS Authority will file a Notice of Exemption for Site SCHCYN with the County Clerk in accordance with Section 21152(b) of the California Public Resources Code and Section 15062 of the State CEQA Guidelines.

**FISCAL IMPACT/FINANCING**

The Work contemplated in Amendment No. 37 for PSBN Round 2 Work will increase the aggregate Maximum Contract Sum by \$20,254 from \$138,611,575 to \$138,631,829 and will be reimbursable under the Broadband Technology Opportunities Program (BTOP) grant.

**FACTS AND PROVISIONS/LEGAL REQUIREMENT**

The Authority's counsel has reviewed the recommended actions.

**CONCLUSION**

Upon the Board's approval of the recommended actions, on behalf of the Authority, the Executive Director will have authority to execute Amendment No. 37 with Motorola, substantially similar in form to the Enclosed.

Respectfully submitted,



SCOTT EDSON  
EXECUTIVE DIRECTOR

JA:rf:pdd

M:\MOTOROLA (LA-RICS 008)\2. Amendments\Draft\_Amendment 37\Draft\_LTE Amendment 37 Board Letter\_07-01-19.docx

Enclosures

cc: Counsel to the Authority

**AMENDMENT NUMBER THIRTY-SEVEN**  
**TO AGREEMENT NO. LA-RICS 008**  
**FOR**  
**LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM –**  
**PUBLIC SAFETY BROADBAND NETWORK**

Recitals

This Amendment Number Thirty-Seven (together with all exhibits, attachments, and schedules hereto, ("Amendment No. 37") is entered into by and between the Los Angeles Regional Interoperable Communications System Authority ("Authority") and Motorola Solutions, Inc. ("Contractor"), effective as of July \_\_\_\_\_, 2019 (the date executed by the Authority), based on the following recitals:

WHEREAS, Authority and Contractor have entered into that certain Agreement No. LA-RICS 008 for Los Angeles Regional Interoperable Communications System ("LA-RICS") – Public Safety Broadband Network (PSBN), dated as of March 6, 2014 (together with all exhibits, attachments, and schedules thereto, all as amended prior to the date hereof, the "Agreement").

WHEREAS, the Agreement has been previously amended by Amendment Number One, effective as of March 6, 2014, to exercise the Unilateral Option for all Work pertaining to Phase 1.

WHEREAS, the Agreement has been previously amended by Amendment Number Two, effective April 7, 2014, to (a) make changes necessary to reflect the Authority's exercise of the Unilateral Option for all Work pertaining to Phase 1 for Additive Alternate No. 1, System Design Work for the Home Subscriber Server ("HSS"), and all Work pertaining to Phase 1 for Additive Alternate No. 2, System Design Work for the Redundant Evolved Packet Core ("EPC"), and (b) to make other changes as reflected in Amendment No. 2.

WHEREAS, the Agreement has been previously amended by Amendment Number Three, effective June 20, 2014, to exercise the Unilateral Option for all Work pertaining to Phase 2, Site Construction and Site Modification, and Phase 3, Supply PSBN Components.

WHEREAS, the Agreement has been previously amended by Amendment Number Four, effective July 16, 2014, to exercise the Unilateral Option for all Work pertaining to (i) Phase 2 for Additive Alternate No. 1, Site Construction and Site Modification for the HSS, (ii) Phase 3 for Additive Alternate No. 1, Supply PSBN Components Work for the HSS, (iii) Phase 2 for Additive Alternate No. 2, Site Construction and Site Modification Work for the Redundant EPC, and (iv) Phase 3 for Additive Alternate No. 2, Supply PSBN Components Work for the Redundant EPC.

WHEREAS, the Agreement has been previously amended by Amendment Number Five, effective September 24, 2014, to exercise the Unilateral Option for all Work



pertaining to Phase 4, PSBN Implementation, including Phase 4 Work for Additive Alternate 1 (Home Subscriber Server) and Additive Alternate 2 (Redundant Evolved Packet Core), to install, optimize, test, commission, and deploy all or such portion of the PSBN as authorized by the Authority via notices to proceed, and to make other certain changes as reflected in Amendment No. 5.

WHEREAS, the Agreement has been previously amended by Amendment Number Six, effective October 3, 2014, to (a) make changes necessary to reflect the removal of three (3) PSBN Sites and all the Work and equipment associated with these PSBN Sites; (b) to make the changes necessary to reflect the replacement of undisguised antenna support structures to disguised antenna support structures at 32 PSBN Sites and all of the Work and equipment affected by these replacements; (c) to make other certain changes; and (d) to increase the Maximum Contract Sum by \$2,613,300 from \$175,583,275 to \$178,196,575.

WHEREAS, the Agreement has been previously amended by Amendment Number Seven, effective December 31, 2014, to (a) make changes necessary to reflect the replacement of undisguised antenna support structures with various types of antenna support structures at eight PSBN Sites and all of the Work and equipment affected by these replacements; (b) reconcile hose tower designs for 28 sites in Phase 2; and (c) to make other certain changes as reflected in Amendment No. 7.

WHEREAS, the Agreement has been previously amended by Amendment Number Eight, effective February 13, 2015, to (a) make changes necessary to reflect the removal of thirty-six (36) PSBN Sites and all the Work and equipment associated with the removal of these sites (b) make changes necessary to reflect the addition of six (6) PSBN Sites and all the Work and equipment associated with the addition of these sites and exercise the Unilateral Options for all Work pertaining to Phase 1 (System Design), Phase 2 (Site Construction and Site Modification), Phase 3 (Supply PSBN Components), and Phase 4 (PSBN Implementation) for these six (6) PSBN Sites; (c) reconcile hose tower installation and associated foundation costs for twenty-eight (28) PSBN Sites in Phase 2; (d) to reduce the Maximum Contract Sum by \$11,941,896 from \$178,196,575 to \$166,254,679; and (d) to make other certain changes reflected in Amendment No. 8.

WHEREAS, the Agreement has been previously amended by Amendment Number Nine, effective March 23, 2015, to (a) make changes necessary to reflect the removal of twenty-four (24) PSBN Sites and all the Work and equipment associated with the removal of these sites; (b) make changes necessary to reflect the addition of six (6) PSBN Sites and all the Work and equipment associated with the addition of these sites and exercise the Unilateral Options for all Work pertaining to Phase 1 (System Design), Phase 2 (Site Construction and Site Modification), Phase 3 (Supply PSBN Components), and Phase 4 (PSBN Implementation) for these six (6) PSBN Sites; (c) make changes necessary to reflect Phase 1 Work, site design visit for one (1) potential PSBN System Site; (d) to reduce the Maximum Contract Sum by \$7,324,405 from \$166,254,679 to \$158,930,274; and (e) to make certain other changes reflected in Amendment No. 9.

WHEREAS, the Agreement was previously amended by Amendment Number Ten, effective June 25, 2015, to (a) make changes necessary to remedy certain miscalculations reflected in Amendment No. 9 resulting in a reduction in the amount by \$280,622; (b) make changes necessary to reflect the inclusion of Phase 1 (System Design) Work for fifteen (15) Cell-on-Wheels (COWs) as set forth in Exhibit C (Schedule of Payments) attached to Amendment No. 10, and exercise the Unilateral Option for all Work Pertaining to Phase 1 (System Design) for the COWs in the amount of \$411,981; (c) make changes necessary to reflect construction restoration Work for thirty (30) PSBN Sites to return the sites to preconstruction conditions in the amount of \$2,321,257; (d) make changes necessary to reflect the inclusion of fiber optic equipment and related Work for the County of Los Angeles and the City of Los Angeles to allow for interconnectivity among the agencies and the PSBN in the amount of \$1,275,000; (e) to increase the Maximum Contract Sum by \$3,727,616 (\$4,008,238 - \$280,622) from \$158,930,274 to \$162,657,890; and (f) to make certain other changes as set forth in Amendment No. 10.

WHEREAS, the Agreement was previously amended by Amendment Number Eleven, effective July 16, 2015, to (a) make changes necessary to reflect the inclusion of one (1) PSBN Site and all Work and equipment associated with the addition of this site in the amount of \$336,081 as set forth in Exhibit C (Schedule of Payments) attached to this Amendment No. 11; (b) make changes necessary to reflect the inclusion of Phase 2 (Site Construction and Site Modification), Phase 3 (Supply PSBN Components), and Phase 4 (PSBN Implementation) Work for fifteen (15) COWs in the amount of \$3,244,880 as set forth in Exhibit C (Schedule of Payments) attached to this Amendment No. 11; (c) exercise the Unilateral Options for all Work Pertaining to Phase 1 (System Design) for one (1) PSBN Site (PASDNP) and Phase 2 (Site Construction and Site Modification), Phase 3 (Supply PSBN Components), and Phase 4 (PSBN Implementation) for the one (1) PSBN Site and the fifteen (15) COWs; and (d) to increase the Maximum Contract Sum by \$3,580,961 from \$162,657,890 to \$166,238,851. The parties acknowledged that the Maximum Contract Sum would be adjusted down accordingly in future amendments reducing the scope of the PSBN Project.

WHEREAS, the Agreement was previously amended by Amendment Number Twelve, effective August 13, 2015, to (a) account for the removal of forty-two (42) sites from the scope of the PSBN; (b) make changes necessary to reflect the removal of tower foundations from seven (7) PSBN Sites as part of construction restoration Work to return the sites to preconstruction conditions in the amount of \$37,607; (c) make changes necessary to include construction restoration Work for one (1) PSBN Site (LASDCVS) to return the site to preconstruction conditions in the amount of \$19,800; (d) make changes necessary to reflect the inclusion and purchase of 5,000 Universal Integrated Circuit Cards (UICC) in the amount of \$245,000; (e) make changes necessary to reflect the inclusion and purchase of five (5) CISCO routers and five (5) corresponding units of data service in the amount of \$17,500; (f) make changes necessary to reflect site construction changes in the amount of \$150,740 (g) make changes necessary to remedy certain miscalculations in cost in the amount of \$165,422; (h) make the changes necessary to reflect a cost reduction for forty-two (42) terminated PSBN Sites in the amount of \$12,989,223; (i) resulting in a reduction in the Maximum Contract Sum by \$12,353,154

(\$12,989,223 – \$636,069 when taking the above cost increases into consideration) from \$166,238,851 to \$153,885,697; and (j) to make other certain changes as set forth in Amendment No. 12.

WHEREAS, the Agreement was previously amended by Amendment Number Thirteen, effective September 4, 2015, to (a) account for the removal of seventy-seven (77) PSBN Sites from the scope of the PSBN; (b) account for the replacement of one (1) PSBN Site (LAPP001 replacing LAFD049) and the equipment and Work associated with the replacement of this site with an increased amount of \$404,053; (c) reconcile microwave equipment to align with the final backhaul design with an increased amount of \$813,381; (d) identify equipment for PSBN Sites that have since been dropped from the PSBN design where such equipment had already been ordered, manufactured and/or delivered and installed with an increased amount of \$10,727,207; (e) make changes necessary to reflect site construction changes with an increased amount of \$482,923; (f) make changes necessary to remedy certain miscalculations resulting in a cost reduction of \$25,854; (g) make changes necessary to reflect various site reconciliations and corresponding adjustments resulting in a cost reduction of \$6,304,207; (h) make changes necessary to reflect a cost reduction for seventy-seven (77) terminated PSBN Sites in the amount of \$30,511,394; (i) all actions decreasing the Maximum Contract Sum by \$24,413,891 (\$36,841,455 – \$12,427,564 when taking the above cost increases and reductions into consideration) from \$153,885,697 to \$129,471,804; and (j) to make other certain changes as set forth in Amendment No. 13.

WHEREAS, the Agreement was previously amended by Amendment Number Fourteen, effective October 9, 2015, to (a) reconcile spare equipment required for the continued operation and support of the PSBN for an increased amount of \$1,214,021; (b) reconcile equipment necessary for the fifteen (15) Cell-On-Wheels (COWs) for an increased amount of \$2,157,669; (c) make changes necessary to reflect site construction changes for an increased amount of \$80,220; (d) reconcile excess equipment for a decreased amount of \$24,229; and (e) all actions increasing the Maximum Contract Sum by \$3,427,681 (\$1,214,021 + \$2,157,669 + \$80,220 - \$24,229) from \$129,471,804 to \$132,899,485; and (e) to make other certain changes as set forth in the Amendment No. 14.

WHEREAS, the Agreement was previously amended by Amendment Number Fifteen, effective December 21, 2015, to settle the Contractor Claims, including the dispute over the project management fees and any and all other claims for additional compensation above the current Maximum Contract Sum that Contractor or its subcontractors may have against the Authority relating to any Work that has been performed or is required to be performed under the PSBN Agreement, increasing the Maximum Contract Sum by \$10,685,472 from \$132,899,485 to \$143,584,957.

WHEREAS, the Agreement was previously amended by Amendment Number Sixteen, effective March 15, 2016, to include all Work related to additional Radio Frequency (RF) Emissions testing at twelve (12) PSBN Sites increasing the Maximum Contract Sum by \$3,300 from \$143,584,957 to \$143,588,257.

WHEREAS, the Agreement was previously amended by Amendment Number Seventeen, effective May 4, 2016, to make the changes necessary to reflect the termination of Waterway Coverage Testing, Freeway Coverage Testing, Special Operational Testing, and PSBN Burn-In Testing, which decreased the Maximum Contract Sum by \$931,936, from \$143,588,257 to \$142,656,321.

WHEREAS, the Agreement was previously amended by Amendment Number Eighteen, effective August 31, 2016, to make changes necessary to (a) extend the Warranty Period until December 31, 2016, at no additional cost; (b) reflect the reconciliation of excess equipment for a decreased amount of \$600,502; (c) reflect the reconciliation of spare equipment for a decreased amount of \$768,027, (d) make changes necessary to reconcile the cost of LASDCVS to reflect costs for that were inadvertently omitted for construction Work performed that was not included as part of restoration and has not been paid to date for an increased amount of \$62,969, (e) make changes necessary to correct certain administrative errors for an increased amount of \$25,964; (f) to make other certain changes as set forth in the Amendment No. 18; and (g) decrease the Maximum Contract Sum by \$1,279,596,  $[(-\$600,502) + (-\$768,027) + \$62,969 + \$25,964]$ , when taking the above cost increases and reductions into consideration from \$142,656,321 to \$141,376,725.

WHEREAS, the Agreement was previously amended by Amendment Number Nineteen, effective December 21, 2016, to make changes necessary to (a) extend the Warranty Period until March 31, 2017, at no additional cost; (b) make changes necessary to upgrade the Authority's Deployable Vehicle (System on Wheels), which includes the requisite services, equipment, material, configuration, installation, provide backup power, antenna storage and mounts, fiber connectivity and backhaul services, and related Work to support Special Events for an increase in the amount of \$235,768; (c) reflect a reduction in Training as certain Training courses will not be provided to the Authority for a decrease in the amount of \$200,000; (d) reflect a reduction in Wide Area Coverage Testing as it is no longer necessary for a decrease in the amount of \$2,153,150; (e) reflect Optimization Work necessary to account for extended Optimization efforts for an increase in the amount of \$550,000; (f) to make other certain changes as set forth in this Amendment No. 19; and (g) decreasing the Maximum Contract Sum by \$1,567,382  $(\$235,768 - \$200,000 - \$2,153,150 + \$550,000)$ , when taking the cost increases and decreases into consideration, from \$141,376,725 to \$139,809,343.

WHEREAS, the Agreement was previously amended by Amendment Number Twenty, effective March 20, 2017, to make changes necessary to (a) reflect the relocation of certain equipment (towers, generator fuel tanks, tower hardware, etc.) from the Southern California Edison (SCE) Mesa Substation site to the County of Los Angeles Fire Departments Del Valle Training Facility as the original storage site is no longer available after April 15, 2017, for an increase in the amount of \$208,338; (b) make other certain changes as set forth in Amendment No. 20; and (c) increase the Maximum Contract Sum by \$208,338 from \$139,809,343 to \$140,017,681.

WHEREAS, the Agreement was previously amended by Amendment Number Twenty-One, effective March 20, 2017, to make changes necessary to (a) extend the

Warranty Period on a month-to-month basis, at no additional cost; (b) with the first month commencing on April 1, 2017, and expiring on April 30, 2017; and (c) agree and acknowledge that subsequent month-to-month Warranty Period extensions, if any, will be mutually agreed upon by both parties.

WHEREAS, the Agreement was previously amended by Amendment Number Twenty-Two, effective April 13, 2017, to make changes necessary to (a) revise Exhibit A (Statement of Work) to allow the Contractor to create Access Point Names (APNs) for the Authority's member agencies at a cost of \$977 per member agency, with a minimum of four (4) agencies to be deployed at a time, for a cost increase in the amount of \$3,908; (b) increasing the Maximum Contract Sum by \$3,908 from \$140,017,681 to \$140,021,589; and (c) make other certain changes as set forth in Amendment No. 22.

WHEREAS, the Agreement was previously amended by Amendment Number Twenty-Three, effective April 13, 2017, to (a) make changes necessary to extend the Warranty Period until May 31, 2017, at no additional cost; and (b) make other certain changes as set forth in Amendment No. 23.

WHEREAS, the Agreement was previously amended by Amendment Number Twenty-Four, effective May 18, 2017, to make changes necessary to (a) extend the Initial Term of the Agreement by exercising the first one-year Option Term for Maintenance Work under Phase 5 (PSBN Maintenance), commencing on June 1, 2017 and expiring on May 31, 2018, unless sooner terminated or extended, in whole or in part, in the amount of \$2,991,000 resulting in a cost decrease in the amount of \$2,964,683, when taking the currently contemplated first year Maintenance cost of \$5,955,683 into consideration; (b) exercise the Unilateral Option for the first one-year Option Term for Maintenance Work under Phase 5 (PSBN Maintenance); (c) revise Exhibit A (Statement of Work) to increase the scope of PSEN Work to allow the Contractor to assist the Authority with connecting its member agencies to the PSBN for a not-to-exceed cost increase in the amount of \$275,000; (d) decrease the Maximum Contract Sum by \$2,689,683 from \$140,021,589 to \$137,331,906 when taking the cost increases and decreases into consideration; and (e) make other certain changes as set forth in Amendment No. 24.

WHEREAS, the Agreement was previously amended by Amendment Number Twenty-Five, effective October 19, 2017, to make changes necessary to (a) revise Exhibit A (Statement of Work) and Exhibit B (PSBN Specifications) to reflect a reduction in the scope of certain Work related to Network Management System and Inventory Management System and a corresponding reduction in the cost in the amount of \$316,767; (b) reflect a reduction in the scope of certain Work related to Documentation and a corresponding reduction in the cost in the amount of \$68,515; (c) reflect a reduction in the scope of certain Work related to Additive Alternate No. 2 (Redundant Evolved Packet Core [EPC]) and a corresponding reduction in the cost in the amount of \$1,061,704; (d) reflect the removal of the scope of all Work related to Additive Alternate No. 3 (Location Services) and a corresponding reduction in the cost in the amount of \$2,592,246; (e) reflect a reduction in the scope of certain Work related to Cell on Wheels (COWs) and a corresponding reduction in the cost in the amount of \$129,977; (f) reflect

a reduction in the scope of certain Work related to Site Construction Changes and a corresponding reduction in the cost in the amount of \$14,046; (g) decrease the Maximum Contract Sum by \$4,183,255 from \$137,331,906 to \$133,148,651 when taking the cost decreases into consideration; and (h) make other certain changes as set forth in Amendment No. 25.

WHEREAS, the Agreement was previously amended by Amendment Number Twenty-Six, effective November 21, 2017, to make changes necessary to (a) reflect an increase and decrease in the scope of certain Work related to a certain Cell on Wheels (COWs) site (CHPNWHLL) resulting in a net increase in the cost in the amount of \$97,220; (b) reflect a reduction in the scope of certain Work related to Site Construction Changes and a corresponding reduction in the cost in the amount of \$33,674; (c) increase the Maximum Contract Sum by \$63,546 from \$133,148,651 to \$133,212,197 when taking the cost increases and decreases into consideration; and (d) make other certain changes in Amendment No. 26

WHEREAS, the Agreement was previously amended by Amendment Number Twenty-Seven, effective May 17, 2018, to make changes necessary to (a) extend the Initial Term of the Agreement by extending the first Option Term for Maintenance Work under Phase 5 (PSBN Maintenance) for an additional month, commencing on June 1, 2018 and expiring on June 30, 2018, unless sooner terminated or extended, in whole or in part, in the amount of \$195,306; (b) increase the Maximum Contract Sum by \$195,306 from \$133,212,197 to \$133,407,503 when taking the cost increase into consideration; and (c) make other certain changes as set forth in Amendment No. 27.

WHEREAS, the Agreement was previously amended by Amendment Number Twenty-Eight, effective June 27, 2018, to make changes necessary to (a) extend the Initial Term of the Agreement for an additional month, commencing on July 1, 2018 and expiring on July 31, 2018, unless sooner terminated or extended, in whole or in part; at no cost, with no obligation to Contractor to perform Maintenance Work or Services (b) make other certain changes as set forth in Amendment No. 28.

WHEREAS, the Agreement was previously amended by Amendment Number Twenty-Nine, effective July 26, 2018, to make changes necessary to (a) reflect a decrease in the scope of certain Work related to training for the Cell on Wheels (COWs) resulting in a net decrease in the cost in the amount of \$13,000; (b) reflect the removal of Phase 4 (PSBN Implementation) Work for a certain COW site (SCEMESA) and a corresponding reduction in the cost in the amount of \$8,345; (c) decrease the Maximum Contract Sum by \$21,345 from \$133,407,503 to \$133,386,158 when taking the cost decreases into consideration; and (d) make other certain changes as set forth in Amendment No. 29.

WHEREAS, the Agreement was previously amended by Amendment Number Thirty, effective July 31, 2018, to make changes necessary to (a) extend the Initial Term of the Agreement for an additional sixty (60) days commencing on August 1, 2018, and expiring on September 30, 2018, unless sooner terminated or extended, in whole or in



part; at no cost, with no obligation to Contractor to perform Maintenance Work or Services; and (b) make other certain changes as set forth in Amendment No. 30.

WHEREAS, the Agreement was previously amended by Amendment Number Thirty-One, effective September 25, 2018, to make changes necessary to (a) extend the Initial Term of the Agreement for an additional month, commencing on October 1, 2018, and expiring on October 31, 2018, unless sooner terminated or extended, in whole or in part; at no cost, with no obligation to Contractor to perform Maintenance Work or Services; and (b) make other certain changes as set forth in Amendment No. 31.

WHEREAS, the Agreement was previously amended by Amendment Number Thirty-Two, effective October 31, 2018, to make changes necessary to (a) extend the Initial Term of the Agreement for an additional thirty (30) days commencing on November 1, 2018, and expiring on November 30, 2018, unless sooner terminated or extended, in whole or in part; at no cost, with no obligation to Contractor to perform Maintenance Work or Services; and (b) make other certain changes as set forth in Amendment No. 32.

WHEREAS, the Agreement was previously amended by Amendment Number Thirty-Three, effective November 29, 2018, to make changes necessary to (a) extend the Initial Term of the Agreement for an additional thirty (30) days commencing on December 1, 2018, and expiring on December 31, 2018, unless sooner terminated or extended, in whole or in part; at no cost, with no obligation to Contractor to perform Maintenance Work or Services; and (b) make other certain changes as set forth in Amendment No. 33.

WHEREAS, the Agreement was previously amended by Amendment Number Thirty-Four, effective December 19, 2018, to make changes necessary to (a) extend the Initial Term of the Agreement for an additional thirty (30) days commencing on January 1, 2019, and expiring on January 31, 2019, unless sooner terminated or extended, in whole or in part; at no cost, with no obligation to Contractor to perform Maintenance Work or Services; and (b) make other certain changes as set forth in Amendment No. 34.

WHEREAS, the Agreement was previously amended by Amendment Number Thirty-Five, effective January 24, 2019, to make changes necessary to (a) extend the Initial Term of the Agreement commencing as of February 1, 2018; (b) perform all Work necessary to incorporate nine (9) additional PSBN Sites to be co-located at certain Land Mobile Radio (LMR) System Sites (collectively hereinafter, "PSBN Round 2 Collocation Sites"), into the scope of Phase 1 (System Design), Phase 2 (Site Construction and Site Modification), Phase 3 (Supply PSBN Components), and certain Work in Phase 4 (PSBN Implementation) as set forth in Exhibit A.1 (PSBN Round 2 Statement of Work & Specifications) for a cost increase in the amount of \$6,724,617 as set forth in Exhibit C.20 (PSBN Round 2 Collocation Sites Bill of Materials); (c) supply all PSBN Components for seventeen (17) PSBN Round 2 Urban Sites (as defined herein) for a cost increase in the amount of \$2,411,489 as set forth in Exhibit C.21 (PSBN Round 2 Urban Sites Bill of Materials); (d) reduce the Maximum Contract Sum for PSBN Work through Amendment No. 34 for a cost decrease of \$4,558,480 to account for certain equipment costs being shifted to PSBN Round 2; (e) exercise the Unilateral Options for all Work pertaining to

Phase 1 (System Design), Phase 2 (Site Construction and Site Modification), Phase 3 (Supply PSBN Components) and certain Work in Phase 4 (PSBN Implementation) for the 9 PSBN Round 2 Collocation Sites; (f) increase collectively the Maximum Contract Sum by \$4,577,627 for PSBN Round 2 Work increasing the aggregate Maximum Contract Sum from \$133,386,158 to \$137,963,785 as set forth in Exhibit C.1 (PSBN Payment Summary); and (g) make other certain changes as set forth in this Amendment No. 35.

WHEREAS, the Agreement was previously amended by Amendment Number Thirty-Six, effective \_\_\_\_\_, 2019, to make changes necessary to (a) reconcile certain PSBN Components for nine (9) PSBN Round 2 Collocation Sites for a cost increase in the amount of \$104,961 as set forth in Exhibit C.20 (PSBN Round 2 Collocation Sites Bill of Materials); (b) reconcile certain PSBN Components for seventeen (17) PSBN Round 2 Urban Sites for a cost increase in the amount of \$298,192 as set forth in Exhibit C.21 (PSBN Round 2 Urban Sites Bill of Materials); (c) shift certain equipment costs to PSBN Round 1 in the amount of \$244,637; (d) increase the Maximum Contract Sum for PSBN Round 1 by \$244,637; (e) increase the Maximum Contract Sum for PSBN Round 2 by \$403,153; (f) collectively increase the aggregate maximum contract sum by \$647,790 from \$137,963,785 to \$138,611,575; and (e) make other certain changes as set forth in this Amendment No. 36.

WHEREAS, the Authority and Contractor desire to further amend the Agreement pursuant to this Amendment No. 37 to make changes necessary to (a) reconcile certain PSBN Components for PSBN Round 2 Sites including at an additional potential site for a cost increase in the amount of \$20,254 as set forth in Exhibit C.21 (PSBN Round 2 Urban Sites Bill of Materials); (b) increase the Maximum Contract Sum for PSBN Round 2 by \$20,254; (c) collectively increase the aggregate maximum contract sum by \$20,254 from \$138,611,575 to \$138,631,829; and (d) make other certain changes as set forth in this Amendment No. 37.

WHEREAS, this Amendment No. 37 is authorized under Section 2 (Changes to Agreement) of the Agreement.

NOW THEREFORE, in consideration of the foregoing recitals, all of which are incorporated as part of this Amendment No. 37, and for other valuable consideration, the receipt and sufficiency of which are acknowledged, Authority and Contractor hereby agree as follows:

1. Capitalized Terms; Section References. Capitalized terms used herein without definition (including in the recitals hereto), have the meanings given to such terms in the Base Document. Unless otherwise noted, section references in this Amendment No. 37 refer to sections of the Base Document and its Exhibits, as amended by this Amendment No. 37.
2. Reconcile Certain PSBN Components for PSBN Round 2 Sites. The Authority and Contractor agree to reconcile certain PSBN Components for PSBN Round 2 Urban Sites to align with design requirements. The reconciled PSBN Components are reflected in Exhibit C.21 (PSBN Round 2 Urban Sites Bill of Materials) respectively.

3. Amendments to Base Document.

3.1 Section 8.1.1 (Maximum Contract Sum) of the Base Document is deleted in its entirety and replaced with the following:

8.1.1 Maximum Contract Sum

8.1.1.1 PSBN Through Amendment No. 37

The "Maximum Contract Sum" under this Agreement for the PSBN through Amendment No. 37 is One Hundred Thirty-Eight Million, Six Hundred and Thirty-One Thousand, Eight Hundred and Twenty-Nine Dollars (\$138,631,829) which includes the Contract Sum and all Unilateral Option Sums, as set forth in Exhibit C (Schedule of Payments).

8.1.1.2 PSBN Round 2

The "Maximum Contract Sum" under this Agreement for PSBN Round 2 is Nine Million, Five Hundred and Fifty-Nine Thousand, Five Hundred and Fourteen Dollars (\$9,559,514) which includes the Contract Sum and all Unilateral Option Sums, as set forth in Exhibit C (Schedule of Payments).

3.2 Section 24.4.1.2 within Section 24.4 (Limitation of Liability) of the Base Document is deleted in its entirety and replaced with the following:

24.4.1.2 PSBN Round 2

With respect to PSBN Round 2 Work, except for liability resulting from personal injury, harm to tangible property, or wrongful death, Contractor's total liability to the Authority, whether for breach of contract, warranty, negligence, or strict liability in tort, will be limited in the aggregate to direct damages no greater than 1.75 times the Maximum Contract Sum for PSBN Round 2, which is Seventeen Million, One Hundred and Fifty-Seven Thousand, Two Hundred and Sixty-Four Dollars (\$17,157,264). Notwithstanding the foregoing, Contractor shall not be liable to the Authority for any special, incidental, indirect, or consequential damages.

4. Amendments to Agreement Exhibits.

4.1 Exhibit C.1 (PSBN Payment Summary) of Exhibit C (Schedule of Payments) is deleted in its entirety and replaced with Exhibit C.1 (PSBN Payment

Summary) to Exhibit C (Schedule of Payments), to reflect a reconciliation of certain PSBN Components, which is attached to this Amendment No. 37, and is incorporated herein by this reference.

- 4.2 Exhibit C.21 (PSBN Round 2 Urban Sites Bill of Materials) of Exhibit C (Schedule of Payments) is deleted in its entirety and replaced with Exhibit C.21 (PSBN Round 2 Urban Sites Bill of Materials) to Exhibit C (Schedule of Payments), to reflect a reconciliation of certain PSBN Components for PSBN Round 2 Collocation Sites, which is attached to this Amendment No. 37, and is incorporated herein by this reference.
5. This Amendment No. 37 shall become effective as of the date identified in the recitals, which is the date upon which:
  - 5.1 An authorized agent of Contractor has executed this Amendment No. 37;
  - 5.2 Los Angeles County Counsel has approved this Amendment No. 37 as to form;
  - 5.3 The Board of Directors of the Authority has authorized the Executive Director of the Authority to execute this Amendment No. 37; and
  - 5.4 The Executive Director of the Authority has executed this Amendment No. 37.
6. Except as expressly provided in this Amendment No. 37, all other terms and conditions of the Agreement shall remain the same and in full force and effect.
7. Contractor and the person executing this Amendment No. 37 on behalf of Contractor represent and warrant that the person executing this Amendment No. 37 for Contractor is an authorized agent who has actual authority to bind Contractor to each and every term and condition of this Amendment No. 37, and that all requirements of Contractor to provide such actual authority have been fulfilled.
8. This Amendment No. 37 may be executed in one or more original or facsimile counterparts, all of which when taken together shall constitute one in the same instrument.

\* \* \*

**AMENDMENT NUMBER THIRTY-SEVEN  
TO AGREEMENT NO. LA-RICS 008  
FOR  
LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM –  
PUBLIC SAFETY BROADBAND SYSTEM**

IN WITNESS WHEREOF, the parties hereto have caused this Amendment No. 37 to be executed on their behalf by their duly authorized representatives, effective as of the date first set forth above.

LOS ANGELES REGIONAL  
INTEROPERABLE COMMUNICATIONS  
SYSTEM AUTHORITY

MOTOROLA SOLUTIONS, INC.

By: \_\_\_\_\_

Scott Edson  
Executive Director

By: \_\_\_\_\_

Norm Folger  
Motorola Project Director

APPROVED AS TO FORM FOR THE  
LOS ANGELES REGIONAL  
INTEROPERABLE COMMUNICATIONS  
SYSTEM AUTHORITY:

MARY C. WICKHAM  
County Counsel

By: \_\_\_\_\_

Truc L. Moore  
Principal Deputy County Counsel

## SCHEDULE OF PAYMENTS

### EXHIBIT C.1 - PSBN PAYMENT SUMMARY

Description	Unilateral Option Sum	Contract Sum - Full Payable Amount	10% Holdback Amount	Payment Less 10% Holdback Amount
<b>PSBN WORK (THROUGH AMENDMENT NO. 36)</b>				
Phase 1 - System Design <sup>(Note 4)</sup>	\$ -	\$ 14,460,588	\$ 1,206,987	\$ 13,253,601
Phase 2 - Site Construction and Site Modification <sup>(Note 4)</sup>	\$ -	\$ 19,861,888	\$ 1,939,956	\$ 17,921,932
Phase 3 - Supply PSBN Components	\$ -	\$ 21,754,297	\$ 2,046,410	\$ 19,707,887
Phase 4 - PSBN Implementation	\$ -	\$ 7,181,025	\$ 708,966	\$ 6,472,059
<b>Subtotal (Phases 1 to 4)</b>	<b>\$ -</b>	<b>\$ 63,257,798</b>	<b>\$ 5,902,319</b>	<b>\$ 57,355,479</b>
Phase 5 - PSBN Maintenance (Year 1 Option Term)	\$ -	\$ 2,991,000	\$ -	\$ 2,991,000
Phase 5 - PSBN Maintenance Extension (June 30, 2018)	\$ -	\$ 195,306	\$ -	\$ 195,306
Phase 5 - PSBN Maintenance (Years 2 through 5)	\$ 26,414,061	\$ -	\$ 2,641,406	\$ 23,772,655
<b>Subtotal (Phases 1 to 5)</b>	<b>\$ 26,414,061</b>	<b>\$ 66,444,104</b>	<b>\$ 8,543,725</b>	<b>\$ 84,314,440</b>
Additive Alternate 1 - Home Subscriber Server (HSS) <sup>(Notes 1, 2, 3)</sup>	\$ -	\$ 960,888	\$ 96,089	\$ 864,799
Additive Alternate 2 - Redundant Evolved Packet Core <sup>(Notes 1, 2, 3)</sup>	\$ -	\$ 2,519,662	\$ 251,967	\$ 2,267,695
Additive Alternate 3 - Location Services	\$ -	\$ -	\$ -	\$ -
Maintenance for Additive Alternates 1 to 3 (First 5 Years of Maintenance)	\$ 6,166,090	\$ -	\$ 616,609	\$ 5,549,481
<b>Subtotal (Additive Alternates)</b>	<b>\$ 6,166,090</b>	<b>\$ 3,480,550</b>	<b>\$ 964,665</b>	<b>\$ 8,681,975</b>
<b>Total ([Phases 1-5] + Additive Alternates)</b>	<b>\$ 32,580,151</b>	<b>\$ 69,924,654</b>	<b>\$ 9,508,390</b>	<b>\$ 92,996,415</b>
<b>CELL-ON-WHEELS (COW) WORK</b>				
Phase 1 Work for 15 Cell-on-Wheels (COWs)	\$ -	\$ 411,713	\$ 41,149	\$ 370,563
Phase 2 Work for 15 Cell-on-Wheels (COWs)	\$ -	\$ 1,800,330	\$ 180,045	\$ 1,620,286
Phase 3 Work for 15 Cell-on-Wheels (COWs)	\$ -	\$ 3,452,895	\$ 338,067	\$ 3,114,828
Phase 4 Work for 15 Cell-on-Wheels (COWs)	\$ -	\$ 95,485	\$ 9,555	\$ 85,930
<b>OTHER WORK</b>				
Restoration Work	\$ -	\$ 2,378,664	\$ -	\$ 2,378,664
Fiber Optic Equipment and Related Work	\$ -	\$ 1,275,000	\$ 127,500	\$ 1,147,500
Site Construction Changes	\$ -	\$ 666,163	\$ 66,616	\$ 599,535
Claims Settlement	\$ -	\$ 15,764,246	\$ -	\$ -
LA-RICS Deployable Vehicle Readiness Upgrade and Related Work	\$ -	\$ 235,768	\$ 23,577	\$ 212,191
LA-RICS PSBN - Equipment Relocation	\$ -	\$ 208,338	\$ -	\$ 208,338
LA-RICS Public Safety Enterprise Network (PSEN) Services	\$ -	\$ 278,908	\$ -	\$ -
<b>Total for PSBN Round 1 Work</b>	<b>\$ 32,580,151</b>	<b>\$ 96,492,164</b>	<b>\$ 10,294,899</b>	<b>\$ 102,734,250</b>



## SCHEDULE OF PAYMENTS

### EXHIBIT C.1 - PSBN PAYMENT SUMMARY

Description	Unilateral Option Sum	Contract Sum - Full Payable Amount	10% Holdback Amount	Payment Less 10% Holdback Amount
<b>PSBN ROUND 2 WORK</b> (Note 5)				
<b>PSBN Round 2 Collocation Sites:</b>				
Performance Bond	\$ -	\$ 28,233	\$ -	\$ 28,233
Project Schedule	\$ -	\$ 159,537	\$ 15,954	\$ 143,583
Phase 1 Work	\$ -	\$ 555,480	\$ 55,548	\$ 499,932
Phase 2 Work	\$ -	\$ 1,342,935	\$ 134,294	\$ 1,208,642
Phase 3 Equipment	\$ -	\$ 3,101,759	\$ -	\$ 3,101,759
Phase 3 - Spare Equipment	\$ -	\$ 928,765	\$ -	\$ 928,765
Phase 4 Work	\$ -	\$ 712,870	\$ 71,287	\$ 641,583
<b>Subtotal PSBN Round 2 Collocation Sites (Phases 1 - 4)</b>	<b>\$ -</b>	<b>\$ 6,829,579</b>	<b>\$ 277,083</b>	<b>\$ 6,552,497</b>
<b>PSBN Round 2 Urban Sites:</b>				
Phase 3 Equipment		\$ 2,729,935	\$ -	\$ 2,709,681
<b>Subtotal for PSBN Round 2 Urban Sites</b>	<b>\$ -</b>	<b>\$ 2,729,935</b>	<b>\$ -</b>	<b>\$ 2,709,681</b>
<b>Total for PSBN Round 2 Work</b>	<b>\$ -</b>	<b>\$ 9,559,514</b>	<b>\$ 277,083</b>	<b>\$ 9,262,178</b>
<b>TOTAL CONTRACT SUM</b>	<b>\$106,051,678</b>			
<b>MAXIMUM CONTRACT SUM</b> (Total Unilateral Option Sum + Total Contract Sum)	<b>\$138,631,829</b>			

\* The Authority will authorize payment to Contractor for the amount of the applicable invoices less ten percent (10%) as Holdback for each deliverable under Exhibit A (Statement of Work) and Exhibit B (PSBN Specifications), however not all deliverables (i.e. insurance, bonds) in the Exhibit C, Schedule of Payments, will be subject to a 10% holdback.

Note 1: Pursuant to Amendment No. 2, effective April 7, 2014, the Authority exercised the Unilateral Option Sum for Phase 1 for both Additive Alternate No. 1, System Design for the Home Subscriber Server (HSS), and Additive Alternate No. 2, System Design for the Redundant Evolved Packet Core (EPC). In connection therewith, the Unilateral Option Sum for System Design for Phase 1 for both Additive Alternate No. 1 and Additive Alternate No. 2, in a total amount of \$359,044 was converted into a Contract Sum. The cost for the System Design for Phase 1 for both Additive Alternate No. 1 and Additive Alternate No. 2 are reflected in Exhibit C. 7 (Additive Alternates) as amended and restated in Amendment No. 2. The balance of the remaining Unilateral Option Sum for Additive Alternate No. 1 and Additive Alternate No. 2 is reflected in Exhibit C.7 (Additive Alternates).

Note 2: Pursuant to Amendment No. 4, effective July 16, 2014, the Authority exercised the Unilateral Option Sum for all Work pertaining to (i) Phase 2 for Additive Alternate No. 1, Site Construction and Site Modification for Home Subscriber Server (HSS), (ii) Phase 3 for Additive Alternate No. 1, Supply PSBN Components for the HSS, (iii) Phase 2 for Additive Alternate No. 2, Site Construction and Site Modification for the Redundant Evolved Packet Core (EPC), and (iv) Phase 3 for Additive Alternate No. 2, Supply PSBN Components for the Redundant EPC. In connection therewith, the Unilateral Option Sum for (i) Phase 2 for Additive Alternate No. 1, Site Construction and Site Modification for the HSS, (ii) Phase 3 for Additive Alternate No. 1, Supply PSBN Components for the HSS, (iii) Phase 2 for Additive Alternate No. 2, Site Construction and Site Modification for the Redundant Evolved Packet Core (EPC), and (iv) Phase 3 for Additive Alternate No. 2, Supply PSBN Components for the Redundant EPC; all in a total amount of \$2,962,648 was converted into a Contract Sum. The cost for the Site Construction and Site Modification for Phase 2 for both Additive Alternate No. 1 and Additive Alternate No. 2 are reflected in Exhibit C. 7 (Additive Alternates) as amended and restated in Amendment No. 4. The cost for Supplying PSBN Components for both Additive Alternate No. 1 and Additive Alternate No. 2 are reflected in Exhibit C.7 (Additive Alternates) as amended and restated in Amendment No. 4. The balance of the remaining Unilateral Option Sum for Additive Alternate No. 1 and Additive Alternate No. 2 is reflected in Exhibit C.7 (Additive Alternates).

## SCHEDULE OF PAYMENTS

### EXHIBIT C.1 - PSBN PAYMENT SUMMARY

Description	Unilateral Option Sum	Contract Sum - Full Payable Amount	10% Holdback Amount	Payment Less 10% Holdback Amount
-------------	--------------------------	--	------------------------	--

**Note 3:** Pursuant to Amendment No. 5, effective September 24, 2014, the Authority exercised the Unilateral Option Sum for all Work pertaining to (i) Phase 4 for Additive Alternate No. 1, PSBN Implementation Work for Home Subscriber Server (HSS), and (ii) Phase 4 for Additive Alternate No. 2, PSBN Implementation Work for the Redundant Evolved Packet Core (EPC). In connection therewith, the Unilateral Option Sum for (i) Phase 4 for Additive Alternate No. 1, PSBN Implementation Work for the HSS, and (ii) Phase 4 for Additive Alternate No. 2, PSBN Implementation Work for the Redundant EPC; all in a total amount of \$1,184,562 was converted into a Contract Sum. The cost for the PSBN Implementation Work for Phase 4 for both Additive Alternate No. 1 and Additive Alternate No. 2 are reflected in Exhibit C. 7 (Additive Alternates) as amended and restated in Amendment No. 5. The cost for PSBN Implementation Work for both Additive Alternate No. 1 and Additive Alternate No. 2 are reflected in Exhibit C.7 (Additive Alternates) as amended and restated in Amendment No. 5. The balance of the remaining Unilateral Option Sum for Additive Alternate No. 1 and Additive Alternate No. 2 is reflected in Exhibit C.7 (Additive Alternates).

**Note 4:** Pursuant to Amendment No. 7, effective December 31, 2014, credits for Phases 1 and 2 were realized in the amount of \$1,005,807. However, the cost for power load studies in Phase 1 in the amount of \$12,444 was taken from the Credits. The remaining Credit balance of \$991,585 is reserved for use for a future replacement site(s).

**Note 5:** Pursuant to Amendment No. 35, the Agreement was amended to reflect the inclusion of PSBN Round 2 Work.

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.1 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 1 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
<b>eNB Urban Site Equipment</b>								
Ericsson	Ericsson,UCBB6630LTE,...,NON-COMM BASEBAND 6630,LTE,...COMBINED UNIT/BASEBAND 6630 WITH FAN (included in CEQ 20548)	INF 903 6083/02	NA	NA	1	\$ 13,075.40	\$ 14,382.93	\$ 14,382.93
Ericsson	CABLE WITH CONNECTOR/POWER CABLE	RPM777528/10000	NA	NA	1	\$ 48.18	\$ 53.00	\$ 53.00
Ericsson	CABLE WITH CONNECTOR/GROUNDING CABLE	RPM777567/02500	NA	NA	1	\$ 81.03	\$ 89.13	\$ 89.13
Ericsson	RBS 6601 RJ-45 Cable	TSR4820211/2400	NA	NA	1	\$ 42.55	\$ 51.25	\$ 51.25
Ericsson	IDLe cable (1000 mm)	RPM777417/01000	NA	NA	1	\$ 319.74	\$ 351.71	\$ 351.71
Ericsson	IDLe cable (1800 mm)	RPM777417/01800	NA	NA	1	\$ 330.69	\$ 363.76	\$ 363.76
Ericsson	IDLe cable (3000 mm)	RPM777417/03000	NA	NA	1	\$ 387.63	\$ 426.39	\$ 426.39
Ericsson	Radio 4478 B14 (700MHz), 20W HWAC incl.	INF 903 6056/N14	NA	NA	3	\$ 7,923.42	\$ 8,715.76	\$ 26,147.29
Ericsson	LTE-FDD Cell Carrier 10MHz Bandwidth HWAC (per RU)	INF 901 6000/HAF6*	NA	NA	3	\$ 238.71	\$ 262.58	\$ 787.74
Ericsson	Output Power HWAC 20W incr.steps (per RU)	INF 903 9999/HR01	NA	NA	7	\$ 194.91	\$ 214.40	\$ 1,500.81
Ericsson	Baseband R503, Auxillary Mux Unit	INF 901 6000/DXM2	NA	NA	3	\$ 1,780.47	\$ 1,958.52	\$ 5,875.55
Ericsson	INH8010026/1,GPS-TMG-HR-26NCM,...,GPS Ant 1575.42MHz 26dB Nf,Collar,Mount,,	INH8010026/1	NA	NA	1	\$ -	\$ -	\$ -
Ericsson	External Alarm Cable	RPM919664/15000	NA	NA	1	\$ 41.77	\$ 45.95	\$ 45.95
Ericsson	Signal Cable	RPM77701/00180	NA	NA	1	\$ 6.57	\$ 7.23	\$ 7.23
Ericsson	OVP Kit	NTB101242/2	NA	NA	9	\$ 30.22	\$ 33.24	\$ 299.20
Ericsson	SAU Kit	NTB101242/1	NA	NA	3	\$ 420.71	\$ 462.78	\$ 1,388.34
Ericsson	SFP, SMD, 2.5Gbps High Temp	RDH10247/25	NA	NA	9	\$ 33.17	\$ 36.48	\$ 328.36
Ericsson	MOUNTING KIT (MK wall brackets long)	SXK1250247/1	NA	NA	3	\$ 43.37	\$ 47.71	\$ 143.13
Purcell	KIT,FLXWS,14"H PLINTH,ATT,2-3112	2000003132	NA	NA	1	\$ 469.76	\$ 516.73	\$ 516.73
Purcell	Description: FLX21-2520,130W HEX,HTR,100A DIST	2000004800	NA	NA	1	\$ 6,215.68	\$ 7,486.79	\$ 7,486.79
<b>Lines and Antennas equipment</b>								
Quintel	8' 65 degree 8-Port Multi-band antenna - 700/850/PCS-WCS w/ Band 14	QS8658-3e	NA	NA	6	\$ 2,956.50	\$ 3,252.15	\$ 19,512.90
Raycap Inc.	Outdoor-rated Enclosure with,Strikesorb Protection for 12,Remote Radios; Mounting at,the base station or,rooftop	DC12-48-60-0-25E	NA	NA	1	\$ 1,719.15	\$ 1,891.07	\$ 1,891.07
Raycap Inc.	Dome Encl Design w/Strikesorb,Protection for (9) -48V thru,-60VDC RRRH; Tower top,Installed; low let-through of,-160vdc; incl pole mint hw	DC9-48-60-18-8C-EV	NA	NA	3	\$ 1,998.00	\$ 2,406.59	\$ 7,219.77
<b>DC Power Plant and Battery Back Up (BBU) equipment</b>								
	Reserved							
Vertiv	NF16W512WNCUWNOSLIDEBATTDRAWER	F2016064	NA	NA	1	\$ -	\$ -	\$ -

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.1 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 1 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
Vertiv	ATT POWER CABINET, 48V,	F1011032	NA	NA	1	\$ 5,790.36	\$ 6,369.40	\$ 6,369.40
Vertiv	PWR SYS,-48/+24V, NETSURE 512NGBB	582137000ZZ007	NA	NA	1	\$ 3,772.28	\$ 4,149.50	\$ 4,149.50
Vertiv	CB,HYD MAG,1P,5A,80VDC,SPDT	102274	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	CB,HYD MAG,1P,25A,80VDC,SPDT	102278	NA	NA	3	\$ 11.11	\$ 12.23	\$ 36.68
Vertiv	CB,HYD MAG,1P,50A,80VDC,SPDT	102282	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	Rectifier, eSure, 48VDC, 2000W, 1RU	1R482000E3	NA	NA	8	\$ 152.64	\$ 167.91	\$ 1,343.26
NORTH STAR	Battery String (48V)	NSB170FTRED0044	NA	NA	3	\$ 2,330.88	\$ 2,330.88	\$ 6,992.64
<b>Power Telco</b>								
Kohler	Generator 24/72 Hour	20REOZK	1002584	SGM32C9VT	1	\$ -	\$ -	\$ -
	Reserved							
	Reserved							
Pantrol	PanLock Single phase	PL-PLM00	NA	NA	1	\$ 509.00	\$ 613.09	\$ 613.09
MSI / LA-RICS	CAC Configuration AC/Transfer Switch Cabinet (PPC)	CAC-A45201190P	1002925	1155697-150213-014	1	\$ 6,724.00	\$ 6,724.00	\$ 6,724.00
Pentair	Fiber Hframe Cabinet - 30x24 A30248HCLO	A30248HCLO	NA	NA	1	\$ 254.04	\$ 279.44	\$ 279.44
Talley	Standard Hframe	NA	NA	NA	1	N/A	N/A	N/A
<b>Tower Equipment</b>								
Valmont	TRIPLE T-ARM KIT FOR 12 ANTENNAS WITH REINFORCEMENT	RMV12-496 and PRK-1245	N/A	N/A	1	\$ 3,144.00	\$ 3,786.95	\$ 3,786.95
Valmont	70' MONOPOLE - 69' POLE WITH 1' FOUNDATION	TBD	N/A	N/A	1	\$ 22,126.00	\$ 26,650.77	\$ 26,650.77
Valmont	2' DISH MOUNT KIT	UGLM, FMA1, P472	N/A	N/A	1	\$ 443.00	\$ 533.59	\$ 533.59
	Reserved							
	Reserved							
Valmont	STRUCTURAL ANALYSIS AND DRAWING	TBD	N/A	N/A	1	\$ 400.00	\$ 460.00	\$ 460.00
Valmont	FOUNDATION DESIGN PER CUSTOMER FURNISHED SOILS REPORT	TBD	N/A	N/A	1	\$ 600.00	\$ 690.00	\$ 690.00
Valmont	FREIGHT COSTS, WITH UNLOADING OF TRUCK	NA	N/A	N/A	1	\$ 4,200.00	\$ 4,200.00	\$ 4,200.00
Valmont	FREIGHT COSTS, ANCHOR STEEL FREIGHT SHIPPED DIRECT FROM SUPPLIER	NA	N/A	N/A	1	\$ 350.00	\$ 350.00	\$ 350.00
<b>Roof Top - Indoor - MISC eNB Equipment</b>								
Arrow	FIBER JUMPER SM LC/LC 2MTR	900S-2M-LC	NA	NA	12	\$ 10.95	\$ 12.05	\$ 144.54
CommScope	FIBER CABLE ASSEMBLY 2 SM, 7.5M	FJ-2SM-015-7.5M	NA	NA	3	\$ 58.99	\$ 64.89	\$ 194.66
<b>Warehouse Equipment</b>								
MSI	Storage of purchased equipment (12 Months)				1	\$ 6,450.00	\$ 7,417.50	\$ 7,417.50
<b>Urban Site 1 - Phase 3 Total:</b>								<b>\$ 159,829.50</b>

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.2 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 2 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
<b>eNB Urban Site Equipment</b>								
Ericsson	Ericsson,UCBB6630LTE,...,NON-COMM BASEBAND 6630,LTE,...COMBINED UNIT/BASEBAND 6630 WITH FAN (included in CEQ 20548)	INF 903 6083/02	NA	NA	1	\$ 13,075.40	\$ 14,382.93	\$ 14,382.93
Ericsson	CABLE WITH CONNECTOR/POWER CABLE	RPM777528/10000	NA	NA	1	\$ 48.18	\$ 53.00	\$ 53.00
Ericsson	CABLE WITH CONNECTOR/GROUNDING CABLE	RPM777567/02500	NA	NA	1	\$ 81.03	\$ 89.13	\$ 89.13
Ericsson	RBS 6601 RJ-45 Cable	TSR4820211/2400	NA	NA	1	\$ 42.55	\$ 51.25	\$ 51.25
Ericsson	IDLe cable (1000 mm)	RPM777417/01000	NA	NA	1	\$ 319.74	\$ 351.71	\$ 351.71
Ericsson	IDLe cable (1800 mm)	RPM777417/01800	NA	NA	1	\$ 330.69	\$ 363.76	\$ 363.76
Ericsson	IDLe cable (3000 mm)	RPM777417/03000	NA	NA	1	\$ 387.63	\$ 426.39	\$ 426.39
Ericsson	Radio 4478 B14 (700MHz), 20W HWAC incl.	INF 903 6056/N14	NA	NA	3	\$ 7,923.42	\$ 8,715.76	\$ 26,147.29
Ericsson	LTE-FDD Cell Carrier 10MHz Bandwidth HWAC (per RU)	INF 901 6000/HAF6*	NA	NA	3	\$ 238.71	\$ 262.58	\$ 787.74
Ericsson	Output Power HWAC 20W incr.steps (per RU)	INF 903 9999/HR01	NA	NA	7	\$ 194.91	\$ 214.40	\$ 1,500.81
Ericsson	Baseband R503, Auxiliary Mux Uni	INF 901 6000/DXM2	NA	NA	3	\$ 1,780.47	\$ 1,958.52	\$ 5,875.55
Ericsson	INH8010026/1,GPS-TMG-HR-26NCM,...,GPS Ant 1575.42MHz 26dB Nf,Collar,Mount,,	INH8010026/1	NA	NA	1	\$ -	\$ -	\$ -
Ericsson	External Alarm Cable	RPM919664/15000	NA	NA	1	\$ 41.77	\$ 45.95	\$ 45.95
Ericsson	Signal Cable	RPM77701/00180	NA	NA	1	\$ 6.57	\$ 7.23	\$ 7.23
Ericsson	OVP Kit	NTB101242/2	NA	NA	9	\$ 30.22	\$ 33.24	\$ 299.20
Ericsson	SAU Kit	NTB101242/1	NA	NA	3	\$ 420.71	\$ 462.78	\$ 1,388.34
Ericsson	SFP, SMD, 2.5Gbps High Temp	RDH10247/25	NA	NA	9	\$ 33.17	\$ 36.48	\$ 328.36
Ericsson	MOUNTING KIT (MK wall brackets long)	SXX1250247/1	NA	NA	3	\$ 43.37	\$ 47.71	\$ 143.13
Purcell	KIT,FLXWS,14"H PLINTH,ATT,2-3112	2000003132	NA	NA	1	\$ 469.76	\$ 516.73	\$ 516.73
Purcell	Description: FLX21-2520,130W HEX,HTR,100A DIST	2000004800	NA	NA	1	\$ 6,215.68	\$ 6,837.25	\$ 6,837.25
<b>Lines and Antennas equipment</b>								
Quintel	8' 65 degree 8-Port Multi-band antenna - 700/850/PCS-WCS w/ Band 14	QS8658-3e	NA	NA	6	\$ 2,956.50	\$ 3,252.15	\$ 19,512.90
Raycap Inc.	Outdoor-rated Enclosure with,Strikesorb Protection for 12,Remote Radios; Mounting at,the base station or,rooftop	DC12-48-60-0-25E	NA	NA	1	\$ 1,719.15	\$ 1,891.07	\$ 1,891.07
Raycap Inc.	Dome Encl Design w/Strikesorb,Protection for (9) -48V thru,-60VDC RRH; Tower top,Installed; low let-through of,-160vdc; incl pole mnt hw	DC9-48-60-18-8C-EV	NA	NA	3	\$ 1,998.00	\$ 2,406.59	\$ 7,219.77
<b>DC Power Plant and Battery Back Up (BBU) equipment</b>								
	Reserved							
Vertiv	NF16W512WNCUWNOSLIDEBATTDRAWER	F2016064	NA	NA	1	\$ -	\$ -	\$ -

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.2 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 2 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
Vertiv	ATT POWER CABINET, 48V,	F1011032	NA	NA	1	\$ 5,790.36	\$ 6,369.40	\$ 6,369.40
Vertiv	PWR SYS,-48/+24V, NETSURE 512NGBB	582137000ZZ007	NA	NA	1	\$ 3,772.28	\$ 4,149.50	\$ 4,149.50
Vertiv	CB,HYD MAG,1P,5A,80VDC,SPDT	102274	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	CB,HYD MAG,1P,25A,80VDC,SPDT	102278	NA	NA	3	\$ 11.11	\$ 12.23	\$ 36.68
Vertiv	CB,HYD MAG,1P,50A,80VDC,SPDT	102282	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	Rectifier, eSure, 48VDC, 2000W, 1RU	1R482000E3	NA	NA	8	\$ 152.64	\$ 167.91	\$ 1,343.26
NORTH STAR	Battery String (48V)	NSB170FTRED0044	NA	NA	3	\$ 2,330.88	\$ 2,330.88	\$ 6,992.64
<b>Power Teleo</b>								
Kohler	Generator 24/72 Hour	20REOZK	1002849	SGM32C9TX	1	\$ -	\$ -	\$ -
	Reserved							
	Reserved							
Pantrol	PanLock Single phase	PL-PLM00	NA	NA	1	\$ 509.00	\$ 613.09	\$ 613.09
MSI / LA-RICS Excess	CAC Configuration AC/Transfer Switch Cabinet (PPC)	CAC-A45201190P	1002926	1155697-150213-015	1	\$ 6,724.00	\$ 6,724.00	\$ 6,724.00
Pentair	TYPE 3R ENCLOSURE W/LIFT-OFF	A30248HCLO	NA	NA	1	\$ 254.04	\$ 279.44	\$ 279.44
Talley	Standard Hframe	NA	NA	NA	1	N/A	N/A	N/A
<b>Tower Equipment</b>								
Valmont	TRIPLE T-ARM KIT FOR 12 ANTENNAS WITH REINFORCEMENT	RMV12-496 and PRK-1245	N/A	N/A	1	\$ 3,144.00	\$ 3,786.95	\$ 3,786.95
Valmont	100' MONOPOLE - 99' POLE WITH 1' FOUNDATION PROJECTION	TBD	N/A	N/A	1	\$ 18,847.00	\$ 22,701.21	\$ 22,701.21
Valmont	2' DISH MOUNT KIT	UGLM, FMA1, P472	N/A	N/A	1	\$ 443.00	\$ 533.59	\$ 533.59
Valmont	(3) 6' PIVOT STANDOFF ARMS	TBD	TBD	TBD	2	\$ 2,274.00	\$ 2,739.03	\$ 5,478.07
Valmont	COLLAR MOUNT FOR CORNER REFLECTOR	TBD	TBD	TBD	1	\$ 361.00	\$ 434.82	\$ 434.82
Valmont	STRUCTURAL ANALYSIS AND DRAWING	TBD	N/A	N/A	1	\$ 400.00	\$ 460.00	\$ 460.00
Valmont	FOUNDATION DESIGN PER CUSTOMER FURNISHED SOILS REPORT	TBD	N/A	N/A	1	\$ 600.00	\$ 690.00	\$ 690.00
Valmont	FREIGHT COSTS, WITH UNLOADING OF TRUCK	NA	N/A	N/A	1	\$ 4,200.00	\$ 4,200.00	\$ 4,200.00
Valmont	FREIGHT COSTS, ANCHOR STEEL FREIGHT SHIPPED DIRECT FROM SUPPLIER	NA	N/A	N/A	1	\$ 300.00	\$ 300.00	\$ 300.00
<b>Roof Top - Indoor - MISC eNB Equipment</b>								
Arrow	FIBER JUMPER SM LC/LC 2MTR	900S-2M-LC	NA	NA	12	\$ 10.95	\$ 12.05	\$ 144.54
CommScope	FIBER CABLE ASSEMBLY 2 SM, 7.5M	FJ-2SM-015-7.5M	NA	NA	3	\$ 58.99	\$ 64.89	\$ 194.66
<b>Warehouse Equipment</b>								
MSI	Storage of purchased equipment (12 Months)				1	\$ 6,450.00	\$ 7,417.50	\$ 7,417.50
<b>Urban Site 2 - Phase 3 Total:</b>								<b>\$ 161,093.30</b>



**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.3 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 3 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
<b>eNB Urban Site Equipment</b>								
Ericsson	Ericsson,UCBB6630LTE,,,NON-COMM BASEBAND 6630,LTE,,,COMBINED UNIT/BASEBAND 6630 WITH FAN (included in CEQ 20548)	INF 903 6083/02	NA	NA	1	\$ 13,075.40	\$ 14,382.93	\$ 14,382.93
Ericsson	CABLE WITH CONNECTOR/POWER CABLE	RPM777528/10000	NA	NA	1	\$ 48.18	\$ 53.00	\$ 53.00
Ericsson	CABLE WITH CONNECTOR/GROUNDING CABLE	RPM777567/02500	NA	NA	1	\$ 81.03	\$ 89.13	\$ 89.13
Ericsson	RBS 6601 RJ-45 Cable	TSR4820211/2400	NA	NA	1	\$ 42.55	\$ 51.25	\$ 51.25
Ericsson	IDLe cable (1000 mm)	RPM777417/01000	NA	NA	1	\$ 319.74	\$ 351.71	\$ 351.71
Ericsson	IDLe cable (1800 mm)	RPM777417/01800	NA	NA	1	\$ 330.69	\$ 363.76	\$ 363.76
Ericsson	IDLe cable (3000 mm)	RPM777417/03000	NA	NA	1	\$ 387.63	\$ 426.39	\$ 426.39
Ericsson	Radio 4478 B14 (700MHz), 20W HWAC incl.	INF 903 6056/N14	NA	NA	3	\$ 7,923.42	\$ 8,715.76	\$ 26,147.29
Ericsson	LTE-FDD Cell Carrier 10MHz Bandwidth HWAC' (per RU)	INF 901 6000/HAF6*	NA	NA	3	\$ 238.71	\$ 262.58	\$ 787.74
Ericsson	Output Power HWAC 20W incr.steps (per RU)	INF 903 9999/HR01	NA	NA	7	\$ 194.91	\$ 214.40	\$ 1,500.81
Ericsson	Baseband R503, Auxiliary Mux Uni	INF 901 6000/DXM2	NA	NA	3	\$ 1,780.47	\$ 1,958.52	\$ 5,875.55
Ericsson	INH8010026/1,GPS-TMG-HR-26NCM,,,GPS Ant 1575.42MHz 26dB Nf,Collar,Mount,,	INH8010026/1	NA	NA	1	\$ -	\$ -	\$ -
Ericsson	External Alarm Cable	RPM919664/15000	NA	NA	1	\$ 41.77	\$ 45.95	\$ 45.95
Ericsson	Signal Cable	RPM77701/00180	NA	NA	1	\$ 6.57	\$ 7.23	\$ 7.23
Ericsson	OVP Kit	NTB101242/2	NA	NA	9	\$ 30.22	\$ 33.24	\$ 299.20
Ericsson	SAU Kit	NTB101242/1	NA	NA	3	\$ 420.71	\$ 462.78	\$ 1,388.34
Ericsson	SFP, SMD, 2.5Gbps High Temp	RDH10247/25	NA	NA	9	\$ 33.17	\$ 36.48	\$ 328.36
Ericsson	MOUNTING KIT (MK wall brackets long)	SXX1250247/1	NA	NA	3	\$ 43.37	\$ 47.71	\$ 143.13
Purcell	KIT,FLXWS,14"H PLINTH,ATT,2-3112	2000003132	NA	NA	1	\$ 469.76	\$ 516.73	\$ 516.73
Purcell	Description: FLX21-2520,130W HEX,HTR,100A DIST	2000004800	NA	NA	1	\$ 6,215.68	\$ 6,837.25	\$ 6,837.25
<b>Lines and Antennas equipment</b>								
Quintel	8' 65 degree 8-Port Multi-band antenna - 700/850/PCS-WCS w/ Band 14	QS8658-3e	NA	NA	6	\$ 2,956.50	\$ 3,252.15	\$ 19,512.90
Raycap Inc.	Outdoor-rated Enclosure with,Strikesorb Protection for 12,Remote Radios; Mounting at,the base station or,rooftop	DC12-48-60-0-25E	NA	NA	1	\$ 1,719.15	\$ 1,891.07	\$ 1,891.07
Raycap Inc.	Dome Encl Design w/Strikesorb,Protection for (9) -48V thru,-60VDC RRH; Tower top,Installed; low let-through of,-160vdc; incl pole mnt hw	DC9-48-60-18-8C-EV	NA	NA	3	\$ 1,998.00	\$ 2,406.59	\$ 7,219.77
<b>DC Power Plant and Battery Back Up (BBU) equipment</b>								
	Reserved							
Vertiv	NF16W512WNCUWNOSLIDEBATTDRAWER	F2016064	NA	NA	1	\$ -	\$ -	\$ -

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.3 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 3 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
Vertiv	ATT POWER CABINET, 48V,	F1011032	NA	NA	1	\$ 5,790.36	\$ 6,369.40	\$ 6,369.40
Vertiv	PWR SYS.-48/+24V, NETSURE 512NGBB	582137000ZZ007	NA	NA	1	\$ 3,772.28	\$ 4,149.50	\$ 4,149.50
Vertiv	CB,HYD MAG,1P,5A,80VDC,SPDT	102274	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	CB,HYD MAG,1P,25A,80VDC,SPDT	102278	NA	NA	3	\$ 11.11	\$ 12.23	\$ 36.68
Vertiv	CB,HYD MAG,1P,50A,80VDC,SPDT	102282	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	Rectifier, eSure, 48VDC, 2000W, 1RU	1R482000E3	NA	NA	8	\$ 152.64	\$ 167.91	\$ 1,343.26
NORTH STAR	Battery String (48V)	NSB170FTRED0044	NA	NA	3	\$ 2,330.88	\$ 2,330.88	\$ 6,992.64
<b>Power Telco</b>								
Kohler	Generator 24/72 Hour	20REOZK	1007629	SGM32D3WM	1	\$ -	\$ -	\$ -
	Reserved							
	Reserved							
Panrol	PanLock Single phase	PL-PLM00	NA	NA	1	\$ 509.00	\$ 613.09	\$ 613.09
MSI / LA-RICS Excess	CAC Configuration AC/Transfer Switch Cabinet (PPC)	CAC-A45201190P	1002928	1155697-150213-017	1	\$ 6,724.00	\$ 6,724.00	\$ 6,724.00
Pentair	TYPE 3R ENCLOSURE W/LIFT-OFF	A30248HCLO	NA	NA	1	\$ 254.04	\$ 279.44	\$ 279.44
Talley	Standard Hframe	NA	NA	NA	1	N/A	N/A	N/A
<b>Tower Equipment</b>								
Valmont	TRIPLE T-ARM KIT FOR 12 ANTENNAS WITH REINFORCEMENT	RMV12-496 and PRK-1245	N/A	N/A	1	\$ 3,144.00	\$ 3,786.95	\$ 3,786.95
Valmont	70' MONOPOLE - 69' POLE WITH 1' FOUNDATION	TBD	N/A	N/A	1	\$ 20,870.00	\$ 25,137.92	\$ 25,137.92
Valmont	2' DISH MOUNT KIT	UGLM, FMA1, P472	N/A	N/A	1	\$ 443.00	\$ 533.59	\$ 533.59
	Reserved							
	Reserved							
Valmont	STRUCTURAL ANALYSIS AND DRAWING	TBD	N/A	N/A	1	\$ 400.00	\$ 460.00	\$ 460.00
Valmont	FOUNDATION DESIGN PER CUSTOMER FURNISHED SOILS REPORT	TBD	N/A	N/A	1	\$ 600.00	\$ 690.00	\$ 690.00
Valmont	FREIGHT COSTS, WITH UNLOADING OF TRUCK	NA	N/A	N/A	1	\$ 4,225.00	\$ 4,225.00	\$ 4,225.00
Valmont	FREIGHT COSTS, ANCHOR STEEL FREIGHT SHIPPED DIRECT FROM SUPPLIER	NA	N/A	N/A	1	\$ 350.00	\$ 350.00	\$ 350.00
<b>Roof Top - Indoor - MISC eNB Equipment</b>								
Arrow	FIBER JUMPER SM LC/LC 2MTR	900S-2M-LC	NA	NA	12	\$ 10.95	\$ 12.05	\$ 144.54
CommScope	FIBER CABLE ASSEMBLY 2 SM, 7.5M	FJ-2SM-015-7.5M	NA	NA	3	\$ 58.99	\$ 64.89	\$ 194.66
<b>Warehouse Equipment</b>								
MSI	Storage of purchased equipment (12 Months)				1	\$ 6,450.00	\$ 7,417.50	\$ 7,417.50
<b>Urban Site 3 - Phase 3 Total:</b>								<b>\$ 157,692.11</b>

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.4 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 4 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
<b>eNB Urban Site Equipment</b>								
Ericsson	Ericsson,UCBB6630LTE,,,NON-COMM BASEBAND 6630,LTE,,,COMBINED UNIT/BASEBAND 6630 WITH FAN (included in CEQ 20548)	INF 903 6083/02	NA	NA	1	\$ 13,075.40	\$ 14,382.93	\$ 14,382.93
Ericsson	CABLE WITH CONNECTOR/POWER CABLE	RPM777528/10000	NA	NA	1	\$ 48.18	\$ 53.00	\$ 53.00
Ericsson	CABLE WITH CONNECTOR/GROUNDING CABLE	RPM777567/02500	NA	NA	1	\$ 81.03	\$ 89.13	\$ 89.13
Ericsson	RBS 6601 RJ-45 Cable	TSR4820211/2400	NA	NA	1	\$ 42.55	\$ 51.25	\$ 51.25
Ericsson	IDLe cable (1000 mm)	RPM777417/01000	NA	NA	1	\$ 319.74	\$ 351.71	\$ 351.71
Ericsson	IDLe cable (1800 mm)	RPM777417/01800	NA	NA	1	\$ 330.69	\$ 363.76	\$ 363.76
Ericsson	IDLe cable (3000 mm)	RPM777417/03000	NA	NA	1	\$ 387.63	\$ 426.39	\$ 426.39
Ericsson	Radio 4478 B14 (700MHz), 20W HWAC incl.	INF 903 6056/N14	NA	NA	3	\$ 7,923.42	\$ 8,715.76	\$ 26,147.29
Ericsson	LTE-FDD Cell Carrier 10MHz Bandwidth HWAC (per RU)	INF 901 6000/HAF6*	NA	NA	3	\$ 238.71	\$ 262.58	\$ 787.74
Ericsson	Output Power HWAC 20W incr.steps (per RU)	INF 903 9999/HR01	NA	NA	7	\$ 194.91	\$ 214.40	\$ 1,500.81
Ericsson	Baseband R503, Auxillary Mux Unit	INF 901 6000/DXM2	NA	NA	3	\$ 1,780.47	\$ 1,958.52	\$ 5,875.55
Ericsson	INH8010026/1,GPS-TMG-HR-26NCM,,,GPS Ant 1575.42MHz 26dB Nf,Collar,Mount,,	INH8010026/1	NA	NA	1	\$ -	\$ -	\$ -
Ericsson	External Alarm Cable	RPM919664/15000	NA	NA	1	\$ 41.77	\$ 45.95	\$ 45.95
Ericsson	Signal Cable	RPM77701/00180	NA	NA	1	\$ 6.57	\$ 7.23	\$ 7.23
Ericsson	OVP Kit	NTB101242/2	NA	NA	9	\$ 30.22	\$ 33.24	\$ 299.20
Ericsson	SAU Kit	NTB101242/1	NA	NA	3	\$ 420.71	\$ 462.78	\$ 1,388.34
Ericsson	SFP, SMD, 2.5Gbps High Temp	RDH10247/25	NA	NA	9	\$ 33.17	\$ 36.48	\$ 328.36
Ericsson	MOUNTING KIT (MK wall brackets long)	SXX1250247/1	NA	NA	3	\$ 43.37	\$ 47.71	\$ 143.13
Purcell	KIT,FLXWS,14"H PLINTH,ATT,2-3112	2000003132	NA	NA	1	\$ 469.76	\$ 516.73	\$ 516.73
Purcell	Description: FLX21-2520,130W HEX,HTR,100A DIST	2000004800	NA	NA	1	\$ 6,215.68	\$ 6,837.25	\$ 6,837.25
<b>Lines and Antennas equipment</b>								
Quintel	8' 65 degree 8-Port Multi-band antenna - 700/850/PCS-WCS w/ Band 14	QS8658-3e	NA	NA	6	\$ 2,956.50	\$ 3,252.15	\$ 19,512.90
Raycap Inc.	Outdoor-rated Enclosure with,Strikesorb Protection for 12,Remote Radios; Mounting at,the base station or,rooftop	DC12-48-60-0-25E	NA	NA	1	\$ 1,719.15	\$ 1,891.07	\$ 1,891.07
Raycap Inc.	Dome Encl Design w/Strikesorb,Protection for (9) -48V thru,-60VDC RRH; Tower top,Installed; low let-through of,-160vdc; incl pole mnt hw	DC9-48-60-18-8C-EV	NA	NA	3	\$ 1,998.00	\$ 2,406.59	\$ 7,219.77
<b>DC Power Plant and Battery Back Up (BBU) equipment</b>								
	Reserved							
Vertiv	NF16W512WNCUWNOSLIDEBATTDRAWER	F2016064	NA	NA	1	\$ -	\$ -	\$ -

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.4 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 4 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
Vertiv	ATT POWER CABINET, 48V,	F1011032	NA	NA	1	\$ 5,790.36	\$ 6,369.40	\$ 6,369.40
Vertiv	PWR SYS,-48/+24V, NETSURE 512NGBB	58213700ZZ007	NA	NA	1	\$ 3,772.28	\$ 4,149.50	\$ 4,149.50
Vertiv	CB,HYD MAG,1P,5A,80VDC,SPDT	102274	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	CB,HYD MAG,1P,25A,80VDC,SPDT	102278	NA	NA	3	\$ 11.11	\$ 12.23	\$ 36.68
Vertiv	CB,HYD MAG,1P,50A,80VDC,SPDT	102282	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	Rectifier, eSure, 48VDC, 2000W, 1RU	1R482000E3	NA	NA	8	\$ 152.64	\$ 167.91	\$ 1,343.26
NORTH STAR	Battery String (48V)	NSB170FTRED0044	NA	NA	3	\$ 2,330.88	\$ 2,330.88	\$ 6,992.64
<b>Power Telco</b>								
Kohler	Generator 24/72 Hour	20REOZK	1007630	SGM32D3WN	1	\$ -	\$ -	\$ -
TBD	Generator Tank	NA	NA	NA	1	\$ 9,422.83	\$ 11,349.80	\$ 11,349.80
Pyramid	Fuel Tank Install	TBD	N/A	N/A	1	\$ 5,750.00	\$ 6,612.50	\$ 6,612.50
Panrol	PanLock Single phase	PL-PLM00	NA	NA	1	\$ 509.00	\$ 613.09	\$ 613.09
MSI / LA-RICS Excess	CAC Configuration AC/Transfer Switch Cabinet (PPC)	CAC-A45201190P	1002929	1155697-150213-018	1	\$ 6,724.00	\$ 6,724.00	\$ 6,724.00
Pentair	TYPE 3R ENCLOSURE W/LIFT-OFF	A30248HCLO	NA	NA	1	\$ 254.04	\$ 279.44	\$ 279.44
Talley	Standard Hframe	NA	NA	NA	1	N/A	N/A	N/A
<b>Tower Equipment</b>								
Valmont	TRIPLE T-ARM KIT FOR 12 ANTENNAS WITH REINFORCEMENT	RMV12-496 and PRK-1245	N/A	N/A	1	\$ 3,144.00	\$ 3,786.95	\$ 3,786.95
Valmont	100' MONOPOLE - 99' POLE WITH 1' FOUNDATION PROJECTION	TBD	N/A	N/A	1	\$ 19,815.00	\$ 23,867.17	\$ 23,867.17
Valmont	2' DISH MOUNT KIT	UGLM, FMA1, P472	N/A	N/A	1	\$ 443.00	\$ 533.59	\$ 533.59
Valmont	(3) 6' PIVOT STANDOFF ARMS	TBD	TBD	TBD	2	\$ 2,274.00	\$ 2,739.03	\$ 5,478.07
Valmont	COLLAR MOUNT FOR CORNER REFLECTOR	TBD	TBD	TBD	1	\$ 361.00	\$ 434.82	\$ 434.82
Valmont	STRUCTURAL ANALYSIS AND DRAWING	TBD	N/A	N/A	1	\$ 400.00	\$ 460.00	\$ 460.00
Valmont	FOUNDATION DESIGN PER CUSTOMER FURNISHED SOILS REPORT	TBD	N/A	N/A	1	\$ 600.00	\$ 690.00	\$ 690.00
Valmont	FREIGHT COSTS, WITH UNLOADING OF TRUCK	NA	N/A	N/A	1	\$ 4,200.00	\$ 4,200.00	\$ 4,200.00
Valmont	FREIGHT COSTS, ANCHOR STEEL FREIGHT SHIPPED DIRECT FROM SUPPLIER	NA	N/A	N/A	1	\$ 300.00	\$ 300.00	\$ 300.00
<b>Roof Top - Indoor - MISC eNB Equipment</b>								
Arrow	FIBER JUMPER SM LC/LC 2MTR	900S-2M-LC	NA	NA	12	\$ 10.95	\$ 12.05	\$ 144.54
CommScope	FIBER CABLE ASSEMBLY 2 SM, 7.5M	FJ-2SM-015-7.5M	NA	NA	3	\$ 58.99	\$ 64.89	\$ 194.66
<b>Warehouse Equipment</b>								
MSI	Storage of purchased equipment (12 Months)				1	\$ 6,450.00	\$ 7,417.50	\$ 7,417.50
<b>Urban Site 4 - Phase 3 Total:</b>								<b>\$ 180,221.56</b>

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.5 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 5 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
<b>eNB Urban Site Equipment</b>								
Ericsson	Ericsson,UCBB6630LTE,,,NON-COMM BASEBAND 6630,LTE,,,COMBINED UNIT/BASEBAND 6630 WITH FAN (included in CEQ 20548)	INF 903 6083/02	NA	NA	1	\$ 13,075.40	\$ 14,382.93	\$ 14,382.93
Ericsson	CABLE WITH CONNECTOR/POWER CABLE	RPM777528/10000	NA	NA	1	\$ 48.18	\$ 53.00	\$ 53.00
Ericsson	CABLE WITH CONNECTOR/GROUNDING CABLE	RPM777567/02500	NA	NA	1	\$ 81.03	\$ 89.13	\$ 89.13
Ericsson	RBS 6601 RJ-45 Cable	TSR4820211/2400	NA	NA	1	\$ 42.55	\$ 51.25	\$ 51.25
Ericsson	IDLe cable (1000 mm)	RPM777417/01000	NA	NA	1	\$ 319.74	\$ 351.71	\$ 351.71
Ericsson	IDLe cable (1800 mm)	RPM777417/01800	NA	NA	1	\$ 330.69	\$ 363.76	\$ 363.76
Ericsson	IDLe cable (3000 mm)	RPM777417/03000	NA	NA	1	\$ 387.63	\$ 426.39	\$ 426.39
Ericsson	Radio 4478 B14 (700MHz), 20W HWAC incl.	INF 903 6056/N14	NA	NA	3	\$ 7,923.42	\$ 8,715.76	\$ 26,147.29
Ericsson	LTE-FDD Cell Carrier 10MHz Bandwidth HWAC (per RU)	INF 901 6000/HAF6*	NA	NA	3	\$ 238.71	\$ 262.58	\$ 787.74
Ericsson	Output Power HWAC 20W incr.steps (per RU)	INF 903 9999/HR01	NA	NA	7	\$ 194.91	\$ 214.40	\$ 1,500.81
Ericsson	Baseband R503, Auxillary Mux Uni	INF 901 6000/DXM2	NA	NA	3	\$ 1,780.47	\$ 1,958.52	\$ 5,875.55
Ericsson	INH8010026/1,GPS-TMG-HR-26NCM,,,GPS Ant 1575.42MHz 26dB Nf,Collar,Mount,,	INH8010026/1	NA	NA	1	\$ -	\$ -	\$ -
Ericsson	External Alarm Cable	RPM919664/15000	NA	NA	1	\$ 41.77	\$ 45.95	\$ 45.95
Ericsson	Signal Cable	RPM77701/00180	NA	NA	1	\$ 6.57	\$ 7.23	\$ 7.23
Ericsson	OVP Kit	NTB101242/2	NA	NA	9	\$ 30.22	\$ 33.24	\$ 299.20
Ericsson	SAU Kit	NTB101242/1	NA	NA	3	\$ 420.71	\$ 462.78	\$ 1,388.34
Ericsson	SFP, SMD, 2.5Gbps High Temp	RDH10247/25	NA	NA	9	\$ 33.17	\$ 36.48	\$ 328.36
Ericsson	MOUNTING KIT (MK wall brackets long)	SXX1250247/1	NA	NA	3	\$ 43.37	\$ 47.71	\$ 143.13
Purcell	KIT,FLXWS,14"H PLINTH,ATT,2-3112	2000003132	NA	NA	1	\$ 469.76	\$ 516.73	\$ 516.73
Purcell	Description: FLX21-2520,130W HEX,HTR,100A DIST	2000004800	NA	NA	1	\$ 6,215.68	\$ 6,837.25	\$ 6,837.25
<b>Lines and Antennas equipment</b>								
Quintel	8' 65 degree 8-Port Multi-band antenna - 700/850/PCS-WCS w/ Band 14	QS8658-3e	NA	NA	6	\$ 2,956.50	\$ 3,252.15	\$ 19,512.90
Raycap Inc.	Outdoor-rated Enclosure with,Strikesorb Protection for 12,Remote Radios; Mounting at,the base station or,rooftop	DC12-48-60-0-25E	NA	NA	1	\$ 1,719.15	\$ 1,891.07	\$ 1,891.07
Raycap Inc.	Dome Encl Design w/Strikesorb,Protection for (9) -48V thru,-60VDC RRH; Tower top,Installed; low let-through of,-160vdc; incl pole mnt hw	DC9-48-60-18-8C-EV	NA	NA	3	\$ 1,998.00	\$ 2,406.59	\$ 7,219.77
<b>DC Power Plant and Battery Back Up (BBU) equipment</b>								
	Reserved							
Vertiv	NF16W512WNCUWNOSLIDEBATTDRAWER	F2016064	NA	NA	1	\$ -	\$ -	\$ -

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.5 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 5 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
Vertiv	ATT POWER CABINET, 48V,	F1011032	NA	NA	1	\$ 5,790.36	\$ 6,369.40	\$ 6,369.40
Vertiv	PWR SYS,-48/+24V, NETSURE 512NGBB	582137000ZZ007	NA	NA	1	\$ 3,772.28	\$ 4,149.50	\$ 4,149.50
Vertiv	CB,HYD MAG,1P,5A,80VDC,SPDT	102274	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	CB,HYD MAG,1P,25A,80VDC,SPDT	102278	NA	NA	3	\$ 11.11	\$ 12.23	\$ 36.68
Vertiv	CB,HYD MAG,1P,50A,80VDC,SPDT	102282	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	Rectifier, eSure, 48VDC, 2000W, 1RU	1R482000E3	NA	NA	8	\$ 152.64	\$ 167.91	\$ 1,343.26
NORTH STAR	Battery String (48V)	NSB170FTRED0044	NA	NA	3	\$ 2,330.88	\$ 2,330.88	\$ 6,992.64
<b>Power Telco</b>								
Kohler	Generator 24/72 Hour	20REOZK	1007631	SGM32D3WP	1	\$ -	\$ -	\$ -
TBD	Generator Tank	NA	NA	NA	1	\$ 9,422.83	\$ 11,349.80	\$ 11,349.80
Pyramid	Fuel Tank Install	TBD	N/A	N/A	1	\$ 5,750.00	\$ 6,612.50	\$ 6,612.50
Pantrol	PanLock Single phase	PL-PLM00	NA	NA	1	\$ 509.00	\$ 613.09	\$ 613.09
MSI / LA-RICS Excess	CAC Configuration AC/Transfer Switch Cabinet (PPC)	CAC-A45201190P	1002931	1155697-150213-020	1	\$ 6,724.00	\$ 6,724.00	\$ 6,724.00
Pentair	TYPE 3R ENCLOSURE W/LIFT-OFF	A30248HCLO	NA	NA	1	\$ 254.04	\$ 279.44	\$ 279.44
Talley	Standard Hframe	NA	NA	NA	1	N/A	N/A	N/A
<b>Tower Equipment</b>								
Valmont	TRIPLE T-ARM KIT FOR 12 ANTENNAS WITH REINFORCEMENT	RMV12-496 and PRK-1245	N/A	N/A	1	\$ 3,144.00	\$ 3,786.95	\$ 3,786.95
Valmont	100' MONOPOLE - 99' POLE WITH 1' FOUNDATION PROJECTION	TBD	N/A	N/A	1	\$ 19,815.00	\$ 23,867.17	\$ 23,867.17
Valmont	2' DISH MOUNT KIT	UGLM, FMA1, P472	N/A	N/A	1	\$ 443.00	\$ 533.59	\$ 533.59
Valmont	(3) 6' PIVOT STANDOFF ARMS	TBD	TBD	TBD	2	\$ 2,274.00	\$ 2,739.03	\$ 5,478.07
Valmont	COLLAR MOUNT FOR CORNER REFLECTOR	TBD	TBD	TBD	1	\$ 361.00	\$ 434.82	\$ 434.82
Valmont	STRUCTURAL ANALYSIS AND DRAWING	TBD	N/A	N/A	1	\$ 400.00	\$ 460.00	\$ 460.00
Valmont	FOUNDATION DESIGN PER CUSTOMER FURNISHED SOILS REPORT	TBD	N/A	N/A	1	\$ 600.00	\$ 690.00	\$ 690.00
Valmont	FREIGHT COSTS, WITH UNLOADING OF TRUCK	NA	N/A	N/A	1	\$ 4,200.00	\$ 4,200.00	\$ 4,200.00
Valmont	FREIGHT COSTS, ANCHOR STEEL FREIGHT SHIPPED DIRECT FROM SUPPLIER	NA	N/A	N/A	1	\$ 300.00	\$ 300.00	\$ 300.00
<b>Roof Top - Indoor - MISC eNB Equipment</b>								
Arrow	FIBER JUMPER SM LC/LC 2MTR	900S-2M-LC	NA	NA	12	\$ 10.95	\$ 12.05	\$ 144.54
CommScope	FIBER CABLE ASSEMBLY 2 SM, 7.5M	FJ-2SM-015-7.5M	NA	NA	3	\$ 58.99	\$ 64.89	\$ 194.66
<b>Warehouse Equipment</b>								
MSI	Storage of purchased equipment (12 Months)				1	\$ 6,450.00	\$ 7,417.50	\$ 7,417.50
<b>Urban Site 5 - Phase 3 Total:</b>								<b>\$ 180,221.56</b>

# SCHEDULE OF PAYMENTS

## EXHIBIT C.21.6 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)

### PSBN ROUND 2 URBAN SITE 6 (MONOPOLE)

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
<b>eNB Urban Site Equipment</b>								
Ericsson	Ericsson,UCBB6630LTE,,,NON-COMM BASEBAND 6630,LTE,,,COMBINED UNIT/BASEBAND 6630 WITH FAN (included in CEQ 20548)	INF 903 6083/02	NA	NA	1	\$ 13,075.40	\$ 14,382.93	\$ 14,382.93
Ericsson	CABLE WITH CONNECTOR/POWER CABLE	RPM777528/10000	NA	NA	1	\$ 48.18	\$ 53.00	\$ 53.00
Ericsson	CABLE WITH CONNECTOR/GROUNDING CABLE	RPM777567/02500	NA	NA	1	\$ 81.03	\$ 89.13	\$ 89.13
Ericsson	RBS 6601 RJ-45 Cable	TSR4820211/2400	NA	NA	1	\$ 42.55	\$ 51.25	\$ 51.25
Ericsson	IDLe cable (1000 mm)	RPM777417/01000	NA	NA	1	\$ 319.74	\$ 351.71	\$ 351.71
Ericsson	IDLe cable (1800 mm)	RPM777417/01800	NA	NA	1	\$ 330.69	\$ 363.76	\$ 363.76
Ericsson	IDLe cable (3000 mm)	RPM777417/03000	NA	NA	1	\$ 387.63	\$ 426.39	\$ 426.39
Ericsson	Radio 4478 B14 (700MHz), 20W HWAC incl.	INF 903 6056/N14	NA	NA	3	\$ 7,923.42	\$ 8,715.76	\$ 26,147.29
Ericsson	LTE-FDD Cell Carrier 10MHz Bandwidth HWAC' (per RU)	INF 901 6000/HAF6*	NA	NA	3	\$ 238.71	\$ 262.58	\$ 787.74
Ericsson	Output Power HWAC 20W incr.steps (per RU)	INF 903 9999/HR01	NA	NA	7	\$ 194.91	\$ 214.40	\$ 1,500.81
Ericsson	Baseband R503, Auxillary Mux Uni	INF 901 6000/DXM2	NA	NA	3	\$ 1,780.47	\$ 1,958.52	\$ 5,875.55
Ericsson	INH8010026/1,GPS-TMG-HR-26NCM,,,GPS Ant 1575.42MHz 26dB Nf,Collar,Mount,,	INH8010026/1	NA	NA	1	\$ -	\$ -	\$ -
Ericsson	External Alarm Cable	RPM919664/15000	NA	NA	1	\$ 41.77	\$ 45.95	\$ 45.95
Ericsson	Signal Cable	RPM77701/00180	NA	NA	1	\$ 6.57	\$ 7.23	\$ 7.23
Ericsson	OVP Kit	NTB101242/2	NA	NA	9	\$ 30.22	\$ 33.24	\$ 299.20
Ericsson	SAU Kit	NTB101242/1	NA	NA	3	\$ 420.71	\$ 462.78	\$ 1,388.34
Ericsson	SFP, SMD, 2.5Gbps High Temp	RDH10247/25	NA	NA	9	\$ 33.17	\$ 36.48	\$ 328.36
Ericsson	MOUNTING KIT (MK wall brackets long)	SXX1250247/1	NA	NA	3	\$ 43.37	\$ 47.71	\$ 143.13
Purcell	KIT,FLXWS,14"H PLINTH,ATT,2-3112	2000003132	NA	NA	1	\$ 469.76	\$ 516.73	\$ 516.73
Purcell	Description: FLX21-2520,130W HEX,HTR,100A DIST	2000004800	NA	NA	1	\$ 6,215.68	\$ 6,837.25	\$ 6,837.25
<b>Lines and Antennas equipment</b>								
Quintel	8' 65 degree 8-Port Multi-band antenna - 700/850/PCS-WCS w/ Band 14	QS8658-3e	NA	NA	6	\$ 2,956.50	\$ 3,252.15	\$ 19,512.90
Raycap Inc.	Outdoor-rated Enclosure with,Strikesorb Protection for 12,Remote Radios; Mounting at,the base station or,rooftop	DC12-48-60-0-25E	NA	NA	1	\$ 1,719.15	\$ 1,891.07	\$ 1,891.07
Raycap Inc.	Dome Encl Design w/Strikesorb,Protection for (9) -48V thru,-60VDC RRH; Tower top,Installed; low let-through of,-160vdc; incl pole mnt hw	DC9-48-60-18-8C-EV	NA	NA	3	\$ 1,998.00	\$ 2,406.59	\$ 7,219.77
<b>DC Power Plant and Battery Back Up (BBU) equipment</b>								
	Reserved							
Vertiv	NF16W512WNCUWNOSLIDEBATTDRAWER	F2016064	NA	NA	1	\$ -	\$ -	\$ -



**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.6 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 6 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
Vertiv	ATT POWER CABINET, 48V,	F1011032	NA	NA	1	\$ 5,790.36	\$ 6,369.40	\$ 6,369.40
Vertiv	PWR SYS.-48/+24V, NETSURE 512NGBB	582137000ZZ007	NA	NA	1	\$ 3,772.28	\$ 4,149.50	\$ 4,149.50
Vertiv	CB,HYD MAG,1P,5A,80VDC,SPDT	102274	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	CB,HYD MAG,1P,25A,80VDC,SPDT	102278	NA	NA	3	\$ 11.11	\$ 12.23	\$ 36.68
Vertiv	CB,HYD MAG,1P,50A,80VDC,SPDT	102282	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	Rectifier, eSure, 48VDC, 2000W, 1RU	1R482000E3	NA	NA	8	\$ 152.64	\$ 167.91	\$ 1,343.26
NORTH STAR	Battery String (48V)	NSB170FTRED0044	NA	NA	3	\$ 2,330.88	\$ 2,330.88	\$ 6,992.64
<b>Power Telco</b>								
Kohler	Generator 24/72 Hour	20REOZK	1007638	SGM32D3Z9	1	\$ -	\$ -	\$ -
TBD	Generator Tank	NA	NA	NA	1	\$ 9,422.83	\$ 11,349.80	\$ 11,349.80
Pyramid	Fuel Tank Install	TBD	N/A	N/A	1	\$ 5,750.00	\$ 6,612.50	\$ 6,612.50
Panrol	PanLock Single phase	PL-PLM00	NA	NA	1	\$ 509.00	\$ 613.09	\$ 613.09
MSI / LA-RICS Excess	CAC Configuration AC/Transfer Switch Cabinet (PPC)	CAC-A45201190P	1002932	1155697-150213-021	1	\$ 6,724.00	\$ 6,724.00	\$ 6,724.00
Pentair	TYPE 3R ENCLOSURE W/LIFT-OFF	A30248HCLO	NA	NA	1	\$ 254.04	\$ 279.44	\$ 279.44
Talley	Standard Hframe	NA	NA	NA	1	N/A	N/A	N/A
<b>Tower Equipment</b>								
Valmont	TRIPLE T-ARM KIT FOR 12 ANTENNAS WITH REINFORCEMENT	RMV12-496 and PRK-1245	N/A	N/A	1	\$ 3,144.00	\$ 3,786.95	\$ 3,786.95
Valmont	100' MONOPOLE - 99' POLE WITH 1' FOUNDATION PROJECTION	TBD	N/A	N/A	1	\$ 19,815.00	\$ 23,867.17	\$ 23,867.17
Valmont	2' DISH MOUNT KIT	UGLM, FMA1, P472	N/A	N/A	1	\$ 443.00	\$ 533.59	\$ 533.59
Valmont	(3) 6' PIVOT STANDOFF ARMS	TBD	TBD	TBD	2	\$ 2,274.00	\$ 2,739.03	\$ 5,478.07
Valmont	COLLAR MOUNT FOR CORNER REFLECTOR	TBD	TBD	TBD	1	\$ 361.00	\$ 434.82	\$ 434.82
Valmont	STRUCTURAL ANALYSIS AND DRAWING	TBD	N/A	N/A	1	\$ 400.00	\$ 460.00	\$ 460.00
Valmont	FOUNDATION DESIGN PER CUSTOMER FURNISHED SOILS REPORT	TBD	N/A	N/A	1	\$ 600.00	\$ 690.00	\$ 690.00
Valmont	FREIGHT COSTS, WITH UNLOADING OF TRUCK	NA	N/A	N/A	1	\$ 4,200.00	\$ 4,200.00	\$ 4,200.00
Valmont	FREIGHT COSTS, ANCHOR STEEL FREIGHT SHIPPED DIRECT FROM SUPPLIER	NA	N/A	N/A	1	\$ 300.00	\$ 300.00	\$ 300.00
<b>Roof Top - Indoor - MISC eNB Equipment</b>								
Arrow	FIBER JUMPER SM LC/LC 2MTR	900S-2M-LC	NA	NA	12	\$ 10.95	\$ 12.05	\$ 144.54
CommScope	FIBER CABLE ASSEMBLY 2 SM, 7.5M	FJ-2SM-015-7.5M	NA	NA	3	\$ 58.99	\$ 64.89	\$ 194.66
<b>Warehouse Equipment</b>								
MSI	Storage of purchased equipment (12 Months)				1	\$ 6,450.00	\$ 7,417.50	\$ 7,417.50
<b>Urban Site 6 - Phase 3 Total:</b>								<b>\$ 180,221.56</b>

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.7 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 7 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
<b>eNB Urban Site Equipment</b>								
Ericsson	Ericsson,UCBB6630LTE,,,NON-COMM BASEBAND 6630,LTE,,,COMBINED UNIT/BASEBAND 6630 WITH FAN (included in CEQ 20548)	INF 903 6083/02	NA	NA	1	\$ 13,075.40	\$ 14,382.93	\$ 14,382.93
Ericsson	CABLE WITH CONNECTOR/POWER CABLE	RPM777528/10000	NA	NA	1	\$ 48.18	\$ 53.00	\$ 53.00
Ericsson	CABLE WITH CONNECTOR/GROUNDING CABLE	RPM777567/02500	NA	NA	1	\$ 81.03	\$ 89.13	\$ 89.13
Ericsson	RBS 6601 RJ-45 Cable	TSR4820211/2400	NA	NA	1	\$ 42.55	\$ 51.25	\$ 51.25
Ericsson	IDLe cable (1000 mm)	RPM777417/01000	NA	NA	1	\$ 319.74	\$ 351.71	\$ 351.71
Ericsson	IDLe cable (1800 mm)	RPM777417/01800	NA	NA	1	\$ 330.69	\$ 363.76	\$ 363.76
Ericsson	IDLe cable (3000 mm)	RPM777417/03000	NA	NA	1	\$ 387.63	\$ 426.39	\$ 426.39
Ericsson	Radio 4478 B14 (700MHz), 20W HWAC incl.	INF 903 6056/N14	NA	NA	3	\$ 7,923.42	\$ 8,715.76	\$ 26,147.29
Ericsson	LTE-FDD Cell Carrier 10MHz Bandwidth HWAC (per RU)	INF 901 6000/HAF6*	NA	NA	3	\$ 238.71	\$ 262.58	\$ 787.74
Ericsson	Output Power HWAC 20W incr.steps (per RU)	INF 903 9999/HR01	NA	NA	7	\$ 194.91	\$ 214.40	\$ 1,500.81
Ericsson	Baseband R503, Auxiliary Mux Uni	INF 901 6000/DXM2	NA	NA	3	\$ 1,780.47	\$ 1,958.52	\$ 5,875.55
Ericsson	INH8010026/1,GPS-TMG-HR-26NCM,,,GPS Ant 1575.42MHz 26dB Nf,Collar,Mount,,	INH8010026/1	NA	NA	1	\$ -	\$ -	\$ -
Ericsson	External Alarm Cable	RPM919664/15000	NA	NA	1	\$ 41.77	\$ 45.95	\$ 45.95
Ericsson	Signal Cable	RPM77701/00180	NA	NA	1	\$ 6.57	\$ 7.23	\$ 7.23
Ericsson	OVP Kit	NTB101242/2	NA	NA	9	\$ 30.22	\$ 33.24	\$ 299.20
Ericsson	SAU Kit	NTB101242/1	NA	NA	3	\$ 420.71	\$ 462.78	\$ 1,388.34
Ericsson	SFP, SMD, 2.5Gbps High Temp	RDH10247/25	NA	NA	9	\$ 33.17	\$ 36.48	\$ 328.36
Ericsson	MOUNTING KIT (MK wall brackets long)	SXK1250247/1	NA	NA	3	\$ 43.37	\$ 47.71	\$ 143.13
Purcell	KIT,FLXWS,14"H PLINTH,ATT,2-3112	2000003132	NA	NA	1	\$ 469.76	\$ 516.73	\$ 516.73
Purcell	Description: FLX21-2520,130W HEX,HTR,100A DIST	2000004800	NA	NA	1	\$ 6,215.68	\$ 6,837.25	\$ 6,837.25
<b>Lines and Antennas equipment</b>								
Quintel	8' 65 degree 8-Port Multi-band antenna - 700/850/PCS-WCS w/ Band 14	QS8658-3e	NA	NA	6	\$ 2,956.50	\$ 3,252.15	\$ 19,512.90
Raycap Inc.	Outdoor-rated Enclosure with,Strikesorb Protection for 12,Remote Radios; Mounting at,the base station or,rooftop	DC12-48-60-0-25E	NA	NA	1	\$ 1,719.15	\$ 1,891.07	\$ 1,891.07
Raycap Inc.	Dome Encl Design w/Strikesorb,Protection for (9) -48V thru,-60VDC RRRH; Tower top,Installed; low let-through of,-160vdc; incl pole mnt hw	DC9-48-60-18-8C-EV	NA	NA	3	\$ 1,998.00	\$ 2,406.59	\$ 7,219.77
<b>DC Power Plant and Battery Back Up (BBU) equipment</b>								
	Reserved							
Vertiv	NF16W512WNCUWNOSLIDEBATTDRAWER	F2016064	NA	NA	1	\$ -	\$ -	\$ -

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.7 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 7 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
Vertiv	ATT POWER CABINET, 48V,	F1011032	NA	NA	1	\$ 5,790.36	\$ 6,369.40	\$ 6,369.40
Vertiv	PWR SYS,-48/+24V, NETSURE 512NGBB	582137000ZZ007	NA	NA	1	\$ 3,772.28	\$ 4,149.50	\$ 4,149.50
Vertiv	CB,HYD MAG,1P,5A,80VDC,SPDT	102274	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	CB,HYD MAG,1P,25A,80VDC,SPDT	102278	NA	NA	3	\$ 11.11	\$ 12.23	\$ 36.68
Vertiv	CB,HYD MAG,1P,50A,80VDC,SPDT	102282	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	Rectifier, eSure, 48VDC, 2000W, 1RU	1R482000E3	NA	NA	8	\$ 152.64	\$ 167.91	\$ 1,343.26
NORTH STAR	Battery String (48V)	NSB170FTRED0044	NA	NA	3	\$ 2,330.88	\$ 2,330.88	\$ 6,992.64
<b>Power Telco</b>								
Kohler	Generator 24/72 Hour	20REOZK	1007639	SGM32D43R	1	\$ -	\$ -	\$ -
TBD	Generator Tank	NA	NA	NA	1	\$ 9,422.83	\$ 11,349.80	\$ 11,349.80
Pyramid	Fuel Tank Install	TBD	N/A	N/A	1	\$ 5,750.00	\$ 6,612.50	\$ 6,612.50
Pantrol	PanLock Single phase	PL-PLM00	NA	NA	1	\$ 509.00	\$ 613.09	\$ 613.09
MSI / LA-RICS Excess	CAC Configuration AC/Transfer Switch Cabinet (PPC)	CAC-A45201190P	1002934	1155697-150213-023	1	\$ 6,724.00	\$ 6,724.00	\$ 6,724.00
Pentair	TYPE 3R ENCLOSURE W/LIFT-OFF	A30248HCLO	NA	NA	1	\$ 254.04	\$ 279.44	\$ 279.44
Talley	Standard Hframe	NA	NA	NA	1	N/A	N/A	N/A
<b>Tower Equipment</b>								
Valmont	TRIPLE T-ARM KIT FOR 12 ANTENNAS WITH REINFORCEMENT	RMV12-496 and PRK-1245	N/A	N/A	1	\$ 3,144.00	\$ 3,786.95	\$ 3,786.95
Valmont	100' MONOPOLE - 99' POLE WITH 1' FOUNDATION PROJECTION	TBD	N/A	N/A	1	\$ 19,815.00	\$ 23,867.17	\$ 23,867.17
Valmont	2' DISH MOUNT KIT	UGLM, FMA11, P472	N/A	N/A	1	\$ 443.00	\$ 533.59	\$ 533.59
Valmont	(3) 6' PIVOT STANDOFF ARMS	TBD	TBD	TBD	2	\$ 2,274.00	\$ 2,739.03	\$ 5,478.07
Valmont	COLLAR MOUNT FOR CORNER REFLECTOR	TBD	TBD	TBD	1	\$ 361.00	\$ 434.82	\$ 434.82
Valmont	STRUCTURAL ANALYSIS AND DRAWING	TBD	N/A	N/A	1	\$ 400.00	\$ 460.00	\$ 460.00
Valmont	FOUNDATION DESIGN PER CUSTOMER FURNISHED SOILS REPORT	TBD	N/A	N/A	1	\$ 600.00	\$ 690.00	\$ 690.00
Valmont	FREIGHT COSTS, WITH UNLOADING OF TRUCK	NA	N/A	N/A	1	\$ 4,200.00	\$ 4,200.00	\$ 4,200.00
Valmont	FREIGHT COSTS, ANCHOR STEEL FREIGHT SHIPPED DIRECT FROM SUPPLIER	NA	N/A	N/A	1	\$ 300.00	\$ 300.00	\$ 300.00
<b>Roof Top - Indoor - MISC eNB Equipment</b>								
Arrow	FIBER JUMPER SM LC/LC 2MTR	900S-2M-LC	NA	NA	12	\$ 10.95	\$ 12.05	\$ 144.54
CommScope	FIBER CABLE ASSEMBLY 2 SM, 7.5M	FJ-2SM-015-7.5M	NA	NA	3	\$ 58.99	\$ 64.89	\$ 194.66
<b>Warehouse Equipment</b>								
MSI	Storage of purchased equipment (12 Months)				1	\$ 6,450.00	\$ 7,417.50	\$ 7,417.50
<b>Urban Site 7 - Phase 3 Total:</b>								<b>\$ 180,221.56</b>

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.8 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 8 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
<b>eNB Urban Site Equipment</b>								
Ericsson	Ericsson,UCBB6630LTE,,,NON-COMM BASEBAND 6630,LTE,,,COMBINED UNIT/BASEBAND 6630 WITH FAN (included in CEQ 20548)	INF 903 6083/02	NA	NA	1	\$ 13,075.40	\$ 14,382.93	\$ 14,382.93
Ericsson	CABLE WITH CONNECTOR/POWER CABLE	RPM777528/10000	NA	NA	1	\$ 48.18	\$ 53.00	\$ 53.00
Ericsson	CABLE WITH CONNECTOR/GROUNDING CABLE	RPM777567/02500	NA	NA	1	\$ 81.03	\$ 89.13	\$ 89.13
Ericsson	RBS 6601 RJ-45 Cable	TSR4820211/2400	NA	NA	1	\$ 42.55	\$ 51.25	\$ 51.25
Ericsson	IDLe cable (1000 mm)	RPM777417/01000	NA	NA	1	\$ 319.74	\$ 351.71	\$ 351.71
Ericsson	IDLe cable (1800 mm)	RPM777417/01800	NA	NA	1	\$ 330.69	\$ 363.76	\$ 363.76
Ericsson	IDLe cable (3000 mm)	RPM777417/03000	NA	NA	1	\$ 387.63	\$ 426.39	\$ 426.39
Ericsson	Radio 4478 B14 (700MHz), 20W HWAC incl.	INF 903 6056/N14	NA	NA	3	\$ 7,923.42	\$ 8,715.76	\$ 26,147.29
Ericsson	LTE-FDD Cell Carrier 10MHz Bandwidth HWAC' (per RU)	INF 901 6000/HAF6*	NA	NA	3	\$ 238.71	\$ 262.58	\$ 787.74
Ericsson	Output Power HWAC 20W incr.steps (per RU)	INF 903 9999/HR01	NA	NA	7	\$ 194.91	\$ 214.40	\$ 1,500.81
Ericsson	Baseband R503, Auxillary Mux Uni	INF 901 6000/DXM2	NA	NA	3	\$ 1,780.47	\$ 1,958.52	\$ 5,875.55
Ericsson	INH8010026/1,GPS-TMG-HR-26NCM,,,GPS Ant 1575.42MHz 26dB Nf,Collar,Mount,,	INH8010026/1	NA	NA	1	\$ -	\$ -	\$ -
Ericsson	External Alarm Cable	RPM919664/15000	NA	NA	1	\$ 41.77	\$ 45.95	\$ 45.95
Ericsson	Signal Cable	RPM77701/00180	NA	NA	1	\$ 6.57	\$ 7.23	\$ 7.23
Ericsson	OVP Kit	NTB101242/2	NA	NA	9	\$ 30.22	\$ 33.24	\$ 299.20
Ericsson	SAU Kit	NTB101242/1	NA	NA	3	\$ 420.71	\$ 462.78	\$ 1,388.34
Ericsson	SFP, SMD, 2.5Gbps High Temp	RDH10247/25	NA	NA	9	\$ 33.17	\$ 36.48	\$ 328.36
Ericsson	MOUNTING KIT (MK wall brackets long)	SXX1250247/1	NA	NA	3	\$ 43.37	\$ 47.71	\$ 143.13
Purcell	KIT,FLXWS,14"H PLINTH,ATT,2-3112	2000003132	NA	NA	1	\$ 469.76	\$ 516.73	\$ 516.73
Purcell	Description: FLX21-2520,130W HEX,HTR,100A DIST	2000004800	NA	NA	1	\$ 6,215.68	\$ 6,837.25	\$ 6,837.25
<b>Lines and Antennas equipment</b>								
Quintel	8' 65 degree 8-Port Multi-band antenna - 700/850/PCS-WCS w/ Band 14	QS8658-3e	NA	NA	6	\$ 2,956.50	\$ 3,252.15	\$ 19,512.90
Raycap Inc.	Outdoor-rated Enclosure with,Strikesorb Protection for 12,Remote Radios; Mounting at,the base station or,rooftop	DC12-48-60-0-25E	NA	NA	1	\$ 1,719.15	\$ 1,891.07	\$ 1,891.07
Raycap Inc.	Dome Encl Design w/Strikesorb,Protection for (9) -48V thru,-60VDC RRH; Tower top,Installed; low let-through of,-160vdc; incl pole mnt hw	DC9-48-60-18-8C-EV	NA	NA	3	\$ 1,998.00	\$ 2,406.59	\$ 7,219.77
<b>DC Power Plant and Battery Back Up (BBU) equipment</b>								
	Reserved							
Vertiv	NF16W512WNCUWNOSLIDEBATTDRAWER	F2016064	NA	NA	1	\$ -	\$ -	\$ -

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.8 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 8 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
Vertiv	ATT POWER CABINET, 48V,	F1011032	NA	NA	1	\$ 5,790.36	\$ 6,369.40	\$ 6,369.40
Vertiv	PWR SYS.-48/+24V, NETSURE 512NGBB	582137000ZZ007	NA	NA	1	\$ 3,772.28	\$ 4,149.50	\$ 4,149.50
Vertiv	CB,HYD MAG,1P,5A,80VDC,SPDT	102274	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	CB,HYD MAG,1P,25A,80VDC,SPDT	102278	NA	NA	3	\$ 11.11	\$ 12.23	\$ 36.68
Vertiv	CB,HYD MAG,1P,50A,80VDC,SPDT	102282	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	Rectifier, eSure, 48VDC, 2000W, 1RU	1R482000E3	NA	NA	8	\$ 152.64	\$ 167.91	\$ 1,343.26
NORTH STAR	Battery String (48V)	NSB170FTRED0044	NA	NA	3	\$ 2,330.88	\$ 2,330.88	\$ 6,992.64
<b>Power Telco</b>								
Kohler	Generator 24/72 Hour	20REOZK	1007640	SGM32D43S	1	\$ -	\$ -	\$ -
TBD	Generator Tank	NA	NA	NA	1	\$ 9,422.83	\$ 11,349.80	\$ 11,349.80
Pyramid	Fuel Tank Install	TBD	N/A	N/A	1	\$ 5,750.00	\$ 6,612.50	\$ 6,612.50
Panrol	PanLock Single phase	PL-PLM00	NA	NA	1	\$ 509.00	\$ 613.09	\$ 613.09
MSI / LA-RICS Excess	CAC Configuration AC/Transfer Switch Cabinet (PPC)	CAC-A45201190P	1002935	1155697-150213-024	1	\$ 6,724.00	\$ 6,724.00	\$ 6,724.00
Pentair	TYPE 3R ENCLOSURE W/LIFT-OFF	A30248HCLO	NA	NA	1	\$ 254.04	\$ 279.44	\$ 279.44
Talley	Standard Hframe	NA	NA	NA	1	N/A	N/A	N/A
<b>Tower Equipment</b>								
Valmont	TRIPLE T-ARM KIT FOR 12 ANTENNAS WITH REINFORCEMENT	RMV12-496 and PRK-1245	N/A	N/A	1	\$ 3,144.00	\$ 3,786.95	\$ 3,786.95
Valmont	100' MONOPOLE - 99' POLE WITH 1' FOUNDATION PROJECTION	TBD	N/A	N/A	1	\$ 19,815.00	\$ 23,867.17	\$ 23,867.17
Valmont	2' DISH MOUNT KIT	UGLM, FMA1, P472	N/A	N/A	1	\$ 443.00	\$ 533.59	\$ 533.59
Valmont	(3) 6' PIVOT STANDOFF ARMS	TBD	TBD	TBD	2	\$ 2,274.00	\$ 2,739.03	\$ 5,478.07
Valmont	COLLAR MOUNT FOR CORNER REFLECTOR	TBD	TBD	TBD	1	\$ 361.00	\$ 434.82	\$ 434.82
Valmont	STRUCTURAL ANALYSIS AND DRAWING	TBD	N/A	N/A	1	\$ 400.00	\$ 460.00	\$ 460.00
Valmont	FOUNDATION DESIGN PER CUSTOMER FURNISHED SOILS REPORT	TBD	N/A	N/A	1	\$ 600.00	\$ 690.00	\$ 690.00
Valmont	FREIGHT COSTS, WITH UNLOADING OF TRUCK	NA	N/A	N/A	1	\$ 4,200.00	\$ 4,200.00	\$ 4,200.00
Valmont	FREIGHT COSTS, ANCHOR STEEL FREIGHT SHIPPED DIRECT FROM SUPPLIER	NA	N/A	N/A	1	\$ 300.00	\$ 300.00	\$ 300.00
<b>Roof Top - Indoor - MISC eNB Equipment</b>								
Arrow	FIBER JUMPER SM LC/LC 2MTR	900S-2M-LC	NA	NA	12	\$ 10.95	\$ 12.05	\$ 144.54
CommScope	FIBER CABLE ASSEMBLY 2 SM, 7.5M	FJ-2SM-015-7.5M	NA	NA	3	\$ 58.99	\$ 64.89	\$ 194.66
<b>Warehouse Equipment</b>								
MSI	Storage of purchased equipment (12 Months)				1	\$ 6,450.00	\$ 7,417.50	\$ 7,417.50
<b>Urban Site 8 - Phase 3 Total:</b>								<b>\$ 180,221.56</b>

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.9 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 9 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
eNB Urban Site Equipment								
Ericsson	Ericsson,UCBB6630LTE,...,NON-COMM BASEBAND 6630,LTE,...COMBINED UNIT/BASEBAND 6630 WITH FAN (included in CEQ 20548)	INF 903 6083/02	NA	NA	1	\$ 13,075.40	\$ 14,382.93	\$ 14,382.93
Ericsson	CABLE WITH CONNECTOR/POWER CABLE	RPM777528/10000	NA	NA	1	\$ 48.18	\$ 53.00	\$ 53.00
Ericsson	CABLE WITH CONNECTOR/GROUNDING CABLE	RPM777567/02500	NA	NA	1	\$ 81.03	\$ 89.13	\$ 89.13
Ericsson	RBS 6601 RJ-45 Cable	TSR4820211/2400	NA	NA	1	\$ 42.55	\$ 51.25	\$ 51.25
Ericsson	IDLe cable (1000 mm)	RPM777417/01000	NA	NA	1	\$ 319.74	\$ 351.71	\$ 351.71
Ericsson	IDLe cable (1800 mm)	RPM777417/01800	NA	NA	1	\$ 330.69	\$ 363.76	\$ 363.76
Ericsson	IDLe cable (3000 mm)	RPM777417/03000	NA	NA	1	\$ 387.63	\$ 426.39	\$ 426.39
Ericsson	Radio 4478 B14 (700MHz), 20W HWAC incl.	INF 903 6056/N14	NA	NA	3	\$ 7,923.42	\$ 8,715.76	\$ 26,147.29
Ericsson	LTE-FDD Cell Carrier 10MHz Bandwidth HWAC (per RU)	INF 901 6000/HAF6*	NA	NA	3	\$ 238.71	\$ 262.58	\$ 787.74
Ericsson	Output Power HWAC 20W incr.steps (per RU)	INF 903 9999/HR01	NA	NA	7	\$ 194.91	\$ 214.40	\$ 1,500.81
Ericsson	Baseband R503, Auxillary Mux Uni	INF 901 6000/DXM2	NA	NA	3	\$ 1,780.47	\$ 1,958.52	\$ 5,875.55
Ericsson	INH8010026/1,GPS-TMG-HR-26NCM,...,GPS Ant 1575.42MHz 26dB Nf,Collar,Mount,,	INH8010026/1	NA	NA	1	\$ -	\$ -	\$ -
Ericsson	External Alarm Cable	RPM919664/15000	NA	NA	1	\$ 41.77	\$ 45.95	\$ 45.95
Ericsson	Signal Cable	RPM77701/00180	NA	NA	1	\$ 6.57	\$ 7.23	\$ 7.23
Ericsson	OVP Kit	NTB101242/2	NA	NA	9	\$ 30.22	\$ 33.24	\$ 299.20
Ericsson	SAU Kit	NTB101242/1	NA	NA	3	\$ 420.71	\$ 462.78	\$ 1,388.34
Ericsson	SFP, SMD, 2.5Gbps High Temp	RDH10247/25	NA	NA	9	\$ 33.17	\$ 36.48	\$ 328.36
Ericsson	MOUNTING KIT (MK wall brackets long)	SXX1250247/1	NA	NA	3	\$ 43.37	\$ 47.71	\$ 143.13
Purcell	KIT,FLXWS,14"H PLINTH,ATT,2-3112	2000003132	NA	NA	1	\$ 469.76	\$ 516.73	\$ 516.73
Purcell	Description: FLX21-2520,130W HEX,HTR,100A DIST	2000004800	NA	NA	1	\$ 6,215.68	\$ 6,837.25	\$ 6,837.25
Lines and Antennas equipment								
Quintel	8' 65 degree 8-Port Multi-band antenna - 700/850/PCS-WCS w/ Band 14	QS8658-3e	NA	NA	6	\$ 2,956.50	\$ 3,252.15	\$ 19,512.90
Raycap Inc.	Outdoor-rated Enclosure with,Strikesorb Protection for 12,Remote Radios; Mounting at,the base station or,rooftop	DC12-48-60-0-25E	NA	NA	1	\$ 1,719.15	\$ 1,891.07	\$ 1,891.07
Raycap Inc.	Dome Encl Design w/Strikesorb,Protection for (9) -48V thru,-60VDC RRH; Tower top,Installed; low let-through of,-160vdc; incl pole mnt hw	DC9-48-60-18-8C-EV	NA	NA	3	\$ 1,998.00	\$ 2,406.59	\$ 7,219.77
DC Power Plant and Battery Back Up (BBU) equipment								
Reserved								
Vertiv	NF16W512WNCUWNOSLIDEBATTDRAWER	F2016064	NA	NA	1	\$ -	\$ -	\$ -

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.9 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 9 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
Vertiv	ATT POWER CABINET, 48V,	F1011032	NA	NA	1	\$ 5,790.36	\$ 6,369.40	\$ 6,369.40
Vertiv	PWR SYS,-48/+24V, NETSURE 512NGBB	582137000ZZ007	NA	NA	1	\$ 3,772.28	\$ 4,149.50	\$ 4,149.50
Vertiv	CB,HYD MAG,1P,5A,80VDC,SPDT	102274	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	CB,HYD MAG,1P,25A,80VDC,SPDT	102278	NA	NA	3	\$ 11.11	\$ 12.23	\$ 36.68
Vertiv	CB,HYD MAG,1P,50A,80VDC,SPDT	102282	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	Rectifier, eSure, 48VDC, 2000W, 1RU	1R482000E3	NA	NA	8	\$ 152.64	\$ 167.91	\$ 1,343.26
NORTH STAR	Battery String (48V)	NSB170FTRED0044	NA	NA	3	\$ 2,330.88	\$ 2,330.88	\$ 6,992.64
<b>Power Teleo</b>								
Kohler	Generator 24/72 Hour	20REOZK	1007641	SGM32D43T	1	\$ -	\$ -	\$ -
TBD	Generator Tank	NA	NA	NA	1	\$ 9,422.83	\$ 11,349.80	\$ 11,349.80
Pyramid	Fuel Tank Install	TBD	N/A	N/A	1	\$ 5,750.00	\$ 6,612.50	\$ 6,612.50
Pantrol	PanLock Single phase	PL-PLM00	NA	NA	1	\$ 509.00	\$ 613.09	\$ 613.09
MSI / LA-RICS Excess	CAC Configuration AC/Transfer Switch Cabinet (PPC)	CAC-A45201190P	1002937	1155697-150213-026	1	\$ 6,724.00	\$ 6,724.00	\$ 6,724.00
Pentair	TYPE 3R ENCLOSURE W/LIFT-OFF	A30248HCLO	NA	NA	1	\$ 254.04	\$ 279.44	\$ 279.44
Talley	Standard Hframe	NA	NA	NA	1	N/A	N/A	N/A
<b>Tower Equipment</b>								
Valmont	TRIPLE T-ARM KIT FOR 12 ANTENNAS WITH REINFORCEMENT	RMV12-496 and PRK-1245	N/A	N/A	1	\$ 3,144.00	\$ 3,786.95	\$ 3,786.95
Valmont	100' MONOPOLE - 99' POLE WITH 1' FOUNDATION PROJECTION	TBD	N/A	N/A	1	\$ 19,815.00	\$ 23,867.17	\$ 23,867.17
Valmont	2' DISH MOUNT KIT	UGLM, FMA1, P472	N/A	N/A	1	\$ 443.00	\$ 533.59	\$ 533.59
Valmont	(3) 6' PIVOT STANDOFF ARMS	TBD	TBD	TBD	2	\$ 2,274.00	\$ 2,739.03	\$ 5,478.07
Valmont	COLLAR MOUNT FOR CORNER REFLECTOR	TBD	TBD	TBD	1	\$ 361.00	\$ 434.82	\$ 434.82
Valmont	STRUCTURAL ANALYSIS AND DRAWING	TBD	N/A	N/A	1	\$ 400.00	\$ 460.00	\$ 460.00
Valmont	FOUNDATION DESIGN PER CUSTOMER FURNISHED SOILS REPORT	TBD	N/A	N/A	1	\$ 600.00	\$ 690.00	\$ 690.00
Valmont	FREIGHT COSTS, WITH UNLOADING OF TRUCK	NA	N/A	N/A	1	\$ 4,200.00	\$ 4,200.00	\$ 4,200.00
Valmont	FREIGHT COSTS, ANCHOR STEEL FREIGHT SHIPPED DIRECT FROM SUPPLIER	NA	N/A	N/A	1	\$ 300.00	\$ 300.00	\$ 300.00
<b>Roof Top - Indoor - MISC eNB Equipment</b>								
Arrow	FIBER JUMPER SM LC/LC 2MTR	900S-2M-LC	NA	NA	12	\$ 10.95	\$ 12.05	\$ 144.54
CommScope	FIBER CABLE ASSEMBLY 2 SM, 7.5M	FJ-2SM-015-7.5M	NA	NA	3	\$ 58.99	\$ 64.89	\$ 194.66
<b>Warehouse Equipment</b>								
MSI	Storage of purchased equipment (12 Months)				1	\$ 6,450.00	\$ 7,417.50	\$ 7,417.50
<b>Urban Site 9 - Phase 3 Total:</b>								<b>\$ 180,221.56</b>



**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.10 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 10 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
<b>eNB Urban Site Equipment</b>								
Ericsson	Ericsson,UCBB6630LTE,...,NON-COMM BASEBAND 6630,LTE,...COMBINED UNIT/BASEBAND 6630 WITH FAN (included in CEQ 20548)	INF 903 6083/02	NA	NA	1	\$ 13,075.40	\$ 14,382.93	\$ 14,382.93
Ericsson	CABLE WITH CONNECTOR/POWER CABLE	RPM777528/10000	NA	NA	1	\$ 48.18	\$ 53.00	\$ 53.00
Ericsson	CABLE WITH CONNECTOR/GROUNDING CABLE	RPM777567/02500	NA	NA	1	\$ 81.03	\$ 89.13	\$ 89.13
Ericsson	RBS 6601 RJ-45 Cable	TSR4820211/2400	NA	NA	1	\$ 42.55	\$ 51.25	\$ 51.25
Ericsson	IDLe cable (1000 mm)	RPM777417/01000	NA	NA	1	\$ 319.74	\$ 351.71	\$ 351.71
Ericsson	IDLe cable (1800 mm)	RPM777417/01800	NA	NA	1	\$ 330.69	\$ 363.76	\$ 363.76
Ericsson	IDLe cable (3000 mm)	RPM777417/03000	NA	NA	1	\$ 387.63	\$ 426.39	\$ 426.39
Ericsson	Radio 4478 B14 (700MHz), 20W HWAC incl.	INF 903 6056/N14	NA	NA	3	\$ 7,923.42	\$ 8,715.76	\$ 26,147.29
Ericsson	LTE-FDD Cell Carrier 10MHz Bandwidth HWAC (per RU)	INF 901 6000/HAF6*	NA	NA	3	\$ 238.71	\$ 262.58	\$ 787.74
Ericsson	Output Power HWAC 20W incr.steps (per RU)	INF 903 9999/HR01	NA	NA	7	\$ 194.91	\$ 214.40	\$ 1,500.81
Ericsson	Baseband R503, Auxillary Mux Uni	INF 901 6000/DXM2	NA	NA	3	\$ 1,780.47	\$ 1,958.52	\$ 5,875.55
Ericsson	INH8010026/1,GPS-TMG-HR-26NCM,...,GPS Ant 1575.42MHz 26dB Nf,Collar,Mount,,	INH8010026/1	NA	NA	1	\$ -	\$ -	\$ -
Ericsson	External Alarm Cable	RPM919664/15000	NA	NA	1	\$ 41.77	\$ 45.95	\$ 45.95
Ericsson	Signal Cable	RPM77701/00180	NA	NA	1	\$ 6.57	\$ 7.23	\$ 7.23
Ericsson	OVP Kit	NTB101242/2	NA	NA	9	\$ 30.22	\$ 33.24	\$ 299.20
Ericsson	SAU Kit	NTB101242/1	NA	NA	3	\$ 420.71	\$ 462.78	\$ 1,388.34
Ericsson	SFP, SMD, 2.5Gbps High Temp	RDH10247/25	NA	NA	9	\$ 33.17	\$ 36.48	\$ 328.36
Ericsson	MOUNTING KIT (MK wall brackets long)	SXX1250247/1	NA	NA	3	\$ 43.37	\$ 47.71	\$ 143.13
Purcell	KIT,FLXWS,14"H PLINTH,ATT,2-3112	2000003132	NA	NA	1	\$ 469.76	\$ 516.73	\$ 516.73
Purcell	Description: FLX21-2520,130W HEX,HTR,100A DIST	2000004800	NA	NA	1	\$ 6,215.68	\$ 6,837.25	\$ 6,837.25
<b>Lines and Antennas equipment</b>								
Quintel	8' 65 degree 8-Port Multi-band antenna - 700/850/PCS-WCS w/ Band 14	QS8658-3e	NA	NA	6	\$ 2,956.50	\$ 3,252.15	\$ 19,512.90
Raycap Inc.	Outdoor-rated Enclosure with,Strikesorb Protection for 12,Remote Radios; Mounting at,the base station or,rooftop	DC12-48-60-0-25E	NA	NA	1	\$ 1,719.15	\$ 1,891.07	\$ 1,891.07
Raycap Inc.	Dome Encl Design w/Strikesorb,Protection for (9) -48V thru,-60VDC RRH; Tower top,Installed; low let-through of,-160vdc; incl pole mnt hw	DC9-48-60-18-8C-EV	NA	NA	3	\$ 1,998.00	\$ 2,406.59	\$ 7,219.77
<b>DC Power Plant and Battery Back Up (BBU) equipment</b>								
	Reserved							
Vertiv	NF16W512WNCUWNOSLIDEBATTDRAWER	F2016064	NA	NA	1	\$ -	\$ -	\$ -

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.10 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 10 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
Vertiv	ATT POWER CABINET, 48V,	F1011032	NA	NA	1	\$ 5,790.36	\$ 6,369.40	\$ 6,369.40
Vertiv	PWR SYS,-48/+24V, NETSURE 512NGBB	582137000ZZ007	NA	NA	1	\$ 3,772.28	\$ 4,149.50	\$ 4,149.50
Vertiv	CB,HYD MAG,1P,5A,80VDC,SPDT	102274	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	CB,HYD MAG,1P,25A,80VDC,SPDT	102278	NA	NA	3	\$ 11.11	\$ 12.23	\$ 36.68
Vertiv	CB,HYD MAG,1P,50A,80VDC,SPDT	102282	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	Rectifier, eSure, 48VDC, 2000W, 1RU	1R482000E3	NA	NA	8	\$ 152.64	\$ 167.91	\$ 1,343.26
NORTH STAR	Battery String (48V)	NSB170FTRED0044	NA	NA	3	\$ 2,330.88	\$ 2,330.88	\$ 6,992.64
<b>Power Teleo</b>								
Kohler	Generator 24/72 Hour	20REOZK	1007642	SGM32D43V	1	\$ -	\$ -	\$ -
	Reserved							
	Reserved							
Pantrol	PanLock Single phase	PL-PLM00	NA	NA	1	\$ 509.00	\$ 613.09	\$ 613.09
MSI / LA-RICS Excess	CAC Configuration AC/Transfer Switch Cabinet (PPC)	CAC-A45201190P	1002938	1155697-150213-027	1	\$ 6,724.00	\$ 6,724.00	\$ 6,724.00
Pentair	TYPE 3R ENCLOSURE W/LIFT-OFF	A30248HCLO	NA	NA	1	\$ 254.04	\$ 279.44	\$ 279.44
Talley	Standard Hframe	NA	NA	NA	1	N/A	N/A	N/A
<b>Tower Equipment</b>								
Valmont	TRIPLE T-ARM KIT FOR 12 ANTENNAS WITH REINFORCEMENT	RMV12-496 and PRK-1245	N/A	N/A	1	\$ 3,144.00	\$ 3,786.95	\$ 3,786.95
Valmont	100' MONOPOLE - 99' POLE WITH 1' FOUNDATION PROJECTION	TBD	N/A	N/A	1	\$ 19,815.00	\$ 23,867.17	\$ 23,867.17
Valmont	2' DISH MOUNT KIT	UGLM, FMA1, P472	N/A	N/A	1	\$ 443.00	\$ 533.59	\$ 533.59
Valmont	(3) 6' PIVOT STANDOFF ARMS	TBD	TBD	TBD	2	\$ 2,274.00	\$ 2,739.03	\$ 5,478.07
Valmont	COLLAR MOUNT FOR CORNER REFLECTOR	TBD	TBD	TBD	1	\$ 361.00	\$ 434.82	\$ 434.82
Valmont	STRUCTURAL ANALYSIS AND DRAWING	TBD	N/A	N/A	1	\$ 400.00	\$ 460.00	\$ 460.00
Valmont	FOUNDATION DESIGN PER CUSTOMER FURNISHED SOILS REPORT	TBD	N/A	N/A	1	\$ 600.00	\$ 690.00	\$ 690.00
Valmont	FREIGHT COSTS, WITH UNLOADING OF TRUCK	NA	N/A	N/A	1	\$ 4,200.00	\$ 4,200.00	\$ 4,200.00
Valmont	FREIGHT COSTS, ANCHOR STEEL FREIGHT SHIPPED DIRECT FROM SUPPLIER	NA	N/A	N/A	1	\$ 300.00	\$ 300.00	\$ 300.00
<b>Roof Top - Indoor - MISC eNB Equipment</b>								
Arrow	FIBER JUMPER SM LC/LC 2MTR	900S-2M-LC	NA	NA	12	\$ 10.95	\$ 12.05	\$ 144.54
CommScope	FIBER CABLE ASSEMBLY 2 SM, 7.5M	FJ-2SM-015-7.5M	NA	NA	3	\$ 58.99	\$ 64.89	\$ 194.66
<b>Warehouse Equipment</b>								
MSI	Storage of purchased equipment (12 Months)				1	\$ 6,450.00	\$ 7,417.50	\$ 7,417.50
<b>Urban Site 10 - Phase 3 Total:</b>								<b>\$ 162,259.25</b>

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.11 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 11 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
eNB Urban Site Equipment								
Ericsson	Ericsson,UCBB6630LTE,,,NON-COMM BASEBAND 6630,LTE,,,COMBINED UNIT/BASEBAND 6630 WITH FAN (included in CEQ 20548)	INF 903 6083/02	NA	NA	1	\$ 13,075.40	\$ 14,382.93	\$ 14,382.93
Ericsson	CABLE WITH CONNECTOR/POWER CABLE	RPM777528/10000	NA	NA	1	\$ 48.18	\$ 53.00	\$ 53.00
Ericsson	CABLE WITH CONNECTOR/GROUNDING CABLE	RPM777567/02500	NA	NA	1	\$ 81.03	\$ 89.13	\$ 89.13
Ericsson	RBS 6601 RJ-45 Cable	TSR4820211/2400	NA	NA	1	\$ 42.55	\$ 51.25	\$ 51.25
Ericsson	IDLe cable (1000 mm)	RPM777417/01000	NA	NA	1	\$ 319.74	\$ 351.71	\$ 351.71
Ericsson	IDLe cable (1800 mm)	RPM777417/01800	NA	NA	1	\$ 330.69	\$ 363.76	\$ 363.76
Ericsson	IDLe cable (3000 mm)	RPM777417/03000	NA	NA	1	\$ 387.63	\$ 426.39	\$ 426.39
Ericsson	Radio 4478 B14 (700MHz), 20W HWAC incl.	INF 903 6056/N14	NA	NA	3	\$ 7,923.42	\$ 8,715.76	\$ 26,147.29
Ericsson	LTE-FDD Cell Carrier 10MHz Bandwidth HWAC (per RU)	INF 901 6000/HAF6*	NA	NA	3	\$ 238.71	\$ 262.58	\$ 787.74
Ericsson	Output Power HWAC 20W incr.steps (per RU)	INF 903 9999/HR01	NA	NA	7	\$ 194.91	\$ 214.40	\$ 1,500.81
Ericsson	Baseband R503, Auxillary Mux Uni	INF 901 6000/DXM2	NA	NA	3	\$ 1,780.47	\$ 1,958.52	\$ 5,875.55
Ericsson	INH8010026/1,GPS-TMG-HR-26NCM,,,GPS Ant 1575.42MHz 26dB Nf,Collar,Mount,,	INH8010026/1	NA	NA	1	\$ -	\$ -	\$ -
Ericsson	External Alarm Cable	RPM919664/15000	NA	NA	1	\$ 41.77	\$ 45.95	\$ 45.95
Ericsson	Signal Cable	RPM77701/00180	NA	NA	1	\$ 6.57	\$ 7.23	\$ 7.23
Ericsson	OVP Kit	NTB101242/2	NA	NA	9	\$ 30.22	\$ 33.24	\$ 299.20
Ericsson	SAU Kit	NTB101242/1	NA	NA	3	\$ 420.71	\$ 462.78	\$ 1,388.34
Ericsson	SFP, SMD, 2.5Gbps High Temp	RDH10247/25	NA	NA	9	\$ 33.17	\$ 36.48	\$ 328.36
Ericsson	MOUNTING KIT (MK wall brackets long)	SXK1250247/1	NA	NA	3	\$ 43.37	\$ 47.71	\$ 143.13
Purcell	KIT,FLXWS,14"H PLINTH,ATT,2-3112	2000003132	NA	NA	1	\$ 469.76	\$ 516.73	\$ 516.73
Purcell	Description: FLX21-2520,130W HEX,HTR,100A DIST	2000004800	NA	NA	1	\$ 6,215.68	\$ 6,837.25	\$ 6,837.25
Lines and Antennas equipment								
Quintel	8' 65 degree 8-Port Multi-band antenna - 700/850/PCS-WCS w/ Band 14	QS8658-3e	NA	NA	6	\$ 2,956.50	\$ 3,252.15	\$ 19,512.90
Raycap Inc.	Outdoor-rated Enclosure with,Strikesorb Protection for 12,Remote Radios; Mounting at,the base station or,rooftop	DC12-48-60-0-25E	NA	NA	1	\$ 1,719.15	\$ 1,891.07	\$ 1,891.07
Raycap Inc.	Dome Encl Design w/Strikesorb,Protection for (9) -48V thru,-60VDC RRH; Tower top,Installed; low let-through of,-160vdc; incl pole mnt hw	DC9-48-60-18-8C-EV	NA	NA	3	\$ 1,998.00	\$ 2,406.59	\$ 7,219.77
DC Power Plant and Battery Back Up (BBU) equipment								
	Reserved							
Vertiv	NF16W512WNCUWNOSLIDEBATTDRAWER	F2016064	NA	NA	1	\$ -	\$ -	\$ -

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.11 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 11 (MONOPOLE)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
Vertiv	ATT POWER CABINET, 48V,	F1011032	NA	NA	1	\$ 5,790.36	\$ 6,369.40	\$ 6,369.40
Vertiv	PWR SYS,-48/+24V, NETSURE 512NGBB	582137000ZZ007	NA	NA	1	\$ 3,772.28	\$ 4,149.50	\$ 4,149.50
Vertiv	CB,HYD MAG,1P,5A,80VDC,SPDT	102274	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	CB,HYD MAG,1P,25A,80VDC,SPDT	102278	NA	NA	3	\$ 11.11	\$ 12.23	\$ 36.68
Vertiv	CB,HYD MAG,1P,50A,80VDC,SPDT	102282	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	Rectifier, eSure, 48VDC, 2000W, 1RU	1R482000E3	NA	NA	8	\$ 152.64	\$ 167.91	\$ 1,343.26
NORTH STAR	Battery String (48V)	NSB170FTRED0044	NA	NA	3	\$ 2,330.88	\$ 2,330.88	\$ 6,992.64
<b>Power Teleo</b>								
Kohler	Generator 24/72 Hour	20REOZK	1007643	SGM32D43W	1	\$ -	\$ -	\$ -
	Reserved					\$ -	\$ -	\$ -
	Reserved					\$ -	\$ -	\$ -
Panrol	PanLock Single phase	PL-PLM00	NA	NA	1	\$ 509.00	\$ 613.09	\$ 613.09
MSI / LA-RICS Excess	CAC Configuration AC/Transfer Switch Cabinet (PPC)	CAC-A45201190P	1002940	1155697-150213-029	1	\$ 6,724.00	\$ 6,724.00	\$ 6,724.00
Pentair	TYPE 3R ENCLOSURE W/LIFT-OFF	A30248HCLO	NA	NA	1	\$ 254.04	\$ 279.44	\$ 279.44
Talley	Standard Hframe	NA	NA	NA	1	N/A	N/A	N/A
<b>Tower Equipment</b>								
Valmont	TRIPLE T-ARM KIT FOR 12 ANTENNAS WITH REINFORCEMENT	RMV12-496 and PRK-1245	N/A	N/A	1	\$ 3,144.00	\$ 3,786.95	\$ 3,786.95
Valmont	100' MONOPOLE - 99' POLE WITH 1' FOUNDATION PROJECTION	TBD	N/A	N/A	1	\$ 19,815.00	\$ 23,867.17	\$ 23,867.17
Valmont	2' DISH MOUNT KIT	UGLM, FMA1, P472	N/A	N/A	1	\$ 443.00	\$ 533.59	\$ 533.59
Valmont	(3) 6' PIVOT STANDOFF ARMS	TBD	TBD	TBD	2	\$ 2,274.00	\$ 2,739.03	\$ 5,478.07
Valmont	COLLAR MOUNT FOR CORNER REFLECTOR	TBD	TBD	TBD	1	\$ 361.00	\$ 434.82	\$ 434.82
Valmont	STRUCTURAL ANALYSIS AND DRAWING	TBD	N/A	N/A	1	\$ 400.00	\$ 460.00	\$ 460.00
Valmont	FOUNDATION DESIGN PER CUSTOMER FURNISHED SOILS REPORT	TBD	N/A	N/A	1	\$ 600.00	\$ 690.00	\$ 690.00
Valmont	FREIGHT COSTS, WITH UNLOADING OF TRUCK	NA	N/A	N/A	1	\$ 4,200.00	\$ 4,200.00	\$ 4,200.00
Valmont	FREIGHT COSTS, ANCHOR STEEL FREIGHT SHIPPED DIRECT FROM SUPPLIER	NA	N/A	N/A	1	\$ 300.00	\$ 300.00	\$ 300.00
<b>Roof Top - Indoor - MISC eNB Equipment</b>								
Arrow	FIBER JUMPER SM LC/LC 2MTR	900S-2M-LC	NA	NA	12	\$ 10.95	\$ 12.05	\$ 144.54
CommScope	FIBER CABLE ASSEMBLY 2 SM, 7.5M	FJ-2SM-015-7.5M	NA	NA	3	\$ 58.99	\$ 64.89	\$ 194.66
<b>Warehouse Equipment</b>								
MSI	Storage of purchased equipment (12 Months)				1	\$ 6,450.00	\$ 7,417.50	\$ 7,417.50
<b>Urban Site 11 - Phase 3 Total:</b>								<b>\$ 162,259.25</b>

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.12 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 12 (MONOPOLE)**  
**(TBD)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
eNB Urban Site Equipment								
Ericsson	Ericsson,UCBB6630LTE,...,NON-COMM BASEBAND 6630,LTE,...COMBINED UNIT/BASEBAND 6630 WITH FAN (included in CEQ 20548)	INF 903 6083/02	NA	NA	1	\$ 13,075.40	\$ 14,382.93	\$ 14,382.93
Ericsson	CABLE WITH CONNECTOR/POWER CABLE	RPM777528/10000	NA	NA	1	\$ 48.18	\$ 53.00	\$ 53.00
Ericsson	CABLE WITH CONNECTOR/GROUNDING CABLE	RPM777567/02500	NA	NA	1	\$ 81.03	\$ 89.13	\$ 89.13
Ericsson	RBS 6601 RJ-45 Cable	TSR4820211/2400	NA	NA	1	\$ 42.55	\$ 51.25	\$ 51.25
Ericsson	IDLe cable (1000 mm)	RPM777417/01000	NA	NA	1	\$ 319.74	\$ 351.71	\$ 351.71
Ericsson	IDLe cable (1800 mm)	RPM777417/01800	NA	NA	1	\$ 330.69	\$ 363.76	\$ 363.76
Ericsson	IDLe cable (3000 mm)	RPM777417/03000	NA	NA	1	\$ 387.63	\$ 426.39	\$ 426.39
Ericsson	Radio 4478 B14 (700MHz), 20W HWAC incl.	INF 903 6056/N14	NA	NA	3	\$ 7,923.42	\$ 8,715.76	\$ 26,147.29
Ericsson	LTE-FDD Cell Carrier 10MHz Bandwidth HWAC (per RU)	INF 901 6000/HAF6*	NA	NA	3	\$ 238.71	\$ 262.58	\$ 787.74
Ericsson	Output Power HWAC 20W incr.steps (per RU)	INF 903 9999/HR01	NA	NA	7	\$ 194.91	\$ 214.40	\$ 1,500.81
Ericsson	Baseband R503, Auxillary Mux Uni	INF 901 6000/DXM2	NA	NA	3	\$ 1,780.47	\$ 1,958.52	\$ 5,875.55
Ericsson	INH8010026/1,GPS-TMG-HR-26NCM,..,GPS Ant 1575.42MHz 26dB Nf,Collar,Mount,,	INH8010026/1	NA	NA	1	\$ -	\$ -	\$ -
Ericsson	External Alarm Cable	RPM919664/15000	NA	NA	1	\$ 41.77	\$ 45.95	\$ 45.95
Ericsson	Signal Cable	RPM77701/00180	NA	NA	1	\$ 6.57	\$ 7.23	\$ 7.23
Ericsson	OVP Kit	NTB101242/2	NA	NA	9	\$ 30.22	\$ 33.24	\$ 299.20
Ericsson	SAU Kit	NTB101242/1	NA	NA	3	\$ 420.71	\$ 462.78	\$ 1,388.34
Ericsson	SFP, SMD, 2.5Gbps High Temp	RDH10247/25	NA	NA	9	\$ 33.17	\$ 36.48	\$ 328.36
Ericsson	MOUNTING KIT (MK wall brackets long)	SXX1250247/1	NA	NA	3	\$ 43.37	\$ 47.71	\$ 143.13
Purcell	KIT,FLXWS,14"H PLINTH,ATT,2-3112	2000003132	NA	NA	1	\$ 469.76	\$ 516.73	\$ 516.73
Purcell	Description: FLX21-2520,130W HEX,HTR,100A DIST	2000004800	NA	NA	1	\$ 6,215.68	\$ 6,837.25	\$ 6,837.25
Lines and Antennas equipment								
Quintel	8' 65 degree 8-Port Multi-band antenna - 700/850/PCS-WCS w/ Band 14	QS8658-3e	NA	NA	6	\$ 2,956.50	\$ 3,252.15	\$ 19,512.90
Raycap Inc.	Outdoor-rated Enclosure with,Strikesorb Protection for 12,Remote Radios; Mounting at,the base station or,rooftop	DC12-48-60-0-25E	NA	NA	1	\$ 1,719.15	\$ 1,891.07	\$ 1,891.07
Raycap Inc.	Dome Encl Design w/Strikesorb,Protection for (9) -48V thru,-60VDC RRH; Tower top,Installed; low let-through of,-160vdc; incl pole mnt hw	DC9-48-60-18-8C-EV	NA	NA	3	\$ 1,998.00	\$ 2,406.59	\$ 7,219.77
DC Power Plant and Battery Back Up (BBU) equipment								
Reserved								
Vertiv	NF16W512WNCUWNOSLIDEBATTDRAWER	F2016064	NA	NA	1	\$ -	\$ -	\$ -

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.12 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 12 (MONOPOLE)**  
**(TBD)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
Vertiv	ATT POWER CABINET, 48V,	F1011032	NA	NA	1	\$ 5,790.36	\$ 6,369.40	\$ 6,369.40
Vertiv	PWR SYS,-48/+24V, NETSURE 512NGBB	582137000ZZ007	NA	NA	1	\$ 3,772.28	\$ 4,149.50	\$ 4,149.50
Vertiv	CB,HYD MAG,1P,5A,80VDC,SPDT	102274	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	CB,HYD MAG,1P,25A,80VDC,SPDT	102278	NA	NA	3	\$ 11.11	\$ 12.23	\$ 36.68
Vertiv	CB,HYD MAG,1P,50A,80VDC,SPDT	102282	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	Rectifier, eSure, 48VDC, 2000W, 1RU	1R482000E3	NA	NA	8	\$ 152.64	\$ 167.91	\$ 1,343.26
NORTH STAR	Battery String (48V)	NSB170FTRED0044	NA	NA	3	\$ 2,330.88	\$ 2,330.88	\$ 6,992.64
<b>Power Teleo</b>								
Kohler	Generator 24/72 Hour	20REOZK	1007644	SGM32D446	1	\$ -	\$ -	\$ -
	Reserved					\$ -	\$ -	\$ -
	Reserved					\$ -	\$ -	\$ -
Pantrol	PanLock Single phase	PL-PLM00	NA	NA	1	\$ 509.00	\$ 613.09	\$ 613.09
MSI / LA-RICS Excess	CAC Configuration AC/Transfer Switch Cabinet (PPC)	CAC-A45201190P	1002942	1155697-150213-031	1	\$ 6,724.00	\$ 6,724.00	\$ 6,724.00
Pentair	TYPE 3R ENCLOSURE W/LIFT-OFF	A30248HCLO	NA	NA	1	\$ 254.04	\$ 279.44	\$ 279.44
Talley	Standard Hframe	NA	NA	NA	1	N/A	N/A	N/A
<b>Tower Equipment</b>								
Valmont	TRIPLE T-ARM KIT FOR 12 ANTENNAS WITH REINFORCEMENT	RMV12-496 and PRK-1245	N/A	N/A	1	\$ 3,144.00	\$ 3,786.95	\$ 3,786.95
Valmont	100' MONOPOLE - 99' POLE WITH 1' FOUNDATION PROJECTION	TBD	N/A	N/A	1	\$ 19,815.00	\$ 23,867.17	\$ 23,867.17
Valmont	2' DISH MOUNT KIT	UGLM, FMA1, P472	N/A	N/A	1	\$ 443.00	\$ 533.59	\$ 533.59
Valmont	(3) 6' PIVOT STANDOFF ARMS	TBD	TBD	TBD	2	\$ 2,274.00	\$ 2,739.03	\$ 5,478.07
Valmont	COLLAR MOUNT FOR CORNER REFLECTOR	TBD	TBD	TBD	1	\$ 361.00	\$ 434.82	\$ 434.82
Valmont	STRUCTURAL ANALYSIS AND DRAWING	TBD	N/A	N/A	1	\$ 400.00	\$ 460.00	\$ 460.00
Valmont	FOUNDATION DESIGN PER CUSTOMER FURNISHED SOILS REPORT	TBD	N/A	N/A	1	\$ 600.00	\$ 690.00	\$ 690.00
Valmont	FREIGHT COSTS, WITH UNLOADING OF TRUCK	NA	N/A	N/A	1	\$ 4,200.00	\$ 4,200.00	\$ 4,200.00
Valmont	FREIGHT COSTS, ANCHOR STEEL FREIGHT SHIPPED DIRECT FROM SUPPLIER	NA	N/A	N/A	1	\$ 300.00	\$ 300.00	\$ 300.00
<b>Roof Top - Indoor - MISC eNB Equipment</b>								
Arrow	FIBER JUMPER SM LC/LC 2MTR	900S-2M-LC	NA	NA	12	\$ 10.95	\$ 12.05	\$ 144.54
CommScope	FIBER CABLE ASSEMBLY 2 SM, 7.5M	FJ-2SM-015-7.5M	NA	NA	3	\$ 58.99	\$ 64.89	\$ 194.66
<b>Warehouse Equipment</b>								
MSI	Storage of purchased equipment (12 Months)				1	\$ 6,450.00	\$ 7,417.50	\$ 7,417.50
<b>Urban Site 12 - Phase 3 Total:</b>								<b>\$ 162,259.25</b>

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.13 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITES 13 (Monopole)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
<b>eNB Urban Site Equipment</b>								
Ericsson	Ericsson,UCBB6630LTE,,,NON-COMM BASEBAND 6630,LTE,,,COMBINED UNIT/BASEBAND 6630 WITH FAN (included in CEQ 20548)	INF 903 6083/02	NA	NA	1	\$ 13,075.40	\$ 14,382.93	\$ 14,382.93
Ericsson	CABLE WITH CONNECTOR/POWER CABLE	RPM777528/10000	NA	NA	1	\$ 48.18	\$ 53.00	\$ 53.00
Ericsson	CABLE WITH CONNECTOR/GROUNDING CABLE	RPM777567/02500	NA	NA	1	\$ 81.03	\$ 89.13	\$ 89.13
Ericsson	RBS 6601 RJ-45 Cable	TSR4820211/2400	NA	NA	1	\$ 42.55	\$ 51.25	\$ 51.25
Ericsson	IDLe cable (1000 mm)	RPM777417/01000	NA	NA	1	\$ 319.74	\$ 351.71	\$ 351.71
Ericsson	IDLe cable (1800 mm)	RPM777417/01800	NA	NA	1	\$ 330.69	\$ 363.76	\$ 363.76
Ericsson	IDLe cable (3000 mm)	RPM777417/03000	NA	NA	1	\$ 387.63	\$ 426.39	\$ 426.39
Ericsson	Radio 4478 B14 (700MHz), 20W HWAC incl.	INF 903 6056/N14	NA	NA	3	\$ 7,923.42	\$ 8,715.76	\$ 26,147.29
Ericsson	LTE-FDD Cell Carrier 10MHz Bandwidth HWAC (per RU)	INF 901 6000/HAF6*	NA	NA	3	\$ 238.71	\$ 262.58	\$ 787.74
Ericsson	Output Power HWAC 20W incr.steps (per RU)	INF 903 9999/HR01	NA	NA	7	\$ 194.91	\$ 214.40	\$ 1,500.81
Ericsson	Baseband R503, Auxillary Mux Uni	INF 901 6000/DXM2	NA	NA	3	\$ 1,780.47	\$ 1,958.52	\$ 5,875.55
Ericsson	INH8010026/1,GPS-TMG-HR-26NCM,,,GPS Ant 1575.42MHz 26dB Nf,Collar,Mount,,	INH8010026/1	NA	NA	1	\$ -	\$ -	\$ -
Ericsson	External Alarm Cable	RPM919664/15000	NA	NA	1	\$ 41.77	\$ 45.95	\$ 45.95
Ericsson	Signal Cable	RPM77701/00180	NA	NA	1	\$ 6.57	\$ 7.23	\$ 7.23
Ericsson	OVP Kit	NTB101242/2	NA	NA	9	\$ 30.22	\$ 33.24	\$ 299.20
Ericsson	SAU Kit	NTB101242/1	NA	NA	3	\$ 420.71	\$ 462.78	\$ 1,388.34
Ericsson	SFP, SMD, 2.5Gbps High Temp	RDH10247/25	NA	NA	9	\$ 33.17	\$ 36.48	\$ 328.36
Ericsson	MOUNTING KIT (MK wall brackets long)	SXX1250247/1	NA	NA	3	\$ 43.37	\$ 47.71	\$ 143.13
Purcell	KIT,FLXWS,14"H PLINTH,ATT,2-3112	2000003132	NA	NA	1	\$ 469.76	\$ 516.73	\$ 516.73
Purcell	Description: FLX21-2520,130W HEX,HTR,100A DIST	2000004800	NA	NA	1	\$ 6,215.68	\$ 6,837.25	\$ 6,837.25
<b>Lines and Antennas equipment</b>								
Quintel	8' 65 degree 8-Port Multi-band antenna - 700/850/PCS-WCS w/ Band 14	QS8658-3e	NA	NA	6	\$ 2,956.50	\$ 3,252.15	\$ 19,512.90
Raycap Inc.	Outdoor-rated Enclosure with,Strikesorb Protection for 12,Remote Radios; Mounting at,the base station or,rooftop	DC12-48-60-0-25E	NA	NA	1	\$ 1,719.15	\$ 1,891.07	\$ 1,891.07
Raycap Inc.	Dome Encl Design w/Strikesorb,Protection for (9) -48V thru,-60VDC RRH; Tower top,Installed; low let-through of,-160vdc; incl pole mnt hw	DC9-48-60-18-8C-EV	NA	NA	3	\$ 1,998.00	\$ 2,406.59	\$ 7,219.77
<b>DC Power Plant and Battery Back Up (BBU) equipment</b>								
	Reserved							
Vertiv	NF16W512WNCUWNOSLIDEBATTDRAWER	F2016064	NA	NA	1	\$ -	\$ -	\$ -



**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.13 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITES 13 (Monopole)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
Vertiv	ATT POWER CABINET, 48V,	F1011032	NA	NA	1	\$ 5,790.36	\$ 6,369.40	\$ 6,369.40
Vertiv	PWR SYS,-48/+24V, NETSURE 512NGBB	582137000ZZ007	NA	NA	1	\$ 3,772.28	\$ 4,149.50	\$ 4,149.50
Vertiv	CB,HYD MAG,1P,5A,80VDC,SPDT	102274	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	CB,HYD MAG,1P,25A,80VDC,SPDT	102278	NA	NA	3	\$ 11.11	\$ 12.23	\$ 36.68
Vertiv	CB,HYD MAG,1P,50A,80VDC,SPDT	102282	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	Rectifier, eSure, 48VDC, 2000W, 1RU	1R482000E3	NA	NA	8	\$ 152.64	\$ 167.91	\$ 1,343.26
NORTH STAR	Battery String (48V)	NSB170FTRED0044	NA	NA	3	\$ 2,330.88	\$ 2,330.88	\$ 6,992.64
<b>Power and Telco</b>								
Kohler	Generator 24/72 Hour	20REOZK	1007648	SGM32D44B	1	\$ -	\$ -	\$ -
	Reserved							
	Reserved							
Pantrol	PanLock Single phase	PL-PLM00	NA	NA	1	\$ 509.00	\$ 613.09	\$ 613.09
MSI / LA-RICS Excess	CAC Configuration AC/Transfer Switch Cabinet (PPC)	CAC-A45201190P	1002950	1155697-150213-039	1	N/A	\$ 6,724.00	\$ 6,724.00
Pentair	TYPE 3R ENCLOSURE W/LIFT-OFF	A30248HCLO	NA	NA	1	\$ 254.04	\$ 279.44	\$ 279.44
Talley	Standard Hframe	NA	NA	NA	1	N/A	N/A	N/A
<b>Tower Equipment</b>								
Valmont	TRIPLE T-ARM KIT FOR 12 ANTENNAS WITH REINFORCEMENT	RMV12-496 and PRK-1245	N/A	N/A	1	\$ 3,144.00	\$ 3,786.95	\$ 3,786.95
Valmont	100' MONOPOLE - 99' POLE WITH 1' FOUNDATION PROJECTION	TBD	N/A	N/A	1	\$ 19,815.00	\$ 23,867.17	\$ 23,867.17
Valmont	2' DISH MOUNT KIT	UGLM, FMA1, P472	N/A	N/A	1	\$ 443.00	\$ 533.59	\$ 533.59
Valmont	(3) 6' PIVOT STANDOFF ARMS	TBD	TBD	TBD	2	\$ 2,274.00	\$ 2,739.03	\$ 5,478.07
Valmont	COLLAR MOUNT FOR CORNER REFLECTOR	TBD	TBD	TBD	1	\$ 361.00	\$ 434.82	\$ 434.82
Valmont	STRUCTURAL ANALYSIS AND DRAWING	TBD	N/A	N/A	1	\$ 400.00	\$ 460.00	\$ 460.00
Valmont	FOUNDATION DESIGN PER CUSTOMER FURNISHED SOILS REPORT	TBD	N/A	N/A	1	\$ 600.00	\$ 690.00	\$ 690.00
Valmont	FREIGHT COSTS, WITH UNLOADING OF TRUCK	NA	N/A	N/A	1	\$ 4,200.00	\$ 4,200.00	\$ 4,200.00
Valmont	FREIGHT COSTS, ANCHOR STEEL FREIGHT SHIPPED DIRECT FROM SUPPLIER	NA	N/A	N/A	1	\$ 300.00	\$ 300.00	\$ 300.00
<b>Roof Top - Indoor - MISC eNB Equipment</b>								
Arrow	FIBER JUMPER SM LC/LC 2MTR	900S-2M-LC	NA	NA	12	\$ 10.95	\$ 12.05	\$ 144.54
CommScope	FIBER CABLE ASSEMBLY 2 SM, 7.5M	FJ-2SM-015-7.5M	NA	NA	3	\$ 58.99	\$ 64.89	\$ 194.66
<b>Warehouse Equipment</b>								
MSI	Storage of purchased equipment (12 Months)				1	\$ 6,450.00	\$ 7,417.50	\$ 7,417.50
<b>Urban Site 13 - Phase 3 Total:</b>								<b>\$ 162,259.25</b>

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.14 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITES 14 (COLLOCATION)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
<b>eNB Urban Site Equipment</b>								
Ericsson	Ericsson,UCBB6630LTE,,,NON-COMM BASEBAND 6630,LTE,,,COMBINED UNIT/BASEBAND 6630 WITH FAN (included in CEQ 20548)	INF 903 6083/02	NA	NA	1	\$ 13,075.40	\$ 14,382.93	\$ 14,382.93
Ericsson	CABLE WITH CONNECTOR/POWER CABLE	RPM777528/10000	NA	NA	1	\$ 48.18	\$ 53.00	\$ 53.00
Ericsson	CABLE WITH CONNECTOR/GROUNDING CABLE	RPM777567/02500	NA	NA	1	\$ 81.03	\$ 89.13	\$ 89.13
Ericsson	RBS 6601 RJ-45 Cable	TSR4820211/2400	NA	NA	1	\$ 42.55	\$ 51.25	\$ 51.25
Ericsson	IDLe cable (1000 mm)	RPM777417/01000	NA	NA	1	\$ 319.74	\$ 351.71	\$ 351.71
Ericsson	IDLe cable (1800 mm)	RPM777417/01800	NA	NA	1	\$ 330.69	\$ 363.76	\$ 363.76
Ericsson	IDLe cable (3000 mm)	RPM777417/03000	NA	NA	1	\$ 387.63	\$ 426.39	\$ 426.39
Ericsson	Radio 4478 B14 (700MHz), 20W HWAC incl.	INF 903 6056/N14	NA	NA	3	\$ 7,923.42	\$ 8,715.76	\$ 26,147.29
Ericsson	LTE-FDD Cell Carrier 10MHz Bandwidth HWAC (per RU)	INF 901 6000/HAF6*	NA	NA	3	\$ 238.71	\$ 262.58	\$ 787.74
Ericsson	Output Power HWAC 20W incr.steps (per RU)	INF 903 9999/HR01	NA	NA	7	\$ 194.91	\$ 214.40	\$ 1,500.81
Ericsson	Baseband R503, Auxillary Mux Uni	INF 901 6000/DXM2	NA	NA	3	\$ 1,780.47	\$ 1,958.52	\$ 5,875.55
Ericsson	INH8010026/1,GPS-TMG-HR-26NCM,,,GPS Ant 1575.42MHz 26dB Nf,Collar,Mount,,	INH8010026/1	NA	NA	1	\$ -	\$ -	\$ -
Ericsson	External Alarm Cable	RPM919664/15000	NA	NA	1	\$ 41.77	\$ 45.95	\$ 45.95
Ericsson	Signal Cable	RPM77701/00180	NA	NA	1	\$ 6.57	\$ 7.23	\$ 7.23
Ericsson	OVP Kit	NTB101242/2	NA	NA	9	\$ 30.22	\$ 33.24	\$ 299.20
Ericsson	SAU Kit	NTB101242/1	NA	NA	3	\$ 420.71	\$ 462.78	\$ 1,388.34
Ericsson	SFP, SMD, 2.5Gbps High Temp	RDH10247/25	NA	NA	9	\$ 33.17	\$ 36.48	\$ 328.36
Ericsson	MOUNTING KIT (MK wall brackets long)	SXX1250247/1	NA	NA	3	\$ 43.37	\$ 47.71	\$ 143.13
Purcell	KIT,FLXWS,14"H PLINTH,ATT,2-3112	2000003132	NA	NA	1	\$ 469.76	\$ 516.73	\$ 516.73
Purcell	Description: FLX21-2520,130W HEX,HTR,100A DIST	2000004800	NA	NA	1	\$ 6,215.68	\$ 6,837.25	\$ 6,837.25
<b>Lines and Antennas equipment</b>								
Quintel	8' 65 degree 8-Port Multi-band antenna - 700/850/PCS-WCS w/ Band 14	QS8658-3e	NA	NA	6	\$ 2,956.50	\$ 3,252.15	\$ 19,512.90
Site Pro	Antenna Sector frame	VFA14RRU or other mou	NA	NA	3	\$ 1,775.00	\$ 2,137.99	\$ 6,413.96
Raycap Inc.	Outdoor-rated Enclosure with,Strikesorb Protection for 12,Remote Radios; Mounting at,the base station or,rooftop	DC12-48-60-0-25E	NA	NA	1	\$ 1,719.15	\$ 1,891.07	\$ 1,891.07
Raycap Inc.	Dome Encl Design w/Strikesorb,Protection for (9) -48V thru,-60VDC RRH; Tower top,Installed; low let-through of,-160vdc; incl pole mnt hw	DC9-48-60-18-8C-EV	NA	NA	3	\$ 1,998.00	\$ 2,406.59	\$ 7,219.77
<b>DC Power Plant and Battery Back Up (BBU) equipment</b>								
Vertiv	NF16W512WNCUWNOSLIDEBATTDRAWER	F2016064	NA	NA	1	\$ -	\$ -	\$ -

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.14 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITES 14 (COLLOCATION)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
Vertiv	ATT POWER CABINET, 48V,	F1011032	NA	NA	1	\$ 5,790.36	\$ 6,369.40	\$ 6,369.40
Vertiv	PWR SYS,-48/+24V, NETSURE 512NGBB	582137000ZZ007	NA	NA	1	\$ 3,772.28	\$ 4,149.50	\$ 4,149.50
Vertiv	CB,HYD MAG,1P,5A,80VDC,SPDT	102274	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	CB,HYD MAG,1P,25A,80VDC,SPDT	102278	NA	NA	3	\$ 11.11	\$ 12.23	\$ 36.68
Vertiv	CB,HYD MAG,1P,50A,80VDC,SPDT	102282	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	Rectifier, eSure, 48VDC, 2000W, 1RU	1R482000E3	NA	NA	8	\$ 152.64	\$ 167.91	\$ 1,343.26
NORTH STAR	Battery String (48V)	NSB170FTRED0044	NA	NA	3	\$ 2,330.88	\$ 2,330.88	\$ 6,992.64
<b>Power and Telco</b>								
Kohler	Generator 24/72 Hour	20REOZK	1007645	SGM32D447	1	\$ -	\$ -	\$ -
Pantrol	PanLock Single phase	PL-PLM00	NA	NA	1	\$ 509.00	\$ 613.09	\$ 613.09
MSI / LA-RICS Excess	CAC Configuration AC/Transfer Switch Cabinet (PPC)	CAC-A45201190P	1002944	1155697-150213-033	1	N/A	\$ 6,724.00	\$ 6,724.00
Pentair	TYPE 3R ENCLOSURE W/LIFT-OFF	A30248HCLO	NA	NA	1	\$ 254.04	\$ 279.44	\$ 279.44
Talley	Standard Hframe	NA	NA	NA	1	\$ -	\$ -	\$ -
<b>Roof Top - Indoor - MISC eNB Equipment</b>								
Arrow	FIBER JUMPER SM LC/LC 2MTR	900S-2M-LC	NA	NA	12	\$ 10.95	\$ 12.05	\$ 144.54
CommScope	FIBER CABLE ASSEMBLY 2 SM, 7.5M	FJ-2SM-015-7.5M	NA	NA	3	\$ 58.99	\$ 64.89	\$ 194.66
<b>Warehouse Equipment</b>								
MSI	Storage of purchased equipment (12 Months)				1	\$ 6,450.00	\$ 7,417.50	\$ 7,417.50
<b>Urban Site 14 - Phase 3 Total:</b>								<b>\$ 128,922.62</b>

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.15 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITES 15 (COLLOCATION)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
<b>eNB Urban Site Equipment</b>								
Ericsson	Ericsson,UCBB6630LTE,,,NON-COMM BASEBAND 6630,LTE,,,COMBINED UNIT/BASEBAND 6630 WITH FAN (included in CEQ 20548)	INF 903 6083/02	NA	NA	1	\$ 13,075.40	\$ 14,382.93	\$ 14,382.93
Ericsson	CABLE WITH CONNECTOR/POWER CABLE	RPM777528/10000	NA	NA	1	\$ 48.18	\$ 53.00	\$ 53.00
Ericsson	CABLE WITH CONNECTOR/GROUNDING CABLE	RPM777567/02500	NA	NA	1	\$ 81.03	\$ 89.13	\$ 89.13
Ericsson	RBS 6601 RJ-45 Cable	TSR4820211/2400	NA	NA	1	\$ 42.55	\$ 51.25	\$ 51.25
Ericsson	IDLe cable (1000 mm)	RPM777417/01000	NA	NA	1	\$ 319.74	\$ 351.71	\$ 351.71
Ericsson	IDLe cable (1800 mm)	RPM777417/01800	NA	NA	1	\$ 330.69	\$ 363.76	\$ 363.76
Ericsson	IDLe cable (3000 mm)	RPM777417/03000	NA	NA	1	\$ 387.63	\$ 426.39	\$ 426.39
Ericsson	Radio 4478 B14 (700MHz), 20W HWAC incl.	INF 903 6056/N14	NA	NA	3	\$ 7,923.42	\$ 8,715.76	\$ 26,147.29
Ericsson	LTE-FDD Cell Carrier 10MHz Bandwidth HWAC (per RU)	INF 901 6000/HAF6*	NA	NA	3	\$ 238.71	\$ 262.58	\$ 787.74
Ericsson	Output Power HWAC 20W incr.steps (per RU)	INF 903 9999/HR01	NA	NA	7	\$ 194.91	\$ 214.40	\$ 1,500.81
Ericsson	Baseband R503, Auxillary Mux Uni	INF 901 6000/DXM2	NA	NA	3	\$ 1,780.47	\$ 1,958.52	\$ 5,875.55
Ericsson	INH8010026/1,GPS-TMG-HR-26NCM,,,GPS Ant 1575.42MHz 26dB Nf,Collar,Mount,,	INH8010026/1	NA	NA	1	\$ -	\$ -	\$ -
Ericsson	External Alarm Cable	RPM919664/15000	NA	NA	1	\$ 41.77	\$ 45.95	\$ 45.95
Ericsson	Signal Cable	RPM77701/00180	NA	NA	1	\$ 6.57	\$ 7.23	\$ 7.23
Ericsson	OVP Kit	NTB101242/2	NA	NA	9	\$ 30.22	\$ 33.24	\$ 299.20
Ericsson	SAU Kit	NTB101242/1	NA	NA	3	\$ 420.71	\$ 462.78	\$ 1,388.34
Ericsson	SFP, SMD, 2.5Gbps High Temp	RDH10247/25	NA	NA	9	\$ 33.17	\$ 36.48	\$ 328.36
Ericsson	MOUNTING KIT (MK wall brackets long)	SXX1250247/1	NA	NA	3	\$ 43.37	\$ 47.71	\$ 143.13
Purcell	KIT,FLXWS,14"H PLINTH,ATT,2-3112	2000003132	NA	NA	1	\$ 469.76	\$ 516.73	\$ 516.73
Purcell	Description: FLX21-2520,130W HEX,HTR,100A DIST	2000004800	NA	NA	1	\$ 6,215.68	\$ 6,837.25	\$ 6,837.25
<b>Lines and Antennas equipment</b>								
Quintel	8' 65 degree 8-Port Multi-band antenna - 700/850/PCS-WCS w/ Band 14	QS8658-3e	NA	NA	6	\$ 2,956.50	\$ 3,252.15	\$ 19,512.90
Site Pro	Antenna Sector frame	VFA14RRU or other mou	NA	NA	3	\$ 1,775.00	\$ 2,137.99	\$ 6,413.96
Raycap Inc.	Outdoor-rated Enclosure with,Strikesorb Protection for 12.Remote Radios; Mounting at,the base station or,rooftop	DC12-48-60-0-25E	NA	NA	1	\$ 1,719.15	\$ 1,891.07	\$ 1,891.07
Raycap Inc.	Dome Encl Design w/Strikesorb,Protection for (9) -48V thru,-60VDC RRH; Tower top,Installed; low let-through of,-160vdc; incl pole mnt hw	DC9-48-60-18-8C-EV	NA	NA	3	\$ 1,998.00	\$ 2,406.59	\$ 7,219.77
<b>DC Power Plant and Battery Back Up (BBU) equipment</b>								
Vertiv	NF16W512WNCUWNOSLIDEBATTDRAWER	F2016064	NA	NA	1	\$ -	\$ -	\$ -

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.15 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITES 15 (COLLOCATION)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
Vertiv	ATT POWER CABINET, 48V,	F1011032	NA	NA	1	\$ 5,790.36	\$ 6,369.40	\$ 6,369.40
Vertiv	PWR SYS,-48/+24V, NETSURE 512NGBB	582137000ZZ007	NA	NA	1	\$ 3,772.28	\$ 4,149.50	\$ 4,149.50
Vertiv	CB,HYD MAG,1P,5A,80VDC,SPDT	102274	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	CB,HYD MAG,1P,25A,80VDC,SPDT	102278	NA	NA	3	\$ 11.11	\$ 12.23	\$ 36.68
Vertiv	CB,HYD MAG,1P,50A,80VDC,SPDT	102282	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	Rectifier, eSure, 48VDC, 2000W, 1RU	1R482000E3	NA	NA	8	\$ 152.64	\$ 167.91	\$ 1,343.26
NORTH STAR	Battery String (48V)	NSB170FTRED0044	NA	NA	3	\$ 2,330.88	\$ 2,330.88	\$ 6,992.64
<b>Power and Telco</b>								
Kohler	Generator 24/72 Hour	20REOZK	1007647	SGM32D449	1	\$ -	\$ -	\$ -
Pantrol	PanLock Single phase	PL-PLM00	NA	NA	1	\$ 509.00	\$ 613.09	\$ 613.09
MSI / LA-RICS Excess	CAC Configuration AC/Transfer Switch Cabinet (PPC)	CAC-A45201190P	1002945	1155697-150213-034	1	N/A	\$ 6,724.00	\$ 6,724.00
Pentair	TYPE 3R ENCLOSURE W/LIFT-OFF	A30248HCLO	NA	NA	1	\$ 254.04	\$ 279.44	\$ 279.44
Talley	Standard Hframe	NA	NA	NA	1	\$ -	\$ -	\$ -
<b>Roof Top - Indoor - MISC eNB Equipment</b>								
Arrow	FIBER JUMPER SM LC/LC 2MTR	900S-2M-LC	NA	NA	12	\$ 10.95	\$ 12.05	\$ 144.54
CommScope	FIBER CABLE ASSEMBLY 2 SM, 7.5M	FJ-2SM-015-7.5M	NA	NA	3	\$ 58.99	\$ 64.89	\$ 194.66
<b>Warehouse Equipment</b>								
MSI	Storage of purchased equipment (12 Months)				1	\$ 6,450.00	\$ 7,417.50	\$ 7,417.50
<b>Urban Site 15 - Phase 3 Total:</b>								<b>\$ 128,922.62</b>

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.16 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 16 (ROOF TOP)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
<b>eNB Urban Site Equipment</b>								
Ericsson	Ericsson,UCBB6630LTE,,,NON-COMM BASEBAND 6630,LTE,,,COMBINED UNIT/BASEBAND 6630 WITH FAN (included in CEQ 20548)	INF 903 6083/02	NA	NA	1	\$ 13,075.40	\$ 14,382.93	\$ 14,382.93
Ericsson	CABLE WITH CONNECTOR/POWER CABLE	RPM777528/10000	NA	NA	1	\$ 48.18	\$ 53.00	\$ 53.00
Ericsson	CABLE WITH CONNECTOR/GROUNDING CABLE	RPM777567/02500	NA	NA	1	\$ 81.03	\$ 89.13	\$ 89.13
Ericsson	RBS 6601 RJ-45 Cable	TSR4820211/2400	NA	NA	1	\$ 42.55	\$ 51.25	\$ 51.25
Ericsson	IDLe cable (1000 mm)	RPM777417/01000	NA	NA	1	\$ 319.74	\$ 351.71	\$ 351.71
Ericsson	IDLe cable (1800 mm)	RPM777417/01800	NA	NA	1	\$ 330.69	\$ 363.76	\$ 363.76
Ericsson	IDLe cable (3000 mm)	RPM777417/03000	NA	NA	1	\$ 387.63	\$ 426.39	\$ 426.39
Ericsson	Radio 4478 B14 (700MHz), 20W HWAC incl.	INF 903 6056/N14	NA	NA	3	\$ 7,923.42	\$ 8,715.76	\$ 26,147.29
Ericsson	LTE-FDD Cell Carrier 10MHz Bandwidth HWAC (per RU)	INF 901 6000/HAF6*	NA	NA	3	\$ 238.71	\$ 262.58	\$ 787.74
Ericsson	Output Power HWAC 20W incr.steps (per RU)	INF 903 9999/HR01	NA	NA	7	\$ 194.91	\$ 214.40	\$ 1,500.81
Ericsson	Baseband R503, Auxillary Mux Uni	INF 901 6000/DXM2	NA	NA	3	\$ 1,780.47	\$ 1,958.52	\$ 5,875.55
Ericsson	INH8010026/1,GPS-TMG-HR-26NCM,,,GPS Ant 1575.42MHz 26dB Nf,Collar,Mount,,	INH8010026/1	NA	NA	1	\$ -	\$ -	\$ -
Ericsson	External Alarm Cable	RPM919664/15000	NA	NA	1	\$ 41.77	\$ 45.95	\$ 45.95
Ericsson	Signal Cable	RPM77701/00180	NA	NA	1	\$ 6.57	\$ 7.23	\$ 7.23
Ericsson	OVP Kit	NTB101242/2	NA	NA	9	\$ 30.22	\$ 33.24	\$ 299.20
Ericsson	SAU Kit	NTB101242/1	NA	NA	3	\$ 420.71	\$ 462.78	\$ 1,388.34
Ericsson	SFP, SMD, 2.5Gbps High Temp	RDH10247/25	NA	NA	9	\$ 33.17	\$ 36.48	\$ 328.36
Ericsson	MOUNTING KIT (MK wall brackets long)	SXK1250247/1	NA	NA	3	\$ 43.37	\$ 47.71	\$ 143.13
Purcell	KIT,FLXWS,14"H PLINTH,ATT,2-3112	2000003132	NA	NA	1	\$ 469.76	\$ 516.73	\$ 516.73
Purcell	Description: FLX21-2520,130W HEX,HTR,100A DIST	2000004800	NA	NA	1	\$ 6,215.68	\$ 6,837.25	\$ 6,837.25
<b>Lines and Antennas equipment</b>								
Quintel	8' 65 degree 8-Port Multi-band antenna - 700/850/PCS-WCS w/ Band 14	QS8658-3e	NA	NA	6	\$ 2,956.50	\$ 3,252.15	\$ 19,512.90
Raycap Inc.	Outdoor-rated Enclosure with,Strikesorb Protection for 12,Remote Radios; Mounting at,the base station or,rooftop	DC12-48-60-0-25E	NA	NA	1	\$ 1,719.15	\$ 1,891.07	\$ 1,891.07
Raycap Inc.	Dome Encl Design w/Strikesorb,Protection for (9) -48V thru,-60VDC RRRH; Tower top,Installed; low let-through of,-160vdc; incl pole mnt hw	DC9-48-60-18-8C-EV	NA	NA	3	\$ 1,998.00	\$ 2,406.59	\$ 7,219.77
Raycap Inc.	Pluggable; upgradable,rack-mount tray equipment,w/Strikesorb protection and,front-panel alarm indication,for 12 remote radios	DC12-48-60-RM	NA	NA	3	\$ 1,709.30	\$ 1,880.22	\$ 5,640.67
<b>DC Power Plant and Battery Back Up (BBU) equipment</b>								
Vertiv	NF16W512WNCUWNOSLIDEBATTDRAWER	F2016064	NA	NA	1	\$ -	\$ -	\$ -

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.16 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 16 (ROOF TOP)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
Vertiv	ATT POWER CABINET, 48V,	F1011032	NA	NA	1	\$ 5,790.36	\$ 6,369.40	\$ 6,369.40
Vertiv	PWR SYS,-48/+24V, NETSURE 512NGBB	582137000ZZ007	NA	NA	1	\$ 3,772.28	\$ 4,149.50	\$ 4,149.50
Vertiv	CB,HYD MAG,1P,5A,80VDC,SPDT	102274	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	CB,HYD MAG,1P,25A,80VDC,SPDT	102278	NA	NA	3	\$ 11.11	\$ 12.23	\$ 36.68
Vertiv	CB,HYD MAG,1P,50A,80VDC,SPDT	102282	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	Rectifier, eSure, 48VDC, 2000W, 1RU	1R482000E3	NA	NA	8	\$ 152.64	\$ 167.91	\$ 1,343.26
NORTH STAR	Battery String (48V)	NSB170FTRED0044	NA	NA	3	\$ 2,330.88	\$ 2,330.88	\$ 6,992.64
<b>Power and Telco</b>								
MSI / LA-RICS Excess	CAC Configuration AC/Transfer Switch Cabinet (PPC)	CAC-A45201190P	1002951	1155697-150213-040	1	NA	\$ 6,724.00	\$ 6,724.00
Pentair	TYPE 3R ENCLOSURE W/LIFT-OFF	A30248HCLO	NA	NA	1	\$ 254.04	\$ 279.44	\$ 279.44
Talley	Standard Hframe	NA	NA	NA	1	NA	N/A	N/A
<b>Roof Top - Indoor - MISC eNB Equipment</b>								
Arrow	FIBER JUMPER SM LC/LC 2MTR	900S-2M-LC	NA	NA	12	\$ 10.95	\$ 12.05	\$ 144.54
CommScope	FIBER CABLE ASSEMBLY 2 SM, 7.5M	FJ-2SM-015-7.5M	NA	NA	3	\$ 58.99	\$ 64.89	\$ 194.66
<b>Warehouse Equipment</b>								
MSI	Storage of purchased equipment (12 Months)				1	\$ 6,450.00	\$ 7,417.50	\$ 7,417.50
<b>Urban Site 16 - Phase 3 Total:</b>								<b>\$ 127,536.24</b>



**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.17 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 17 (ROOF AND INTERIOR)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
<b>eNB Urban Site Equipment</b>								
Ericsson	Ericsson,UCBB6630LTE,,,NON-COMM BASEBAND 6630,LTE,,,COMBINED UNIT/BASEBAND 6630 WITH FAN (included in CEQ 20548)	INF 903 6083/02	NA	NA	1	\$ 13,075.40	\$ 14,382.93	\$ 14,382.93
Ericsson	CABLE WITH CONNECTOR/POWER CABLE	RPM777528/10000	NA	NA	1	\$ 48.18	\$ 53.00	\$ 53.00
Ericsson	CABLE WITH CONNECTOR/GROUNDING CABLE	RPM777567/02500	NA	NA	1	\$ 81.03	\$ 89.13	\$ 89.13
Ericsson	RBS 6601 RJ-45 Cable	TSR4820211/2400	NA	NA	1	\$ 42.55	\$ 51.25	\$ 51.25
Ericsson	IDLe cable (1000 mm)	RPM777417/01000	NA	NA	1	\$ 319.74	\$ 351.71	\$ 351.71
Ericsson	IDLe cable (1800 mm)	RPM777417/01800	NA	NA	1	\$ 330.69	\$ 363.76	\$ 363.76
Ericsson	IDLe cable (3000 mm)	RPM777417/03000	NA	NA	1	\$ 387.63	\$ 426.39	\$ 426.39
Ericsson	Radio 4478 B14 (700MHz), 20W HWAC incl.	INF 903 6056/N14	NA	NA	3	\$ 7,923.42	\$ 8,715.76	\$ 26,147.29
Ericsson	LTE-FDD Cell Carrier 10MHz Bandwidth HWAC (per RU)	INF 901 6000/HAF6*	NA	NA	3	\$ 238.71	\$ 262.58	\$ 787.74
Ericsson	Output Power HWAC 20W incr.steps (per RU)	INF 903 9999/HR01	NA	NA	7	\$ 194.91	\$ 214.40	\$ 1,500.81
Ericsson	Baseband R503, Auxillary Mux Unit	INF 901 6000/DXM2	NA	NA	3	\$ 1,780.47	\$ 1,958.52	\$ 5,875.55
Ericsson	INH8010026/1,GPS-TMG-HR-26NCM,,,GPS Ant 1575.42MHz 26dB Nf,Collar,Mount,,	INH8010026/1	NA	NA	1	\$ -	\$ -	\$ -
Ericsson	External Alarm Cable	RPM919664/15000	NA	NA	1	\$ 41.77	\$ 45.95	\$ 45.95
Ericsson	Signal Cable	RPM77701/00180	NA	NA	1	\$ 6.57	\$ 7.23	\$ 7.23
Ericsson	OVP Kit	NTB101242/2	NA	NA	9	\$ 30.22	\$ 33.24	\$ 299.20
Ericsson	SAU Kit	NTB101242/1	NA	NA	3	\$ 420.71	\$ 462.78	\$ 1,388.34
Ericsson	SFP, SMD, 2.5Gbps High Temp	RDH10247/25	NA	NA	9	\$ 33.17	\$ 36.48	\$ 328.36
Ericsson	MOUNTING KIT (MK wall brackets long)	SXX1250247/1	NA	NA	3	\$ 43.37	\$ 47.71	\$ 143.13
Purcell	KIT,FLXWS,14"H PLINTH,ATT.2-3112	2000003132	NA	NA	1	\$ 469.76	\$ 516.73	\$ 516.73
Purcell	Description: FLX21-2520,130W HEX,HTR,100A DIST	2000004800	NA	NA	1	\$ 6,215.68	\$ 6,837.25	\$ 6,837.25
<b>Lines and Antennas equipment</b>								
Quintel	8' 65 degree 8-Port Multi-band antenna - 700/850/PCS-WCS w/ Band 14	QS8658-3e	NA	NA	6	\$ 2,956.50	\$ 3,252.15	\$ 19,512.90
Raycap Inc.	Outdoor-rated Enclosure with,Strikesorb Protection for 12,Remote Radios; Mounting at,the base station or,rooftop	DC12-48-60-0-25E	NA	NA	1	\$ 1,719.15	\$ 1,891.07	\$ 1,891.07
Raycap Inc.	Dome Encl Design w/Strikesorb,Protection for (9) -48V thru,-60VDC RRRH; Tower top,Installed; low let-through of,-160vdc; incl pole mnt h/w	DC9-48-60-18-8C-EV	NA	NA	3	\$ 1,998.00	\$ 2,406.59	\$ 7,219.77
Raycap Inc.	Pluggable; upgradable,rack-mount tray equipment,w/Strikesorb protection and,front-panel alarm indication,for 12 remote radios	DC12-48-60-RM	NA	NA	3	\$ 1,709.30	\$ 1,880.22	\$ 5,640.67
<b>DC Power Plant and Battery Back Up (BBU) equipment</b>								
Vertiv	NF16W512WNCUWNOSLIDEBATTDRAWER	F2016064	NA	NA	0	\$ -	\$ -	\$ -

**SCHEDULE OF PAYMENTS**  
**EXHIBIT C.21.17 (PSBN ROUND 2 URBAN SITES BILL OF MATERIALS)**  
**PSBN ROUND 2 URBAN SITE 17 (ROOF AND INTERIOR)**

PHASE 3 - SUPPLY PSBN COMPONENTS								
Manufacture Name for Order OM	Item Description OM	Manufacturer P/N	Applicable Asset Number	Applicable Serial Number	Qty Per Site	Pricing Extended To Motorola	Ext. Cost Per Unit	Contract Sum - Full Payable Amount
Vertiv	ATT POWER CABINET, 48V,	F1011032	NA	NA	0	\$ 5,790.36	\$ 6,369.40	\$ -
Vertiv	PWR SYS,-48/+24V, NETSURE 512NGBB	582137000ZZ007	NA	NA	1	\$ 3,772.28	\$ 4,149.50	\$ 4,149.50
Vertiv	CB,HYD MAG,1P,5A,80VDC,SPDT	102274	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	CB,HYD MAG,1P,25A,80VDC,SPDT	102278	NA	NA	3	\$ 11.11	\$ 12.23	\$ 36.68
Vertiv	CB,HYD MAG,1P,50A,80VDC,SPDT	102282	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	Rectifier, eSure, 48VDC, 2000W, 1RU	1R482000E3	NA	NA	8	\$ 152.64	\$ 167.91	\$ 1,343.26
NORTH STAR	Battery String (48V)	NSB170FTRED0044	NA	NA	3	\$ 2,330.88	\$ 2,330.88	\$ 6,992.64
Vertiv	CB,HYD MAG,1P,10A,80VDC,SPDT	102778	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	CB,HYD MAG,1P,20A,80VDC,SPDT	102277	NA	NA	1	\$ 11.11	\$ 12.23	\$ 12.23
Vertiv	NS7100,3-Row,7Fl,w/o Battery Trays	582127000100	NA	NA	1	\$ 5,124.60	\$ 5,637.06	\$ 5,637.06
Vertiv	KIT,-48V BATTERY TRAY,23",100A CB	588820200SK00	NA	NA	3	\$ 427.05	\$ 469.76	\$ 1,409.27
Vertiv	Kit, Bus Bars, Battery Tray Cables	555478	NA	NA	1	\$ 160.97	\$ 177.06	\$ 177.06
Vertiv	Relay Rack,45U,23"W,84.00"H,Zone-4	562353	NA	NA	1	\$ 788.40	\$ 867.24	\$ 867.24
<b>Power and Telco</b>								
MSI / LA-RICS				1155697-150213-042				
Excess	CAC Configuration AC/Transfer Switch Cabinet (PPC)	CAC-A45201190P	1002953		1	N/A	\$ 6,724.00	\$ 6,724.00
Talley	Standard Hframe	NA	NA	NA	1	N/A	N/A	N/A
<b>Roof Top - Indoor - MISC eNB Equipment</b>								
Arrow	FIBER JUMPER SM LC/LC 2MTR	900S-2M-LC	NA	NA	12	\$ 10.95	\$ 12.05	\$ 144.54
CommScope	FIBER CABLE ASSEMBLY 2 SM, 7.5M	FJ-2SM-015-7.5M	NA	NA	3	\$ 58.99	\$ 64.89	\$ 194.66
Motorola	2 Post Seismic Rated 19" Relay Racks - 2 Post. Ability to support Batteries, DC Plant and eNB Equipment	DSMOTORACK19	NA	NA	3	\$ 2,190.00	\$ 2,409.00	\$ 6,570.00
<b>Warehouse Equipment</b>								
MSI	Storage of purchased equipment (12 Months)				1	\$ 6,450.00	\$ 7,417.50	\$ 7,417.50
<b>Urban Site 17 - Phase 3 Total:</b>								<b>\$ 135,572.48</b>



## LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM AUTHORITY

2525 Corporate Place, Suite 100  
Monterey Park, California 91754  
Telephone: (323) 881-8291  
<http://www.la-rics.org>

SCOTT EDSON  
EXECUTIVE DIRECTOR

July 11, 2019

LA-RICS Board of Directors  
Los Angeles Regional Interoperable Communications System Authority (the "Authority")

Dear Directors:

### **APPROVE AMENDMENT NO. 39 TO AGREEMENT NO. LA-RICS 007 FOR LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM LAND MOBILE RADIO SYSTEM**

#### **SUBJECT**

Board approval is requested to authorize the Executive Director to execute Amendment No. 39 to Agreement No. LA-RICS 007 (Agreement), which contemplates a reconciliation of the Narrowband Mobile Data Network (NMDN) Subsystem to the Land Mobile Radio (LMR) System and the incorporation of certain Change Order Modifications, all actions resulting in a net decrease to the Maximum Contract Sum in the amount of \$646,601.

#### **RECOMMENDED ACTIONS**

It is recommended that your Board:

1. Make the following finding:
  - a. Find that the inclusion of two (2) LMR System Sites (Rancho Palos Verdes Tee [RPVT] and East Sunset Ridge [ESR]) into the scope of Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR Components), and Phase 4 (LMR System Implementation) to align with the updated LMR System Design to allow the design, construction, implementation, operation and maintenance activities for the LMR System at the RPVT and ESR sites, including the design, construction, implementation, operation and maintenance of the NMDN Subsystem, and approval of the NMDN reconciliation for these two sites are categorically exempt from the

California Environmental Quality Act (CEQA) pursuant to 14 Cal. Regs. ("CEQA Guidelines") §§ 15303 and 15304 for the reasons stated in this Board Letter and as noted in the record of the project.

- b. Find that (a) approval of NMDN reconciliation for one (1) LMR System Site (Hauser Peak [HPK]) is within the scope of the activities previously authorized at HPK on November 13, 2014, which your Board previously found statutorily exempt from review under CEQA pursuant to Public Resources Code Section 21080.25, the exemption adopted specifically for the Los Angeles Regional Interoperable Communications System (LA-RICS) project.
  - c. Find that (a) approval of the NMDN reconciliation for eight (8) LMR System Sites (Black Jack Peak [BJM], Burnt Peak 1 [BUR1], Castro Peak [CPK], Dakin Peak [DPK], Frost Peak [FRP], Grass Mountain [GMT], Green Mountain [GRM], Johnstone Peak 2 [JPK2]) are (a) within the scope of the Final Environmental Impact Report (EIR) prepared for the LA-RICS LMR System, which was previously certified under CEQA on March 29, 2016; and (b) there are no changes to the project at this site(s) or to the circumstances under which the project is undertaken that require revisions to the previous EIR due to new significant effects or a substantial increase in the severity of previously identified significant effects.
2. Approve Amendment No. 39 Enclosure to Agreement No. LA-RICS 007 for a LMR System with Motorola Solutions, Inc. (Motorola), which revises the Agreement to reflect the following:
  - a. Reconcile the NMDN Subsystem to align with the updated LMR System design for a cost decrease in the amount of \$720,207.
  - b. Make changes necessary to incorporate LMR Change Order Modifications for a cost increase in the amount of \$73,606.
3. Authorize a decrease to the Maximum Contract Sum in the amount \$646,601 from \$298,178,459 to \$297,531,858 when taking the cost increases and decreases into consideration.
4. Allow for the issuance of one or more Notices to Proceed for the Work contemplated in Amendment No. 39.



5. Delegate authority to the Executive Director or his designee to execute Amendment No. 39, in substantially similar form, to the Enclosed Amendment Enclosure.

### **BACKGROUND**

The Authority continues to work closely with Motorola on the reconciliation of sites and subsystems to align with the LMR System redesign. As this is an iterative process, the ongoing design work has resulted in the need to reconcile certain Work, equipment, Subsystems, and corresponding costs to reflect the updated design. As a result, part of the recommended actions contemplate the reconciliation of the NMDN Subsystem in its entirety.

With respect to the LMR Change Order Modification contemplated in Amendment No. 39, Authority staff, including its consultants, and the LMR Contractor, Motorola have reviewed and negotiated each claim, including the associated costs, for each change order. The changes presented in Amendment No. 39 benefit the LMR project and are required for the completion of the LMR System. LMR change orders are considered for a variety of reasons and reflect items that were not originally considered in the contract or are performed in order to ratify an agreement between the Authority and its Contractor, Motorola, regarding work to be performed.

### **PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION**

Approval of the recommended actions will authorize the Executive Director or his designee to execute Amendment No. 39 to reconcile the NMDN Subsystem and incorporate certain Change Order Modifications, all actions resulting in a decrease to the Maximum Contract Sum in the amount of \$646,601.

As a result of the membership opt outs and redesign efforts to date, it was necessary to reconcile the LMR System design. Such reconciliations include, but are not limited to, changes in site makeup, equipment counts, and configurations, which affects the subsystems that makeup the LMR System. In regards to changes in site makeup, the RPVT site is replacing the RPV1 site and ESR is replacing the SUN site contemplated previously in the LMR System due to challenges in negotiating site use and access at RPV1 and to improve system coverage from SUN. In regards to LMR System design, one of these subsystems, the NMDN Subsystem, has reached the final configuration and design parameters and is being presented to your Board for consideration under Amendment No. 39, which results in changes to the scope and a cost decrease.

With respect to the LMR Change Order Modification contemplated in Amendment No. 39, Authority staff, including its consultants, and the LMR Contractor, Motorola, have reviewed and negotiated each claim, including the associated costs, for each change order. The particular LMR Change Order Modifications contemplated is for Work associated with encroachment permit fees, abatement and remediation work, new Phase 1 work to account for a site relocation, certain site lease exhibit work, and the recuperation of costs for a day tank (fuel supply component).

### **FISCAL IMPACT/FINANCING**

The activities contemplated in Amendment No. 39 will result in a net decrease the Maximum Contract Sum by \$646,601 from \$298,178,459 to \$297,531,858 when taking the recommended actions into consideration and shall be fully reimbursed by the Urban Areas Security Initiative (UASI) grant.

### **ENVIRONMENTAL DOCUMENTATION**

Approval of the design, construction, implementation, operation, and maintenance of the LMR System infrastructure at the RPVT and ESR sites are exempt from review under CEQA pursuant to 14 Cal. Code Regs. ("CEQA Guidelines") §§ 15303 and 15304. This determination is based on a detailed analysis of the site, available in the Authority's files, which demonstrates that the communication equipment proposed at the site (1) consists of construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures; and/or the conversion of existing small structures from one use to another where only minor modifications are made in the exterior of the structure (Guidelines § 15303); and (2) consists of minor alterations in the condition of land, water, and/or vegetation, which do not involve removal of healthy, mature, scenic trees (Guidelines § 15304). The analysis also demonstrates that none of the activities proposed at this site triggers any applicable exception to the identified categorical exemption(s). (Guidelines § 15300.2.). Specifically, the project would not impact any environmental resources of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state or local agencies. Further, the cumulative impact of successive projects of the same type in the same place over time would not be significant; there is no reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances; the project would not result in damage to scenic resources within a highway officially designated as a state scenic highway; the site is not located on a site included on any list compiled pursuant to Section 65962.5 of the Government Code; and the project would not cause a substantial adverse change in the significance of a historical resource.



As the CEQA lead agency, the Authority previously determined on November 13, 2014, that design, construction, implementation, operation, and maintenance of LMR System infrastructure at one (1) LMR System Site (HPK) contemplated in the NMDN reconciliation is exempt from review under CEQA pursuant to Public Resources Code Section 21080.25, the statutory CEQA exemption adopted specifically for the LA-RICS, which exempts these activities as long as they meet certain criteria set forth in the exemption. The Authority also determined on November 13, 2014, that leased circuit work that may occur outside of HPK as needed to provide connectivity to the LMR System is categorically exempt under CEQA pursuant to CEQA Guidelines section 15301, 15303, and 15304. Approval of the reconciliation NMDN to align with the updated LMR System Design for HPK is within the scope of the previously authorized activities, and the determination that these activities are exempt from CEQA remains unchanged. This determination is supported by substantial evidence in the custody of the Authority, which is incorporated in relevant part into the record of proceedings for this Amendment No. 39.

The environmental impacts of the project at eight (8) LMR System Sites (BJM, BUR1, CPK, DPK, FRP, GMT, GRM, JPK2) contemplated in the NMDN reconciliation were evaluated in the Environmental Impact Report (EIR) prepared by the LA-RICS Authority for the LMR System. On March 29, 2016, your Board certified the Final EIR for the LMR System in compliance with CEQA, made findings with respect to the environmental impacts of the project, and adopted the Mitigation Monitoring Program (MMP) as a condition of approval for the project. The currently recommended actions related to eight (8) LMR System Sites (BJM, BUR1, CPK, DPK, FRP, GMT, GRM, JPK2) are within the scope of the impacts analyzed in the previously certified Final EIR and the Board's previous environmental findings, and adoption of the MMP are applicable to the current recommendations. There have been no changes to the project analyzed or to the circumstances under which the project is undertaken for these LMR System sites that would require revisions to the previous EIR due to new significant effects or a substantial increase in the severity of previously identified significant effects pursuant to Public Resources Code section 21166 or CEQA Guidelines sections 15162 and 15163. The previously adopted MMP will continue to apply.

Upon the Board's approval of the recommended actions, the LA-RICS Authority will file a Notice of Exemption with the County Clerk for Site RPVT and ESR pursuant to Section 21152(b) of the California Public Resources Code and Section 15062 of the State CEQA Guidelines.



**FACTS AND PROVISIONS/LEGAL REQUIREMENT**

The Authority's counsel has reviewed the recommended actions and approved as to form.

**CONCLUSION**

Upon the Board's approval of the recommended actions, the Executive Director or his designee will have delegated authority to proceed in a manner described in the recommended actions.

Respectfully submitted,



SCOTT EDSON  
EXECUTIVE DIRECTOR

JA:pdd

M:\MOTOROLA (LA-RICS 007)\2. Amendments\Amendment 39 (Draft)\LMR Amendment 39 Board Letter\_07-03-19.docx

Enclosure

cc: Counsel to the Authority

**AMENDMENT NUMBER THIRTY-NINE**  
**TO AGREEMENT NO. LA-RICS 007**  
**FOR**  
**LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM –**  
**LAND MOBILE RADIO SYSTEM**

**Recitals**

This Amendment Number Thirty-Nine (together with all exhibits, attachments, and schedules hereto, "Amendment No. 39") is entered into by and between the Los Angeles Regional Interoperable Communications System Authority ("Authority") and Motorola Solutions, Inc. ("Contractor"), effective as of July \_\_\_\_\_, 2019, based on the following recitals:

Authority and Contractor have entered into that certain Agreement No. LA-RICS 007 for Los Angeles Regional Interoperable Communications System ("LA-RICS") – Land Mobile Radio System, dated as of August 15, 2013 (together with all exhibits, attachments, and schedules thereto, all as amended prior to the date hereof, the "Agreement").

The Agreement has been previously amended by Amendment Number One, effective as of September 5, 2013, to exercise the Unilateral Option for all Work pertaining to Phase 1 (System Design), without the Additive Alternates; with no change to the Maximum Contract Sum.

The Agreement has been previously amended by Amendment Number Two, effective as of October 29, 2013, to exercise the Unilateral Option for all Work pertaining to Project Descriptions in Phase 1 (System Design) for the Bounded Area Coverage Additive Alternate; with no change to the Maximum Contract Sum.

The Agreement has been previously amended by Amendment Number Three, effective as of December 19, 2013, to, among other things, exercise the Unilateral Option for all Work pertaining to Contractor's provision and implementation of Specified Equipment (as defined in Amendment No. 3) increasing the Maximum Contract Sum by \$1,285,230, from \$280,354,954 to \$281,640,184.

The Agreement has been previously amended by Amendment Number Four, effective as of December 19, 2013, to, among other things, provide and implement under Phase 1 (System Design) certain additional equipment referred to as "Station B Equipment" increasing the Maximum Contract Sum by \$1,169,047, from \$281,640,184 to \$282,809,231.

The Agreement has been previously amended by Amendment Number Five, effective as of March 27, 2014, to, among other things; include license coordination fees, increasing the Maximum Contract Sum by \$20,240, from \$282,809,231 to \$282,829,472.

The Agreement has been previously amended by Amendment Number Six, effective as of April 17, 2014, to, among other things, upgrade to the Los Angeles Police Department's Valley Dispatch Center's ("LAPDVDC") Uninterruptible Power Supply ("UPS") to accommodate the installation and deployment of Core 2 at this facility, increasing the Maximum Contract Sum by \$68,146, from \$282,829,472 to \$282,897,618.

The Agreement has been previously amended by Amendment Number Seven, effective as of May 8, 2014, to, among other things, purchase portable radios, radio accessories, consolettes, and consoles; and to add a provision to address potential joint obligations of Authority and Contractor under the Antennae Lease Agreement dated April 17, 2014, between the City of Los Angeles, the Authority, and Contractor; increasing the Maximum Contract Sum by \$5,177,051, from \$282,897,618 to \$288,074,669.

The Agreement has been previously amended by Amendment Number Eight, effective as of August 28, 2014, to purchase additional portable radios and radio accessories; increasing the Maximum Contract Sum by \$3,671,006, from \$288,074,669 to \$291,745,675.

The Agreement has been previously amended by Amendment Number Nine, effective November 19, 2014, to (a) make changes necessary to reflect the removal of one (1) LMR System Site and all the Work and equipment associated with the removal of this site; (b) make the necessary changes to reflect Phase 1 (System Design) Project Description Work only for twenty-six (26) potential replacement sites; (c) exercise the Unilateral Options for all Work pertaining to Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR System Components), and Phase 4 (LMR System Implementation) for twenty-six (26) existing LMR System Sites; with no increase to the Maximum Contract Sum.

The Agreement has been previously amended by Amendment Number Ten, effective February 17, 2015, to (a) make the necessary changes to reflect Phase 1 (System Design) Description Work for one (1) potential replacement site; (b) make changes necessary to reflect the removal of four (4) LMR System Sites and all the Work and equipment associated with these sites; (c) make changes necessary to reflect the inclusion of four (4) LMR System Sites and all the Work and equipment associated with these sites and exercise the Unilateral Options for all Work pertaining to Phase 1 (System Design), Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR System Components), and Phase 4 (LMR System Implementation) for these four (4) LMR System Sites; (d) exercise the Unilateral Options for all Work pertaining to Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR System Components), and Phase 4 (LMR System Implementation) for eight (8) LMR System Sites currently contemplated in the Design; (e) allow for two power load studies to be conducted; and (f) make other certain changes as reflected in Amendment No. 10, increasing the Maximum Contract Sum by \$1,101,138, from \$291,745,675 to \$292,846,813.

The Agreement has been previously amended by Amendment Number Eleven, effective April 28, 2015, to (a) make the necessary changes to reflect Phase 1 (System Design) Description Work for two (2) potential replacement sites; (b) make changes

necessary to reflect an existing credit from Amendment No. 3 in the amount of \$547,158 in Phase 3 (Supply LMR System Components) for one (1) LMR System Site, (c) make changes necessary to add project management costs that were inadvertently omitted in Amendment No. 10 in the amount of \$64,282 in Phase 4 (LMR System Implementation) for one (1) LMR System Site, and (d) make other certain changes as reflected in Amendment No. 11, all of which reduced the Maximum Contract Sum by \$459,529, from \$292,846,813 to \$292,387,284.

The Agreement has been previously amended in Amendment Number Twelve, effective August 27, 2015, to (a) make the necessary changes to reflect the shifting of FCC Licensing Work and costs from Phase 3 (Supply LMR System Components) to Phase 1 (System Design) in the amount of \$284,041; (b) make certain changes to reflect the increase of FCC Licensing Work to contemplate the licensing of all UHF T-Band frequencies as referenced in Attachment B, at each of the applicable subsystem sites in order to achieve compliance with the performance criteria set forth in the Agreement, all in the amount of \$139,076; (c) make the necessary changes to reflect the inclusion of a bridge warranty for the Specified Equipment (Core 1, Core 2, repeater sites, Site on Wheels, and Station B Equipment) previously purchased under Amendment No. 3 and Amendment No. 4, to bridge the gap in warranty for this equipment until such time as Final LMR System Acceptance is achieved in the amount of \$647,533; and (d) to purchase portable radios, radio accessories, consolettes, and a control station for the Los Angeles Sheriff's Department Aero Bureau for purposes of mutual aid in the amount of \$386,234; increasing the Maximum Contract Sum by \$1,172,843 from \$292,387,284 to \$293,560,127.

The Agreement has been previously amended to Amendment Number Thirteen effective October 30, 2015 to make the necessary changes to reflect Phase 1 (System Design) Work to add lease exhibits to twenty-nine (29) LMR System Sites; increasing the Maximum Contract Sum by \$14,888 from \$293,560,127 to \$293,575,015.

The Agreement has been previously amended in Amendment Number Fourteen, effective November 17, 2015, to reflect the Work to reprogram UHF frequencies in accordance with Attachment A and purchase upgraded equipment for the County of Los Angeles Sheriff's Department's (LASD) Station B, as well as the Authority's System on Wheels to prepare for use at certain scheduled events in the amount of \$64,256, increasing the Maximum Contract Sum from \$293,575,015 to \$293,639,271.

The Agreement has been previously amended in Amendment Number Fifteen, effective December 17, 2015, to reflect the inclusion of Phase 1 (System Design) Project Description Work for eleven (11) potential replacement sites in the amount of \$128,414, increasing the Maximum Contract Sum from \$293,639,271 to \$293,767,685.

The Agreement has been previously amended in Amendment Number Sixteen, effective December 23, 2015, to (a) reflect the removal of thirty-one (31) LMR System Sites from the scope of Phase 1 (System Design) Work only for a cost reduction in the amount of \$1,132,374; (b) reflect the inclusion of seventeen (17) LMR System Sites into the scope of Phase 1 (System Design) only which includes all Work associated with the

addition of these sites into Phase 1 (System Design) for a cost increase in the amount of \$635,537; (c) exercise the Unilateral Options for all Work pertaining to Phase 1 (System Design) for seventeen (17) LMR System Sites; (d) include Phase 1 (System Design) Project Description Work only for one (1) potential replacement site (LACF134) for a cost increase in the amount of \$11,674; (e) account for a comprehensive redesign of the LMR System and all associated Work for a cost increase in the amount of \$1,054,440; (f) reflect the removal, relocation, and deployment of the LMR System Core 2 equipment from Los Angeles Police Department Valley Dispatch Center (LAPDVDC) to Palmdale Sheriff Station (PLM) and necessary Work associated with this relocation and for a cost increase in the amount of \$499,912; increasing the Maximum Contract Sum by \$1,069,189 (\$635,537 + \$11,674 + \$1,054,440 + \$499,912 - \$1,132,374 when taking the above cost increases and decreases into consideration) from \$293,767,685 to \$294,836,874.

The Agreement has been previously amended in Amendment Number Seventeen, effective April 25, 2016, as follows:

- (a) Make changes necessary to reflect the removal of thirty-four (34) LMR System Sites from the scope of Phase 1 (System Design), Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR System Components), and Phase 4 (LMR System Implementation), respectively, and all associated Work of the same for a cost reduction in the amount of \$45,143,083.
- (b) Make the changes necessary to reflect the inclusion of nineteen (19) LMR System Sites into the scope of Phase 1 (System Design), Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR System Components), and Phase 4 (LMR System Implementation), respectively, and all associated Work of the same for a cost increase in the amount of \$23,677,589.
- (c) Re-baselining of the project management overhead expenses, attributable in the Agreement to each phase of the work that contemplates project management fees, to more accurately reflect the current project scope, and to establish a formula to more accurately price the net impact on project management overhead expenses of any subsequent addition or removal of sites. The re-baseline removes costs on a per site basis to a new per phase deliverable as contemplated in Amendment No. 17 in the amount of \$8,207,108. This re-baselining does however result in a net cost reduction in the amount of \$572,826 which is contemplated in the re-baseline.
- (d) Reconcile equipment necessary for certain LMR System Sites as well as the logging recorder as a result of redesign for a cost increase in the amount of \$3,171,159.
- (e) Exercise the Unilateral Options for all Work pertaining to Phase 1 (System Design), Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR System Components), and Phase 4 (LMR System Implementation)

respectively, for those LMR System Sites contained in the LMR System reflecting the reconciliation of sites contemplated in Amendment No. 17.

- (e) Decreasing the Maximum Contract Sum by \$10,087,227 ( $-\$45,143,083 + \$23,677,589 + \$8,207,108 + \$3,171,159$ ) when taking the above cost increases and decreases into consideration) from \$294,836,874 to \$284,749,647.
- (f) Make other certain changes as set forth in Amendment No. 17.

The Agreement has been previously amended in Amendment Number Eighteen, effective May 4, 2016, to (a) reflect the inclusion of eight (8) LMR System Sites into the scope of Phase 1 (System Design) Work only which includes all Work associated with the addition of these sites into Phase 1 (System Design) for a cost increase in the amount of \$76,136; (b) exercise the Unilateral Options for all Work pertaining to Phase 1 (System Design) for eight (8) LMR System Sites; (c) reflect the inclusion of Phase 1 (System Design) Project Description Work for four (4) LMR System Sites for a cost increase in the amount of \$46,696; and (d) increasing the Maximum Contract Sum by \$122,832 ( $\$76,136 + \$46,696$ ), when taking the cost increases into consideration from \$284,749,647 to \$284,872,479.

The Agreement has been previously amended in Amendment Number Nineteen, effective May 5, 2016, to make changes necessary to (a) reflect the removal of one (1) LMR System Site from the scope of Phase 1 (System Design), Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR System Components), and Phase 4 (LMR System Implementation) for a cost reduction in the amount of \$1,192,712, which includes a reduction in the amount of \$20,322 for project management costs for this site; (b) reconcile equipment necessary for certain LMR System Sites as a result of redesign for a cost increase in the amount of \$1,197,256; increasing the Maximum Contract Sum by \$4,544 ( $\$1,197,256 - \$1,192,712$ ), when taking the cost increases and decreases into consideration, from \$284,872,479 to \$284,877,023; and (c) make other certain changes as set forth in Amendment No. 19.

The Agreement has been previously amended in Amendment Number Twenty, effective September 28, 2016, to make changes necessary to (a) reconcile nine (9) LMR System Sites to reflect the updated LMR System Design for a cost increase in the amount of \$367,144, (b) include 3D Modeling Work for certain LMR System Sites for a cost increase in the amount of \$6,534; (c) remove Site Lease Exhibit Work for certain LMR System Sites for a cost decrease in the amount of \$14,884; (d) increasing the Maximum Contract Sum by \$358,794 ( $\$367,144 + \$6,534 - \$14,884$ ) from \$284,877,023 to \$285,235,817 when taking the cost increases and decreases into consideration and (e) make other certain changes as set forth in Amendment No. 20.

The Agreement has been previously amended in Amendment Number Twenty-One, effective October 27, 2016, to make changes necessary to reflect (a) the replacement of one (1) LMR System Site Johnstone Peak (JPK) with site Johnstone Peak 2 (JPK2) by (1) removing site JPK from the scope of Phase 1 (System Design), Phase 2

(Site Construction and Site Modification), Phase 3 (Supply LMR System Components), and Phase 4 (LMR System Implementation), respectively, and all associated Work of the same; and (2) include the JPK2 site into the scope of Phase 1 (System Design), Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR System Components), and Phase 4 (LMR System Implementation), respectively, and all associated Work of the same, with the equivalent scope and cost for all Phases as JPK resulting in a cost neutral replacement; (b) exercise the Unilateral Options for all Work pertaining to Phase 1 (System Design) only for the replacement site Johnstone Peak 2; (c) reconcile ten (10) LMR System Sites to reflect the updated LMR System Design for a cost increase in the amount of \$804,944; (d) remove five (5) Project Descriptions from the scope of Phase 1 Work for a cost decrease in the amount of \$58,370; (e) make changes necessary to reflect an administrative revisions for a cost decrease in the amount of \$32,001; (f) increasing the Maximum Contract Sum by \$714,573 (\$804,944 - \$58,370 - \$32,001) from \$285,235,817 to \$285,950,390, when taking the cost increases and decreases into consideration; and (g) make other certain changes as set forth in Amendment No. 21.

The Agreement has been previously amended in Amendment Number Twenty-Two, effective November 17, 2016, to make changes necessary to reflect (a) the reconciliation of three (3) LMR System Sites to reflect the updated LMR System Design for a cost increase in the amount of \$476,676; (b) increasing the Maximum Contract Sum by \$476,676 from \$285,950,390 to \$286,427,066, when taking the cost increase into consideration; and (c) make other certain changes as set forth in Amendment No. 22.

The Agreement has been previously amended in Amendment Number Twenty-Three, effective December 21, 2016, to make changes necessary to (a) include four (4) LMR System Sites and all Work and equipment associated with these sites into Phase 1 (System Design) to be contemplated in the LMR System for a cost increase in the amount of \$36,068; (b) exercise the respective Unilateral Options all Phase 1 (System Design) Work pertaining to the four (4) LMR System Sites; (c) purchase certain Radio Equipment to be used with Authority's User Equipment for a cost increase in the amount of \$948; (d) increase the Maximum Contract Sum by \$39,016 from \$286,427,066 to \$286,466,082, when taking the cost increases into consideration; and (d) make other certain changes as set forth in Amendment No. 23.

The Agreement has been previously amended in Amendment Number Twenty-Four effective January 25, 2017, to make changes necessary to reflect (a) the reconciliation of six (6) LMR System Sites to align with the updated LMR System Design for a cost increase in the amount of \$2,379,232; (b) increase the Maximum Contract Sum by \$2,379,232 from \$286,466,082 to \$288,845,314, when taking the cost increase into consideration; and (c) make other certain changes as set forth in Amendment No. 24.

The Agreement has been previously amended in Amendment Number Twenty-Five effective March 20, 2017, to make changes necessary to reflect (a) the reconciliation of five (5) LMR System Sites to align with the updated LMR System Design for a cost decrease in the amount of \$330,670; (b) the inclusion of three (3) LMR System Sites into the scope of Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR Components), Phase 4 (LMR System Implementation), and exercising the Unilateral



Options of the same, to align with the updated LMR System Design for a cost increase in the amount of \$4,684,205 (c) increase the Maximum Contract Sum by \$4,353,535 from \$288,845,314 to \$293,198,849, when taking the cost increase and decrease into consideration; and (d) make other certain changes as set forth in Amendment No. 25.

The Agreement has been previously amended in Amendment Number Twenty-Six, effective April 13, 2017, to make changes necessary to reflect (a) the reconciliation of seven (7) LMR System Sites to align with the updated LMR System Design for a cost increase in the amount of \$2,336,048; (b) the inclusion of one (1) LMR System Site into the scope of Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR Components), Phase 4 (LMR System Implementation), and exercising the Unilateral Options of the same, to align with the updated LMR System Design for a cost increase in the amount of \$64,744 (c) increase the Maximum Contract Sum by \$2,400,792 from \$293,198,849 to \$295,599,641, when taking the cost increase into consideration; and (d) make other certain changes as set forth in Amendment No. 26.

The Agreement has been previously amended in Amendment Number Twenty-Seven, effective June 1, 2017, to make changes necessary to reflect (a) the reconciliation of two (2) LMR System Sites to align with the updated LMR System Design for a cost decrease in the amount of \$355,410 (b) the inclusion of two (2) LMR System Sites into the scope of Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR Components), Phase 4 (LMR System Implementation), and exercising the Unilateral Options of the same, to align with the updated LMR System Design for a cost increase in the amount of \$1,439,627 (c) make changes necessary to reflect an administrative reconciliation, a reconciliation related to dropped sites, and a reconciliation related to services performed in Phase 1 for a cost decrease in the amount of \$3,434,574; (d) increase the scope to include all Work necessary to implement an environmental Mitigation Monitoring and Reporting Plan into the LMR program to assess and ensure mitigation measures are met for a cost increase in the amount of \$2,912,356, (e) increase the Maximum Contract Sum by \$561,999 from \$295,599,641 to \$296,161,640 when taking the cost increases and decreases into consideration; and (f) make other certain changes as set forth in Amendment No. 27.

The Agreement has been previously amended in Amendment Number Twenty-Eight, effective August 21, 2017, to make changes necessary to reflect (a) the reconciliation of one (1) LMR System Site to align with the updated LMR System Design for a cost increase of \$868,771 (b) make changes necessary to reflect LMR Change Order Modifications for a cost increase in the amount of \$31,487; (c) increase the Maximum Contract Sum by \$900,258 from \$296,161,640 to \$297,061,898 when taking the cost increases into consideration; and (d) make other certain changes as set forth in Amendment No. 28.

The Agreement has been previously amended in Amendment Number Twenty-Nine, effective September 07, 2017, to make changes necessary to reflect (a) the inclusion of one (1) LMR System Site into the scope of Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR Components), Phase 4 (LMR System Implementation), and exercise the Unilateral Options of the same, to align with the

updated LMR System Design for a cost increase in the amount of \$1,170,471 (b) make changes necessary to reflect LMR Change Order Modifications for a cost increase in the amount of \$31,922; (c) increase the Maximum Contract Sum by \$1,202,393 from \$297,061,898 to \$298,264,291 when taking the cost increases into consideration; and (d) make other certain changes as set forth in Amendment No. 29.

The Agreement has been previously amended in Amendment Number Thirty, effective November 09, 2017, to make changes necessary to reflect (a) the reconciliation of seven (7) LMR System Site to align with the updated LMR System Design for a cost decrease of \$1,664,767 (b) the inclusion of one (1) LMR System Site into the scope of Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR Components), Phase 4 (LMR System Implementation), and exercise the Unilateral Options of the same, to align with the updated LMR System Design for a cost increase in the amount of \$1,228,018 (c) make changes necessary to reflect LMR Change Order Modifications for a cost increase in the amount of \$4,195; (d) upgrade equipment for the Multiprotocol Label Switching (MPLS) Mobile Backhaul which will provide the backhaul capacity necessary for network performance reliability and functionality for a cost increase in the amount of \$2,200,000; (e) increase the Maximum Contract Sum by \$1,767,446 from \$298,264,291 to \$300,031,737 when taking the cost increases and decreases into consideration; and (f) make other certain changes as set forth in Amendment No. 30.

The Agreement has been previously amended in Amendment Number Thirty-One, effective February 28, 2018, to make changes necessary to reflect (a) certain LMR Change Order Modifications, in particular the installation of tower lighting at Mira Loma (MLM) LMR System Site, for a cost increase in the amount of \$19,573; (d) increase the Maximum Contract Sum by \$19,573 from \$300,031,737 to \$300,051,310 when taking the cost increases into consideration; and (b) make other certain changes as set forth in Amendment No. 31.

The Agreement has been previously amended in Amendment Number Thirty-Two, effective March 1, 2018, to make changes necessary to reflect (a) the reconciliation of three (3) LMR System Sites to align with the updated LMR System Design for a cost decrease in the amount of \$4,131,931; (b) a cost neutral administrative reconciliation in connection with the Narrowband Mobile Data Network (NMDN) Subsystem to align all corresponding per site NMDN costs to a single line item cost, impacting thirty-three (33) LMR System Sites; (c) decrease the Maximum Contract Sum by \$4,131,931 from \$300,051,310 to \$295,919,379 when taking the cost decrease into consideration; and (d) make other certain changes as set forth in Amendment No. 32.

The Agreement has been previously amended in Amendment Number Thirty-Three, effective May 30, 2018, to make changes necessary to reflect (a) certain LMR Change Order Modifications for a cost increase in the amount of \$17,490 (b) increase the Maximum Contract Sum by \$17,490 from \$295,919,379 to \$295,936,869 when taking the cost increase into consideration; and (c) make other certain changes as set forth in Amendment No. 33.

The Agreement has been previously amended in Amendment Number Thirty-Four, effective July 31, 2018, to make changes necessary to reflect (a) the inclusion of one (1) LMR System Site into the scope of Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR Components), Phase 4 (LMR System Implementation), and exercise the Unilateral Options of the same, to align with the updated LMR System Design for a cost increase in the amount of \$1,016,780; (b) certain LMR Change Order Modifications for a cost increase in the amount of \$90,744; (c) the removal of certain Authority equipment, in particular an Uninterruptible Power Supply (UPS), from the Los Angeles Police Department's Valley Dispatch Center (LAPDVDC) for a cost increase in the amount of \$6,010; (d) an extension of a bridge warranty for the certain Early Deployment/Specified Equipment purchased and deployed under previously approved Amendments to bridge the warranty gap for this equipment until December 31, 2019, for a cost increase in the amount of \$430,800; (e) increase the Maximum Contract Sum by \$1,544,334 from \$295,936,869 to \$297,481,203 when taking the cost increase into consideration; and (f) make other certain changes as set forth in Amendment No. 34.

The Agreement has been previously amended in Amendment Number Thirty-Five, effective October 11, 2018, to make changes necessary to reflect (a) the reconciliation of one (1) LMR System Site Olinda (OLI) from the scope of Phase 1 (System Design), Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR System Components), and Phase 4 (LMR System Implementation), respectively, and all associated Work of the same for a cost decrease in the amount of \$701,234; (b) the inclusion of one (1) LMR System Site Winding Way (WWY) into the scope of Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR Components), Phase 4 (LMR System Implementation), and exercise the Unilateral Options of the same, to align with the updated LMR System Design for a cost increase in the amount of \$1,064,388; (c) certain LMR Change Order Modifications for a cost increase in the amount of \$13,115 (d) make changes necessary to reflect an administrative reconciliation, a reconciliation related to the removal of certain Authority equipment, in particular an Uninterruptible Power Supply (UPS), from the Los Angeles Police Department's Valley Dispatch Center (LAPDVDC) for a cost increase in the amount of \$601; (e) increase the Maximum Contract Sum by \$376,870 from \$297,481,203 to \$297,858,073 when taking the cost decrease and increase into consideration; and (f) make other certain changes as set forth in Amendment No. 35.

The Agreement has been previously amended in Amendment Number Thirty-Six, effective November 19, 2018, to make changes necessary to reflect (a) reconciliation of five (5) LMR System Sites to align with the updated LMR System Design for a cost decrease in the amount of \$535,981; (b) inclusion of one (1) LMR System Site San Pedro Hill (SPH) into the scope of Phase 2 (Site Construction and Site Modification), Phase 3 (Supply LMR Components), Phase 4 (LMR System Implementation), exercising the Unilateral Options of the same, to align with the updated LMR System Design for a cost increase in the amount of \$842,471; (c) incorporate an LMR Change Order Modification for a cost increase in the amount of \$4,952 (d) increase the Maximum Contract Sum by \$311,442 from \$297,858,073 to \$298,169,515 when taking the cost decreases and increases into consideration; and (e) make other certain changes as set forth in Amendment No. 36.

The Agreement has been previously amended in Amendment Number Thirty-Seven, effective February 26, 2019, to make changes necessary to (a) incorporate certain LMR Change Order Modifications for a cost increase in the amount of \$56,337; (b) increase the Maximum Contract Sum by \$56,337 from \$298,169,515 to \$298,255,852 when taking the cost increases into consideration; and (c) make other certain changes as set forth in this Amendment No. 37.

The Agreement has been previously amended in Amendment Number Thirty-Eight, effective June 11, 2019, to make changes necessary to (a) incorporate certain LMR Change Order Modifications as further described in this Amendment No. 38 that results in a net cost decrease in the amount of \$47,393; (b) decrease the Maximum Contract Sum by \$47,393 from \$298,225,852 to \$298,178,459 when taking the cost increases and decreases into consideration; and (c) make other certain changes as set forth in this Amendment No. 38.

The Authority and Contractor desire to further amend the Agreement to make changes necessary to (a) reflect a reconciliation related to the Narrowband Mobile Data Network (NMDN) Subsystem resulting in a cost decrease in the amount of \$720,207, (b) incorporate certain LMR Change Order Modifications as further described in this Amendment No. 39 that results in a cost increase in the amount of \$73,606; (c) decrease the Maximum Contract Sum by \$646,601 from \$298,178,459 to \$297,531,858 when taking the cost increase and decrease into consideration; and (d) make other certain changes as set forth in this Amendment No. 39.

This Amendment No. 39 is authorized under Section 2 (Changes to Agreement) of the Agreement.

NOW THEREFORE, in consideration of the foregoing recitals, all of which are incorporated as part of this Amendment No. 39, and for other valuable consideration, the receipt and sufficiency of which are acknowledged, Authority and Contractor hereby agree as follows:

1. Capitalized Terms; Section References. Capitalized terms used herein without definition (including in the recitals hereto), have the meanings given to such terms in the Base Document. Unless otherwise noted, section references in this Amendment No. 39 refer to sections of the Base Document, as amended by this Amendment No. 39.
2. LMR Change Order Modifications. The parties agree and acknowledge that Contractor will perform those certain Change Order Modification Work set forth in Exhibit C.17 (LMR Change Order Modifications) and in the table in this Section 2, in exchange for the amounts set forth in Exhibit C.17 (LMR Change Order Modifications) to Exhibit C (Schedule of Payments).

Item No.	Site ID	COR No.	Description	Amount
2.1	AGH	MSI-5073	Encroachment Permit Fee	\$4,807
2.2	CCB	MSI-5045	Abatement and Remediation Work	\$13,125
2.3	LACFDEL	MSI-5076	New Phase 1 Work Due to Site Relocation – Rev. 1	\$43,271
2.4	SPH	MSI-5068	Lease Exhibit Option – Rev. 1	\$1,065
2.5	UNIB	MSI-5063	Recuperation of Cost for Day Tank for Cancelled Site	\$11,338
<b>TOTAL AMOUNT:</b>				<b>\$73,606</b>

### 3. Amendments to the Base Document.

3.1 Section 8.1.1 of the Base Document is deleted in its entirety and replaced with the following:

8.1.1. The "Maximum Contract Sum" under this Agreement is Two Hundred Ninety-Seven Million, Five Hundred Thirty-One Thousand, Eight Hundred Fifty-Eight Dollars (\$297,531,858), which includes the Contract Sum and all Unilateral Option Sums, as set forth in Exhibit C (Schedule of Payments).

3.2 Section 24.4.1 of the Base Document is deleted in its entirety and replaced with the following:

24.4.1 Except for liability resulting from personal injury, harm to tangible property, or wrongful death, Contractor's total liability to the Authority, whether for breach of contract, warranty, negligence, or strict liability in tort, will be limited in the aggregate to direct damages no greater than Two Hundred Ninety-Five Million, Nine Hundred Seventeen Thousand, Nine Hundred Thirty-Two Dollars (\$295,917,932). Notwithstanding the foregoing, Contractor shall not be liable to the Authority for any special, incidental, indirect, or consequential damages.

### 4. Amendments to Agreement Exhibits.

4.1 Section 1.4.13 of Exhibit B.1 (LMR System Specifications) is deleted in its entirety and replaced with the following:

1.4.13 The Contractor will provide overall LMR System availability at 1% Grade of Service for a wide area call, including Contractor provided dispatch consoles expressed as a percentage of the maximum expected availability over a given period. The Contractor will provide a LMR System that is available 99.99% of the time across the LA-RICS service area (geographic area covered by the LMR System) measured on a monthly basis. For NMDN System, availability will be measured using the uptime statistics of the network controller's ability to process data

packets at the minimum required raw bit rate of 22 kbps, reduced from 32 kbps in the original specification.

- 4.2 Section 3.5.2.2 of Exhibit B.1 (LMR System Specifications) is deleted in its entirety and replaced with the following:

3.5.2.2 The Contractor will design and install the system so that the network allows for the number of concurrent logged on users determined per the aggregate load profile evaluated in 3.5.2.3.

- 4.3 Section 3.5.2.3 of Exhibit B.1 (LMR System Specifications) is deleted in its entirety and replaced with the following:

3.5.2.3 The Contractor will use the user profiles provided by the Authority and included in this Section 3.5.2.3 (NMDN Load Model) to calculate the number of active units that can be supported by the NMDN. A detailed throughput study, based on the RF spectrum available, will be included as part of the LMR System Design.

NMDN MESSAGE PROFILE – LAW USER						
Message Type	# Msgs/ 8 hrs.	Outbound Bytes per msg	Inbound Bytes per msg	Outbound Bytes per 8 hrs.	Inbound Bytes per 8 hrs.	Total
Login	2	113	73	226	146	372
Logout	2	58	68	116	136	252
Dispatch	26	548	58	14,248	1,508	15,756
Status Msg	104	0	98	0	10,192	10,192
Admin Msg (BOLO-Text)	16	168	0	2,688	0	2,688
License Query	20	0	98	0	1,960	1,960
License No Hit Response(s)	18	548	0	9,864	0	9,864
License Hit Response(s)	2	2,096	0	4,192	01,960	4,192
Registration Query	20	0	98	0	0	1,960
Registration No Hit Response(s)	18	298	0	5,364	0	5,364
Registration Hit Response(s)	2	1,048	0	2,096	2,160	2,096
Name Query	20	0	108	0	0	2,160
Name No Hit Response(s)	18	548	0	9,864	0	9,864
Name Hit Response(s)	2	2,096	0	4,192	392	4,192
Misc. Query (Gun, article)	4	0	98	0	0	392
Misc. Responses	4	298	0	1,192	1,230	1,192
Traffic Stop / On-View	10	548	123	5,480	4,920	6,710
Car-Car / Email	40	123	123	4,920	864	9,840
CAD Query	8	748	108	5,984	864	6,848
RMS Query	8	548	108	4,384	24,768	5,248
Incident Upload	4	0	6,192	0	0	24,768
Incident Download	2	15,480	0	30,960	17,520	30,960
AVL Msgs	240	298	73	71,520	47,040	89,040
AVL Command	480	0	98	0		47,040
IP Overhead	552.5	48	48			

NMDN MESSAGE PROFILE – FIRE USER						
Message Type	# Msgs/ 8 hrs.	Outbound Bytes per msg	Inbound Bytes per msg	Outbound Bytes per 8 hrs.	Inbound Bytes per 8 hrs.	Total
Login	2	113	73	226	146	372
Logout	2	58	68	116	136	252
Dispatch	17	548	58	9,316	986	10,302
Status Msg	68	0	98	0	6,664	6,664
Admin Msg (BOLO-Text)	4	168	0	672	0	672
License Query	0	0	98	0	0	0
License No Hit Response(s)	0	548	0	0	0	0
License Hit Response(s)	0	2,096	0	0	0	0
Registration Query	0	0	98	0	0	0
Registration No Hit Response(s)	3	298	0	894	0	894
Registration Hit Response(s)	1	1,048	0	1,048	0	1,048
Name Query	0	0	108	0	0	0
Name No Hit Response(s)	0	548	0	0	0	0
Name Hit Response(s)	0	2,096	0	0	0	0
Misc. Query (Gun, article)	0	0	98	0	0	0
Misc. Responses	0	298	0	0	0	0
Traffic Stop / On-View	0	298	123	0	0	0
Car-Car / Email	20	123	123	2,460	2,460	4,920
CAD Query	8	748	108	5,984	864	6,848
RMS Query	8	298	108	2,384	864	3,248
Incident Upload	4	0	6,192	0	24,768	24,768
Incident Download	2	15,480	0	30,960	0	30,960
AVL Msgs	240	548	73	131,520	17,520	149,040
AVL Command	480	0	98	0	47,040	47,040
IP Overhead	481	48	48	23,100	23,100	46,200

- 4.4 Section 3.5.2.5 of Exhibit B.1 (LMR System Specifications) is deleted in its entirety and replaced with the following:

3.5.2.5 The Contractor will certify that the network provides a data speed at least 22 kbps, reduced from 32 kbps in the original specification, on a 25 KHz channel.

- 4.5 Section 3.5.2.11 of Exhibit B.1 (LMR System Specifications) is deleted in its entirety and replaced with the following:

3.5.2.11 The Contractor will design and install the system to use available capacity for integrating Automatic Vehicle Location (AVL) and Automatic Vehicle Routing and Recommendation (AVRR) systems per the aggregate load profile evaluated in 3.5.2.3.

- 4.6 Section 3.5.2.12 of Exhibit B.1 (LMR System Specifications) is deleted in its entirety and replaced with the following:

3.5.2.12 The Contractor will design and install the system uses available capacity to send AVL data from the fixed infrastructure (CAD) to vehicles. Each vehicle will monitor other vehicles per the aggregate load profile evaluated in 3.5.2.3.



- 4.7 Section 3.5.3.4.1 through Section 3.5.3.4.5 of Exhibit B.1 (LMR System Specifications) are deleted in their entirety and replaced with the following:
- 3.5.3.4.1 LA Basin – 93.7% uplink and 91.9% downlink (97% was original value).
  - 3.5.3.4.2 Northern Desert – 93.5% uplink and 93.0% downlink (97% was original value).
  - 3.5.3.4.3 Santa Monica Mountains – 73.8% uplink and 75.4% downlink (original values of 93% and 94% respectively).
  - 3.5.3.4.4 CA – 14 Corridor – 85.5% uplink and 93.2 downlink (97% was original value).
  - 3.5.3.4.5 Foothills – 81.0% uplink and 81.6% downlink (original value of 96.6% and 97% respectively).
- 4.8 Section 3.5.3.5 of Exhibit B.1 (LMR System Specifications) is deleted in its entirety and replaced with the following:
- 3.5.3.5 In accordance with Section 15.2.5 of the Base Document, the Contractor will guarantee that the NMDN provides Narrowband Mobile Data Coverage at an Area Reliability of 95% over 72.2% uplink (originally 93.8%) and 71.5% downlink (originally 90.9%) of all roads depicted in Exhibit J (Confidential Supplement) for Santa Catalina, and 87.1% uplink and 92.7% downlink for all the areas depicted near Two Harbors, Little Harbor, Santa Catalina Airport, Middle Ranch, City of Avalon, Pebbly Beach (Helicopter Port), White's Landing, Salta Verde Point, Fisherman's Cove, Empire Landing, Mills Landing, and Helispot 55C (Dive Chamber).
- 4.9 Section 3.5.3.6 of Exhibit B.1 (LMR System Specifications) is deleted in its entirety and replaced with the following:
- 3.5.3.6 In accordance with Section 15.2.5 of the Base Document, the Contractor will guarantee that the NMDN provides Narrowband Mobile Data Coverage at an Area Reliability of 95% over 61.7% uplink (originally 74.2%) and 61.5% downlink (originally 79.5%) of all roads, as depicted in Exhibit J (Confidential Supplement) for the Angeles National Forest Coverage Detail.
- 4.10 Section 4.2.18.2.1 of Exhibit B.1 (LMR System Specifications) is deleted in its entirety and replaced with the following:

- 4.2.18.2.1 Coverage Testing will consist of demonstrating (via a vehicle while driving a route through a predefined set of tiles) the predicted coverage exceeds the modeled predictions (as represented by the more limiting of the predicted inbound or outbound coverage). The Authority has determined that conducting its Coverage Testing strictly as described in TSB-88 (latest version) will not achieve the level of test detail or test quality that is desired by the Authority. Therefore, in instances where the test setup or test procedure described in this document differs from TSB-88, this Specification will govern.
- 4.11 Exhibit B.1 is revised to include a new Attachment 1 (NMDN Functional Description) attached to this Amendment No. 39, which is incorporated herein by this reference.
- 4.12 Exhibit C.1 (LMR System Payment Summary) to Exhibit C (Schedule of Payments) is deleted in its entirety and replaced with Exhibit C.1 (LMR System Payment Summary) to Exhibit C (Schedule of Payments) attached to this Amendment No. 39, which is incorporated herein by this reference.
- 4.13 Exhibit C.4 (Phase 3 – Supply LMR System Components) to Exhibit C (Schedule of Payments) is deleted in its entirety and replaced with Exhibit C.4 (Phase 3 – Supply LMR System Components) to Exhibit C (Schedule of Payments) attached to this Amendment No. 39, which is incorporated herein by this reference.
- 4.14 Exhibit C.15 (LMR System Discounts) to Exhibit C (Schedule of Payments) is deleted in its entirety and replaced with Exhibit C.15 (LMR System Discounts) to Exhibit C (Schedule of Payments) attached to this Amendment No. 39, which is incorporated herein by this reference.
- 4.15 Exhibit C.17 (LMR Change Order Modifications) to Exhibit C (Schedule of Payments) is deleted in its entirety and replaced with Exhibit C.17 (LMR Change Order Modifications), attached to this Amendment No. 39, which is incorporated herein by this reference.
5. This Amendment No. 39 shall become effective as of the date identified in the recitals, which is the date upon which:
- 5.1 An authorized agent of Contractor has executed this Amendment No. 39;
- 5.2 Los Angeles County Counsel has approved this Amendment No. 39 as to form;
- 5.3 The Board of Directors of the Authority has authorized the Executive Director of the Authority, if required, to execute this Amendment No. 39; and

- 5.4 The Executive Director of the Authority has executed this Amendment No. 39.
6. Except as expressly provided in this Amendment No. 39, all other terms and conditions of the Agreement shall remain the same and in full force and effect.
7. Contractor and the person executing this Amendment No. 39 on behalf of Contractor represent and warrant that the person executing this Amendment No. 39 for Contractor is an authorized agent who has actual authority to bind Contractor to each and every term and condition of this Amendment No. 39, and that all requirements of Contractor to provide such actual authority have been fulfilled.
8. This Amendment No. 39 may be executed in one or more original or facsimile counterparts, all of which when taken together shall constitute one in the same instrument.

\* \* \*

**AMENDMENT NUMBER THIRTY-NINE**  
**TO AGREEMENT NO. LA-RICS 007**  
**FOR**  
**LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM –**  
**LAND MOBILE RADIO SYSTEM**

IN WITNESS WHEREOF, the parties hereto have caused this Amendment No. 39 to be executed on their behalf by their duly authorized representatives, effective as of the date first set forth above.

LOS ANGELES REGIONAL  
INTEROPERABLE COMMUNICATIONS  
SYSTEM AUTHORITY

MOTOROLA SOLUTIONS, INC.

By: \_\_\_\_\_

Scott Edson  
Executive Director

By: \_\_\_\_\_

Norm Folger  
Motorola Project Director

APPROVED AS TO FORM FOR THE  
LOS ANGELES REGIONAL  
INTEROPERABLE COMMUNICATIONS  
SYSTEM AUTHORITY:

MARY C. WICKHAM  
County Counsel

By: \_\_\_\_\_

Truc L. Moore  
Principal Deputy County Counsel

# **Narrowband Mobile Data Network (NMDN) Functional Description**



## **TABLE OF CONTENTS**

### **Section 1**

Introduction .....	1
--------------------	---

### **Section 2**

NMDN Subsystem Overview .....	2
2.1 Key Requirements .....	2
2.1.1 Coverage .....	2
2.1.2 Capacity .....	2
2.1.3 Reliability and Fault Tolerance .....	2
2.2 Key Benefits .....	2
2.3 NMDN Subsystem Architecture .....	3
2.3.1 NMDN Subsystem Design Overview .....	3
2.3.1.1 Mobility .....	4
2.3.1.2 Topology .....	4
2.3.1.3 Site Configuration .....	5
2.3.2 Control .....	6
2.3.3 Signal Flow Description .....	7
2.3.4 Subsystem Features .....	7
2.3.4.1 Open Architecture .....	7
2.3.4.2 IP-Based Integration .....	7
2.3.4.3 Digital Sense Multiple Access (DSMA) .....	8
2.3.4.4 Forward Error Correction .....	8
2.4 Subsystem Configuration .....	9
2.4.1 Core and RF Sites Map .....	9
2.4.2 NMDN Subsystem Sites Summary .....	10
2.4.3 NMDN Frequency Plan .....	11
2.4.4 Site Frequency Plan .....	11
2.4.5 Site Antenna Allocations .....	12
2.4.6 Core / NMS Site Configurations .....	13
2.4.6.1 LA-RICS Local Area Network .....	14
2.4.7 System Administration .....	14
2.4.8 Base Station Site Configuration .....	14
2.4.8.1 Base Stations .....	15
2.4.8.2 Base Station Controller .....	15
2.4.8.3 UHF 2-Channel RF Distribution system .....	15
2.4.8.4 Antennas and Transmission Line .....	16
2.4.8.5 NMDN LAN Switches .....	16
2.4.8.6 Base Station Monitoring .....	16
2.4.8.7 DC Supply and Distribution .....	16
2.4.8.8 Backhaul .....	16
2.4.9 Mobile Configuration .....	17

### **Section 3**

NMDN Subsystem Coverage Approach .....	19
3.1 Coverage Goals .....	19



## EXHIBIT B.1 – ATTACHMENT 1

Agreement No. LA-RICS 007 – Included under Amendment No. 39

3.1.1	Coverage Methodology .....	19
3.1.1.1	Coverage Prediction Modeling Tool .....	19
3.1.1.2	Site Selection .....	20
3.1.1.3	Site RF Parameters .....	20
3.1.1.4	Interference Baseline .....	20
3.1.2	Coverage Results .....	21
3.1.2.1	NMDN Subsystem Coverage .....	21
3.1.2.2	Zone Coverage .....	22
3.1.3	Capacity and Performance .....	23
3.1.3.1	Purpose .....	23
3.1.3.2	Assumptions .....	23
3.1.3.3	Traffic Load Analysis Methodology .....	26
3.1.3.4	Results .....	27
3.2	Subsystem Technology .....	28
3.2.1	Overview .....	28
3.2.2	IQ Mobile Server .....	28
3.2.2.1	Network Management Function .....	28
3.2.2.2	Network Configuration .....	29
3.2.2.3	Diagnostics Tools .....	30
3.2.3	NMDN Base Station .....	30
3.2.4	RF / Antenna Interconnection Design .....	32
3.2.4.1	One-Channel Site Interconnection Diagram .....	32
3.2.4.2	Two-Channel Site Interconnection Diagram .....	32
3.2.5	UHF RF Distribution System .....	33
3.2.5.1	Combiner .....	34
3.2.5.2	Transmit Filter .....	34
3.2.5.3	Receive Filter .....	35
3.2.5.4	Receiver Multicoupler .....	36
3.2.6	Base Station Antennas .....	36
3.2.7	NMDN UHF Mobile Data Radio .....	38
3.2.7.1	Mobile Data Radio Configuration .....	38
3.2.8	Alarm Reporting .....	39
3.3	NMDN Redundancy Features and Failure Modes .....	39
3.3.1	Redundancy Features .....	39
3.3.1.1	Geo Redundant IQ Mobile Servers .....	39
3.3.1.2	Multi-Channel RF Sites .....	40
3.3.1.3	Transport Network Redundancy .....	40
3.3.2	NMDN Failure Modes .....	41
3.3.2.1	IQ Mobile Server Impairment .....	41
3.3.2.2	Site Impairment .....	42
3.4	Ethernet / IP Plan .....	43

## SECTION 1

# INTRODUCTION

The Los Angeles Regional Interoperable Communications System (LA-RICS) Land Mobile Radio (LMR) System design consists of one data subsystem and four voice subsystems as listed below:

- Narrowband Mobile Data Network (NMDN)
- Digital Trunked Voice Radio Subsystem (DTVRS) – UHF T-Band
- Digital Trunked Voice Radio Subsystem (DTVRS) – 700 MHz
- Analog Conventional Voice Radio Subsystem (ACVRS)
- Los Angeles Regional Tactical Communications Subsystem (LARTCS)

At the heart of the LA-RICS LMR System are a primary Core site and a backup Core site. These redundant system elements are located at two physical locations:

- Los Angeles County Fire Command and Control Facility (FCCF) – Primary Core
- Los Angeles County Sheriff Station at Palmdale (PLM) – Backup Core

Figure 1 shows a high-level view of the LA-RICS LMR System. The focus of this functional description is the NMDN subsystem, which provides narrowband data communication services to mobile users.

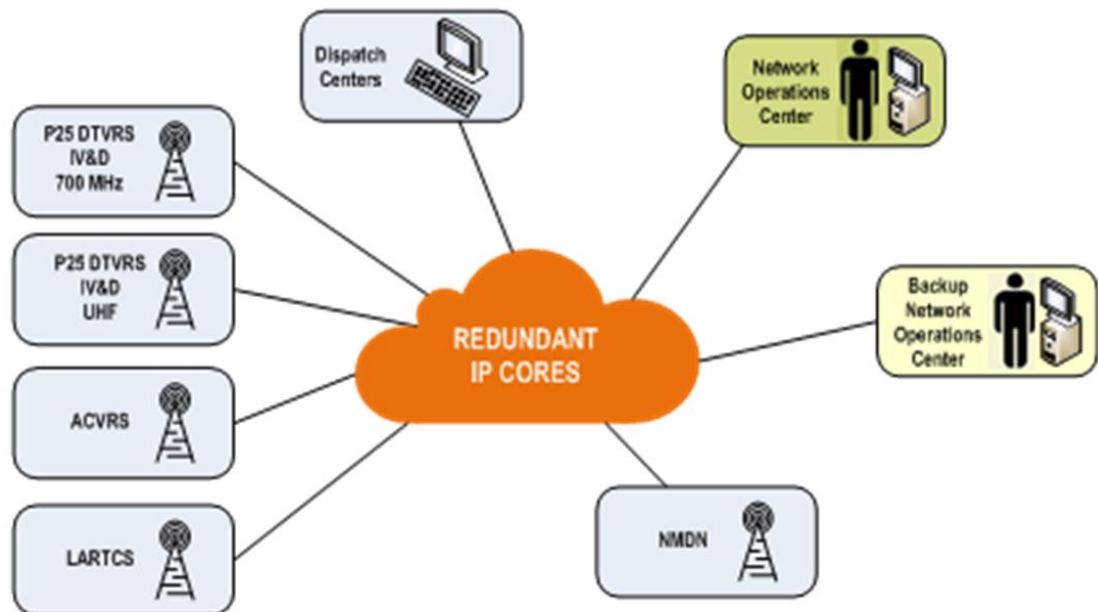


Figure 1. Architectural Overview of the LA-RICS LMR System.

**SECTION 2**

# NMDN SUBSYSTEM OVERVIEW

## 2.1 KEY REQUIREMENTS

### 2.1.1 Coverage

Motorola's coverage design addresses the coverage requirements for each of the seven defined coverage zones:

- Northern Desert
- Foothills
- CA-14 Corridor
- Santa Monica Mountains
- Basin
- Santa Catalina
- Angeles National Forest

The NMDN Subsystem Coverage Approach section in this document provides coverage results details for each zone and presents the coverage design approach and methodology.

### 2.1.2 Capacity

The NMDN subsystem supports up to 2,300 uniformly distributed subscribers, with up to 80 users per channel. The calculated capacity requirement is based on the RF channel plan and the load profile discussed in Section 3.1.3 Capacity and Performance.

### 2.1.3 Reliability and Fault Tolerance

The design meets the LA-RICS requirement for redundancy via geographically separated Core sites, each with central radio controllers to attain a highly reliable and fault tolerant mobile data subsystem.

## 2.2 KEY BENEFITS

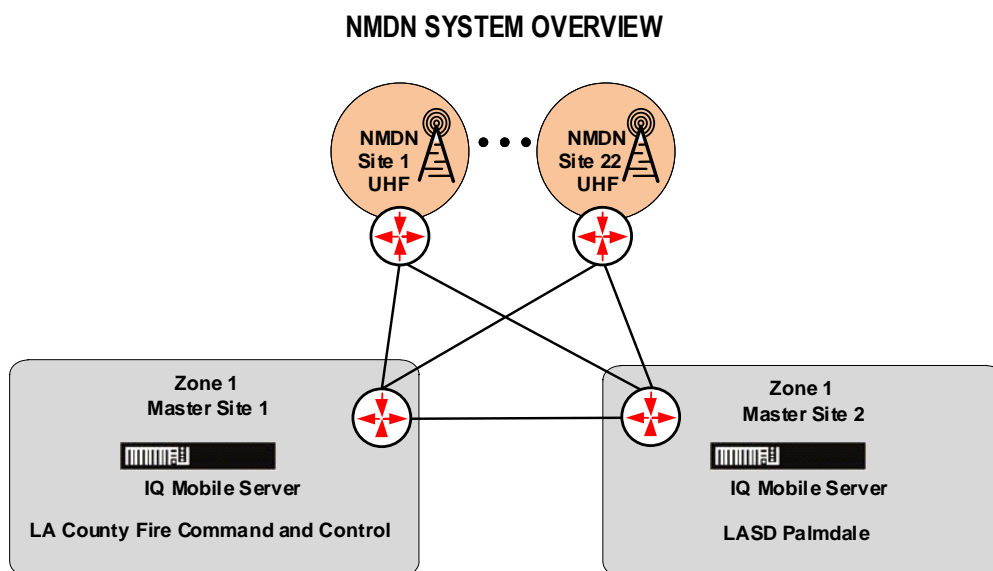
The NMDN subsystem will enable LA-RICS members' data dispatch systems to communicate with mobile units, using the UHF T-band, via Internet Protocol (IP) connectivity throughout Los Angeles County and its seven zones.

The NMDN subsystem technology provides for:

- Wide area coverage – to support the coverage LA-RICS users need throughout the Los Angeles County area
- Sufficient capacity – to support up to 2,300 uniformly distributed users
- Frequency re-use RF architecture – to efficiently re-use RF resources to achieve capacity
- Spectrum efficiency - Frequency-shift keying modulation providing data rates of 22 kbps in a 25 kHz channel
- Core site redundancy – geographically separated Core sites to prevent total system outage in the event one of the two Core sites loses network connectivity
- Fault tolerant, hot standby geographically redundant network controllers – in the event of a hardware or software failure on the main controlling server, the geographically redundant server will automatically take control of the system with zero downtime

## 2.3 NMDN SUBSYSTEM ARCHITECTURE

Figure 2 is a high level diagram of the subsystem architecture. The NMDN subsystem comprises 22 base station sites. Each of the base station sites is co-located with a voice subsystem radio site.



**Figure 2. LA-RICS Narrowband Mobile Data Network Subsystem High Level Diagram.**

### 2.3.1 NMDN Subsystem Design Overview

The NMDN subsystem will provide narrowband IP-based data services to participating LA-RICS member agencies. The design employs two centers from which the NMDN is controlled, twenty-two base station transmitter sites, and nineteen UHF channels across the network to meet the requirements specified in the amended Base Agreement and its Exhibits.

The NMDN subsystem includes:

- RadioMobile IQ Mobile Servers located at the Los Angeles County Fire Command and Control Facility and the LA County Sheriff Palmdale station. These servers operate in an Active/Standby configuration to provide system controller redundancy.
- Integration with System Management and Monitoring Subsystem (SMMS).
- Diagnostic applications for the NMDN.
- Base Station Equipment: There will be two 100 Watt base stations and two RadioMobile base station controllers at each NMDN site. Some sites will have 2 RF channels while other sites are configured with 1 channel. At the 1 channel sites, the second base station and site controller provide redundant hardware configured for the same channel. Each base station is configured to provide service on one 25 kHz channel.
- Mobile Data Radio Equipment including mobile and GPS antennas are to be provided by individual participating agencies.

### 2.3.1.1 Mobility

The raw over-the-air bit rate is 22 kbps in a 25 kHz channel. The 95% message success rate coverage design is based on connectivity speed of 22 kbps.

The application data can be XML or any form of data. When transmitted, the data is converted into binary data on the host end and the mobile end, either by RM's application or in case of third party application, RM's middle layer. The maximum size of transmission packet including overhead is 1K.

Considering the base stations are in a 100% duty cycle (TRANSMIT UP), the mobiles use the SYSINFO message sent out by the IQ Mobile Server to determine whether to stay on channel or go look for another channel to lock on. The mobile is always looking to lock on a channel. The mobile also uses a "here-i-am" message or "data packet" for the IQMS to determine which site to use for outbound transmission.

### 2.3.1.2 Topology

The NMDN subsystem is a private system that operates on FCC-licensed 25 kHz channels. As such, base station equipment is required at multiple sites to ensure that vehicles can sustain connectivity to the network while roaming throughout the NMDN coverage area. To preserve bandwidth on the NMDN subsystem, participating Agencies should be configured with middleware solutions that will select broadband services whenever broadband is available. The middleware should use the NMDN subsystem as a "last resort" data network and restrict use to applications designed to operate efficiently over narrowband channels.

Twenty-two sites have been selected to meet the 95% area reliability coverage requirement. In areas underserved by broadband, such as the Angeles National Forest, the sites will be equipped with up to two (2) RF channels for additional capacity. In the subscriber dense urban areas with 1 RF channel, dual base station configurations provide redundant hardware. In either configuration, all sites have two base stations.

The system design shown in Figure 3 includes 22 NMDN base sites, fifteen (15) single-channel sites and seven (7) two-channel sites.

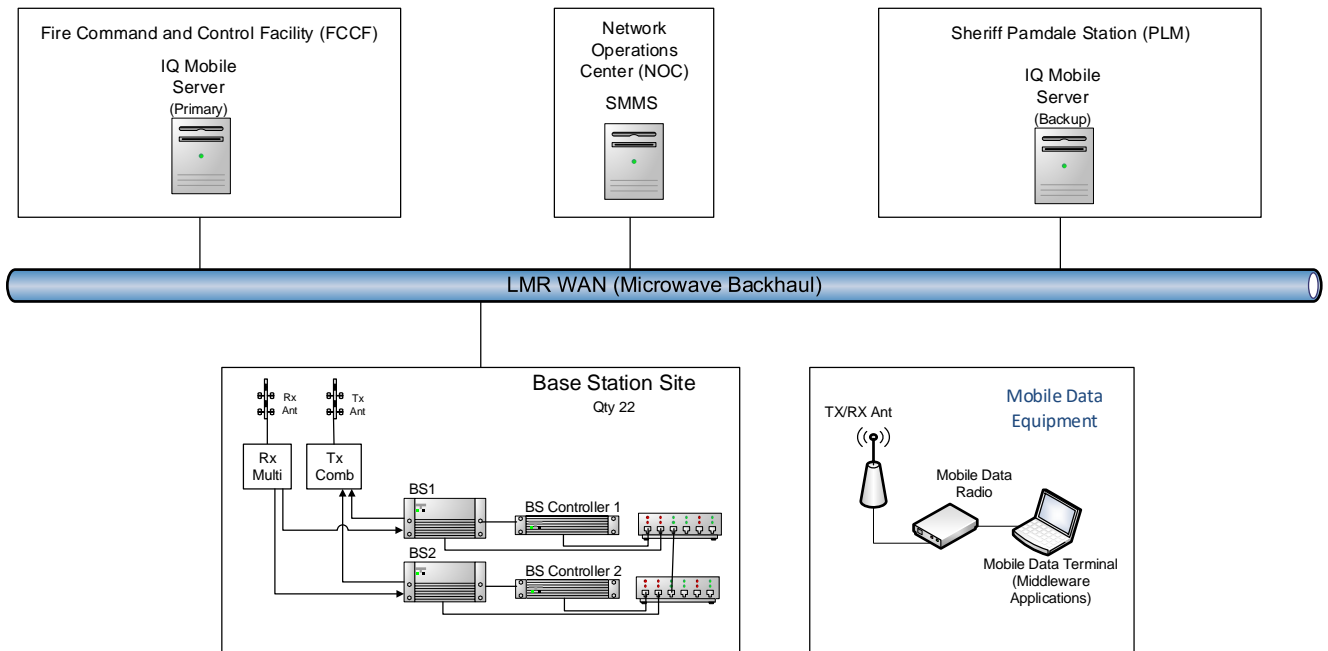


Figure 3. NMDN System Diagram.

## 2.3.1.3 Site Configuration

At each site, NMDN base stations are installed in lower portion of the 7 ½ foot tall microwave rack, which is a standard 19-inch rack. The NMDN equipment configuration includes the antenna system hardware, network switches, base stations, station controllers, and site monitoring equipment. Figure 4 shows a typical rack face diagram for a NMDN base site.

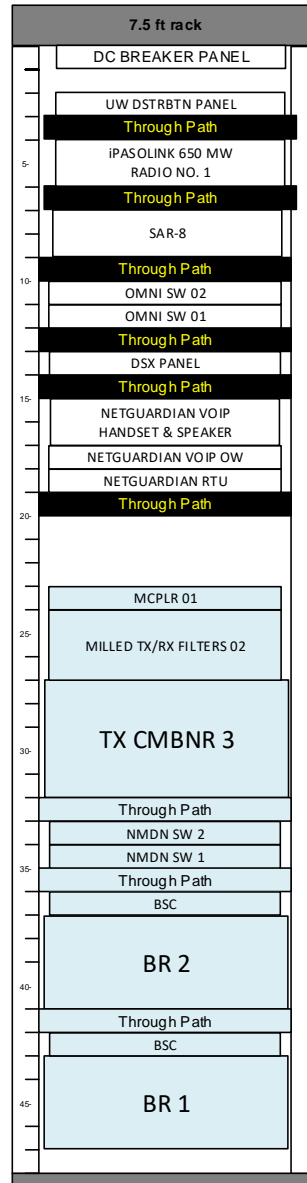


Figure 4. NMDN Site Equipment

## 2.3.2 Control

The NMDN subsystem solution, through the IQ Mobile Server, provides connectivity for IP-based Computer Aided Dispatch (CAD) systems used by LA-RICS members, provided that the CAD system is designed to efficiently use narrowband data. All communications between members' CAD systems and mobile data terminals is automatically routed through the IQ Mobile Server to the appropriate base station, and from there to the correct mobile data equipment.



The IQ Mobile Server and IQ Web Monitor provide mobile data system management, mobile data network configuration, mobile data diagnostics, and mobile data user management for the wireless network and include the applications and utilities.

### **2.3.3 Signal Flow Description**

This section describes the signal flow for data and control signalling in the NMDN subsystem architecture.

#### **Overview**

Figure 3 illustrates the NMDN subsystem site architecture. The primary equipment and site types are summarized below:

- Redundant IQ Mobile Servers are located at both the LASD Palmdale station (PLM) and Los Angeles Fire Command and Control Facility (FCCF). The IQ Mobile Server is the interface between the Agency's data applications and the NMDN subsystem.
- Base Stations: Base radios and RadioMobile Base Station controllers are connected to the IQ Mobile Server via the LMR System Backhaul or Microwave Subsystem and are the interfaces between the IQ Mobile Server and mobile data radios and computers.
- Mobile Data Radios (including UHF antennas, GPS antenna, and vehicle installation kits): The RadioMobile mobile data radio is the interface between Base Stations and the mobile data computers used in the vehicles. Each member agency's middleware is needed to manage IP communications between mobile data terminals (PCs, etc.) and agency specific applications in dispatch centers.
- Mobile Data Computers (typically a laptop computer or dedicated digital device): Dispatch data, forms and messages are received and displayed on a computer or other terminal in the vehicle. Middleware Applications can be used to control port traffic within the data devices in order to facilitate switching between multiple data service sources (e.g. NMDN, Carrier LTE, Public Safety LTE, WiFi hotspots, etc.). Middleware selection and provision is up to each agency utilizing the NMDN subsystem.

### **2.3.4 Subsystem Features**

#### **2.3.4.1 Open Architecture**

The NMDN subsystem utilizes an open architecture incorporating industry-standard IP data protocols, which include TCP/IP, UDP, and ICMP.

This open architecture system allows users to load and use a variety of qualified dispatch related software on mobile data terminals in vehicles.

#### **2.3.4.2 IP-Based Integration**

For ease of integration, the NMDN subsystem provides end-to-end IP connectivity to support the following:

- Standard Network Maintenance and Diagnostics
  - Maintaining and diagnosing this system is accomplished in the same way as any other network server on a traditional LAN. Each radio has an IP address just as a

LAN-based computer, so a network manager can remotely manage the mobile data network; including granting/restricting access to the network, disabling accounts, etc. Similarly, usage statistics can be monitored and managed, as on a traditional network.

- The RadioMobile software also provides system diagnostic procedures, to test all the components of the system. For example, a network administrator can test the functionality of each of the components of the system (e.g. mobile data radio, mobile data terminal, or base station) to confirm that the unit is online and communicating properly.

#### 2.3.4.3 Digital Sense Multiple Access (DSMA)

The RadioMobile protocol uses Digital Sense Multiple Access (DSMA) as an efficient method for controlling contention on the inbound channel. With DSMA, base stations provide a status indicator for inbound channel activity in the transmitted outbound data stream. Mobile units check the DSMA status indicator to see if the inbound channel is “busy” before transmitting data.

This method mitigates collisions on the inbound channel and results in improved inbound channel throughput relative to less efficient techniques such as Carrier Sense Multiple Access (CSMA), Slotted Aloha, or Aloha.

#### 2.3.4.4 Forward Error Correction

Sending data reliably via mobile data radio is a greater challenge when compared to other fixed infrastructure media. There are momentary signal fades that occur, especially while the vehicles are in motion. There are multipath distortions that occur when the vehicles are operating in locations where the signal takes two or more routes to the receiver. These conditions result in incomplete or corrupted messages. One method of restoring data to a useful form is called Forward Error Correction (FEC).

Forward Error Correction enables the mobile data radio or base station (whichever is receiving the message) to recover a message that was impaired by interference at the receiver, rather than require the entire message to be sent again. This greatly increases the Message Success Rate and reduces wasteful retransmissions of data, which have a significant impact on system capacity.

The RadioMobile solutions uses modified Reed-Solomon FEC methodology, including the use of bit interleaving to mitigate correlated bit errors that are common in a land mobile radio environment.

## 2.4 SUBSYSTEM CONFIGURATION

### 2.4.1 Core and RF Sites Map

The map in Figure 5 shows a graphical depiction of the NMDN subsystem site locations with color-coded references indicating site configurations, where black markers are 2-channel sites and red markers indicate 1-channel sites.



Figure 5. NMDN RF Sites

**2.4.2 NMDN Subsystem Sites Summary**

Table 1 lists the sites used within the NMDN subsystem.

**Table 1. NMDN Subsystem Site Table.**

Site Designator	Site Name	RF Ch. Qty (per site)	Latitude	Longitude
BJM	Black Jack Peak	2	33-23-13.12 N	-118-24-4.55 W
BUR1	Burnt Peak 1	1	34-40-56.52 N	-118-34-27.91 W
CPK	Castro Peak	2	34-5-8.45 N	-118-47-7.16 W
DPK	Dakin Peak	1	33-20-59.57 N	-118-21-11.05 W
ESR	East Sunset Ridge	1	34-11-16.22 N	-117-41-58.78 W
FRP	Frost Peak	2	34-21-5.26 N	-117-40-29.12 W
GMT	Grass Mountain	1	34-38-27.4 N	-118-24-51.97 W
GRM	Green Mountain	1	34-5-11.06 N	-118-32-56.7 W
HPK	Hauser Peak	2	34-32-47.85 N	-118-13-7.96 W
JPK2	Johnstone Peak 2	1	34-9-36.49 N	-117-47-58.58 W
LACF072	Fire Station 72	1	34-4-35.12 N	-118-52-51.26 W
MDI	Mount Disappointment	1	34-14-46.6 N	-118-6-18.4 W
MMC	Mount McDill	2	34-33-57.7 N	-118-15-17.8 W
MML	Magic Mountain Link	1	34-23-10.48 N	-118-19-43.68 W
MTL2	Mount Lukens-2	1	34-16-8.11 N	-118-14-16.8 W
ONK	Oat Mountain Nike	1	34-19-34.11 N	-118-35-11.91 W
PHN	Puente Hills	1	33-57-21.49 N	-117-53-41.84 W
PRG	Portal Ridge	1	34-40-31.1 N	-118-24-47.95 W
RHT	Rolling Hills Transmit	2	33-46-11.02 N	-118-22-34.72 W
TOP	Topanga Peak	1	34-5-1.03 N	-118-38-21.78 W
TPK	Tejon Peak	1	34-48-11.07 N	-118-48-56.63 W
WTR	Whitaker Ridge	2	34-35-2.41 N	-118-43-16.99 W

### 2.4.3 NMDN Frequency Plan

The coverage and capacity goals will be achieved through the use of 22 base station sites, with 19 frequency pairs per Table 2.

**Table 2. NMDN Subsystem Frequency Pairs (MHz).**

Channel #	RX Frequency (MHz)	TX Frequency (MHz)
1	470.3625	473.3625
2	470.4125	473.4125
3	470.4375	473.4375
4	470.4625	473.4625
5	470.4875	473.4875
6	470.5125	473.5125
7	470.5375	473.5375
8	470.5625	473.5625
9	470.5875	473.5875
10	470.6125	473.6125
11	470.6625	473.6625
12	470.7375	473.7375
13	470.7625	473.7625
14	470.7875	473.7875
15	470.8375	473.8375
16	470.8625	473.8625
17	470.8875	473.8875
18	470.9125	473.9125
19	470.9375	473.9375

### 2.4.4 Site Frequency Plan

Table 3 shows the frequencies sets used by each site. The coverage design and frequency plan considers the coverage needs, capacity needs, and limited frequency pool to primarily deliver NMDN services to areas underserved by broadband.

**Table 3. NMDN Subsystem Frequency Allocations.**

Site	Site name	Frequency 1 (MHz)	Frequency 2 (MHz)
BJM	Black Jack Peak	470.5125	470.8875
BUR1	Burnt Peak 1	470.7875	
CPK	Castro Peak	470.7625	470.8625
DPK	Dakin Peak	470.4625	
ESR	East Sunset Ridge	470.9125	
FRP	Frost Peak	470.7625	470.8625
GMT	Grass Mountain	470.6125	

## EXHIBIT B.1 – ATTACHMENT 1

Agreement No. LA-RICS 007 – Included under Amendment No. 39

Site	Site name	Frequency 1 (MHz)	Frequency 2 (MHz)
GRM	Green Mountain	470.4125	
HPK	Hauser Peak	470.5125	470.8875
JPK2	Johnstone Peak 2	470.5375	
LACF072	Fire Station 72	470.5375	
MDI	Mount Disappointment	470.4375	
MMC	Mount McDill	470.4875	470.5875
MML	Magic Mountain Link	470.9125	
MTL2	Mount Lukens-2	470.8375	
ONK	Oat Mountain Nike	470.5625	
PHN	Puente Hills	470.7875	
PRG	Portal Ridge	470.4375	
RHT	Rolling Hills Transmit	470.4875	470.5875
TOP	Topanga Peak	470.6625	
TPK	Tejon Peak	470.3625	
WTR	Whitaker Ridge	470.7375	470.9375

### 2.4.5 Site Antenna Allocations

For each base station site, Table 4 lists the antenna selection, height, and gain for the transmit and receive antennas. The NMDN sites are designed to leverage down tilt angles up to 8 degrees, with 6 degree down tilt being most typical. In all cases, PIM rated antennas of -140 dBc or better are used.

## EXHIBIT B.1 – ATTACHMENT 1

Agreement No. LA-RICS 007 – Included under Amendment No. 39

Table 4. NMDN Subsystem UHF RF Site and Antenna Parameters.

Site Designator	ERP (Watts per Channel)	Tx Antenna Model	Tx Height (ft)	Tx Antenna Gain (dBd)	Rx Antenna Model	Rx Antenna Height (ft)	Rx Antenna Gain (dBd)
BJM	69.2	CC450-09-T6	130	8.5	CC450-09-T6	180	8.5
BUR1	70.8	CC450-09-T6	125	8.5	CC450-09-T6	151	8.5
CPK	75.9	CC450-09-T6	86	8.5	CC450-09-T6	119	8.5
DPK	112.2	OA80-67-DIN-T3	130	11	OA80-67-DIN-T3	171	11
ESR	109.6	CSA40-67-DIN	145	11	CSA40-67-DIN	171	11
FRP	66.1	OA40-67-DIN-T8	145	9	OA40-67-DIN-T8	171	9
GMT	70.8	CC450-09-T6	85	8.5	CC450-09-T6	111	8.5
GRM	70.8	CC450-09-T6	75	8.5	CC450-09-T6	109	8.5
HPK	75.9	CC450-09-T3	48	8.5	CC450-09-T3	98	8.5
JKP2	91.2	CC450-09-T6	115	8.5	CC450-09-T6	141	8.5
LACF072	102.3	OA40-67-DIN-T8	44	9	OA40-67-DIN-T8	68	9
MDI	79.4	CC450-09-T6	54	8.5	CC450-09-T6	89	8.5
MMC	66.1	OA40-67-DIN-T3	136	9	OA40-67-DIN-T3	171	9
MML	89.1	OA40-67-DIN-T3	74	9	CC450-09-T6	100	8.5
MTL2	63.1	CC450-09-T3	119	8.5	CC450-09-T3	145	8.5
ONK	61.7	CC450-09-T6	140	8.5	CC450-09-T6	171	8.5
PHN	75.9	CC450-09-T6	76	8.5	CC450-09-T6	106	8.5
PRG	70.8	CC450-09-T6	94	8.5	CC450-09-T6	120	8.5
RHT	69.2	CC450-09-T6	119	8.5	CC450-09-T6	150	8.5
TOP	77.6	CC450-09-T6	37	8.5	CC450-09-T6	69	8.5
TPK	69.2	OA40-67-DIN-T8	136	9	OA40-67-DIN-T8	171	9
WTR	75.9	CC450-09-T6	68	8.5	CC450-09-T6	99	8.5

### 2.4.6 Core / NMS Site Configurations

Figure 6 shows the IQ Mobile Server hardware to be installed at the Fire Command and Control Center (FCCF) and the LA County Sheriff Palmdale station (PLM) Core Sites. Implementation includes Dell PowerEdge Series hardware, Windows Server, and MS SQL Server Standard. Detailed interconnect drawings will be provided as part of the site drawing package.

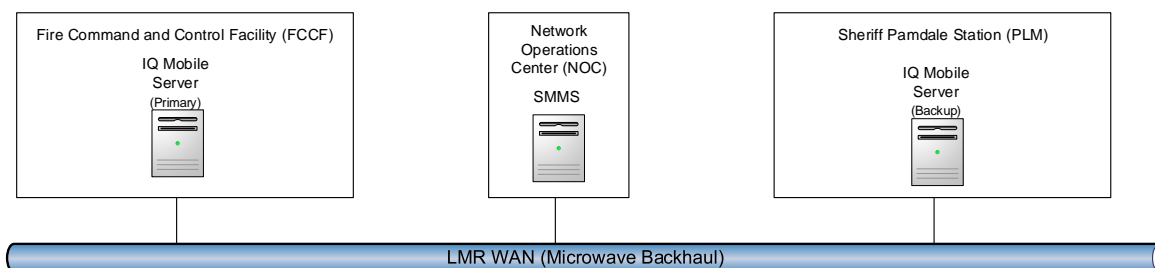


Figure 6. Control Center Block Diagram.



### 2.4.6.1 LA-RICS Local Area Network

All base station sites require constant IP connectivity to the IQ Mobile Server. This will be facilitated by the backhaul or microwave network described in the corresponding backhaul network documentation. The LA-RICS application (CAD, etc.) servers used for dispatch and other purposes must also have IP connectivity to the IQ Mobile Server. Each participating agency is responsible for the connectivity from their location to the LA-RICS-provided facilities.

### 2.4.7 System Administration

The IQ Mobile Servers manage the hardware and software functions of the NMDN. For example, the IQ Mobile Server is responsible for routing data, managing RF resources, configuration, and management of users including logging of traffic on the wireless infrastructure. System administration functions and the corresponding functionality are discussed below:

- Base Stations and BSCs are assigned IP Addresses with NMDN IP Address scheme and subnets with access to IQMS via LA-RICS backhaul
- User Management – From a wireless perspective, new users may be added seamlessly if the wireless network administrator assigns them a MID (mobile ID) on the system. Users may be denied access on a link level (using 3<sup>rd</sup> party middleware such as NetMotion or RadioIP to deny access or denied access at the CAD level)
- Audit and Logging – All user transactions in the form of raw data are logged in the NMDN database
- Statistics and reporting – Logged information such as base station & mobile statistics, alarm history is stored in the IQMS database and log files
- System operating status and fault alarms – Real time and historical views of system status, errors and faults are available both in IQMS database as well as IQ Web Monitor. The SNMP software administrator can set up a system by which maintenance personnel are advised of faults through e-mail or other notification systems. A customized SNMP application is not included as an NMDN deliverable, however NMDN SNMP traps will be sent to the SMMS.
- Diagnostics and troubleshooting – NMDN components are tested and diagnosed using the embedded diagnostic tools
- Base Station Configuration – Base stations can be programmed remotely. If a base station failure requires that a replacement be installed, the administrator can remotely configure the replacement unit.

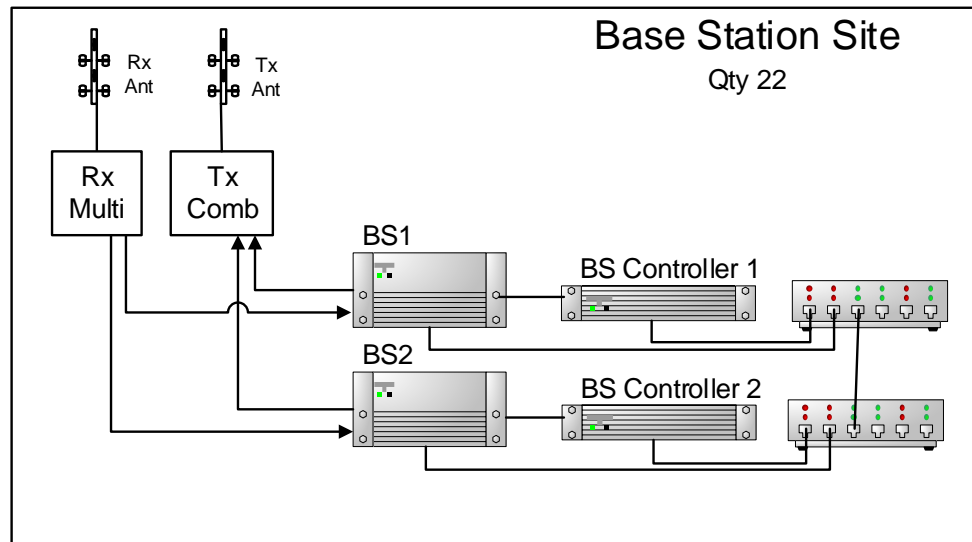
### 2.4.8 Base Station Site Configuration

Site designs are identical from an IP connectivity sense, with each base station being independently controlled by the IQ Mobile Server. The standard NMDN base site configuration is illustrated in Figure 7.

At each site, NMDN base stations and associated equipment are installed in a standard 7 ½ foot tall, 19-inch wide rack. Components of the Base Station Site include:

1. Base Stations

2. Base Station Controllers
3. UHF 2-Channel RF Distribution system
4. Antennas and Transmission Lines
5. NMDN LAN switches
6. Backhaul Interconnectivity



**Figure 7. NMDN Subsystem Base Station Site Configuration.**

### 2.4.8.1 Base Stations

Two base stations are used at each site. The station is capable of providing transmit power of 100 Watts, using a Tait base station. All sites have 2 base stations. For 1 channel sites, the second base station serves as backup hardware. For 2 channel sites, both base stations are active, so the site will have at least 1 channel active in the event of a base station failure.

### 2.4.8.2 Base Station Controller

Two base station controllers are deployed at each site. The Base Station Controller is the RadioMobile BSC 2212. The BSC 2212 provides error-free, digital communication between a host computer and multiple mobile units over a full-duplex, FM radio channel. The BSC channel contention among the mobile units is managed by the BSC using Digital Sense Multiple Access (DSMA) techniques.

### 2.4.8.3 UHF 2-Channel RF Distribution system

RF Filtering will consist of the following:

- A 2-channel hybrid transmitter combiner to consolidate all transmitter outputs into a single antenna.

- Milled Transmit window filter with a 1 MHz passband.
- Milled Receive window filter with a 1 MHz passband.
- Receive multicoupler to consolidate all receivers on a single antenna.
- Advanced Power Monitor (APM)

#### 2.4.8.4 Antennas and Transmission Line

The antenna models selected for each site are listed in Table 4. Antennas gains vary between 8.5 dBd and 11 dBd. Electrical down tilt for most sites is 6 degrees; however, tilts as high as 8 degrees are used. From the combiner output to the antenna, the system is PIM hardened to mitigate potential passive intermodulation products.

#### 2.4.8.5 NMDN LAN Switches

Each NMDN site as 2 LAN switches to support NMDN equipment. The NMDN site LAN switch hardware is the Cisco IE1000 Ethernet Switch, which uses -48VDC power. These switches provide redundancy and connect to the site backhaul switches for connectivity to the core sites.

#### 2.4.8.6 Base Station Monitoring

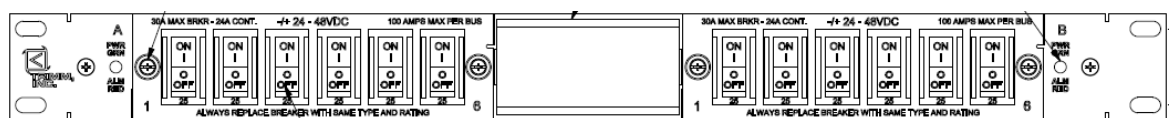
Base stations are monitored via IP. They are connected to the LA-RICS Backhaul via IP and report any alarms (configured) to the IQ Mobile Server Alarm Module. Then, they are visible in the IQ Web Monitor with additional information. RM will also trigger an alarm to the NOC's System Management and Monitoring Subsystem (SMMS). The base stations can also be dialed in with the manufacturer's service kit remotely to obtain more information and diagnoses remotely.

#### 2.4.8.7 DC Supply and Distribution

13.6VDC Power provided by the DC-DC converters is distributed to each load via circuit breaker protection.

Two -48VDC line feeds to each DC-DC converter and two 13.6VDC lines from each DC-DC converter to each distribution panel provide input power fault tolerance.

A typical DC Distribution frame supplied for NMDN racks is shown in Figure 8.



**Figure 8. Typical DC Distribution Pane.**

#### 2.4.8.8 Backhaul

Site minimum bandwidth requirement is determined by  $(2n) * 22 \text{ kbps}$ , where  $n$  = the number of channels, such that each path between the IQ Mobile server and the base site is 44 kbps for

a 1 channel site and 88 kbps for a 2 channel site. Table 5 lists the minimum bandwidth requirements in kilobits-per-second for each NMDN base site.

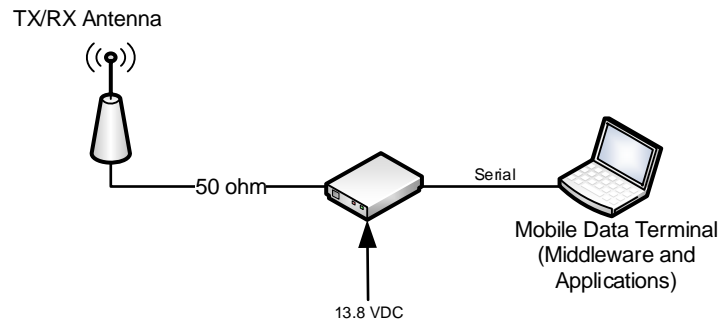
**Table 5. Site Minimum Bandwidth Requirements.**

Site Name	Site Designator	Data Channels	Minimum Bandwidth Required (kbps)
Black Jack Peak	BJM	2	88
Burnt Peak 1	BUR1	1	44
Castro Peak	CPK	2	88
Dakin Peak	DPK	1	44
East Sunset Ridge	ESR	1	44
Frost Peak	FRP	2	88
Grass Mountain	GMT	1	44
Green Mountain	GRM	1	44
Hauser Peak	HPK	2	88
Johnstone Peak 2	JPk2	1	44
Fire Station 72	LACF072	1	44
Mount Disappointment	MDI	1	44
Mount McDill	MMC	2	88
Magic Mountain Link	MML	1	44
Mount Lukens-2	MTL2	1	44
Oat Mountain Nike	ONK	1	44
Puente Hills	PHN	1	44
Portal Ridge	PRG	1	44
Rolling Hills Transmit	RHT	2	88
Topanga Peak	TOP	1	44
Tejon Peak	TPK	1	44
Whitaker Ridge	WTR	2	88

## 2.4.9 Mobile Configuration

Figure 9 describes the hardware configuration for the basic mobile. A single UHF antenna supports TX and RX operations. Motorola recommends standard 1/4 Wave unity gain mobile antenna mounted center roof for all vehicles. The GPS antenna provides vehicle location for CAD. The Mobile Data Radio is fed with a nominal 13.8 VDC from the vehicle ignition. The Mobile Data Terminal is connected to the Mobile Data Radio via the Serial port. The

configuration for each type of vehicle is determined by the preferences of each member agency.



**Figure 9. Mobile Data Equipment Block Diagram.**

**SECTION 3**

# NMDN SUBSYSTEM COVERAGE APPROACH

## 3.1 COVERAGE GOALS

Geographic coverage is segmented into seven zones: The Basin zone, the Northern Desert zone, the Santa Monica Mountain zone, the CA-14 Corridor zone and the Foothills zone, each has a design requirement for 95% area reliability within the area shown to be covered. With the limited number of sites and channels to support NMDN, the geographic coverage percentages achievable by zone will vary.

### 3.1.1 Coverage Methodology

The coverage and capacity goals will be achieved through the use of 22 base station sites, with 19 channels from UHF TV Ch-14 as described in Section 2.4.3 – NMDN Frequency Plan.

The design approach with RadioMobile is based on the following assumptions:

- Participating agencies will use middleware that prioritize broadband services such as enterprise WiFi, FirstNet (AT&T), and carrier 4G whenever these networks are available.
- NMDN coverage should primarily focus coverage and capacity in areas underserved by broadband, such as the Angeles National Forest (ANF), Santa Monica Mountains (SMM), and Catalina (CAT).
- The narrowband load model provided by LA-RICS will be used with UDP/IP overhead added.
- Max system capacity is based on uniform user distribution across sites and channels.

MSI has performed preliminary work to assess frequency re-use, coverage, and viable frequency licensing, which resulted in the selection of 22 sites and initial channel assignments. The design is based on licensing 19 channels with 9 channels licensed at a single site and 10 channels licensed at two sites. The channels licensed at two sites will be continuous key with minimal co-channel interference for added system capacity.

#### 3.1.1.1 Coverage Prediction Modeling Tool

Coverage prediction for NMDN subsystem uses the Motorola Hydra coverage simulation tool.

Hydra includes the ability to:

## EXHIBIT B.1 – ATTACHMENT 1

Agreement No. LA-RICS 007 – Included under Amendment No. 39

- Create radio path profiles with the most up-to-date terrain data and field strength cross-plotted against terrain.
- Develop propagation studies using the Okumura model.
- Overlay features such as roads, county lines, city and town names, terrain, population density, or land use.
- Adjust predicted field strength method.

### 3.1.1.2 Site Selection

Site selection for the NMDN subsystem is based on the site list provided by The Authority. The sites are described earlier in this document in Section 2.4.1 – Core and RF Sites Map. Sites were selected to provide the most efficient topology, by maximizing coverage, while facilitating frequency reuse on a non-interfering basis so that all channels are continuous key (100% duty cycle).

### 3.1.1.3 Site RF Parameters

Technical parameters for each site used in the coverage predictions are presented below in Table 6.

Table 6. NMDN Subsystem Site RF Parameters.

Site ID	ERP (Watts per Channel)	Tx Antenn a Gain	Tx Antenna Height (ft AGL)	Tx Antenna Azimuth (deg)	Tx Antenna Downtilt (deg)	Rx Antenna Gain	Rx Antenna Height (ft)	Rx Antenna Azimuth (deg)	Rx Antenna Downtilt (deg)	Height Above Average Terrain (feet)	Latitude  (ddd-mm-ss.s)	Longitude  (ddd-mm-ss.s)
CPK	69.2	8.5	130		6	8.5	180		6	1873.1	33-23-13.12 N	-118-24-4.55 W
BUR1	70.8	8.5	125		6	8.5	151		6	2507.8	34-40-56.52 N	-118-34-27.91 W
CPK	75.9	8.5	86		6	8.5	119		6	2053.2	34-5-8.45 N	-118-47-7.16 W
DPK	112.2	11	130	90	3	11	171	90	3	1476.6	33-20-59.57 N	-118-21-11.05 W
ESR	109.6	11	145	30	8M	11	171	20	8M	2438.8	34-11-16.22 N	-117-41-58.78 W
FRP	66.1	9	145	60	8	9	171	60	8	3225.3	34-21-5.26 N	-117-40-29.12 W
GMT	70.8	8.5	85		6	8.5	111		6	1590.8	34-38-27.4 N	-118-24-51.97 W
GRM	70.8	8.5	86		6	8.5	120		6	1343.1	34-5-11.06 N	-118-32-56.7 W
HPK	75.9	8.5	48		3	8.5	98		3	2170.7	34-32-47.85 N	-118-13-7.96 W
JPk2	91.2	8.5	115		6	8.5	141		6	1115.9	34-9-36.49 N	-117-47-58.58 W
LACF072	102.3	9	44	270	8	9	68	270	8	963.7	34-4-35.12 N	-118-52-51.26 W
MDI	79.4	8.5	54		6	8.5	89		6	3034.3	34-14-46.6 N	-118-6-18.4 W
MMC	66.1	9	136	0	3	9	171	0	3	2239.0	34-33-57.7 N	-118-15-17.8 W
MML	89.1	9	74	20	3	8.5	100	0	6	2291.3	34-23-10.48 N	-118-19-43.68 W
MTL2	63.1	8.5	119		3	8.5	145		3	2608.5	34-16-8.11 N	-118-14-16.8 W
ONK	61.7	8.5	140		6	8.5	171		6	2239.0	34-19-34.11 N	-118-35-11.91 W
PHN	75.9	8.5	76		6	8.5	106		6	965.1	33-57-21.49 N	-117-53-41.84 W
PRG	70.8	8.5	94		6	8.5	120		6	906.1	34-40-31.1 N	-118-24-47.95 W
RHT	69.2	8.5	119		6	8.5	150		6	1253.7	33-46-11.02 N	-118-22-34.72 W
TOP	77.6	8.5	37		6	8.5	69		6	1903.0	34-5-1.03 N	-118-38-21.78 W
TPK	69.2	9	136	135	8	9	171	135	8	1012.0	34-48-11.07 N	-118-48-56.63 W
WTR	75.9	8.5	68		6	8.5	99		6	995.2	34-35-2.41 N	-118-43-16.99 W

### 3.1.1.4 Interference Baseline

The NMDN subsystem reuses frequencies based on achieving sufficient isolation due to distance or terrain. With sufficient isolation, re-use channel can operate on a continuous key basis to for best throughput performance using the DSMA contention control.



## 3.1.2 Coverage Results

### 3.1.2.1 NMDN Subsystem Coverage

Figure 10 shows the Inbound 3-try 95% covered area reliability coverage prediction for NMDN. Figure 11 shows the Outbound 3-try 95% covered area reliability coverage prediction for NMDN.



Figure 10. NMDN Inbound 3-Try 95% Covered Area Reliability.



Figure 11. NMDN Outbound 3-Try 95% Covered Area Reliability.

## 3.1.2.2 Zone Coverage

Table 7 shows geographic percent coverage requirements and predicted results for each of the NMDN service zones, as derived from the coverage analysis. The results are based on Hydra analysis using a signal quality equivalent to DAQ 4.0 and using a mobile data radio with a center-roof quarter-wave antenna. Coverage is verified in accordance with the Coverage

Acceptance Test Procedure, which uses message success rate of 95% as the objective criterion.

**Table 7. NMDN Subsystem Geographic Percent Coverage per Zone.**

<b>NMDN Service Zone</b>	<b>Required Area Reliability</b>	<b>Results Geographic Area % (Uplink)</b>	<b>Results Geographic Area % (Downlink)</b>
Basin	95%	93.7%	91.9%
Santa Monica Mountains	95%	73.8%	75.4%
Foothills	95%	81.0%	81.6%
CA-14 Corridor	95%	85.5%	93.2%
Northern Desert	95%	93.5%	93.0%
Santa Catalina Island (Roads and Areas)	95%	72.2%	71.5%
Angeles National Forest (ANF) (Roads)	95%	61.7%	61.5%

### 3.1.3 Capacity and Performance

#### 3.1.3.1 Purpose

Capacity planning is determined by a study of the defined message model and number of channels in the system design. Using the message model, the analysis estimates the number of potential concurrent users on a single channel. The single channel result determines the potential number of users across the system assuming uniform distribution of users across sites.

#### 3.1.3.2 Assumptions

The basis for the message model is provided by LA-RICS from Exhibit 23: *Data Loading Study* prepared by RCC Consultants, Inc. and released on March 27, 2009. The LA-RICS message model accounts for data only and does not include the IP overhead necessary for networking. Therefore Motorola added IP overhead to the base model to produce a modified Law profile and a modified Fire profile. The IP overhead assumptions include the following:

- All traffic is UDP/IP (adds 28 bytes for UDP/IP header)
- Allocate 20 bytes for encapsulation header (middleware)
- All messages are acknowledged by the application in a UDP/IP message in a 48 byte message (28 byte UDP/IP header + 20 encapsulation header)
- A minimum of 60% compression gain can be achieved across the provided message model

**EXHIBIT B.1 – ATTACHMENT 1***Agreement No. LA-RICS 007 – Included under Amendment No. 39*

The adjusted messaged models for law enforcement and fire are shown in Table 8 and Table 9. The adjustments in these tables are to accommodate the above stated assumptions regarding UDP/IP headers, middleware encapsulation, and application level acknowledgements.

**Table 8 Message Model – LAW.**

Message Type	# Msgs / 8-hrs	Outbound Bytes/msg	Inbound Bytes/msg	Outbound Bytes/8-hrs	Inbound Bytes/8-hrs	Total
Login	2	113	73	226	146	372
Logout	2	58	68	116	136	252
Dispatch	26	548	58	14,248	1,508	15,756
Status Msg	104	0	98	0	10,192	10,192
Admin Msg (BOLO/Text)	16	168	0	2,688	0	2,688
License Query	20	0	98	0	1,960	1,960
License No Hit Response(s)	18	548	0	9,864	0	9,864
License Hit Response(s)	2	2,096	0	4,192	0	4,192
Registration Query	20	0	98	0	1,960	1,960
Registration No Hit Response(s)	18	298	0	5,364	0	5,364
Registration Hit Response(s)	2	1,048	0	2,096	0	2,096
Name Query	20	0	108	0	2,160	2,160
Name No Hit Response(s)	18	548	0	9,864	0	9,864
Name Hit Responses(s)	2	2,096	0	4,192	0	4,192
Misc. Query (Gun, article)	4	0	98	0	392	392
Misc Response	4	298	0	1,192	0	1,192
Traffic Stop/On-View	10	548	123	5,480	1,230	6,710
Car-Car / Email	40	123	123	4,920	4,920	9,840
CAD Query	8	748	108	5,984	864	6,848
RMS Query	8	548	108	4,384	864	5,248
Incident Upload	4	0	6,192	0	24,768	24,768
Incident Download	2	15,480	0	30,960	0	30,960
AVL Msgs	240	298	73	71,520	17,520	89,040
AVL Command	480	0	98	0	47,040	47,040
IP Overhead	655	48	48	31,440	31,440	62,880

**EXHIBIT B.1 – ATTACHMENT 1***Agreement No. LA-RICS 007 – Included under Amendment No. 39***Table 9. Message Model – FIRE.**

Message Type	# Msgs / 8-hrs	Outbound Bytes/msg	Inbound Bytes/msg	Outbound Bytes/8-hrs	Inbound Bytes/8-hrs	Total
Login	2	113	73	226	146	372
Logout	2	58	68	116	136	252
Dispatch	17	548	58	9,316	986	10,302
Status Msg	68	0	98	0	6,664	6,664
Admin Msg (BOLO/Text)	4	168	0	672	0	672
License Query	0	0	98	0	0	0
License No Hit Response(s)	0	548	0	0	0	0
License Hit Response(s)	0	2,096	0	0	0	0
Registration Query	0	0	98	0	0	0
Registration No Hit Response(s)	3	298	0	894	0	894
Registration Hit Response(s)	1	1,048	0	1,048	0	1,048
Name Query	0	0	108	0	0	0
Name No Hit Response(s)	0	548	0	0	0	0
Name Hit Responses(s)	0	2,096	0	0	0	0
Misc. Query (Gun, article)	0	0	98	0	0	0
Misc Response	0	298	0	0	0	0
Traffic Stop/On-View	0	298	123	0	0	0
Car-Car / Email	20	123	123	2,460	2,460	4,920
CAD Query	8	748	108	5,984	864	6,848
RMS Query	8	298	108	2,384	864	3,248
Incident Upload	4	0	6,192	0	24,768	24,768
Incident Download	2	15,480	0	30,960	0	30,960
AVL Msgs	240	548	73	131,520	17,520	149,040
AVL Command	480	0	98	0	47,040	47,040
IP Overhead	481	48	48	23,100	23,100	46,200

Per the RCC report, the ratio of Law users to Fire users is 2:1. Using this ratio and the assumed message models, the weighted average message model is shown in

Table 10. LA-RICS NMDN Weighted Average Message Model.

Msg Size (Bytes)	Inbound IP msgs/user/hr	Outbound IP msgs/user/hr
<= 64	66.7	74.9
65-128	67.9	5.5
129-256	0.6	1.9
257-512	0	28.2
513-1024	0	23.4
1025-1499	0	0.3
1500	2.5	3.5
	<b>137.7</b>	<b>137.7</b>

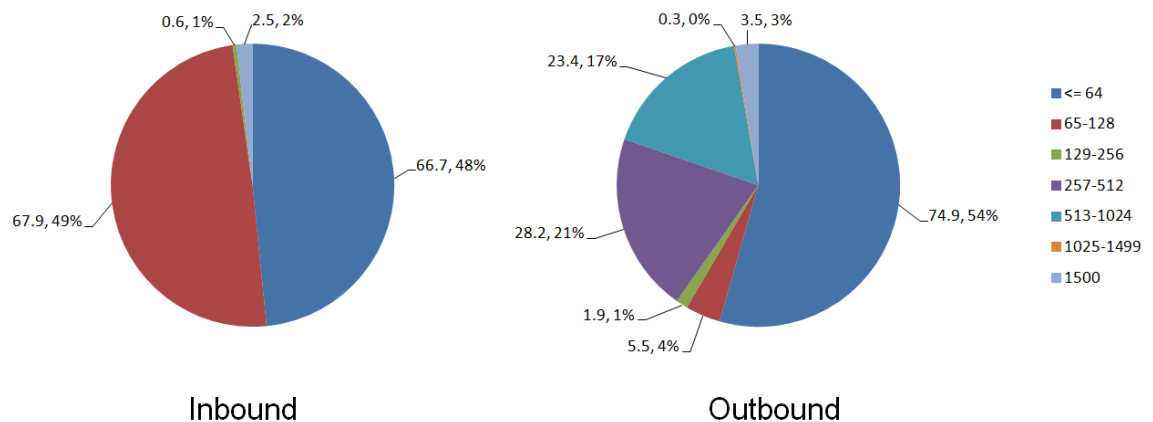


Figure 12. LA-RICS NMDN Weighted Average IP Packet Size Distribution

### 3.1.3.3 Traffic Load Analysis Methodology

Using the LA-RICS NMDN Weighted Average Message Model defined in Table 10, RadioMobile evaluated to determine the maximum number of users that can be supported on a single channel. The traffic is assumed a steady message arrival rate on any given channel with some variation. On a fully loaded channel, traffic bursts can result in longer response times due to the increased traffic. Once traffic subsides channel performance should return to normal.



The system limit is determined based on every channel in the system operating at maximum user load, which implies a uniform distribution of users across all channels.

#### **3.1.3.4 Results**

The maximum number of users per channel is estimated at 80 users, based on the message model and 60% compression gain on messages. The channel plan uses 19 physical channels from UHF CH-14. With the planned channel assignments and re-use across the 22 sites, the design has the equivalent of 29 virtual channels. Therefore, the NMDN system limit is approximately 2300 NMDN users.

The 2300 user system limit is based on uniform distribution of users across all channels. In practice, this type of distribution is not likely. The practical number of users served will be limited to the number of available channels in a given incident area. Relative to the current LA County Fire narrowband data system, the NMDN network provides almost a 2.5x capacity increase with additional channels focused in the Northern Desert, Santa Monica mountains, Angeles National Forest, and Catalina island areas. Countywide, the majority of users are expected to operate on broadband networks such as FirstNet or other 4G carrier, using NMDN as a “last resort” network. Agency provided middleware (Ex B.3.5.1.1) will be used for network selection, compression, and encryption. The Agency provided middleware will also need to restrict NMDN use to applications designed for narrowband.



## **3.2 SUBSYSTEM TECHNOLOGY**

### **3.2.1 Overview**

The NMDN subsystem is a UHF narrowband mobile data radio network designed to provide 22 kbps IP connectivity between fixed location enterprise networks and mobile data terminals.

The system consists of three main components, the IQ Mobile Server, base stations and mobile data radios (connected to mobile data terminals and middleware applications).

### **3.2.2 IQ Mobile Server**

The IQ Mobile Server Suite forms the core of RadioMobile's mobile data system solutions offering. It is built on a highly scalable platform with open interfaces and a robust database design capable of processing thousands of transactions per second.

IQ Mobile Server functions can be classified into three main categories:

- Operations (network control, site selection, gateway, interface and link operations)
- Monitoring (site equipment, server health and subscriber devices)
- Management (administrative management functions and configuration of the mobile data system components)



**Figure 13. IQ Mobile Server Hardware.**

#### **3.2.2.1 Network Management Function**

Network Management Function performs the following functions:

Mobile Data System Operations

- End-to-end mobile data system traffic routing (from host to mobile)
- Network control of traffic between the various network types (private, public, other)

- Site selection mechanism based on single/multi frequency single/multi site combinations
- Gateway services for mobile data traffic
- Interface(s) with single/multiple hosts (CAD, AVL, Mapping)
- Internal communication across servers via shared database and/or TCP/IP connections
- Network health check data exchange across devices
- Multi-threaded link operations of various sites/channels of mobile data system

#### Mobile Data System Monitoring

- Web-based monitoring of all aspects of the mobile data system
- Provides information about alarms generated from various equipment including: base stations, backhaul and any other network devices
- Provides key statistics across the system at a channel and/or mobile and/or link level
- Accessible via internal customer private network such as intranet

#### Mobile Data System Management

- Management of system alarms generated due to equipment malfunction and/or data flow interruption
- Administrative system control options for resetting base stations, maintenance and troubleshooting
- Ability to control post-alarm actions such as email, page and text alerts based on sequence of events

### 3.2.2.2 Network Configuration

IQ Mobile Server has a variety of configuration parameters that control the operation of the NMDN. The server is driven by a SQL Server Database that stores inbound and outbound data. Some of the configuration parameters that control the operation of the IQMS include

- Database Location
- IP addresses of the Hosts
- IP addresses of the base station controllers (sites)
- Keepalive criteria
- BSC key up/down criteria (if necessary)
- Inactive mobile criteria
- Compression/Fragmentation criteria
- Others

#### **Fault Tolerance**

IQ Mobile Servers (A & B) are setup in a fault tolerant mode. IQMS A will act as the primary server for all data communication and will have a connection with the hosts and sites. Switchover can be controlled in one of two ways.

- Host. If the host determines a switchover needs to happen, it can send a message to IQMS which can initiate a switchover from IQMS A to B. IQMS B will then connect out to the sites and also take over communication with the host.
- Health check. If IQMS A/B health check daemon determines the active server (or process) is offline, it initiates a switchover to the backup (or secondary server) to initiate communication with the sites and the host.

### 3.2.2.3 Diagnostics Tools

There are two types of diagnostics tools available from RadioMobile

#### **IQ Diagnostics**

This is a tool available on the IQ Mobile Server environment to diagnose/troubleshoot inbound and outbound data across any of the individual link (site) processes or host processes. The data is pulled from the SQL Server for this purpose. The user of this tool can type in search criteria including inbound/outbound, link/site name, time period, search text etc.

#### **Stress Test Utility**

This is a mobile diagnostics utility that can be used to emulate a mobile. It can connect to a data transceiver (Radio Modem) via PC and initiate messages either via the radio network or directly to the BSC to test end-to-end communications either at a system level or at a site/link level. The utility gives the user a variety of options to select including actual data, retry, echo, looping, format etc.

### 3.2.3 NMDN Base Station

NMDN Base Stations are designed for the stringent requirements of mobile data communication systems. All base sites are configured to support two base stations. The base stations are connected to the tower mounted Transmit and Receive antennas through a 2-channel UHF RF distribution system. The 100 Watt base stations are configured for -48 VDC power and provide power to their corresponding RadioMobile Base Station Controller (BSC 2212), which is depicted in Figure 14. The Base Station Controllers connect to the IQ Mobile servers at the core through the LA-RICS MPLS backhaul network.

Base Stations are pre-tuned and pre-configured prior to shipment with appropriate frequency, power and alarm settings template. This template can be saved as a profile file which can then be remotely pushed out to the base station in case of re-programming. Base stations are connected via LA-RICS MPLS backhaul network to the IQ Mobile Server using which these base stations can be remotely connected & configured via the service kit utility.

The base station controller (BSC 2212) provides the 4-level Frequency-Shift Keying (FSK) support for the base station transmit and receive functions. A full 25 kHz channel bandwidth is required to achieve the 22 kbps raw bit rate. The BSC 2212 provides error-free, digital communication between a host computer and multiple mobile units over a full-duplex, FM radio channel.

The BSC manages channel contention among the mobile units using Digital Sense Multiple Access (DSMA) techniques. Automatic Gain Control circuits in the BSC compensate for variations in mobile signal deviation. Specifications for the BSC are listed in Table 11.

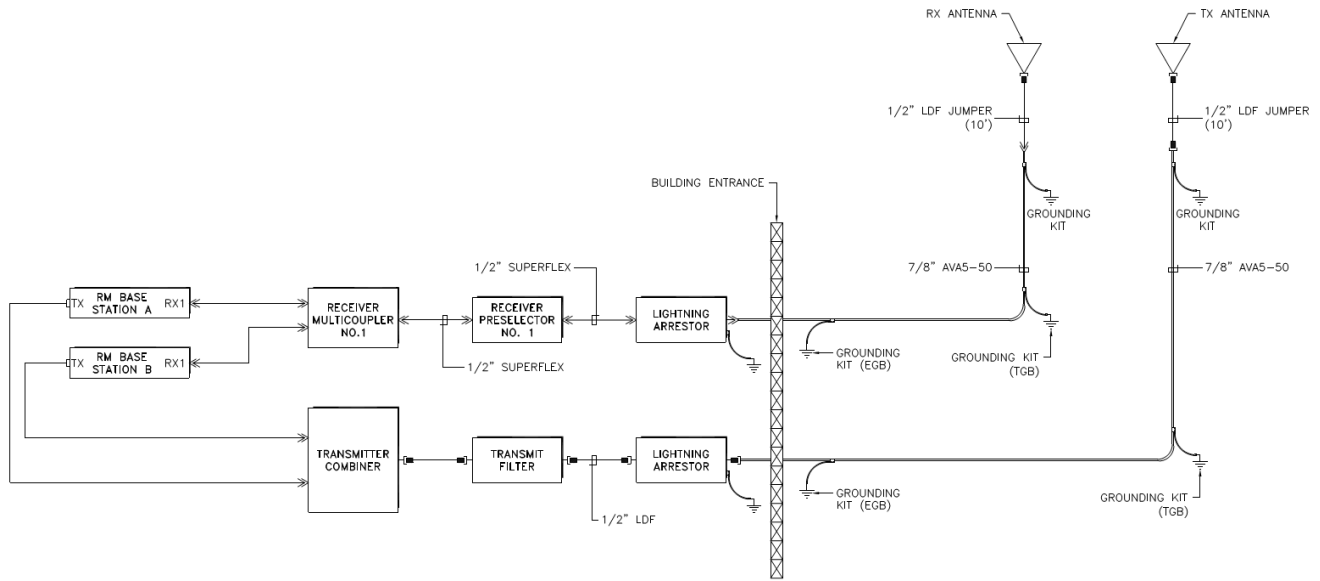
**Figure 14. NMDN Base Station Controller.****Table 11. Base Station Specifications**

Parameter	Specification
Frequency Range TX	470-512 MHz
Frequency Range RX	470-512 MHz
TX/RX Frequency Separation	3 MHz
Channel Spacing	25 kHz
Modulation	4-Level FSK
Data Rate	22 Kbps
Sensitivity	0.25Uv (-119dBm)
Distortion	DSP equalizes transmit and receive audio distortion
Operating Temperature	-30C to +60C
Power Supply Voltage	88 to 264V
Current Consumption TX	239VA at 120VAC, 19.2A at 12VDC
Current Consumption RX	~ 0.500VA at 120VDC
Number of Channels available to be programmed	255
RF Output Power	Up to 100 Watts
Transmitter Attack Time	2 ms
FCC Type Accepted	Yes

## 3.2.4 RF / Antenna Interconnection Design

### 3.2.4.1 One-Channel Site Interconnection Diagram

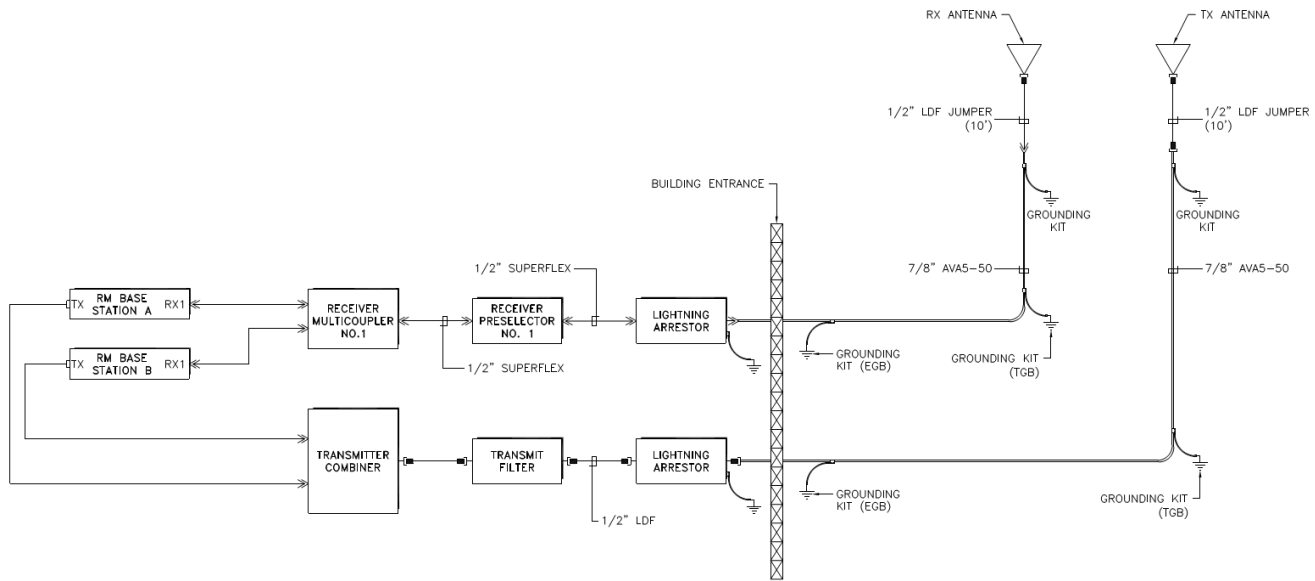
Figure 15 illustrates the typical RF interconnections for a one-channel NMDN base site.



**Figure 15. One-Channel Base Station Site Interconnection Diagram**

### 3.2.4.2 Two-Channel Site Interconnection Diagram

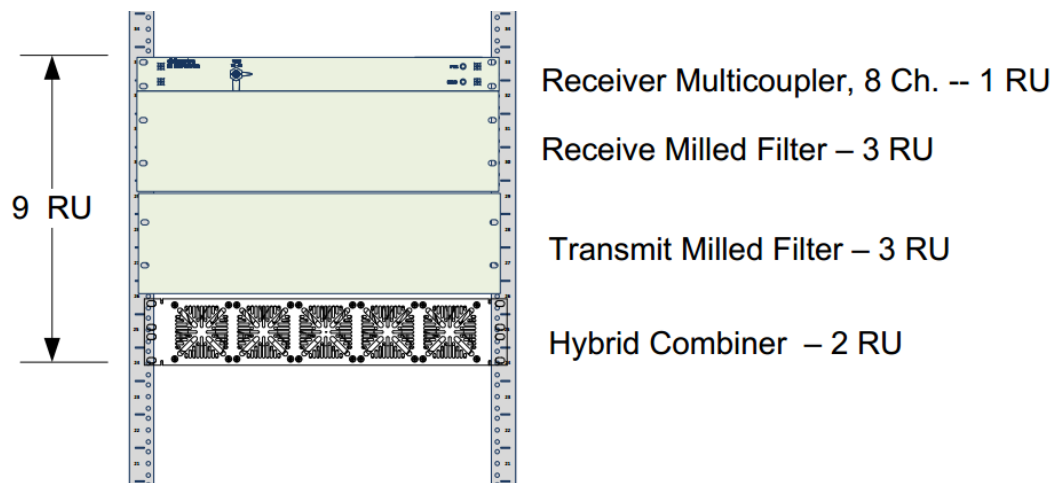
Figure 16 illustrates the typical RF interconnections for a two-channel NMDN base site.



**Figure 16. Two Channel Base Station Site Interconnection Diagram**

### 3.2.5 UHF RF Distribution System

Each NMDN base site includes a 2-channel UHF RF Distribution System that provides a 2-channel hybrid combiner, milled transmit filter, milled receive filter, and an 8-channel receiver multicoupler. The combination of these components uses 9 rack units of space as depicted in Figure 17



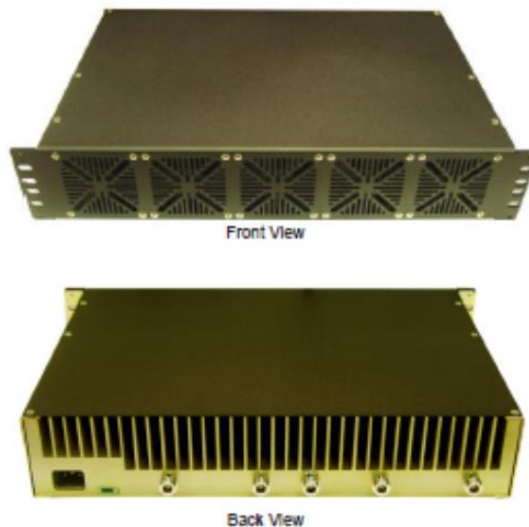
**Figure 17. RF Distribution System Rack Mount Configuration.**

### 3.2.5.1 Combiner

The combiner is designed to consolidate up to two transmitters into a single antenna with minimal loss incurred. Table 12 lists the transmit combiner specifications. The combiner hardware is shown in Figure 18

**Table 12. Transmit Combiner Specifications.**

Parameter	Value
Frequency Range	450-512 MHz
Type	Hybrid
TX-TX Separation	No minimum
Insertion loss	4.5 dB
TX-TX isolation	> 70 dB
Antenna - Tx Isolation	> 50 dB
Power per channel	100 Watts
Isolators	Dual
Input connector	N-Female
Output connector	DIN Female
Power (for fans)	-48 VDC
Mounting	2 RU / EIA 19-inch



**Figure 18. Combiner Front and Back Views.**

### 3.2.5.2 Transmit Filter

The transmit filter purpose is to achieve a minimum of 45 dB of selectivity at the closest receive frequency. This will reduce the sideband noise by at least 45 dB per best practices. With another 45



dB of isolation between the transmit and receive antennas, sideband noise at the receiver can be reduced by over 90 dB. The specifications for the transmit filter are listed in Table 13.

**Table 13. Milled Transmit Filter Specifications.**

Parameter	Value
Type	Milled Filter
Passband (MHz)	468.5 - 471.0
Insertion loss	< 1.5 dB
Isolation at RX frequencies	> 45 dB
Return loss	> 14 dB
Connectors	DIN Female
Mounting	3 RU, EIA 19-inch

### 3.2.5.3 Receive Filter

The receive filter provides a minimum of 65 dB of selectivity to the closest transmit frequency. With another 45 dB of isolation between the transmit and receive antennas, the result is over 110 dB of TX carrier suppression at the base station receiver. The hardware for the RX and TX milled filters is shown in Figure 19. The specifications for the receive filter are listed in Table 14.

**Table 14. Milled Receive Filter Specifications.**

Parameter	Value
Type	Milled Filter
Passband (MHz)	473.0 – 475.5
Insertion loss	2.5 dB
Isolation at TX frequencies	> 65 dB
Return loss	> 14 dB
Connectors	N-Female
Mounting	3 RU, EIA 19-inch



**Figure 19. TX and RX Milled Filter Front and Back Views.**

#### 3.2.5.4 Receiver Multicoupler

The multicoupler is housed in the equipment room and it is located after the receiver preselector. The selected model is a standard 4-port multicoupler.

Specifications for the Multicoupler are provided in Table 15.

**Table 15. Receiver Multicoupler Specifications.**

Parameter	Value
Frequency Range	380 – 512 MHz
Gain	9 dB
Attenuator Range	0-15 dB
LNA Noise Figure	2.5 dB typical
Input Connectors	N-Female
Output Connectors	BNC-Female
Mounting	1 RU, EIA 19-inch
Power	-48 VDC

#### 3.2.6 Base Station Antennas

The NMDN coverage design uses multiple antenna models, all manufactured by RFI Technology Solutions. The design uses electrical downtilts ranging from 0 to 8 degrees with one site using an 8 degree mechanical downtilt.

Table 16 and Table 17 show TX and RX antenna models, including gain, beam width, azimuth, and down-tilts used.

**EXHIBIT B.1 – ATTACHMENT 1***Agreement No. LA-RICS 007 – Included under Amendment No. 39***Table 16. Base Station TX Antenna Models.**

Site ID	TX Ant Qty	TX Antenna Model #	TX Antenna Manufacturer	Gain (dBd)	Beam Width (deg)	Azimuth (deg)	Electrical Downtilt (deg)	Mechanical Downtilt (deg)Value
BJM	1	CC450-09-T6	RFI	8.5	omni	n/a	6	
BUR1	1	CC450-09-T6	RFI	8.5	omni	n/a	6	
CPK	1	CC450-09-T6	RFI	8.5	omni	n/a	6	
DPK	1	OA80-67-DIN-T3	RFI	11.0	180	90	3	
ESR	1	CSA40-67-DIN	RFI	11.0	71	30		8
FRP	1	OA40-67-DIN-T8	RFI	9.0	178	60	8	
GMT	1	CC450-09-T6	RFI	8.5	omni	n/a	6	
GRM	1	CC450-09-T6	RFI	8.5	omni	n/a	6	
HPK	1	CC450-09-T3	RFI	8.5	omni	n/a	3	
JPk2	1	CC450-09-T6	RFI	8.5	omni	n/a	6	
LACF072	1	OA40-67-DIN-T8	RFI	9.0	178	270	8	
MDI	1	CC450-09-T6	RFI	8.5	omni	n/a	6	
MMC	1	OA40-67-DIN-T3	RFI	9.0	178	0	3	
MML	1	OA40-67-DIN-T3	RFI	9.0	178	20	3	
MTL2	1	CC450-09-T3	RFI	8.5	omni	n/a	3	
ONK	1	CC450-09-T6	RFI	8.5	omni	n/a	6	
PHN	1	CC450-09-T6	RFI	8.5	omni	n/a	6	
PRG	1	CC450-09-T6	RFI	8.5	omni	n/a	6	
RHT	1	CC450-09-T6	RFI	8.5	omni	n/a	6	
TOP	1	CC450-09-T6	RFI	8.5	omni	n/a	6	
TPK	1	OA40-67-DIN-T8	RFI	9.0	178	135	8	
WTR	1	CC450-09-T6	RFI	8.5	omni	n/a	6	

**Table 17. Base Station RX Antenna Models.**

Site ID	RX Ant Qty	RX Antenna Model #	RX Antenna Manufacturer	Gain (dBd)	Beam Width (deg)	Azimuth (deg)	Electrical Downtilt (deg)	Mechanical Downtilt (deg)Value
BJM	1	CC450-09-T6	RFI	8.5	omni		6	
BUR1	1	CC450-09-T6	RFI	8.5	omni		6	
CPK	1	CC450-09-T6	RFI	8.5	omni		6	
DPK	1	OA80-67-DIN-T3	RFI	11.0	180	90	3	
ESR	1	CSA40-67-DIN	RFI	11.0	71	20		
FRP	1	OA40-67-DIN-T8	RFI	9.0	178	60	8	
GMT	1	CC450-09-T6	RFI	8.5	omni		6	
GRM	1	CC450-09-T6	RFI	8.5	omni		6	
HPK	1	CC450-09-T3	RFI	8.5	omni		3	
JPk2	1	CC450-09-T6	RFI	8.5	omni		6	
LACF072	1	OA40-67-DIN-T8	RFI	9.0	178	270	8	
MDI	1	CC450-09-T6	RFI	8.5	omni		6	
MMC	1	OA40-67-DIN-T3	RFI	9.0	178	0	3	
MML	1	CC450-09-T6	RFI	8.5	omni	0	6	
MTL2	1	CC450-09-T3	RFI	8.5	omni		3	
ONK	1	CC450-09-T6	RFI	8.5	omni		6	
PHN	1	CC450-09-T6	RFI	8.5	omni		6	
PRG	1	CC450-09-T6	RFI	8.5	omni		6	
RHT	1	CC450-09-T6	RFI	8.5	omni		6	
TOP	1	CC450-09-T6	RFI	8.5	omni		6	
TPK	1	OA40-67-DIN-T8	RFI	9.0	178	135	8	
WTR	1	CC450-09-T6	RFI	8.5	omni		6	

### 3.2.7 NMDN UHF Mobile Data Radio

The NMDN UHF Mobile Data Radio is the RadioMobile IQ Modem RM 2212. The IQ Modem 2212 Transceiver consists of a modem which modulates and de-modulates signals to and from the RF base transceiver. The modem packetizes the data for transmission as well as provides special “digital signal processing” DSP to improve the ability of the transmitted signal to overcome noise and fading common to the mobile environment. It also contains a Micro Controller which allows multiple communication ports for GPS if requested, computer terminals or other data collection devices.

The modem provides a 22 kbps raw bit rate in 25 kHz channels. The interface to the modem is serial. General specifications for the mobile data radio are listed in Table 18.

The LA-RICS contract provides infrastructure only; thus, the NMDN Mobile Data Radio is the responsibility of participating agencies.

**Table 18. NMDN UHF Mobile Data Radio Specifications.**

Parameter	Specification
Frequency Range	450 to 512 MHz
Mode of operation	Half-duplex
Bit rate	22 kbps in 25 kHz channels
Voltage range	9-20 VDC
Current drain	12VDC receive 150 mA: TX 8.5A @ 50Watts
Power supply	13.7VDC @ 12A Recommended
Modulation	4-level FSK
Forward Error Correction	Interleaved modified Reed Solomon.
Antenna connections	BNC or Mini-UHF
Interface connection	DB15 Femal ext or 18pin dual line mini match internal I/O
Dimensions (HxWxD / lbs)	6.3” Depth x 6.26” wide x 1.9” high / 44.9 oz.
Regulatory	FCC Type Accepted
Emission designator	16K0F1D
Transmit power	50Watts
Transmit attack time	< 10 ms

#### 3.2.7.1 Mobile Data Radio Configuration

The mobile data radio currently connects to the MDC via Serial (RS232) port. The mobile application running on the user PC will require RadioMobile middleware (not part of the current scope) to interface with the NMDN network. All modem and radio parameters are pre-configured including modem ID (on the modem) and all radio parameters (channels, frequency pairs, power etc.). RadioMobile will provide the customer with necessary radio programming utility.

##### 3.2.7.1.1 Aerial Use Data Radio Configuration

Mobile data radios used in an aerial environment will be configured separately to all other terminals.

Narrowband Mobile Data Network coverage for airborne mobiles will be provided by the same radio network as used by land-based vehicles. Mobile Data Radios in aircraft will be programmed with a subset of the frequencies available to land-based vehicles. Aerial use modems will be limited to channels that are not re-used at other sites so that self interference will be adequately limited.

### **3.2.8 Alarm Reporting**

The Base Stations report a variety of alarms for the PA, PMU and Reciter modules. Alarm reporting happens in two parts.

- Setting up which alarms to report (done on the service kit application while applying base station template)
- Setting up triggers based on the reported alarms (showing on web monitor, external interface, email/text personnel etc.)

The IQ Web Monitor at any time shows the current status of the alarms along with a list of historical alarms reported at every site.

The RF distribution system supporting the RadioMobile base stations will be monitored with the same type of Advanced Power Monitoring (APM) equipment used to monitor the ASTRO network. The APM equipment monitors the Transmit Forward Power and VSWR on the antenna side of the transmitter combiner. This ensures that any RF faults that would otherwise be masked by the combiner's isolators, and therefore not seen by the network base stations, can be monitored, measured, and have alarm conditions reported.

The APM non-intrusively measures RF performance on a per-channel 24x7 basis, allowing coverage performance impacting problems to be detected promptly. The APM provides valuable detailed information on the fault condition, allowing appropriately prioritised maintenance activities to be scheduled - depending on the nature, severity, and impact of the fault.

For each site, an APM Line Coupler will be inserted on the antenna side of the transmit combiner. The forward and reflected ports will be connected to an APM unit that will monitor forward and reflected power and report alarms to the SMMS.

## **3.3 NMDN REDUNDANCY FEATURES AND FAILURE MODES**

The NMDN subsystem design includes a number of redundancy features that enable the system to fully operate and deliver traffic to mobile data users during outages. The following section covers failure modes and scenarios that can affect service delivery or have an impact on system performance.

### **3.3.1 Redundancy Features**

#### **3.3.1.1 Geo Redundant IQ Mobile Servers**

The IQ Mobile Server supports operations, management, control, and coordination of the entire NMDN subsystem.

IQ Mobile Servers (A & B) are setup in a fault tolerant mode. IQMS A will act as the primary server for all data communication and will have a connection with the hosts and sites. Switchover can be controlled in one of two ways.

- Host. If the host determines a switchover needs to happen, it can send a message to IQMS which can initiate a switchover from IQMS A to B. IQMS B will then connect out to the sites and also take over communication with the host.
- Health check. If IQMS A/B health check daemon determines the active server (or process) is offline, it initiates a switchover to the backup (or secondary server) to initiate communication with the sites and the host.

#### 3.3.1.1.1 IQ Mobile Server Operation

An IQ Mobile server is located at each Core site. One server will be located at the Los Angeles County Fire Command and Control Facility (FCCF) Primary Core site, and the second server will be located at the Palmdale Sheriff (PLM) Backup Core site.

Both servers will have connection with all the sites via MPLS backhaul. The IQMS connects out to the sites (acts as a client) and the BSCs act like a server. When the primary server goes down, the connections with the BSCs disconnect and the backup server starts initiating connections with the individual BSCs and takes over NMDN communication.

#### 3.3.1.2 Multi-Channel RF Sites

The NMDN subsystem utilizes a total of 22 RF sites. Within this group of sites, there are 7 two-channel sites and 15 one-channel sites. Refer to Table 3 to identify the number of channels on each site. Each base station at a multi-channel site operates on a different radio frequency while sharing the same coverage footprint. The resulting common coverage area provided by a group of base stations provides an inherent service area coverage provision such that mobiles registered on a failing base station will migrate to another subsystem base station to maintain network connectivity.

#### 3.3.1.3 Transport Network Redundancy

The microwave network is designed such that there are at least two connectivity paths between the IQ Mobile Server locations and each of the base station sites. This ensures that a single network failure will not result in a loss of connectivity between the NMDN core and base station sites.

## 3.3.2 NMDN Failure Modes

### 3.3.2.1 IQ Mobile Server Impairment

Either of the IQ Mobile Servers can control and manage the entire NMDN network. A failure of a single IQ Mobile Server will not result in a NMDN system-wide outage.

#### 3.3.2.1.1 Failure of a Primary IQ Mobile Server

Scenario	Failure of a Primary IQ Mobile Server
Overview	The NMDN subsystem consists of two geo-redundant IQ Mobile Servers at the two Core site locations.
Definition and Action	In the event that the primary IQ Mobile Server fails, it will result in automatic switchover to the backup IQ Mobile Server at the backup core location. The entire Narrowband Mobile Data Network remains fully operational with no loss of data.
Detection and Notification	Both servers will have connection with all the sites via MPLS backhaul. The IQMS connects out to the sites (acts as a client) and the BSCs act like a server. When the primary server goes down, the connections with the BSCs disconnect and the backup server starts initiating connections with the individual BSCs and takes over NMDN communication.
Impact on Users	Users may experience momentary loss of communication (lasting up to a minute) however as sites begin to reconnect, the message retries should kick in continuing mobile communication.
Recovery	When the primary server becomes available, the system can be set to auto-recover back or it can be set to switchover when the backup system fails or can be switched manually via a utility.



### 3.3.2.2 Site Impairment

A site failure, whether it is a single or dual channel site, can result in a system impact. The following are examples of site impairment scenarios.

#### 3.3.2.2.1 Failure of a Base Station at a Single Channel Site

Scenario	Failure of Base Station at a Single Channel Site
Overview	The Narrowband Mobile Data Network is comprised of 22 sites, and 15 of these sites have a single channel with redundant base stations.
Definition and Action	If a base station fails at a single channel site, the site will resume operations through the redundant base station hardware.
Detection and Notification	When a base station fails at a single site, the mobile looks for another channel to lock on (by listening for sysinfo). The mobile keeps looking until a site/channel is found. An alarm is initiated to indicate the site is down.
Impact on Users	The mobile will roam away from the site and try to lock on to a different channel/site.
Recovery	When the site becomes available, mobiles are able to lock on the site again.

#### 3.3.2.2.2 Failure of a Base Station at a Two Channel Site

Scenario	Failure of Base Station at a Single Channel Site
Overview	The Narrowband Mobile Data Network is comprised of 22 sites, and 7 of these sites have a two channels with a total of two base stations at the site.
Definition and Action	If a base station fails at a two channel site, the site will resume operations through the base station on the other channel if that site has the best signal strength.
Detection and Notification	When a base station fails at a two channel site, the mobile looks for another channel to lock on (by listening for sysinfo). It keeps looking until a site/channel is found. If the current site has the best signal strength, the mobile will lock on to the second channel at this site. An alarm is initiated to indicate the channel is down.
Impact on Users	Describe how users are impacted. The area being served will have a reduction in capacity with one channel available instead of two.
Recovery	When the channel becomes available, mobiles are able to lock on the site again.

**3.3.2.2.3 Failure of a NMDN LAN Switch at Base Site**

<b>Scenario</b>	<b>Failure of a NMDN LAN Switch at Base Site</b>
<b>Overview</b>	The NMDN base stations transmit data to mobile data radios and receive uplinks from mobile data radios. All data is routed to the active IQ Mobile Server. The base stations are connected to the IQ Mobile Server by the IP backhaul network via the redundant NMDN LAN switches.
<b>Definition and Action</b>	In the event that a NMDN LAN switch fails, the affected base station will be out of service; however the redundant base station will remain active.
<b>Detection and Notification</b>	Lack of connectivity from IQMS to base stations at that site will initiate alarms. Also, if the LAN switch is setup for SNMP traps, it will alarm.
<b>Impact on Users</b>	All sites have redundant base station hardware. Mobiles registered on a failing base station will migrate to the redundant base station to maintain network connectivity (applies to both 2-channel and 1-channel sites).
<b>Recovery</b>	A technician will be dispatched to the site to repair or replace the Ethernet switch and restore service to the affected base station. IQ Mobile Server will automatically detect the reappearance of the base station and begin routing traffic through the station as mobiles register on those base stations.

## **3.4 ETHERNET / IP PLAN**

There are some network requirements that cannot be violated, so consideration must be given to the NMDN's place in the larger network. The MSI MPLS plan will accommodate the RadioMobile infrastructure equipment; however, the IP space used for the mobile data equipment must be on a private network, such as the LA County Fire network. For agencies wanting to participate in the NMDN system, RadioMobile will propose IP planning and implementation services on a per agency basis as the requirements and needs for each agency will vary.

**EXHIBIT C.1***Agreement No. LA-RICS 007 - Amended and Restated under Amendment No. 38*

<b>EXHIBIT C.1 - SCHEDULE OF PAYMENTS LMR SYSTEM PAYMENT SUMMARY</b>				
<b>Summary</b>	<b>Unilateral Option Sum</b>	<b>Contract Sum - Full Payable Amount</b>	<b>10% Holdback Amount</b>	<b>Payment Minus 10% Holdback Amount</b>
<b>Phase 1</b> <sup>(Note 1)</sup>	\$ -	\$ 43,400,362	\$ 3,124,069	\$ 40,276,293
<b>Phase 2</b>	\$ -	\$ 44,568,333	\$ 4,347,443	\$ 40,220,890
<b>Phase 3</b>	\$ -	\$ 62,294,687	\$ 4,825,871	\$ 57,468,816
<b>Phase 4</b>	\$ -	\$ 28,314,989	\$ 2,768,127	\$ 25,546,862
<b>SUBTOTAL (Phases 1 to 4):</b>	<b>\$ -</b>	<b>\$ 178,578,371</b>	<b>\$ 15,065,511</b>	<b>\$ 163,512,860</b>
<b>Phase 5 (15 Years)</b>	\$ 55,898,518	\$ -	\$ -	\$ 55,898,518
<b>TOTAL (Phases 1 to 5):</b>	<b>\$ 55,898,518</b>	<b>\$ 178,578,371</b>	<b>\$ 15,065,511</b>	<b>\$ 219,411,378</b>
Bounded Area Coverage Additive Alternate <sup>(Note 1)</sup>	\$ 19,109,375	\$ -	\$ 1,910,937	\$ 17,198,437
Mandatory Building Coverage Additive Alternate	\$ 29,828,448	\$ -	\$ 2,982,845	\$ 26,845,603
Metrorail Coverage Additive Alternate	\$ 4,792,260	\$ -	\$ 479,226	\$ 4,313,034
LMR System Maintenance for Additive Alternates	\$ 19,620,355	\$ -	\$ 1,962,036	\$ 17,658,320
Source Code Software Escrow	\$ 1,304,000	\$ -	\$ 130,400	\$ 1,173,600
LMR Mitigation Monitoring and Reporting Plan		\$ 2,912,356	\$ -	\$ 2,912,356
LMR Change Order Modifications		\$ 296,028	\$ 22,242	\$ 200,180
Multiprotocol Label Switching Mobile Backhaul		\$ 2,200,000	\$ 220,000	\$ 1,980,000
<b>SUBTOTAL</b>	<b>\$ 130,552,956</b>	<b>\$ 183,986,755</b>	<b>\$ 22,773,197</b>	<b>\$ 291,692,908</b>
<b>TOTAL CONTRACT SUM:</b>	<b>\$183,986,755</b>			
LMR Discounts <sup>(Note 2)</sup>	<b>-\$17,007,853</b>			
<b>MAXIMUM CONTRACT SUM(Total Unilateral Option Sum plus Total Contract Sum):</b>	<b>\$297,531,858</b>			

**Note 1:** The cost for the Project Descriptions for the Bounded Area Coverage only are reflected in Exhibit C.2 (Phase 1 - System Design) as amended and restated in Amendment No. 2., and included (\$173,110) in Phase 1 Contract Sum - Full Payable Amount. The balance of the remaining Unilateral Option Sum for Bounded Area Coverage Additive Alternate Work is reflected in Exhibit C.7 (Bounded Area Coverage Additive Alternate).

**Note 2:** The total remaining balance of the LMR Discounts applied to the Max Contract Sum will be utilized at the discretion of the Authority.

## EXHIBIT C.4 - SCHEDULE OF PAYMENTS

### PHASE 3 - SUPPLY LMR SYSTEM COMPONENTS

Deliverable/ Task/ Section No. <i>(Exhibit A, Exhibit B, or Base Document)</i>	Site ID	Deliverable		Equipment Purchase in Phase 1 Credit per Site <i>(Note 1.11,12,13, 14,15)</i>	DTVRS	ACVRS	LARTCS	NMDN <i>(Note 17)</i>	Microwave	Credits <i>(Note 2)</i>	Total Contract Sum - Total Payable Amount for Phase 3 <i>(Note 1, 3, 8, 16)</i>	10% Holdback Amount	Payable Amount Less 10% Holdback
<b>B.3.2 to B.3.6</b>		<b>Equipment Delivery</b>											
B.3.2 to B.3.6	BAH	Baldwin Hills	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	BJM	Black Jack Peak	\$ -	\$ -	\$ 483,224	\$ 241,792	\$ 381,450	\$ -	\$ 28,058	\$ -	\$ 1,134,524	\$ 113,452	\$ 1,021,072
B.3.2 to B.3.6	BMT	Bald Mountain	\$ -	\$ -	\$ 1,351,696	\$ -	\$ 171,631	\$ -	\$ 36,032	\$ -	\$ 1,559,359	\$ -	\$ 1,559,359
B.3.2 to B.3.6	BRK	Blue Rock	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	BUR	Burnt Peak	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	BVG	Beverly Glen	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	CCB	Compton Court Building	\$ -	\$ -	\$ 482,398	\$ 171,692	\$ -	\$ -	\$ 36,176	\$ -	\$ 690,266	\$ -	\$ 690,266
B.3.2 to B.3.6	CEP	Century Plaza	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	CLM	Claremont	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 30,252	\$ -	\$ 30,252	\$ 3,025	\$ 27,227
B.3.2 to B.3.6	CPK	Castro Peak	\$ -	\$ -	\$ 548,134	\$ 318,690	\$ 381,450	\$ -	\$ 51,596	\$ -	\$ 1,299,870	\$ 129,987	\$ 1,169,883
B.3.2 to B.3.6	DPK	Dakin Peak	\$ -	\$ -	\$ 917,908	\$ 270,273	\$ 299,795	\$ -	\$ 39,605	\$ -	\$ 1,527,581	\$ 152,758	\$ 1,374,823
B.3.2 to B.3.6	ELSGDDP	El Segundo PD	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	ENG1	Encinal 1 (Fire Camp)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	GRM	Green Mountain	\$ -	\$ -	\$ 548,134	\$ 231,585	\$ 302,182	\$ -	\$ 64,130	\$ -	\$ 1,146,032	\$ 114,603	\$ 1,031,429
B.3.2 to B.3.6	HPK	Hauser Peak	\$ -	\$ -	\$ 917,311	\$ 145,772	\$ 296,409	\$ -	\$ 46,753	\$ -	\$ 1,406,245	\$ -	\$ 1,406,245
B.3.2 to B.3.6	JKP	Johnstone Peak	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	LACF028	FS 28	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	LACF056	FS 56	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	LACF071	FS 71	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	LACF072	FS 72	\$ -	\$ -	\$ 546,319	\$ 83,252	\$ 210,233	\$ -	\$ 26,897	\$ -	\$ 866,701	\$ 86,670	\$ 780,031
B.3.2 to B.3.6	LACF077	FS 77	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	LACF084	FS 84	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	LACF091	FS 91	\$ -	\$ -	\$ 176,055	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 176,055	\$ 17,606	\$ 158,450
B.3.2 to B.3.6	LACF099	FS 99	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	LACF119	FS 119	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	LACF144	FS 144	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	LACF149	FS 149	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	LACF157	FS 157	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	LACF196	FS 169	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	LACFCP09	CP 9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	LACFDEL	Los Angeles County Fire Departmental Del Valle Training Camp	\$ -	\$ -	\$ 372,867	\$ 74,338	\$ 85,268	\$ -	\$ 32,590	\$ -	\$ 565,063	\$ 56,506	\$ 508,557
B.3.2 to B.3.6	LAH	LA City Hall <i>(Note 4)</i>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	LBR	Lower Blue Ridge	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	LDWP243	DWP Sylmar Water Ladder	\$ -	\$ -	\$ 431,751	\$ 74,185	\$ 79,467	\$ -	\$ 27,849	\$ -	\$ 613,252	\$ -	\$ 613,252
B.3.2 to B.3.6	MAM	Magie Mountain	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	MDI	Mount Disappointment	\$ -	\$ -	\$ 548,133	\$ 271,717	\$ 381,450	\$ -	\$ 30,684	\$ -	\$ 1,231,986	\$ 123,199	\$ 1,108,787
B.3.2 to B.3.6	MLE	Mount Lee	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	MLM	Mira Loma Facility	\$ -	\$ -	\$ 917,609	\$ 121,774	\$ 39,740	\$ -	\$ 31,324	\$ -	\$ 1,110,448	\$ 111,045	\$ 999,403
B.3.2 to B.3.6	MMC	Mount McDill	\$ -	\$ -	\$ 483,224	\$ 146,308	\$ 376,943	\$ -	\$ 60,498	\$ -	\$ 1,066,973	\$ 106,697	\$ 960,276
B.3.2 to B.3.6	MFL	Mount Lukens	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	MFF	Mount Thom	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	MTW	Mount Washington	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	MVS	Monte Vista (Star Center)	\$ -	\$ -	\$ 524,294	\$ 95,096	\$ -	\$ -	\$ 30,352	\$ -	\$ 649,741	\$ 0	\$ 649,741
B.3.2 to B.3.6	OAT	Oat Mountain OAT	\$ -	\$ -	\$ 176,493	\$ 162,062	\$ -	\$ -	\$ 80,168	\$ -	\$ 418,724	\$ 41,872	\$ 376,852
B.3.2 to B.3.6	OMC	Oat Mountain OMC	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	ONK	Oat Mountain Nike	\$ -	\$ -	\$ 432,751	\$ 146,308	\$ 376,943	\$ -	\$ 27,470	\$ -	\$ 983,472	\$ 26,127	\$ 957,345
B.3.2 to B.3.6	PHN	Puente Hills	\$ -	\$ -	\$ 524,774	\$ 365,910	\$ 297,006	\$ -	\$ 32,899	\$ -	\$ 1,220,589	\$ -	\$ 1,220,589

## EXHIBIT C.4 - SCHEDULE OF PAYMENTS

### PHASE 3 - SUPPLY LMR SYSTEM COMPONENTS

Deliverable/ Task/ Section No. <i>(Exhibit A, Exhibit B, or Base Document)</i>	Site ID	Deliverable		Equipment Purchase in Phase 1 Credit per Site <i>(Note 1,11,12,13, 14,15)</i>	DTVRS	ACVRS	LARTCS	NMDN <i>(Note 17)</i>	Microwave	Credits <i>(Note 2)</i>	Total Contract Sum Total Payable Amount for Phase 3 <i>(Note 1, 3, 8, 16)</i>	10% Holdback Amount	Payable Amount Less 10% Holdback
B.3.2 to B.3.6	PRG	Portal Ridge	\$ -	\$ -	\$ 483,223	\$ 144,298	\$ 299,795	\$ -	\$ 54,116	\$ -	\$ 981,434	\$ 98,143	\$ 883,291
B.3.2 to B.3.6	PSH	Pomona-1620 Hillcrest	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	RDNBPD	Redondo Beach PD	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	RHT	Rolling Hills Transmit	\$ -	\$ -	\$ 917,609	\$ 172,269	\$ 127,115	\$ -	\$ 28,417	\$ -	\$ 1,245,411	\$ 124,541	\$ 1,120,870
B.3.2 to B.3.6	RIH	Rio Hondo	\$ -	\$ -	\$ 969,351	\$ 365,666	\$ 79,785	\$ -	\$ 32,596	\$ -	\$ 1,447,396	\$ 144,740	\$ 1,302,656
B.3.2 to B.3.6	RPVE004	Rancho Palos Verde City Hall	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	SAG	San Augustine	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	SDW	San Dimas	\$ -	\$ -	\$ 525,073	\$ 232,167	\$ -	\$ -	\$ 45,368	\$ -	\$ 802,608	\$ 80,261	\$ 722,347
B.3.2 to B.3.6	SGH	Signal Hill <sup>(Note 9)</sup>	\$ -	\$ -	\$ 483,224	\$ -	\$ -	\$ -	\$ 42,926	\$ -	\$ 526,150	\$ 52,615	\$ 473,535
B.3.2 to B.3.6	SPC	San Pedro Hill	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	SPN	Saddle Peak <sup>(Note 9)</sup>	\$ -	\$ -	\$ 548,134	\$ -	\$ 296,341	\$ -	\$ 30,636	\$ -	\$ 875,110	\$ 87,511	\$ 787,599
B.3.2 to B.3.6	SUN	Sunset Ridge	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 670,211	\$ 67,021	\$ 603,190
B.3.2 to B.3.6	SVP	San Vicente Peak	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	SWP	Southwest Area Station	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	TOP	Topanga Peak <sup>(Note 9)</sup>	\$ -	\$ -	\$ 1,002,900	\$ 231,585	\$ 79,904	\$ -	\$ 39,457	\$ -	\$ 1,353,847	\$ 135,385	\$ 1,218,462
B.3.2 to B.3.6	TPK	Tejon Peak	\$ -	\$ -	\$ 483,224	\$ 144,298	\$ 211,208	\$ -	\$ 43,043	\$ -	\$ 881,773	\$ 47,040	\$ 834,733
B.3.2 to B.3.6	TWR	Tower Peak	\$ -	\$ -	\$ 482,445	\$ 241,169	\$ 296,341	\$ -	\$ 37,676	\$ -	\$ 1,057,631	\$ 105,763	\$ 951,868
B.3.2 to B.3.6	VPC	Verdugo Peak (city)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	WAD	Walker Drive	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	WMP	Whittaker Middle Peak	\$ -	\$ -	\$ 482,412	\$ 74,451	\$ 85,265	\$ -	\$ 38,076	\$ -	\$ 680,207	\$ 68,021	\$ 612,186
B.3.2 to B.3.6	WS1	100 Wilshire	\$ -	\$ -	\$ -	\$ 197,560	\$ -	\$ -	\$ 75,330	\$ -	\$ 272,890	\$ 27,289	\$ 245,601
B.3.2 to B.3.6	WTR	Whittaker Ridge	\$ -	\$ -	\$ 482,411	\$ 145,877	\$ 297,675	\$ -	\$ 42,956	\$ -	\$ 968,920	\$ 96,892	\$ 872,028
B.3.2 to B.3.6	LAPD077	77TH Street Area Complex	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	LAPDDVN	Devonshire Area station	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	FCCF	L.A. County Fire Command	\$ -	\$ -	\$ 548,134	\$ 334,775	\$ 136,826	\$ -	\$ 109,185	\$ -	\$ 1,128,920	\$ -	\$ 1,128,920
B.3.2 to B.3.6	LAPDVDC	Valley Dispatch Center	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	FCCF_Core	FCCF_Core	\$ -	\$ -	\$ 404,329	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 404,329	\$ -	\$ 404,329
B.3.2 to B.3.6	LAPDVDC_Core	LAPDVDC_Core	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Site Equipment Subtotal			\$ -	\$ -	\$ 18,195,544	\$ 5,204,869	\$ 5,590,222	\$ -	\$ 1,333,116	\$ -	\$ 30,993,971	\$ 2,218,770	\$ 28,775,201
ADDITIONAL SITES (AMENDMENT NO. 10)													
B.3.2 to B.3.6	APC	Equipment Delivery Airport Courthouse	\$ -	\$ -	\$ 177,033	\$ -	\$ -	\$ -	\$ 36,176	\$ -	\$ 213,209	\$ -	\$ 213,209
B.3.2 to B.3.6	BCHCPRK	Beverly Hills Coldwater Canyon Park	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	LACF136	FS-136	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	LAHE	LA City Hall East <sup>(Note 4)</sup>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.2 to B.3.6	OLI	Olinda	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Subtotal for Additional Sites (Amendment No. 10)			\$ -	\$ -	\$ 177,033	\$ -	\$ -	\$ -	\$ 36,176	\$ -	\$ 213,209	\$ -	\$ 213,209
ADDITIONAL SITES (AMENDMENT NO. 17)													
B.3.2 to B.3.6	AGH	Equipment Delivery Agoura Hills	\$ -	\$ -	\$ 546,316	\$ 232,589	\$ 88,027	\$ -	\$ 49,600	\$ -	\$ 916,532	\$ 91,653	\$ 824,879
B.3.2 to B.3.6	BUR1	Burnt Peak 1	\$ -	\$ -	\$ 10,714	\$ 144,298	\$ 296,341	\$ -	\$ 33,298	\$ -	\$ 484,651	\$ 48,465	\$ 436,186
B.3.2 to B.3.6	CCT	Criminal Court (Foltz)	\$ -	\$ -	\$ 547,631	\$ 101,375	\$ -	\$ -	\$ 49,600	\$ -	\$ 698,606	\$ -	\$ 698,606
B.3.2 to B.3.6	CRN	Cerro Negro	\$ -	\$ -	\$ 700,610	\$ 359,241	\$ -	\$ -	\$ 49,600	\$ -	\$ 1,109,451	\$ 110,945	\$ 998,506
B.3.2 to B.3.6	FRP	Frost Peak (Upper Blue Ridge)	\$ -	\$ -	\$ 11,540	\$ 342,483	\$ 382,524	\$ -	\$ 43,713	\$ -	\$ 780,260	\$ 78,026	\$ 702,234
B.3.2 to B.3.6	GMT	Grass Mountain	\$ -	\$ -	\$ 483,224	\$ 76,785	\$ 130,106	\$ -	\$ 44,353	\$ -	\$ 734,468	\$ 73,447	\$ 661,021
B.3.2 to B.3.6	H-17A	H-17 Helipad	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 215,658	\$ 21,566	\$ 194,092
B.3.2 to B.3.6	LARICSHQ	LA-RICS Headquarters	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 30,252	\$ 3,025	\$ 27,227
B.3.2 to B.3.6	LASDTEM	Temple Station	\$ -	\$ -	\$ 218,743	\$ -	\$ -	\$ -	\$ 43,430	\$ -	\$ 262,173	\$ -	\$ 262,173

## EXHIBIT C.4 - SCHEDULE OF PAYMENTS

### PHASE 3 - SUPPLY LMR SYSTEM COMPONENTS

Deliverable/ Task/ Section No. <i>(Exhibit A, Exhibit B, or Base Document)</i>	Site ID	Deliverable		Equipment Purchase in Phase 1 Credit per Site <i>(Note 1,11,12,13, 14,15)</i>	DTVRS	ACVRS	LARTCS	NMDN <i>(Note 17)</i>	Microwave	Credits <i>(Note 2)</i>	Total Contract Sum - Total Payable Amount for Phase 3 <i>(Note 1, 3, 8, 16)</i>	10% Holdback Amount	Payable Amount Less 10% Holdback
B.3.2 to B.3.6	LPC	Loop Canyon	\$ -		\$ 176,493	\$ 74,451	\$ 83,473	\$ -	\$ 105,885	\$ -	\$ 440,302	\$ 44,030	\$ 396,272
B.3.2 to B.3.6	LEPS	Lower Encinal Pump Station	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 823,549	\$ 82,355	\$ 741,194
B.3.2 to B.3.6	MIR	Mirador	\$ -	\$ -	\$ 548,134	\$ -	\$ -	\$ -	\$ 27,795	\$ -	\$ 575,929	\$ 57,593	\$ 518,336
B.3.2 to B.3.6	MML	Magic Mountain Link	\$ -		\$ 154,395	\$ 144,298	\$ 382,884	\$ -	\$ 89,241	\$ -	\$ 770,818	\$ 77,082	\$ 693,736
B.3.2 to B.3.6	MTL2	Mount Lukens 2	\$ -		\$ 547,298	\$ 504,306	\$ 299,795	\$ -	\$ 73,460	\$ -	\$ 1,424,857	\$ 142,486	\$ 1,282,371
B.3.2 to B.3.6	PDC	Pacific Design Center	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 742,588	\$ 74,259	\$ 668,329
B.3.2 to B.3.6	PLM	Palmdale Station	\$ -	\$ -	\$ 177,192	\$ -	\$ -	\$ -	\$ 91,168	\$ -	\$ 672,689	\$ -	\$ 672,689
B.3.2 to B.3.6	PMT	Pine Mountain	\$ -	\$ -	\$ 307,575	\$ 27,643	\$ 80,834	\$ -	\$ 44,353	\$ -	\$ 460,405	\$ 46,041	\$ 414,365
B.3.2 to B.3.6	PWT	Portsmouth Tank	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 314,877	\$ 31,488	\$ 283,389
B.3.2 to B.3.6	VPK	Verdugo Peak County <sup>(Note 9)</sup>	\$ -	\$ -	\$ 546,316	\$ 232,589	\$ 163,600	\$ -	\$ 49,600	\$ -	\$ 992,105	\$ 26,703	\$ 965,403
Subtotal for Additional Sites (Amendment No. 17)			\$ -	\$ -	\$ 4,976,181	\$ 2,240,058	\$ 1,907,584	\$ -	\$ 795,096	\$ -	\$ 12,450,170	\$ 1,009,162	\$ 11,441,008
ADDITIONAL SITE (AMENDMENT NO. 21)													
B.3.2 to B.3.6		Equipment Delivery											
B.3.2 to B.3.6	JPk2	Johnstone Peak - 2			\$ 10,714	\$ 271,717	\$ 299,795	\$ -	\$ 43,712	\$ -	\$ 625,939	\$ 62,594	\$ 563,345
Subtotal for Additional Site (Amendment No. 21)			\$ -	\$ -	\$ 10,714	\$ 271,717	\$ 299,795	\$ -	\$ 43,712	\$ -	\$ 625,939	\$ 62,594	\$ 563,345
ADDITIONAL SITES (AMENDMENT NO. 25)													
B.3.2 to B.3.6		Equipment Delivery											
B.3.2 to B.3.6	BHS	Baldwin Hills County	\$ -	\$ -	\$ 1,002,901	\$ 163,066	\$ -	\$ -	\$ 79,826	\$ -	\$ 1,245,793	\$ 124,579	\$ 1,121,214
B.3.2 to B.3.6	DPW38	Los Angeles County Department of Public Works Pump Station 38	\$ -	\$ -	\$ 153,569	\$ 146,308	\$ 297,675	\$ -	\$ 63,231	\$ -	\$ 660,783	\$ 66,078	\$ 594,705
B.3.2 to B.3.6	RPV1	Rancho Palos Verdes	\$ -	\$ -	\$ 177,192	\$ -	\$ -	\$ -	\$ 28,417	\$ -	\$ 205,609	\$ 20,561	\$ 185,048
Subtotal for Additional Sites (Amendment No. 25)			\$ -	\$ -	\$ 1,333,662	\$ 309,374	\$ 297,675	\$ -	\$ 171,474	\$ -	\$ 2,112,185	\$ 211,219	\$ 1,900,967
ADDITIONAL SITE (AMENDMENT NO. 26)													
B.3.2 to B.3.6		Equipment Delivery											
B.3.2 to B.3.6	LAN	Lancaster							\$ 30,252	\$ -	\$ 30,252	\$ 3,025	\$ 27,227
Subtotal for Additional Site (Amendment No. 26)			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 30,252	\$ -	\$ 30,252	\$ 3,025	\$ 27,227
ADDITIONAL SITES (AMENDMENT NO. 27)													
B.3.2 to B.3.6		Equipment Delivery											
B.3.2 to B.3.6	BKK	BKK Landfill			\$ 218,743	\$ 35,341	\$ -		\$ 44,353		\$ 298,437	\$ 29,844	\$ 268,593
B.3.2 to B.3.6	UCLA	UCLA (Factor Building)			\$ 240,747				\$ 38,076		\$ 278,823	\$ 27,882	\$ 250,941
Subtotal for Additional Sites (Amendment No. 27)			\$ -	\$ -	\$ 459,490	\$ 35,341	\$ -	\$ -	\$ 82,429	\$ -	\$ 577,260	\$ 57,726	\$ 519,534
ADDITIONAL SITES (AMENDMENT NO. 29)													
B.3.2 to B.3.6		Equipment Delivery											
B.3.2 to B.3.6	POM	Pomona Courthouse	\$ -		\$ 524,294	\$ 203,198	\$ -	\$ -	\$ 30,252		\$ 757,744	\$ 75,774	\$ 681,970
Subtotal for Additional Sites (Amendment No. 29)			\$ -	\$ -	\$ 524,294	\$ 203,198	\$ -	\$ -	\$ 30,252	\$ -	\$ 757,744	\$ 75,774	\$ 681,970
ADDITIONAL SITES (AMENDMENT NO. 30)													
B.3.2 to B.3.6		Equipment Delivery											
B.3.2 to B.3.6	UNIV	Universal Studios	\$ -		\$ 548,134	\$ -	\$ 85,268	\$ -	\$ 38,076		\$ 671,478	\$ 67,148	\$ 604,330
Subtotal for Additional Sites (Amendment No. 30)			\$ -	\$ -	\$ 548,134	\$ -	\$ 85,268	\$ -	\$ 38,076	\$ -	\$ 671,478	\$ 67,148	\$ 604,330
NMDM (AMENDMENT NO. 32 AND AMENDMENT NO. 39)													
B.3.2 to B.3.6		Equipment Delivery <sup>(Note 17)</sup>											
B.3.2 to B.3.6		Narrowband Mobile Data Network (NMDN)									\$ 2,044,988	\$ 204,499	\$ 1,840,489
Subtotal for NMDM (Amendment No. 32)			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,044,988	\$ 204,499	\$ 1,840,489
ADDITIONAL SITES (AMENDMENT NO. 34)													
B.3.2 to B.3.6		Equipment Delivery											
B.3.2 to B.3.6	INDWT	Industry Water Tank	\$ -	\$ -	\$ 218,743	\$ 202,744	\$ -	\$ -	\$ 31,324		\$ 452,811	\$ 45,281	\$ 407,530
Subtotal for Additional Sites (Amendment No. 34)			\$ -	\$ -	\$ 218,743	\$ 202,744	\$ -	\$ -	\$ 31,324	\$ -	\$ 452,811	\$ 45,281	\$ 407,530

## EXHIBIT C.4 - SCHEDULE OF PAYMENTS

### PHASE 3 - SUPPLY LMR SYSTEM COMPONENTS

Deliverable/ Task/ Section No. <i>(Exhibit A, Exhibit B, or Base Document)</i>	Site ID	Deliverable		Equipment Purchase in Phase 1 Credit per Site <i>(Note 1,11,12,13, 14,15)</i>	DTVRS	ACVRS	LARTCS	NMDN <i>(Note 17)</i>	Microwave	Credits <i>(Note 2)</i>	Total Contract Sum - Total Payable Amount for Phase 3 <i>(Note 1, 3, 8, 16)</i>	10% Holdback Amount	Payable Amount Less 10% Holdback
<b>ADDITIONAL SITES (AMENDMENT NO. 35)</b>													
B.3.2 to B.3.6		Equipment Delivery											
B.3.2 to B.3.6	WWY	Winding Way	\$ -	\$ -	\$ 548,134		\$ -	\$ -	\$ 30,252		\$ 578,386	\$ 57,839	\$ 520,547
Subtotal for Additional Sites (Amendment No. 35)			\$ -	\$ -	\$ 548,134	\$ -	\$ -	\$ -	\$ 30,252	\$ -	\$ 578,386	\$ 57,839	\$ 520,547
<b>ADDITIONAL SITES (AMENDMENT NO. 36)</b>													
B.3.2 to B.3.6		Equipment Delivery											
B.3.2 to B.3.6	SPH	San Pedro Hill	\$ -	\$ -	\$ 479,002				\$ 44,353		\$ 523,355	\$ 52,336	\$ 471,020
Subtotal for Additional Sites (Amendment No. 36)			\$ -	\$ -	\$ 479,002	\$ -	\$ -	\$ -	\$ 44,353	\$ -	\$ 523,355	\$ 52,336	\$ 471,020
B.3.7		Consoles for LARTCS	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 502,275	\$ 50,228	\$ 452,048
B.3.8		Logging Recorder	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,743,216	\$ -	\$ 1,743,216
B.3.9		System Management and Monitoring Subsystem	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 445,681	\$ 44,568	\$ 401,113
B.1.6		FCC Licensing <i>(Note 6)</i>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B.3.10		Pre-Installation Testing Acceptance - Core Staging for SOT Prep	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -	\$ -
B.3.10.1.DTVRS		Pre-Installation Testing Acceptance - Core Staging for SOT Prep (DTVRS)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,344,147	\$ 234,415	\$ 2,109,732
B.3.10.1.ACVR		Pre-Installation Testing Acceptance - Core Staging for SOT Prep (ACVR)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 746,582	\$ 74,658	\$ 671,924
B.3.10.1.LARTCS		Pre-Installation Testing Acceptance - Core Staging for SOT Prep (LARTCS)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 966,294	\$ 96,629	\$ 869,664
B.3.10.1.NMDN		Pre-Installation Testing Acceptance - Core Staging for SOT Prep (NMDN)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 254,660	\$ 25,466	\$ 229,194
B.3.10.1.FINAL		Pre-Installation Testing Acceptance - Core Staging for SOT Prep FINAL	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 250,626	\$ 25,063	\$ 225,563
B.3.10.2.BALANCE		Pre-Installation Testing Acceptance - Balance of Sites by Site	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,456,627	\$ 245,663	\$ 2,210,964
		Equipment Shipment: Credit for Portable Radio Upgrades	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (361,900)	\$ (36,190)	\$ (325,710)
Base.22.3.2		Performance Bond for Phase 3 - Supply LMR System Components	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 474,041		\$ 474,041
		Total Lease Costs for Phase 3 - Supply LMR System Components		N/A	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Base.22.2.1		Liability Insurance (General and Professional)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 440,691		\$ 440,691
Total for Phase 3 - Supply LMR System Components:			\$ -	\$ -	\$ 27,470,931	\$ 8,467,301	\$ 8,180,544	\$ -	\$ 2,666,512	\$ -	\$ 62,294,687	\$ 4,825,871	\$ 57,468,816

Note 1: Pursuant to Amendment No. Three, effective as of December 19, 2013, (a) Contractor's provision and implementation of certain equipment reflected in Exhibit C.2 (Schedule of Payments Phase 1 – System Design) to Exhibit C (Schedule of Payments), as amended by Amendment No. Three, was moved from Phases 3 and 4 to Phase 1; and (b) Contractor was engaged to provide and implement under Phase 1, certain additional equipment reflected in Exhibit C.2 (Schedule of Payments Phase 1 – System Design) to Exhibit C (Schedule of Payments), as amended by Amendment No. Three, (the equipment described in clauses (a) and (b) is collectively referred to as the "Specified Equipment").

In connection therewith, (i) a Unilateral Option Sum in the amount of \$4,362,681 was moved from Schedules C.4 (Schedule of Payments Phase 3 – Supply LMR System Components) and C.5 (Schedule of Payments Phase 4 – System Implementation) to Exhibit C (Schedule of Payments) to Schedule C.2 (Schedule of Payments Phase 1 – System Design) to Exhibit C (Schedule of Payments), as amended by Amendment No. Three, and thereafter such Unilateral Option Sum was converted to a Contract Sum; and (ii) a Unilateral Option Sum in the amount of \$1,285,230 was added to Schedule C.2 (Schedule of Payments Phase 1 – System Design) to Exhibit C (Schedule of Payments), as amended by Amendment No. Three, and thereafter such Unilateral Option Sum was converted to a Contract Sum.

Note 2: Pursuant to Amendment No. Nine, effective November 19, 2014, the Authority removed 1 LMR System Site for Phases 1 through 4. As such, Credits were realized in the amount of \$646,001. However, the cost for preparing Project Descriptions for 26 potential replacement sites in the amount of \$303,524 was utilized in Phase 1. As such, the remaining Credit balance of \$342,477 is reserved for use for a future replacement site.



## EXHIBIT C.4 - SCHEDULE OF PAYMENTS

### PHASE 3 - SUPPLY LMR SYSTEM COMPONENTS

Deliverable/ Task/ Section No. <small>(Exhibit A, Exhibit B, or Base Document)</small>	Site ID	Deliverable		Equipment Purchase in Phase 1 Credit per Site <small>(Note 1,11,12,13, 14,15)</small>	DTVRS	ACVRS	LARTCS	NMDN <small>(Note 17)</small>	Microwave	Credits <small>(Note 2)</small>	Total Contract Sum - Total Payable Amount for Phase 3 <small>(Note 1, 3, 8, 16)</small>	10% Holdback Amount	Payable Amount Less 10% Holdback
---	---------	-------------	--	---	-------	-------	--------	----------------------------------	-----------	------------------------------------	--	------------------------	--

Note 3: Pursuant to Amendment No. Ten, effective February 17, 2015, Exhibit C.3 (Schedule of Prices - Supply LMR System Components) was amended by Amendment No. 10 to reflect the conversion of Unilateral Option Sum to Contract Sum for (a) the conversion of Unilateral Option Sum to Contract Sum for for eight (8) LMR System Site currently contemplated in the Design and the addition of five (5) LMR System Sites; and (b) the removal of four (4) sites.

Note 4: Credit in the amount of \$547,158 for LAH was moved to LAHE in Amendment No. 10 for recordkeeping purposes.

Note 5: Pursuant to Amendment No. Eleven, effective April 28, 2015, Exhibit C.3 (Schedule of Prices - Supply LMR System Components) was amended by Amendment No. 11 to reflect the a credit in the amount of \$547,158 that was moved from LAH to LAHE in Amendment No. 10.

Note 6: Pursuant to Amendment No. Twelve, effective August 27, 2015, Exhibit C.3 (Schedule of Prices - Supply LMR System Components) was amended by Amendment No. 12 to shift FCC Licensing costs to Phase 1, in the amount of \$284,041.

Note 7: Pursuant to Amendment No. Sixteen, effective December 23, 2015, the Authority removed thirty-one (31) LMR System Sites for Phase 1. As such, Credits were realized in the amount of \$1,132,374. However, adding seventeen (17) new LMR System Sites to Phase 1 in the amount of \$635,537 will be taken from the credited amount of \$1,132,374, bringing the total amount of credits down to \$363,599 (inclusive of Phase 1 Work performed for 75% drawings and building permits in the amount of \$133,238) and shall be reflected in the Whitaker Middle Peak site in Phase 3. The remaining Credit balance of \$363,599 is reserved for use for a future replacement site(s).

Note 8: Pursuant to Amendment No. Seventeen, thirty-four (34) LMR System Sites were removed from further consideration; nineteen (19) LMR System Sites were included as part of the LMR System; and Phase 3 Completion Acceptance was included. In connection therewith, and in addition to all activities contemplated in this Phase 3, Unilateral Option Sums, not previously exercised, were converted into Contract Sums.

Note 9: Pursuant to Amendment No. Seventeen, a credit in the amount of \$1,002,901 was transferred from Baldwin Hills (BAH) to Saddle Peak (SPN); a credit in the amount of \$547,298 was transferred from Mount Lukens (MTL) to Signal Hill (SGH); a credit in the amount of \$522,426 was transferred from Verdugo Peak City (VPC) to Verdugo Peak County (VPK); and a credit in the amount of \$547,158 was transferred from LACity Hall East (LAHE) to Topanga Peak (TOP).

Note 10: Pursuant to Amendment No. Nineteen, one (1) LMR System Site was removed from further consideration in Phases 1-4. Also, two (2) LMR System Sites were reconciled in Phases 2-4.

Note 11: Pursuant to Amendment No. Twenty-One, credit in the amount of \$563,761 from CPK was moved to BUR1, credit in the amount of \$943,771 from MLM was moved to MTL2, credit in the amount of \$181,525 from OAT was moved to LPC, credit in the amount of \$497,000 from SDW was moved to SUN, credit in the amount of \$547,298 from SGH was moved to MML, credit in the amount of \$547,158 from TOP was moved to FRP, credit in amount of \$497,000 from TPK was moved to MDI.

Note 12: Pursuant to Amendment No. Twenty-Two, credit in the amount of \$248,500 from MMC was moved to BJM and credit in the amount of \$248,000 from MMC was moved to TWR; credit in the amount of \$471,732 from RIH was moved to CPK and credit in the amount of \$471,732 from RIH was moved to DPK; credit in the amount of \$501,450 from SPN was moved to MIR and credit in the amount of \$501,451 from SPN was moved to TPK.

Note 13: Pursuant to Amendment No. Twenty-Four, credit in the amount of \$482,444 from MVS was moved to LEPS and credit in the amount of \$501,451 from TPK was moved to LACDEL.

Note 14: Pursuant to Amendment No. Twenty-Five, credit in the amount of \$501,451 from LACFDEL was moved to DPK; credit in the amount of \$496,165 from WTR was moved to FRP and \$396,000 from WTR was moved to GMT. Credit in the amount of \$496,165 from WMP was moved to JPK2 and credit in the amount of \$363,599 from WMP was moved to MTL2.

Note 15: Pursuant to Amendment No. Twenty-Six, credit in the amount of \$200,000 from BUR1 was moved to DPK, credit in the amount of \$363,761 from BUR1 was moved to ENCL. Credit in the amount of \$285,000 from JPK2 was moved to SUN, credit in the amount of \$440,000 from JPK2 was moved to TWR, and credit in the amount of \$268,165 from JPK2 was moved to WS1. Credit in the amount of \$181,525 from LPC was moved to H-17A. Credit in the amount of \$300,000 from MDI was moved to MIR, credit in the amount of \$600,000 from MDI was moved to PDC, and credit in the amount of \$141,634 from MDI was moved to PWT. Credit in the amount of \$547,298 from MML was moved to BJM. Credit in the amount of \$943,771 from MTL2 was moved to RIH and credit in the amount of \$363,599 from MTL2 was moved to RIH. Credit in the amount of \$480,139 from PRG was moved to PMT.

## EXHIBIT C.15 - SCHEDULE OF PAYMENTS

### LMR SYSTEM DISCOUNTS

Section No. (Exhibit C or Phase)	Description	Discounts (Note 1)
<b>Phase 1 - DISCOUNTS FOR SYSTEM DESIGN</b>		
C.2	Discount for Dropped Sites <sup>(Note 2)</sup>	\$ (363,599)
<b>Phase 3 - DISCOUNTS FOR SUPPLY LMR SYSTEM COMPONENTS</b>		
C.4	Discount for Equipment Purchased in Phase 1 <sup>(Note 3)</sup>	\$ (15,295,521)
<b>Phase 4 - DISCOUNTS FOR LMR SYSTEM IMPLEMENTATION</b>		
C.5	Discount for Services Performed in Phase 1 <sup>(Note 3)</sup>	\$ (765,576)
<b>LMR NMDM (Amendment No. 32)</b>		
C.4	Discount from NMDM <sup>(Note 4&amp;5)</sup>	\$ (583,157)
<b>TOTAL LMR SYSTEM DISCOUNTS</b>		<b>\$ (17,007,853)</b>

Note 1: The total remaining balance of the LMR Discounts applied to the Max Contract Sum will be utilized at the discretion of the Authority.

Note 2: Pursuant to Amendment No. 16 effective December 23, 2015, Exhibit C.1 (Schedule of Prices - System Design) was amended by Amendment No. 16 to reflect (a) removal of thirty-one (31) LMR System Sites resulting in credits in the amount of \$1,132,374 for Phase 1 only; (2) addition of seventeen (17) LMR System Sites in the amount of \$635,537 which was taken from the credited amount of \$1,132,374, bringing the total amount of credits down to \$363,599 (inclusive of Phase 1 Work performed for 75% drawings and building permits in the amount of \$133,238) and reflected in the Whitaker Middle Peak site in Phase 3. Under Amendment No. 27, the remaining Discount balance of \$363,599 was moved from Phase 3 to Phase 1.

Note 3: Pursuant to Amendment No. 3, effective as of December 19, 2013, (a) Contractor's provision and implementation of certain equipment reflected in Exhibit C.2 (Schedule of Payments Phase 1 – System Design) to Exhibit C (Schedule of Payments), as amended by Amendment No. 3, was moved from Phases 3 and 4 to Phase 1; and (b) Contractor was engaged to provide and implement under Phase 1, certain additional equipment reflected in Exhibit C.2 (Schedule of Payments Phase 1 – System Design) to Exhibit C (Schedule of Payments), as amended by Amendment No. 3, (the equipment described in clauses (a) and (b) is collectively referred to as the "Specified Equipment").

Note 4: Pursuant to Amendment 32, the per site NMDN costs contemplated in Phase 3 and Phase 4 have moved to a single line item in Phase 3 in the amount of \$2,764,123 resulting in an increase to the NMDN Discounts to the amount of \$582,086, which have been captured in this Exhibit C.15 (LMR Discounts) and will be applied at the discretion of the Authority.

Note 5: Pursuant to Amendment 39, the Discounts from NMDN costs are reconciled to reflect an increase in the amount of \$1,071, resulting in an increase to the total NMDN Discounts in the amount of \$583,157, which has been captured in this Exhibit C.15 (LMR Discounts) and will be applied at the discretion of the Authority.

## SCHEDULE OF PAYMENTS

### EXHIBIT C.17 - LMR CHANGE ORDER MODIFICATIONS

Change Order Number	Site ID	Item/Category	Contract Sum - Payable Amount	10% Holdback Amount	Payable Amount Less 10% Holdback Amount
<b>Amendment No. 28</b>					
MSI003 Revised	OLI	MSI-003 OLI Tower Mapping (Revised)	\$ -	\$ -	\$ -
MSI-007	LDWP243	MSI-007 LDWP243 Additional Structural Analysis for Coverage Enhancement	\$ 2,200	\$ 220	\$ 1,980
MSI-008	LMR	MSI-008 Station B Reprogramming of 700 MHz DTVRS Stations	\$ 9,912	\$ 991	\$ 8,921
MSI-009	AGH	MSI-009 AGH SCE Engineering Fee Reimbursement	\$ 5,634	\$ 563	\$ 5,071
MSI-012	LMR	MSI-012 Site 3D Models per Authority Request BJM, DPK, TWR	\$ -	\$ -	\$ -
MSI-015	BUR1	MSI-015 BUR1 SCE Engineering Fee	\$ 3,308	\$ 331	\$ 2,977
MSI-016	BMT	MSI-016 BMT SCE Engineering Fee	\$ 592	\$ 59	\$ 533
MSI-017	MML	MSI-017 MML SCE Engineering Fee	\$ 3,308	\$ 331	\$ 2,977
<b>Amendment No. 28 Subtotal</b>			<b>\$ 24,953</b>	<b>\$ 2,495</b>	<b>\$ 22,458</b>
<b>Amendment No. 29</b>					
MSI-030	APC	MSI-030 Saturday Labor and Crane Cost	\$ 2,405	\$ 241	\$ 2,165
MSI-020R	BKK	MSI-020R Tower Mapping and Painting	\$ 26,225	\$ 2,623	\$ 23,603
MSI-024	BKK	MSI-024 Dispersive Wave Testing	\$ 5,426	\$ 543	\$ 4,883
MSI-1208	POM	MSI-LMR1208 ACM and LCP Testing Services	\$ 4,400	\$ 440	\$ 3,960
<b>Amendment No. 29 Subtotal</b>			<b>\$ 38,456</b>	<b>\$ 3,846</b>	<b>\$ 34,610</b>
<b>Amendment No. 30</b>					
MSI-1205	MVS	MSI-1205 MVS LCP Testing Services	\$ 4,195	\$ 420	\$ 3,776
<b>Amendment No. 30 Subtotal</b>			<b>\$ 4,195</b>	<b>\$ 420</b>	<b>\$ 3,776</b>
<b>Amendment No. 31</b>					
MSI-1265	ONK	MSI-1265 Environmental Testing ACM and LPC Services	\$ 3,633	\$ 363	\$ 3,270
MSI-1206	CCT	MSI-1206 HVAC Condenser Pad Modification	\$ 9,745	\$ 975	\$ 8,771
MSI-1321	AGH	MSI-1321 Additional Title, Survey, Research	\$ 2,100	\$ 210	\$ 1,890
MSI-1267R	LARICSHQ	MSI-1267R Environmental Testing ACM and LPC Services	\$ 4,095	\$ 410	\$ 3,686
<b>Amendment No. 31 Subtotal</b>			<b>\$ 19,573</b>	<b>\$ 1,957</b>	<b>\$ 17,616</b>
<b>Amendment No. 33</b>					
MSI-1528	MLM	MSI-1528 MLM Tower Light	\$ 17,490	\$ 1,749	\$ 15,741
<b>Amendment No. 33 Subtotal</b>			<b>\$ 17,490</b>	<b>\$ 1,749</b>	<b>\$ 15,741</b>
<b>Amendment No. 34</b>					
MSI-1447	AGH	MSI-1477 AGH Additional Electrical Work	\$ 84,503	\$ 8,450	\$ 76,053
MSI-1435	HPK	MSI-1435 HPK Power Conduit Outside Compound	\$ 6,241	\$ 624	\$ 5,617
<b>Amendment No. 34 Subtotal</b>			<b>\$ 90,744</b>	<b>\$ 9,074</b>	<b>\$ 81,670</b>
<b>Amendment No. 35</b>					
MSI-5002	SDW	MSI-5002 SDW Waveguide Bridge Installation	\$ 13,115	\$ 1,312	\$ 11,804
<b>Amendment No. 35 Subtotal</b>			<b>\$ 13,115</b>	<b>\$ 1,312</b>	<b>\$ 11,804</b>
<b>Amendment No. 36</b>					
MSI-5003	BJM	MSI-5003 BJM Tower Mapping Services	\$ 4,952	\$ 495	\$ 4,457
<b>Amendment No. 36 Subtotal</b>			<b>\$ 4,952</b>	<b>\$ 495</b>	<b>\$ 4,457</b>
<b>Amendment No. 37</b>					
MSI-5010	CRN	CRN Lead Paint Abatement and Consulting Services	\$ 3,754	\$ 375	\$ 3,379
MSI-5008	CRN	CRN Siren	\$ 10,113	\$ 1,011	\$ 9,102
MSI-5015	CRN	CRN Permanent Fence	\$ 5,043	\$ 504	\$ 4,539
MSI-1209R	FCCF	FCCF Receptacle Light Installation	\$ 12,336	\$ 1,234	\$ 11,102
MSI-5031	HPK	HPK SCE Trenching	\$ 12,623	\$ 1,262	\$ 11,361
MSI-UNI-002	MMC	MMC Concrete Under Asphalt	\$ 9,765	\$ 977	\$ 8,789
MSI-UNI-003	MMC	MMC Electrical Power Conduits	\$ 2,703	\$ 270	\$ 2,433
<b>Amendment No. 37 Subtotal</b>			<b>\$ 56,337</b>	<b>\$ 5,634</b>	<b>\$ 50,703</b>

**EXHIBIT C.17**

Agreement No. LA-RICS 007 - Included under Amendment No. 39

Change Order Number	Site ID	Item/Category	Contract Sum - Payable Amount	10% Holdback Amount	Payable Amount Less 10% Holdback Amount
<b>Amendment No. 38</b>					
MSI-5017	PMT	PMT 2nd GeoTechnical Engineering Services	\$ 23,626	\$ 2,363	\$ 21,263
MSI-5030	UCLA	UCLA ACM and LCP Testing Services	\$ 4,725	\$ 473	\$ 4,253
MSI-UNI-004	FCCF	FCCF Relocated Prime Site Equipment		\$ -	\$ -
MSI-5038	SGH	SGH Barrel Tile Roof	\$ 6,843	\$ 684	\$ 6,159
MSI-5021	SGH	SGH NB CX Stand Down Costs	\$ 7,652	\$ 765	\$ 6,887
MSI-5046	DPW38	DPW38 LCP Testing	\$ 2,363	\$ 236	\$ 2,127
MSI-5043	VPK	VPK Tower Foundation	\$ 34,102	\$ 3,410	\$ 30,692
MSI-5006	VPK	VPK Power Run	\$ 50,027	\$ 5,003	\$ 45,024
MSI-UNI-005	VPK	VPK Retaining Wall Credit	\$ (68,141)	\$ (6,814)	\$ (61,327)
MSI-UNI-006	LACFDEL	LACFDEL Reuse of Existing Shelter	\$ (121,819)	\$ (12,182)	\$ (109,637)
MSI-5024	MIR	MIR Additional Topography	\$ 2,205	\$ 221	\$ 1,985
MSI-5061	MDI	MDI 2nd GeoTechnical Engineering Services	\$ 7,588	\$ 759	\$ 6,829
MSI-5028	MDI	MDI Underground Utility Locator	\$ 756	\$ 76	\$ 680
MSI-5029	MDI	MDI Addition Topo Survey	\$ 2,100	\$ 210	\$ 1,890
MSI-5050	WWY	WWY Native American Monitoring	\$ 580	\$ 58	\$ 522
<b>Amendment No. 38 Subtotal</b>			<b>\$ (47,393)</b>	<b>\$ (4,739)</b>	<b>\$ (42,654)</b>
<b>Amendment No. 39</b>					
MSI-5073	AGH	AGH Encroachment Permit Fee	\$ 4,807	\$ 481	\$ 4,326
MSI-5045	CCB	CCB Abatement and Remediation Work	\$ 13,125	\$ 1,313	\$ 11,813
MSI-5076	LACFDEL	LACFDEL New Phase 1 Work_Rev.1	\$ 43,271	\$ 4,327	\$ 38,944
MSI-5068	SPH	SPH Lease Exhibit Option_Rev.1	\$ 1,065	\$ 107	\$ 959
MSI-5063	UNIV	UNIV Recuperation of Cost for Day Tank for Cancelled Site	\$ 11,338	\$ 1,134	\$ 10,204
<b>Amendment No. 39 Subtotal</b>			<b>\$ 73,606</b>	<b>\$ 7,361</b>	<b>\$ 66,245</b>
<b>TOTAL FOR ALL LMR CHANGE ORDER MODIFICATIONS</b>			<b>\$ 296,028</b>	<b>\$ 22,242</b>	<b>\$ 200,180</b>

Note 1: The above identified Change Order Modifications have been fully negotiated between the Authority and the Contractor, and the above amounts represent



## LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM AUTHORITY

2525 Corporate Place, Suite 100  
Monterey Park, California 91754  
Telephone: (323) 881-8291  
<http://www.la-rics.org>

SCOTT EDSON  
EXECUTIVE DIRECTOR

July 11, 2019

Los Angeles Regional Interoperable Communications System Authority (Authority)  
Board of Directors (Board)

Dear Directors:

### **DELEGATE AUTHORITY TO EXECUTIVE DIRECTOR TO NEGOTIATE AGREEMENT FOR LONG TERM EVOLUTION ROUND 2 SYSTEM SITE**

#### **SUBJECT**

This letter requests authority from the Board for the Executive Director to finalize and execute an agreement substantially similar in form to the enclosed document for a Long Term Evolution (LTE, also known as Public Safety Broadband Network or PSBN) Round 2 System site with the County of Los Angeles (County).

#### **RECOMMENDED ACTION:**

It is recommended that the Board:

1. Find that the approval and execution of the Amendment No. 1 to Land Mobile Radio (LMR) Site Access Agreement with the County and a Sublicense Agreement with AT&T NCW Wireless at Enclosure 1 for one LTE Round 2 System site with the County at Monte Vista Sheriff's Training Academy and Regional Services (STARS) Center (MVS2) site to allow for the design, construction, implementation, operation and maintenance of the LTE Round 2 System infrastructure at this one site is within the scope of the activities your Board previously found categorically exempt from CEQA on January 24, 2019 pursuant to CEQA Guidelines sections 15301, 15303, and 15304 for the reasons set forth in this letter and as noted in the record of the project, and that the determination that these activities are exempt from CEQA remains unchanged.
2. Delegate authority to the Executive Director, or designee, to finalize and execute (i) a Site Access Agreement (SAA) with the County, and (ii) Sublicense Agreement with AT&T NCW Wireless, substantially similar in form to the agreements Enclosed hereto, all subject to review and approval by County Counsel.



## **BACKGROUND**

At its May 16, 2013, Board meeting, the Board directed Authority staff to begin negotiations with various jurisdictions for SAAs for the use of specific sites by the Authority for LMR and/or LTE broadband communication sites. LTE Round 2 discussions and negotiations between the County and Authority has resulted in the attached proposed SAA, Enclosure 1.

Entering into the proposed SAA with the County would provide the Authority with licenses or sublicenses to use a portion of their owned or leased property for use as an LTE Round 2 communication site. This licensed site would include all necessary space and easements for access and utilities to construct, install, operate, maintain and repair a LTE Round 2 communications site.

With respect to the LTE System, the Authority received approval from the National Telecommunications and Information Administration (NTIA) to build an additional 26 sites, including MVS, for inclusion in the NPSBN to augment radio signal coverage of the LTE System previously deployed by the Authority. MVS2 is a current LMR System site that the County previously approved an SAA for, and was identified as one of the 26 sites suitable for additional LTE System coverage. Amendment No. 1 to this LMR SAA Enclosure permits collocation of the LTE antenna on the Authority owned equipment at MVS2. Following the completion of the LTE work and required federal approvals, the LTE System equipment at MVS2 will be incorporated into the NPSBN and will be maintained and operated by FirstNet's vendor, AT&T-NCW. AT&T-NCW will have access to MVS2 under the attached sublicense and consent to sublicense, Enclosure 2.

Delegated authority is requested from the Board, to the Executive Director, or designee, to finalize and execute the agreements on substantially similar terms and conditions as the Enclosure. Granting approval for the execution of these proposed agreements will assist in keeping the LTE Round 2 projects schedule on track, and help make the goal of interoperable communications in the County of Los Angeles a reality.

A brief summary of similar relevant provisions with the County follows below:

Agency	Number of Sites	Term	Lease Cost	Zoning Requirements	Ministerial Permitting Cost
County of Los Angeles (MVS2)	1	15 years	Gratis	Exempt	Waived

## **PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION**

Construction of the proposed LTE Round 2 System Site would allow for greater frequency flexibility and would increase radio and broadband coverage, especially in those areas where there is no current or very limited coverage. The addition of new LTE infrastructure

**AGENDA ITEM K**

at MVS2 site will also provide public safety agencies the opportunity to increase their coverage footprint for their responders as part of the NPSBN. With increased coverage, the Authority and member agencies could use the system for testing, running coverage maps, broadcasting, and as appropriate, in their day to day operations.

### **FISCAL IMPACT/FINANCING**

The granting of non-exclusive access to the LA-RICS Authority will be on a gratis basis.

### **ENVIRONMENTAL DOCUMENTATION**

As the CEQA lead agency, the Authority determined on January 24, 2019, that design, construction, implementation, operation, and maintenance of the LTE Round 2 System equipment at site MVS2 is categorically exempt from review under CEQA pursuant to CEQA Guidelines Sections 15301, 15303, and 15304. This determination is based on a detailed analysis available in the Authority's files, which is incorporated in relevant part into the record of proceedings for the MVS2 SAA, which demonstrates that the communication equipment proposed at site MVS2: (1) consists of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use (Guidelines § 15301); (2) consists of construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures; and/or the conversion of existing small structures from one use to another where only minor modifications are made in the exterior of the structure (Guidelines § 15303); (3) consists of minor alterations in the condition of land, water, and/or vegetation which do not involve removal of healthy, mature, scenic trees (Guidelines § 15304); and/or (4) qualifies as in-fill development (Guidelines § 15332). The analysis also demonstrates that none of the activities proposed at this site trigger any applicable exception to the identified categorical exemption(s). (Guidelines § 15300.2.)

Specifically, the LTE Round 2 System work at site MVS2 would not impact any environmental resources of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies. Further, the cumulative impact of successive projects of the same type in the same place over time would not be significant; there is no reasonable possibility that the LTE Round 2 System work at site MVS2 will have a significant effect on the environment due to unusual circumstances; the LTE Round 2 System work at site MVS2 would not result in damage to scenic resources within a highway officially designated as a state scenic highway; site MVS2 is not located on a site included on any list compiled pursuant to Section 65962.5 of the Government Code; and the LTE Round 2 System work at site MVS2 would not cause a substantial adverse change in the significance of a historical resource.



The LTE Round 2 System work at site MVS2 has undergone parallel federal environmental review under the National Environmental Protection Act (NEPA), and NTIA has issued an amended Finding of No Significant Impact (FONSI) for the LTE project inclusive of the MVS2 site on May 14, 2019.

Upon the Board's approval of the recommended action, the Authority will file a Notice of Exemption with the County Clerk for the SAA for MVS2 in accordance with Section 15062 of the State CEQA Guidelines.

**FACTS AND PROVISIONS/LEGAL REQUIREMENT**

The Authority's counsel has reviewed the recommended action.

Respectfully submitted,



SCOTT EDSON  
EXECUTIVE DIRECTOR

SE:wst:pl

Enclosures

c: Counsel to the Authority

**AMENDMENT NO. 1 TO  
LMR SITE ACCESS AGREEMENT**

**THIS AMENDMENT NUMBER 1 TO LMR SITE ACCESS AGREEMENT** (together with all exhibits, attachments, and schedules hereto, if any, "**Amendment No. 1**") TO THE LMR SITE ACCESS AGREEMENT ("**Agreement**") entered into on December 23, 2015, is effective as of \_\_\_\_\_,

**BY AND BETWEEN**  
referred

**COUNTY OF LOS ANGELES**, hereinafter  
to as "**Owner**"

**AND**

Authority,

**THE LOS ANGELES REGIONAL  
INTEROPERABLE COMMUNICATIONS  
SYSTEM AUTHORITY**, a Joint Powers  
hereinafter referred to as "**LA-RICS Authority**."

**RECITALS:**

**WHEREAS**, Owner and the LA-RICS Authority have entered into an Agreement dated December 23, 2015 to permit the use of the Monte Vista Star Center as a Land Mobile Radio ("**Broadband**" or "**LMR**") broadband communication site; and

**WHEREAS**, LA-RICS Authority now desires to also collocate, construct, install, operate and maintain Long Term Evolution ("**LTE**") equipment at the Monte Vista Star Center ("**LTE Site**"); and

**WHEREAS**, Owner is willing to permit use of a portion of the Monte Vista Star Center by the LA-RICS Authority for use as both an LTE and LMR communication site (collectively "**Los Angeles Regional Interoperable Communications System Site**" or "**LA-RICS Site**"); and

**WHEREAS**, LA-RICS Authority is willing to accept and exercise the rights granted by the Agreement, as modified by this Amendment No. 1 for use of the LA-RICS Site in accordance with the terms and conditions prescribed herein and in the Agreement.

**NOW, THEREFORE**, in consideration of the foregoing recitals, which are hereby deemed a contractual part hereof, and the mutual promises, covenants, and conditions set forth herein, the parties hereto agree as follows:

1. Capitalized Terms; Paragraph References. Capitalized terms used herein without definition (including in the recitals hereto), have the meanings given to such terms in the Agreement, unless otherwise defined in this Amendment No. 1. Unless otherwise noted, section references in this Amendment No. 1 refer to sections in the Agreement, as amended by this Amendment No. 1.
2. General Revisions to Agreement.

- 2.01 All references in the Agreement to "LMR Site" shall be replaced with "LA-RICS Site", as defined in this Amendment No. 1.
- 2.02 All references in the Agreement to "LMR Vendor" shall be replaced with "LMR Vendor and/or LTE Vendor." "LMR Vendor" and "LTE Vendor" are currently defined in the Agreement.
3. Revisions to Section 1. The first paragraph of Section 1 is hereby deleted in its entirety and is replaced as follows:
- "Owner hereby licenses to the LA-RICS Authority and LA-RICS Authority hereby accepts from Owner on the terms and conditions set forth herein, the use of land within a portion of the Real Property, together with all necessary space and easements for access and utilities to install and operate an unmanned LMR and LTE communication site, consisting of the parcels of land shown on Exhibit A attached hereto and incorporated herein by this reference (the "LA-RICS Site")."
4. Revisions to Section 2. The first paragraph of Section 2 is hereby deleted in its entirety and is replaced as follows:
- "The sole purpose of this Agreement is to allow the LA-RICS Authority to access and use the LA-RICS Site for the installation, operation, maintenance, and repair of an LMR and LTE communication facility. The LA-RICS Authority, (and/or its member agencies, the LMR Vendor and/or LTE Vendor, the First Net Parties and/or other agents): (a) shall have the right to construct, install, repair, remove, replace, maintain, and operate the LA-RICS Authority's LMR and LTE communications system, which typically consists of, without limitation, the infrastructure, shelters, equipment and related improvements listed on Exhibit B (Equipment List) attached hereto and incorporated herein by this reference (such LMR and LTE system, and associated infrastructure, shelters, equipment and related improvements, collectively the "LA-RICS Facility") and other related materials as may be deemed necessary by the LA-RICS AUTHORITY, and (b) shall be allowed access over, through and across each site comprising the Real Property for ingress to and egress from the applicable LA-RICS Site 24 hours per day, 7 days per week without notice. Each LA-RICS Site shall be used only for the purposes authorized by this Section 2, and such other purposes as are directly related thereto, and for no other purposes whatsoever (collectively the "Permitted Activities")."
5. Revisions to Agreement Exhibits/Attachments. The following exhibits are revised as follows:
- Exhibit B (Equipment List) is hereby deleted in its entirety and replaced with the new Exhibit B (Equipment List) which is attached to this Amendment No. 1 and incorporated by this reference.

6. Revisions to Section 25. The following paragraph shall be added to Section 25 as paragraph 25.07 and shall read as follows:

Notwithstanding the foregoing or any language to the contrary contained herein, the LTE system located at the LA-RICS Facility will be ultimately incorporated into the federal First Responder Network Authority's ("FirstNet") National Public Safety Broadband Network ("NPSBN") operated by FirstNet's federal contractor, AT&T Corp. and its various wholly owned direct and indirect subsidiaries including New Cingular Wireless PCS, LLC, (collectively, "AT&T"), following the receipt of appropriate federal approvals from the Department of Commerce's National Oceanic and Atmospheric Administration Grants Office ("NOAA Grants Office") and National Telecommunications and Information Administration ("NTIA"). LA-RICS Authority will seek approval from the NOAA Grants Office and/or NTIA to sublicense the LTE system constructed and installed at the LA-RICS Facility once completed to FirstNet's federal contractor, AT&T, for inclusion in the NSPBN, if LA-RICS Authority is granted approval from the NOAA Grants Office and/or NTIA to transfer the equipment constructed and installed at the Site to FirstNet's federal contractor, AT&T, for inclusion in the NSPBN, LA-RICS Authority shall enter into a sublicense with AT&T whereby the LTE system of the LA-RICS Facility shall be sublicensed to AT&T, which Owner consent to sublicense shall be granted by Owner at the time of execution of the sublicense agreement.

7. Except as expressly provided in this Amendment No. 1, all other terms and conditions of the Agreement shall remain the same and in full force and effect.

8. This Amendment No. 1 may be executed in one or more original, PDF or facsimile counterparts, all of which when taken together shall constitute one in the same instrument.

*[SIGNATURE PAGE IMMEDIATELY FOLLOWS]*

**IN WITNESS WHEREOF**, the LA-RICS Authority has executed this Amendment No. 1 or caused it to be duly executed and Owner has caused this Amendment No. 1 to be executed on the day, month and year first above written.

**LA-RICS AUTHORITY:**

**THE LOS ANGELES REGIONAL  
INTEROPERABLE  
COMMUNICATIONS SYSTEM  
AUTHORITY**, a California Joint Powers  
Authority

By: \_\_\_\_\_  
Print Name: \_\_\_\_\_  
Its: \_\_\_\_\_

**OWNER:**

**COUNTY OF LOS ANGELES**,  
a body corporate and politic

By: \_\_\_\_\_  
Print Name: \_\_\_\_\_  
Its: \_\_\_\_\_

**APPROVED AS TO FORM:**

**MARY WICKHAM  
COUNTY COUNSEL**

By: \_\_\_\_\_  
Deputy

**APPROVED AS TO FORM:**

**MARY WICKHAM  
COUNTY COUNSEL**

By: \_\_\_\_\_  
Deputy

## **SUBLICENSE AGREEMENT FOR MVS**

THIS SUBLICENSE AGREEMENT FOR MVS (this "**Sublicense Agreement**") is entered into as of the \_\_\_\_\_ day of \_\_\_\_\_, 2019 between THE LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM AUTHORITY, a Joint Powers Authority, hereinafter referred to as "**LA-RICS AUTHORITY**" (or "**Sublicensor**"), and NEW CINGULAR WIRELESS PCS, LLC, a Delaware limited liability company that is a wholly-owned, indirect subsidiary of AT&T Inc., hereinafter referred to as "**AT&T-NCW**," (or "**Sublicensee**"). Each party may individually be referred to as a "**Party**," and collectively, the "**Parties**".

### **RECITALS:**

**WHEREAS**, LA-RICS AUTHORITY was established pursuant to a Joint Powers Agreement dated January 2009 ("**JPA**") for the purpose of coordinating governmental services to establish a wide-area interoperable public safety communications network commonly known as LA-RICS;

**WHEREAS**, the County of Los Angeles ("**County**"), as licensor, and LA-RICS AUTHORITY, as licensee, are Parties to the LMR Site Access Agreement ("**SAA**") for the Los Angeles County Sheriff's Department Monte Vista (Star Center) ("**MVS**") entered into on December 23, 2015, identified by the County as Agreement Number COL-883, under which LA-RICS AUTHORITY has the right to use a portion of County-owned or County-controlled property for use as a Land Mobile Radio ("**LMR**") broadband communication site. A complete copy of the SAA is attached to this Sublicense as **Attachment 1**;

**WHEREAS**, the County permitted the LA-RICS AUTHORITY to also have access to use MVS as a Long Term Evolution ("**LTE**") communication site as part of the LA-RICS LMR system ("**LA-RICS LTE System**"), and County and LA-RICS amended the SAA on \_\_\_\_\_, 2019 ("**Amendment No. 1**") to allow for such LTE use, with such amendment included as part of **Attachment 1**.

**WHEREAS**, on March 30, 2017, the First Responder Network Authority ("**FirstNet**"), an independent authority within the Department of Commerce's National Telecommunications and Information Administration, announced the award of a contract (the "**FirstNet NPSBN Contract**") to AT&T Corp., on behalf of itself and its subsidiaries or entities that are controlled by AT&T Corp., or by AT&T Corp.'s parent company, AT&T Inc. (hereinafter referred to collectively as "**AT&T**;" and AT&T-NCW is one of the entities composing the immediately preceding definition of AT&T) to build and operate the FirstNet National Public Safety Broadband Network ("**FirstNet NPSBN**");

WHEREAS, this Sublicensed Site (as defined below), located on a LA-RICS Authority's [120 foot monopole] (the "LA-RICS Tower") and related infrastructure located at the public-safety grade PSBN site commonly known as MVS, located at 11515 Colima Rd, Whittier, CA 93550 (the "Real Property"), will be ultimately incorporated into the federal First Responder Network Authority's ("**FirstNet**") National Public Safety Broadband Network ("**NPSBN**") operated by FirstNet's federal contractor, AT&T Corp. and its various wholly owned direct and indirect subsidiaries including New Cingular Wireless PCS, LLC, (collectively, "**AT&T**"), following the receipt of appropriate federal approvals from the Department of Commerce's National Oceanic and Atmospheric Administration Grants Office ("**NOAA Grants Office**") and National Telecommunications and Information Administration ("**NTIA**");

WHEREAS, Sublicensor will seek approval from the NOAA Grants Office and/or NTIA to transfer the equipment constructed and installed at the Sublicensed Site once completed to FirstNet's federal contractor, AT&T, for inclusion in the NSPBN.

**WHEREAS**, upon approval from the NOAA Grants Office and/or NTIA, AT&T-NCW is willing to accept and exercise the grant of this License for use of the site located on the Real Property in accordance with the terms and conditions prescribed herein;

**WHEREAS**, pursuant to Amendment No. 1, under which the County and LA-RICS AUTHORITY shall expanded the purpose and use sections of the SAA to permit this sublicensed use and certain other terms and conditions set forth therein and the County shall consent to this Sublicense Agreement, which Consent shall be incorporated herein by reference and will be attached to this Sublicense Agreement as **Attachment 2** (hereinafter, the term "SAA" shall mean the SAA as amended by the Consent); and

**NOW, THEREFORE**, in consideration of the foregoing recitals, which are hereby deemed a contractual part hereof, and the mutual promises, covenants, and conditions set forth herein, the parties hereto agree as follows:

1. **SUBLICENSED SITE**

LA-RICS AUTHORITY hereby sublicenses to AT&T-NCW and AT&T-NCW hereby accepts from LA-RICS AUTHORITY on the terms and conditions set forth herein, the use of land within a portion of the Real Property, together with all necessary space and easements for access and utilities, for the purpose of installing, constructing, connecting, modifying, using, operating, monitoring, maintaining, repairing, replacing, supplementing and upgrading a communications facility on the LA-RICS Tower and on associated ground space for currently existing LTE equipment located at MVS, consisting of the parcels of land shown on Exhibit A (Site Description) of the SAA at Attachment 1 attached hereto and incorporated herein by this reference (the "**Sublicensed Site**").

AT&T-NCW acknowledges its personal inspection of the Sublicensed Site and the surrounding area and evaluation of the extent to which the physical condition thereof will affect its operations. AT&T-NCW accepts the Sublicensed Site in its as-is condition with no duty to investigate, and LA-RICS AUTHORITY makes no warranty, express or implied, as to the suitability of the Sublicensed Site or the Real Property for AT&T-NCW's use; its physical



condition, including the condition and stability of the soils or groundwater on or under any of the Real Property; and the presence of pollutants or contaminants therein.

AT&T-NCW, and its authorized contractors and agents may make or construct or cause to be made or constructed additions, alterations, repairs, replacements or other changes to the Sublicensed Site at AT&T-NCW's expense in accordance with all of the terms and conditions of this Sublicense Agreement.

AT&T-NCW hereby acknowledges the legal right of possession of the LA-RICS AUTHORITY or its successors in the Real Property granted pursuant to the SAA and covenants and agrees never to assail, contest, or resist said right of possession.

Ownership of all improvements constructed by AT&T-NCW upon each and every site comprising the Sublicensed Site and all alterations, additions or betterments thereto shall remain with AT&T-NCW or other agencies as may be provided by any applicable grant requirements. AT&T-NCW may remove any of its own improvements to the Real Property at any time during the term of this Sublicense Agreement, and LA-RICS AUTHORITY hereby waives any and all lien rights it may have in relation thereto, statutory or otherwise.

AT&T-NCW hereby acknowledges that the Real Property is occupied by the LA-RICS AUTHORITY pursuant to the SAA. Accordingly, it is understood and recognized that this Sublicense Agreement constitutes a sublease, and that this Sublicense Agreement shall be subject in all respects to the terms of, and the rights of County as licensor under the SAA, as set forth in the SAA, including but not limited to any County rights to lease or license space on the LA-RICS Tower located at the Sublicensed Site. Except as otherwise expressly provided in this Sublicense Agreement, the terms and conditions of the SAA insofar as they relate to the Real Property or the Sublicensed Site, subject to the terms set forth in this Section 1 (Sublicensed Site), are made a part of and incorporated into this Sublicense Agreement as if recited herein in full. Notwithstanding the foregoing, in the event of conflict between the terms of the SAA and the terms of this Sublicense Agreement, as between LA-RICS AUTHORITY and AT&T-NCW only, the terms of this Sublicense Agreement shall control; provided, however, in the event the observance or performance by either party hereto of the terms of this Sublicense Agreement may result in a breach of the terms of the SAA, the subject terms of this Sublicense Agreement shall be invalid and unenforceable and the corresponding terms of the SAA shall control. LA-RICS AUTHORITY represents and warrants that it is not in default under the SAA, and that LA-RICS AUTHORITY has not received any notice of default under the SAA. In the event that LA-RICS AUTHORITY contemplates voluntarily terminating the SAA or modifying the SAA in a manner materially adverse to AT&T-NCW, LA-RICS AUTHORITY shall promptly provide AT&T-NCW with written notice of such contemplated action. LA-RICS AUTHORITY shall promptly provide AT&T-NCW with written notice of any termination effected by LA-RICS AUTHORITY as provided in this Section, and in no event shall such termination be effective prior to the date that is one (1) year from the date that written notice of such termination was provided to AT&T-NCW. LA-RICS AUTHORITY shall promptly provide written notice of any event of default or termination notice LA-RICS AUTHORITY receives from the County. Notwithstanding anything to the contrary contained in this Sublicense Agreement, neither the making nor the acceptance of this Sublicense Agreement shall: (a) constitute a waiver or release by any Party of any representations, warranties, liabilities, duties or obligations imposed upon a party by the terms,

conditions and provisions of the Transfer Agreement; or (b) enlarge, extend, restrict, supersede, replace, amend, waive, limit or otherwise modify the terms, conditions and provisions of the Transfer Agreement. In the event of any dispute between the terms hereof and the Transfer Agreement, the terms of the Transfer Agreement shall control.

## 2. **PURPOSE AND USE**

The sole purpose of this Sublicense Agreement is to allow AT&T-NCW to access and use the Sublicensed Site for the installation, construction, connection, modification, use, operation, monitoring, maintenance, repair, replacement, supplementation and upgrade of a communications facility ("**AT&T-NCW Communications Facility**") for the transmission and reception of communications signals in a manner that is consistent with AT&T's overall strategy for providing services under the FirstNet NPSBN Contract and fulfilling its obligations to FirstNet thereunder (the "**FirstNet NPSBN Solution**"), and as otherwise provided in accordance with this Section 2 (Purpose and Use) and the terms and conditions of this Sublicense Agreement. For clarity, in order to provide the FirstNet NPSBN Solution, Licensee shall not be limited in its use of the Sublicensed Site to (a) the use of any specific technology, (b) changes in technology, (c) the use of specific bands of spectrum as long as Band Class 14 is also used at the Sublicensed Site, unless otherwise agreed to by LA-RICS AUTHORITY, or (d) to the use of any specific type of communications equipment. However, with respect to (a) through (d), and unless the LA-RICS AUTHORITY has otherwise previously approved pursuant to Section 3 (Approvals/Design Review), Section 6 (Conditions Precedent to Installation or Alterations of Equipment) and Section 8 (Alterations) (as applicable):

- (i). The technology or communications equipment must use the spectrum for the FirstNet NPSBN Solution;
- (ii). Sublicensee's communications equipment at the Sublicensed Site will not exceed, following the Effective Date of this Sublicense Agreement, the (1) footprint of the concrete pad for the eNodeB, (2) the footprint of the LA-RICS Tower, (3) the existing height of the LA-RICS Tower, or (4) the vertical and horizontal dimensions occupied by the AT&T-NCW Communications Facility as of July 1, 2018 on the LA-RICS Tower; and
- (iii) Sublicensee will obtain and maintain such permits and licenses required for the construction and operation of its communications equipment and will operate in accordance with all applicable laws and regulations.

Since the AT&T-NCW Communications Facility is collocated with the LA-RICS AUTHORITY's equipment and installations at the Sublicensed Site, no changes to the AT&T-NCW Communications Facility or the Sublicensed Site may be made by AT&T and AT&T-NCW unless the LA-RICS AUTHORITY has approved pursuant to Section 3 (Approvals/Design Review), Section 6 (Conditions Precedent to Installation or Alterations of Equipment) and Section 8 (Alterations) (as applicable).

Sublicensee (and/or its employees, agents, vendors, escorted invitees, the First Net Parties and/or other agents): (a) shall have the right to install, construct, connect, modify, use, operate, monitor, maintain, repair, replace, supplement and upgrade the AT&T-NCW Communications Facility which may consist of, but shall not be limited to, the infrastructure, shelters, equipment

and related improvements listed on Exhibit B (Equipment List) of the SAA attached at Attachment 1 hereto and incorporated herein by this reference and other related materials as may be deemed necessary by Sublicensee in accordance with and subject to the terms and conditions of this Sublicense Agreement, including without limitation Section 2 (Purpose and Use), Section 3 (Approvals/Design Review), Section 6 (Conditions Precedent to Installation or Alterations of Equipment) and Section 8 (Alterations) (as applicable), and (b) shall be allowed access over, through and across the Sublicensed Site comprising the Real Property for ingress to and egress from the Sublicensed Site 24 hours per day, 7 days per week subject to compliance with the policies and procedures for access attached hereto as Attachment 3 (Access). The Sublicensed Site shall be used for the purposes authorized by this Section 2 (Purpose and Use), and such other purposes as are directly related thereto, and for no other purposes whatsoever (collectively the "**Permitted Activities**"). As used herein, all references to any "vendor(s)" of Sublicensee shall be deemed to mean and refer to any number of Sublicensee's contractors, subcontractors and/or vendors, including without limitations Motorola Solutions, Inc. AT&T-NCW shall ensure that all usage of the Sublicensed Site and/or the Real Property hereunder, is in compliance with all terms and conditions of this Sublicense Agreement.

Nothing contained in this Sublicense Agreement shall be deemed or construed in any way to limit the LA-RICS AUTHORITY's authority to exercise any right or power concerning the utilization of the Real Property including without limitation the Sublicensed Site; provided, however, that such LA-RICS AUTHORITY shall not include the exercise of any right or power that would interfere with the AT&T-NCW Communications Facility.

### 3. **APPROVALS/DESIGN REVIEW**

The parties acknowledge that LA-RICS AUTHORITY currently uses, and will continue to use, the Sublicensed Site as a LMR communication site as part of the LA-RICS LMR System (the "**LA-RICS LMR System**"); as such AT&T-NCW shall follow the requirements set forth herein when making changes or alterations to the AT&T-NCW Communications Facility.

### 4. **TERM**

The initial term ("**Initial Term**") of the Sublicense Agreement shall commence upon full execution of this Sublicense Agreement ("**Commencement Date**") and shall continue so long as AT&T and AT&T-NCW continues to utilize Band Class 14 spectrum at the Sublicensed Site, until the expiration or earlier termination of the FirstNet NPSBN Contract, at which time this Sublicense Agreement will expire, unless this Sublicense Agreement is sooner terminated (a) by AT&T-NCW or (b) by LA-RICS AUTHORITY pursuant to Section 28 (Default), or (c) the termination of the SAA.

### 5. **CONSIDERATION**

The consideration for the use granted herein shall be AT&T-NCW's compliance with all of the terms and conditions of this Sublicense Agreement.

**6. CONDITIONS PRECEDENT TO INSTALLATION OR ALTERATIONS OF EQUIPMENT**

LA-RICS AUTHORITY shall have the opportunity to review and provide input, if any, as to all project plans and specifications for AT&T-NCW's proposed installation or alterations of the equipment comprising the AT&T-NCW Communications Facility (not including "like-kind" replacements). In addition, LA-RICS AUTHORITY shall have the right to inspect said equipment and the Sublicensed Site at any time during and after installation upon not less than twenty-four (24) hours prior written notice to AT&T-NCW (except in cases of emergency pursuant to Section 14 hereof (Emergency Access)) and, at AT&T-NCW's option, AT&T-NCW may choose to have a representative to accompany LA-RICS AUTHORITY during any such inspection of or access to a Sublicensed Site. AT&T-NCW shall not commence installation of equipment or alteration of a Sublicensed Site, or any portion thereof, until the LA-RICS AUTHORITY has reviewed and approved the plans and specifications in accordance with all of the terms and conditions of this Sublicense Agreement, including without limitation Sections 3 and 8 hereof. LA-RICS AUTHORITY's review and approval of the plans shall not release AT&T-NCW from the responsibility for, or the correction of, any errors, omissions or other mistakes that may be contained in the plans and specifications. AT&T-NCW shall be responsible for notifying LA-RICS AUTHORITY and all other relevant parties immediately upon discovery of such omissions and/or errors. AT&T-NCW shall not cause or permit any change of any equipment installed by AT&T-NCW on a Sublicensed Site including power outputs or changes in the use of frequencies described in Exhibit B hereto (Equipment List) of the SAA at Attachment 1, but not including "like-kind" replacements, except after LA-RICS AUTHORITY has been provided an opportunity to review and approve, such plans and specifications.

Notwithstanding the foregoing, LA-RICS AUTHORITY's review and approval of the use of additional frequencies/spectrum bands is limited to screening for potential interference issues and that Band Class 14 continues to be used at the Sublicensed Site, and such approval shall not be unreasonably denied.

AT&T-NCW, prior to commencement of any activity the Sublicensed Site that would constitute a "project" as that term is defined in Title 14, Section 15378 of the California Code of Regulations, will comply with all applicable requirements of the California Environmental Quality Act (Pub. Resources Code § 21000 et seq., "CEQA").

**7. OPERATION**

AT&T-NCW shall install, operate and modify the AT&T-NCW Communications Facility at its own expense and risk as approved by LA-RICS AUTHORITY in accordance with the terms hereof, and such installation, operation and modification shall not cause radio frequency interference with equipment, transmission or reception (operated currently or in the future) by LA-RICS AUTHORITY, including for the LA-RICS LMR System. AT&T-NCW and/or its agent shall install interference protection devices such as isolators, cavities, circulators, or combiners as required or recommended by accepted industry practices. Each component of the AT&T-NCW Communications Facility shall be clearly identified with AT&T-NCW's address, telephone number, Federal Communications Commission ("FCC") license and frequencies in use. Such

identification shall be attached to each component of the AT&T-NCW Communications Facility in plain view.

AT&T-NCW agrees that LA-RICS AUTHORITY may grant the use of any unused portion of the Real Property to any third party for the purpose of installing communications transmitting equipment, so long as such uses do not conflict or interfere with AT&T-NCW's operations already in place or a future use previously approved by the County and/or the LA-RICS AUTHORITY, as provided for pursuant to this Sublicense Agreement and subject to County approval. Any third party granted rights by the LA-RICS AUTHORITY shall be required to comply with all applicable noninterference rules of the FCC. In the event that any third party user approved by LA-RICS AUTHORITY at any portion of the Real Property causes impermissible interference with the Sublicensee's operations as provided for pursuant to this Sublicense Agreement, Sublicensee with notify LA-RICS AUTHORITY of such interference, and LA-RICS AUTHORITY will then notify and require the third-party user to resolve the interference issues.

LA-RICS AUTHORITY reserves the right, at its expense, and subject to County approval, to install on the Real Property its own communications shelter, telecommunication equipment, and appropriate tower space for telecommunications and/or microwave(collectively, the "**LA-RICS AUTHORITY Facilities**") so long as the installation of said LA-RICS AUTHORITY Facilities does not interfere with AT&T-NCW's operations already in place or a future use previously approved by the County and/or the LA-RICS AUTHORITY, or AT&T-NCW's rights under this Sublicense Agreement. AT&T-NCW and LA-RICS AUTHORITY agree to make commercially reasonable efforts to resolve any radio frequency interference issues with equipment, transmission or reception caused by the installation of the LA-RICS AUTHORITY Facilities.

AT&T-NCW accepts the Sublicensed Site in an "as is" condition as of the date of full execution of this Sublicense Agreement. AT&T-NCW may, at its sole cost and expense, in accordance with and subject to the terms of this Sublicense Agreement, including without limitation Section 2 (Purpose and Use), Section 3 (Approvals/Design Review), Section 6 (Conditions Precedent to Installation or Alterations of Equipment) and Section 8 (Alterations) (as applicable), perform installations, construction, connections, modifications, monitoring, maintenance, repairs, additions to, upgrades, and replacements of its equipment as necessary and appropriate for its ongoing business, including without limitation, providing for the FirstNet NPSBN and has the right to do all work necessary to maintain the Sublicensed Site to accommodate AT&T-NCW's infrastructure, shelter, equipment, and related improvements and as required for AT&T-NCW's operations of the AT&T-NCW Communications Facility at the Sublicensed Site, including any structural upgrades required to accommodate AT&T-NCW's infrastructure, shelter, equipment and related improvements on the Sublicensed Site.

## **8. ALTERATIONS**

Sublicensee shall make no renovations, alterations or improvements to the Sublicensed Site or the Real Property other than to install, construct, connect, modify, use, monitor, maintain, repair, replace, supplement, upgrade and operate the AT&T-NCW Communications Facility in accordance with the documentation attached hereto as Exhibits A, B, and C to the SAA at Attachment 1 and/or as permitted elsewhere herein, without providing prior written notice to LA-RICS AUTHORITY, provided that such renovations, alterations, or improvements shall be

consistent with the authorized use set forth in Section 2 (Purpose and Use) hereof. Notwithstanding the foregoing, however, it is understood and agreed that Sublicensee shall have the right to perform any alterations or modifications and/or make repairs and replacements: (a) of "like-kind" (equipment replacement with equipment of similar dimensions and at the same location) infrastructure, shelters, equipment, and/or related improvements without providing notice to the LA-RICS AUTHORITY; and (b) consistent with providing the FirstNet NPSBN Solution as long as it meets the requirements of Section 2 (Purpose and Use), Section 3 (Approvals/Design Review), Section 6 (Conditions Precedent to Installation or Alterations of Equipment) (as applicable); and/or (c) and/or that may be required as a result of FCC rules or regulations, after providing notice to the LA-RICS AUTHORITY. Sublicensee agrees: (i) to submit to the LA-RICS AUTHORITY, for review and approval, all plans and specifications, working drawings, and other information reasonably required by the LA-RICS AUTHORITY covering proposed alterations by Sublicensee, (ii) to discuss with LA-RICS AUTHORITY the LA-RICS AUTHORITY's concerns, if any, regarding the proposed alterations, and (iii) to work in good faith to address such concerns. All work to be done by Sublicensee shall be performed in accordance with the plans provided to LA-RICS AUTHORITY.

#### 9. **MAINTENANCE**

LA-RICS AUTHORITY shall be responsible for maintenance of the Sublicensed Site, and such maintenance responsibility shall include general upkeep, landscaping, lawn-mowing, and related maintenance activities. The Sublicensed Site shall be kept neat and clean by AT&T-NCW and ready for normal use by LA-RICS AUTHORITY and other users. Should AT&T-NCW fail to accomplish this, following 30 days written notice from LA-RICS AUTHORITY, LA-RICS AUTHORITY may perform the work and AT&T-NCW shall pay the cost thereof upon written demand by LA-RICS AUTHORITY.

AT&T-NCW shall be responsible for the timely repair of all damage to the Sublicensed Site or the Real Property caused by the negligence or willful misconduct of AT&T-NCW, its employees, contractors, agents or business vendors. Should AT&T-NCW fail to promptly make such repairs after thirty (30) days written notice from LA-RICS AUTHORITY, LA-RICS AUTHORITY may have repairs made and AT&T-NCW shall pay the cost thereof upon written demand by LA-RICS AUTHORITY.

#### 10. **CONSTRUCTION STANDARDS**

Installation and maintenance of AT&T-NCW's equipment including without limitation the AT&T-NCW Communications Facility shall be performed in a neat and workmanlike manner and shall at all times comply in all respects to the statutes, laws, ordinances and regulations of any governmental authority having jurisdiction which are applicable to the installation, construction, operation and maintenance of AT&T-NCW's equipment, including but not limited to the County of Los Angeles Building Code.

AT&T-NCW shall remove any debris to the extent resulting from installation, construction, maintenance, operation and repair on the Sublicensed Site by AT&T-NCW and its authorized agents and contractors. In the event that AT&T-NCW fails to remove such debris from the Sublicensed Site, LA-RICS AUTHORITY shall provide written notice to AT&T-NCW and allow

AT&T-NCW ten (10) business days after receipt of notice to remove such debris. After the expiration of such ten-business day period, LA-RICS AUTHORITY shall cause such debris to be removed and invoice AT&T-NCW for the cost of said removal.

## 11. **OTHER OPERATIONAL RESPONSIBILITIES**

11.01 As applicable, AT&T-NCW, and its authorized agents and contractors shall:

(a) Comply with and abide by all applicable rules, regulations and directions of LA-RICS AUTHORITY and County.

(b) At all times hold the rights to build, deploy and operate under the FirstNet NPSBN and comply with all applicable City and County ordinances and all State and Federal laws, and, in the course thereof, obtain and keep in effect all required permits and licenses required to engage in the Permitted Activities on the Sublicensed Site.

(c) Conduct the Permitted Activities in a courteous and non-profane manner, operate without interfering with the use of the Real Property by LA-RICS AUTHORITY or the public, except as herein permitted, and remove any agent, invitee or employee who fails to conduct Permitted Activities in the manner heretofore described.

(d) Assume the risk of loss, damage or destruction to the AT&T-NCW Communications Facility and any and all fixtures and personal property belonging to AT&T-NCW that are installed or placed within the Sublicensed Site, unless such loss, damage or destruction was caused by the negligent or willful act or omission of the LA-RICS AUTHORITY, its agents, employees or contractors.

## 12. **RELOCATION**

12.01 LA-RICS AUTHORITY shall have the right to request relocation of the AT&T-NCW Communications Facility or any portion thereof on no more than one occasion during the term hereof to another location on the Real Property ("**Alternate Site**") subject to County approval, and provided:

(a) the Alternate Site: (i) is substantially similar to AT&T-NCW's current Sublicensed Site in size, (ii) is compatible with AT&T-NCW's use pursuant to Section 2 hereof, and (iii) does not materially interfere with any portion of the AT&T-NCW Communications Facility or the LA-RICS system or equipment;

(b) LA-RICS AUTHORITY shall pay all costs incurred by AT&T-NCW for relocation of AT&T-NCW's equipment from the Sublicensed Site to the Alternate Site and any improvement of the Alternate Site to make it substantially similar to the Sublicensed Site, including all costs incurred to obtain all of the certificates, permits, and other approvals that may be required by any agency having jurisdiction, including costs required to comply with CEQA and the National Environmental Policy Act (NEPA), as applicable, prior to any activity at an Alternate Site that would constitute a "project" as that term is defined in Title 14, Section 15378 of the California Code of Regulations, as well as any soil boring tests needed to permit AT&T-NCW's use of the Alternate Site;



(c) LA-RICS AUTHORITY shall give AT&T-NCW at least six (6) months written notice before requiring relocation; and

(d) AT&T-NCW's use of the AT&T-NCW Communications Facility in question will not be materially interrupted and AT&T-NCW shall be allowed, if necessary, to place temporary equipment on the Real Property during the relocation.

13. **ACCESS TO SUBLICENSED SITE**

LA-RICS AUTHORITY hereby grants to AT&T-NCW and its employees, agents, vendors, escorted invitees, the FirstNet Parties and other agents a nonexclusive right to use, at its sole risk, during the term and option period of this Sublicense Agreement, the access which serves the Sublicensed Site ("Access"). AT&T-NCW, on behalf of itself and its employees, agents, vendors, escorted invitees, the First Net Parties and other agents, acknowledge and accept the present condition of the Access on an "as is" basis. AT&T-NCW shall provide LA-RICS AUTHORITY with notice of all of its representatives or agents who are authorized to access the Sublicensed Site pursuant to this Section. AT&T-NCW shall document the condition of the Access prior to the execution of this Sublicense Agreement by means of photographs to be provided at AT&T-NCW's cost.

AT&T-NCW acknowledges and agrees that occasions may arise requiring AT&T-NCW to share in the cost of cleaning up of mud-slide debris and repairing the Access to its original accessible condition (as documented pursuant to Section 13) after a storm or heavy rainfall. AT&T-NCW hereby agrees to pay its reasonable proportionate share of such clean-up repair costs within thirty (30) days of receipt of an invoice from LA-RICS AUTHORITY, and acknowledges and agrees that the details of any such clean-up or repair and associated cost may be disclosed to AT&T-NCW by LA-RICS AUTHORITY upon at least thirty (30) days' notice. Notwithstanding the foregoing, AT&T-NCW's financial burden pursuant to this Section shall not exceed five thousand dollars (\$5,000) per incident.

14. **EMERGENCY ACCESS BY LA-RICS AUTHORITY**

LA-RICS AUTHORITY and its authorized agents may access the Sublicensed Site at any time for the purpose of performing maintenance, inspection and/or for making emergency improvements or repairs to the Sublicensed Site or to interrupt or terminate AT&T-NCW's transmission(s) from the Sublicensed Site should AT&T-NCW be unable or unwilling to respond to LA-RICS AUTHORITY's request to take immediate action to correct any deficiency which threatens LA-RICS AUTHORITY's operation on the Sublicensed Site, provided that LA-RICS AUTHORITY shall endeavor to provide a 24-hour prior notice to AT&T-NCW and shall access the Sublicensed Site in the presence, if possible, of an AT&T-NCW representative, if provided by AT&T-NCW. Notwithstanding the foregoing, LA-RICS AUTHORITY shall not be required to provide notice to AT&T-NCW prior to entering the Sublicensed Site due to an emergency; provided, however, that under no circumstance shall the LA-RICS AUTHORITY access AT&T-NCW's equipment cabinets. LA-RICS AUTHORITY shall use its best efforts to minimize any inconvenience or disturbance to AT&T-NCW when entering the Sublicensed Site. AT&T-NCW shall reimburse LA-RICS AUTHORITY within thirty (30) days of receipt of LA-RICS

AUTHORITY's written request for LA-RICS AUTHORITY's actual costs to correct any deficiency that is corrected by LA-RICS AUTHORITY pursuant to this Section.

15. **RADIO FREQUENCY EMISSIONS/INTERFERENCE**

**15.01 No Interference.** AT&T-NCW shall not use the Sublicensed Site in any way which causes radio frequency ("RF") interference in excess of levels permitted by the FCC or otherwise interferes with the use of the Real Property by LA-RICS AUTHORITY or LA-RICS AUTHORITY's agents, invitees or other Sublicensees or users who may occupy portions of the Real Property at the time this Sublicense Agreement is entered into. AT&T-NCW shall be responsible for electromagnetic compatibility of AT&T-NCW's equipment with existing and future equipment at the Real Property.

**15.02 Interference With Public Safety Systems.** In the event of any interference with County's Sheriff or Fire Department, CWIRS, Paramedic or LANet systems, or any future public safety-related systems, which is caused by AT&T-NCW's equipment or operations, AT&T-NCW shall be immediately notified by LA-RICS AUTHORITY of such interference. Following such notification, the parties will meet promptly to cooperatively discuss and reach agreement on how such interference will be resolved.

**15.03 Interference With Non-Public Safety Systems.** In the event AT&T-NCW's operations or equipment cause interference with non-public safety-related systems of County or any other duly authorized occupant of the Real Property, written notice of such interference shall be provided to AT&T-NCW and LA-RICS promptly meet with LA-RICS AUTHORITY to cooperatively discuss and reach agreement on how such interference will be resolved. LA-RICS AUTHORITY agrees that LA-RICS AUTHORITY and/or any other occupants of the Real Property who currently have or in the future take possession of the Real Property will be permitted to install only such radio equipment that is of the type and frequency which will not cause measurable interference with the existing equipment of AT&T-NCW.

**15.04 Interference During Emergency.** If any measurable interference caused by AT&T-NCW's equipment with LA-RICS AUTHORITY's electronic equipment during an emergency incident occurs, AT&T-NCW will immediately power down to the extent necessary to eliminate the interference or cease operation, transmission or further use of AT&T-NCW's interfering equipment at the Sublicensed Site upon being notified by LA-RICS Authority of such interference. Following such notification, the Parties will meet promptly to cooperatively discuss and reach agreement on how such interference will be resolved.

**15.05 Compliance With Law.** AT&T-NCW is aware of its obligation to comply with all applicable rules and regulations of the FCC pertaining to RF emissions standards, as well as applicable rules and/or regulations of any other federal or state agency (including without limitation the Occupational Safety and Health Administration ("OSHA") having jurisdiction over the installation, operation, maintenance and/or working conditions involving RF emissions and/or safety and work standards performed on or near communications towers and antenna-licensed premises. AT&T-NCW agrees to be solely responsible for compliance with all applicable FCC and other governmental requirements with respect to installation, operation, and maintenance of its own equipment and for repairs to its own equipment at the Sublicensed Site. AT&T-NCW will

immediately remedy its operations to comply with such applicable laws, rules and regulations as they apply to its operations, individually and in the aggregate, with all applicable FCC and other applicable governmental RF emissions standards, but shall only be liable for any violations of such applicable standards to the extent arising solely from AT&T-NCW's equipment alone and not in combination with others. Where AT&T-NCW's equipment, in combination with other, exceed or violates such standards, AT&T-NCW shall reasonably cooperate with LA-RICS AUTHORITY and with other relevant parties to mitigate such violations in a timely manner.

16. **UTILITIES**

16.01 AT&T-NCW shall, at its sole cost and expense, maintain the current utility service line required for the conduct of the Permitted Activities, and shall be responsible for the payment of all utilities necessary for the operation of the AT&T-NCW Communications Facility on the Sublicensed Site as of \_\_\_\_\_, 2019.

17. **HOLD HARMLESS AND INDEMNIFICATION**

AT&T-NCW agrees to indemnify, defend, save and hold harmless LA-RICS AUTHORITY, County, and its member agencies, agents, elected and appointed officers, employees, and contractors from and against any and all liability, expense (including, without limitation, defense costs and legal fees), and claims for damages of any nature whatsoever, including, without limitation, bodily injury, death, personal injury, or property damage arising from or connected with AT&T-NCW's operations or its services hereunder, including, without limitation, any Workers' Compensation suit, liability, or expense, arising from or connected with services performed on behalf of AT&T-NCW by any person pursuant to this Sublicense Agreement.

LA-RICS AUTHORITY agrees to indemnify, defend, save and hold harmless AT&T-NCW and its directors, officers, agents, employees, and contractors from and against any and all liability, expense (including, without limitation, defense costs and legal fees), and claims for damages of any nature whatsoever, including, without limitation, bodily injury, death, personal injury, or property damage arising from or connected with the negligence or willful misconduct of LA-RICS AUTHORITY and/or its agents, elected and appointed officers, employees, and contractors in connection with the performance of LA-RICS AUTHORITY's obligations hereunder.

18. **INSURANCE**

18.01 Without limiting AT&T-NCW's obligations to LA-RICS AUTHORITY and County, AT&T-NCW shall provide and maintain, at its own expense during the term of this Sublicense Agreement, the following program(s) of insurance covering its operations hereunder. Such insurance shall be provided by insurer(s) with an A.M. Best rating of at least A-VII, , and evidence of such programs satisfactory to the LA-RICS AUTHORITY, shall be delivered to the Executive Director of the LA-RICS AUTHORITY, on or before the Effective Date of this Sublicense Agreement. Such evidence shall specifically identify this Sublicense Agreement and shall contain express conditions that LA-RICS AUTHORITY is to be given written notice at least thirty (30) days in advance of cancellation or non-renewal of any required coverage that is not

replaced and shall include the LA-RICS AUTHORITY and the County as an additional insured (except for the Worker's Compensation Insurance). AT&T-NCW may self-insure the insurance required under this Sublicense Agreement. AT&T-NCW will require its contractors and subcontractors to provide commercial insurance as required in the Section, and any additional insurance required by AT&T-NCW of its contractor/subcontractor, shall name the LA-RICS AUTHORITY and the County as an additional insured.

(a) Commercial General Liability. A program of insurance which shall be primary to and not contributing with any other insurance maintained by LA-RICS AUTHORITY or the County, written on ISO policy form CG 00 01 or its equivalent, and endorsed to include the LA-RICS AUTHORITY and the County as an additional insured, and shall include, but not be limited to:

(1) Comprehensive general liability insurance endorsed for Site-operations, products/completed operations, contractual, broad form property damage, and personal injury with a limit of not less than

General Aggregate:	\$2 million
Products/Completed Operations Aggregate:	\$2 million
Personal and Advertising Injury:	\$1 million
Per occurrence	\$1 million

(2) Automobile Liability insurance (written on ISO form CA 00 01 or its equivalent) with a limit of liability of not less than \$1 million for each accident, and providing coverage for all "owned," "hired" and "non-owned" vehicles, or coverage for "any auto," used in AT&T-NCW's business operations.

(b) Workers Compensation. A program of workers' compensation insurance in an amount and form to meet all applicable requirements of the labor code of the State of California, and which specifically covers all persons providing services on behalf of AT&T-NCW and all risks to such persons under the Sublicense Agreement.

Each Accident:	\$1 million
Disease - policy limit:	\$1 million
Disease - each employee:	\$1 million

(c) Commercial Property Insurance. Sublicensee may self-insure this risk. Such coverage shall:

- Provide coverage for LA-RICS AUTHORITY's and County's property, and any improvements and betterments; This coverage shall be at least as broad as that provided by the Causes-of-Loss Special Form (ISO form CP 10 30), Ordinance or Law Coverage, flood, and Business Interruption equal to two (2) years annual rent;
- Be written for the full replacement cost of the property, with a deductible no greater than \$250,000 or 5% of the property value whichever is less. Insurance proceeds shall be payable to the LA-RICS AUTHORITY, County and AT&T-NCW as their interests may appear and be utilized for repair and restoration of the Premises. Failure to use such insurance proceeds to timely repair and restore the Premises shall constitute a material breach of the Sublicense Agreement.

(d) **Construction Insurance.** If major construction work is performed by AT&T-NCW during the term of this Lease (i.e. demolition of structures, construction of new structures, renovation or retrofit involving structures frame, foundation or supports, or more than 50% of building, etc.) then AT&T-NCW or AT&T-NCW's contractor shall provide the following insurance. LA-RICS AUTHORITY and/or County shall determine the coverage limits required on a project by project basis:

- **Installation Floater Insurance.** Sublicensee is self-insured. Such coverage shall insure against damage from perils covered by the Causes-of-Loss Special Form (ISO form CP 10 30). This insurance shall be endorsed to include earthquake, flood, ordinance or law coverage, coverage for temporary offsite storage, debris removal, pollutant cleanup and removal, testing, preservation of property, excavation costs, landscaping, shrubs and plants, and full collapse coverage during construction, without restricting collapse coverage to specified perils. Such insurance shall be extended to include boiler & machinery coverage for air conditioning, heating and other equipment during testing. This insurance shall be written on a completed-value basis and cover the entire value of the construction project, including LA-RICS AUTHORITY furnished materials and equipment, against loss or damage until completion and acceptance by AT&T-NCW and the LA-RICS AUTHORITY if required.
- **General Liability Insurance.** Such coverage shall be written on ISO policy form CG 00 01 or its equivalent, naming LA-RICS AUTHORITY and County as an additional insured, with limits of not less than:

General Aggregate:	\$50 million
Products/Completed Operations Aggregate:	\$50 million
Personal and Advertising Injury:	\$25 million
Each Occurrence:	\$25 million

The Products/Completed Operations coverage shall continue to be maintained in the amount indicated above for at least two (2) years from the date the Project is completed and accepted by AT&T-NCW and the LA-RICS AUTHORITY if required.

- **Automobile Liability.** Such coverage shall be written on ISO policy form CA 00 01 or its equivalent with limits of not less than \$5 million for bodily injury and property damage, in combined or equivalent split limits, for each single accident. such insurance shall cover liability arising out of AT&T-NCW's or AT&T-NCW's contractor use of autos pursuant to this lease, including owned, leased, hired, and/or non-owned autos, as each may be applicable.
- **Professional Liability.** Licensee is self-insured. Such insurance shall cover liability arising from any error, omission, negligent, or wrongful act of AT&T-NCW's contractor and/or licensed professional (i.e. architects, engineers, surveyors, etc.) with limits of not less than \$5 million per claim and \$10 million aggregate. The coverage shall also provide an extended two-year reporting period commencing upon expiration, termination or cancellation of the construction project.
- **Workers Compensation and Employers' Liability Insurance** or qualified self-insurance satisfying statutory requirements. Such coverage shall provide Employers' Liability coverage with limits of not less than \$1 million per accident. Such policy shall be endorsed to waive subrogation against the LA-RICS AUTHORITY for injury to AT&T-NCW's or AT&T-NCW's contractor employees. If AT&T-NCW's or AT&T-NCW's contractor employees will be engaged in maritime employment, the coverage shall provide the benefits required by the U.S. Longshore and Harbor Workers Compensation Act, Jones Act or any other federal law to which AT&T-NCW is subject. If AT&T-NCW or AT&T-NCW's contractor will provide leased employees, or, is an employee leasing or temporary staffing firm or a professional employer organization (PEO), coverage also shall include an Alternate Employer Endorsement (providing scope of coverage equivalent to ISO policy form WC 00 03 01 A) naming the LA-RICS AUTHORITY as the Alternate Employer, and the endorsement form shall be modified to provide that LA-RICS AUTHORITY will receive not less than thirty (30) days advance written notice of cancellation of this coverage provision.

18.02 Insurer Financial Ratings. Insurance is to be provided by an insurance company with an A.M. Best rating of not less than A:VII, unless otherwise approved by LA-RICS AUTHORITY.

18.03 Failure to Maintain Coverage. Failure by AT&T-NCW to maintain the required insurance, or to provide evidence of insurance coverage acceptable to LA-RICS AUTHORITY, shall constitute a material breach of this Sublicense Agreement.

18.04 Notification of Incidents. AT&T-NCW shall report to LA-RICS AUTHORITY any accident or incident relating to activities performed under this Sublicense Agreement which involves injury or property damage which might reasonably be thought to result in the filing of a

claim or lawsuit against AT&T-NCW and/or LA-RICS AUTHORITY. Such report shall be made in writing within seventy-two (72) hours of AT&T-NCW's knowledge of such occurrence.

18.05 Compensation for LA-RICS AUTHORITY Costs. In the event that AT&T-NCW fails to comply with any of the indemnification or insurance requirements of this Sublicense Agreement, and such failure to comply results in any costs to LA-RICS AUTHORITY, AT&T-NCW shall pay full compensation for all reasonable costs incurred by LA-RICS AUTHORITY.

19. **FAILURE TO PROCURE INSURANCE**

Failure on the part of AT&T-NCW to procure or maintain the required program(s) of insurance shall constitute a material breach of contract upon which LA-RICS AUTHORITY may immediately terminate this Sublicense Agreement, or at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith, and all monies so paid by LA-RICS AUTHORITY shall be repaid by AT&T-NCW to LA-RICS AUTHORITY upon demand.

Use of the Sublicensed Site shall not commence until AT&T-NCW has complied with the aforementioned insurance requirements, and shall be suspended during any period that AT&T-NCW fails to maintain said insurance policies in full force and effect.

20. **TAXES**

20.01 The interest (as defined in California Revenue and Taxation Code Section 107) in the Sublicensed Site created by this Sublicense Agreement may be subject to property taxation if created. The party in whom the property or possessory interest is vested may be subject to the payment of the property taxes levied on the interest.

20.02 AT&T-NCW shall pay before delinquency all lawful taxes, assessments, fees or charges which at any time may be levied by the Federal, State, LA-RICS AUTHORITY, City, or any other tax or assessment-levying body upon the Sublicensed Site arising from AT&T-NCW' use of the Sublicensed Site.

20.03 If AT&T-NCW fails to pay any lawful taxes or assessments upon the Sublicensed Site which AT&T-NCW is obligated to pay, AT&T-NCW will be in default of this Sublicense Agreement.

20.04 LA-RICS AUTHORITY reserves the right to pay any such tax, assessment, fees or charges, and all monies so paid by LA-RICS AUTHORITY shall be repaid by AT&T-NCW to LA-RICS AUTHORITY upon demand. AT&T-NCW and LA-RICS AUTHORITY agree that this is a license and not a lease and no real estate interest is being conveyed herein.

21. **NOTICES**

Any notice, request, demand or other communication required to be sent to a Party pursuant to this Sublicense Agreement must be sent in writing by personal delivery (including by a nationally recognized overnight courier service), or first class certified U.S. mail, postage pre-paid and with return receipt requested sent to the Parties at their addresses indicated below. Routine exchange of information may be conducted via telephone or electronic means, including e-mail.



If to LA-RICS AUTHORITY:

Scott Edson, Executive Director  
2525 Corporate Place, Suite 100  
Monterey Park, California 91754  
Phone:(323) 881-8281  
Fax: (323) 264-0718  
Email: Scott .Edson@LA-RICS.ORG

With a copy to:

Truc L. Moore, Principal Deputy County Counsel  
Office of the County Counsel  
350 South Figueroa St., Suite # 700  
Los Angeles, CA 90071  
Phone: (213) 808-8779  
Fax: (213) 693-4904  
Email: tlmoore@counsel.lacounty.gov

Roberto Saldana, Deputy County Counsel  
Office of the County Counsel  
500 West Temple Street  
Los Angeles, California 90012  
Phone: (213) 974-1887  
Fax: (213) 613-4751  
Email: RSaldana@counsel.lacounty.gov

If to the County:

County of Los Angeles  
Board of Supervisors  
383 Hall of Administration  
500 West Temple Street  
Los Angeles, CA 90012

With a copy to:

County of Los Angeles  
Chief Executive Office  
Real Estate Division  
Attn: Direction of Real Estate  
222 S. Hill Street, 3rd Floor  
Los Angeles, CA 90012

If to AT&T-NCW:

New Cingular Wireless PCS, LLC

Attn: Network Real Estate Administration  
Re: Los Angeles – LA-RICS Assignment  
575 Morosgo Drive NE  
Atlanta, Georgia 30324

With a copy to:

New Cingular Wireless PCS, LLC  
Attn.: Legal Dept – Network Operations  
Re: Los Angeles – LA-RICS Assignment  
208 S. Akard Street  
Dallas, TX 75202-4206

The copy sent to the Legal Department is an administrative step which alone does not constitute legal notice.

Any of the above parties may change its address for notice under this Sublicense by giving thirty (30) days' prior written notice to the other Parties in the manner provided in this Section 21. Any notice or communication sent under this Section 21 will be deemed to have been duly given and effective when properly sent and received or refused.

22. **AT&T-NCW COMMUNICATIONS FACILITY REMOVAL**

22.01 AT&T-NCW shall remove all of its AT&T-NCW Communications Facility and personal and improvements from the Sublicensed Site and the Real Property and restore the Sublicensed Site to its original condition, reasonable wear and tear and damage or destruction by the acts of God beyond the control of AT&T-NCW excepted, on or before the expiration of this Sublicense Agreement, unless this Sublicense Agreement is otherwise terminated or cancelled prior to the expiration date provided herein, in which case AT&T-NCW shall remove from the Sublicensed Site and the Real Property all of its AT&T-NCW Communications Facility and personal property and improvements and restore the Sublicensed Site to its original condition, reasonable wear and tear and damage or destruction by the acts of God beyond the control of AT&T-NCW excepted, within ninety (90) days of the cancellation. If weather conditions or lack of access to the Sublicensed Site render the timely removal of AT&T-NCW's property impossible, then AT&T-NCW shall have thirty (30) days from the earliest date on which access is possible in which to comply with this provision.

22.02 If AT&T-NCW does not timely remove all of its AT&T-NCW Communications Facility, personal property and improvements from the Sublicensed Site and the Real Property within the time provided in this Section, LA-RICS AUTHORITY may, but shall not be required to, remove the AT&T-NCW Communications Facility and all personal property and improvements at AT&T-NCW's expense. AT&T-NCW shall reimburse LA-RICS AUTHORITY within thirty (30) days of receipt of an itemized accounting of the cost for such removal of personal property and improvements. LA-RICS AUTHORITY shall incur no liability for any damage to the AT&T-NCW Communications Facility during removal or storage.

23. **INDEPENDENT STATUS**

This Sublicense Agreement is by and between LA-RICS AUTHORITY and AT&T-NCW and is not intended and shall not be construed to create the relationship of agent, servant, employee, partnership, joint venture or association as between LA-RICS AUTHORITY and AT&T-NCW. AT&T-NCW understands and agrees to bear the sole responsibility and liability for furnishing Workers' Compensation with respect to services performed on behalf of AT&T-NCW pursuant to this Sublicense Agreement.

24. **AMENDMENT**

Any modification of any of the terms and conditions hereof shall require a written amendment signed by an authorized agent of AT&T-NCW and an authorized agent of LA-RICS AUTHORITY, and approval from the County.

25. **ASSIGNMENT**

This Sublicense Agreement may not be sold, assigned or transferred by AT&T-NCW without the approval or consent of the LA-RICS AUTHORITY and the County, which consent will be at the LA-RICS Authority and County's sole discretion. As to third parties, this Sublicense Agreement may not be sold, assigned or transferred without the written consent of the LA-RICS AUTHORITY and the County, which consent will be at the LA-RICS AUTHORITY and County's sole discretion. No change of stock ownership, partnership interest or control of AT&T-NCW shall constitute an assignment hereunder. To effect such assignment or transfer, AT&T-NCW shall first deliver to the LA-RICS AUTHORITY:

- (i) A written request for approval;
- (ii) The name, address, and most recent financial statements of the proposed transferee or sublicensee;
- (iii) Proposed unredacted instrument of transfer or assignment or any or all of its rights hereunder; and
- (iv) Any other information reasonably requested by LA-RICS AUTHORITY.

LA-RICS AUTHORITY shall approve or disapprove a proposed transfer, assignment or sublicense within sixty (60) days after AT&T-NCW delivers all such items to the LA-RICS AUTHORITY, and thereafter notify County of the proposed transfer, assignment or sublicense. LA-RICS AUTHORITY's failure to respond to any request pursuant to this Section shall be deemed disapproval of said request.

In the case of an assignment, the proposed instrument shall include a written assumption by the assignee of all obligations of AT&T-NCW under the Sublicense Agreement arising thereafter and assignee shall be liable to perform the full obligations of AT&T-NCW under this Sublicense Agreement and as a condition to the completion of such transfer must cure, remedy, or

correct any event of default existing at the time of such transfer in a manner satisfactory to the LA-RICS AUTHORITY.

In the case of a sublicense, the proposed instrument shall specifically include a provision that the sublicense shall comply with and be subject to all of the terms covenants, and conditions of this Sublicense Agreement.

LA-RICS AUTHORITY may, without the consent of AT&T-NCW, assign any and all of its rights hereunder to Los Angeles County who agrees to assume LA-RICS AUTHORITY's rights and obligations hereunder this Sublicense Agreement.

26. **SUBORDINATION AND NON-DISTURBANCE**: N/A

27. **CONDEMNATION**

In the event of any condemnation of the Real Property (or any portion thereof), AT&T-NCW may terminate this Sublicense Agreement upon written notice to LA-RICS AUTHORITY if such condemnation may reasonably be expected to disrupt AT&T-NCW's operations at the Sublicensed Site for more than forty-five (45) days. AT&T-NCW may on its own behalf make a claim in any condemnation proceeding involving the Sublicensed Site for losses related to the equipment comprising the applicable AT&T-NCW Communications Facility, its relocation costs and its damages and losses (but not for the loss of its interest, if any, under this Sublicense Agreement). Any such notice of termination shall cause this Sublicense Agreement to expire with the same force and effect as though the date set forth in such notice were the date originally set as the expiration date of this Sublicense Agreement, and LA-RICS AUTHORITY and AT&T-NCW shall make an appropriate adjustment, as of such termination date, with respect to payments due to the other, if any, under this Sublicense Agreement.

28. **DEFAULT**

Except as otherwise provided in this Sublicense Agreement, in the event of a default hereunder by AT&T-NCW, LA-RICS AUTHORITY shall provide written notice thereof to AT&T-NCW. AT&T-NCW shall have sixty (60) days from the date of said notice in which to cure the default, provided that AT&T-NCW shall have such extended period beyond sixty (60) days as may be required if the nature of the cure is such that it reasonably requires more than sixty (60) days and AT&T-NCW has commenced to cure the default within the 60-day period and has acted with reasonable diligence in commencing and pursuing such cure to completion. LA-RICS AUTHORITY may not maintain any action or effect any remedies for default against AT&T-NCW unless and until AT&T-NCW has failed to cure a default within the time periods set forth in this Section. In the event that AT&T-NCW fails to cure a default within sixty (60) days or as otherwise provided in this Section, LA-RICS AUTHORITY may: (a) cure the default and invoice AT&T-NCW for all costs reasonably incurred in effecting such cure, or (b) terminate this Sublicense Agreement upon written notice to AT&T-NCW, take possession of the Sublicensed Site and remove all AT&T-NCW's improvements located thereon. In the event of a default hereunder by LA-RICS AUTHORITY, AT&T-NCW shall provide written notice thereof to LA-RICS AUTHORITY. LA-RICS AUTHORITY shall have sixty (60) days from the date of said notice in which to cure the default, provided that LA-RICS AUTHORITY shall have such

extended period beyond sixty (60) days as may be required if the nature of the cure is such that it reasonably requires more than sixty (60) days and LA-RICS AUTHORITY has commenced to cure the default within the 60-day period and has acted with reasonable diligence in commencing and pursuing such cure to completion. AT&T-NCW may not maintain any action or effect any remedies for default against LA-RICS AUTHORITY unless and until LA-RICS AUTHORITY has failed to cure a default within the time periods set forth in this Section. In the event that LA-RICS AUTHORITY fails to cure a default within sixty (60) days or as otherwise provided in this Section, AT&T-NCW may: (a) cure the default and invoice LA-RICS AUTHORITY for all costs reasonably incurred by AT&T-NCW in effecting such cure, or (b) terminate this Sublicense Agreement upon written notice to LA-RICS AUTHORITY.

## 29. **WAIVER**

29.01 Any waiver by either party of the breach of any one or more of the covenants, conditions, terms and agreements herein contained shall not be construed to be a waiver of any other breach of the same or of any other covenant, condition, term or agreement herein contained, nor shall failure on the part of either party to require exact, full and complete compliance with any of the covenants, conditions, terms or agreements herein contained be construed as in any manner changing the terms of this Sublicense Agreement or stopping either party from enforcing the full provisions thereof.

29.02 No option, right, power, remedy, or privilege of either party shall be construed as being exhausted by the exercise thereof in one or more instances. The rights, powers, options, and remedies given either party by this Sublicense Agreement shall be cumulative.

## 30. **HAZARDOUS MATERIALS**

The parties hereto hereby warrant and represent that they shall comply with all applicable Federal, State, and local laws and regulations concerning the use, release, storage and disposal of hazardous substances on the Sublicensed Site and the Real Property. For purposes of this Sublicense Agreement, the term "hazardous substances" shall be deemed to include hazardous, toxic or radioactive substances, as defined in California Health and Safety Code Section 25316, as amended from time to time, or the same or a related defined term in any successor or companion statutes, and crude oil or byproducts of crude oil other than crude oil which exists on the Real Property as a natural formation, and those chemicals and substances identified pursuant to Health and Safety Code Section 25249.8., as it may be amended from time to time.

The parties each agree to indemnify and defend the other and the other's agents, officers, employees, and contractors against any and all losses, liabilities, claims and/or costs (including reasonable attorneys' fees and costs) to the extent arising from the indemnifying party's breach of any warranty or agreement contained in this Section.

## 31. **DAMAGE OR DESTRUCTION**

Either party shall have the right to terminate this Sublicense Agreement with respect to all or any portion of the Sublicensed Site in the event of one of the following: (a) the applicable Real Property or the Sublicensed Site is damaged by fire or other casualty, incidents of war, earthquake, or other violent action of the elements such that repairs cannot reasonably be expected to be

completed within forty-five (45) days following said damage (or LA-RICS AUTHORITY in its sole discretion elects not to make such repair); or (b) the applicable Real Property or Sublicensed Site is damaged by fire or other casualty, incidents of war, earthquake, or other violent action of the elements such that such damage may reasonably be expected to disrupt AT&T-NCW's operations at such Sublicensed Site for more than forty-five (45) days. Notwithstanding the foregoing, in the event of any of the damage described in this Section, AT&T-NCW shall have the right to elect to perform or cause to be performed any of the required repairs to the applicable Real Property or Sublicensed Site should LA-RICS AUTHORITY elect not to undertake such repairs. Any notice of termination provided pursuant to this Section shall cause this Sublicense Agreement to expire with the same force and effect as though the date set forth in such notice were the date originally set as the expiration date of this Sublicense Agreement, and the parties shall make an appropriate adjustment, as of such termination date, with respect to payments due to the other under this Sublicense Agreement, if any.

Should any matter or condition beyond the control of the parties, such as war, public emergency, calamity, fire, earthquake, flood or act of God prevent performance of this Sublicense Agreement by either party, such party shall be relieved of the performance of such obligations during the time period of the event.

AT&T-NCW shall be solely responsible for any damage or loss to AT&T-NCW's equipment resulting from theft or vandalism or resulting from any other cause, except to the extent caused by LA-RICS AUTHORITY's acts or omissions.

32. **AUTHORIZATION WARRANTY**

The parties hereto represent and warrant that the person executing this Sublicense Agreement for each of them is an authorized agent who has actual authority to bind such party to each and every term, condition, and obligation of this Sublicense Agreement and that all requirements of such party have been fulfilled to provide such authority.

33. **INDEPENDENT CONTRACTOR STATUS**

This Sublicense Agreement is not intended, and shall not be construed, to create the relationship of agent, servant, employee, partnership, joint venture, or association between LA-RICS AUTHORITY and AT&T-NCW. AT&T-NCW shall bear the sole responsibility and liability for furnishing Worker's Compensation benefits to any person for injuries from or connected with services performed on behalf of AT&T-NCW pursuant to this Sublicense Agreement as required by law. The foregoing indemnification does not apply to liability caused by the negligence of the LA-RICS AUTHORITY.

34. **GOVERNING LAW, JURISDICTION, AND VENUE**

This Sublicense Agreement shall be governed by, and construed in accordance with the internal laws of the State of California. AT&T-NCW agrees and consents to the exclusive jurisdiction of the courts of the State of California for all purposes regarding this Sublicense Agreement and further agrees and consents that venue of any action brought hereunder shall be exclusively in the County of Los Angeles.

35. **COMPLIANCE WITH APPLICABLE LAW**

In the performance of this Sublicense Agreement, each party and anyone acting on such party's behalf pursuant to this Sublicense Agreement shall comply with all applicable Federal, State and local laws, rules, regulations, ordinances, directives, guidelines, policies and procedures (including without limitation the rules and regulations of the FCC, the Federal Aviation Administration ("FAA"), and OSHA, and all provisions required thereby to be included in this Sublicense Agreement are hereby incorporated herein by reference.

36. **COMPLIANCE WITH CIVIL RIGHTS LAWS, NONDISCRIMINATION AND AFFIRMATIVE ACTION**

36.01 AT&T-NCW hereby assures that it will comply with Subchapter VI of the Civil Rights Act of 1964, 42 USC Sections 2000 (e) (1) through 2000 (e) (17), to the end that no person shall, on the grounds of race, creed, color, sex, religion, ancestry, age, condition or physical handicap, marital status, political affiliation, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subject to discrimination under this Sublicense Agreement or under any project, program or activity supported by this Sublicense Agreement.

36.02 AT&T-NCW certifies and agrees that it will deal with its subcontractors, bidders, or vendors without regard to or because of race, color, religion, ancestry, national origin, sex, age, physical or mental disability, marital status, or political affiliation.

36.03 AT&T-NCW certifies and agrees that it, its Affiliates, subsidiaries, or holding companies shall comply with all applicable Federal and State laws and regulations to the end that no person shall, on the grounds of race, color, religion, ancestry, national origin, sex, age, physical or mental disability, marital status, or political affiliation, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under this Sublicense Agreement or under any project, program, or activity supported by this Sublicense Agreement.

36.04 If the LA-RICS AUTHORITY finds that any of the above provisions of this Section have been violated, such violation shall constitute a material breach of this Sublicense Agreement upon which the LA-RICS AUTHORITY may terminate, or suspend this Sublicense Agreement.

36.05 While the LA-RICS AUTHORITY reserves the right to determine independently that the anti-discrimination provisions of this Sublicense Agreement have been violated, in addition, a determination by the California Fair Employment Practices Commission, the Federal Equal Employment Opportunity Commission that AT&T-NCW has violated Federal or State anti discrimination laws or regulations shall constitute a finding by LA-RICS AUTHORITY that AT&T-NCW has violated the anti-discrimination provisions of this Sublicense Agreement.

36.06 In the event AT&T-NCW violates the antidiscrimination provisions of the Sublicense Agreement, the parties agree that it is difficult to ascertain the amount of liquidated damages, and hereby agree that the LA-RICS AUTHORITY shall, at its sole option, be entitled to the sum of FIVE HUNDRED DOLLARS (\$500.00) for each such violation pursuant to California Civil Code 1671 as liquidated damages in lieu of terminating or suspending this Sublicense Agreement.

37. **NON EXCLUSIVITY**

Nothing herein is intended or shall be construed as creating any exclusive arrangement with AT&T-NCW. This Sublicense Agreement shall not restrict the LA-RICS AUTHORITY from acquiring similar, equal or like goods and/or services from other entities or sources.

38. **NOTICE OF EMPLOYEES REGARDING THE FEDERAL EARNED INCOME CREDIT**

AT&T-NCW shall notify its employees, and shall require each Contractor and Subcontractor to notify its employees, that they may be eligible for the Federal Earned Income Credit under the federal income tax laws. Such notice shall be provided in accordance with the requirements set forth in Internal Revenue Service Notice No. 1015.

39. **PUBLIC RECORDS ACT**

39.01 Any documents submitted by AT&T-NCW or its contractors or agents and all information obtained in connection with the LA-RICS AUTHORITY's right to inspect the Sublicensed Site or any other rights provided by this Sublicense Agreement shall become the exclusive property of the LA-RICS AUTHORITY. All such documents become a matter of public record and shall be regarded as public records, except as specifically provided by California Government Code Section 6250 et seq. ("**Public Records Act**") and which are marked "trade secret," "confidential," or "proprietary." The LA-RICS AUTHORITY shall not be in any way liable or responsible for the disclosure of any such records including, without limitation, those so marked, if disclosure is required by law, or by an order issued by a court of competent jurisdiction.

39.02 In the event the LA-RICS AUTHORITY is required to defend an action on a Public Records Act request as requested by AT&T-NCW for any of the aforementioned documents, information, books, records, and/or contents of a proposed marked "trade secret," "confidential", or "proprietary," AT&T-NCW agrees to refund and indemnify the LA-RICS AUTHORITY from all costs and expenses, including without limitation reasonable attorney's fees, incurred in such action or liability arising under the Public Records Act within thirty days after AT&T-NCW's receipt of LA-RICS AUTHORITY's invoice.

40. **OTHER TERMS AND CONDITIONS**

40.01 Advertising Materials and Signs. Except for warning signs required by law, AT&T-NCW shall not post signs upon the Sublicensed Site or improvements thereon, or distribute or cause to be distributed any advertising materials unless prior approval therefor is obtained from the LA-RICS AUTHORITY.

40.02 Habitation. The Sublicensed Site shall not be used for human habitation.

40.03 Illegal Activities. AT&T-NCW shall not knowingly permit any illegal activities to be conducted upon the Sublicensed Site.

40.04 Safety. AT&T-NCW shall immediately correct any unsafe condition on the Sublicensed Site, as well as any unsafe practices occurring thereon, to the extent such unsafe



condition or practice occurs as a result of AT&T-NCW's use of the Sublicensed Site. AT&T-NCW shall cooperate fully with LA-RICS AUTHORITY in the investigation of any accidental injury or death occurring on the Sublicensed Site, including a prompt report thereof to the LA-RICS AUTHORITY. AT&T-NCW shall cooperate and comply fully with LA-RICS AUTHORITY, State, municipal, federal or any other regulatory agency having jurisdiction thereover, regarding any safety inspections and certifications of any and all AT&T-NCW's structures and enclosures. AT&T-NCW, at its expense, may use any and all appropriate means of restricting public access to the Sublicensed Site.

40.05 Sanitation. No offensive matter, refuse, or substance constituting an unnecessary, unreasonable or unlawful fire hazard, or material detrimental to the public health in violation of the law, shall be permitted or remain on the Sublicensed Site and within a distance of fifty (50) feet thereof, and AT&T-NCW and LA-RICS AUTHORITY shall prevent any accumulation thereof from occurring.

40.06 Security Devices. AT&T-NCW, at its own expense, may provide any legal devices or equipment and the installation thereof, designated for the purpose of protecting the Sublicensed Site from theft, burglary or vandalism, provided written approval for installation thereof is first obtained from the LA-RICS AUTHORITY. LA-RICS AUTHORITY shall be responsible for securing the Real Property to the extent deemed necessary by LA-RICS AUTHORITY in its sole discretion.

41. **ACKNOWLEDGMENT OF INELIGIBILITY FOR RELOCATION ASSISTANCE**

AT&T-NCW hereby disclaims any status as a "displaced person" as such is defined in Government Code Section 7260 and hereby acknowledges its ineligibility for relocation assistance as provided in Government Code Section 7260 through 7276, inclusive, as interpreted in Title 25, Chapter 6, Section 6034(b) (1) of the California Administrative Code upon the future cancellation or termination of this Sublicense Agreement.

42. **AT&T-NCW'S STAFF AND EMPLOYMENT PRACTICES**

AT&T-NCW shall designate one member of its staff as an Operations Manager with whom the LA-RICS AUTHORITY may deal with on a daily basis. Any person selected by AT&T-NCW as an Operations Manager shall be fully acquainted with AT&T-NCW's operation, familiar with the terms and the conditions prescribed therefore by this Sublicense Agreement, and authorized to act in the day-to-day operation thereof.

AT&T-NCW shall establish an identification system for each of its personnel assigned to service the Sublicensed Site that clearly indicates the name of the person. The identification system shall be furnished at AT&T-NCW expense and may include appropriate uniform attire and name badges as routinely maintained by AT&T-NCW.

43. **BANKRUPTCY**

The LA-RICS AUTHORITY and AT&T-NCW hereby expressly agree and acknowledge that it is the intention of both parties that in the event that during the term of this Sublicense Agreement AT&T-NCW shall become a debtor in any voluntary or involuntary bankruptcy

proceeding (a Proceeding) under the United States Bankruptcy Code, 11 U.S.C. 101, et seq. (the Code), this Sublicense Agreement is and shall be treated as an unexpired lease of nonresidential real property for purposes of Section 365 of the Code, 11 U.S.C. 365 (as may be amended), and, accordingly, shall be subject to the provisions of subsections (d)(3) and (d)(4) of said Section 365 (as may be amended).

44. **SUCCESSORS AND ASSIGNS**

Subject to any provision hereof restricting assignment or subletting by AT&T-NCW, this Sublicense Agreement shall bind the parties, their personal representatives, successors and assigns.

45. **SEVERABILITY**

The invalidity of any provision of this Sublicense Agreement, as determined by a court of competent jurisdiction shall in no way affect the validity of any other provision hereof.

46. **INTERPRETATION**

Unless the context of this Sublicense Agreement clearly requires otherwise: (i) the plural and singular numbers shall be deemed to include the other; (ii) the masculine, feminine and neuter genders shall be deemed to include the others; (iii) "or" is not exclusive; and (iv) "includes" and "including" are not limiting.

47. **ENTIRE AGREEMENT**

This Sublicense Agreement (and the attached exhibits) contains the entire agreement between the parties hereto with respect to the matters set forth herein, and no addition or modification of any terms or provisions shall be effective unless set forth in writing, signed by both LA-RICS AUTHORITY and AT&T-NCW.

**IN WITNESS WHEREOF**, AT&T-NCW has executed this Sublicense Agreement or caused it to be duly executed and LA-RICS AUTHORITY has caused this Sublicense Agreement to be executed on the day, month and year first above written.

THE LOS ANGELES REGIONAL  
INTEROPERABLE COMMUNICATIONS  
SYSTEM AUTHORITY

NEW CINGULAR WIRELESS PCS, LLC  
By: AT&T Mobility Corporation  
Its: Manager

A California Joint Powers Authority

By: \_\_\_\_\_

Print Name: \_\_\_\_\_

Its: \_\_\_\_\_

By: \_\_\_\_\_

Name: Gram Meadors

Title: AVP – Sourcing Operations

Dated: \_\_\_\_\_

APPROVED AS TO FORM:

MARY C. WICKHAM  
COUNTY COUNSEL

By: \_\_\_\_\_

Deputy

# **ATTACHMENT 1**

## **LMR SITE ACCESS AGREEMENT**



LMR MVS Site  
Access Agreement (S

## **ATTACHMENT 2**

### **CONSENT TO SUBLICENSE AGREEMENT OF LMR SITE ACCESS AGREEMENT NO. COL-883 FOR MVS**

**THIS CONSENT TO SUBLICENSE AGREEMENT OF LTE SITE ACCESS AGREEMENT NO. COL-883 FOR MVS** (this “**Consent Agreement**”) is made as of the \_\_\_\_\_ day of \_\_\_\_\_, 2019 (“**Effective Date**”), by and among COUNTY OF LOS ANGELES, a body politic and corporate (“**Licensor**”), THE LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM AUTHORITY, a Joint Powers Authority, hereinafter referred to as “**LA-RICS Authority**” (or “**Sublicensor**”), and NEW CINGULAR WIRELESS PCS, LLC, a Delaware limited liability company that is a wholly-owned, indirect subsidiary of AT&T Inc., hereinafter referred to as “**AT&T-NCW**” (or “**Sublicensee**”) (individually, a “**Party**,” and collectively, the “**Parties**”).

#### **RECITALS:**

A. Reference is hereby made to that certain LMR Site Access Agreement dated December 23, 2015 and revised per Amendment Number One to LMR Site Access Agreement dated \_\_\_\_\_, 2019, between Licensor and Sublicensor (collectively, the “**SAA**”), whereby Licensor licensed to LA-RICS Authority and LA-RICS Authority licensed from Licensor that certain land located at 11515 Colima Rd, Whittier, CA 93550 identified as Los Angeles County Parcel Number (APN) \_\_\_\_\_ (the “**Real Property**”) and more commonly known as Los Angeles County Sheriff's Department Monte Vista (Star Center) (“**MVS**”).

B. LA-RICS Authority has requested Licensor's consent to that certain Sublicense Agreement for MVS, dated \_\_\_\_\_ (the “**Sublicense Agreement**”), between Sublicensor and Sublicensee.

C. Licensor is willing to consent to the Sublicense Agreement on the terms and conditions contained herein.

#### **AGREEMENT:**

NOW THEREFORE, in consideration of the mutual covenants contained in this Consent Agreement, and for valuable consideration, the receipt and sufficiency of which are acknowledged by the parties, the parties hereto agree as follows:

##### **1. Permitted Expansion of Section 2 (Purpose and Use) of SAA.**

1.1 From and after the Effective Date of this Consent Agreement, and notwithstanding anything to the contrary in the SAA, Licensor hereby licenses to Sublicensor and grants Sublicensor the right to access and use the Real Property as an LA-RICS Site (as defined in the SAA), and to

further sublicense to AT&T-NCW and grant AT&T-NCW the right to additionally access and use the Real Property for the Sublicensed Site (as defined in the Sublicense Agreement) for the installation, construction, connection, modification, use, operation, monitoring, maintenance, repair, replacement, supplementation and upgrade of a communications facility (as defined in the Sublicense Agreement, the AT&T-NCW Communications Facility) for the transmission and reception of communications signals in a manner that is consistent with AT&T's overall strategy for providing services under the FirstNet NPSBN Contract (as defined in the Sublicense Agreement), and fulfilling its obligations to FirstNet thereunder (the "**FirstNet NPSBN Solution**") as more particularly set forth in Section 2 (Purpose and Use) of the Sublicense Agreement, subject to, and in accordance with the terms and conditions of the Sublicense Agreement, including but not limited to, Sections 2 (Purpose and Use), Section 3 (Approvals/Design Review), Section 6 (Conditions Precedent to Installation or Alterations of Equipment), Section 8 (Alterations) and Section 13 (Access) of the Sublicense Agreement (as applicable), this Consent Agreement and the SAA, as modified herein .

1.2 The SAA, as hereby expanded pursuant to this Section 1 (Permitted Expansion of Section 2 (Purpose and Use) of SAA), and the terms and conditions set forth therein, shall continue in full force and effect except as may be specifically modified by this Consent Agreement. In the event of any conflict between the SAA and this Consent Agreement, the terms, conditions and provisions of this Consent Agreement shall govern, and all references to the SAA hereinafter in this Agreement shall mean the SAA as modified herein.

**2. Licensor's Consent.** Licensor hereby consents to the sublicense of the SAA to, and the access and use of the Real Property for the Sublicensed Site by, AT&T-NCW under the terms and conditions set forth in the Sublicense Agreement. Licensor confirms that, as of the Effective Date of this Consent Agreement, the SAA is in full force and effect and no default is outstanding. The Sublicense Agreement is subject and subordinate to the SAA. Except as set forth herein, Licensor shall not be bound by any of the terms, covenants, conditions, provisions or agreements of the Sublicense Agreement.

**3. Recognition of Sublicensee.** If the SAA and Sublicensor's interest in and right to occupy the Real Property shall be terminated as a result of an event of default (as defined in the SAA), Sublicensee may cure any and all damages that gave rise to the event of default under the SAA as it relates to the Real Property, and if cured, Sublicensee shall attorn to and recognize Licensor as the licensor of the Real Property under the SAA for the remainder of the term of the Sublicense Agreement, and Sublicensee shall perform and observe all obligations under the SAA during the remainder of the term of the Sublicense Agreement; and Licensor shall recognize Sublicensee as the licensee of the Real Property under the SAA for the remainder of the term of the Sublicense. In the event of such attornment, Sublicensee shall have the same duties, rights, obligations and liabilities of Sublicensor under the SAA.

**4. Non-Release of Sublicensee; Further Transfers.** Neither the Sublicense Agreement nor this Consent Agreement will: (a) release or discharge Sublicensor from any liability, whether past, present or future, under the SAA; (b) alter the primary liability of Sublicensor to perform and comply with all of Sublicensor's obligations under the SAA (including the payment of all bills rendered by Licensor for charges incurred by Sublicensor for services and materials supplied to

the Sublicensed Property); (c) be construed as a waiver of Licensor's right to consent to an amendment of the sublicense or to any further sublicense or assignment either by Sublicensor or by the Sublicensee under the SAA or the Sublicense Agreement, or as a consent to any portion of the Sublicensed Property being used or occupied by any other party.

## **5. General Provisions.**

**5.1 Controlling Law.** The terms and provisions of this Consent Agreement shall be construed in accordance with and governed by the laws of the State of California and the Parties further agree and consent that venue of any action brought hereunder shall be exclusively in the County of Los Angeles.

**5.2 Entire Agreement; Waiver.** This Consent Agreement constitutes the final, complete and exclusive statement between the Parties to this Agreement pertaining to the terms of Licensor's consent to the Sublicense Agreement, supersedes all prior understandings or agreements of the Parties, and is binding on and inures to the benefit of their respective heirs, representatives, successors and assigns. No Party has been induced to enter into this Consent Agreement by, nor is any Party relying on, any representation or warranty outside those expressly set forth in this Consent Agreement. Any agreement made after the date of this Consent Agreement is ineffective to modify, waive, or terminate this Consent Agreement, in whole or in part, unless that agreement is in writing, is signed by the Parties to this Consent Agreement, and specifically states that agreement modifies this Consent Agreement.

**5.3 Binding Effect.** This Consent Agreement shall be binding upon and inure to the benefit of the Parties hereto, their heirs, successors and assigns.

**5.4 Captions.** The paragraph captions utilized herein are in no way intended to interpret or limit the terms and conditions hereof; rather, they are intended for purposes of convenience only.

**5.5 Capitalized Terms.** All terms spelled with initial capital letters in this Consent Agreement that are not expressly defined in this Agreement will have the respective meanings given such terms in the SAA.

**5.6 Severability.** If any term, provision, covenant or condition contained in this Consent Agreement is, to any extent, held by a court of competent jurisdiction to be invalid or unenforceable, the remainder of this Consent Agreement, or the application of that term, provision, covenant or condition to persons or circumstances other than those as to which it is held to be invalid or unenforceable, will not be affected by that invalidity or unenforceability, and all other terms, covenants and conditions of this Consent Agreement will be valid and enforceable to the fullest extent possible permitted by law.

**5.7 Counterparts.** This Consent Agreement may be executed in any number of original counterparts. Any such counterpart, when executed, shall constitute an original of this Consent Agreement, and all such counterparts together shall constitute one and the same Consent Agreement.

IN WITNESS WHEREOF, the Parties have executed this Consent Agreement as of the above Effective Date.

SUBLICENSOR

THE LOS ANGELES REGIONAL  
INTEROPERABLE COMMUNICATIONS  
SYSTEM AUTHORITY

By: \_\_\_\_\_

Print Name: \_\_\_\_\_

Its: \_\_\_\_\_

APPROVED AS TO FORM:

MARY C. WICKHAM  
COUNTY COUNSEL

By: \_\_\_\_\_  
Deputy

LICENSOR

COUNTY OF LOS ANGELES

By: \_\_\_\_\_

Print Name: \_\_\_\_\_

Its: \_\_\_\_\_

APPROVED AS TO FORM:

MARY C. WICKHAM  
COUNTY COUNSEL

By: \_\_\_\_\_  
Deputy

SUBLICENSEE

NEW CINGULAR WIRELESS PCS, LLC

By: AT&T Mobility Corporation

Its: Manager

By: \_\_\_\_\_

Name: Gram Meadors

Title: AVP – Sourcing Operations

Dated: \_\_\_\_\_



## **ATTACHMENT 3**

### **ACCESS**

1. AT&T shall coordinate all access requirements to the site with the LA-RICS Authority.
2. AT&T personnel and its' subcontractors shall clear background checks as required by the Sherriff's Department.
3. All cleared personnel shall, at all times, carry their driver license, company identification card, and documentation indicating they are a subcontractor to AT&T.
4. AT&T shall leave a copy of the key for any lock cabinets and equipment with the LA RICS Authority and Sherriff's Department.