



AGENDA

**LOS ANGELES REGIONAL
INTEROPERABLE COMMUNICATIONS SYSTEM AUTHORITY**

BOARD OF DIRECTORS SPECIAL MEETING

Thursday, May 17, 2012 • 1:30 p.m.
Los Angeles County Fire Department Headquarters
Training Room 26, 1320 N. Eastern Ave., Los Angeles, CA 90063

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

AGENDA POSTED: May 15, 2012

Complete agendas are made available for review at the designated meeting location during normal business hours and may also be accessible on the Authority's website at <http://www.la-rics.org>.

Members:

1. **William T Fujioka**, Chair, CEO, County of Los Angeles
 2. **Charles L. Beck**, Vice Chair, Police Chief, City of Los Angeles
 3. **Mark R. Alexander**, City Manager, representing California Contract Cities Association
 4. **Leroy D. Baca**, Sheriff, County of Los Angeles
 5. **Reginald Harrison**, Deputy City Manager, City of Long Beach
 6. **LeRoy J. Jackson**, City Manager, City of Torrance, representing At Large Seat
 7. **Dr. Mitchell H. Katz**, Director, DHS, County of Los Angeles
 8. **Gerry F. Miller**, Chief Legislative Analyst, City of Los Angeles
 9. **Daryl L. Osby**, Fire Chief, County of Los Angeles
 10. **Brian Cummings**, Fire Chief, City of Los Angeles
 11. **Donald Pedersen**, Police Chief, City of Culver City, representing At Large Seat
 12. **Scott Pickwith**, Police Chief, representing the Los Angeles County Police Chiefs Association
 13. **Kim Raney**, Police Chief, City of Covina, representing At Large Seat
 14. **Timothy Scranton**, Fire Chief, representing the Los Angeles Area Fire Chiefs Association
 15. **Miguel Santana**, CAO, City of Los Angeles
 16. **Gregory L. Simay**, Assistant General Manager, City of Burbank Water & Power, representing At Large Seat
 17. **Steven K. Zipperman**, Police Chief, Los Angeles School Police Department
-

Officers:

1. **Patrick Mallon**, Executive Director
2. **Wendy L. Watanabe**, County of Los Angeles Auditor-Controller
3. **Mark J. Saladino**, County of Los Angeles Treasurer and Tax Collector
4. **Patricia Saucedo**, 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 – (None)**
- IV. **CONSENT CALENDAR – (None)**
- V. **REPORTS – (None)**
- VI. **DISCUSSION ITEMS (1-2)**
 - 1. Land Mobile Radio (LMR) Voice Radio System Status
Attachment: Item 1 (Jacobs LMR Feasibility Study and Powerpoint Presentation)
 - 2. Long Term Evolution (LTE) Broadband System Status
Attachment: Item 2 (Dept. of Commerce Materials)
- VII. **ADMINISTRATIVE MATTERS – (None)**
- VIII. **MISCELLANEOUS – (None)**
- IX. **PUBLIC COMMENTS**
- X. **ITEMS FOR FUTURE DISCUSSION AND/OR ACTION BY THE BOARD**
 - 3. Project Funding
 - 4. Project Risk Controls
- XI. **ADJOURNMENT and NEXT MEETING:**

Thursday, June 7, 2012, at 2:00 p.m., at the Los Angeles County Fire Department, Training Room 26, 1320 N. Eastern Avenue, Los Angeles, CA 90063.



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.

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.



LA-RICS

**Los Angeles Regional
Interoperable
Communications System
LA-RICS
LMR Feasibility Study**

May 8, 2012

© Copyright 2012, LA-RICS Authority. All Rights Reserved.

AGENDA ITEM 1 – ATTACHMENT A

Executive Summary

In November 2011, the Los Angeles Regional Interoperable Communications System (LA-RICS) Joint Powers Authority (JPA) released a comprehensive Request for Proposal (RFP)¹ to vendors for the design and implementation of an interoperable communications network consisting of multiple subsystems using spectrum in the 470-512 MHz frequency range. Public safety radio users share these frequencies with the UHF television broadcast industry. As a result, the land mobile radio (LMR) industry commonly refers to this spectrum as UHF “T-Band” or just T-Band. The interoperable radio communications network comprises the following subsystems:

- Digital Trunked Voice Radio Subsystem (DTVRS)
- Analog Conventional Voice Radio Subsystem (ACVRS)
- Los Angeles Regional Tactical Communications Subsystem (LARTCS)
- Narrowband Mobile Data Network (NMDN)
- Broadband Mobile Data Network (BMDN)

During the timeframe associated with LA-RICS’ evaluation of vendor proposals for these systems, the U.S. Congress passed a house resolution, number H. R. 3630², that provides for the reallocation of the 700 MHz D Block (758-763 MHz and 788-793 MHz) for the planned Nationwide Public Safety Broadband Network (NPSBN). The legislation also calls for public safety, in return for receipt of the D Block, to vacate all Public Safety use of the T-Band within nine years. Within H. R. 3630, Congress also provided for assistance to affected agencies with both funding and spectrum. At this time, not all the specifics are final as to what form this assistance might take or what rules will govern this assistance.

Because of these pending changes to the T-Band, LA-RICS tasked Jacobs Project Management Co. (Jacobs) to prepare and deliver an *LMR Feasibility Analysis for implementing the LA-RICS replacement voice radio system in the 700/800 MHz frequency band, either now or as a replacement to the current T-Band system at some time in the future, possibly within the next five to nine years.* Essentially, Jacobs was tasked to look at two options for LA-RICS:

¹ RFP # LA-RICS 004

²H.R. 3630: Middle Class Tax Relief and Job Creation Act of 2012 Title VI: Public Safety Communications and Electromagnetic Spectrum Auctions

1. Continue T-Band deployment understanding that migration to another frequency band(s) will be required at some point in the future, possibly during the next five to nine years, and
2. Migrate now to a 700/800 MHz network or hybrid of networks

The underlying consideration for either option is the viability of deploying a 700/800 MHz network either now or at some future period. It is important to note that this feasibility study considers only the DTVRS, ACVRS, and NMDN subsystems. The remaining subsystems use specific frequencies or frequency ranges not impacted by the aforementioned legislative action.

As part of the analysis, LA-RICS directed Jacobs to provide a T-Band investment recovery analysis based on the notion that LA-RICS might have the option to move forward with a T-Band implementation now, and then migrate to a 700/800 MHz network at some future day. Considerations center on what, if any, portion of the work done and investments made implementing the T-Band network would be reusable in the 700/800 MHz network and what additional investment recovery (costs and breakage) would result.

In order to meet the needs of the task, Jacobs approached its research by defining three conceptual scenarios and conducting analysis based on each scenario:

1. Implementation of a compliant T-Band system as defined in the November 2011, RFP.

By conducting this analysis, Jacobs was able to provide a baseline for establishing a breakage analysis should LA-RICS implement T-Band now and potentially migrate to a 700/800 MHz system at some point in the future.

2. Implementation of a RFP-compliant 700/800 MHz system as defined in the November 2011, RFP.

This conceptual scenario provides analysis to determine whether or not LA-RICS can migrate now to a 700/800 MHz system and by doing so, what additional investment recovery would result.

3. Implementation of a compliant 700/800 MHz **alternative option** system using a slightly different approach to meeting the needs of the NMDN.

This conceptual scenario provides analysis to answer two concerns; Can LA-RICS migrate to a 700/800 MHz network now or at some point in the future,

using an approach that is slightly different than stated in the RFP and what is the breakage for a future migration to this system?

The overall methodology employed for conducting this analysis required access and research into several sources of data; LA-RICS November, 2011, RFP, Region Five 700 MHz and 800 MHz spectrum allocation plans, FCC database, prior studies, and meetings with the LA-RICS internal technical staff. In addition, Jacobs conducted overall spectrum analysis, coverage analysis, capacity analysis, and pricing analysis. All pricing analyses were developed with vendor-neutral pricing and all costs were computed using current dollar values, with values with a margin of error equal to plus or minus 20% of the total estimated cost.

Scenario #1 - Implementation of a Compliant T-Band System

In this analysis, Jacobs investigated the estimated costs of implementing a compliant T-Band system as defined in the November 2011, RFP. Utilizing the RFP as a baseline, Jacobs conducted analysis to determine site count, capacity, coverage, spectrum, channel count, microwave, and site development costs. As previously noted, vendor-neutral pricing was utilized to determine cost figures.

Jacobs' analysis resulted in a total estimated cost of implementing the UHF T-Band system implementation to be \$208M. The findings of the estimated cost for employing a RFP compliant T-Band system are broken down as follows:

- Fixed Radio Equipment and Consoles - \$120M
- Site Infrastructure - \$25M
- Microwave - \$15M
- Integration - \$48M

A more detailed analysis is contained within the body of this report. Although not a factor in determining the cost analysis of implementing a compliant T-Band system, it should be noted that the implementation of the T-Band system has been based on the identification of up to 661 narrowband (12.5 kHz) UHF T-Band channels that have been identified as potentially available to LA-RICS for use in the T-Band spectrum using Project P25 Phase 1 technology.

Scenario #2 - Implementation of a Compliant 700/800 MHz System

In this analysis, Jacobs investigated the feasibility of immediately implementing a 700/800 MHz P25 Phase 2 system in place of the current plan to implement a T-Band System. This analysis addresses the following key questions:

1. Does LA-RICS have sufficient 700/800 MHz spectrum available to construct a system to meet the coverage and capacity requirements as outlined in the November 2011, RFP?
2. Can a 700/800 MHz implementation meet the LA-RICS coverage requirements as defined in the LA-RICS RFP using only the potential sites identified in Exhibits 4 and 5 of the November 2011, RFP?
3. What is the rough order of magnitude (ROM) cost if LA-RICS implements a 700/800 MHz LMR system without changing the performance requirements of the November 2011, RFP?

It should be noted that any consideration for implementation of a 700/800 MHz LMR system will require agencies currently operating on spectrum other than 700/800 MHz to purchase new subscriber equipment. However, agencies currently operating on a 700/800 MHz system **or** agencies utilizing multi-band subscriber equipment that is capable of operating on the 700/800 MHz system may not have to purchase new subscriber equipment.

Cost for new subscriber units for use on a 700/800 MHz system have been estimated at \$275M based on vendor neutral pricing. A more detailed analysis of the cost model is provided in the body of this report.

Jacobs used the key requirements and assumptions provided in the November 2011, RFP as the foundation for this analysis. Where Jacobs deemed the information available for the analyses was insufficient, reasonable assumptions were identified and incorporated. Assumptions were based on sound LMR engineering, best practices, and as recommended in the current versions of the Telecommunications Industry Association (TIA) Technical Service Bulletin (TSB)-88. The assumptions for this analysis included:

- **P25 Phase 2 is required. (Due to required frequencies, this scenario cannot be achieved in the Phase 1 configuration and would require build-out of the 700/800 MHz network in Phase 2.)**
- Data sources utilized for the analysis were accurate.

- ACVRS will continue to reside on 800 MHz spectrum.
- NMDN will operate on 25 kHz channels.
- Low viability channels were excluded from the analysis.
- Interference analysis was not included.
- Secondary responders would share the LMR system.
- No state spectrum was utilized in the analysis.

Compliant 700/800 MHz System Conclusion

The results of Jacobs' spectrum analysis identified up to 286 narrowband channels (i.e., 12.5 kHz channels) as potentially available to LA-RICS for use in the 700/800 MHz spectrum using APCO³ Project 25 Phase 2 technology that provides two operational talk paths in each 12.5 kHz RF channel. The analysis also showed that 369 narrowband channels are required to comply with the RFP performance requirements for the DTVRS, ACVRS, and NMDN subsystems.

Spectrum Analysis Summary for RFP-Compliant 700/800 MHz System

• Channels needed for required DTVRS	156
• Additional channels needed for projected growth	9
• Channels required for ACVRS	64
• Channels required for NMDN	140
• Total 12.5 kHz channels needed Including growth	369
• Narrowband channels Potentially Available	286

The results of this analysis revealed that:

- 1) There is not enough potential 700/800 MHz spectrum available to LA-RICS to implement an RFP-compliant 700/800 MHz system utilizing P25 Phase 1 technology, and
- 2) Should LA-RICS choose to implement the system utilizing P25 Phase 2 technology, there are still not enough potential 700/800 MHz channels available

³ Association of Public Safety Communications Officials

to immediately implement an RFP-compliant 700/800 MHz system. This is due to the RFP requirement to include narrowband mobile data.

Scenario #3 - Implementation of a Compliant 700/800 MHz Alternative Option System

This analysis allowed Jacobs to leverage the methodology utilized during the preceding scenario as to the implementation of the compliant 700/800 MHz system. As this conceptual scenario required identifying an alternative option, the methodology included developing an alternative approach to reducing spectrum requirements.

Utilizing the previously identified methodology, assumptions, and parameters provided in the RFP, the following additional assumptions were employed in the analysis:

- Sufficient channels would have to be available from the potential spectrum pool of available 700/800 MHz frequencies and that LA-RICS would have a governance model in place.
- LA-RICS would apply for and receive FCC licenses to operate on the potential 700/800 MHz channels that are not now licensed to LA-RICS JPA members.
- All current data operations would move to LTE to meet the narrowband mobile data requirements defined in the RFP. LA-RICS may choose a more economical solution in the mountainous fringe areas.

Jacobs' coverage prediction analysis indicates that when using 700/800 MHz spectrum, LA-RICS dense urban and bounded area coverage requirements are achievable with an estimated 85 sites pending the outcome of a detailed design.

Using only the potential sites listed in Exhibits 4 & 5 of the RFP, the coverage requirement of 95% of all roads at 95% area reliability for the Angeles National Forest (ANF) roads is not achievable using 700/800 MHz spectrum and the preferred sites. Using the sites provided, Jacobs' coverage prediction covers approximately 60% of the defined area at 95% reliability. There are a number of alternatives to provide the desired coverage in the ANF that LA-RICS can explore during the detailed design effort.

Compliant 700/800 MHz Alternative Option System Conclusion

Jacobs concludes that there is enough evidence to pursue further study for the consideration of a 700/800 MHz system using P25 Phase 2 technology and meet the

requirements of the RFP, provided the assumptions used in the RFP and this analysis are thoroughly validated.

Spectrum Analysis Summary for Compliant 700/800 MHz Alternative Option

• DTVRS narrowband channel requirements	156
• Narrowband channels required for projected growth	9
• ACVRS narrowband channel requirements	64
• NMDN narrowband channel requirements	0
• Total narrowband channels required including growth	229
• Narrowband channels potentially available	286

Jacobs estimates the cost of implementing the fixed portion of the alternative 700/800 MHz system to be \$265M. **The cost for replacing existing T-Band subscriber equipment with 700/800 MHz dual-band user equipment is approximately \$275M.**

Costs estimates are broken down as follows:

• Fixed Radio Equipment and consoles	\$149M
• Site Infrastructure	\$34M
• Microwave	\$21M
• Integration	\$61M
• 700/800 MHz subscriber equipment	\$275M

Breakage Analysis

As part of the tasking, LA-RICS directed Jacobs to conduct an analysis that assumes an initial T-Band implementation with a migration to 700/800 MHz at some future time. In this analysis, Jacobs investigated the feasibility of implementing a 700/800 MHz P25 Phase 2 system in place of the current plan to implement a T-Band System. This analysis was based on the following assumptions:

- A 700/800 MHz system will be implemented prior to the T-Band vacate deadline
- Analysis excludes costs for equipment replaced at normal end of life
- Integration costs will have to be repeated

Jacobs created two notional models to establish breakage; UHF T-Band and 700/800 MHz models for the DTVRS, ACVRS, and the NMDN configured to meet the requirements of the RFP.

Summary of Findings

This analysis was requested to examine the feasibility for implementing the LA-RICS system using 700/800 MHz frequencies either now or as a replacement to the current T-Band system at some time in the future, estimated to be five to nine years. Although Jacobs discusses the findings of this analysis with detail within this report, the following summary of findings provides a high-level snapshot analysis:

Spectrum Findings

Jacobs' findings demonstrate that there are not enough available 700/800 MHz channels available to implement the LA-RICS system in accordance with the requirements of the November 2011 RFP utilizing either P25 Phase 1 or Phase 2 technology. If LA-RICS modifies the narrowband mobile data network so that the LTE network serves the requirements and implements with Phase 2 technology, enough channels may become available to make it feasible to consider building the LA-RICS system using 700/800 MHz, provided LA-RICS can acquire the potentially available channels.

The viability of deploying a modified 700/800 MHz network is contingent on all member agencies contributing existing frequencies to the spectrum pool.

Coverage Findings

The 700/800 MHz DTVRS can meet coverage requirements, including the requirement defined as Bounded Area Coverage also referred to as Dense Urban Portable Coverage Requirements, with 85 sites. It can also meet the track coverage requirement. Meeting the coverage requirements in the Angeles National Forest will require either additional sites or some other form of coverage engineered in the future.

Capacity Findings

The capacity requirements in the RFP for the subsystems in this analysis exceed what is achievable using 286 channels. Using LTE for narrowband mobile data could free up enough channels to make it feasible to use 700/800 MHz spectrum to build LA-RICS and meet the capacity requirements stated in the RFP.

Microwave Findings

While optical fiber is available at many of the sites for interconnect and backhaul, Jacobs determined that it is probably feasible to use microwave for all sites proposed for the subsystems discussed in this analysis. The potential to use optical fiber is an item typically addressed as part of a detailed design effort.

DRAFT



LA-RICS
LMR FEASIBILITY STUDY

© Copyright 2012, LA-RICS Authority. All Rights Reserved

1

TASK ASSIGNED

- ✘ Review the feasibility of two options for LA-RICS regarding the T-Band deployment
 - + Continue the build out of the T-Band system as defined in the November 2011 RFP with a later migration to a 700/800 MHz system
 - + Immediately migrate to a 700/800 MHz system



© Copyright 2012, LA-RICS Authority. All Rights Reserved

2

OVERALL METHODOLOGY

- ✘ Sources of data
 - + November 2011 RFP
 - + Region 5 700/800 plan
 - + FCC database
 - + Prior studies
 - + Internal technical staff



© Copyright 2012, LA-RICS Authority. All Rights Reserved.

3

OVERALL METHODOLOGY

- ✘ Analyze spectrum, coverage, capacity and pricing
 - + All costs computed using current dollars
- ✘ Define three conceptual scenarios
 - + T-Band
 - + 700/800 RFP compliant
 - + 700/800 alternate option



© Copyright 2012, LA-RICS Authority. All Rights Reserved.

4

T-BAND SCENARIO

- ✘ Used the RFP information to determine:
 - + Site count/site development cost
 - + Capacity
 - + Coverage
 - + Spectrum/Channel count
 - + Microwave
- ✘ Developed vendor neutral pricing for use in breakage analysis



© Copyright 2012, LA-RICS Authority. All Rights Reserved.

5

RFP LMR SYSTEM REQUIREMENTS

- ✘ 5 Subsystems
 - + Digital Trunked Voice Radio Subsystem (DTVRS)
 - ✘ Coverage - 95/95 and 97/95
 - ✘ Capacity - 50,000 users plus 50% growth
 - + Analog Conventional Voice Radio Subsystem (ACVRS)
 - ✘ 64 channels
 - + Narrowband Mobile Data Network (NMDN)
 - ✘ 19.2 kbps throughput
 - + Los Angeles Regional Tactical Communications Subsystem (LARTCS)
 - + Broadband Mobile Data Network (BMDN)



© Copyright 2012, LA-RICS Authority. All Rights Reserved.

6

T-BAND SCENARIO

12.5 kHz Channel Analysis

	T-Band RFP Compliant (62 Sites)
Voice System (DTVRS)	260
Analog Overlay (ACVRS)	64
Data Overlay (NMDN)	140
Total Requirements	464
Potential Spectrum Available	661



© Copyright 2012, LA-RICS Authority. All Rights Reserved.

7

T-BAND CONCEPTUAL SCENARIO FINDINGS

Estimated Costs UHF T-Band	
Fixed radio equipment	\$120M
Site infrastructure	\$25M
Microwave	\$15M
Integration	\$48M
Total	\$208M
Accuracy is +/- 20%	
Estimated costs based on RFP requirements - No vendor proposal information utilized	



© Copyright 2012, LA-RICS Authority. All Rights Reserved.

8

H.R. 3630 REQUIRES GIVEBACK OF T-BAND

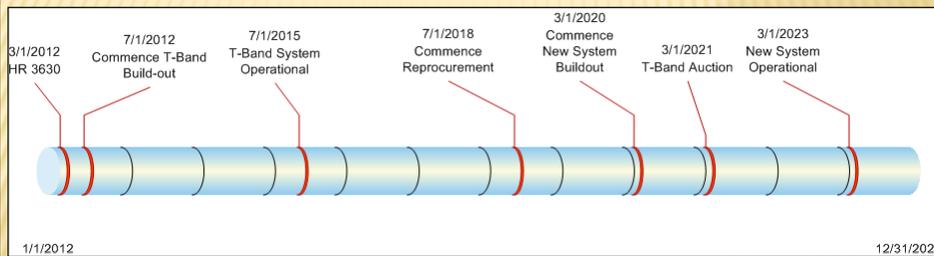
- ✘ Vacate T-Band spectrum not later than 9 years after enactment (~2021); Auction of spectrum begins
- ✘ Users then have 2 years after auction completes to vacate the spectrum (~2023)
- ✘ Funds from auction “shall be available” to cover costs of relocation from T-Band spectrum to yet-to-be identified spectrum
- ✘ This issue affects 11 of the largest metropolitan areas in the United States
- ✘ Unknown potential to extend giveback deadline



© Copyright 2012, LA-RICS Authority. All Rights Reserved.

9

NOTIONAL TIMELINE



© Copyright 2012, LA-RICS Authority. All Rights Reserved

10

700/800 RFP COMPLIANT SCENARIO

✘ Methodology

- + Searched databases for appropriate spectrum
- + Categorized spectrum in three viability levels
- + Ran coverage studies to determine site requirement
- + Ran capacity studies to determine channels required
- + Determined equipment requirements for pricing



© Copyright 2012, LA-RICS Authority. All Rights Reserved.

11

700/800 RFP COMPLIANT SCENARIO

✘ Assumptions

- + P25 Phase 2 is required
- + Data sources are accurate
- + Analog overlay – 800 MHz only
- + Data overlay – 25 kHz channels
- + Low viability channels were excluded
- + Interference analysis not included
- + Secondary Responders share LMR system
- + No State spectrum was used



© Copyright 2012, LA-RICS Authority. All Rights Reserved.

12

700/800 RFP COMPLIANT SCENARIO

12.5 kHz Analysis

	700/800 Compliant (85 sites)
Voice System (DTVRS)	165
Analog Overlay (ACVRS)	64
Data Overlay (NMDN)	140
Total Requirements	369
Potential Spectrum Available	286

Conclusion: Scenario is not viable



© Copyright 2012, LA-RICS Authority. All Rights Reserved.

13

700/800 ALTERNATIVE OPTION

- ✘ Methodology
 - + Developed alternative approach to reduce spectrum requirements
 - + Phase 2 design
 - + Used analysis from prior 700/800 RFP compliant scenario
- ✘ Assumptions
 - + Same assumptions as previous scenario
 - + Data overlay – moved to LTE
 - + Sufficient channels would have to be available from potential spectrum pool



© Copyright 2012, LA-RICS Authority. All Rights Reserved.

14

700/800 ALTERNATIVE OPTIONS

12.5 kHz Channel Analysis

	700/800 Alternative (85 sites)
Voice System (DTVRS)	165
Analog Overlay (ACVRS)	64
Data Overlay (NMDN)	0 (LTE) Some NMDN could be used for ANF
Total Requirements	229
Potential Spectrum Available	286

Sufficient channels would have to be available from the potential spectrum pool
Must be implemented in Phase 2



© Copyright 2012, LA-RICS Authority. All Rights Reserved.

15

700/800 ALTERNATIVE OPTION FINDINGS

Estimated Costs Alternative Option		
Fixed radio equipment		\$149M
Site infrastructure		\$34M
Microwave		\$21M
Integration		\$61M
	Subtotal	\$265M
Subscriber equipment		\$275M
	Total	\$540M

Accuracy is +/- 20%

Estimated costs based on RFP requirements - No vendor proposal information utilized



© Copyright 2012, LA-RICS Authority. All Rights Reserved.

16

SPECTRUM SUMMARY

12.5 kHz Channel Analysis

	T-Band Compliant (62 sites)	700/800 Compliant (85 sites)	700/800 Alternative (85 sites)
Voice System (DTVRS)	260 (260 TP)	165 (330 TP)	165 (330 TP)
Analog Overlay (ACVRS)	64	64	64
Data Overlay (NMDN)	140	140	0 (LTE)
Total Requirements	464	369	229
Potential Spectrum Available	661	286	286



© Copyright 2012, LA-RICS Authority. All Rights Reserved.

17

ESTIMATED COST SUMMARY

	T-Band Compliant	700/800 Alternative Option
Fixed radio equipment and consoles	\$120M	\$149M
Site infrastructure	\$25M	\$34M
Microwave	\$15M	\$21M
Integration	\$48M	\$61M
Subtotal	\$208M	\$265M
Subscriber equipment		\$275M
Total	\$208M	\$540M

Accuracy is +/- 20%

Estimated costs based on RFP requirements – No vendor proposal information utilized



© Copyright 2012, LA-RICS Authority. All Rights Reserved.

18

BREAKAGE

- ✘ A 700/800 system will be implemented prior to the T-Band vacate deadline
- ✘ Excludes costs for equipment replaced at normal end of life
- ✘ Integration costs will have to be repeated



© Copyright 2012, LA-RICS Authority. All Rights Reserved

19

BREAKAGE SUMMARY

	T-Band Compliant	700/800 Alternative Option
Fixed radio equipment	\$120M	\$149M
Site infrastructure	\$25M	\$34M
Microwave	\$15M	\$21M
Integration	\$48M	\$61M
Subtotal	\$208M	\$265M
Subscriber equipment		\$275M
Total	\$208M	\$540M

Accuracy is +/- 20%

Estimated costs based on RFP requirements – No vendor proposal information utilized



© Copyright 2012, LA-RICS Authority. All Rights Reserved.

20

BREAKAGE FINDINGS

Estimated Residual Value, End of Year (Ten-year life Straight-line Depreciation)						
	Initial Cost	Year 6	Year 7	Year 8	Year 9	Year 10
Fixed Radio Equipment	\$120M	\$48M	\$36M	\$24M	\$12M	0
← Expected 700/800 implementation timeframe →						

(Some aspects of Systems Integration costs of \$48M may be considered depreciable based on LA-RICS accounting rules).



© Copyright 2012, LA-RICS Authority. All Rights Reserved.

21



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
OFFICE OF ACQUISITION AND GRANTS

MAY 11 2012

Patrick Mallon, Executive Director
Los Angeles Regional Interoperable Communications System Authority
2525 Corporate Pl.
Monterey Park, CA 91754-7672

Re: Broadband Technology Opportunities Program (BTOP)
Los Angeles Regional Interoperable Communications System Authority
(Grant Award # NT10BIX5570158)
Notice of Partial Suspension of Long Term Evolution (LTE) activities

Dear Mr. Mallon:

Upon acceptance of a grant from the U.S. Department of Commerce (Grant Award No. NT10BIX5570158), your organization agreed to comply with requirements specified in the terms and conditions of the Broadband Technology Opportunities Program (BTOP) award. Although we understand that you have made every effort to comply with the terms and conditions of your award, Congress has enacted subsequent legislation that will prevent you from remaining in compliance with certain terms and conditions of your award. As a result, the National Telecommunications and Information Administration (NTIA) recommended that the National Oceanic and Atmospheric Administration (NOAA) Grants Office partially suspend your project in order to address the potential effect of Title VI of the Middle Class Tax Relief and Job Creation Act of 2012 ("Act") on your award. This letter addresses the steps that you must take in the next 45 days to provide information in order to proceed with your project.

BACKGROUND:

In 2007, the FCC designated the Public Safety Spectrum Trust (PSST) as the Public Safety Broadband Licensee for the ten megahertz (MHz) of 700 MHz public safety broadband spectrum.¹ On May 11, 2010, the FCC adopted FCC 10-79, an order that permits certain state and local governmental entities to deploy public safety broadband systems using the 700 MHz spectrum licensed to PSST.²

In 2010, NTIA made the decision to award seven BTOP grants to build public safety networks that would utilize the 700 MHz public safety broadband spectrum.

¹ Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band, Order, 22 F.C.C. Rcd. 20453 (2007).

² Requests for Waiver of Various Petitioners to Allow the Establishment of 700 MHz Interoperable Public Safety Wireless Broadband Networks, Order, PS Dkt. No. 06-229, FCC 10-79 (adopted May 11, 2010), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-10-79A1.pdf.

AGENDA ITEM 2 – ATTACHMENT A

The seven BTOP public safety recipients have the legal authority to use the 700 MHz spectrum only through the waivers of FCC rules and through lease agreements executed with the PSST. Accordingly, NTIA and NOAA incorporated a special award condition (SAC) into each of the awards that requires the recipients to comply with FCC's extant requirements and all subsequent orders and public notices regarding the use of the 700 MHz public safety broadband spectrum. The SAC further provides that "[i]f any future regulatory requirement (from the FCC or other governmental entity) results in a material technical or financial change in the project, the recipient must submit a revised budget, associated documentation, and other material, as applicable, for review and approval by the Grants Office."³

On February 22, 2012, the President signed the Act, Title VI of which created the First Responder Network Authority (FirstNet), an independent authority within NTIA, and requires the FCC to reallocate and grant a license for the use of the 700 MHz D block spectrum and existing public safety broadband spectrum to FirstNet.⁴ In effect, this statutory mandate requires the FCC to transfer or rescind the current 700 MHz license for ten megahertz of spectrum from PSST and to grant a single license for 20 megahertz of 700 MHz spectrum to FirstNet.

Los Angeles Regional Interoperable Communications System Authority spectrum lease agreement with the PSST will expire in September 2012, by which time the 700 MHz license authority is likely to have been granted to FirstNet or to be in the process of being granted to FirstNet. You will need to work with FirstNet to seek to use the 700 MHz spectrum. However, when — and under what conditions — FirstNet will allow such use is currently unknown.

In summary, once the current public safety lease agreements expire in September 2012, or when PSST or the FCC takes other action, Los Angeles Regional Interoperable Communications System Authority will lose access to the 700 MHz public safety spectrum that is necessary to operate its BTOP-funded network. Moreover, the likelihood that new minimum technical standards to be developed for operation in the 700 MHz band may conflict with your existing

³ BTOP Public Safety Award, Special Award Condition, "FCC Compliance and Notification SAC":

The recipient shall comply with the requirements established in the Federal Communications Commission's (FCC) Order in PS Docket 06-229, adopted on May 11, 2010 (FCC 10-79), and all subsequent orders and public notices regarding the use of the 700 MHz public safety broadband spectrum (763-768 MHz and 793-798 MHz). If any future regulatory requirement (from the FCC or other governmental entity) results in a material technical or financial change in the project, the recipient must submit a revised budget, associated documentation, and other material, as applicable, for review and approval by the Grants Office.

⁴ Title VI, Middle Class Tax Relief and Job Creation Act of 2012, P.L. 112-96, § 6201(a):

Reallocation and Grant of License.- Notwithstanding any other provision of law, and subject to the provisions of the Act, the Commission shall reallocate and grant a license to the First Responder Network Authority for the use of the 700 MHz D block spectrum and existing public safety broadband spectrum.

network designs creates a significant risk that further BTOP expenditures for Long Term Evolution (LTE) infrastructure may result in stranded investments.⁵

REASON FOR PARTIAL SUSPENSION:

Under the Department of Commerce Uniform Administrative Requirements at 15 C.F.R. § 14.62 and 15 C.F.R. § 24.43, as a remedy for material noncompliance, the Grants Office may “[w]holly or partly suspend or terminate the current award.”⁶ Although Title VI of the Act does not immediately place Los Angeles Regional Interoperable Communications System Authority out of compliance with the terms and conditions of your award, it is clear that you will, through no fault of your own, be in material noncompliance with the terms and conditions of your grant award in being unable to comply fully with FCC rules as required by the SAC incorporated into your award.

RESULT:

The NOAA Grants Office has placed Los Angeles Regional Interoperable Communications System Authority’s Automated Standard Application for Payments (ASAP) account on agency review status. In addition, the NOAA Grants Office will partially suspend your award with respect to all LTE-related activities (including, for example, the acquisition of LTE-related equipment, such as eNodeB and the evolved packet core, and end-user devices). During this partial suspension, you will not be allowed to incur any costs for LTE-related activities.

REQUIRED RECIPIENT ACTION:

Within 45 days, Los Angeles Regional Interoperable Communications System Authority must provide NOAA and NTIA an initial detailed accounting of the scope of LTE-related and non-LTE-related activities and the associated budget with the amounts obligated and expended in each category to date.

You will have the opportunity to propose revisions to the activities and budget for the current project to reallocate funds from LTE-related items to non-LTE-related items. The BTOP staff has developed a list of “low risk” project activities that each recipient’s revised statement of work and budget can address. This list is included as Attachment 1.

To the extent that you cannot identify appropriate, non-LTE uses for some or all of your remaining grant funds, you will need to provide a statement acknowledging that the LTE portion of the project associated with those funds will be on suspension (*i.e.*, no costs will be incurred and no work will be performed) until Los Angeles Regional Interoperable Communications System Authority regains authority to utilize the 700 MHz public safety spectrum.

⁵ See *id.*, § 6203 (establishing the Public Safety Interoperability Board to recommend minimum technical standards to FirstNet); *id.*, § 6206(b)-(c) (authorizing FirstNet to issue requests for proposals using these minimum technical standards).

⁶ 15 C.F.R. §§ 24.43(a)(3). The Grants Office may impose special conditions such as payment on a reimbursement only basis where a grantee “is otherwise not responsible.” 15 C.F.R. §§ 24.12. Here, NOAA and NTIA note that your organization is unable to be “responsible” for a reason completely outside your control.

Please provide all necessary information by **Monday, June 25, 2012**. Please contact Mr. Lance Johnson at 202-482-5032 or ljohnson@ntia.doc.gov if you have any questions or require any additional clarification. Failure to respond to this letter in a timely or comprehensive manner may result in additional enforcement action being taken. Thank you for your cooperation.

Sincerely,

A handwritten signature in blue ink that reads "Arlene Simpson-Porter". The signature is written in a cursive style with a large initial 'A'.

Arlene Simpson-Porter, Director
Grants Management Division

Cc: Anthony G. Wilhelm, Ph.D.
Laura Pettus
Lance Johnson
Aimee Meacham



UNITED STATES DEPARTMENT OF COMMERCE
The Assistant Secretary for Communications
and Information
Washington, D.C. 20230

Mr. Patrick Mallon
Los Angeles Regional Interoperable
Communications System Authority
2525 Corporate Place
Monterey Park, CA 91754-7672

MAY 11 2012

Re: Broadband Technology Opportunities Program (BTOP)
LA RICS (Grant Award NT10BIX5570158)

Dear Mr. Mallon:

Thank you for your hard work to implement your grant to deploy next-generation public safety broadband facilities in the Los Angeles area. Being on the cutting edge of a new network is both exhilarating and challenging, and your dedication to serving your community is clear from our conversations and the work you have been doing on your project. However, as we discussed a few weeks ago, the Middle Class Tax Relief and Job Creation Act of 2012 (the Act) has radically altered the assumptions on which we awarded your grant in 2010. This letter is to inform you that I have recommended and the Grants Office has agreed to partially suspend the 700 MHz BTOP projects so that we can work individually with you to determine the best course forward for your grant that ensures, as best we can, that the equipment and facilities bought with taxpayer funds will be incorporated into the new national public safety broadband network.

Congress's action in February to establish a nationwide public safety broadband network based on a single, nationwide architecture is an important step to realizing our shared goal of an interoperable public safety broadband network. The Act provides additional spectrum, funding, and a strong governance structure to advance this much-needed effort. Ultimately, all public safety responders, regardless of their location, will be able to communicate using advanced applications that will improve public safety's ability to stay safe and do its job well.

Congress created the First Responder Network Authority (FirstNet) within NTIA to oversee the deployment, maintenance, and operation of the new network and placed a heavy responsibility on FirstNet to ensure the network's success.¹ Having a strong centralized authority will avoid the balkanization that has plagued earlier efforts at interoperable public safety communications, will lower costs because of economies of scale, and will maintain an undivided focus on interoperability and stronger security. One of FirstNet's statutory responsibilities is to consult with the future public safety customers of the nationwide network—states, localities, territories, and tribes—and translate their requirements and needs into the design and specifications for the

¹Middle Class Tax Relief and Job Creation Act of 2012 ("the Act"), Pub. L. No. 112-96, 126 Stat. 156, §6206 (2012) (delineating specific powers and instructing FirstNet to take other actions necessary, appropriate, or advisable to accomplish the overall purpose of the legislation).

AGENDA ITEM 2 – ATTACHMENT B

national network.² FirstNet must then craft the single network architecture and develop requests for proposals for the construction and operation of the network.³

With the good news of Congress's action comes a basic fact – the new law dramatically changes the assumptions on which we awarded the public safety grants in 2010. These radically different circumstances, and the Recovery Act's mandate to prudently manage taxpayer funds, require us to reassess how to proceed with the projects while FirstNet organizes itself to design and build the single interoperable national network envisioned by Congress.⁴ As we conduct this reassessment, we are guided by the following considerations:

- We want to keep the grant money in the communities that received the grants; and
- We want to ensure that the grant dollars are spent on facilities and equipment that will be incorporated into FirstNet's single nationwide public safety network.

We are exploring fiscally prudent ways to move forward, which include obtaining an extension of the grant deadlines from the Office of Management and Budget (OMB). But we are also cognizant of the fact that, given the ambitious deadlines we have imposed on grantees, some have taken delivery of equipment and have started installation. Moreover, I acknowledge that proceeding with one or more projects, if practicable, could yield valuable information for FirstNet.

Accordingly, I asked each of you in April to pause with respect to ordering, taking delivery, or installing LTE equipment. Nonetheless, in the absence of a formal suspension order, I understand that some grantees feel pressured to continue with the purchase and installation of LTE equipment. Doing so when FirstNet has not yet ensured how to integrate these projects into the nationwide network puts at risk the millions of taxpayer dollars that are funding your project – a risk that neither NTIA nor your communities should be willing to take at this time. Moreover, purchase and installation of this equipment before the FirstNet Board of Directors has even met could add costs to the FirstNet network and negatively impact the ultimate business case and deployment of the national network in ways that could make the network economically unattractive to its public safety customers.

We cannot predict the FirstNet Board of Directors' upcoming decisions with regard to network architecture, security, and other considerations, but we need to make sure that FirstNet has every possible chance to succeed in the tasks before it. We must move forward in a way that appropriately balances near-term public safety needs with prudent management of limited resources and the longer-term goal of a truly nationwide and interoperable broadband network for public safety.

² *Id.* at (c)(2).

³ *Id.* at (b).

⁴ *See* American Recovery and Reinvestment Act of 2009, Public Law 111–5, 123 Stat. 115, §3(b) (2009) (stating the general principle that Recovery Act funds should be used to advance statutory purposes consistent with prudent management).

In the coming weeks, we will discuss your project's progress to date and scope out specific LTE-related and non-LTE-related activities contained in your project. We will also provide you the opportunity to propose revisions to your project to reallocate funds from LTE-related items to non-LTE-related items and discuss potential paths forward for the LTE portion of your project (e.g., if LTE vendors provide indemnification against the risk their equipment will not be used by FirstNet) and the larger lessons learned that may be applied to FirstNet.

We recognize your hard work and dedication to meet the strict timelines of the Recovery Act. Our ultimate goal is to enable all of public safety, nationwide, to benefit from the public safety broadband network. We will do all we can to ensure that you remain on the forefront of public safety broadband efforts, that the grant funds for which you have been working so hard stay in your communities, and that FirstNet moves forward as expeditiously as possible. We ask for your help in meeting these goals.

Sincerely,

A handwritten signature in blue ink that reads "Lawrence E. Strickling". The signature is written in a cursive style with a large, looping "S" at the end.

Lawrence E. Strickling



FREQUENTLY ASKED QUESTIONS (FAQ)

Broadband Technology Opportunities Program (BTOP) 700 MHz Public Safety Projects: Conforming Existing State and Local BTOP Projects with the Nationwide Public Safety Network Envisioned by the Middle Class Tax Relief and Job Creation Act

Summary

Through its Broadband Technology Opportunities Program (BTOP), the National Telecommunications and Information Administration (NTIA) is overseeing approximately 120 investments to expand broadband infrastructure in communities nationwide. Seven of these grants, awarded in 2010, are for projects to deploy public safety wireless broadband networks. NTIA awarded these grants after the Federal Communications Commission (FCC) permitted the jurisdictions, on a conditional basis, to use 700 MHz spectrum to deploy public safety broadband systems.

In February, Congress enacted [The Middle Class Tax Relief and Job Creation Act of 2012](#) (the Act), containing landmark provisions to create a much-needed nationwide interoperable public safety broadband network. The Act created the First Responder Network Authority (FirstNet), charging it with taking "all actions necessary to ensure the building, deployment and operation" of the nationwide network in consultation with Federal, State, tribal, and local public safety entities, and other key stakeholders. The network is to be based on a single, national network architecture. FirstNet will hold the 700 MHz spectrum license for the network.

Due to this significant development, NTIA is taking action to partially suspend the seven BTOP-funded 700 MHz public safety projects to ensure that they proceed in a manner that supports development of the nationwide, interoperable network that will help police, firefighters, emergency medical service professionals and other public safety officials stay safe and do their jobs more effectively.

FAQs

How much BTOP money was awarded to 700 MHz public safety grants?

NTIA awarded a total of \$382.5 million to the seven public safety projects. As of May 1, 2012, approximately \$341 million of this amount remains unspent.

Who are the recipients and where are the projects located?

- Adams County Communications Center, Inc. (Colorado)
- City of Charlotte (North Carolina)
- Executive Office of the State of Mississippi (Mississippi)
- Los Angeles Regional Interoperable Communications System Authority (California)
- Motorola Solutions, Inc. (San Francisco Bay Area, California)
- New Jersey Department of Treasury (Northern New Jersey)
- New Mexico Department of Information Technology (Albuquerque and Santa Fe, New Mexico)

What was the purpose of these public safety broadband projects? What has changed since these initial awards?

The seven awards were for pilot projects representing different models of how public safety broadband projects might be designed, owned, operated, and maintained. Each jurisdiction -- whether it was a locality, joint powers of authority (JPA), or State -- proposed different project models. Some projects used existing public safety infrastructure, some used commercial infrastructure, and some proposed a shared private/public infrastructure. These funded projects also differed in their approaches to the evolved packet core (EPC): some grant recipients would own the EPC, while others would use a "hosted" EPC solution. Finally, some projects are more traditional in that the awardees would





develop a request for proposal and own, operate, and maintain their Long Term Evolution (LTE) systems, while other awardees would use private/public partnerships to deploy their LTE public safety facilities.

In the two years since these grant awards, however, the landscape for public safety broadband has changed. Under BTOP, these public safety projects were developing seven distinct networks. Although each jurisdiction agreed as a condition of its FCC waiver and BTOP award to interoperate with one another, these projects were approved when the concept of public safety broadband was a “network-of-networks” model. The new law adopted a very different vision for the network’s architecture and governance. In addition, as a condition of receiving a grant, BTOP awardees were required to obtain a license from the FCC to use the 700 MHz spectrum. The current spectrum leases expire in September 2012. The Act requires the FCC to reallocate and grant a single license to FirstNet for the use of the 700 MHz D block spectrum and existing public safety broadband spectrum. The decision to partially suspend these grants is to ensure that any further activities will be consistent with the mandates of the new law. NTIA’s goal is to ensure that Congress’s vision of a nationwide interoperable public safety broadband network can be realized.

What is wrong with moving forward?

While the Act allocates \$7 billion for the nationwide network, additional funding is likely to be needed to deploy and operate the network. However, if BTOP funds continue to be invested without pausing to reassess project activities in light of the Act, then spending may result in stranded investments (that is, facilities that cannot be integrated into the nationwide network because they are incompatible with the new network architecture). Indeed, the resulting facilities may require the diversion of even more funding to integrate them into the nationwide architecture. Given these uncertainties and the need for public funds to be prudently managed, the best approach is for NTIA to limit the activities of these awards and to work with the grantees to help them avoid potential activities that may lead to added costs in the future or stranded investments.

Could any of the current BTOP projects be used in the nationwide public safety broadband network?

It very well may be possible for the BTOP-funded projects to be integrated into the nationwide public safety broadband network. Until the nationwide design and architecture for this network are developed under the framework and process established by the Act, however, no one can be certain that further spending on the projects as originally proposed and approved will be sound investments. Thus, the only prudent approach for NTIA and the grantees is to partially suspend the awards.

Why are there interoperability concerns with the BTOP-funded projects? All vendors indicate that their equipment is 3GPP compliant and interoperable.

It is impossible to provide adequate assurances on public safety equipment interoperability or compliance at this point in the implementation of the new Act. For example, while the Act calls for the FCC, via its Interoperability Board, to recommend “minimum technical requirements” for interoperability, this work has not yet been finalized, nor have the Act’s other extensive collaboration and consultation steps that are required to contribute to the development of the network’s architecture and design.

Furthermore, current vendor self-certification of compliance with 3GPP standards does not ensure interoperability with equipment from other manufacturers. Each component of the network will need to go through suitable conformance and interoperability testing to ensure that it conforms directly to the standard and is interoperating with all other components as designed by FirstNet. The more vendors that the nationwide network has for each of the component parts, the more interfaces will exist that will require conformance and interoperability testing, which drives up complexity and the cost of the network. Further, without a user device testing process established for public safety, BTOP recipients could purchase user devices that may not operate on the nationwide network or with any chosen commercial roaming partner.





Finally, the ongoing maintenance and support of multiple and different networks will be complex and costly. 3GPP standards are left to interpretation, which means that the same requirement can be developed differently by different vendors. In addition, 3GPP has several releases and sub-releases, which means that each company or vendor has its own version of software and hardware. At any given time, companies are at various release versions, which can lead to problems with how features are supported across different vendors. All of these technical factors need to be considered in light of the new Act with respect to the BTOP-funded projects.

Is NTIA discounting the value of these early public safety broadband deployments?

No. NTIA recognizes that much hard work has gone into procurement and deployment of the BTOP public safety projects, and that these projects were conceived as “test beds” for the early deployment of broadband facilities. Already, many lessons have been learned that will benefit FirstNet. At the same time, each of these jurisdictions accepted its FCC waiver and its BTOP funds subject to conditions, including the requirement that its network be interoperable and its operations comply with any future regulatory changes. Partially suspending these projects allows NTIA and the BTOP awardees to take steps to ensure any further investments of these federal funds are in alignment with the changes brought about by the Act.

Why is NTIA only suspending a portion of these grants? Given all the ways in which the new law changed the public safety broadband landscape, what aspects of these projects could be allowed to continue?

Recipients will be asked to submit a revised statement of work and budget to determine which non-LTE aspects of their project may continue. Aspects of each project that are not contingent on the use of the 700 MHz spectrum may be allowed to continue. Recipients will be asked to work with their Federal Program Officer to determine how to proceed.

How long will NTIA partially suspend these projects?

NTIA is moving forward on a limited basis with these grant awards to ensure these projects will be compatible with the nationwide interoperable public safety broadband network. Specifically, the projects will be able to move forward with broadband activities related to non-LTE expenditures. Recipients will have the opportunity to re-scope their projects and will submit a revised budget in Grants Online within 45 days, clearly indicating changes related to non-LTE activities.

Won't this action cause these jurisdictions' public safety users or other local and State officials to lose momentum?

Many BTOP-funded activities in these jurisdictions can continue without delay consistent with the goals and provisions of the new Act. NTIA is committed to working individually with its grantees to help ensure that any ongoing operations do not put public dollars at unnecessary risk and are consistent with the deployment of a nationwide public safety broadband network, based on single, nationwide network architecture, and other requirements established by the Act. NTIA's focus will be to work with its grantees on the development of a network that is usable and interoperable for all first responders on a nationwide basis.

What if grantees have invoices from vendors related to LTE activities that are not yet paid?

Grant recipients should work with their Federal Program Officer and Grants Office on their specific situation to determine the best path forward.

BTOP grantees are quickly approaching their project completion deadlines. Will NTIA extend those deadlines?

NTIA is seeking an extension of the 700 MHz public safety grant deadlines from the Office of Management and Budget (OMB), because of the unique circumstances related to these seven public safety grant projects.





FACT SHEET
Broadband Technology Opportunities Program
Public Safety – 700 MHz projects
"Low Risk" Project List

Purpose:

Develop a list of potential "low risk" projects for BTOP public safety 700 Megahertz (MHz) projects that support and prepare for the nationwide public safety broadband network.

Background:

In February 2012, Congress enacted The Middle Class Tax Relief and Job Creation Act of 2012, which directed the creation of a nationwide interoperable public safety broadband network (PSBN). NTIA wants to be prudent with any investments that are made before FirstNet, the entity charged by Congress with overseeing the PSBN, develops its blueprint for the nationwide network's architecture. Specifically, NTIA wants to avoid investments that would need to be replaced if they are incompatible with the nationwide network. NTIA has created a list of "low risk" project investments for the public safety 700 MHz waiver recipients that have BTOP funding. This list outlines investments that are likely to be at a lower risk of being incompatible with the ultimate nationwide network.

Categories	Potential "Low Risk" Activities
Backhaul	<ul style="list-style-type: none"> ▪ Documenting and/or upgrading connectivity capabilities for public safety broadband ▪ Documenting existing wireline/wireless backhaul resources to determine what is already in place and not used/underused (e.g., existing Public Safety Answering Points' fiber capacity) ▪ Analyzing existing Internet Protocol (IP) backbone to determine gaps in supporting high bandwidth PSBN ▪ Planning and modeling network capacity to ensure backhaul links and aggregation points are appropriately provisioned ▪ Upgrading existing backbone upgrades to support advanced capabilities [i.e., Multiprotocol Label Switching (MPLS)] ▪ Installing fiber-optic connections to support high-bandwidth data capabilities ▪ Installing sufficient microwave connectivity to support high-bandwidth data capabilities
Site Upgrade	<ul style="list-style-type: none"> ▪ Documenting and/or upgrading existing site capabilities ▪ Installing/expanding battery backup systems and/or generators to support additional broadband hardware ▪ Expanding or enhancing existing shelters for broadband equipment ▪ Conducting tower analyses to determine feasibility of supporting 700 MHz antennas for broadband ▪ Documenting and analyzing site power/grounding to determine upgrades needed to support additional eNodeB and routing hardware
Ancillary Equipment	<ul style="list-style-type: none"> ▪ Acquiring Long Term Evolution (LTE) test equipment - handheld spectrum analyzers, cable testers, or drive test tools ▪ Analyzing existing cell on wheel/cell on light truck (COW/COLT) capabilities

