



AGENDA

LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM AUTHORITY

BOARD OF DIRECTORS SPECIAL MEETING

Thursday, June 30, 2011 • 2:00 p.m. – 3:30 p.m.
Sheriff's Department
Media Conference Room
4700 W. Ramona Boulevard, Monterey Park, CA 91754

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

AGENDA POSTED: June 28, 2011

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 Miller**, Chief Legislative Analyst, City of Los Angeles
9. **Daryl L. Osby**, Fire Chief, County of Los Angeles
10. **Millage Peaks**, 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. **Harold Scoggins**, 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. PUBLIC COMMENTS

IV. REPORTS

1. Director's Report – Pat Mallon
 - a. Procurement Update

V. DISCUSSION ITEMS

1. Update on Senate Bill 911
Attachment: Item 1
2. Enterprise Sharing Consideration
Attachment: Item 2

VI. PUBLIC COMMENT

VII. MEETING ADJOURNMENT

VIII. NEXT REGULAR BOARD OF DIRECTORS MEETING: Thursday, July 7, 2011 at 9:00 a.m. at the Grace E. Simons Lodge.



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.



LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM AUTHORITY

2525 Corporate Place, Suite 200
Monterey Park, California
(323) 881-8291

PATRICK J. MALLON
EXECUTIVE DIRECTOR

June 28, 2011

TO: BOARD OF DIRECTORS
FROM: 
SUBJECT: UPDATE ON SENATE BILL 911 (S. 911)
"PUBLIC SAFETY SPECTRUM AND WIRELESS INNOVATION ACT"

BACKGROUND:

On June 8, 2011, Chairman John D. (Jay) Rockefeller and Ranking Member Kay Hutchinson led the Senate Commerce Committee in sending S. 911, the Public Safety Spectrum and Wireless Innovation Act, to the full Senate for consideration. The bill was approved by the Commerce Committee by a 21-4 vote.

Key Provisions of the S. 911 include the following:

- Establishes a framework for the deployment of a nationwide, interoperable, wireless broadband network for public safety
- Allocates 10 megahertz of spectrum, known as the "D-block," to public safety
- Establishes a private, nonprofit corporation to be known as the "Public Safety Broadband Corporation", with a 15 member Board of Directors:
 - 4-Federal members (Sec. Commerce, Sec. Homeland Security; Attorney General; Director OMB); lifetime terms
 - Secretary of Commerce appoints 11 nonfederal members to serve as non-federal members of the Board:
 - Minimum of 3 public safety professionals and minimum of 3 state/local or tribal representatives; two, 3-year staggered terms maximum
 - Members must ensure geographic and regional representation
 - Nonfederal members must be qualified in one of the following areas: public safety, technical expertise, broadband network management or financial
 - The Public Safety Broadband Corporation shall hold the single public safety broadband license and is responsible for building, deploying and operating a nationwide, interoperable public safety broadband network
- Directs the National Science Foundation and the National Institute of Standards and Technology to conduct cutting edge research into transformative wireless technologies.
- Establishes a "Public Safety Trust Fund" authorized for the following uses:

AGENDA ITEM 1

- The Public Safety Broadband Corporation shall hold the single public safety broadband license and is responsible for building, deploying and operating a nationwide, interoperable public safety broadband network
- Directs the National Science Foundation and the National Institute of Standards and Technology to conduct cutting edge research into transformative wireless technologies.
- Establishes a "Public Safety Trust Fund" authorized for the following uses:
 - Payment of auction incentives
 - Broadcaster relocation (\$1B max.)
 - State/Local Implementation fund to assist state, regional and local jurisdictions to identify, plan, and implement the most efficient and effective way to integrate the equipment and infrastructure associated with the public safety broadband network (\$250M)
 - Requires each state to designate a single officer or governmental body to serve as coordinator of grant funds
 - Public Safety Broadband Corporation funding split out by:
 - Evolved Packet Core development (\$1.25B)
 - Radio Access Network build out (\$10.5B)
 - Public Safety Research and Development through NIST (\$100M per year from 2012-2016)
 - Advanced Information and Technology Research (\$250M per year from 2012-2016) split between National Science Foundation (\$130M) and DARPA (\$70M)
 - Deficit Reduction - Any amounts remaining after the deduction of the amounts required shall be deposited in the General Fund of the Treasury, where such amounts shall be dedicated for the sole purpose of deficit reduction.
- Repurposing federal spectrum for commercial purpose and federal spectrum sharing
 - Amends eligible federal entities
 - Amends eligible federal frequencies
- Updates the spectrum relocation process to facilitate opportunities for federal government spectrum sharing and reallocation
- Directs Federal agencies to study the economic value of the spectrum that they use to better inform federal spectrum management decisions
- Directs NTIA to develop a strategic spectrum plan to identify how spectrum is being used across the federal government, opportunities to increase efficient use of federally allocated spectrum and infrastructure, an assessment of future spectrum needs, and plans to incorporate these needs in the frequency assignment, equipment certification, and review processes

IMPACTS:

This bill will impact the LA-RICS broadband network, LA-SafetyNet, since the Authority received a waiver from the Federal Communication Commission (FCC) to permit early building in the public safety spectrum band.

Per the waiver order issued on May 10, 2010, the Public Safety Spectrum Trust (PSST) holds the license for the 700MHz spectrum. The waiver jurisdictions (LA-RICS included) entered into a lease agreement with PSST and provides quarterly reports to the FCC as part of the waiver requirement. It is anticipated that S. 911 will transition the governance of this spectrum from PSST to the Public Safety Broadband Corporation (PSBC). Transitioning details are not known at this time, and will most likely be developed after the PSBC is set up.

As a recipient of the FCC waiver and leasee of the 700 MHz spectrum, the Authority will need to work close with the PSBC to ensure compliance with the technical requirements and any arising lease agreements.

While S. 911 provides for public-private enterprise sharing, it is important to note that the bill permits only federal government spectrum sharing and revenue generated from this sharing must be approved by the National Telecommunication Information Administration (NTIA) and Office of Management and Budget (OMB). Revenue generated will be deposited into the Spectrum Relocation Fund to be used to pay the sharing costs of an eligible Federal entity incurring such costs. Any amounts in the Fund that are remaining after the payment of relocation and sharing costs are reverted to and deposited in the General Fund of the Treasury.

The LA-RICS Authority's staff believes that S. 911 provides a good governance model for the nationwide broadband system and supports the allocation of the D Block to public safety. LA-RICS Authority's staff recommends actively monitoring the bill and the PSBC to assess future impacts as well as seek a seat on the PSBC Board of Directors.

On June 16, 2011, the Legislative Committee convened and approved supporting the current version of the bill. Specifically, the Legislative committee recommended:

- Supporting the allocation of the D Block to public safety
- Including in communications to Congress that frequencies used by the Los Angeles region must not be auctioned
- Seeking future funding that becomes available to States and local entities.

An action item regarding S. 911 will be agendaized for the next regular Board of Directors meeting scheduled for July 7, 2011 to ascertain the Board's position on this bill.

cc: Counsel to the Authority



LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM AUTHORITY

2525 Corporate Place, Suite 200
Monterey Park, California
(323) 881-8291

Patrick J. Mallon
Director

June 30, 2011

TO: BOARD OF DIRECTORS
FROM: *Patrick J. Mallon*
PATRICK J. MALLON
SUBJECT: ENTERPRISE SHARING OPTIONS FOR LA-SAFETYNET

This memo provides an overview of five ways in which the Authority might share infrastructure (sites, towers, etc.) and/or broadband spectrum with private entities (“Enterprise Sharing”) in order to expedite the implementation, improve the performance and/or lower the cost of the LA-RICS mobile broadband network, LA-SafetyNet. For each of the Enterprise Sharing options, the potential advantages and disadvantages have been identified, along with critical information items that require further research.

Figure 1 identifies the five distinct approaches discussed in this memo for constructing LA-SafetyNet; however these approaches are not necessarily mutually exclusive and it would be possible to incorporate elements of multiple options into a comprehensive enterprise sharing agreement.

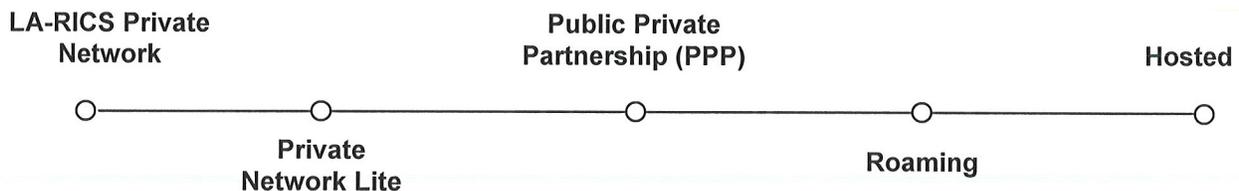


Figure 1: Enterprise Sharing Options

The following factors were reviewed for each of the options:

- The operational and technical ramifications on the public safety users
- The capital expenses, operating expenses, and revenue generation opportunities
- The implementation schedule
- The potential impact on the current LA-RICS procurement

- The constraints of the BTOP grant
- The opportunities and constraints of federal spectrum legislation and nationwide public-safety network governance

Option 1: Private Network (Current Approach)

Overview of Approach

Under the current approach, the Authority would build a fully-functional, Authority/member-owned private network. All major elements of the infrastructure, including towers, equipment shelters, transmitter/receivers, backhaul networks, and the system core would be owned by the Authority or its members and built to public safety standards.

The system would utilize either 10 or 20 MHz of dedicated Public Safety spectrum in the 700 MHz band, depending on the ultimate resolution of the D Block reallocation issue. Network management would initially be outsourced, with a possible transition in-house to Authority management over time. The private network would be designed and built to meet all baseline operational requirements without the need for external resources.

During project implementation, the Authority could, at its discretion, approach other entities to explore the sharing of physical infrastructure, such as tower sites and equipment, the backhaul network, or the network core. The Authority could lease space on its physical infrastructure to commercial partners for a fee in order to generate operating revenue, as well as exchange use of Authority infrastructure for the use of partner infrastructure in order to improve network coverage, capacity, and performance.

Moreover, depending on pending legislation, the Authority might be able to develop spectrum sharing agreements with commercial carriers that would provide for sharing of underutilized spectrum within certain guidelines. However, it is not clear at this time if the Authority would be able to retain any revenues that result from such agreements.

Advantages

The primary potential advantage of this scenario is that the Authority can build all physical infrastructure to public safety grade reliability standards and retain maximum control of major elements of the network. This allows the Authority to independently set policy for site access, maintenance and repairs, and to retain full control of network management, priority, and pre-emption based solely on operational needs.

Financially, this scenario best uses the \$154.6 million BTOP grant, which funds the majority of the capital cost of the project while minimizing the substantial long-term operating costs of using leased infrastructure. The Authority would also have the potential to generate ongoing operating revenue by leasing the infrastructure and/or

public safety spectrum to potential partners, subject to regulatory limitations. This scenario most strongly positions the Authority to enter into future enterprise sharing agreements by maximizing the negotiable assets the Authority would bring to such an arrangement. This alternative most closely conforms to the existing procurement process.

Disadvantages

With the need to construct more than 200 new radios sites, a private network poses the greatest challenges with respect to site permitting, overall project schedule and cost. Unexpected site improvements could potentially exceed available grant funds and neighborhood issues could delay the implementation of individual sites.

This option, while offering the Authority the greatest control over the network, also places the greatest burden on the Authority to meet management, maintenance, and operations standards. Finally, due to financial constraints, the Authority would likely not be able to take advantage of upgrades to the LTE standards as quickly as the commercial carriers.

Critical Information Requirements:

- Estimated revenue stream from co-location agreements
- Quantified site development cost and schedule risk
- Coverage and performance comparison of LA-SafetyNet v. commercial LTE
- Reliability comparison of LA-SafetyNet v. commercial LTE
- LTE refresh cycle timeframes/costs
- Final maintenance and operations cost of private network

Option 2: Private Network Lite

Overview of Approach

Option 2 is network that incorporates use of commercial infrastructure (sites, towers, etc.) where practical, but remains substantially private. Existing member radio sites would be supplemented with new sites at member facilities, as well as commercial sites, depending on project constraints. The Authority would own and maintain the majority of the infrastructure and all radio electronics, and would exclusively use the Public Safety Broadband spectrum.

As in the fully private network option, the Authority could explore leasing of its infrastructure or spectrum resources upon completion of the network, but the system would be operable without an enterprise partner.

Advantages

When applied as a supplemental strategy for site development, this option offers an opportunity to better control capital costs and project schedule by leveraging existing commercial development. The ability to use commercial leased sites and backhaul also offers greater flexibility in system design. This option is available within the

current procurement process. With the exceptions noted below, this option also retains the primary advantages of a fully private system.

Disadvantages

Leased infrastructure limits Authority control and potentially reduces the reliability of the system. Leased elements may not be built to meet public safety needs and the Authority will likely bear the expense of any desired upgrades. While equipment placed on leased sites would be funded under the BTOP grant, ongoing lease expenses would not, which would increase overall operating expenses. Finally, the inclusion of leased sites may call for a broader network re-design if tower heights, microwave paths, and fiber optic connectivity are not equivalent to the private sites they would replace.

Critical Information Requirements:

- Availability and cost of commercial communications sites
- Availability, speed, and cost of leased microwave, fiber, or other backhaul
- Reliability of potential leased elements, and available agreements for system maintenance
- Estimated site development costs for meeting public safety standards at leased sites
- Permitting and approval requirements for leased sites

Option 3: Public-Private Partnership

Overview of Approach

Under Option 3, the Authority would enter into a partnership with a private entity for the design and build of LA-SafetyNet. The Authority and its private partner would jointly identify existing network infrastructure (tower sites, backhaul, core sites, etc.) that could be used to implement the network and determine who would be responsible for any new infrastructure that was required for the system. Both partners would share the physical infrastructure, equipment, and backhaul capacity, however, LA-Safety Net would be dependent on its commercial partner from inception.

The parties could operate on separate broadband frequency ranges or, depending on pending legislation, enter into a spectrum sharing agreement.

Within this option, the Authority and its private partner together have discretion regarding what proportionate share of assets each brings to the arrangement. The advantages and disadvantages below would vary in magnitude in relation to the Authority's asset share in the partnership.

Advantages

Leveraging a large base of existing private assets could greatly speed the initial system deployment by minimizing new site development and the associated

planning, permitting, and construction process. This option could also significantly reduce capital costs.

Use of commercial equipment and sites could give the Authority access to commercial-grade site densities, potentially improving coverage and performance relative to a fully private network. Leveraging an existing enterprise network could also leverage access to an existing backhaul network, potentially improving system capacity and/or reducing cost.

Disadvantages

Co-dependence reduces Authority control of the system, and introduces several financial, technical and operational issues. Depending on the terms of the enterprise sharing agreement, the Authority may incur operating expenses for the use of commercial infrastructure. The Authority may also need to invest significant capital to ensure commercial infrastructure meets public safety standards, or decide to accept commercial level reliability at certain sites.

This approach requires that both parties coordinate system upgrades, which will introduce the risk of incompatibility if upgrades are not timed appropriately. An enterprise sharing agreement may also require changes to the Authority's existing BTOP grant agreement, which currently relies on member assets to meet grant match requirements. Finally, this option may call for a change in the current procurement process and delay the project.

Critical Information Requirements:

- Potential enterprise partners in the Los Angeles area, and the amount of owned vs. leased infrastructure in their systems
- Market availability of equipment - antennas, eNodeBs, and core components - that can be partitioned for dual use
- Reliability comparison of LA-SafetyNet v. commercial LTE

Option 4: Roaming Model

Overview of Approach

LA-SafetyNet will likely include roaming in order to supplement coverage under most scenarios. In Option 4, roaming is central, rather than supplemental, to day-to-day operations. Under this scenario, the Authority would build out infrastructure to supplement the commercially available networks and would focus on areas where coverage was otherwise not available or cost effective, e.g., potential terrorist targets, high disaster risk areas, high call volume zones, etc.

Existing and new Authority physical infrastructure and Public Safety spectrum would be used to create this core network, which could operate independent of any enterprise sharing agreement. Coverage in the remaining areas of the region would be provided by a commercial roaming partner, using commercial spectrum.

Advantages

The roaming model could offer immediate deployment of LTE capability in the commercial coverage areas that could be supplemented or replaced as LA-SafetyNet is built. This model leverages the commercial system upgrade cycle and reduces the amount of private infrastructure to be built, maintained, and upgraded. This arrangement could offer substantial network surge capacity in emergencies, but only if broader issues of public safety priority and pre-emption on commercial networks are resolved.

Additionally, even in the absence of spectrum sharing agreements, the Authority could generate revenue by charging for use of Authority built and maintained physical infrastructure to supplement areas not covered by the commercial partner. This option can reduce capital costs and project schedule risk. Build-out of the LA-SafetyNet coverage zones could possibly be completed within the bounds of the current procurement process.

Disadvantages

As a roaming customer, the Authority would have limited input into the design of the commercial carrier's network and would generally have to accept the provided levels of coverage and performance. Roaming users operating on the commercial network would be faced with lack of network pre-emption, an inability to prioritize network resources based on operational needs, and lower levels of network reliability and resiliency.

While initially reducing the capital costs of LA-SafetyNet, the roaming option would likely result in relatively high ongoing operational expenses. This option would also require the availability of user equipment that can operate on both the public safety spectrum and the commercial spectrum in order to provide seamless coverage. Finally, while build-out of the LA-SafetyNet coverage areas can be accomplished under the current system procurement, selection of a partner to provide roaming service may require a separate procurement and contracting process.

Critical Information Requirements:

- Roaming and commercial use rates currently available to public safety users
- Coverage and performance of potential commercial carriers
- Availability and cost of devices that could operate on the PS and the commercial carrier spectrum
- Reliability/Resiliency Comparison of LA-SafetyNet v. commercial LTE

Option 5: Hosted Network

Overview of Approach

Under the hosted network model the Authority would contract network services from a commercial carrier. The Authority would not construct any new infrastructure, but may allow use of its existing sites and towers for construction of the network. The

commercial carrier would provide all equipment, sites, backhaul, core space, and management services for the network.

With this approach, the Authority would provide 10 to 20 MHz of public safety spectrum for operation of the network and, depending on pending spectrum regulations, the Authority could possibly enter into a spectrum sharing arrangement with the network operator.

Advantages

This option would provide for a rapid implementation with minimal capital costs if LA-SafetyNet is integrated into a commercial carrier's build out of its own LTE networks. Network maintenance, operations, and management would be outsourced to the carrier and the Authority may benefit from more frequent technology updates common to the private sector. Finally, by keeping full leaseholder interest over the spectrum used, the Authority is well-positioned to keep priority and pre-emption rights for its users.

Disadvantages

This option is dependent on a commercial carrier agreeing to make potentially substantial upgrades to its infrastructure to accommodate LA-SafetyNet. Commercial infrastructure may need to be hardened to public safety reliability standards and coverage may need to be improved in public safety critical areas, especially low population density areas.

This option shifts system costs from capital to operations, which may significantly impact the overall costs to Authority members. Any capital savings from the BTOP grant will likely revert to the Department of Commerce, rather than the Authority, while any increase in operating costs will be the responsibility of the members.

This option will likely require a new solicitation to commercial carriers.

Critical Information Requirements:

- Commercial carrier interest in hosting, and potential costs
- Coverage, performance, and reliability standards achievable in a hosted solution
- Status of current and pending regulation, legislation, and governance regarding the use of public safety spectrum
- Ability to use BTOP grant funds for the hosted network model

Summary

Table 1 summarizes five initial approaches for Enterprise Sharing. The options presented in this memo are not mutually exclusive. Elements of multiple options, e.g., site collocation, spectrum sharing and roaming, could be combined into a solution that best meets the Authority's needs.

Table 1: Enterprise Sharing Options

Impacts	Private: all physical infrastructure built and owned by the Authority; optional spectrum sharing	Private Lite: most infrastructure built and owned by the Authority, some leased sites and backhaul; optional spectrum sharing	Public-Private Partnership: shared infrastructure; co-dependent networks; possible spectrum sharing	Roaming: private network limited to certain zones; commercial roaming throughout; no spectrum sharing	Hosted: Commercial carrier uses Public Safety spectrum to provide service; no private infrastructure; spectrum sharing highly likely
Operational	<ul style="list-style-type: none"> ▪ Authority maintains control over the full network ▪ All sites public-safety hardened ▪ Possible reduced performance relative to commercial networks 	<ul style="list-style-type: none"> ▪ Authority maintains control over most of the network ▪ Leased sites may not be public-safety hardened 	<ul style="list-style-type: none"> ▪ Dependent on the enterprise partner ▪ Shared infrastructure may not be public-safety hardened ▪ Possible performance improvements 	<ul style="list-style-type: none"> ▪ Authority has full control over a limited network ▪ Roaming coverage sites not public-safety hardened ▪ Roaming coverage/capacity depend on commercial network 	<ul style="list-style-type: none"> ▪ No direct control over the network ▪ Most sites not public-safety hardened ▪ Commercial quality performance possible
Technical	<ul style="list-style-type: none"> ▪ Slower network upgrade schedule ▪ Resource intensive operations and maintenance 	<ul style="list-style-type: none"> ▪ Slower network upgrade schedule ▪ Resource intensive operations and maintenance 	<ul style="list-style-type: none"> ▪ System design requires full private partner participation ▪ Requires coordinated network upgrades ▪ Dependent on availability of multi-band capable equipment 	<ul style="list-style-type: none"> ▪ Requires multi-band user equipment ▪ Requires coordinated network upgrades 	<ul style="list-style-type: none"> ▪ Hosted solution requires minimal Authority technical resources
Financial	<ul style="list-style-type: none"> ▪ Site development presents greatest potential for cost overruns ▪ Makes best use of grant funding for capital costs ▪ Minimizes operating costs 	<ul style="list-style-type: none"> ▪ Leased sites help to limit site development cost overruns ▪ Makes good use of grant funding for capital costs ▪ Leased assets may increase operating costs 	<ul style="list-style-type: none"> ▪ Leveraging commercial infrastructure may reduce capital costs ▪ May not fully utilize grant funding ▪ Operating costs not grant-funded and depend on partnership terms 	<ul style="list-style-type: none"> ▪ Limited project scope limits capital costs and potential overruns ▪ May not fully utilize grant funding ▪ Increased operating costs are not grant-funded 	<ul style="list-style-type: none"> ▪ No site development costs ▪ Does not focus on current grant funds ▪ Fully trades capital costs for operational costs

Table 1: Enterprise Sharing Options

Impacts	Private: all physical infrastructure built and owned by the Authority; optional spectrum sharing	Private Lite: most infrastructure built and owned by the Authority, some leased sites and backhaul; optional spectrum sharing	Public-Private Partnership: shared infrastructure; co-dependent networks; possible spectrum sharing	Roaming: private network limited to certain zones; commercial roaming throughout; no spectrum sharing	Hosted: Commercial carrier uses Public Safety spectrum to provide service; no private infrastructure; spectrum sharing highly likely
Schedule	<ul style="list-style-type: none"> ▪ Site permitting, approvals, and development pose significant schedule risk 	<ul style="list-style-type: none"> ▪ Site permitting, approvals, and development pose significant schedule risk ▪ Leased assets help manage schedule risk 	<ul style="list-style-type: none"> ▪ Limited site development poses more limited schedule risk ▪ May cause an initial project delay related to contracting 	<ul style="list-style-type: none"> ▪ Roaming agreement could quickly initiate service ▪ Limited site development poses limited schedule risk 	<ul style="list-style-type: none"> ▪ No site development risk ▪ Deployment schedule dependent on speed of hosting carrier's network upgrades
Procurement	<ul style="list-style-type: none"> ▪ Conforms to current procurement process 	<ul style="list-style-type: none"> ▪ May be covered by current procurement process 	<ul style="list-style-type: none"> ▪ May need to alter the current procurement process in order to incorporate a potential partner 	<ul style="list-style-type: none"> ▪ Limited coverage zone implementation may be covered under existing procurement process ▪ Roaming may call for a separate procurement 	<ul style="list-style-type: none"> ▪ Communications as a service would call for a different procurement process
Grant Requirements	<ul style="list-style-type: none"> ▪ Challenging to execute within current grant deadline ▪ Complies with all other grant requirements 	<ul style="list-style-type: none"> ▪ Leased sites may help meet grant schedule ▪ Leased sites do not count towards the match requirement ▪ Operating costs are not grant funded 	<ul style="list-style-type: none"> ▪ Major change in project scope may require grantor approval ▪ Leveraging partner sites may help meet grant schedule ▪ Operating costs are not grant funded 	<ul style="list-style-type: none"> ▪ Major change in project scope may require grantor approval ▪ Roaming costs are not grant funded 	<ul style="list-style-type: none"> ▪ Leased sites may help meet grant schedule ▪ Leased sites will not count towards the match requirement ▪ Operating costs are not grant funded
National Policy	<ul style="list-style-type: none"> ▪ Allows the Authority to accommodate or incorporate any pending developments in national spectrum policy 	<ul style="list-style-type: none"> ▪ Allows the Authority to accommodate or incorporate any pending changes in national spectrum policy 	<ul style="list-style-type: none"> ▪ Terms of the partnership agreement highly dependent on a D-Block decision and on nationwide network governance 	<ul style="list-style-type: none"> ▪ Option is independent of any national-level policy decisions 	<ul style="list-style-type: none"> ▪ Viability of this option dependent on D-Block decision and on nationwide network governance