

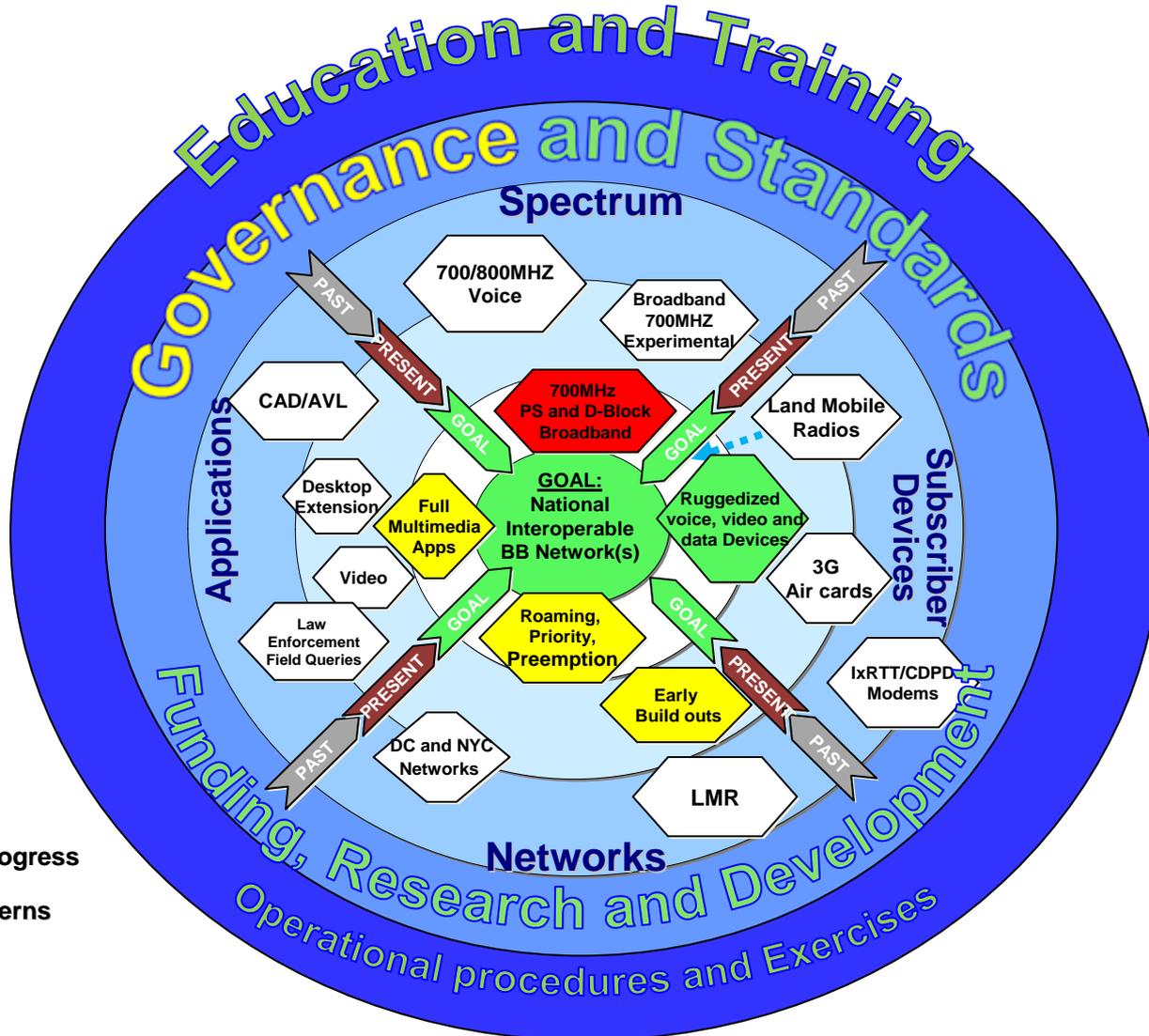
# **The FCC's Public Safety National Broadband Plan:**

APCO supports the plan  
with a few but significant exceptions

**Presented by  
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# APCO's Communication Vision:

Public Safety and the FCC share a common GOAL with a few **Exceptions**



# Agreements

Goals	HIGHLIGHTS
<p><b>Leveraged Networks</b></p>	<p>We need a flexible network framework that will leverage existing public safety, local, state, federal, and commercial infrastructure to reduce the cost of building out a national broadband network. Public safety agencies need the flexibility to use the network types that best suit their specific needs. These networks could be dedicated, shared, or commercial and the use of IP-based technologies and a common air interface (LTE) will ensures that all networks are fully interoperable across the U.S.</p>
<p><b>Funding</b></p>	<p>We agree that at least \$16 billion will be needed for the public safety broadband network. Of the total, roughly \$6 billion will be needed in federal grants for capital costs of deployment. An additional \$6-10 billion will be needed for operating and network evolution costs.</p>
<p><b>Technical and Operational Standards</b></p>	<p>Public safety has endorsed Long Term Evolution (LTE) as the standard technology for the 700 MHz broadband networks. By adopting the LTE standard prior to any deployments, public safety is working to ensure systems are interoperable. Public safety believes that there will be considerable cost savings in purchasing equipment since the largest commercial carriers world-wide have also adopted the LTE standard. Operational standards and polices are as critical as technical standards and we need sufficient funding to develop all needed standards.</p>
<p><b>Voice Communications</b></p>	<p>After VOIP communications have matured and public safety grade broadband networks and devices are deployed, public safety agencies should be encouraged to migrate existing land mobile radio (LMR) systems to next generation mission critical communications technologies. This in turn will considerably improve interoperability and reduce LMR equipment and maintenance costs to state and local governments.</p>
<p><b>Ubiquitous National Public Safety Network</b></p>	<p>Our overall goal for improving our nation’s public safety communications systems is to create a ubiquitous public safety broadband network in the 700 MHz band that meets all of public safety’s needs in all geographic locations and across all jurisdictions and services. A unique opportunity exists to change the paradigm of public safety communications where multiple frequency bands and incompatible technologies create obstacles to interoperability and perpetuate inefficiency. The ultimate goal and vision of the public safety broadband network is to learn from the mistakes of the past and plan for a future in which wireless broadband networks deployed on a common frequency band using a common technology platform to provide public safety with the tools they need for the twenty first century.</p>
<p><b>Ruggedized voice, video, and data Devices</b></p>	<p>Networks alone can not meet PS communications needs. We have to invest in and promote PS grade devices for the BB network.</p>

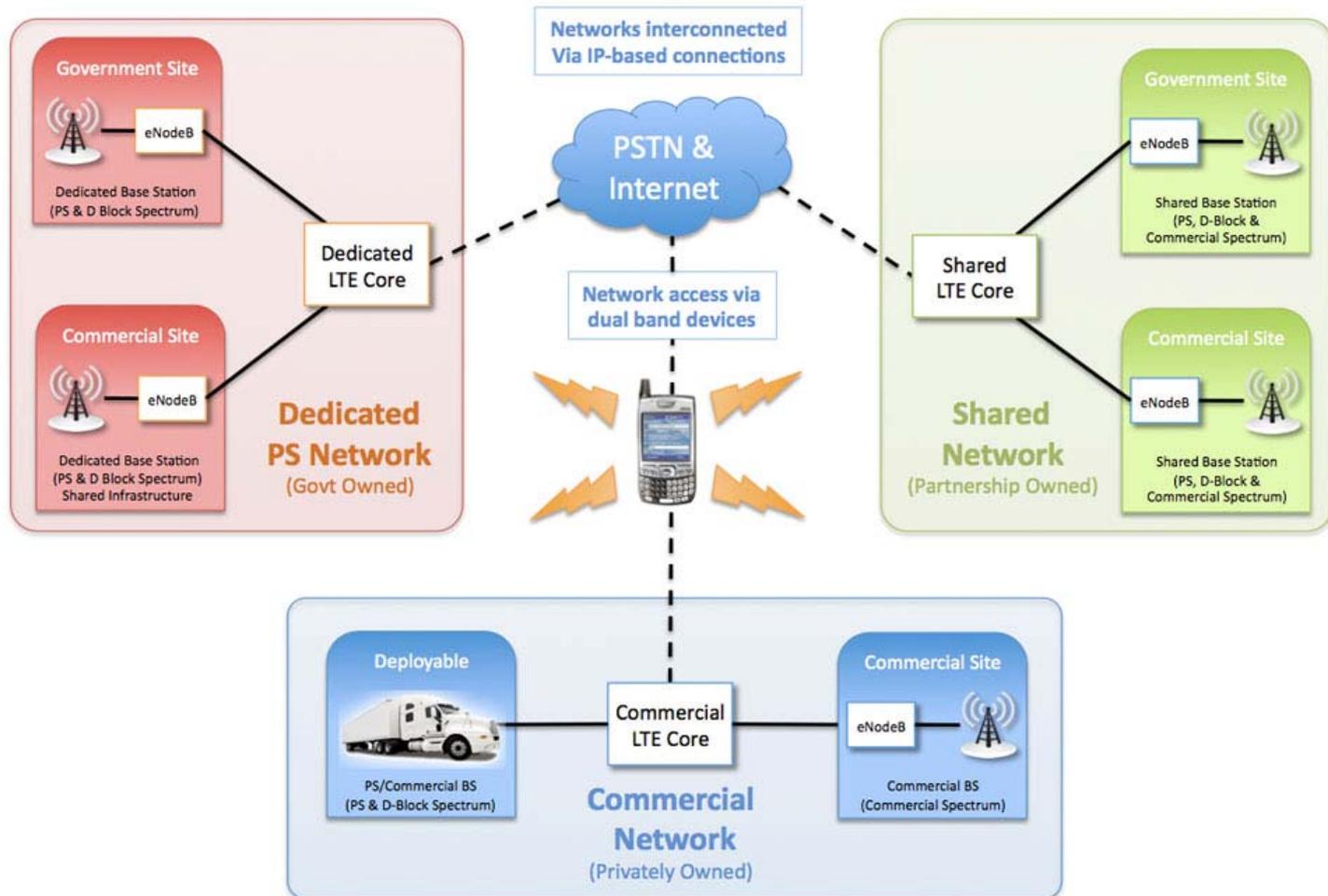
# Disagreements, Concerns and Recommendations

GOALS	Why we differ...	Recommendations
<p><b>Spectrum Allocation</b></p>	<ul style="list-style-type: none"> <li>•PS <b>NEEDS</b> the 700MHz D-Block spectrum because its proximity to existing public safety broadband spectrum makes it uniquely suited to address public safety needs. Over time, we anticipate that public safety spectrum in other bands could be cleared and made available for commercial use as public safety communications needs migrate to the 700 MHz band.</li> <li>•We are very concerned that spectrum calculations used by the Commission were based on optimal network design conditions. These concerns are noted on the website (<a href="http://d-block.net/index.php?id=57">http://d-block.net/index.php?id=57</a>).</li> </ul>	<p>We request that the Commission continues to work closely with PS and that Congress hold hearings to determine the best path forward. Following this open and frank debate, the Commission can act swiftly to implement any Congressional mandates that may be enacted.</p>
<p><b>Roaming, Priority and Preemption</b></p>	<ul style="list-style-type: none"> <li>•PS agrees and supports Roaming and Priority services but disagrees with the thinking that you can discount PS' spectrum needs when you leverage the commercial roaming partner network. The idea of off loading traffic is reasonable but will be operationally ineffective because PS incidents will happen anywhere and are likely to be spread over just a few sectors versus an entire network. <b><i>We must assume that the commercial traffic in the affected sectors will be at peak capacity as well due to the incident.</i></b></li> <li>•More concerning is the thinking that you can prioritize all traffic on a commercial network in an emergency. What is more important, a Mom with child calling for help in a fire, the first responder trying to direct his team to save her or the FBI, S/L police and CIA attempting to up and download video to see where the terrorist went who set the bomb that caused the fire? <b><i>Preemption under these conditions is very concerning absent public safety's ability to control the commercial networks.</i></b></li> </ul>	<ul style="list-style-type: none"> <li>•Recalculate PS' spectrum needs removing the dependence on commercial roaming partners.</li> <li>•Develop and test roaming and priority models that will ensure that public safety and commercial users receive communication services during normal and critical network operations. These models have to be based on PS's ability to dynamically adjust priorities during incidents, literally from the command posts. It can't work at a network level, only.</li> </ul>

# Disagreements, Concerns and Recommendations

GOALS	Why we differ...	Recommendations
<p><b>Early Build Outs</b></p>	<p>The support for early build outs is overwhelming, the need is great, but the delays in approving waivers are harmful to our short and long term goals for the following reasons:</p> <p>1)Only operational use will provide the answers to our many design questions.</p> <p>2)While we know that state and local funding is limited, it is impossible to gain funding without an authorization to deploy and operate networks.</p> <p>3)Private sector funding via partnerships provides an opportunity for PS to deploy in advance of federal funding. Waiver delays prohibit any diverse funding opportunities.</p> <p>4)PS network and device requirements are needed in the LTE standards setting process. LTE equipment vendors can not promote PS requirements without clear, market based support. In other words, the longer we hold up the market by holding back the waivers, the longer it will be before our requirements can be represented. PS will eventually lose its limited opportunity to become a part of the LTE commercial landscape.</p>	<p>Approve pending waivers without further delays.</p>
<p><b>Governance</b></p>	<p>The goals outlined for ERIC are reasonable and appropriate, however without knowing who the Commission intends to lead and officially participate in ERIC, we have concerns.</p>	<p>Disclose planned ERIC membership and the anticipated governance model.</p>
<p><b>Full Multimedia APPs</b></p>	<p>There are (2) groups of APPs; Present and Future. Network usage models should be incident based and assume dramatically rising resource usage given advancements in tools and applications.</p>	<p>Ensure that PS' spectrum needs incorporate <u>near</u> future uses such as helmet cams, remote chem/bio detectors, and first responder vital signs monitoring for all users entering an incident. Also include uses like robots, and drones.</p>

# Dedicated PS, Public-Private(Shared), and Commercial LTE networks working together to provide comprehensive PS BB Communications



# Partner/Build/Buy High-Level Business Model



**Rule of Thumb:  
As The Ratio of #  
Network Users to  
Coverage Area  
Increases...**

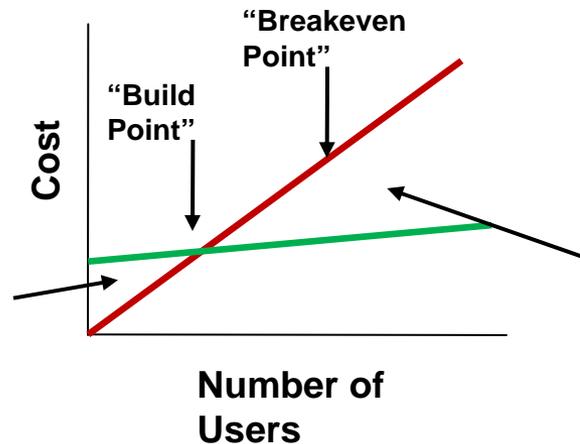


**Financial analysis moves  
toward favoring local build  
model with all other factors  
held equal.**



**Why? Subscription Costs of  
a Commercial Service  
Becomes More Expensive  
Than Ownership**

**Commercial  
Build or use  
favored.**



**State, Local, or  
Public/Private  
Build Favored.**

-  **Commercial Subscription Cost**
-  **Network Operating Ownership Cost**

# Public Safety 700MHz Network Development Process

