

# Want government reform? Idea #3: A new public safety communication strategy

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by Reuven Carlyle



Have you ever noticed how police officers carry both a cellular phone and a hand-held radio? It might surprise you to learn that you are paying hundreds of times more for the radio than the cell phone. And you're about to pay millions more unless we have the courage to change course. Even the New York Times is [starting to agitate](#).

When I joined McCaw Cellular Communications in the early 1990s—one of the world's most entrepreneurial companies—less than 10 million Americans had mobile phones. They were big, clunky and had no data capability. Today there are as many mobile phones as people, prices have fallen and consumers have benefitted from innovation that led to iPhones, Windows Mobile, Droid and other robust platforms. The change has been technically disruptive and positive. In that same time, the nation's public safety community—law enforcement, fire, EMS—has also spent billions of public tax dollars on new infrastructure and yet the quality, cost and functionality of their expensive, proprietary, two-way radios has not materially improved since the 1970s.

Now, the taxpayers of Seattle, King County and Washington State are being asked to spend up to hundreds of millions more for a brand new radio system for police, fire, EMS and other emergency workers.

In Seattle and King County alone my gut check is that the cost will be in the \$50 million to \$250 million range. Since I'm not on the inside I don't know if this is close or far from the truth, but my gut is that it's uncomfortably in that range. And that says nothing of our friends in Pierce, Snohomish and other communities who are struggling through a similar

journey. And Oregon is much further down the same pathway and is now politically panicking in the face of a \$600 million bill.

It's time for courageous honesty: In my personal view, the decision is the wrong direction technically, politically, and financially.

The uncomfortable truth is that for city, county and state governments public safety radio equipment costs between 10x and 100x more than it does in most other countries, despite the U.S. leadership position for wireless technologies such as smartphones, WiFi, WiMax and more. Even Seattle, in many ways the hometown of the consumer wireless industry, will pay tens of millions for a proprietary new police radio system.

The reason is that the nation's public safety communications market does not enjoy healthy, vibrant, market-based competition in any way comparable to consumer mobile services

First of all, it is important to acknowledge that we must ensure our police, fire and EMS officials have access to high quality emergency communication systems. Unfortunately, we must upgrade the hardware-based system because the current vendor for the Seattle and King County system, Motorola, has made a business decision to end support for the current network.

In fairness, they told us long ago they would eventually turn off our system, and we needed to buy their next generation system (or conceptually their competitor's system). Unlike in the consumer market, we may have purchased the equipment, but the company retains the right to determine how long our system is supported. It's not much of an exaggeration to say that it's sort of like Verizon asking consumers to directly fund new cell towers and network and then forcing everyone to buy new mobile phones because the company wants to upgrade their internal network capabilities.

Second, our nation's first responders and 9-1-1 dispatchers aggressively moved to establish an industry standard for first responders called "P25" to get better radios at lower prices, to break the monopoly of the current structure. Unfortunately, more than 25 years later, P25 is still not available, still not implemented and even the Chairman of the FCC recently jolted Members of Congress by acknowledging "...[P25] has taken more than 20 years to develop and is still not complete" and "the protracted development of P25 has allowed vendors to take advantage of selling proprietary solutions."

The industry knows that P25 isn't, in fact, truly standards-based and has resulted in even more expensive radios, not the other way around. If our state's march toward P25 continues, it will be more business as usual – and first responder radios will still cost \$5,000 each. (Did you catch that? Just one P25 radio for one police officer costs \$5,000 and yet it has less processing power and functionality than an iPhone, Windows Mobile or Droid phone).

Yet with few exceptions that is exactly where our current ‘group think’ in Seattle and King County is leading.

Third, some local Seattle and King County officials have recently applied for the Obama Administration’s plans for broadband across the nation utilizing “4G” or “LTE” technology on 700 MHz... for the Seattle area. Their position is inspired in part because the broadband system would help first responders. And yet The National Broadband Plan, as written, doesn’t help with voice communications—the most essential element for police, fire and EMS officials.

This isn’t a modest technical decision, it’s a major policy choice facing King County Executive Dow Constantine and the county council as well as Mayor Michael McGinn and the city council.

Here’s a picture of where Seattle and King County are headed if we don’t change direction: The first 4G or LTE system built in the U.S. for first responders is already underway, in the San Francisco Bay Area – a geography and population similar to our own. The federal government is fronting the \$50 million it will cost, and the result is that 300 public safety vehicles will be equipped with 4G data modems. That is \$167,000 per police car and fire truck, for video to and from the scene.

At the same time the consumer marketplace—AT&T, Verizon, Sprint and T-Mobile—provides virtually the same mobile service at a fraction of the cost at equal or higher service quality levels in many cases. Public safety is building their own mirror system to commercial services. A mirror system that is on track to be proprietary, closed, and expensive like our existing first responder radio systems.

Of course consumer cellular phones are not perfect nor always a technically viable alternative, and they are by no means a simple alternative, but philosophically they demonstrate the profound value of market-based competition.

I am willing to bet a private tour of the State Capitol building that if you ask 20 police, fire and EMS officials to choose between their cellular phones and their two way radios, the majority will choose to hold onto the former. Their mobile phones are easier, more flexible, equally as reliable in most cases and now support data.

Without question it’s important to acknowledge that technically cell phones do have limitations – in basements, rural and other “out of coverage” areas they won’t provide essential voice communications for first responders. But the very important and dirty little secret is that neither do the P25 radio systems, or the 4G/LTE systems. Our first responders need handsets that utilize the high feature / low cost advantages of open market cell phone systems, but also work in basements “peer to peer” when out of range of the system. And that solution still shouldn’t cost \$5,000 for each and every single radio.

While it is true public safety radios need to be heavy duty, it doesn't inherently mean they should cost 10 times as much as commercial systems that have more processing power, more technical flexibility and more application functionality.

Yes this is a bit technical and wonky but the financial implications are stunning in scale – as Oregon is experiencing, approaching \$1 billion when the costs of all local agencies are included with the first \$600 million buildout.

Is it too late? There is a way forward if we have the courageous honesty to tackle old assumptions and myths.

1. We should stop buying P25 radios at literally \$5,000 per radio and start buying TETRA radios. TETRA is similar to P25, but it is truly open standard radio used by police and fire departments in Europe and Asia . They offer more features and are tested around the globe... and cost less than \$500 each. They are essentially “Nextel-like” in their capability but are a fraction of the cost of the non-open standard P25.

2. We should absolutely back a national broadband plan – but not this one. Not until it is legally bound to an open, public standard that enables true, free market participation from any and all vendors. Not a penny of federal or state funding should go towards any proprietary 4G/LTE solutions, and Seattle and King County public safety leaders should insist on an open standard before launching any 4G/LTE 700 MHz construction in Washington.

3. Let's ask line officers and regular firefighters what they need to do their jobs. They are the users and yet we rarely ask them firsthand what they need to succeed.

4. Investigate the real-deal of the \$50 million pilot project in San Francisco, which puts the proprietary 4G/LTE technology in the lead for another 20-year monopoly. Let's understand the implications before Seattle goes down the same expensive route—but likely without the pot of federal money provided to San Francisco.

5. We're not the only ones with this issue. We should ask other regions and states to join us in asking for a market that gives our first responders what they really need, at a price that we can afford.

6. We should have the courage to explore a stronger partnership with commercial mobile operators in underserved areas. We could subsidize the expansion of their networks and provide cell tower sites, for example, in exchange for more sophisticated 'priority access' for public safety—and improved service level agreements—and pricing breaks.

Perhaps a stronger partnership with Oregon could save us both hundreds of millions of dollars or more. We can no longer afford a world where each state, each county, each city 'goes it alone' in the delivery of 'utility' services such as communications. Imagine our buying power united by a technical vision and strategy?

Unfortunately, at the end of the day, we acknowledge we have to buy a new radio system for our faithful and hard-working police, firefighters, and EMTs in the Seattle and King County area.

We as a city, county and state are more innovative, entrepreneurial and technically sophisticated than this. If we believe in government reform and want to display to the public that we have the courageous honesty to seize the opportunity of this crisis, we need to change course even in sacred areas like public safety. We have to question old assumptions, challenge monopolies inside and outside of government, and demand that when taxpayers are paying the bill, there is value for our dollar.

It's the right thing for the public who are served by our courageous law enforcement, firefighters and EMS officials. And it's right for taxpayers.

Your partner in service,

Reuven.

# 9 Years After 9/11, Public Safety Radio Not Ready

By [EDWARD WYATT](#) (The New York Times)

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WASHINGTON — The inability of most firefighters and police officers to talk to each other on their radios on Sept. 11, 2001, at the World Trade Center — one of the most vexing problems on that day nine years ago — still has not been completely resolved.

The problem, highlighted in the 9/11 Commission Report, was seen again in 2005 after Hurricanes Katrina and Rita. Public safety officers from different jurisdictions arrived at the scene of those disasters only to find that, unable to communicate with each other by radio, they had to resort to running handwritten notes between command centers.

Despite \$7 billion in federal grants and other spending over the last seven years to improve the ability of public safety departments to talk to one another, most experts in such communications say that it will be years, if ever, before a single nationwide public safety radio system becomes a reality.

In the meantime, public safety and homeland security officials have patched together voice networks in some regions, including New York, that link commanders at various agencies. But the focus in Washington has turned to the development of the next generation of emergency communications, wireless broadband, which seeks to succeed where radio has failed.

Many of the issues that helped shape the current dysfunctional public safety radio networks threaten the creation of a uniform standard for wireless broadband communications.

“For a brief moment in time, a solution is readily within reach,” James A. Barnett Jr., chief of the [Federal Communications Commission](#)’s public safety and homeland security bureau, told a Congressional hearing this summer. “Unless we embark on a comprehensive plan now, including public funding, America will not be able to afford a nationwide, interoperable public safety network.”

Public safety groups, with the backing of some members of Congress, are arguing that they need to be given control of a larger chunk of broadband spectrum — the airwaves on which wireless devices communicate with each other — to ensure that they have adequate network capacity during emergencies.

Officials from the F.C.C. and other legislators disagree, saying that the best way to pay for and build a robust, affordable communications system is to auction some of the

airwaves to commercial companies that can build a network and make it available to public safety agencies during an emergency.

That disagreement, and the associated Congressional inquiries and lobbying, have stalled development just as wireless phone companies are beginning to construct and deploy their fourth-generation, or 4G, networks.

Building public safety networks at the same time as the commercial wireless networks, and sharing towers and fiber optic cables would save \$9 billion in construction costs and billions more over the lifetime of the network, the F.C.C. says.

Some public safety systems are already under way. Last month, the Commerce Department awarded \$220 million to five regional efforts to build some of the first wireless broadband public safety systems. Among the awards was \$50 million to [Motorola](#) to build a network in the San Francisco Bay area that would allow public safety officials from San Francisco, Oakland and surrounding counties to talk, transfer files and share video.

But those initial broadband systems are being built before the various parties have settled on the appropriate standards for equipment and networks — meaning that there is no guarantee that other jurisdictions that build their systems at some point in the future will be working on the same wavelength.

Because of the specialized nature of much of the equipment, the nation's 50,000 public safety agencies pay \$2,500 to \$5,000 a unit for the current generation of rugged, hand-held radios that allow different departments to talk to each other. Only mass production of uniform broadband equipment is likely to bring down the costs, officials say.

And while the Obama administration, Congress, the F.C.C. and public safety groups are seeking agreements on standards, turf battles and political posturing have crept into the debate.

“The history of public safety is one where the vendors have driven the requirements,” Deputy Chief Charles F. Dowd, who oversees the [New York Police Department](#)'s communications division, said in an interview. “We don't want that situation anymore. We want public safety to do the decision making. And since we're starting with a clean slate, we can develop rules that everybody has to play by.”