

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Public Safety and Homeland Security	)	PS Docket No. 06-229
Bureau Seeks Comment on Petitions for	)	
Waiver to Deploy 700 MHz Public Safety	)	DA 09-1819
Broadband Networks	)	
	)	
	)	

To: The Public Safety and Homeland Security Bureau

**REPLY COMMENTS OF THE NORTH DAKOTA RURAL TELECOM  
COALITION**

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## SUMMARY

As described herein, the record in this proceeding establishes that the related waiver requests of New EA, Inc. dba Flow Mobile (“Flow Mobile”) and the State of North Dakota should be denied, because the proposed technology will not be interoperable with the proposed nationwide public safety broadband network. Moreover, the public safety community has overwhelmingly objected to Flow Mobile’s proposal to usurp the public safety narrowband spectrum for its proposed Wi-Fi system, since this action would block the planned nationwide public safety voice network, and create the risk of interference to the first responders in neighboring jurisdictions (such as Minnesota, which has already committed to a co-channel narrowband voice network). In addition, the legal, economic and technical justifications offered by Flow Mobile for its waiver fail to justify a grant:

- (1) While Flow Mobile cites to the high cost and delay of building an LTE network in North Dakota, its data is faulty. Moreover, Verizon Wireless is already embarking on constructing a nationwide LTE network that will cover North Dakota as well – and the only costs to the State will be user fees, which will be similar to those that Flow Mobile will charge.
- (2) While Flow Mobile cites to the delay of waiting for resolution of the FCC’s D Block plan, the Commission is addressing that plan in February, and North Dakota must engage in contracting, funding and public safety planning/coordination processes that likely will not be completed before then.
- (3) Flow Mobile’s claim that the Wi-Fi open standard can be used for reliable, fully mobile broadband operations and handoffs is unsupported and suspect at best.
- (4) The commenters agree that Flow Mobile is not eligible to obtain the requested waiver under Section 337 of the Communications Act of 1934, as amended (“the Act”); and while Flow Mobile’s comments suggest that it has commercial spectrum to segregate private and public safety communications, its own representations to the Commission and North Dakota indicate that Flow Mobile is not committed to segregating its traffic (or even migrating to LTE).

## Table of Contents

	<u>Page</u>
Summary.....	ii
I. Flow Mobile Has Never Demonstrated Interoperability with LTE.....	2
II. The Record Does Not Support Reallocation of 700 MHz Narrowband Channels for Broadband Systems .....	9
III. Flow Mobile’s Arguments Based on Cost Savings are Erroneous .....	13
IV. Flow Mobile’s Technical Justifications Also Miss the Mark .....	17
V. Commenters Agree that Flow Mobile is Not Eligible to Seek Use of the Public Safety Spectrum, and the State of North Dakota Cannot Act as Flow Mobile’s Agent to Overcome this Lack of Eligibility .....	21
VI. The Record Overwhelmingly Supports the Use of Long Term Evolution (LTE) Technology for the 700 MHz Public Safety Broadband Network .....	23
VII. The FCC Should Maintain a Nationwide License Framework for the Public Safety Broadband License Spectrum and Allow Petitioners to Enter into Spectrum Leases with the PSST .....	26
VIII. The FCC Should Adopt Uniform Standards as Guidance for State and Local Authorities to Issue RFPs and Funding to Implement 700 MHz Public Safety Networks .....	26
IX. Waiver Proponents Must Describe their Proposals in Sufficient Detail.....	27
CONCLUSION .....	28

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Public Safety and Homeland Security Bureau Seeks Comment on Petitions for Waiver to Deploy 700 MHz Public Safety Broadband Networks	)	PS Docket No. 06-229 DA 09-1819
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To: The Public Safety and Homeland Security Bureau

**REPLY COMMENTS OF THE NORTH DAKOTA RURAL TELECOM  
COALITION**

The North Dakota Rural Telecom Coalition (“RTC”), on behalf of its member companies listed in Attachment A, respectfully submits these reply comments on the above captioned petitions for waiver. As described below, the record in this proceeding establishes that the related waiver requests of New EA, Inc. dba Flow Mobile (“Flow Mobile”) and the State of North Dakota should be denied, because the proposed technology will not be interoperable with the proposed nationwide public safety broadband network. Moreover, the public safety community has overwhelmingly objected to Flow Mobile’s proposal to usurp the public safety narrowband spectrum for its proposed Wi-Fi system, since this action would block the planned nationwide public safety voice network, and create the risk of interference to the first responders in neighboring jurisdictions (such as Minnesota, which has already committed to a co-channel narrowband voice network). In addition, the legal, economic and technical justifications offered by Flow Mobile for its waiver fail to justify a grant:

- (1) While Flow Mobile cites to the high cost and delay of building an LTE network in North Dakota, its data is faulty. Moreover, Verizon Wireless is already embarking on constructing a nationwide LTE network that will cover North Dakota as well – and the only costs to the State will be user fees, which will be similar to those that Flow Mobile will charge.

- (2) While Flow Mobile cites to the delay of waiting for resolution of the FCC's D Block plan, the Commission is addressing that plan in February, and North Dakota must engage in contracting, funding and public safety planning/coordination processes that likely will not be completed before then.
- (3) Flow Mobile's claim that the Wi-Fi open standard can be used for reliable, fully mobile broadband operations and handoffs is unsupported and suspect at best.
- (4) The commenters agree that Flow Mobile is not eligible to obtain the requested waiver under Section 337 of the Communications Act of 1934, as amended ("the Act"); and while Flow Mobile's comments suggest that it has commercial spectrum to segregate private and public safety communications, its own representations to the Commission and North Dakota indicate that Flow Mobile is not committed to segregating its traffic (or even migrating to LTE).

In support hereof, the following is shown:

#### **I. Flow Mobile Has Never Demonstrated Interoperability with LTE**

One of the primary goals of the Commission in this proceeding has been addressing the need for interoperability of public safety communications.<sup>1</sup> Indeed, the Commission has stated that "achieving a nationwide level of interoperability among and between public safety communications systems and devices... remains a critical imperative"<sup>2</sup> and it feared that allowing localized build out of the 700 MHz public safety broadband spectrum would result in "balkanized networks incapable of even minimum interoperability."<sup>3</sup> However, the record shows no evidence that Flow Mobile has ever demonstrated that its proposed "4G-like" mobile technology is interoperable with Long Term Evolution (LTE) technology, and comments filed by Flow Mobile fail to squarely

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<sup>1</sup> See, e.g., Public Notice, "Public Safety and Homeland Security Bureau Seeks Comment On Petitions for Waiver to Deploy 700 MHz Public Safety Broadband Networks", Mimeo No. DA 09-1819 (rel. August 14, 2009) at p. 7; Service Rules for the 698-746, 747-762 and 777-792 Bands; Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band, WT Docket No. 06-150, PS Docket No. 06-229, 23 FCC Rcd 8047 (2008) (700 MHz Second Further Notice) at ¶ 6.

<sup>2</sup> Service Rules for the 698-746, 747-762 and 777-792 Bands; Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band, WT Docket No. 06-150, PS Docket No. 06-229, 23 FCC Rcd 14301 (2008) (700 MHz Third Further Notice) at ¶ 51.

address the Commission’s legitimate questions regarding interoperability and integration.<sup>4</sup> Instead, the public safety community and others have established that all available information indicates that the Flow Mobile system will not be interoperable with the nationwide LTE public safety network.

The FCC’s *Public Notice* included numerous questions aimed at the issue of interoperability and it focused specific attention on the question of whether the Flow Mobile/North Dakota proposal was consistent with the Commission’s interoperability and integration goals. RTC’s comments provided the Commission with evidence that Flow Mobile’s technology currently lacked interoperability with LTE, and that Flow Mobile had not demonstrated any commitment to developing this inevitable requirement.<sup>5</sup> In contrast, Flow Mobile simply skirts this issue with empty statements of intention (*e.g.*, “Flow Mobile intends to build and operate an open access network that would be interoperable with LTE.”<sup>6</sup>) and vague wishes (*e.g.*, “Technology advancement enhances opportunities for interoperability and compatibility.”<sup>7</sup>). Flow Mobile provides no timetable for when LTE interoperability with its technology will be available (despite its acknowledgement that LTE is the chosen standard of the public safety community),

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<sup>3</sup> 700 MHz Third Further Notice at ¶ 54.

<sup>4</sup> Flow complains in its *Comments* at p.6 that “‘Proof of concept’ or other showing of interoperability capability among Petitioners systems...may not be possible since there is no LTE network to show interoperability with...” This is an unsuitable answer, in that even without cooperation from LTE vendors in a lab environment or pre-commercial setting, as other vendors have done, nothing has precluded Flow from providing the necessary technical description/theory of operation for LTE interoperability per the public 3GPP standard.

<sup>5</sup> Comments of the North Dakota Rural Telecom Coalition, PS Docket No. 06-229 (*dated* October 16, 2009) (“*RTC Comments*”) at p. 19.

<sup>6</sup> Comments of New EA, Inc. d/b/a Flow Mobile, PS Docket No. 06-229 (*dated* October 15, 2009) (“*Flow Comments*”) at p. 5.

<sup>7</sup> *Flow Comments* at p. 2.

and it instead pins its hopes on “allowing open access standards in 700 MHz networks”<sup>8</sup> and “interoperability with LTE as that standard is developed.”<sup>9</sup> Flow Mobile even goes so far as to suggest that the public safety community’s unanimous choice for LTE (“a technology standard that is still in development”) should not be an impediment to its own technology.<sup>10</sup> However, this presupposes that the FCC finds it in the public interest to scrap the hard work of the NPSTC Broadband Task Force, that it mandates open access technology be used for broadband 700 MHz public safety networks, and that someone else (e.g., LTE standards bodies like 3GPP) will do all the interoperability work for Flow Mobile.<sup>11</sup>

Stakeholders in the public safety broadband network share the concerns of RTC and its members about the lack of demonstrated interoperability of Flow Mobile’s network with LTE, and the record shows a consensus have called for the use of a common network technology – LTE – as the best way to ensure interoperability. In this regard, the Public Safety Spectrum Trust Corporation (PSST) correctly observes that the North Dakota and Flow Mobile proposals “are vague and appear inconsistent with the

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<sup>8</sup> *Flow Comments* at p. 3.

<sup>9</sup> *Id.*

<sup>10</sup> *Flow Comments* at p. 5.

<sup>11</sup> Flow Mobile claims that “such a wireless network would operate on open standards and is designed for interoperability with LTE as that standard is developed.” *Flow Comments* at p. 3. However Flow fails to provide information as to precisely what standard it is referring to for its technology, and any details as to how such a network even theoretically would interoperate with LTE. Flow’s technology appears to be based upon Wi-Fi that has been down-converted and proprietarily altered to fit into non-Wi-Fi-standard and considerably smaller 700MHz channels. The fact is, no such standard exists. Indeed, the ND consultant’s report referenced by Flow in support of its solution (the *Eler Report*) confirms at page 9 that “... the fact that it does not operate within the ... listed IEEE standard frequency ranges means it cannot truly be defined as Wi-Fi”, at page 12 that “End user devices using 802.11 in other frequency ranges are non-standard and rare”, and at page 15 that, “If Wi-Fi based technology is used at 700 MHz, this makes the technology proprietary to some degree and thus possibly manufacturer dependent.” This alone renders it non-standardized. This fact, coupled with Flow Mobile’s use of channel widths that are a small fraction of the standardized channel width, renders the standard irrelevant to Flow’s technology. Nor does any standard exist for interoperability of even conventional, unlicensed Wi-Fi with LTE.

Commission's nationwide interoperability goals."<sup>12</sup> The NPSTC Broadband Task Force has based its entire Report and Recommendations on the assumption that LTE technology would be used, and the National Emergency Number Association (NENA) has called for waiver conditions to include a "commitment to use a common air interface standard identified by the Commission or the PSST (e.g. Long Term Evolution or LTE) for the nation-wide system, including a commitment to update its systems to current versions of the standard as may be necessary."<sup>13</sup>

NPSTC correctly warns the Commission to "proceed with caution on any waiver request that envisions a new broadband deployment with technology other than LTE. Migrations of technology are seldom as quick and easy to achieve in reality as they are in theory."<sup>14</sup> On the key issue of interoperability, it is respectfully submitted that Flow Mobile has provided the Commission with untested theory only, rather than the certainty that such an important nationwide public safety undertaking demands.

Furthermore, Flow argues that public safety will be "waiting years for a standard to be fully developed" for LTE,<sup>15</sup> and therefore that "[c]onditioning relief on the assurance of interoperability may not be possible since *some* major carriers and national public safety organizations have indicated that their preference is a specific standard, LTE."<sup>16</sup> However, LTE technology has been chosen not by "some" but by virtually all interested national public safety organizations, including the nationwide public safety

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<sup>12</sup> Comments of the Public Safety Spectrum Trust Corporation, PS Docket No. 06-229 (dated October 16, 2009) ("*PSST Comments*") at p. 22.

<sup>13</sup> Comments of the National Emergency Number Association, PS Docket No. 06-229 (dated October 16, 2009) ("*PSST Comments*") at p. 3.

<sup>14</sup> Comments of the National Public Safety Telecommunications Council, PS Docket No. 06-229 (dated October 16, 2009) ("*NPSTC Comments*") at p. 6.

<sup>15</sup> *Flow Comments* at p. 3.

<sup>16</sup> *Flow Comments* at p. 4.

broadband licensee, PSST; and the facts are, while improvements to the LTE standard will continue in subsequent releases, as is the case for any technology including Wi-Fi, the 3GPP standard for LTE (Rel-8) was completed nearly a year ago, and was ratified in March 2009; and, that large-scale LTE production is gearing up with initial deployments of commercial infrastructure based on the standard in place today.<sup>17</sup> The notion that “relief” is needed due to an undeveloped standard is completely without merit.

Flow indicates that the “Commission [should] not require a particular technology solution,”<sup>18</sup> and later states that it “supports the methodology where PSST can set guidelines on interoperable solutions while not restricting the deployment in the spectrum to one single technology.”<sup>19</sup> RTC and its members respectfully submit that it would be counter-productive for the Commission to encourage deployment of a new and untested technology in this situation, as this would render meaningless the significant achievements of NPSTC and the public safety community in identifying LTE as the common technology prescription for the 700 MHz public safety broadband network. Flow’s belief that “the local customer of each of these waiver requests will have every incentive to coordinate with the eventual D Block licensee”<sup>20</sup> is purely conjecture, and is irrelevant at that. First, it is a twist of the facts to imply that only the D Block will have LTE prescribed for it and that any and all other technologies might be freely deployed on

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<sup>17</sup> This past August, Verizon Wireless reported completing successful LTE 4G data calls in Boston and Seattle using 700 MHz commercial infrastructure platforms manufactured by Alcatel-Lucent (Boston) and Ericsson (Seattle). See <http://news.vzw.com/news/2009/08/pr2009-08-14f.html> (dated August 14, 2009). Moreover, it has been reported recently that a half-dozen venture capital firms will invest as much as \$1.3 billion into Long Term Evolution, or LTE, development under a new initiative spearheaded by Verizon Wireless. See C. Gibbs, “Verizon Spearheads Effort to Pour \$1.3B Into LTE” GigaOM (October 5, 2009) (available online at <http://gigaom.com/2009/10/05/verizon-spearheads-effort-to-pour-1-3b-into-lte/>).

<sup>18</sup> Flow Comments at p. 4.

<sup>19</sup> Id.

<sup>20</sup> Id.

the PSBL's broadband spectrum so long as they somehow coordinate with the eventual D Block licensee. In fact, the opposite is true - PSST is the PSBL, and it has designated LTE as the technology for the spectrum under its stewardship (and which Flow now seeks to use); and it is the disposition of the D Block that is unknown. Second, Flow Mobile's reasoning falls apart when it is not in a position to demonstrate that its proposed technology is (or ever will be) interoperable with LTE. In fact, it would be impossible for any proposed technology that has not already developed and standardized for interoperability with 3GPP LTE today (such as 3GPP2 cdma2000 EV-DO via the eHRPD standard) to be capable of interoperability by the time LTE networks become available to public safety in 2010. Any perceived cost savings from constructing a network with non-interoperable, prototype, interim technology will be lost when the budget solution is inevitably scrapped (long before these assets are depreciated) in favor of LTE. In this light, the cost of building an interim network can only be seen as a significant additional cost that could have been avoided (*i.e.*, money down the drain). Third, using the 700 MHz public safety broadband channels for an interim network will "pollute the spectrum" and make the inevitable transition to LTE networks more difficult and time consuming. Thus, use of the Flow Mobile technology will only harm and delay public safety's effort toward a reliable and truly interoperable nationwide 700 MHz public safety mobile broadband network, not relieve it.

Furthermore, Flow Mobile suggests the approach of "providing guidelines [on LTE interoperable solutions] while granting the sublicense."<sup>21</sup> But this idea is clearly a non-starter. It would be far too risky and contrary to the public interest for the FCC to allow work on disparate public safety networks to proceed in the absence of clear

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<sup>21</sup> *Flow Comments* at p. 4.

interoperability guidelines – since this raises the risk that public safety “will again end up with balkanized networks incapable of even minimum interoperability.”<sup>22</sup> Prior to granting any waiver request, the Commission should mandate that technical guidelines for LTE interoperability be produced by the proponent in its application, so that they may be examined and approved by PSST, and so they may be incorporated into the terms of an appropriate spectrum use agreement.

In conclusion, the record demonstrates without any doubt that Flow Mobile’s technology is not ready for deployment today, and there is no certainty that it will ever be “ready for primetime.” With only a single 700 MHz access point in its test bed in Dickinson, ND, Flow Mobile’s technology has not been exhaustively tested over time in real-world, high-demand mobile environments (as has LTE), and is not ready for any such deployment today. There is no certainty that it ever will become a robust, high-performance, highly available and highly reliable “carrier class” mobile broadband technology that is compulsory for public safety applications.

Indeed, the North Dakota consultant’s report cited by Flow in support of its technology reveals, “During the demonstration of the 700 MHz there was only one access point due to the temporary FCC spectrum use authorization. This limitation meant we could not conduct a review of the 700 MHz system handoff capabilities.”<sup>23</sup> This not only confirms that Flow’s technology could not be tested for handoff, but one must also conclude from this statement that only one 700 MHz demonstration access point could be accommodated in the 16 MHz of spectrum granted to it temporarily under STA, not the 5 MHz per channel operation it has proposed for ND in practice, and thus that the 5 MHz

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<sup>22</sup> 700 MHz Third Further Notice at ¶ 54.

<sup>23</sup> Elert Report at p.13.

operation proposed by Flow was not actually tested. Given 16 MHz, Flow could have and should have demonstrated its proposed operation of multiple 5MHz channel access points, with handoffs. If all available spectrum was required for the one access point however, the target 3Mbps throughput that the consultant witnessed was accomplished with over three times the amount of spectrum and corresponding throughput capacity or resistance to RF channel impairment (such as from rapid multipath fading in the fully mobile environment) that would be available per channel in practice. Thus even the meager testing evidenced by Flow to date is wholly extraneous. Adding further uncertainty, the subscriber terminal used in the demonstration was an undisclosed form of wireless modem interfaced to the laptop via a cobbled-together “PC [printed circuit] board mounted in an enclosure connected to the laptop via a Cat 5 patch cord,”<sup>24</sup> not any type of small form-factor USB or PCMCIA dongle that would be used in practice. In stark contrast, after years of large-scale inter-vendor testing, major wireless carriers worldwide are deploying LTE networks *today*, and Verizon Wireless has committed to completing its LTE deployment nationwide (including North Dakota) on an expedited schedule. RTC and its members therefore join the first responders and those commenters who have urged the Commission to require all 700 MHz broadband public safety networks to be constructed using LTE from the outset.

## **II. The Record Does Not Support Reallocation of 700 MHz Narrowband Channels for Broadband Systems**

None of the comments in the record for this proceeding support Flow Mobile’s proposed use of 700 MHz narrowband channels in its proposed public safety network for the State of North Dakota. To the contrary, the record demonstrates the importance of

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<sup>24</sup> *Id.* at p.14.

preserving the 700 MHz narrowband channels for Land Mobile Radio (LMR) one-to-many and unit-to-unit communications.

The National Public Safety Telecommunications Council (NPSTC) opposes any use of narrowband spectrum for broadband, and NPSTC carefully limits its support for waiver applicants to “public safety entities that specify operation on the 763-768/793-798 MHz broadband 700 MHz spectrum.”<sup>25</sup>

Comments from the International Association of Chiefs of Police (“IACP”) take strong exception to the idea of “reallocating” 700 MHz narrowband channels for a broadband system. In particular, the IACP goes to great lengths in seeking to dispel the misconception that wireless broadband will be an alternative to LMR mission critical voice systems.<sup>26</sup> While diplomatically worded, the second sentence appears to be directly aimed at the Flow Mobile proposal: “It also appears that some believe that the 12 MHz of spectrum in the 700 MHz band designated for public safety narrowband voice systems should be reallocated for public safety broadband.”<sup>27</sup>

A white paper provided in support of the IACP’s comments emphasizes the importance of ensuring the continued availability of narrowband public safety networks, because there are no technical broadband standards currently in place or planned to provide the one-to-many communications and talk around (unit-to-unit) capability needed for mission critical public safety voice communications.<sup>28</sup> This is an issue that

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<sup>25</sup> *NPSTC Comments* at p. 1

<sup>26</sup> Comments of the International Association of Chiefs of Police PS Docket No. 06-229 (*dated* October 12, 2009) (“*IACP Comments*”) at p. 1.

<sup>27</sup> *Id.*

<sup>28</sup> See IACP White Paper “Wireless Broadband is Not an Alternative to LMR Mission Critical Voice Systems” by Harlin R. McEwen, Chairman, IACP Communications and Technology Committee, at p. 1.

unfortunately became all too apparent during the September 11 terrorist attacks and Hurricane Katrina. Public safety agencies have already spent millions to deploy land mobile radio voice systems in the narrowband 700 MHz spectrum, with many more deployments being planned.<sup>29</sup> In this regard, comments of the Association of Public-Safety Communications Officials-International, Inc. (APCO) suggest that both the Flow Mobile and North Dakota petitions are problematic because of their proposed use of narrowband channels as part of the broadband system.<sup>30</sup> Like RTC, APCO observes that such spectrum use could pose interference issues for public safety narrowband operations in adjoining regions, raising particular concern for statewide 700 MHz systems that might be deployed in Minnesota, South Dakota and Montana. APCO concludes its discussion with an unequivocal assertion that “[u]nder no circumstances should North Dakota be allowed to “pave over” the 700 MHz interoperability channels to facilitate broadband communications.”<sup>31</sup>

Flow Mobile makes the erroneous claim that no narrowband public safety voice networks are planned in states neighboring North Dakota.<sup>32</sup> However, as shown in RTC’s Comments, the public safety community in the neighboring state of Minnesota has been openly engaged in planning a 700 MHz narrowband public safety voice system, and has filed comments in the captioned docket objecting to inconsistent uses of the narrowband spectrum.<sup>33</sup> RTC further demonstrated that North Dakota has not engaged in the public safety spectrum use coordination procedures with neighboring states as set

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<sup>29</sup> *Id.* at p. 4.

<sup>30</sup> *APCO Comments* at p. 34.

<sup>31</sup> *APCO Comments* at p. 14.

<sup>32</sup> *Flow Comments* at p. 8

<sup>33</sup> *RTC Comments* at pp. 24-25; *citing* Minnesota Region 22 Planning Committee, Amendment Number One to 700 MHz Regional Plan, PS Docket No. 06-229 (*filed* December 14, 2007).

forth in the Commission's rules.<sup>34</sup>

Flow Mobile makes the vague claim that it will be able to prevent interference to any neighboring narrowband voice systems through the use of guard bands and filters.<sup>35</sup> However, as Flow's broadband technology would purportedly span nearly the entire narrowband spectrum requested with individual 5 MHz-wide Wi-Fi TDD carriers, guard bands and filters are simply not applicable to interference that will be co-channel and occupy virtually the entire band.<sup>36</sup> Flow then claims that "the technology approach of Flow Mobile would not impose any interference issues should a jurisdiction using the service be adjacent to another jurisdiction using narrowband services" anyway, and then vaguely cites that an ISM band system (2.4 GHz unlicensed) apparently co-exists with a Flow system in the same band somewhere "without real fear of interference", and that "Thus, there is no basis for interference claims regarding the technology."<sup>37</sup> Flow provides no description as to what type of system this other system might be, except that it is "similar to the Flow Mobile system."<sup>38</sup> From this one would reasonably conclude that it is a Wi-Fi system. It is universally understood that Wi-Fi systems cannot operate co-channel within range of each other, and must be assigned to different frequencies to avoid interference and degradation of service. And indeed, Paul Schuetzler, General Manager and CEO of Consolidated Telcom in Dickinson, ND (where Flow's test system is located) has reported receiving mounting complaints of interference from citizens

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<sup>34</sup> *Id.*

<sup>35</sup> *Flow Comments* at p. 8

<sup>36</sup> This is particularly true since Flow has requested the downlink portion of the narrowband allocation. Even if a few narrowband channels could be squeezed into the end of the band not completely occupied by Flow, filtering would be required on the part of the victim P25 mobile receivers, which is an entirely unrealistic expectation.

<sup>37</sup> *Id.*

<sup>38</sup> *Id.*

attempting to use the 2.4 GHz band, where Flow Mobile’s system occupies the vast majority of the available spectrum.<sup>39</sup> For all of the above reasons, Flow’s unsupported assertion of there being no basis for interference claims is completely without merit.

### **III. Flow Mobile’s Arguments Based on Cost Savings are Erroneous**

In its comments, Flow Mobile boasts that it has “developed a specific deployment plan for the State of North Dakota that would deploy a statewide mobile broadband network covering 95% of the geographic land mass of the state at less than one-tenth the cost of a traditional 3G network.”<sup>40</sup> Flow Mobile further claims that mobile broadband services have been unattainable in low-density rural states “because of the high cost per user of traditional wireless networks”<sup>41</sup> and that, for rural states, the burden of constructing a network “could cost hundreds of millions of dollars per state.”<sup>42</sup> However, these assertions are erroneous and misleading. Verizon Wireless today provides 3G coverage using CDMA2000 Evolution-Data Optimized (EV-DO) to roughly 80% of the geography of North Dakota,<sup>43</sup> with an even larger percentage covered by cdma2000 1xRTT service.

Comments of Flow Mobile cite to “an Ovum study conducted for CTIA” as the basis for claiming “it would cost approximately \$528 million to complete the deployment of 3G in North Dakota.”<sup>44</sup> However the study in question says nothing about the cost of 3G deployment in North Dakota. Instead, a review of the document cited reveals that it is

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<sup>39</sup> See attached, Declaration of Paul Schuetzler.

<sup>40</sup> Flow Comments at p. 1.

<sup>41</sup> Id.

<sup>42</sup> Id. at p. 2.

<sup>43</sup> This is readily apparent from examination of Verizon Wireless’ 3G coverage map, available at its website at <http://vzwmap.verizonwireless.com/dotcom/coveragelocator/images/maps/3Gcomparison.pdf>

a study of productivity gains due to wireless.

Nonetheless, RTC responds to Flow Mobile's claims with relevant study material of its own. RTC has outlined a 4G network for State of North Dakota that would provide similar geographic coverage (95%) with genuine, fully mobile broadband technology (3GPP LTE), which would utilize 142 tower sites as indicated from *bona fide* RF engineering predictions. The highest estimated total CapEx requirements for the entire network, including a full 3GPP Enhanced Packet Core ("EPC"), all backhaul electronics and even the cost of mobile devices, are on the order of \$65 Million – and this for a complete 4G network, let alone a 3G network upgrade.<sup>45</sup>

As for Flow Mobile's CapEx estimations, the company has indicated in an application for broadband stimulus funding a CapEx requirement of \$37,329,200 to construct its North Dakota network.<sup>46</sup> This is clearly not less than "one tenth" the legitimate 4G costs, nor even less than half. In fact, RTC's estimated cost of LTE radio access and core network electronics, based on estimations specific to the project obtained by Vantage Point from multiple actual 4G infrastructure vendors, only represents on the order of 30% to 35% of RTC's total estimated CapEx requirement to build such a network in North Dakota. The remainder (approximately \$42 - \$46 million) is for the unavoidable costs associated with towers, backhaul facilities and the like, which, regardless of technology, would apply to any broadband network that would purport to cover 95% of state geography, including Flow Mobile's. It follows that even if Flow's

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<sup>44</sup> *Id.* at p. 5, FN5.

<sup>45</sup> RTC's estimation was obtained from significant study undertaken by Vantage Point Solutions, which was engaged by RTC member companies for this purpose, and whose certification is attached.

<sup>46</sup> *See* New EA BIP/BTOP Project "North Dakota State Wide Mobile Broadband Project for Public Safety and Underserved, (Easygrants ID: 1608), Executive Summary at p. 3 (Executive Summary available online at <http://www.ntia.doc.gov/broadbandgrants/applications/summaries/1608.pdf>)

radio access electronics are given away free, Flow Mobile's total CapEx estimations would not appear to cover realistically even the necessary remaining network costs, and thus are highly questionable and require closer scrutiny.

However, the Commission need not get bogged down in multiple business plans to determine that Flow Mobile's economic justification lacks merit. Instead, it can rely on publicly available information, showing that the costs to North Dakota to obtain service from Flow Mobile using a non-interoperable, interim technology will be approximately the same as the cost to the State to obtain LTE service "out of the box." The commercial providers that North Dakota can partner with are not asking the State to purchase the equipment and deployment services for the shared network. Instead, these carriers will seek to recover their costs by charging North Dakota usage charges. In particular, as shown in the North Dakota consultant's report attached to Flow Mobile's Comments, "Flow Mobile does expect an ongoing revenue stream of roughly the cost of a commercial air card service today (\$55-60/month/card)."<sup>47</sup> As Verizon Wireless charges for broadband service by monthly data volume regardless of access method today (2G or 3G), it is reasonable to expect that charges will not vary significantly for 4G service. If anything, they can be expected to become less per unit of data volume as broadband networks become more efficient, as has been the case across the industry to date. Thus, for comparable pricing, North Dakota can avoid having to abandon the incompatible Flow Mobile technology after a very short time of usage (and scrapping end user equipment that has become obsolete), and it can instead simply contract with an entity that can provide genuine 4G mobile broadband LTE in a comparable timeframe.

Flow Mobile's intent to charge a usage fee to the State would appear to confirm

that it will be necessary for North Dakota to not only engage in a Request for Proposal process, but also its appropriation process, which generally takes two years.<sup>48</sup> In addition, the public safety planning and coordination process must be completed as prescribed by the FCC's Rules. Thus, full implementation of a Flow Mobile network will take approximately the same time as the Verizon LTE network upgrade.

Flow Mobile's claims that a waiver is necessary because of the timing of the Commission's D Block proceeding are likewise misplaced. Flow Mobile states that "...the availability of both the PSST and D Block remain uncertain. National organizations representing the public safety community remain divided on the approach that the Commission should take on the D Block and many are advocating that Congress should reconsider this matter, which could impose even further delay."<sup>49</sup> Flow further presses its claim that D block proceedings will somehow delay deployment on PSST broadband spectrum by claiming that "[a] delay in granting the waiver requests denies the state and local public safety agencies that are prepared to move forward the opportunity to access needed mobile broadband services since it is very unclear as to how or when the D Block will be resolved."<sup>50</sup> Flow also claims that "[i]t would be unfair to hold those jurisdictions back that have identified an approach to deploy and use mobile broadband services while the larger debate on 700 MHz public safety use continues."<sup>51</sup>

However the facts are these: (1) The Chairman of the FCC has announced that the D Block status will be addressed in February; (2) availability of the PSST broadband

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<sup>47</sup> *Elert Report* at page 19.

<sup>48</sup> North Dakota is one of eleven states that operate on a two-year budget cycle.

<sup>49</sup> *Flow Comments* at p.2

<sup>50</sup> *Flow Comments* at p. 3.

<sup>51</sup> *Id.*

allocation is not uncertain as PSST is already the PSBL; (3) PSST's technology selection for its spectrum (LTE) is clear; and (4) D Block proceedings will not unduly delay use of the PSST broadband allocation. Therefore concern over delay in the D Block disposition is immaterial and is not a valid premise for Flow Mobile's expedited waiver request for use of PSST's broadband spectrum, since years of additional testing and development work still needs to be done with Flow Mobile's proposed technology, and the North Dakota RFP/appropriations and public safety coordination processes still need to play out.

#### **IV. Technical Justifications for Flow Mobile's Technology also Miss the Mark.**

The North Dakota consultant's report cited by Flow in support of its proposed solution, to the contrary, provides numerous examples of evidence substantiating RTC's criticism. In this regard, the *Eler Report* observes that "Wi-Fi continues to be primarily an in-building nomadic standard though some manufacturers and vendor have created modifications whereby the technology can be used for point to point fixed, neighborhood and campus outdoor uses" and it clarifies that "Nomadic means that a user moves from one location to another though is generally not in motion."<sup>52</sup> Comments of RTC similarly observe that "Wi-Fi is inherently a WLAN technology for fixed/nomadic use; its OFDM modulation and multiple access schemes were never intended and are unsuitable for the fully mobile environment."<sup>53</sup> Aside from calling into question Flow Mobile's claims of offering full mobility, there is legitimate question about Flow Mobile's wide-area operations. To this point, the *Eler Report* provides: "The only way Wi-Fi can be used in a wide area network is to cobble together a solution using

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<sup>52</sup> *Eler Report* at p.9.

<sup>53</sup> *RTC Comments* at p. 15 (Note 17).

proprietary solutions.”<sup>54</sup> Such a result is neither standardized nor appropriate to meet the public safety community’s needs for a specialized and robust network.

In addition, the *Elert Report* found that “there does not seem to be any discussion of the offering as being able to support Quality of Service...”<sup>55</sup> and that “[t]he application calls out the support for advanced video, data and voice services in a mobile environment though no data supporting this claim can be found in the technical data provided [by Flow Mobile] beyond the features of the 802.11 standards.”<sup>56</sup>

As to Wi-Fi’s shortcomings, the *Elert Report* further confirms that “Wi-Fi can suffer from subscriber overload; the larger the number of users utilizing a single access point, the higher the level of contention for bandwidth as there is no way to control which users connect to which access point. Other technologies such as WiMAX and LTE are expected to send a subscriber to a different base station when the current base station is overloaded...”<sup>57</sup> This unfortunate characteristic of Wi-Fi networks would create a precarious and unacceptable situation when one considers the number of responders likely to converge at the scene of an emergency.

Flow has stated that it is depending upon the 802.11r standard to provide for fully mobile handoff, claiming that “802.11r standards allow for fast handoff up to 100mph and this is in the base stations currently deployed in our 2.4 GHz networks and is in the 700MHz equipment we have tested under the STA.”<sup>58</sup> The fact is, no such design

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<sup>54</sup> *Elert Report* at p.11.

<sup>55</sup> *Id.* at p.15.

<sup>56</sup> *Id.* at p.15.

<sup>57</sup> *Id.* at p.11.

<sup>58</sup> October 21, 2009 Ex Parte Comments of New EA, Inc. dba Flow Mobile (WT Docket No. 96-86 and 06-150 and PS Docket No. 06-229) (*Flow Oct 21 Ex Parte*) at p. 3.

criterion, nor for that matter any design criteria for vehicular velocity exists in the 802.11r amendment to the 802.11-2007 specification. This is because the primary purpose for 802.11r was not to provide for full-vehicular-mobility handoff, but was simply to reduce the amount of time necessary for a Wi-Fi client to associate with a new access point and continue its data session to a duration that would not be noticeable during a VoIP conversation. As Kelly Davis-Felner, senior director for the Wi-Fi Alliance explains, “[t]he key strength of the new standard lies in the fact that it brings the handoff time between APs down to below the 50 millisecond mark, which, she says, ‘is widely accepted as the point at which it would be perceptible on a voice call.’”<sup>59</sup>

However 802.11r will do little to improve the inherent inability of Wi-Fi – a fixed/nomadic WLAN technology – to deal with the rapidly changing multipath fading of the fully mobile environment. It may lessen symptoms to some extent, but it does not address this problem at its source, which a genuine mobile broadband technology must accomplish for reliable handoffs, as does LTE. This is likely why Flow’s handoff demonstration, per the *EIert Report*,<sup>60</sup> failed miserably at handing off, dropping the session 20% to 25% of the time. This significant failure rate occurred even in a standard 2.4GHz Wi-Fi environment with many closely-spaced access points, each having full 20 MHz-wide channels (not 5 MHz-wide channels, as would be the case in their non-standard alteration into 700 MHz), and at relatively modest vehicular speeds within the town where the unlicensed multiple access point system is constructed, and using 802.11r

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<sup>59</sup> *Introducing IEEE 802.11r*, Jeff Goldman, WiFi Planet, October 7, 2008, p.1. A WiFi client can handoff a data session between access points under the base 802.11 specification without 802.11r, however it can take in the hundreds of milliseconds, which is quite audible. 802.11r allows the client to establish authentication and Quality of Service (QoS) mechanisms with the target access point before making the transition, in order to reduce the time necessary to authenticate and set up new QoS treatment. This benefit will be frustrated however if the radio paths are impaired, such as under full mobility.

<sup>60</sup> The *EIert Report* at p.13 states that “Handoff (transition between access points) on the 2.4 GHz network was demonstrated, although one of 4-5 transitions resulted in a dropped connection.”

and Flow's beam-forming technique. In comparison, cellular carriers commonly target total abnormal call terminations for any reason, not just failed handoffs, to remain at less than 3%.<sup>61</sup>

The consultant's report continues to detail and corroborate many other unanswered issues.<sup>62</sup>

- “The described system of using 80’ poles and batteries would not generally be considered acceptable reliability for public safety communications. However, after asking about this it was discovered Flow Mobile has a more sophisticated plan to provide the necessary coverage and method of building base station sites.”

RTC wonders if the no doubt significantly higher costs of this more sophisticated plan are reflected in its CapEx estimations and claims discussed earlier in this Section. The same question applies where “The cost of providing necessary electrical power is not really covered in any of the material provided, nor was there an adequate response provided during the interview.”<sup>63</sup>

- “The written materials do not well describe the initial capability or long term viability of the backhaul network, but Elert & Associates was later [...] assured the plan is quite adequate [...] This concern however still remains...”
- “The redundancy of the network is neither defined nor described...”

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<sup>61</sup> A survey of 3,800 consumers conducted by ChangeWave from Dec. 9-15, 2008, found that Verizon customers reported an average of 2.2% of their calls dropped during the past 90 days; Sprint Nextel customers reported an average of an average of 3.4% dropped calls; AT&T customers reported an average of an average of 3.7% dropped calls; and T-Mobile customers reported an average of an average of 4% dropped calls. *See, e.g.*, <http://www.bloggingstocks.com/2009/01/14/which-cell-phone-carrier-has-the-fewest-dropped-calls/>.

<sup>62</sup> *Id.* at p.16 for all bulleted items following

- Anticipated equipment environmental concerns such as operating temperature range, power, and battery failure/maintenance were voiced. Flow Mobile’s current plan could stand some improvement in these areas...”

Clearly the overwhelming evidence sustains that Flow’s proposed technology is wholly inadequate, un-vetted, un-tested, untimely and inappropriate for the carrier-class, fully mobile broadband public safety application requirement, and that costs represented for same are not comprehensive.

**V. Commenters Agree that Flow Mobile is Not Eligible to Seek Use of the Public Safety Spectrum, and the State of North Dakota Cannot Act as Flow Mobile’s Agent to Overcome this Lack of Eligibility**

In responding to the FCC’s questions with respect to the Flow Mobile and North Dakota Petitions, none of the commenters were able to conclude that Flow Mobile is eligible to seek a waiver under the terms of Section 337 of the Communications Act, or that North Dakota can lawfully seek a waiver on Flow Mobile’s behalf. And while RTC and its members unquestionably support the goal of providing affordable broadband service to citizens in rural America, the record does not support Flow Mobile’s proposed use of public safety spectrum to provide “commercial and residential services.”

Comments of PSST raise substantial concerns that the Flow Mobile and North Dakota Petitions do not comport with the requirements of Section 337 of the Communications Act and the Commission’s public safety and interoperability goals.<sup>64</sup> Moreover, APCO observes that Flow Mobile “clearly does not meet the requirements of Section 337(f), and therefore cannot be granted authority to deploy a system on the public

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<sup>63</sup> *Id.* at p.18.

<sup>64</sup> *PSST Comments* at p. 20.

safety broadband spectrum.”<sup>65</sup>

RTC agrees with PSST and APCO that the “commercial and residential services” that Flow Mobile is proposing do not qualify as public safety services under Section 337, and are not permitted under current law. PSST correctly observes that Flow Mobile does not meet Section 337’s requirement that public safety services be provided by “State or local government entities” or “by nongovernmental organizations that are authorized by a governmental entity whose primary mission is the provision of such services.”<sup>66</sup>

Even if Flow Mobile (or North Dakota, acting on Flow Mobile’s behalf) fell within Section 337’s limitations, RTC agrees with PSST that the current network proposal in both the Flow Mobile and North Dakota Petitions would work to undermine the FCC’s public safety and interoperability goals.<sup>67</sup> PSST also raises concerns about the potential for Flow Mobile’s operations to cause harmful interference to narrowband systems in nearby regions.<sup>68</sup>

Flow Mobile suggests in its Comments that it will provide commercial services over commercial spectrum, and public safety services over the public safety spectrum. However, Flow Mobile does not currently appear to have licensed commercial spectrum throughout North Dakota; and as noted in RTC’s comments, the language in the Flow and North Dakota waiver requests indicate that a mixed use of the public safety spectrum

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<sup>65</sup> Comments of the Association of Public-Safety Communications Officials-International, Inc. (“APCO”), PS Docket No. 06-229 (filed Sept. 22, 2009) (“*APCO Comments*”) at p. 13; *see also* Comments of the National Telecommunications Cooperative Association (NTCA), PS Docket No. 06-229 (dated October 16, 2009) (“*NTCA Comments*”) at pp. 4-5.

<sup>66</sup> *Id.* citing 47 U.S.C. § 337(f)(1)(B).

<sup>67</sup> *PSST Comments* at p. 20.

<sup>68</sup> *Id.*

is contemplated, with public safety receiving some sort of prioritization.<sup>69</sup> Indeed, the language in Flow Mobile’s Comments in this proceeding, and its representations to the North Dakota consultant hired to evaluate the Flow Mobile network, indicate that Flow Mobile is not committed to deploying separate public safety spectrum. Flow Mobile’s Comments state: “*If required*, Flow Mobile’s network can ensure that the spectrum subject to the waiver request would only be used for public safety purposes...”<sup>70</sup>) (*Emphasis added*). Likewise, the *Elert Report* indicates that “if not a separate network, IEEE 802.1p and 802.1Q are expected to be utilized” to prioritize safety-related traffic.<sup>71</sup> This latter statement suggests that the separate network idea is not a certainty, and commercial traffic may be placed on the public safety network.

In sum, none of the comments or subsequent *ex parte* filings by Flow Mobile or its proponents should dispel the statutory and network interoperability/integration concerns initially raised by the Commission in its August 14<sup>th</sup> *Public Notice*.

## **VI. The Record Overwhelmingly Supports the Use of Long Term Evolution (LTE) Technology for the 700 MHz Public Safety Broadband Network**

Upon review of the comments and the NPSTC Broadband Task Force Report, it is clear that the public safety community and other commenters overwhelmingly support the use of a uniform technology for the 700 MHz public safety broadband network, and that the uniform technology of choice is LTE. Requiring a uniform technical standard will ensure interoperability between other local or regional systems and allow roaming by all authorized entities. Having an FCC-approved and PSST-endorsed standard will also alleviate technical questions that state and regional authorities may not have the

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<sup>69</sup> See *Flow Petition* at p. 8; *North Dakota Petition* at pps. 3-5, 7-8.

<sup>70</sup> *Flow Comments* at p. 8.

<sup>71</sup> *Elert Report* at p. 15 para. 6.

experience or expertise to answer, and (as discussed below) will make it quicker and easier for them to proceed with RFPs and adoption of funding mechanisms.

The benefits of selecting a uniform technical standard that is based on LTE are numerous. Most importantly, and as the comments of AT&T and Verizon Wireless explain, use of LTE will promote regional network deployment on a network-of-networks basis that would: (i) allow public safety entities to choose the network solutions best suited to their circumstances; (ii) achieve nationwide roaming and interoperability and a uniform set of minimum technical capabilities under a national framework of standards; and (iii) facilitate public-private partnerships that leverage commercial infrastructure.<sup>72</sup> Most of the waiver requests filed by regional governments are consistent with these principles and could therefore be granted. However, RTC and its members agree with Verizon that “[t]he waiver petition filed by the State of North Dakota contemplates construction of a network based on a technology other than LTE, and as a result, raises questions about whether it would ensure interoperability with broadband networks used by other public safety agencies.”<sup>73</sup>

Unfortunately, the obvious benefits of using LTE as a uniform technical standard for the 700 MHz broadband public safety network – even at some time in the future – are lost on Flow Mobile. The *Elert Report* (prepared using information provided by Flow Mobile and attached to Flow Mobile’s Comments) indicates that Flow Mobile has stated, “[i]f a standard 4G solution is developed and is financially viable for North Dakota, Flow

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<sup>72</sup> See Comments of Verizon Wireless, PS Docket No. 06-229 (dated October 16, 2009) (“*Verizon Comments*”) at pps. 2, 4-7; Comments of AT&T, Inc., PS Docket No. 06-229 (dated October 12, 2009) (“*AT&T Comments*”) at pps. 12-20.

<sup>73</sup> *Verizon Comments* at p. 3, FN 3.

Mobile would review as a *possible* future upgrade.”<sup>74</sup> Thus, Flow Mobile has not made any commitment to upgrade its network to LTE and there is a lack of evidence in the record to suggest that Flow Mobile is willing or able to upgrade its network over time.

As the comments of AT&T correctly observe, LTE is the most advanced and spectrum efficient technology for the foreseeable future. It will offer 4G data speeds, global economies of scale derived from user pools exceeding two billion, compatibility with future networks, and the ability to fall-back to legacy 3G and 2G networks.<sup>75</sup>

Moreover, the Commission’s specification of LTE as the required technology for the 700 MHz broadband public safety network will allow local and regional public safety networks to be developed using a leveraged network model.

RTC and its members support the deployment of 700 MHz public safety networks using the leveraged network model that has been proposed by AT&T and Verizon Wireless. RTC supports the following components proposed by these carriers:

- Congress should permit public safety agencies to use new or existing grant programs to fund the purchase or lease of fully-dedicated network equipment and managed broadband services;
- The Commission should encourage public safety entities to use a *standard RFP process* – perhaps with PSST consultation – to negotiate agreements with commercial operators, system integrators, infrastructure vendors, and tower site vendors for network equipment and systems based on the public safety entity’s preferred network management model.
- The Commission’s adoption of the leveraged network model should include the establishment of technological standards and minimum system requirements for these public safety systems<sup>76</sup>

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<sup>74</sup> *Elert Report* at page 21, response to question, “Is there a plan to move to a 4G standard solution when it becomes available?” (emphasis added)

<sup>75</sup> *AT&T Comments* at p.11.

<sup>76</sup> *AT&T Comments* at pps.12-16.

**VII. The FCC Should Maintain a Nationwide License Framework for the Public Safety Broadband License Spectrum and Allow Petitioners to Enter into Spectrum Leases with the PSST**

RTC agrees with commenters who believe the FCC should maintain a nationwide licensing framework for the 700 MHz public safety band, and that it should allow qualified state and local petitioners that have access to sufficient funding to enter into spectrum leases with the PSST. Allowing the PSST to lease its 700 MHz spectrum for public safety use on a local or regional basis will provide a road map for state and local governments to proceed with early network deployments while at the same time giving the PSST authority to enforce uniform network standards necessary for roaming capability and seamless interoperability of regional LTE networks prior to the spectrum being made available to authorized lessees.

**VIII. The FCC Should Adopt Uniform Standards as Guidance for State and Local Authorities to Issue RFPs and Funding to Implement 700 MHz Public Safety Networks**

RTC agrees with NPSTC that public safety entities who have asked for the authority to deploy regional broadband systems will need a degree of certainty to move forward with requests for proposals (RFPs) and funding to implement systems. This can best be accomplished by requiring regional networks that utilize the 700 MHz public safety broadband channels to deploy LTE from the outset, and by adopting uniform network standards such as those recommended in the NPSTC Broadband Task Force report. The Task Force recommendations include a sample template on which to base the development of a sublicense/lease agreement between the PSST and the regional public safety entities, as well as provisions for interoperability and roaming.

By adopting uniform technical and operating standards for 700 MHz public safety broadband networks, the FCC will provide state and local authorities with the guidance

they need to issue detailed and effective RFPs and to solicit competing bids for statewide and regional networks. Each state and/or regional authority has specific legal requirements it must follow to ensure the integrity of its procurement activities. Directing these authorities to base their RFPs on uniform criteria (such as compliance with standards that were approved by the public safety community in the NPSTC Broadband Task Force report) will allow them to focus their limited time and resources on the solicitation and evaluation of competing proposals. The members of the NPSTC Broadband Task Force have done a tremendous amount of work and it would be counterproductive to permit state or local authorities to develop their own unique standards.

#### **IX. Waiver Proponents Must Describe their Proposals in Sufficient Detail**

RTC and its members agree with the National Emergency Number Association (NENA) that the budgeting authority for a jurisdiction that seeks authority to deploy a state or regional 700 MHz public safety broadband network must put in writing its commitment to make funds available through the budget process. Such a commitment will ensure funds will be in place for initial and recurring costs and that such funds will be sufficient to pay for the entire network coverage area for which a waiver is being sought. Waiver proponents must also provide sufficient detail on the technical specifications and system applications and services of the planned network, including details on how such a network will be integrated into the nation-wide network at a later date. In this regard, RTC agrees with NTCA that both the Flow Mobile and North Dakota waiver requests failed to provide the factual and legal showings necessary to

justify a waiver grant under the Commission's Rules.<sup>77</sup>

## CONCLUSION

In summary, RTC supports the Petitioners' goal of deploying local and regional wireless broadband networks before or during the construction of the nationwide network. However, the *North Dakota Petition* and *Flow Petition* have serious flaws that are not present in the other public safety waiver requests and none of the Commenters have provided evidence to alleviate the concerns raised by RTC, nationwide wireless carriers, equipment manufacturers, and, most importantly, the public safety community. Moreover, the record shows widespread opposition to the Flow Mobile/North Dakota proposal to occupy not only the public safety broadband spectrum but also the entire narrowband spectrum as well. RTC believes that early 700 MHz public safety network deployments must be consistent with statutory requirements and must comply with the recommendations of the NPSTC Broadband Task Force Report, which are predicated on the use of LTE technology from the outset. By adopting a nationwide licensing framework, and requiring waiver petitions to follow uniform technical standards, the Commission will ensure that rural public safety networks do not become "islands of incompatibility" and it will be able to fulfill its principal goal of creating a nationwide, interoperable public safety network.

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<sup>77</sup> Comments of NTCA, at pp. 2-3.



**Attachment A**

**THE NORTH DAKOTA RURAL TELECOM COALITION**

BEK Communications Cooperative	Steele, ND
Consolidated Telcom	Dickinson, ND
Dakota Central Telecommunications Cooperative	Carrington, ND
Dickey Rural Networks	Ellendale, ND
Griggs County Telephone Co.	Cooperstown, ND
Halstad Telephone Company	Halstad, MN
IdeaOne Telecom	Fargo, ND
Inter-Community Telephone Company	Nome, ND
Midstate Telephone Company	Stanley, ND
Moore & Liberty Telephone Company	Enderlin, ND
Nemont Telephone Cooperative	Scobey, MT
North Dakota Telephone Company	Devils Lake, ND
Northwest Communications Cooperative	Ray, ND
Polar Communications Cooperative	Park River, ND
Red River Rural Telephone Association	Abercrombie, ND
Reservation Telephone Cooperative	Parshall, ND
SRT Communications, Inc.	Minot, ND
United Telephone Mutual Aid Corporation	Langdon, ND
West River Telecommunications Cooperative	Hazen, ND

**Attachment B**

**Declaration of Paul Schuetzler**

General Manager and Chief Executive Officer, Consolidated Telcom, Dickinson, ND

## DECLARATION OF PAUL SCHUETZLER

I, Paul Schuetzler, hereby declare under penalty of perjury under the laws of the United States of America as follows:

1. I am the General Manager and CEO of Consolidated Telcom in Dickinson, North Dakota.

2. Since August 2009, Consolidated Telcom has received at least 25 reports from local businesses and consumers with complaints that their 2.4 GHz wireless routers were not working properly. This is a sharp increase of complaints corresponding to the time when it is believed that Flow Mobile began operations of its wireless network. Prior to this time, I was not aware that Consolidated Telcom had received any complaints of this nature.

3. Consolidated has experienced an increase in complaints from new and existing wireless router users whose in-home and/or business networks were disrupted soon after the turn-up of Flow Mobile's network. The majority of these complaints involved customers whose wireless routers were unable to connect to their home computer or server or whose service experienced disruption of signal.

4. Consolidated's technical staff was able to ascertain that the service disruption was primarily on channels 1, 6, and 11, that we understand are channels used by Flow Mobile's network.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Executed: November 16, 2009



Paul Schuetzler  
General Manager / CEO  
Consolidated Telcom

**Attachment C**

**Declaration of John Michael DeWitte, P.E.**

Vice President of Engineering, Vantage Point Solutions - Mitchell, SD

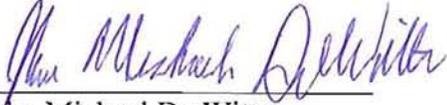
## DECLARATION OF JOHN MICHAEL DE WITTE

I, John Michael De Witte, hereby declare under penalty of perjury under the laws of the United States of America as follows:

1. I am a licensed Professional Engineer in several states including the State of North Dakota (ND Professional Engineering License Number PE 4639). I am the Vice President of Engineering of Vantage Point Solutions, Inc. (VPS). VPS is a telecommunications engineering and consulting firm in Mitchell, South Dakota with a full-time staff of over 100 employees. Our client base of VPS is made up of rural independent Local Exchange Carriers (LECs). I received a Bachelors of Science in Computer Engineering (1982) from Iowa State University (Ames, IA) and a Masters of Business Administration (1992) from Kennesaw State College (Kennesaw, GA).

2. I have reviewed and assisted in the preparation of the foregoing "Reply Comments of the North Dakota Rural Telecom Coalition." With the exception of those facts of which official notice can be taken, all of the technical/engineering/industry facts, descriptions and observations set forth therein are true and correct to the best of my knowledge, information and belief.

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 16<sup>TH</sup> day of November 2009.

  
\_\_\_\_\_  
John Michael De Witte  
Vice President of Engineering

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