

# **Funding 9-1-1 Into the Next Generation:**

## **An Overview of NG9-1-1 Funding Model Options for Consideration**

March 2007





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Dear 9-1-1 and emergency communications industry professionals and policy leaders,

In early 2005 the National Emergency Number Association (NENA) formed the Next Generation (NG) Partner Program. The NG Program is a public-private partnership established to develop a cohesive vision between technology providers and public safety stakeholders in transitioning to an IP-enabled NG9-1-1 and emergency communications system. While a great deal of attention must be paid to technical and operational issues, it is clear that equal time must be given to the public policy issues that are necessary to make NG9-1-1 a reality.

Perhaps the most important policy issue today and into the next generation is funding. Many questions continue to be raised concerning how revenues supporting 9-1-1 should be raised and how the funds should be spent. What exactly are we funding? Who should pay for 9-1-1? What government entity (or entities) will collect and then distribute the monies? Should funds be raised for 9-1-1 alone or for the whole emergency response enterprise of which 9-1-1 is a part?

The following document was created to begin addressing these issues and is the end result of a collaborative effort amongst the members of the NG Partner Program representing a unique cross-section of industry and public safety perspectives. The paper does not recommend one specific funding model over another but puts forth several alternative funding models for consideration that outline the benefits and potential barriers to the proposed models. None of the ideas raised are meant to be exclusive, as the best funding model may be a combination of several ideas.

Every state and region will surely have to deal with their own political realities, but every state does need to provide leadership on this issue, take a step back and determine what the best path forward is. I hope this paper provides some insight and ideas as we work together to adequately fund the best 9-1-1 and emergency communications systems possible.

Sincerely,

Jason Barbour, ENP  
President  
National Emergency Number Association

## Background: Current 9-1-1 Funding Model

The current funding model for 9-1-1 service has its foundation in the historic regulated wireline telecommunications environment of the past 30 years. Subscriber fees for 9-1-1 service are assessed on wireline and wireless phone bills and are collected by telecommunications providers. The funds are then remitted to a state or local government agency who distributes the funds within the state/county to pay for the 9-1-1 system and to supplement Public Safety Answering Point (PSAP) operating budgets. The subscriber fees are typically combined with revenue provided from the general tax fund. The concept of a 9-1-1 subscriber fee on a monthly service bill remains virtually unchanged today from its original inception to today's funding practices. Several variations on this generalized approach exist and there is little consistency among and within states on 9-1-1 surcharge amounts which often differ based on the service type (wireless, wireline, VoIP) or the location in which the fee is being collected<sup>1</sup>.

There are significant challenges today and more on the horizon that indicate the existing 9-1-1 funding model is not sufficient to maintain PSAP operations and to provide the necessary funding for the migration to the next generation (NG) 9-1-1 system. 9-1-1 has moved beyond its original fixed wireline circuit switched telephony for devices calling 9-1-1, as well as the underlying technology of the 9-1-1 network. Historically, it was assumed that funding mechanisms for 9-1-1 were to be levied on an access line basis. Only traditional telephone companies would provide 9-1-1 network and database administration services to governmental entities, thereby relying on the fixed location access line to craft 9-1-1 tariffs. These assumptions are no longer valid with the advent of modern wireless and IP-based communications. Funding models need to adapt to the technical realities of today and be flexible enough to accommodate future technology advances.

Simply modifying the current surcharge model to account for a changing landscape that includes not only an increased use of wireless and IP-based services, but also a corresponding drop in traditional wireline phone service, might be an option if the goal was simply to maintain the status quo. However, that is far from the goal that the public safety industry wishes to achieve. In order to meet the public's expectation of ubiquitous 9-1-1 service for all technologies, there is simply no choice other than to migrate from the current limited 9-1-1 system to a fully IP-enabled NG9-1-1 and emergency communications system capable of responding to a 9-1-1 communication "anytime, anywhere, from any device" and with interoperable voice, data and video communications among all emergency response entities. For more on the NG9-1-1 system, view the Findings and Recommendations of the 2005 NENA NG E9-1-1 Program, available at [www.nena.org](http://www.nena.org).<sup>2</sup>

## NG9-1-1: What Are We Funding?

The NG9-1-1 model envisions a system with shared networks, databases and applications in which the communications costs of public safety agencies are shared amongst all participants in the NG9-1-1 system. This will result in less reliance on individual 9-1-1 centers paying for all aspects of the system at the local level, and will potentially reduce costs through sharing with many non-9-1-1 agencies. This necessarily requires increased coordination of managed IP networks at the state (or regional) level and funding models need to reflect this jurisdictional paradigm.<sup>3</sup> The federal government has a key role to play in providing overall system

<sup>1</sup> Some concepts described in this section and throughout this document are taken from the NENA VoIP Funding and Regulatory Issues Operations Information Document (OID). <http://www.nena.org/media/files/VoIPNENAFundingRegulatoryOIDfinal060606.pdf>

<sup>2</sup> [http://www.nena.org/media/files/ng\\_final\\_copy\\_lo-rez.pdf](http://www.nena.org/media/files/ng_final_copy_lo-rez.pdf). See also final reports of the FCC's Seventh Network Reliability and Interoperability (NRIC) Working Group 1B and 1D available at <http://www.nric.org/fg/index.html>

<sup>3</sup> For a discussion on evolving jurisdictional roles in an NG9-1-1 environment see summary of jurisdictional perspectives discussion of 2005 NG E9-1-1 Program at <http://www.nena.org/media/files/Policy2roundtable-writeup.pdf>

coordination and should provide funding to states for the development of standardized IP-based emergency communications networks. However, states cannot depend on federal funding for the continued maintenance and operation of the 9-1-1 system.

The migration to NG9-1-1 will primarily occur in a phased approach, and while the system will be fully IP-based and architecturally different from today's system, 9-1-1 will remain a local service. Contributions to the 9-1-1 system should still come from users of the system. Thus, there remains the issue of how to best assess and collect funds to pay for the system components and operational costs to effectively migrate to and maintain the NG9-1-1 system. This paper does not attempt to definitively answer the question of what is the optimal model. Rather, it attempts to offer some possible solutions that should be scrutinized by policy makers while taking individual state and local concerns into consideration with an eye towards reform. Simply put, relying on the current patchwork 9-1-1 funding model is not sufficient to maintain the current 9-1-1 system, let alone provide for the essential evolution to NG9-1-1.

## PRINCIPLES

Regardless of the ultimate model chosen, sufficient funds must be provided to pay for migration to and maintenance of a NG9-1-1 system (the network and associated control and database systems), as well as PSAP equipment and operational and training costs, to ensure all emergency communications are routed to the appropriate PSAP and information is efficiently shared amongst the appropriate emergency response entities. In assessing and collecting 9-1-1/emergency communications funds, some basic principles should be adhered to:<sup>4</sup>

1. Funds collected must be used for their intended purpose - No raiding for non-9-1-1/emergency communications purposes
2. Funding from all access methods – Any communications device in which the public has an expectation to receive emergency services
3. Technology and competitively neutral
4. Equitable allocation of revenues
5. Constantly evolving system focused on improving level of service
6. Efficient, accountable operations
7. Coordination, cooperation and collaboration amongst all industry players and government entities

## Funding Model Options

No option listed below is meant to be exclusive. The best funding model may be a combination of several options. In addition, this list is not meant to be exhaustive, as the options stated below are only those that have been identified to date. In addition to the funding model issue, policy makers are also encouraged to consider other systemic issues when providing funding for 9-1-1, including determining what minimum requirements PSAPs need to meet to qualify for funding and whether consolidation of numerous PSAPs in a region is needed. The end goal should be to consistently drive down the average cost of each 9-1-1 communication through technological advancement and overall system performance.

### 1. Fixed amount surcharge on all calling services

Assessing fixed monthly surcharges on calling services (wireline, wireless and VoIP) is the current model.<sup>5</sup> It has historically been primarily a reactive model whereby every time a new

<sup>4</sup> See summary of funding meeting of 2005 NG E9-1-1 Program at <http://www.nena.org/media/files/PolicyRoundtable3Summary.pdf>

<sup>5</sup> A list of current surcharge levels for wireless and wireline services in all 50 states and the District of Columbia is available at [http://www.nena.org/media/files/9-1-1UserFees\\_2.pdf](http://www.nena.org/media/files/9-1-1UserFees_2.pdf)

technology emerges that provides access to 9-1-1 (such as wireless, and now VoIP) new legislation is needed or existing legislation must be modified to incorporate the new service into the system. This takes time and inevitably leads to inconsistencies. If a calling service surcharge model is to be employed it must account for all services and devices that can reasonably expect to be connected to 9-1-1 and legislation must make it clear which types of services are expected to pay the surcharge. The language needs to be designed in a manner that does not require the legislation to be revisited for all new technologies that emerge in subsequent years. In addition, utilizing a surcharge based on a monthly percentage of subscriber bills should be considered rather than a fixed amount. Based on the functionality of the service and its ability and expectation to connect to 9-1-1, the surcharge should apply on day one that the service is offered to the public. This model assumes a 9-1-1 specific surcharge that is collected for and spent only on the 9-1-1 portion of the costs associated with connecting to an NG9-1-1/ emergency communications IP network.

#### Potential Limitation or Barrier to Implementation:

A concern and possible limitation with this system is that telephone numbers appear unlikely to maintain their central role because of increasingly inherent limitations. In the long run it is very likely that telephone numbers will be supplemented by some other manner, such as an e-mail style address (or URI – Uniform Resource Identifier). Clearly, due to their current widespread use and availability, telephone numbers will continue to be important for a significant period, but as end-to-end IP communications becomes more common, many of these entities will only be reachable by an email-like identifier. Additionally, some indications suggest that telephone service business models in the future will move away from a fixed monthly bill whereby service is offered for free and revenue will be generated through applications and advertisements (Skype and instant messaging (IM) services are free today and used by millions). In that case, a surcharge on a free service will result in the collection of \$0. Thus, the longevity of a purely 9-1-1 surcharge on calling services option is somewhat doubtful.

## **2. Surcharge on access infrastructure provider (AIP)**

An alternative to the communications service provider surcharge model is one applied to the access infrastructure provider (AIP)<sup>6</sup>. The AIP is the entity that provides the physical interconnection capability to the end user. Two examples of an AIP would be a cable TV company or a digital subscriber line (DSL) company that provides broadband Internet access. The NG9-1-1 system assumes that the AIP will become an entity responsible for determining location of 9-1-1 calls. The AIP could also collect and remit surcharges since it is local, known, and often regulated. Thus the AIP model would move the surcharge from the calling network to the access network, whereby every access network that could potentially be used to dial 9-1-1 would be assessed a surcharge. Since wireline and wireless networks include access networks, they are included (effectively this is no change to them, although there will be internal organizational issues for these companies since most, if not all, telephone companies are legally and/or operational separated from their AIP arm). The fundamental change would be that individual communications service providers would not be subject to a surcharge, but every broadband network provider would be. Since the location of IP-based 9-1-1 communications will need to come from the access network, the broadband (and any other) access network provider should be able to offset a portion of their costs to deploy location determination against the surcharge.

As all kinds of new “carriers” in the IP domain are added to the 9-1-1 mix, including those with no actual revenue stream (like instant messaging services), surcharges on calling services become problematic. By eliminating the surcharge on the calling network and applying it to

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<sup>6</sup> See Appendix A for a more detailed description of this model.

the access network, the problem is eliminated. Additionally, IP-based communications are increasingly being provided by international companies over which state and local governments lack regulatory authority. However, the access network is always local, while the calling network and provider is often not. Moving the fee to the AIP resolves this international issue as well. Additionally, in this model, if a city were to deploy a city-wide municipal Wi-Fi or Wi-Max network, the network provider (city government) would be expected to pay for 9-1-1 access over that network just like any other commercial network provider. Finally, if done right, this model could incentivize the broadband carriers to deploy the location infrastructure if they can recover a portion of the costs to do so through a 9-1-1 access provider surcharge.

Some combination of a surcharge on all calling services and access infrastructure providers is a possible option for consideration.

#### Potential Limitation or Barrier to Implementation:

The most significant challenge with this model is that it is fundamentally new. Broadband providers are not used to paying into the 9-1-1 system, and will likely resist doing so initially, while communications service providers have a long history of paying 9-1-1 fees. Consumers would also experience a change, although the monetary impact should essentially be neutral.

### **3. Universal Statewide Communications Surcharge**

Rather than allowing for individual surcharges on various communications services which are specifically dedicated to 9-1-1, another possibility is to assess one statewide universal communications surcharge (UCS), which would be a single flat fee, likely ranging from 3-5%, on all communications services<sup>7</sup>. The resulting funds would be used to pay for 9-1-1 and other communications needs for the state and would not be a 9-1-1 only fee. The UCS would be collected on all communications services, including all wireline and wireless service providers, Internet service providers, cable and satellite communications and entertainment services. It is possible that such a funding model could also be used to raise funds to pay for other N-1-1 services, such as 2-1-1, 3-1-1, 5-1-1, 7-1-1, 8-1-1 and national emergency service 800 (toll free) numbers such as suicide prevention hotlines and poison control centers.

Revenue would be collected by the state and allocated for several purposes, including the development and maintenance of a managed IP network for emergency services, PSAP operational costs and other 9-1-1 system components. A possible breakdown of the fund could be as follows, though other allocations are certainly possible and would need to be determined by individual states: 20% for state administrative costs and general purposes, 40% for statewide infrastructure construction/operation and 9-1-1 call delivery and 40% for direct PSAP/communications and operational support. This model is based on percentages of revenues collected rather than fixed amounts. Assuming that consumer bills will consistently reflect the operating costs of communication service and network providers, revenue generated from a UCS on such bills will reflect general market realities and should provide consistent funding for 9-1-1 and emergency communications.

It is important to note that any model based on this proposal must have significant safeguards to prevent fund "raiding" by the state beyond the percentages defined for administrative costs. Additionally, a cost recovery mechanism would likely need to be established and provided to communications suppliers that would also come from the administrative allocation. As with the AIP surcharge model, a benefit would be to incentivize broadband providers to offset a portion of their costs to deploy location determination technology.

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<sup>7</sup> See Appendix B for detailed example of a proposal based on this model.

The percentage allocated to the state for infrastructure construction and operation, which includes 9-1-1 call delivery, should be sufficient to underwrite construction of shared statewide infrastructure that could be utilized for 9-1-1 call delivery, as well as radio interoperability, homeland security applications and intelligence/information sharing. In some cases, jurisdictions have already begun or even completed construction of jurisdiction-wide or multi-jurisdictional networks. Since the existence of these networks greatly simplifies the task of constructing statewide networks by allowing expedited connection to existing special purpose networks, there should be a provision made to compensate forward looking jurisdictions for the state oversight/management of their existing infrastructure. Finally, the remaining monies from the UCS funding would be allocated to direct PSAP/communications costs.

#### Potential Limitation or Barrier to Implementation:

As with the AIP surcharge model, the main challenge with this model is that it is a new approach. Local governments and 9-1-1 governing authorities along with individual PSAPs will be skeptical of a model that is structurally different from what they are used to and in which all funds are collected at the state level. These entities will need significant guarantees that they will not receive lower funding than their current levels. Demonstrating a positive difference in the amount collected in this model as compared to the increasing declines in revenue they are currently receiving as wireline telephone subscribership declines should go a long way to ameliorate such concerns. While change is difficult, the Commonwealth of Virginia was successful in adopting a model along these lines which goes into effect in January of 2007<sup>8</sup>. Finally, consumers would also experience a noticeable change in this model and would need to clearly understand what services are being taxed and why.

#### **4. Universal Federal Communications Surcharge**

Rather than a universal state fee, another option is a national funding model with uniform fees assessed to all communications services nationally which the federal government would collect and distribute to states, who in turn would then distribute such funds to the appropriate 9-1-1/Public Safety Authorities. The model is a variation of the Universal Statewide 9-1-1 Communications Surcharge model, but it is applied at the federal level. Justification for a federal model is based on efficiency and concerns that a state level UCS would require all 50 states to enact legislation that would likely result in inconsistencies amongst the various states. With a federal surcharge, legislation would only need to be adopted once and would ensure national consistency. Not having to wade through different state and local funding schemes could ultimately reduce administration costs of providers, and thus overall service costs of consumers. The Federal Universal Service Fund (USF), a telecommunications fund mandated to long-distance telecom companies in 1996 to subsidize Internet and telecommunications access, may be adaptable for 9-1-1 purposes based on this model.

Additionally, this model would allow the federal government to retain some percentage of the funds for administration costs and remit the remainder back to the states. There would need to be qualifications placed on states in order to receive the funding, including a commitment to NG9-1-1, as well as a statutory guarantee that the federal government could only use the funds as specified by law. The states would receive back an amount they need to build/maintain infrastructure and operational costs, which would not necessarily be a percentage of what they remitted. In this way, for example, New York tax payers could end up partially subsidizing Montana tax payers in the interest of building a nationwide network. Given the mobile nature of American citizens and their expectation of effective 9-1-1 service wherever they are, this may be a plausible concept.

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<sup>8</sup> <http://leg1.state.va.us/cgi-bin/legp504.exe?ses=061&typ=bil&val=hb568>

Since some leaders in state and local government may have concerns with ceding such authority to the federal government, a possible compromise might be to maintain a version of the state/local surcharge model to pay for ongoing operational costs but to have a separate federal communications fee specifically to raise funds for the development of managed NG9-1-1 IP networks. A drawback to such a model is that multiple surcharges would be collected on the same line. Thus, it may actually be more acceptable and efficient to adopt a single federal surcharge.

Potential Limitation or Barrier to Implementation:

Similar challenges described with a state universal communications surcharge will exist with a federal model as well. Sensitivities of local government and individual 9-1-1 centers will be even greater when the federal government is the entity collecting funds. Safeguards to ensure current funding levels, at a minimum, are maintained would likely need to be guaranteed. Additionally, many Members of Congress will be very reluctant to enact a new federal communications tax as the general direction in Congress has been to eliminate new taxes on communications services and the Internet. Also, Congress may be reluctant to pass legislation giving the federal government authority over a function that has traditionally been a state and local government function.

**5. User (incident) fee**

Another possible solution is to assess a user fee for each 9-1-1 call, similar to a 900 number call in which users of the service are charged for use of the service. While this approach would directly attribute the charge to individual users, potentially bypassing the provider, implementation and customer billing would be difficult and it would be unlikely to raise enough funding on its own. However, this option could very well be considered in conjunction with other funding options.

Potential Limitation or Barrier to Implementation:

The main limitations with this model is that implementation and collection of funds would be a very difficult process and unlikely to raise sufficient funds. Another concern would be that people might be discouraged from dialing 9-1-1 if a significant charge would come with making such a call. Finally, it would not be possible to bill non-initialized phones (those that can dial 9-1-1 but are not tied to an active service plan) under such a model.

**6. General Fund Tax Revenue (federal, state and local)**

As mentioned in the discussion on the current funding model, today's 9-1-1 is partially funded by revenue from general tax funds. In a few instances the 9-1-1 system is entirely funded by general tax revenues, but that is certainly a possibility. Other emergency service functions, including police, fire and emergency medical services (EMS), do not rely on any profession specific taxes. They are paid for by general tax dollars. 9-1-1 could adopt this model as well.

Potential Limitation or Barrier to Implementation:

A general concern with this approach in the past has been the fact that 9-1-1 is traditionally an underfunded emergency profession for a variety of reasons, often political, and there are concerns that 9-1-1 services will not receive its fair share of funding if there are not specific funding sources for 9-1-1.

## Conclusion

The public expects their 9-1-1 call to be answered by the appropriate PSAP who can ensure efficient and effective emergency assistance is provided to them. Increasingly, the public has access to new technologies that they expect will also be able to connect to 9-1-1 in an emergency, particularly the youth of our nation who communicate using text and video communications unlike any generation before them. This is also true of the deaf and hard of hearing community that is increasingly using text devices to communicate and must be able to access 9-1-1 as efficiently and easily as the rest of the hearing public. To accommodate the growing expectations of the public and the needs of 9-1-1 telecommunicators, the 9-1-1 system must evolve, and is already beginning to evolve, to a next generation 9-1-1 system. Accordingly, the funding model for 9-1-1 must reflect these technological advancements and provide necessary funding to migrate to an NG9-1-1 system and maintain or enhance funding for the overall 9-1-1 and emergency communications system. Maintaining the status quo, for the 9-1-1 system architecture or the methods that fund it, is simply not an option.

# Appendix A

## Suggested Access Infrastructure Provider (AIP) Funding Method for 9-1-1 Network and PSAP Enhancements Required by the Migration to IP-Based Technology

### BACKGROUND

Many telephone lines in service today will never be used to make a 9-1-1 call. These lines terminate in fax machines, modems, remote telemetry, alarm and a host of other devices. Some terminate in PBXs as incoming trunks that cannot be accessed for outgoing calls. Regardless of their application, all are assessed 9-1-1 surcharges because they are telephone lines and, as such, must be capable of calling 9-1-1. The historical application of surcharges is based on capability, not on actual use.

### IMPACT OF INTERNET TELEPHONY

With the advent of Internet Telephony, every broadband access connection now has the capability to generate a 9-1-1 call. VoIP Service Providers (VSPs) and 9-1-1 authorities must all take steps (and spend money) to accommodate 9-1-1 calls from VSP subscribers.

In the IP/VoIP environment, the functional equivalent of the incumbent local exchange carrier (ILEC) is the VoIP Service Provider (VSP). One significant difference, however, is that there is no physical connection between the VSP and the subscriber. The VSP does not know, with any certainty, the exact location of the subscriber. Furthermore, the VSP may be located anywhere on the planet – this makes regulation and the imposition of state or federal surcharges problematic.

### THE FUNDING SOLUTION

The answer is to assess 9-1-1 surcharges on broadband access connections and apply that revenue to pay for validation database (VDB)/emergency routing database (ERDB) systems, network changes and PSAP equipment changes. The first step will be to modify/enact legislation to assess the fee.

The providers of broadband access are commonly known as Access Infrastructure Providers (AIP). The bulk of broadband access in North America is provided by incumbent telephone companies (via DSL) and cable television companies (via cable modem). Telephone companies already collect 9-1-1 surcharges on telephone lines, so the basic process is in place to collect surcharges on broadband.

Most cable TV companies are also CLECs, who already collect 9-1-1 surcharges on their telephone lines. Again, the process is in place to collect on cable modem access.

Both entities are already regulated at the state level. This should not create a hardship for either.

There is also the option of acquiring wireless broadband access from an AIP other than the telephone or cable television company. That option should be addressed in the enabling legislation. Wireless broadband access, like its wired cousin, will be provided on a subscription basis, and that billing vehicle can be used to collect the surcharge.

### SUMMARY

The benefits of collecting 9-1-1 surcharges through the AIPs include:

- The AIP is the only party that knows the physical location of the subscriber with any certainty

- The AIPs are already regulated at the state and in some cases, local level
- The State has the option to impose surcharges on any new entrants into the AIP market via legislation
- As IP telephony use becomes more widespread and traditional telephony lines are displaced, 9-1-1 surcharge income will decrease. Collecting 9-1-1 surcharges on broadband connections, at minimum, helps stabilize PSAP funding.

Finally, going forward, the AIP will be expected to implement technology to determine the location of the subscriber and store or forward that information (Location Object) for use in the routing and delivery of a 9-1-1 call. This may require a significant expenditure by the AIP. Having the AIP collect the surcharge creates the option to allow the AIP to keep a portion of the surcharge, in order to offset those costs while still generating revenue for the 9-1-1 authority. The AIP is kept whole while the PSAP maintains its funding level.

## Appendix B

### PROPOSAL FOR A STATEWIDE UNIVERSAL COMMUNICATIONS SURCHARGE

This proposal would replace myriad current 9-1-1 surcharges with a single 5% Universal Communications Surcharge (UCS). It is modeled on legislation that goes into effect on January 1, 2007 in the Commonwealth of Virginia. Information on the VA Legislation can be found at: <http://leg1.state.va.us/cgi-bin/legp504.exe?ses=061&typ=bil&val=hb568>.

### NEXT GENERATION 9-1-1 (NG9-1-1) CONCEPTS

NG9-1-1 is an Internet Protocol (IP) based Emergency Services Internetwork (ESINet) capable of supporting not only 9-1-1 delivery, but also a multitude of additional public safety and emergency services communications needs. NG9-1-1 is supported by a number of reports including the Network Reliability and Interoperability Council VII (NRI VII) Focus Group 1D, chartered by the Federal Communications Commission (FCC), [http://www.nric.org/meetings/docs/meeting\\_20051216/FG1D\\_Dec%202005\\_Final%20Report.pdf](http://www.nric.org/meetings/docs/meeting_20051216/FG1D_Dec%202005_Final%20Report.pdf), the United States Department of Transportation (DOT), National Highway Traffic Safety Administration (NHTSA) Intelligent Transportation Systems (ITS) NG9-1-1 Program Office Concept of Operations, <http://www.its.dot.gov/ng911/pdf/ConOps.pdf>, and the National Emergency Number Association NG Partner Program, [http://nena.org/media/files/ng\\_final\\_copy\\_lo-rez.pdf](http://nena.org/media/files/ng_final_copy_lo-rez.pdf).

This model assumes that fundamental to NG9-1-1 is a changing role of federal, state and local governments, whereby the state takes over the responsibility for operation of the ESINet and for the delivery of 9-1-1 calls for service, while local Public Safety Answering Points (PSAPs) retain responsibility for local data maintenance and delivery of emergency services. This changing paradigm is expected to provide significantly improved service levels with potentially reduced cost of operations. This has been partially demonstrated in Elmore County, AL where a limited regional IP implementation has resulted in a 25% - 40% reduction in operating costs:

<http://www.e911institute.org/2006%20Gala/Awards%20Summary%20with%20Photos.pdf>.

It is critical to note that with the proliferation of new communications technologies, it is no longer practical or possible for most individual PSAPs to deal effectively with future 9-1-1 needs. The old idea that if you give enough money to the individual PSAPs, they can "fix" 9-1-1, simply does not work. Throughout the United States there are still areas that do not have even basic 9-1-1. An NG9-1-1 solution should be able to "leap frog" these PSAPs into the future and provide uniform service levels across states and across the country. In an increasingly mobile society, ubiquitous 9-1-1 service is more necessary than ever. While some jurisdictions have been very proactive in providing advanced 9-1-1 services, the residents of these jurisdictions may not find universal 9-1-1 service when traveling. NG9-1-1 provides a plan for effective and integrated deployment of new technologies as opposed to a "hodgepodge" of local implementations. NG9-1-1 will potentially save lives by speeding and simplifying deployment of new technologies. The utilization of a shared infrastructure will also potentially reduce cost.

### THE 5% UCS MODEL

This addendum proposes a general purpose funding model for NG9-1-1 based on a 5% UCS. The UCS would be a flat rate fee collected on all communications services as defined in the aforementioned Virginia legislation and would include all wireline and wireless telephony, Internet access, cable and satellite communications and entertainment services.

For purposes of this discussion, a funding division of 20% for administrative costs, 40% for

statewide infrastructure construction/operation and call delivery and 40% for direct PSAP/communications support is proposed. This model is based on percentages of revenues collected rather than fixed amounts. Since it is highly unlikely that anyone's communications costs are going to go down, this model provides consistent increases in funding across the board. Based on estimates of a 5% UCS for one northeastern state, a \$2 billion estimated UCS collection will be used as an example of funding utilization.

### **ADMINISTRATIVE COSTS**

Since this is proposed as a Universal Communications Surcharge, (as opposed to a Public Safety or 9-1-1 levy), it is reasonable to use a portion of the funds collected for administrative costs. It is important to note that any model based on this proposal must have significant safeguards to prevent fund "raiding" beyond the percentages defined for administrative costs.

Administrative costs are an amount, (in this example, \$400 million), that may be directed to any needs defined by the State. Costs incurred to administer the collection of the UCS, by an entity such as a Public Service Commission or 9-1-1/Emergency Communications Administrative Board, are an example of services that could be funded with this money. Prompt and proper distribution of funding to the appropriate emergency services entities would also come under the heading of administrative costs. It is also possible that administrative funds could be used to pay for other N-1-1 services, such as 2-1-1, 3-1-1, 5-1-1, 7-1-1, 8-1-1 and national emergency service 800 (toll free) numbers such as suicide prevention hotlines and poison control centers, many of which have no dedicated funding sources at this time.

In addition, a 1% - 5% cost recovery to communications suppliers would also come from this allocation. In considering cost recovery, an example would be the State of Texas, which allows cost recovery in the amount of 1% of funds collected. Various industry representatives have suggested that they would like to see 2% cost recovery. This amount is to cover actual administrative costs incurred. It has been pointed out that implementation and operation of NG9-1-1 location technology as well as other potential NG9-1-1 related services, such as Web MultiCast, represent legitimate expenses to Internet Service Providers (ISPs). VoIP providers incur different costs to operate location databases and provision a state level Master Location Data Base (MLDB). Wireless providers have costs associated with location technology and wireline providers will be expected to provision phone numbers in a state operated MLDB. Accordingly, it may be reasonable to allow as much as 5% of funds collected to be retained as cost recovery for the communications suppliers provided they are required to implement NG9-1-1 services quickly and efficiently. In this example, up to \$100 million would be retained by the communications suppliers to underwrite implementation and operation of NG9-1-1 related services and at least \$300 million would be available to the state for administrative operations.

### **STATEWIDE INFRASTRUCTURE CONSTRUCTION/OPERATION AND CALL DELIVERY**

The 40% allocated to the state for infrastructure construction and operation, which includes 9-1-1 call delivery, (in this example, \$800 million), should be sufficient to underwrite construction of shared statewide infrastructure that could be utilized for 9-1-1 call delivery as well as radio interoperability, homeland security applications and intelligence/information sharing, (to include NCIC/police information networks). By the state constructing shared infrastructure and assuming responsibility for its operation, a significant cost is lifted from the individual PSAPs, (either county or municipal). It should be noted that, over 10 years, this proposal generates approximately \$8 billion. As a reference, the Commonwealth of Virginia currently has a contract for such infrastructure with Northrop Grumman Corporation in the amount of \$2 billion over 10 years.

In some cases, jurisdictions have already begun or even completed construction of jurisdiction-wide or multi-jurisdictional IP networks. Since the existence of these networks greatly simplifies the task of construction of statewide networks by allowing expedited connection to existing special purpose networks, there should be a provision made to compensate forward looking jurisdictions for state oversight/management of their existing infrastructure. These local networks would thus become part of the statewide ESINet and could then be administered by the state and, if necessary, brought into compliance with state ESINet standards if they do not meet (or exceed) these standards already. Since NG9-1-1 is state-centric by definition, the local jurisdiction may be required to turn over local network administration and operation as a prerequisite for compensation through the UCS. In another possible scenario, if a local or regional entity wishes to maintain and operate its own portion of the ESINet, then it should be possible to direct statewide infrastructure funding to that entity based on the "Rule of Thirds". The "Rule of Thirds" is the idea that one third of funding would be allocated on the basis of geographic area served, one third on the basis of population served and one third on actual call volume, (which could be measured under an NG9-1-1 distribution system). In this case, it would be required that the local or regional networks meet or exceed state or national standards.

In considering funding for Statewide Infrastructure Construction and Operation, once the initial construction is completed, it is expected that the cost of operation will be significantly reduced. Given that this funding model is state-centric and that a national internetwork is ultimately envisioned, it is reasonable to allow that, upon completion of construction of in-state infrastructure, funding no longer needed for construction would be utilized for deployment and operation of a federal interstate ESINet. In the event that some large area, low population states are still in need of implementation/deployment funding, some of these funds might also be allocated to provide ubiquitous 9-1-1 throughout the country. In any event, UCS funding originally designated for Public Safety should always be utilized for those applications with no more than 50% of any savings realized directed to general public safety uses and the remainder allocated to direct PSAP/communications funding. An alternative federal variation of this proposal is discussed later in this document.

#### **DIRECT PSAP/COMMUNICATIONS FUNDING**

The remaining 40% of the UCS funding would be allocated to direct PSAP/communications costs. Under this example, available funding would be \$800 million. This proposal recommends allocating these funds on a 50/50 basis between PSAP operations, (including equipment, staffing, training and all other costs), and communications needs, (including radios, radio interoperability and other communications requirements that may or may not actually reside in the PSAP but are required for the PSAP to communicate with first responders).

Further, the "Rule of Thirds" would also apply to PSAP/Communications fund allocations. Using this funding rule, large area (potentially rural) jurisdictions would receive the "lion's share" of the geographic funding while high population jurisdictions would receive most of the population-based funding. In most cases, high population jurisdictions would also receive most of the call volume based funding. Volume-based funding, however, provides some additional funding for the more rural areas that have to deal with a large transient population such as generated by special events or seasonal populations that may not appear in traditional population numbers.

In all cases, PSAP/communications would have to receive at least "revenue neutral" funding, (as compared to current surcharge collections), and in most cases there would be a significant increase in funding, (initial estimates are a three to four times increase in funding), over current funding models.

## **FEDERAL MODEL**

A question has been raised as to whether this funding model, (which is proposed as a state model), should be adapted for a federal model. While it is certainly possible to adapt this model such that the 5% UCS would be collected at the federal level and then distributed to the states, this may only add an additional level of administration, (and hence, cost), to the program. In addition, there may be states that can operate with a lower initial UCS. As cost benefits of an NG9-1-1 solution begin to be realized, states could also elect to reduce the UCS. However, given the propensity of the states to “raid” such funds, a federal model may well be worth the “overhead” of administration to make certain that these funds remain available for public safety. Inasmuch as there may be some pressure in the future to “reallocate” funds, either to other uses or to help fund deployments in low population/high area states, (the beneficiaries of the current Universal Service Charge, which is not affected by this proposal), care should be taken in legislation at the federal level as well to provide strict guidelines on UCS fund usage.

## **CONCLUSION**

This proposal has been created to define a new paradigm for funding of next generation communications and beyond. While it is recognized that there are some jurisdictions that are currently receiving proper and adequate funding, most are not. In creating a state-centric NG9-1-1 funding model, it should be recognized that some local autonomy will have to be surrendered. Given the overall benefits of NG9-1-1 in the area of delivery of ubiquitous high quality 9-1-1 service, this is a matter of benefit for all. A well funded, forward looking jurisdiction should consider not only its own parochial interests but also the interests of the population it serves (which today is increasingly mobile). While top quality local 9-1-1 service is essential, it is also important to have ubiquitous 9-1-1 so that when citizens travel they will always have access to 9-1-1 from “any device, anytime, anywhere”, not just in the well funded areas.

This model is proposed as a replacement for existing funding, not an addition to that funding. In the matter of transition, it may be desirable to leave existing funding in place during a “cut-over” period. However, to allow local jurisdictions to continue to collect an overlapping tax in the name of local autonomy is probably a disservice both to 9-1-1 and to the general public which it serves.

Finally, it the importance of strict legislative requirements for the use and disbursement of UCS funding must be reiterated. Funds critical to emergency services funding cannot, under any circumstances, be “raided” for other purposes.

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