

THE FIRST STEP IN MODERNIZING OUR 911 EMERGENCY CALL CENTERS: REVISING THE STATE ENHANCED (E) 911 LEGISLATIVE FUNDING SCHEME TO EFFICIENTLY DISTRIBUTE 911 FUNDS

Elaine Seeman[†]
James E. Holloway^{††}
James Kleckley^{†††}
Frederick Niswander^{††††}

Abstract

State policy-makers and managers can over- or under-allocate and distribute 911 funds to municipal and county (local) governments operating 911 emergency call centers, Public Safety Answering Points (PSAPs), and therefore must periodically review and revise state Enhanced (E)911 legislative funding schemes. North Carolina policy-makers and managers began to consider revisions in 2009 and ended successfully in 2010, with the enactment of the 2010 E911 legislative funding scheme. The new legislation established a more equitable allocation and distribution of 911 funds to municipal and county (local) governments operating PSAPs. This Article explains the review and revision process wherein the North Carolina (NC) 911 Board sponsored the NC E911 Funding Study to determine total NC-eligible E911 cost, propose a state E911 funding model, and make policy and management recommendations. The cost data, funding model, and recommendations were used to review and revise the 2008 NC E911 legislative funding scheme that obligated the NC 911 Board to collect 911 funds from

[†] Associate Professor, Management Information Systems, Department of Decision Sciences, East Carolina University, Greenville, North Carolina 27858. B.A., Indiana University of Pennsylvania, 1973; M.B.A., East Carolina University, 1997; Ph.D., Indiana State University, 2002.

^{††} Professor, Business Law, Department of Finance, College of Business, East Carolina University, Greenville, North Carolina 27858. B.S., North Carolina Agricultural & Technical State University, 1972; M.B.A., East Carolina University, 1984; J.D., University of North Carolina at Chapel Hill, 1983.

^{†††} Research Associate Professor and Director, Bureau of Business Research, College of Business, ECU, Greenville, North Carolina 27858. B.S., University of South Carolina, 1976; PhD, University of South Carolina, 1984.

^{††††} Vice Chancellor, Division of Administration and Finance and Former Dean and W. Howard Rooks Distinguished Professor, College of Business, East Carolina University, Greenville, North Carolina 27858. BBA, Idaho State University, 1978; Ph.D., Texas A&M University, 1994.

users of wireless and wireline communications devices and distribute 911 funds to local governments operating primary PSAPs. Assuming that local governments would spend nearly all distributions of 911 funds, the 2008 NC legislative funding scheme did not mandate that local governments spend all distributions of 911 funds, but explicitly prohibited the use of 911 funds for non-911 purposes. Consequently, local governments accumulated approximately \$91 million in 911 funds. This accumulation of 911 funds and other matters raised public policy concerns and created agency management problems regarding the accumulation or lack of use of 911 funds. These concerns and problems eventually led to a need to review and revise the 2008 NC E911 legislative funding scheme. The North Carolina 911 Board started the review and revision process by sponsoring the NC E911 Funding Study to collect and gather financial, cost, and operational data that would be used to determine the NC-eligible E911 cost and other data, which, in turn, would be used to propose an NC population-based E911 funding model and make E911 policy and management recommendations. This NC E911 Funding Study gathered E911 financial, cost, and operational data that contained past allocations, distributions, and expenditures of 911 funds distributed to local governments over a number of years. The NC E911 Funding Study issued preliminary and final reports to the NC 911 Board, and the final report was accepted and used extensively by the NC 911 Board to propose revisions or amendments that were used by NC policy-makers to enact the 2010 NC E911 legislative funding scheme. Technological and policy changes will eventually require other states to conduct full or partial state E911 funding studies or blindly regulate and manage the allocation and distribution of 911 funds to local governments operating PSAPs within state E911 systems.

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I. INTRODUCTION

State policy-makers and managers must review and revise state Enhanced (E)911 legislative funding schemes to regulate and manage the allocation and distribution of 911 funds to municipal and county 911 emergency call centers of state E911 systems¹ throughout the United States. Traditionally, 911 funds financed the operation of municipal and county 911 emergency call centers that provided only basic, voice-centric 911 emergency call services, but today 911 funds finance the operation of 911 emergency call centers providing E911 services that include traditional voice services in addition to automatic number identification (ANI) and automatic location information (ALI) services to identify and locate,² respectively, wireless and wireline callers.³ In fact, these

The authors give a special thanks to the North Carolina 911 Board for the opportunity to work with its administrators, members, and staff in Raleigh, North Carolina from September 2009 through November 2010 to complete the North Carolina Enhanced (E) 911 Funding Study. The NC E911 Funding Study presented and submitted to the NC 911 Board two reports that are referred to as the NC E911 Preliminary Funding Study Report and the NC E911 Funding Study Final Report. The second report was the NC E911 Funding Study Final Report, accepted by the NC 911 Board, and entered into the NC General Assembly Document Library. Both first and second reports were considered by the NC E911 Board to review and revise the NC 2008 E911 legislative funding scheme. This Article explains sections and appendices of both reports in detail and cites these reports rather than treating the text of the report as published work of the authors. The authors do so because these reports were issued to a public agency and entered into public records or agency files. However, readers who want a copy of the first report, the NC E911 Preliminary Funding Study Report, can request it from the law review office, NC 911 Board, or Bureau of Business Research, College of Business, East Carolina University.

We are most thankful for the opportunity to advise the NC 911 Board and its staff and the 911 Working Group, Raleigh, NC, to study and address E911 policy-making concerns, agency management problems, and the PSAP operational matters of the NC E911 system. The authors also give thanks to Ms. Kate Christenbury and Mrs. Barbara Jarman, research analysts of the Bureau of Business Research, College of Business, East Carolina University, Greenville, NC and our graduate and undergraduate research assistants, Bryan J. Klindworth, Eric W. Morris, and Jesse E. Spence, for their assistance in completing the North Carolina E911 Funding Study. Finally, an earlier version of this Article was presented at the 2010 National Meeting of the Academy of Legal Studies in Business (ALSB) at Richmond, Virginia in August 2010. The authors thank participants at the ALSB meeting for their suggestions and comments.

1. See generally Act of July 23, 2010, 2010 N.C. Sess. Laws 158 (amending statutes governing emergency telephone service) (revising the allocation of funds for the state E911 scheme and the distribution of funds to local governments). In North Carolina, “[e]nhanced 911 service [is] [d]irecting a 911 call to an appropriate PSAP by selective routing or other means based on the geographical location from which the call originated and providing information defining the approximate geographic location and the telephone number of a 911 caller, in accordance with the FCC Order.” N.C. GEN. STAT. § 62A-40(9) (2010) (amending statutes governing emergency telephone service), amended by Act of July 23, 2010, 2010 N.C. Sess. Laws 158 § 1. At the federal level, Enhanced (E) 911 is a Federal Communications Commission (FCC) regulatory scheme that mandates wireless carriers provide the caller’s location information to PSAPs. 47 C.F.R. § 20.18(e).

2. See NAT’L EMERGENCY NUMBER ASS’N (NENA), NENA MASTER GLOSSARY OF 9-1-1 TERMINOLOGY 9–20 (2010) (providing definitions of 911 terminology); *id.* at 19 (ALI is “[t]he automatic display at the PSAP of the caller’s telephone number, the address/location of the telephone and supplementary emergency services information of the location from which a call originates.”); *id.* at 20 (ANI is the “[t]elephone number associated with the access line from which a call originates.”). ANI and ALI enhance the basic, voice-centric 911 emergency call services provided by 911 emergency call centers. James E. Holloway et al., *Regulation and Public Policy in the Full Deployment of the Enhanced Emergency Call System (E-911) and Their Influence on Wireless Cellular and Other Technologies*, 12 B.U. J. SCI. & TECH. L. 93, 102–06 (2006) (explaining the use of ANI and ALI technology to provide 911 emergency call services to wireless and wireline callers).

3. N.C. GEN. STAT. § 62A-40(9) (2010); 47 C.F.R. § 20.18(a)–(h) (2010). State Enhanced (E) 911 systems are rapidly becoming technologically obsolete. See FED. COMM’NS COMM’N, NATIONAL BROADBAND PLAN: CONNECTING AMERICA (2010) [hereinafter FCC, NATIONAL BROADBAND PLAN],

callers still incur all or nearly all of the costs of 911 call services.⁴ Currently, these E911 call services do not include emergency calls from text messages, photographs, videos, and data,⁵ and when non-voice calls are received by 911 call centers, the need for 911 funds will rise with the increase in new non-voice emergency call services.⁶ For this and other reasons, the effectiveness of state E911 legislative funding schemes has now become overridden with state and federal E911 policy concerns.⁷ States must better manage 911 funds by eliminating underfunding and overfunding and identifying financial efficiencies and operational benefits of replacing outdated communications infrastructure and limited E911 call services. Replacing these services and infrastructure has been driven by the need to provide 911 call services for callers using text messaging and other access technologies⁸ and more recently by newly enacted federal legislative communications mandates.⁹ The Federal Communications Commission (FCC) and other agencies issued plans and reports that explained the need for state Next Generation (NG) 911 systems¹⁰

available at <http://download.broadband.gov/plan/national-broadband-plan.pdf>; *id.* at 325 (“U.S. policy on NG911 should focus on fostering rapid transition from analog, voice-centric 911 and emergency communications systems to a broadband-enabled, IP-based emergency services model . . .”). State E911 systems operate on circuit-switched infrastructure that cannot normally receive text messages, photographs, videos, telematics, data, and email messages. *Id.* at 313, 325 (finding the need to add “new 911 capabilities in multiple formats, such as texting, photos, video and e-mail”).

4. See NAT’L E9-1-1 IMPLEMENTATION COORDINATION OFFICE, A NATIONAL PLAN FOR MIGRATING TO IP-ENABLED 9-1-1 SYSTEMS 5-1 (2009), *available at* http://www.911.gov/pdf/National_NG911_Migration_Plan_FINAL.pdf (“In addition, there is little consistency among and within States on 9-1-1 surcharge rates As a result, a steadily decreasing number of consumers are subsidizing the cost of providing 9-1-1 service to a growing consumer market.” (citation omitted)).

5. FCC, NATIONAL BROADBAND PLAN, *supra* note 3, at 325.

6. IMPLEMENTATION COORDINATION OFFICE, *supra* note 4, at 5-1.

7. See Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. 112-96, § 6505(a), 126 Stat. 156, 242 (2012) (requiring the Government Accounting Office (GAO) to study 911 “taxes, fees, or other charges imposed by States or political subdivisions of States”); L. ROBERT KIMBALL & ASSOCS., INC., NEXT GENERATION 9-1-1 FUNDING STUDY SUBMITTED TO THE WASHINGTON STATE MILITARY DEPARTMENT 14 (2008), *available at* <http://www.emd.wa.gov/e911/documents/RPT090122KRS-WashingtonStateNG911FundingStudy-Final1-29-09.pdf> (discussing a NG911 study funded by the State of Washington to consider the collection, allocation, and distribution of 911 funds of the counties and state).

8. See Notice of Proposed Rulemaking, In the Matter of Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications, 26 FCC Rcd. 13,615, 13,616 (Sept. 22, 2011) (explaining that adding non-voice capabilities to 911 systems will significantly improve emergency response); *id.* at 13,623 (“[Primary access technologies] are used to initiate a call or communications session with the PSAP”); *id.* (“[Secondary access technologies] are used to provide additional information to the PSAP after the call or session has been established.”); *id.* (finding that “[i]n the current E911 system, voice and TTY-based text are the only primary media that are widely available, and secondary media, such as photos and video, are not available”).

9. See Middle-Class Tax Relief Act § 6503(b)(1), 126 Stat. at 238–39 (mandating federal regulatory actions to provide an IP-enabled communications infrastructure needs and to support states to implement NG911 services); *id.* (delegating to federal agencies the authority to establish a nationwide, interoperable public safety broadband network); *id.* § 6501, 126 Stat. at 237 (containing Subtitle E or the Next Generation 9-1-1 Advancement Act of 2012 (NG911 Advancement Act)); *id.* § 6503, 126 Stat. at 237–42 (creating a federal 911 coordination office to support the implementation of NG911 services and requiring three federal agencies to study and consult on the use of 911 funds, NG911 legal and regulatory framework, and cost of NG911 services).

10. FCC, NATIONAL BROADBAND PLAN, *supra* note 3, at 325 (“U.S. policy on NG911 should focus on fostering rapid transition from analog, voice-centric 911 and emergency communications systems to a broadband-enabled, IP-based emergency services model.”); see also PAT AMODIO ET AL., WHITE PAPER: A NEXT GENERATION 911 COST STUDY: A BASIS FOR PUBLIC FUNDING ESSENTIAL TO BRINGING A NATIONWIDE

to replace outdated state E911 systems and explain the cost of and need for an Internet-Protocol (IP)-enabled communications infrastructure to replace the outdated circuit-switch infrastructure that does not allow full NG911 services.¹¹ Notwithstanding these federal efforts, the federal government has not established a 911 or E911 funding scheme¹² but only recently began to study the costs of providing NG911 services to develop a federal NG911 funding mechanism.¹³ In the meantime, managing E911 funding and addressing communications infrastructural and NG911 service concerns requires state policy-makers and managers to review and then revise state E911 legislative funding schemes that regulate the collection, allocation, and distribution of 911 funds to 911 call centers or Public Safety Answering Points¹⁴ (PSAPs). A thorough review includes a state E911 funding study to determine the total state E911 costs, propose a state E911 funding model, and make 911 fund management recommendations to propose revisions to state E911 funding schemes as the first step to gain access to an IP-enabled communications infrastructure and thereafter the transition to NG911 services, such as text messaging.

North Carolina began in 2009 to review and in 2010, revised its NC E911 legislative funding scheme.¹⁵ This review included a study of the allocation and distribution of 911 funds to county and municipal governments that operated NC primary PSAPs¹⁶ within the NC E911 system. This review was caused by an NC E911 legislative funding scheme that did not require primary

NEXT GENERATION 911 NETWORK TO AMERICA'S COMMUNICATIONS USERS AND FIRST RESPONDERS 2 (2011), *available at* <http://www.fcc.gov/document/pshsb-next-generation-911-cost-study> (“[T]he Federal Communications Commission’s Public Safety and Homeland Security Bureau presents a cost study on the network connectivity and call routing portion of the nationwide NG911 network.”); Notice of Proposed Rulemaking, 26 FCC Rcd. at 13,616 (seeking comment on a number of issues related to accelerating “the development and deployment of NG911 technology that will enable the public to send emergency communications to 911 Public Safety Answering Points (PSAPs) via text, photos, videos, and data and enhance the information available to PSAPs and first responders for assessing and responding to emergencies”). Earlier, the United States Department of Transportation (USDOT) found that state legislatures must replace state E911 legislation to transition to state NG 911 systems and migrate to an IP-enabled network infrastructure. *See* IMPLEMENTATION COORDINATION OFFICE, *supra* note 4, at 1-2 (explaining why many current 911 systems are out of date and IP-enabled systems are the “optimal technical solution for future 9-1-1 networks”); INTELLIGENT TRANSP. SYS., U.S. DEP’T OF TRANSP., NEXT GENERATION 9-1-1 (NG9-1-1) SYSTEM INITIATIVE 5 (2009), *available at* http://www.its.dot.gov/ng911/pdf/NG911_Transition_PlanFinal.pdf (stating that an upgrade to Next Generation (NG) 911 is necessary in order “to adapt to the public’s increasing use of wireless communications and digital and IP-based devices [that] . . . may transmit video, text, images, and other data”).

11. *See* 47 C.F.R. § 400.2 (2010) (“IP-enabled emergency network or IP-enabled emergency system means an emergency communications network or system based on a secured infrastructure that allows secured transmission of information, using Internet Protocol, among users of the network or system.”).

12. *See* Middle-Class Tax Relief Act § 6508(b), 126 Stat. at 244 (explaining that Congress can use the report of cost of NG911 specifications and requirement as a “resource . . . as it considers creating a coordinated, long-term funding mechanism for the deployment and operation, accessibility, application development, equipment procurement, and training of personnel for Next Generation 9-1-1 services”).

13. *Id.*

14. 47 C.F.R. § 20.3 (2011) (defining Public Safety Answering Point (PSAP) as “[a] point that has been designated to receive 911 calls and route them to emergency service personnel”).

15. 2010 N.C. Sess. Laws 158.

16. *See* N.C. GEN. STAT. § 62A-40(16) (2010), *amended by* 2010 N.C. Sess. Laws 158, § 1 (defining a NC primary PSAP as “[t]he first point of reception of a 911 call by a public safety answering point”).

PSAPs to use all current and past distributions of 911 funds and resulted in an unexpected overfunding and underfunding of PSAPs.¹⁷ Moreover, the NC E911 legislative funding scheme did not permit state 911 administrative authorities to correct the overfunding and underfunding and raised policy concerns regarding the effective use of 911 funds.¹⁸ North Carolina's review of its E911 legislative funding scheme took place while federal agencies informed states that the transition to NG911 services is needed,¹⁹ though North Carolina only revised its E911 legislative funding scheme, its review of E911 funding study may prove to be the first step in providing NG911 services.

The article explains the approach that was taken by North Carolina 911 authorities to review and successfully revise the NC E911 legislative funding scheme to address the overfunding of local governments and the large accumulations of 911 funds by these governments. In their review, North Carolina authorities sponsored an E911 funding study to determine E911 costs, propose an E911 funding model, and make financial, management, and other policy recommendations.²⁰ Specifically, the North Carolina E911 Funding Study determined the total NC-eligible E911 cost²¹ and used the cost data and findings to propose an E911 funding model and make policy and management recommendations to revise the 2008 NC E911 legislative funding scheme.²²

17. See HOUSE SELECT COMMITTEE ON THE USE OF 911 FUNDS, REPORT TO THE 2010 SESSION OF THE 2009 GENERAL ASSEMBLY, Bill Draft 2009-TD-28 (v.17), 2009–2010 Sess. at 8 (N.C. 2010), available at <http://www.ncga.state.nc.us/documentsites/legislativepublications/Study%20Reports%20to%20the%202010%20NCGA/911%20Funds%20%20House%20Select%20Committee.pdf> [hereinafter Bill Draft 2009-TD-28 (v.17)] (The 911 Funds Committee Report's findings state that "[t]he distribution of funds from the 911 Fund is inequitable and should be amended . . ."); see also Gary Robertson, *State House Tries Hand at Freeing 911 Fees for Phones*, DAILY REFLECTOR (Greenville, N.C.), June 14, 2010, at B2 (stating that municipal and county governments in North Carolina had accumulated approximately \$91 million in 911 center accounts).

18. See N.C. GEN. STAT. § 62A-46(a) (2010), amended by 2010 N.C. Sess. Laws 158, § 7(a). The 2008 legislative funding scheme did not grant the NC 911 Board authority to determine a 2008 NC E911 funding formula. *Id.*; Robertson, *supra* note 17, at B2 (explaining that state law restricts what local 911 centers can purchase thus disallowing effective use of funds).

19. See INTELLIGENT TRANSP. SYS., *supra* note 10, at 5 ("[T]he current 9-1-1 systems should transition to a state-of-the-art infrastructure that will enable the transmission of voice, text, images, and other data from all types of communications devices to PSAPs, and on to emergency responder networks.").

20. See generally Bill Draft 2009-TD-28 (v.17), *supra* note 17, at 7–8 (providing an analysis of the use of 911 funds to determine total NC-eligible E911 costs).

21. *Id.*

22. See N.C. GEN. STAT. § 62A-46(c) (2008), amended by H.B. 1691, Gen. Assemb., 2009 Sess., at § 7(c) (N.C. 2010) (restricting use of 911 funds by municipal and county (local) governments to conduct PSAP operations and perform other prescribed activities). The pertinent statutory language states that:

A PSAP that receives a distribution from the 911 Fund may not use the amount received to pay for the lease or purchase of real estate, cosmetic remodeling of emergency dispatch centers, hiring or compensating telecommunicators, or the purchase of mobile communications vehicles, ambulances, fire engines, or other emergency vehicles. Distributions received by a PSAP may be used only to pay for the following:

- (1) The lease, purchase, or maintenance of:
 - a. Emergency telephone equipment, including necessary computer hardware, software, and database provisioning.
 - b. Addressing.
 - c. Telecommunicator furniture.
 - d. Dispatch equipment located exclusively within a building where a PSAP is located, excluding the costs of base station transmitters, towers, microwave links, and antennae used to dispatch emergency call information from the PSAP.

- (1a) The nonrecurring costs of establishing a 911 system.

This Article explains how and why NC 911 authorities chose to conduct a NC E911 funding study in their review of the 2008 NC E911 legislative funding scheme. Although other states collect and distribute or permit county and municipal governments to collect and use 911 funds²³ and may not face or be aware of 911 fund distribution and use problems and constraints, North Carolina and other states must eventually gain access to an IP-enabled communications network and thereafter transition from E911 services to NG911 services.²⁴ The North Carolina E911 funding study was part of North Carolina 911 Board and General Assembly's review of the 2008 NC E911 legislative funding scheme in 2009, though the North Carolina authorities were not preparing to transition to NG911 but merely to correct intractable 911 funding concerns.²⁵ This Article identifies challenges and limitations of a review of a state E911 system to determine its costs and points out that similar challenges and limitations may be faced by other states that must determine the costs of implementing a novel, more complex state NG911 system²⁶ that will require a different state legislative funding scheme.

This Article places the NC E911 Funding Study in the context of North Carolina's need to manage the distribution of 911 funds, urge more effective use of 911 funds by municipal and county governments, and consider emerging federal fiscal, communications, and 911 coordination concerns. This Article consists of six parts, including the introduction and conclusion. This Article is a policy and statutory analysis of North Carolina's review of and revisions to its 2008 NC E911 legislative funding scheme. This analysis includes the nature and use of an E911 funding study to gather, identify, and analyze NC-eligible E911 expenditures, various state E911 funding models, and other policy and management needs. Part I is the introduction and explains the E911 policy concerns and management problems creating the need to revise the 2008 NC E911 legislative funding scheme. Part II explains

(2) Expenditures for in-State training of 911 personnel regarding the maintenance and operation of the 911 system. Allowable training expenses include the cost of transportation, lodging, instructors, certifications, improvement programs, quality assurance training, training associated with call taking, and emergency medical, fire, or law enforcement procedures, and training specific to managing a PSAP or supervising PSAP staff.

23. FED. COMM'NS COMM'N, REPORT TO CONGRESS ON STATE COLLECTION AND DISTRIBUTION OF 911 AND ENHANCED 911 FEES AND CHARGES 4-5 (2011) [hereinafter FCC, FEE COLLECTION 3D REPORT].

24. IMPLEMENTATION COORDINATION OFFICE, *supra* note 4, at 5-1.

25. The intentions of the legislature and other facts are known due to the authors' personal attendance at meetings of the North Carolina 911 Board on August 21, 2009, September 25, 2009, November 29, 2009, January 8, 2010, April 16, 2010, and May 15, 2010.

26. See L. ROBERT KIMBALL & ASSOCS., INC., *supra* note 7, at 44 (illustrating the cost of implementing NG911 services while phasing out E911 services); see also IMPLEMENTATION COORDINATION OFFICE, *supra* note 4, at 4-7 (listing the cost of providing NG911 services in the United States on an IP-enabled infrastructure); *infra* Part II.A and accompanying notes (explaining that NC E911 Funding Study methodology must be modified to determine the projected cost of providing NG911 services and acquiring access to an IP-enabled communications network). The authors conclude that a state E911 funding study should be part of one or more phases of a State *Comprehensive* Next Generation (NG) 911 Funding Study. The NG911 Funding Study supports state NG911 policy-making and management objectives to acquire access to an IP-enabled emergency services network, provide NG 911 services, and phase out E911 services. The NG911 Funding Study informs state policy-makers and managers of the costs of implementing, operating, and maintaining a state NG911 system with access to an IP-enabled emergency services network.

the roles adopted by North Carolina and federal governments to respond to the need for 911 call services by mobile cellular or wireless callers and the need to conduct the NC E911 funding study to respond to overfunding and underfunding of PSAPs. Part III includes lessons that other states should consider in data collection, data analysis, and management and policy environments affecting the NC E911 Funding Study. Part IV examines pertinent provisions of the 2008 NC E911 legislative funding scheme and explains several funding models and methods that were considered to distribute 911 funds under a revised NC E911 legislative funding scheme. Part V explains the proposed E911 funding model and describes the recently enacted 2010 NC E911 legislative funding scheme. Part VI is the conclusion and concludes that the NC E911 Funding Study's E911 cost findings, E911 funding model, and E911 policy and management recommendations contributed substantially to revisions to an ineffective 2008 NC E911 legislative funding scheme.

II. BENEFITS OF AND NEED FOR A STUDY OF THE NC E911 FUNDING SCHEME

North Carolina's E911 system provides E911 services to wireline and wireless subscribers.²⁷ The NC E911 system consists of municipal and county PSAPs that provide E911 services to their local citizens.²⁸ North Carolina provides 911 funds to cover part of the operating and administrative expenses of local governments operating NC primary PSAPs.²⁹ Finally, federal legislative acts, regulations, and policies provide guidance to operate state E911 systems and deploy state NG911 systems.³⁰

A. North Carolina and Federal E911 Policies and Policy-Making

North Carolina and other states must review and revise state E911 legislation that currently includes their state E911 legislative funding schemes. This review determines whether North Carolina and other states need to revise their E911 legislative funding scheme. The 2008 NC E911 legislative funding scheme³¹ obligated the NC 911 Board³² to collect 911 funds from users of wireless and wireline communications devices and distribute 911 funds to each municipality and county operating a NC primary PSAP.³³ Overfunded PSAPs

27. N.C. GEN. STAT. § 62A-40(4) (2010), *amended by* 2010 N.C. Sess. Laws 158.

28. *Id.*

29. *Id.* § 62A-44.

30. See Notice of Proposed Rulemaking, In the Matter of Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications, 26 FCC Rcd. 13,615, 13,628 (Sept. 22, 2011) (stating that the Notice seeks comment in order to determine “as the transition to NG911 occurs, what efforts are needed to educate the public and minimize consumer confusion, and what role, if any, should the [Federal Communications] Commission play in such efforts?”).

31. N.C. GEN. STAT. §§ 62A-43–48 (2008), *amended by* 2010 N.C. Sess. Laws 158, §§ 4–10; see *infra* Part V.A and accompanying notes (stating the more pertinent elements of the 2008 NC E911 legislative funding scheme).

32. N.C. GEN. STAT. § 62A-41 (2008), *amended by* 2010 N.C. Sess. Laws 158 § 2(a) (establishing the North Carolina 911 Board to manage the NC E911 system).

33. See N.C. GEN. STAT. § 62A-40(16) (2008), *amended by* 2010 N.C. Sess. Laws 158 § 1 (defining

pose a threat to public safety when local governments would not use accumulated 911 funds to acquire new equipment. Many local governments may have chosen to wait and see if the North Carolina legislature would allow them to reallocate the 911 funds to general or public safety uses. Underfunding PSAPs creates an entirely different situation. Underfunded PSAPs require local governments to increase the amount of general funds that can be spent on 911 equipment and services that should or would have been paid from state 911 funds. Small municipalities and counties may not have sufficient funds to replace or upgrade equipment and acquire new services. Underfunding PSAPs could jeopardize the safety, property, and lives of local citizens and travelers.

1. *NC 911 Policy Leading to 2008 NC E911 Legislative Funding Scheme*

State legislatures must establish state E911 funding formulas that determine or set the amount of 911 funds that can be collected by state 911 boards or local governments and that can be allocated and distributed to local governments providing 911 emergency call services. In North Carolina, the legislative E911 funding formula or model contained an ill-fated assumption. The NC 2008 E911 legislative funding scheme assumed that local governments would spend their annual 911 fund distributions so it deliberately chose not to require local governments to spend their annual distributions of 911 funds.³⁴ These governments accumulated large sums of 911 funds, approximately \$91 million, for unspecified purposes.³⁵ Yet, 911 funds could only be used for 911 purposes.³⁶ In late 2009 and early 2010, the North Carolina 911 Board concluded that the 2008 NC E911 legislative funding scheme was ineffective, and the North Carolina legislature should revise this funding scheme.³⁷ As part of its review of the 2008 E911 funding scheme, the NC 911 Board sponsored the NC E911 Funding Study to collect cost data, propose a funding model, and make recommendations to stop the unnecessary accumulation of 911 funds.³⁸ The NC E911 Funding Study determined the

“primary PSAP”).

34. See Robertson, *supra* note 17, at B2 (stating that twenty-five local 911 centers had at least \$1 million in cash on hand as of June 30, 2009 and discussing state government proposals to encourage greater local spending of 911-related funds); see also Bill Draft 2009-TD-28 (v.17), *supra* note 17, at 8 (listing findings and recommendations aimed at expanding eligible or reimbursable expenses and allowing greater distribution from the state 911 Fund to cover increases in expenses); *supra* note 25.

35. Robertson, *supra* note 17, at B2; see *infra* Part IV.C and accompanying notes (explaining the pertinent provisions of the 2010 NC E911 legislative funding scheme). See generally Bill Draft 2009-TD-28 (v.17), *supra* note 17, at 8.

36. See Bill Draft 2009-TD-28 (v.17), *supra* note 17, at 8, 16–17 (indicating that all the proposed funding is to be used explicitly for 911 purposes).

37. See Minutes, N.C. 911 Bd. 7–8 (Sept. 25, 2009), available at https://www.nc911.nc.gov/Board/minutes/20090925_Minutes.pdf [hereinafter Conduct Study Minutes] (establishing a contract with the Bureau of Business Research (BBR), College of Business, East Carolina University to conduct the NC E911 Funding Study); see also Minutes, N.C. 911 Bd. 5–6 (Nov. 29, 2009) [hereinafter Hire Contractor Minutes], available at https://www.nc911.nc.gov/Board/minutes/20091120_Minutes.pdf (presenting information to NC 911 Board on collecting data to study PSAP cost); *supra* note 25.

38. Bill Draft 2009-TD-28 (v.17), *supra* note 17, at 8. The House Select Committee conducted several meetings to examine E911 public policy concerns and management problems. See *id.* at 5–6 (recommending

total costs of NC-eligible E911 expenses and proposed a NC E911 funding model³⁹ and made policy and management recommendations to revise the 2008 E911 legislative funding scheme.⁴⁰ The E911 cost, funding model, and recommendations⁴¹ eventually became part of NC 911 Board actions⁴² to propose revisions⁴³ to the 2008 NC E911 legislative funding scheme.⁴⁴

the Board determine a method to establish distributions from the fund to allow adequate distributions to pay both eligible expenses and anticipated increased expenses). The House Select Committee issued the 911 Funds Committee Report stating:

Uniform operating standards for the public safety answering points (PSAPs) that receive distributions from the 9 1 1 Fund are necessary to provide adequate 9 1 1 service across the State.

...

A private network for providing 9 1 1 service would benefit the PSAPs throughout the State.

...

Certain projects conducted by individual PSAPs would better be addressed by conducting the project on a statewide level.

Id. at 7.

39. *See id.* at 7 (finding that the distributions of 911 funds were inequitable among PSAPs). Legislative changes addressed some of these concerns. *See* N.C. GEN. STAT. § 62A-42(b) (2008) (prohibiting “the 911 Board [from] leas[ing], construct[ing], operating, or own[ing] a communications network for the purpose of providing 911 service[s]”); N.C. GEN. STAT. § 62A-46(a), (b) (2008), *amended by* 2010 N.C. Sess. Laws 158 § 2(a) (prohibiting the NC 911 Board from establishing an alternative funding model and making adjustments to 911 fund distributions to PSAPs); N.C. GEN. STAT. § 62A-46(c) (2008) (imposing restrictions on the use of 911 funds for operating and administrative purposes).

40. *See generally* ELAINE SEEMAN ET AL., FINDINGS AND RECOMMENDATIONS ON 911 COSTS AND FUNDING MODEL FOR THE NORTH CAROLINA 911 SYSTEM: AN ADDITIONAL REPORT FOR THE NC 911 BOARD 2–4 (2010) [hereinafter SEEMAN, FINAL REPORT], *available at* <http://www.ncleg.net/documentsites/committees/hscu911f/april%2019,%202010/april-2010-911-ecureport-final.pdf>. The NC E911 Funding Study Final Report was submitted by the NC 911 Board to the House Select Committee on the Use of 911 Funds to the House of Representatives of the North Carolina General Assembly during the 2009–2010 session. *Id.* The NC E911 Funding Study Final Report supplements the first report issued to the NC 911 Board by two of the investigators. *See generally* ELAINE SEEMAN & JAMES E. HOLLOWAY, FINDINGS AND RECOMMENDATIONS ON 911 COSTS AND FUNDING MODEL FOR THE NORTH CAROLINA 911 SYSTEM (2010) [hereinafter SEEMAN, PRELIMINARY REPORT], *available at* https://www.nc911.nc.gov/Board/agenda/Book/20100108_Item%2006a%20ECU%20E911-final-report-jan-6-2010.pdf. North Carolina is not alone in conducting an actual study of state cost of E911 services; the other state’s funding study was used to project the cost of NG911. The State of Washington sponsored a state NG911 funding study to consider the collection, allocation, and distribution of 911 funds of the counties and state. *See* L. ROBERT KIMBALL & ASSOCS., INC., *supra* note 7, at 1–2 (describing the purpose and parameters of a 911 funding study performed at the behest of the Washington State legislature).

41. *See infra* Part V.A and accompanying notes (identifying fundamental policy and management elements that must underpin the NC E911 Funding Study’s proposed model and recommendations to revise the 2008 NC E911 legislative funding scheme).

42. *See* SEEMAN, FINAL REPORT, *supra* note 40, at 3 (discussing additional recommendations taking into consideration cost and a funding model); *see also* SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 15–16 (providing cost ratios of each county by a category of size from a study of E911 services). The NC E911 Preliminary Report did not recommend funding a formula or model due to insufficient data. *See* SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 14–15 (detailing several models but not recommending a particular model). It stated that “[t]he 911 Board should not evaluate statewide 911 service cost until at least 18–24 months of accurate and verifiable PSAP expenditure data is available for analysis.” *Id.* The NC E911 Funding Study Final Report noted that “additional data provides for a much richer and more-comprehensive evaluation and will enable us to refine and simplify the distribution mechanism and process for the current 911 Board.” SEEMAN, FINAL REPORT, *supra* note 40, at 3. It “recommend[ed] a distribution model based on PSAP population with a small additional per-PSAP distribution. The model is derived from PSAP expenditures reports provided to the 911 Board and the Wireless Board as noted above.” *Id.* at 2.

43. *See* Bill Draft 2009-TD-28 (v.17), *supra* note 17, at 2–3 (recommending “a distribution model based on PSAP population with a small additional pre-PSAP distribution[.]” and that they provide “\$25,000 per year to help them provide for the administrative and overhead costs associated with 911 Board reports and inquiries”); SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 15–16. The NC E911 Funding Study Final

Report was presented and accepted by the NC 911 Board on April 16, 2010. Minutes, N.C. 911 Bd. 11 (Apr. 16, 2010) [hereinafter Minutes to Adopt the Report], *available at* https://www.nc911.nc.gov/Board/minutes/20100416_Minutes.pdf. When the NC 911 Board accepted the NC E911 Funding Study, the NC 911 Board accepted and used the proposed findings and recommendations of the NC E911 Funding Study Final Report. *Id.* However, the two NC 911 Board members indicated that the proposed funding model, findings, and recommendations contained management and policy elements that could help address funding concerns and problems involving 911 distributions. *See id.* at 9–10 (showing that both Joe Durham and Jason Barbour discussed the possible budgetary implication of the report).

The NC E911 Funding Study needed financial and administrative data and information to support and assist state E911 management, planning, and policy-making. In support of management and policy-making, the NC 911 Board needed this data and information to advise a committee of the North Carolina General Assembly. *See* Bill Draft 2009-TD-28 (v.17), *supra* note 17, at 6 (demonstrating that the NC 911 committee reviewed and adopted a report which included proposed legislation to be submitted to the NC Speaker of the House). The 911 Funds Committee Report states that “Richard Taylor, Executive Director of the 911 Board presented information on the study conducted by ECU titled “Findings and Recommendations on 911 Costs and Funding Model for the NC 911 System.” *Id.*

The article does not include the full text of the NC E911 Funding Study Final Report. The most pertinent language of the Introduction to the NC E911 Funding Study Final Report states that:

In [the NC Preliminary E911 Funding Study Report] . . . we noted the limitations inherent with using only 6-months of data and suggested that conclusions could be different if more data were available. Subsequent to [the NC Preliminary E911 Funding Study Report], we were made aware of the availability of multiple years of data from the former Wireless Board. We determined that this additional data would be useful in our analysis and recommendations and we have incorporated the additional data into our dataset. As a result of having a more-robust dataset, we have modified some of our recommendations and conclusions in this report.

SEEMAN, FINAL REPORT, *supra* note 40, at 2. The NC E911 Funding Study Final Report gathered additional financial, cost, and operational data and information that were analyzed to determine NC-eligible E911 cost, to propose an E911 funding model, and make policy and management recommendations. Appendix A discusses and lists the data and information of the former Wireless 911 Board and the current 911 Board. *Id.* at 6 app. A. Appendix B includes a detailed description of the process used to calculate PSAP distributions. *Id.* at 9 app. B. Appendix C lists historical costs and estimates of PSAPs operating under the NC Wireless 911 Board and NC 911 Board. *Id.* at 11 app. C. Appendix D lists PSAP per capita amounts (i.e. estimated average weighted annual total cost divided by population) and shows the classification of PSAPs into five categories based on population size. *Id.* at 14 app. D. Appendix E lists calculated preliminary distributions for PSAPs determined by using the per capita values provided above, plus the \$25,000 administrative component. *Id.* at 18 app. E. Finally, the policy and management recommendations of the NC E911 Funding Study Final Report were given to address legislative policy concerns and public management problems caused by the 2008 NC E911 legislative funding scheme. *See id.* at 4–6 (describing the purpose and scope of the E911 funding study).

The NC 911 Board also wanted the financial and administrative data and information to support a group of public safety officials developing a state 911 plan; the NC 911 Board created a 911 Study Group (Working Group) that was composed of local public safety officials, directors, and managers who were charged to develop a state 911 plan and make other recommendations. *See* Minutes, N.C. 911 Bd. 12 (May 15, 2009) [hereinafter Working Group Minutes], *available at* https://www.nc911.nc.gov/Board/minutes/20090515_Minutes.pdf (“Chairman Willis began the discussion by stating that in response to H1480 we had asked for people to volunteer to be part of a working group to begin to talk about the issues cited in the bill.”). Moreover, NENA defines a working group as “[a] group of people formed to discuss and develop a response to a particular issue. The response may result in a Standard, an Information Document, Technical Requirements Document or Liaison.” NENA, *supra* note 2, at 124. The NC 911 Board Working Group proposed and presented to the NC 911 Board a state 911 plan that was modified and adopted by the NC 911 Board. *See generally* N.C. 911 Bd., NORTH CAROLINA STATE 911 PLAN 2–8 (2010), *available at* https://www.nc911.nc.gov/pdf/State911Plan_with_Board_modifications.pdf (describing the process, purpose, and history of the NC 911 Board Working group).

44. *See* Bill Draft 2009-TD-28 (v.17), *supra* note 17, at 7–15 (providing the findings and recommendations of the Board as well as proposed legislation). The 911 Funds Committee Report was used by the North Carolina General Assembly to amend the 2008 NC E911 legislative funding scheme. *Compare id.* at 9–15 (showing the report’s proposed legislation) *with* 2010 N.C. Sess. Laws 158 §§ 4–10 (amending N.C. GEN. STAT. §§ 62A-43(d)–47 (2008)) (containing the Session Laws which amended the 2008 legislative funding scheme). Furthermore, the 911 Funds Committee Chairperson was the Honorable Angela Byrant from the House of Representatives of the North Carolina General Assembly. *See* Bill Draft 2009-TD-28 (v.17), *supra* note 17, at 6, 16. The House Select Committee sent to the NC House of Representatives a legislative

NC E911 legislation reflects the impact of new access technologies, namely cellular telephones, on the need to provide the location of wireline and wireless subscribers requesting 911 emergency call services. The 2008 NC 911 legislative scheme created one regulatory authority to govern wireline and wireless E911 services.⁴⁵ In July 1989, the North Carolina General Assembly enacted a legislative act to govern 911 services to wireline subscribers.⁴⁶ In 1998, the North Carolina General Assembly established the NC Wireless 911 Board to govern E911 services to wireless subscribers.⁴⁷ In 2007, the General Assembly repealed and replaced the 1989 wireline and 1998 wireless legislative schemes with the 2008 NC E911 legislative scheme, which went into effect on January 1, 2008.⁴⁸ The 2008 NC E911 legislation created a single, regulatory authority to regulate or govern wireline and wireless E911 services.⁴⁹ The 2008 NC E911 legislative scheme did not permit local governments to impose and collect a 911 service fee from subscribers of wireline and wireless telephones.⁵⁰ Rather it imposed 911 fees of \$.70 on active wireless, wireless, and Voice over Internet-Protocol (VoIP) communications devices.⁵¹ The 2008 NC E911 legislative scheme created a funding model (or formula) and other funding provisions to allocate and distribute 911 fees to local governments.⁵² However, the 2008 NC E911 legislative funding scheme made an E911 funding assumption that would require statutory revisions to effectively manage 911 funds distributed to local

bill amending the 2008 NC E911 legislative funding scheme and other provisions. *See* H.R. 1691, 2009 N.C. Gen. Assemb., Reg. Sess. (N.C. 2009) (proposing changes to funding and other provisions of the North Carolina Emergency Telephone Services Statute). House Bill 1691 was enacted by North Carolina General Assembly in June 2010. 2010 N.C. Sess. Laws 158 §§ 1–11(b) (amending N.C. GEN. STAT. §§ 62A-40–53 (2008)).

45. *See* N.C. GEN. STAT. §§ 62A-40–53 (2008), *amended by* 2010 N.C. Sess. Laws 158 §§ 1–11(b) (establishing the regulatory scheme).

46. N.C. GEN. STAT. §§ 62A-1–20 (1989), *amended by* 2005 N.C. Sess. Laws 439 §§ 8-11 (codified as N.C. GEN. STAT. §§ 62A-1–20 (2005)), *repealed by* N.C. GEN. STAT. §§ 62A-40–53 (2008). Prior to the enactment of the NC 911 legislative scheme, the North Carolina Attorney General, NC Department of Crime Control and Public Safety Division of Crime Control, NC Civil Preparedness and Fire Commission, and NC Department of Human Resources Office of Emergency Medical Services petitioned the NC Utilities Commission to issue administrative regulations establishing 911. The NC Utilities Commission issued administrative regulations to establish 911 on October 19, 1979. *See* NC 911 BD., *supra* note 43, at 7 (referencing *Matter of Investigating of Rulemaking Regarding Implementation of the 911 Emergency Telephone Number as a Service to Citizens of North Carolina*, petitioned September 1978, which urged the creation of the 911 Board).

47. 1998 N.C. Sess. Laws 158 §§ 1–3 (codified as N.C. GEN. STAT. §§ 62A-21–32 (1998)), *amended by* 2005 N.C. Sess. Laws 439 §§ 1–8 (codified as N.C. GEN. STAT. §§ 62A-21–25 (2005)), *repealed by* N.C. GEN. STAT. §§ 62A-40–53 (2008).

48. N.C. GEN. STAT. §§ 62A-40–53 (2008), *amended by* 2010 N.C. Sess. Laws 158 §§ 1–11(b).

49. *Id.* § 62A-42 (2008), *amended by* 2010 N.C. Sess. Laws 158 §§ 2–3.

50. *Id.* § 62A-43(f) (2008), *amended by* 2010 N.C. Sess. Laws 158 § 4.

51. *Id.* § 62A-43(a) (2008), *amended by* 2010 N.C. Sess. Laws 158 § 4. These 911 user fees are the 911 funds distributed to local governments to cover NC-eligible E911 cost of PSAP operations. *See id.* (requiring the monthly user fees). Other states permit the 911 regulatory authority or local governments to impose a fee or surcharge on wireline, wireless, and VoIP users. *9-1-1 Surcharge - User Fees by State*, NAT'L EMERGENCY NUMBER ASS'N, <http://www.nena.org/?page=911RateByState&hhSearchTerms=state+and+funding> (last visited Sept. 5, 2012) [hereinafter *Surcharge-User Fees*]. In fact, the surcharge or fee is not the same for wireline, wireless, and VoIP users. *Id.* Some states permit local governments to impose and collect a property tax to fund PSAP operations. *Id.*

52. N.C. GEN. STAT. § 62A-46 (2008), *amended by* 2010 N.C. Sess. Laws 158 § 7.

governments operating primary PSAPs. The 2008 E911 legislation included a single regulatory authority to implement E911 legislative funding and other provisions.⁵³ The collection, distribution, and management of 911 funds were delegated to the NC 911 Board.⁵⁴ The 2008 E911 legislative funding provisions required local governments to submit 911 expenditure reports that list state-permitted or eligible expenditures for equipment, services, and other items that could be acquired by PSAPs with state 911 funds distributed by the NC 911 Board.⁵⁵

In addition, the provisions mandate that the NC 911 Board create a state 911 comprehensive plan⁵⁶ and report biennially to NC General Assembly.⁵⁷ In June 2010, the E911 funding formula and other funding provisions of the 2008 NC E911 legislative scheme were revised or amended to ensure equitable distributions and effective management of 911 funds by the NC 911 Board.⁵⁸ The E911 funding revisions or amendments that were proposed by the NC 911 Board were supported by the E911 cost findings, proposed E911 funding model, and E911 policy and management recommendations of the NC E911 Funding Study.⁵⁹ These revisions are the main focus of this Article. Other states may not face or encounter the same or similar 911 funding problems as North Carolina encountered under its 2008 E911 legislative funding scheme. States use different funding formulas and methods to collect, allocate, and distribute 911 funds and numerous and different E911 collection formulas.⁶⁰ The various state E911 allocation and distribution models strongly suggest the lack of past comprehensive E911 funding studies to create E911 collection formulas to precisely identify and collect E911 funds and to establish E911 funding models to precisely allocate and distribute E911 funds.⁶¹ These numerous distribution models and collection formulas may decrease among the states as states incur greater costs and receive fewer revenues to gain access to an IP-enabled communications network and thereafter transition to NG911 services and phase-out E911 services.⁶² The FCC also found that states have different models and methods of collecting and distributing 911 funds to local governments.⁶³ Only a few states chose not to control or approve the use of

53. *Id.* § 62A-42 (2008), amended by 2012 N.C. Sess. Laws 158 §§ 2–3.

54. *Id.* § 62A-42 (2008), amended by 2010 N.C. Sess. Laws 158 §§ 2–3.

55. *Id.* § 62A-46(e)(2) (2008), amended by 2010 N.C. Sess. Laws 158 § 7.

56. *Id.* § 62A-42(a)(1) (2008); see, e.g., NC 911 Bd., *supra* note 43, at 5.

57. *Id.* § 62A-44(c) (2008), amended by 2010 N.C. Sess. Laws 158 § 7.

58. 2010 N.C. Sess. Laws 158 §§ 1–11(b) (amending N.C. GEN. STAT. §§ 62A-40–53 (2008)); see *infra* Part V.A and V.B and accompanying notes. Part V.A includes pertinent 2008 NC E911 legislative funding formula and provisions. Part V.B includes pertinent 2010 amendments to the 2008 NC E911 legislative funding formula and provisions.

59. *Supra* note 25.

60. SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 10.

61. *Id.* at 9 (“Collection of accurate, timely, and verifiable data is critically important for the 911 Board to understand the cost and categorization of allowed expenditures and the cost of 911 services in the state.”).

62. IMPLEMENTATION COORDINATION OFFICE, *supra* note 4, at 4–6–7.

63. FCC, FEE COLLECTION 3D REPORT, *supra* note 23, at 6 (reporting that twenty states collected E911 fees and either distributed these fees to counties or permitted a state agency or board to administer these fees, eight states permitted local governments to establish funding formulas or methods, subject to state restrictions and finally, “twenty states employ a hybrid approach which allows two or more governing bodies or providers to collect surcharges from customers”).

911 funds that were used by local governments providing 911 and E911 services.⁶⁴ State or local E911 funding formulas or methods must continue to provide funds for E911 services, though the use of new access technologies, security, and other devices that are not covered under 911 collection formulas may cause a decline in 911 funds when, today, more 911 funds are needed to migrate to an IP-enabled network, transition to NG911 services, and phase-out E911 services.⁶⁵ Other states may not share North Carolina's need for a funding formula to correct overfunding and underfunding, however, these states must still review and replace or revise their E911 funding schemes to transition to NG911 services, especially where the federal government plays a greater role in 911, E911, and NG911 funding.

2. *Federal 911 Policy Impacting E911 Funding and Operations*

Federal 911 and E911 policies include federal programs and agency actions to support state 911 management and uses of 911 funds to provide E911 services.⁶⁶ States are primarily responsible for collecting, allocating, and distributing 911 funds to the local government's operating PSAPs to provide E911 services.⁶⁷ "Congress enacted the Wireless Communications and Public Safety Act of 1999⁶⁸ (Wireless Communications Act) and amended it[, in part,] with the Ensuring Needed Help Arrives Near Callers Employing 911 Act of 2004⁶⁹ (ENHANCE [911] Act)." Congress also enacted the New and Emerging Technologies 911 Improvement Act of 2008 (NET Improvement 911 Act).⁷⁰ Congress delegated regulatory authority under these legislative acts to the FCC and other agencies to support planning, coordination, and implementation of state E911 systems.⁷¹ The FCC regulates basic 911 and E911 services by imposing obligations on wireless and wireline carriers to deploy and use communication and location technologies that comply with PSAP administrators' requests for national and regional carriers to provide communications services needed to provide E911 services.⁷² Yet, Congress does not permit the FCC to use federal communications regulation to promulgate regulations that would interfere with or supersede state authority to collect, allocate, and distribute 911 fees.⁷³ Thus, federal legislation permits

64. *Id.* at 6–7.

65. IMPLEMENTATION COORDINATION OFFICE, *supra* note 4, at 5-1.

66. SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 6 (citing 47 U.S.C. § 615 (2006)).

67. *See* FCC FEE COLLECTION 3D REPORT, *supra* note 23, at 2–8 (explaining the varying methods of collection, allocation, and distribution of 911 funds among multiple states).

68. SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 6 (citing Wireless Communications and Public Safety Act of 1999, Pub. L. No. 106-81, 113 Stat. 1286 (1999)).

69. *Id.* at 6 (citing Enhance 911 Services, Pub. L. No. 108-494, 118 Stat. 3986 (2004)).

70. *Id.* (citing New and Emerging Technologies 911 Improvement Act of 2008, Pub. L. No. 110-283, 122 Stat. 2620 (2008)).

71. *Id.* (citing 47 U.S.C. § 615 (2006)).

72. *See* 47 C.F.R. § 20.18(a)–(h) (2010) (providing a comprehensive list of current federal 911 regulations and regulations to take effect in the future).

73. 47 U.S.C. § 615a-1(f). Congress permits states to collect, distribute, and use 911 funds. *Id.* Congress does not permit federal communications statutes and regulations to "prevent the imposition and collection of a fee or charge applicable to commercial mobile services or IP-enabled voice services specifically

federal agencies to support state 911 planning, coordination, and implementation of E911 services.⁷⁴

Federal 911 and E911 legislation supports state policies and regulations to establish E911 services.⁷⁵ Federal policies support and assist states in the planning, coordination, and funding of state E911 systems.⁷⁶ The Wireless Communications Act establishes 911 as the universal emergency assistance number and furthers the deployment of state E911 services.⁷⁷ It grants the FCC and other federal agencies the authority to support the states in establishing and implementing E911 services.⁷⁸ Next, the ENHANCE 911 Act promotes “coordinat[ion of] 911 services and E-911 services, at the federal, State, and local levels and . . . ensure[s] that funds collected on telecommunications bills for enhancing emergency 911 services are used only for the purposes for which the funds are being collected.”⁷⁹ Finally, the purposes of the NET Improvement 911 Act are to “promote and enhance public safety by facilitating the rapid deployment of IP-enabled 911 and E-911 services, encourage the Nation’s transition to a national IP-enabled emergency network, and improve 911 and E-911 access to those with disabilities.”⁸⁰ The NET Improvement 911 Act obligates Voice over the Internet Providers (VoIP) to provide 911 and E911 as required by federal law and FCC regulations.⁸¹ Federal communications policies urge and encourage states to plan and coordinate E911 and NG911 services and avoid using 911 funds for non-911 purposes.

Federal funds could assist and support state governments to improve state E911 services and prepare to implement NG911 systems and IP-enabled network infrastructure. Few federal 911 funds have been available to the states, and the funds that were authorized and appropriated by Congress were grant funds subject to eligibility conditions on the states applications for and restrictions on the use of grant funds and state funds.⁸² Although Congress provided few 911 grant funds to state and local governments, it delegated authority to the FCC and Government Accounting Office (GAO) to study the

designated by a State [or] political subdivision . . . for the support or implementation of 911 or enhanced 911 services . . .” *Id.* Congress also imposed a condition on the use 911 funds by stating “that the fee or charge is obligated or expended only in support of 911 and enhanced 911 services, or enhancements of such services, as specified in the provision of State or local law adopting the fee or charge.” *Id.* Finally, Congress creates parity among classes of subscribers by stating that a “class of subscribers to IP-enabled voice services” shall not be charged a service fee greater than any class of subscribers to telecommunications services.” *Id.*

74. Ensuring Needed Help Arrives Near Callers Employing 911 Act of 2004, Pub. L. No. 108-494, § 158(a)(1)(A), 118 Stat. 3986, 3987 (2004).

75. Wireless Communications and Public Safety Act of 1999, Pub. L. No. 106-81, § 3(b), 113 Stat. 1286, 1287 (1999).

76. Ensuring Needed Help Arrives Near Callers Employing 911 Act § 158(a), 118 Stat. at 3987.

77. 47 C.F.R. § 20.18(a)–(h) (2010).

78. 47 U.S.C. § 615; *Id.* § 942.

79. Ensuring Needed Help Arrives Near Callers Employing 911 Act § 103, 118 Stat. at 3986–87 (codified as amended in scattered sections of 47 U.S.C.).

80. New and Emerging Technologies 911 Improvement Act of 2008, Pub. L. No. 110-283, 122 Stat. 2620, 2620 (2008).

81. 47 U.S.C. § 615a-1 (2006).

82. *Id.*

collection, distribution, and use of 911 funds by state governments.⁸³ The ENHANCE 911 and NET 911 Improvement Acts authorized and appropriated, respectively, federal 911 funds for a federal grant program to support the transition to NG911 and migration to an IP-enabled network.⁸⁴ States were not permitted to apply for these federal grant funds if they had used 911 revenues for non-911 purposes.⁸⁵ The federal grant program obligated states to develop state 911 plans to guide the use of federal grant funds.⁸⁶ The need for a state plan and restrictions on the use of state 911 funds are conditional mandates (a carrot approach) imposed on the application for and receipt of federal 911 grant funds.⁸⁷ Federal conditional mandates apply only if the states apply for federal 911 grant funds to implement E911 services and prepare to implement NG911 services and gain access to an IP-enabled network.⁸⁸ Few federal

83. *See id.* § 615a-1(f)(2) (detailing how Congress monitors the use of state 911 funds collected from state and local fees and surcharges imposed on communications devices within interstate commerce). Congress delegated to the FCC the authority to collect information on the collection and distribution of 911 and E911 fees and report its findings to Congress annually. *Id.* The FCC has issued three reports to Congress listing the collection, use, and distribution of 911 funds. FCC FEE COLLECTION 3D REPORT, *supra* note 23, at 14–17; FED. COMM’NS COMM’N, SECOND ANNUAL REPORT TO CONGRESS ON STATE COLLECTION AND DISTRIBUTION OF 911 AND ENHANCED 911 FEES AND CHARGES 14–17 (2010) [hereinafter FCC, FEE COLLECTION 2D REPORT], available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-300946A1.pdf; FED. COMM’NS COMM’N, REPORT TO CONGRESS ON STATE COLLECTION AND DISTRIBUTION OF 911 AND ENHANCED 911 FEES AND CHARGES 14–17 (2009) [hereinafter FCC, FEE COLLECTION 1ST REPORT], available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-292216A2.pdf. Several years earlier the Government Accountability Office (GAO) issued a report on the collection and distribution of state 911 fees. U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-06-338, STATES’ COLLECTION AND USE OF FUNDS FOR WIRELESS ENHANCED 911 SERVICES 1–2 (2006), available at <http://www.gao.gov/new.items/d06338.pdf>. The FCC and GAO examined and issued reports explaining the use or lack thereof of state 911 fee revenues to implement and operate state 911 and E911 systems.

The FCC proposed collecting additional information and making recommendations to Congress on the collection and distribution of 911 funds as part of its request from the Office of Management and Budget to renew its authority to collect information on 911 funds. Public Safety and Homeland Security Bureau Seeks Comment on Information Collection and Recommendations to Congress Regarding State 911/E911 Fees and Expenditures, PS Docket No. 09-14 (opened for comment Dec. 6, 2011) (seeking “comment on whether . . . the Federal Communications Commission (Commission) should collect more detailed or additional information regarding how states, territories, and other reporting jurisdictions collect and expend 911/E911 fees . . . [and] recommendations for the Commission to submit to Congress regarding potential legislative changes that would provide greater accountability in the collection and expenditure of 911/E911 funds.”).

The Middle-Class Tax Relief Act requires the Comptroller General of the United States to confer a study and report to Congress on the imposition and use of 911 funds or service charges. Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. 112-96, § 6505(a)–(b), 124 Stat. 156, 242 (2012). “The Comptroller General . . . shall initiate a study of (1) the imposition of taxes, fees, or other charges imposed by States or political subdivisions of States that are designated or presented as dedicated to improve emergency communications services, including 9-1-1 services or enhanced 9-1-1 services, or related to emergency communications services operations or improvements; and (2) the use of revenues derived from such taxes, fees, or charges.” *Id.* § 6505(a), 126 Stat. at 242.

The Middle Class Tax Relief Act requires the newly created 9-1-1 Implementation Coordination Office to prepare and submit a report that “analyzes and determines detailed costs for specific Next Generation 9-1-1 service requirements and specifications.” *Id.* Moreover, the purpose of the report is “to serve as a resource for Congress as it considers creating a coordinated, long-term funding mechanism for the deployment and operation, accessibility, application development, equipment procurement, and training of personnel for Next Generation 9-1-1 services.” *Id.*

84. 47 U.S.C. § 942.

85. *Id.*

86. *Id.*

87. 47 C.F.R. § 400.1 (2010).

88. *Id.*

funds have been provided to establish and maintain state E911 systems, implement NG911 systems, and gain access to an IP-enabled emergency services network.⁸⁹ Therefore, the states must collect, allocate, and distribute 911 funds to operate and maintain E911 emergency call services.⁹⁰

B. *Need for and Impact of a Revised E911 Funding Scheme*

Significant NC public policy concerns and management problems surround the disproportionate allocation and distribution of 911 funds to municipal and county PSAPs under the E911 funding formula of the 2008 NC E911 legislative funding scheme. All NC PSAPs have implemented Phases I and II⁹¹ of the state E911 system.⁹² Phase II requires PSAPs to locate emergency 911 callers who use either wireline or wireless telephones.⁹³ Phase II, or 911 funding, led to the accumulation of and refusal to use 911 funds by local governments under an ineffective E911 funding formula.⁹⁴ This accumulation of 911 funds could slow the development of the NC 911 system when local governments accumulate 911 funds hoping that NC General Assembly will permit them to divert 911 funds to general or other public safety uses.

1. *Municipal and County PSAP Operational Characteristics*

PSAPs need 911 funds to provide E911 services, implement PSAP operational standards, and acquire new digital technology and services. PSAPs cover different sizes and kinds of geographical areas and have different characteristics, such as different area coverage, numbers of telecommunicators, and kinds of management.⁹⁵ The 2008 NC E911 legislative funding scheme permits the NC 911 Board to grant 911 funds to 128 primary PSAPs⁹⁶ that

89. U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 83, at 3.

90. *Id.*

91. 47 C.F.R. § 20.18(a)–(h) (2010). Phases I and II are a FCC regulatory scheme requiring all wireline and wireless carriers to automatically provide the number and location of wireline and wireless subscribers to PSAPs at the time these subscribers make requests for emergency assistance from PSAPs. *Id.*

92. *Report 2: Percentage of Counties That Are E9-1-1 Capable*, NENA/DDTI (2008), <http://nena.ddti.net/NationalReport.aspx> (last visited Sept. 25, 2012) (showing that all North Carolina counties have completed Phase II).

93. *See* 47 C.F.R. § 20.18(e) (referencing the requirement that licensees must provide to PSAP the location of all 911 calls).

94. *See* Robertson, *supra* note 17, at B2 (describing why the 911 fund could not be spent and why millions of dollars accrued).

95. *See Report 2: Percentage of Counties That Are E9-1-1 Capable*, *supra* note 92 (providing examples of different geographical areas covered by PSAPs that have varying characteristics).

96. N.C. GEN. STAT. § 62A-46(a) (2010), *amended by* 2010 N.C. Sess. Laws 158 § 7(a). The North Carolina General Assembly permits the NC 911 Board to allocate and distribute funds to Primary PSAPs in existence in fiscal year 2008–2009. *Id.* The pertinent provision states that: “Monthly Distribution.—The 911 Board must make monthly distributions to primary PSAPs from the amount allocated to the 911 Fund for PSAPs. A PSAP is not eligible for a distribution under this section unless it provides enhanced 911 services and received distributions from the 911 Board in the 2008–2009 fiscal year” *Id.* Thus, the NC 911 Board cannot allocate or distribute 911 funds to secondary PSAPs that may provide basic or E911 services to wireline and wireless subscribers. *Id.*

provide E911 services to urban and rural municipalities and counties.⁹⁷ PSAPs include single and multiple seat operations,⁹⁸ and may provide or participate in formal training programs.⁹⁹ PSAPs are managed or operated by law enforcement, emergency management, communications, or other public safety office.¹⁰⁰ North Carolina does not provide technical or sales assistance to local governments to assist in the purchase of 911 equipment, services, or technology for PSAPs.¹⁰¹ Vendors and consultants may provide technical and operational guidance and advice to PSAPs and sell communications and other 911 equipment and services to municipal and county governments.¹⁰² Thus, revisions to the 2008 NC E911 legislative funding scheme must ensure that NC 911 Board will have the authority to support PSAPs that eventually may need to comply with state E911 operational procedures and purchase guidelines for costly E911 equipment and services.

2. *PSAP Operational and Administrative Limitations*

NC PSAPs will encounter operational and administrative limitations that may require the state to provide additional 911 funds to PSAPs. These limitations must be addressed to revise the 2008 NC E911 legislative funding scheme so that the NC 911 Board can distribute more 911 funds to PSAPs when they are needed to overcome limitations or operational needs. North Carolina has not established technical and operational standards, readiness capability criteria, or information management guidelines for PSAP operations and administration.¹⁰³ Readiness capabilities criteria include evaluation of the status of PSAP security, ALI database, American with Disability Act (ADA) compliance, and continuity of operations planning.¹⁰⁴ Next, the North Carolina E911 system must transition to a NG911 system and migrate to an IP-enabled emergency services network infrastructure.¹⁰⁵ The transition and migration will require local PSAPs to provide NG911 services and acquire access to an IP-enabled emergency services network.¹⁰⁶ Thus, revisions to the 2008 NC

97. NC 911 BD., *supra* note 43, at 9.

98. *See id.* (stating that PSAPs “vary from single seat centers with limited training and capability to multiple position operations that have discipline specific law enforcement, fire, and emergency medical dispatchers”).

99. *See id.* at 14 (“The level of training offered depends upon the agency in question.”).

100. *Governing Authorities for 911 Primary PSAPs in North Carolina*, NC 911 BOARD https://www.nc911.nc.gov/pdf/PSAP_GoverningAuthorities.pdf (last visited Sept. 5, 2012).

101. *See* NC 911 BD., *supra* note 43, at 9 (“This is a result of the fact that even though 911 is a statewide concern, purchasing and management is done at a local level.”).

102. *Id.* (“To some degree, many PSAPs rely solely upon advice provided by vendors, which may or may not be the best solution technologically, operationally or economically.”).

103. *See id.* at 9, 11–12 (pointing out that the lack of technical and operational standards is a significant impediment to providing adequate 911 services statewide and establishing a state E911 management plan).

104. *See* APCO-NENA, NENA 53-505, APCO-NENA SERVICE CAPABILITY CRITERIA RATING SCALE OPERATIONS INFORMATION DOCUMENT (OID) 6 (2008) (“APCO and NENA have jointly developed this document to assist PSAP Managers and their Governing Authorities to identify their current level of service capability.”).

105. NC 911 BD., *supra* note 43, at 24.

106. NAT’L EMERGENCY NUMBER ASS’N (NENA), NENA NG9-1-1 TRANSITION PLANNING COMM., NENA NG9-1-1 TRANSITION PLAN CONSIDERATIONS (JID) 24–26 (version 1, 2011), *available at*

E911 legislative funding scheme must grant the NC 911 Board the authority to support PSAPs implementing operational procedures, purchasing new equipment, and moving to NG911 services and an IP-enabled network infrastructure.

C. Policy and Methodology to Study Fiscal and Technology Environments

The methodology of the NC E911 Funding Study includes methods and tools to collect and analyze cost and other data and information to determine the NC-eligible and total state cost of E911 services. The NC E911 Funding Study is the necessary first step to determine total state E911 costs as part of another study to determine the cost to provide NG911 services and acquire access to an IP-enabled communications network.¹⁰⁷ Simply, the NC E911

http://www.nena.org/resource/collection/C34466B1-DFD7-49F2-8908-ECA3F4BDA46B/NENA_77-501-v1_NG9-1-1_Transition_Plan_Considerations.pdf. The NENA Transition Committee states that: “It is assumed that the transition to NG9-1-1 will be driven by the business and service needs of the stakeholders and federal or state/province level leadership. Therefore the industry can expect to see Requests for Proposals (RFPs) from the users (PSAPs, 9-1-1 Authorities, states/provinces, etc.) requesting NG9-1-1 functionality. . . . It is unlikely that PSAPs can introduce NG9-1-1 in a single phase. . . . Therefore there are likely stages that would be required that incrementally progress toward the final vision of NG9-1-1.” *Id.* at 23.

107. IMPLEMENTATION COORDINATION OFFICE, *supra* note 4, at 4-6-7; L. ROBERT KIMBALL & ASSOCS., INC., *supra* note 7, at 27. The IP-Enabled Migration Plan does not provide a NG911 cost analysis for a specific state or region. The Washington NG911 Funding Study shows costs of maintaining a state E911 system while each PSAP implements NG911 services. See L. ROBERT KIMBALL & ASSOCS., INC., *supra* note 7, at 40 app. C-1 (illustrating the costs of providing E911 services while NG911 services are implemented by counties and municipalities).

The IP-Enabled Migration Plan, a USDOT Project, included a cost analysis for the national implementation of the NG911 on an IP-enabled infrastructure but did not provide specific data for any one specific state, county, or municipality. IMPLEMENTATION COORDINATION OFFICE, *supra* note 4, at 4-6-7. The IP-Enabled Migration Plan national migration plan states that:

However, actual deployment across the country is likely to reflect a hybrid or combination coordinated, intergovernmental and independent unilateral implementation approaches with various degrees . . . and independence. Based on discussions, two high-level IP-Enabled deployment scenarios were identified for analysis—Uniform and Hybrid—along with the Baseline (current environment) representing today’s level of 9-1-1 technology

The analyses were based on a theoretical plan for implementing NG9-1-1 across the United States and took into account various geographic considerations, but do not reflect the specific situation of any actual State or region. The approach was designed to provide insights from a national, holistic perspective.

Id. at 4-2-3.

The IP-Enabled Migration Plan listed “[t]he results of the cost analysis across all scenarios, presented in both nominal and discounted dollars” The implementation scenarios include the baseline, uniform and hybrid approaches. *Id.* at 4-7. A summary of the results stated that:

Funding Study collected actual cost and operational data that were generated by PSAPs providing actual E911 services. The NC E911 Funding Study methodology must be modified to determine the total state cost of NG911 services because PSAPs have not provided actual NG911 services or gained access to an IP-enabled communications network.

1. *Impact of NG911 Technology on NC E911 Funding Study*

New access and network infrastructure technologies create the need for different methodologies to determine the total state and local cost of a state NG911 system. The NC E911 Funding Study focuses entirely on the NC-eligible cost (total NC cost) of providing E911 services and did not consider the state cost of NG911 services.¹⁰⁸ Currently, NC PSAPs cannot receive text messages, photographs, video, and other media.¹⁰⁹ This NC E911 system operates on an analog or circuit-switched network infrastructure that cannot normally receive calls from newer access technologies and devices, such as email and telematics.¹¹⁰ The FCC and USDOT concluded that state E911 systems must transition to NG911 and migrate to a digital IP-enabled network infrastructure.¹¹¹ In North Carolina, this transition and migration are necessary to permit NC counties and municipalities to provide NG911 services.¹¹²

Table 4-3. Lifecycle Cost Analysis (20-Year Life Cycle)

(Billion, \$ Nominal)	9-1-1 Baseline		NG9-1-1 Uniform	NG9-1-1 Hybrid
	Low Cost	High Cost		
Planning	NA	NA	\$0.2	\$0.2
Acquisitions and Implementation	\$9.2	\$13.2	\$8.7	\$9.1
Operations and Maintenance	\$46.4	\$65.8	\$51.1	\$49.1
Total Life Cycle	\$55.6	\$79.0	\$60.0	\$58.4

Id.

The life cycle of NG911 services and IP-enabled network infrastructure is 20 years and includes planning, acquisitions, implementation, operations, and maintenance stages. *Id.*

108. L. ROBERT KIMBALL & ASSOCS., INC., *supra* note 7, at 1.

109. See E-911 Grant Program, 73 Fed. Reg. 57,567 (proposed Oct. 3, 2008) (to be codified at 47 C.F.R. pt. 400) (finding that E911 systems rely on obsolete 1970s circuit-switched network technology and that states must move to a digital Internet-Protocol enabled infrastructure to provide NG911 communication services).

110. INTELLIGENT TRANSP. SYS., *supra* note 10, at 4. Telematics is “[t]he system of components that supports two-way communications with a motor vehicle for the collection or transmission of information and commands.” *Id.* at C-8.

111. E-911 Grant Program, 73 Fed. Reg. at 57,568; IMPLEMENTATION COORDINATION OFFICE, *supra* note 4, at 1-1-3, 4-6-7.

112. See NENA, A POLICY MAKER BLUEPRINT FOR TRANSITIONING TO THE NEXT GENERATION 9-1-1 SYSTEM: ISSUES AND RECOMMENDATIONS FOR STATE AND FEDERAL POLICY MAKERS TO ENABLE NG9-1-1, at

NG911 services and an IP-enabled network infrastructure will require additional revisions to the state E911 legislative scheme, including the E911 legislative funding provisions.

2. *Use of Information and Analytical Methods to Conduct Study*

Information gathering and statistical methods collect and analyze, respectively, financial, cost, and operational data and information needed by state policy-makers and agency managers to revise the 2008 NC E911 legislative funding scheme. The NC E911 Funding Study uses several information gathering and analytical methods to determine NC-eligible cost, propose a funding model or formula, and make findings and recommendations. First, the NC E911 Funding Study gathered financial and administrative data and information from state expenditure documents and reports and an earlier E911 comprehensive planning study.¹¹³ Second, the NC E911 Funding Study used PSAP surveys to collect cost, call volume, state funding, general funding, and other data and information from primary PSAPs.¹¹⁴ Third, the NC E911 Funding Study searched relevant government, scholarly, and technical publications and documents to gather policy and technical information on the kinds of funding models and other matters of state E911 systems.¹¹⁵ Fourth, the NC E911 Funding Study addressed the veracity of survey and expenditure report data and information and analytics (namely conclusions, assumptions,

4 (2008) [hereinafter NENA, POLICY MAKER BLUEPRINT], available at http://www.state.nj.us/911/resource/nextgen/NG9-1-1PolicyMakerBlueprintTransitionGuide-Final_0.pdf. The NENA Policy-Maker Blueprint states that many states need to replace outdated 911 legislation and policies inhibiting the transition to NG911 and migration to an IP-enabled 911 infrastructure. *Id.*

113. SEEMAN, FINAL REPORT, *supra* note 40, at 3. See generally NORTH CAROLINA 911 BOARD, NORTH CAROLINA ASSESSMENT AND PLAN FOR NEXT GENERATION 9-1-1 VOLUME I (2008), available at <https://www.nc911.nc.gov/pdf/20081104%20Intrado%20North%20Carolina%20Assessment%20Plan-v2.pdf>; NORTH CAROLINA 911 BOARD, COMPREHENSIVE STATEWIDE PLAN: APPENDICES, VOLUME II (2008), available at <https://www.nc911.nc.gov/pdf/20081023%20Appendices%20to%20North%20Carolina%20Assessment%20Plan%20Volume%202.pdf>; NORTH CAROLINA 911 BOARD, COMPREHENSIVE STATEWIDE PLAN: SELECTED ROUTERS, VOLUME III (2008), available at <https://www.nc911.nc.gov/pdf/20081104%20Intrado%20Sel%20Router%20Addendum%20to%20North%20Carolina%20%20Assessment.pdf>; NORTH CAROLINA 911 BOARD, COMPREHENSIVE STATEWIDE E9-1-1 TELECOMMUNICATIONS PLAN (VOLUME IV-NC ASSESSMENT), VOLUME IV (2009), available at <https://www.nc911.nc.gov/pdf/20090116%20Intrado%20Vol%20IV%20North%20Carolina%20Plan%20.pdf>.

We expect that more 911 planning and coordination will be needed to implement and maintain state NG911 systems. See James E. Holloway, Elaine Seeman, & Margaret O'Hara, *State, Agency and Local Next Generation (NG) 911 Planning and Coordination to Implement State NG911 and Internet Protocol (IP) Enabled Network Policies*, 11 PITT. J. TECH. L. & POL'Y 3, 5–10 (2010) (examining the planning, regulatory, and policy environments and explaining the need to integrate local, state and federal NG911 planning and coordination).

114. SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 4; see Hire Contractor Minutes, *supra* note 37, at 6–7 (discussing data from the PSAP surveys). The NC E911 Funding Study used a former PSAP employee to contact primary PSAP supervisors and explain the data and information requested on a second survey. See Hire Contractor Minutes, *supra* note 37, at 6–7. At the NC 911 Board Meeting, “Mr. Taylor observed that a telecommunicator wouldn’t necessarily have the knowledge needed; that someone with more of a PSAP administrative background would be required. Chairman Bakolia suggested hiring a retired 911 professional Chairman Bakolia said he was not inclined to call a vote for additional funding; that ECU and staff would have to negotiate how something like this would work within the existing contract.” *Id.* at 7.

115. SEEMAN PRELIMINARY REPORT, *supra* note 40, at 18–19 (listing the references used to conduct and complete the NC E911 Funding Study).

and inferences) underlying the proposed funding model, findings, and recommendations to support NC 911 Board recommendations to revise the 2008 NC E911 legislative funding scheme.¹¹⁶ Thus, the NC E911 Funding Study methodology gathered financial and cost data and produced valid findings, inferences, and conclusions to revise the NC 2008 E911 legislative funding scheme.

III. CHALLENGES, RESTRAINTS, AND LIMITATIONS ON AN E911 FUNDING STUDY

The purposes of the NC E911 Funding Study were to collect and gather cost, financial and operational data and information to determine the total NC-eligible E911 cost that would be used by the NC E911 Funding Study to propose an E911 funding model and make policy and management recommendations to inform and aid NC legislative policy-makers and agency managers who were reviewing and revising the 2008 NC E911 legislative funding scheme. The completion of NC E911 Funding Study and proposed revisions to the 2008 E911 legislative funding scheme would suffer from restraints and restrictions on gathering accurate and verifiable E911 cost, financial, and operational data. Political and management restraints include limited agency authority, state/county governmental relationships, and municipal and county financial operations. These restraints were eventually addressed by the NC 911 Board to ensure the collection and analysis of accurate and verifiable cost and other data.¹¹⁷ The collection and analysis of cost, financial, and other data were necessary to determine an accurate NC-eligible E911 cost of E911 services that would allow the NC E911 Funding propose a valid E911 funding model, and make valid recommendations to revise the 2008 NC E911 legislative funding scheme.

A. *Data and Information Collection Limitations*

The NC E911 Funding Study was designed to collect and analyze financial, cost, and operational data to determine the NC-eligible cost of E911 services, develop a funding model, and make recommendations.¹¹⁸ These findings and conclusions were given to the NC 911 Board to propose revisions and amendments to the 2008 NC E911 legislative funding scheme.¹¹⁹ Early in the Study, financial data collected was not sufficient to determine the cost and develop an E911 funding model.¹²⁰ The 2008 NC E911 legislative funding

116. *Id.* at 15. The NC E911 Funding Study states explicitly that “[t]he 911 Board should not evaluate statewide 911 service cost until at least 18–24 months of accurate and verifiable PSAP expenditure data is available for analysis.” *Id.*

117. *See* Hire Contractor Minutes, *supra* note 37, at 5–6 (discussing ways to get around said restraints).

118. *Id.* at 3.

119. *See* SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 15–17 (containing a set of recommendations given to the NC 911 Board).

120. *Id.* at 8. It states that “[t]he [expenditure data] for the January 2008 to June 2008 six-month period [are] . . . the most recent period for which detailed PSAP expenditure data is available” *Id.* at 8. “PSAPs are currently providing the NC 911 Board with expenditure data for the July 2008 to June 2009 fiscal year. To

scheme was implemented in January 2008 and had not been implemented long enough to generate sufficient data to make verifiable findings and valid conclusions.¹²¹ Eighteen to twenty-four months of cost data were preferred to make projections, draw inferences, and identify trends.¹²² The NC E911 Funding Study needed another source of cost data and information to determine NC-eligible E911 costs and propose an E911 funding model to review and revise the 2008 NC E911 legislative funding scheme.

1. *Source of Primary Cost and Operational Data*

The NC E911 Funding Study sought to use municipal and county 911 survey data but eventually relied on cost and financial data of earlier state 911 expenditure reports.¹²³ Local governments responded intermittently to the E911 funding survey of PSAP cost and financial data, and these data were not verifiable as to their accuracy and consistency among North Carolina's 128 PSAPs.¹²⁴ One might conclude that local governments may have been either reluctant to use their resources or lacked sufficient resources to complete the survey form. In any event, a private contractor was hired in November 2009 to assist local administrators and PSAP supervisors to complete the PSAP survey form.¹²⁵ Notwithstanding the contractor's efforts, this survey contributed very little, if any, to the cost, operational, and other data needed to determine total state E911 cost, propose a funding model, and make policy and management recommendations.¹²⁶ Consequently, the NC E911 Funding Study relied primarily on cost and financial data and information that were gathered from state 911 expenditure reports to review and revise the 2008 NC E911 legislative funding scheme.¹²⁷

2. *Need for Accurate and Verifiable Data to Make Revisions*

The collection of accurate and verifiable cost and financial data was the

date, 18 PSAP reports have been reconciled and made available to BBR." *Id.* The NC E911 Funding Study Preliminary Report identifies four reasons why the six-month expenditure data should be used with extreme caution by the NC911 Broad in creating a funding model. First, this financial or expenditure data includes significant variability in expenditures due to the timing of expenditure and large capital equipment and items. *Id.* Second, the expenditure collection reporting was only recently implemented in January 2008, under the 2008 NC E911 legislative funding scheme. *Id.* Third, the six month expenditure data collection is very short and may be subject to greater variability. *Id.* Fourth, the expenditure data for the six-month period may not be representative of the PSAP expenditures of the NC E911 system. *Id.* at 8–9.

121. *See id.* at 8–9 (noting four reasons: (1) significant variability in expenditures that will only be reflected over a longer period than six months, (2) the learning curve involved in implementing a new data collection and reporting system, (3) the small sample size represented by a six month period, and (4) the fact that the sixth month period is only one period and therefore does not represent long-term spending patterns).

122. *Id.* at 15.

123. *Id.* at 19 app. B.

124. Hire Contractor Minutes, *supra* note 37, at 5–6.

125. *See id.* at 6–7 (calling for a private contractor to be hired).

126. *See* SEEMAN, PRELIMINARY REPORT *supra* note 40, at 3 (noting the ineffectiveness of the first survey and that the contractor's survey has been more successful, but that not all of the responses to that survey have been received yet).

127. *Id.* at 19 app. B.

most significant challenge in meeting the goals of the NC E911 Funding Study.¹²⁸ Simply, accurate and reliable cost, financial, and operational data are needed to determine PSAP E911 costs, PSAP size, and other PSAP characteristics.¹²⁹ The NC 911 Board needed accurate and verifiable data to recommend or propose revisions to the 2008 E911 legislative funding scheme.¹³⁰ The NC Funding Study Preliminary Report concluded that sufficient data could not be collected from financial expenditure reports submitted by PSAPs to the NC 911 Board during the first six months of 2008.¹³¹ In December 2009, the NC 911 Board provided additional financial expenditures reports¹³² that had been submitted by PSAPs to the NC Wireless 911 Board¹³³ under the 1999 NC 911 wireless legislative scheme.¹³⁴ Thus, accurate and verifiable cost and operational data are essential to determine accurate state 911 costs, propose a NC E911 funding model, and make recommendations to review and revise the 2008 E911 legislative funding scheme.

B. *Administrative, Operational, and Other Limitations*

The NC E911 Funding Study encountered administrative, operational, and other limitations on the use of PSAP financial, operational, and other data. Initially, the limitations make it difficult to determine the total state-eligible costs of E911 services, propose an E911 funding model, and make reliable findings and recommendations. The NC E911 Funding Study considered the use of call volume data to propose an E911 funding model to revise the 2008 NC E911 legislative funding scheme.¹³⁵ Another complexity derives from the fact that total NC-eligible E911 cost does not include all local government costs to operate a PSAP.¹³⁶

1. *Difficulty in Collecting Call Volume or Operational Data*

Call volume and other E911 operational data were difficult to collect

128. *Id.* at 16.

129. *Id.* at 9 (“Collection of accurate, timely, and verifiable data is critically important for the 911 Board to understand the cost and categorization of allowed expenditures and the cost of 911 services in the state.”).

130. See Minutes, N.C. 911 Bd. 3–5 (Jan. 8, 2010) [hereinafter N.C. 911 Bd. Minutes], available at https://www.nc911.nc.gov/Board/minutes/20100108_Minutes.pdf (noting a Board Member’s statement that the Board cannot consider any change in the E911 funding model until it knows the “current cost”).

131. See SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 8–9.

132. Executive Director informed the NC 911 Board that pre-2008 Wireless 911 Board expense reports could be used to develop a funding model. *Supra* note 25. Later, a NC 911 Board member queried whether the Wireless 911 Board data could be used in the funding study and whether the information of these reports was accurate. *Id.* The Executive Director noted that these reports could be used and need to be used in the funding study. *Id.* Later, the Wireless 911 Board expense reports were provided for use in the funding study. *Id.*

133. N.C. GEN. STAT. § 62A-22 (2004), *repealed by* N.C. GEN. STAT. § 62A-41 (2008), *amended by* 2010 N.C. Sess. Laws 158; *see also supra* note 25.

134. N.C. GEN. STAT. §§ 62A-1–13 (1999), *repealed by* N.C. GEN. STAT., §§ 62A-40–53 (2008), *amended by* 2010 N.C. Sess. Laws 158.

135. *Supra* note 25.

136. SEEMAN, PRELIMINARY REPORT *supra* note 40, at 10.

from some local governments.¹³⁷ Foremost, local and state 911 managers could not agree on a single definition of a 911 call; so call volume data submitted by PSAPs could contain different kinds of calls, including nonemergency calls.¹³⁸ PSAP supervisors, NC 911 Board members, and investigators had different definitions of a 911 call.¹³⁹ The NC 911 Board immediately realized that a “911 call” must be defined so that PSAPs and other parties would receive and give the same or a similar definition.¹⁴⁰ In addition, the means of collecting call volume and other operational data differ greatly among public safety offices collecting the data.¹⁴¹ Some public safety offices may not distinguish between a 911 call and a traffic stop when both 911 calls and traffic stops are handled by law enforcement dispatchers who may be 911 telecommunicators.¹⁴² Equally important, some local government managers were hesitant or reluctant to participate in the initial 911 financial survey, even though the NC 911 Board had informed them of the purpose of and need for this survey.¹⁴³ Thus, the NC E911 Funding Study found that collecting financial, operational, and other data may require specific administrative instructions but preferably should be performed routinely by a state E911 management information system.

2. *Limitation of Collecting Data on Expenses on State-Eligible Costs*

The NC E911 Funding Study examined only NC-eligible 911 expenses to determine the costs of E911 services, propose an E911 funding model, and make management and policy findings and recommendations. The NC E911 Funding Study collected financial data only on state-eligible 911 expenses of PSAPs.¹⁴⁴ NC-eligible 911 funds partially cover the operating costs of municipal and county PSAPs.¹⁴⁵ The NC E911 Funding Study purposely chose not to examine total NC E911 cost that covered municipal and county E911 expenses and cost, such as personnel.¹⁴⁶ The NC E911 Funding Study

137. *Supra* note 25.

138. *Id.*

139. *Id.*; *see, e.g.*, Hire Contractor Minutes, *supra* note 37, at 7. (“Further discussion contemplated how many of the survey questions required clarification, with consensus emerging that the calls for service question was the principal issue . . .”).

140. *Id.* (“That sparked conversation regarding how to define calls for service without . . . ambiguity . . .”).

141. *Id.* (“[C]omments . . . about how different CAD systems record call data differently . . .”).

142. *Id.* (“[R]esponder initiated calls such as traffic stops that don’t involve a 911 telephone call get counted by the CAD his county uses as a ‘call for service.’”).

143. Hire Contractor Minutes, *supra* note 37, at 6 (“[Dr. Seeman] admitted they had encountered problems, from finance offices that were uncooperative to PSAPs that were simply unable to provide the information being requested. She said one issue that concerns her is the apparent inaccuracy of call volume data.”).

144. Minutes, N.C. 911 Bd. 10 (Aug. 21, 2009) [hereinafter Submitted Proposal Minutes], available at https://www.nc911.nc.gov/Board/minutes/20090821_Minutes.pdf (“[Dr.] Elaine Seeman reported that the ECU College of Business has submitted a proposal to determine the actual cost of providing 911 in North Carolina right now.”).

145. N.C. GEN. STAT. § 62A-46(c) (2010), amended by 2010 N.C. Sess. Laws 158 § 7(c).

146. *See* Submitted Proposal Minutes, *supra* note 144, at 10 (explaining that the study is only looking at “what the PSAPs are having to pay for their 911 service, e.g. trunk costs, etc” and “trying to determine what those network costs are, what the access costs are, what the selective routing costs are, etc.”); *supra* note 25.

determined only the NC-eligible E911 cost of the NC E911 system.¹⁴⁷ The total NC-eligible E911 costs would identify all state expenses that may include state-eligible expenses that were paid with local or general funds.¹⁴⁸ As local governments identify and seek reimbursements for newly identified NC-eligible expenses, the total NC E911 costs of PSAP operations will increase. These new state-eligible expenses create the need for more state 911 funds or show that some PSAPs may still be underfunded. Therefore, a state E911 funding study must consider state, municipal, and county E911 costs to determine the total state cost of E911 services.

C. *Management and Policy Guidance on a Funding Scheme*

The NC E911 Funding Study must propose an E911 funding model that can be used to propose rational revisions to the 2008 NC E911 legislative funding scheme. The proposed revisions must establish equitable distributions to PSAPs and permit effective management of 911 funds by the NC 911 Board. Therefore, a state E911 legislative funding scheme must address policy concerns and management problems to distribute 911 funds consistent with the public obligations and needs of local governments operating PSAPs.

1. *Adapt to New and Changing Policy Environments*

A NC 2008 E911 legislative funding scheme must be designed to adjust to new and changing policy, regulatory, and economic environments affecting NC eligible E911 costs. The technology and regulatory environments may create the need for the state to impose unfunded local liabilities and underfunded PSAP operations due to the need to replace aging PSAP equipment and comply with new state E911 standards and procedures.¹⁴⁹ These shortfalls may challenge legislative policies and agency management when municipal and county governments that often have fewer tax funds to pay for 911 services request state policy-makers to add more items and services to the list of state eligible expenses.¹⁵⁰ Next, federal policy-makers may also respond

147. See generally SEEMAN, FINAL REPORT *supra* note 40.

148. *Id.*

149. See N.C. GEN. STAT. §§ 62A-42(a)(4), (9) (2010), amended by 2010 N.C. Sess. Laws 158 § 3 (laying out the powers and duties of the 911 board). As North Carolina considers policies and regulations to meet the 911 service demands of text messaging, telematics, and other devices, the NC General Assembly and NC 911 Board must consider imposing new obligations on local governments operating PSAPs. For example, the NC 911 Board may promulgate new operational standards and procedures requiring new personnel, operations, and equipment. *Id.* These standards and procedures may require additional equipment and personnel which, in turn, impose a new financial liability on local governments. See *id.* § 62A-46(e) (2010), amended by 2010 N.C. Sess. Laws 158 § 7(d) (explaining that primary PSAPs must comply with standards and procedures set by the 911 board). The NC 911 Board cannot allocate and distribute 911 funds to cover all PSAP expenses and costs under the 2010 NC E911 legislative funding scheme. See *id.* § 62A-46(c) (2010), amended by 2010 N.C. Sess. Laws 158 § 7(c) (listing the limited purposes for which a PSAP can use 911 funds). Consequently, local governments may need to pay some state-imposed unfunded liabilities from general funds and revenues.

150. See 2010 N.C. Sess. Laws 158, § 7(c) (amending N.C. GEN. STAT. § 62A-46(c)) (listing 911 equipment, services, training, and other items that can and cannot be purchased by municipal and county governments with 911 funds).

by imposing firmer *mandates or conditional demands* on the use of 911 funds and urging state and local governments to make faster implementation of NG911 services and access to an IP-enabled emergency services network.¹⁵¹ Therefore, the revisions to the 2008 NC E911 legislative funding scheme may need to adjust and adapt to new external environments, or these revisions will eventually create 911 funding problems worse than those existing under the 2008 NC E911 legislative funding scheme.

2. *Advance Legislative Policy and Agency Management*

A revised 2008 NC E911 legislative funding scheme should permit effective management of 911 funds by the NC 911 board. Agency management must consider 911 funds to create plans, weigh local operational and fiscal needs, and consider commercial interests. First, the NC E911 funding model must support the implementation of state E911 planning and coordination objectives by the NC 911 Board.¹⁵² Second, the NC E911 funding model must operate within intergovernmental relationships that include E911 authority and discretion delegated to municipal and county governments.¹⁵³ Third, the E911 funding model must be sensitive to commercial and business interests to ensure PSAPs access to critical communications infrastructure of 911 service providers.¹⁵⁴ Fourth, the NC E911 funding model must avoid reducing the level and quality of E911 services that were provided by PSAPs and can never expose citizens to greater risk than previously encountered. Fifth, the NC E911 funding model and other provisions of a revised 2008 NC E911 legislative funding scheme must not allow local governments to accumulate 911 funds and must not permit the use of 911 funds for non-911 purposes.¹⁵⁵ Therefore, the revised 2008 NC E911

151. See 47 U.S.C. § 942(b) (2006) (explaining the purposes for which entities can receive 911 grants, including “the implementation of IP-enabled emergency services and applications enabled by Next Generation 9-1-1 services”); 47 C.F.R. § 400.1 (2010) (clarifying the grant application and approval requirements for grants under 47 U.S.C. § 942); see also *supra* Part III.A and accompanying notes (explaining a federal statutory condition that denies eligibility to receive grant funds to states that are using or have used 911 funds for non-911 purposes).

152. See NC 911 Bd., *supra* note 43, at 15 (“A new funding model that equitably supports all primary PSAPs both now and into the future is needed.”); NENA POLICY-MAKER BLUEPRINT, *supra* note 112, at 7 (“Absent significant inter-governmental cooperation, [this different and disparate] planning and funding may not lead to economies of scale that will enable parity of emergency services capabilities, interoperability, increased efficiency or cost savings within all aspects of emergency communications.”).

153. See 2010 N.C. Sess. Laws 158 § 7 (requiring municipal and county governments to comply with state legislative and NC 911 Board obligations).

154. NENA, POLICY-MAKER BLUEPRINT, *supra* note 112, at 11 (In implementing NG911, “[s]tate legislatures and regulatory bodies, as well as the FCC and Congress, are encouraged to take appropriate steps to enable competition for the delivery of E9-1-1 service that will provide increased opportunities and choices for 9-1-1 governing authorities today.”); see 2010 N.C. Sess. Laws 158 § 3(b) (delegating to NC 911 Board the authority to use 911 revenues to pay for IP-enabled services for an NG911 system).

155. See 2010 N.C. Sess. Laws 158 § 9 (restricting the use of 50% of the Emergency Telephone System Fund to eligible expenses under Article 3 of Chapter 62A, whereas the other 50% may be used for “public safety needs” even if they are ineligible expenses). North Carolina General Assembly permits a one-time use of 50% of accumulated 911 funds for municipal or county public safety purposes. *Id.* However, the NC General Assembly limits or restricts excessive accumulations by limiting carryovers of 911 funds from year to year. 2010 N.C. Sess. Laws 158 § 7(b). Moreover, the 2008 NC E911 legislation prohibits the governor from

legislative scheme must permit the NC 911 Board and local governments to weigh and consider government liabilities, changing environments, and business and public interests.

IV. EXAMINING E911 FUNDING OF 2008 NC E911 LEGISLATIVE FUNDING SCHEME

The NC E911 Funding Study was conducted to determine the NC-eligible costs of E911 services where this cost and other information were used to propose a specific E911 funding model and make particular policy and management recommendations to review and revise the 2008 NC E911 legislative funding scheme.¹⁵⁶ The distributions of 911 funds were either too few or too much. The NC E911 Funding Study must propose an E911 funding model that equitably distributes 911 funds among 128 local PSAPs that were either underfunded or overfunded under the 2008 NC E911 legislative funding scheme.

A. *Policy and Management Failures of the 2008 NC E911 Funding Scheme*

An analysis of the E911 funding model of the 2008 NC E911 legislative funding scheme is necessary to explain, illustrate, and avoid the disproportionate 911 funding of local PSAPs. Other states must also avoid the same or similar problems that can be disastrous when PSAPs are grossly underfunded by state and local governments. Although other states may have different E911 legislative funding schemes, they must periodically review their schemes to ascertain whether these schemes underfund or overfund local PSAPs.¹⁵⁷ The NC E911 Funding Study determines the total NC-eligible cost of PSAP operations and proposes an E911 funding model to review and revise an ineffectual 2008 E911 legislative funding scheme.¹⁵⁸ The 2008 NC E911 legislative funding scheme illustrates how the equitable 911 funding and 911 fund usage assumptions and good legislative intentions of the NC General Assembly and NC E911 Board produced just the opposite effect—overfunding and underfunding PSAPs.¹⁵⁹

1. *Pertinent Funding Provisions of 2008 NC E911 Legislative Funding Scheme*

The operative part of an E911 legislative funding scheme is the E911

using 911 funds for non-911 purposes. This pertinent language states that:

“Nature of Revenue. The General Assembly finds that distributions of revenue from the 911 Fund are not State expenditures for the purpose of Section 5(3) of Article III of the North Carolina Constitution. Therefore, the Governor may not reduce or withhold revenue in the 911 Fund.” N.C. GEN. STAT. § 62A-44(d) (2008), amended by 2010 N.C. Sess. Laws 158 § 5.

156. SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 3.

157. See, e.g., KAN. STAT. ANN. § 12-5377 (describing the review system for the 911 funding scheme in Kansas).

158. SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 3; SEEMAN, FINAL REPORT, *supra* note 40, at 2–4.

159. SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 14–15.

funding model or formula used to allocate and distribute 911 funds to local governments. The 2008 NC E911 legislative funding scheme contained a two-factor E911 funding model to allocate and distribute 911 funds, and the E911 funding model or formula contained base rate and per-capita (population-based) factors.¹⁶⁰ The base rate was the amount of 911 funds that had been distributed to PSAPs at the end of fiscal year 2006–2007.¹⁶¹ The base rate and per-capita factors determined allocations of 911 funds to county and municipal PSAPs.¹⁶²

The pertinent E911 funding model and provisions of the 2008 NC E911 legislative funding scheme were as follows:

§ 62A-46. Fund distribution to PSAPs.

(a) Monthly Distribution. – The 911 Board must make monthly distributions to primary PSAPs from the amount allocated to the 911 Fund for PSAPs. The amount to be distributed to each primary PSAP is the sum of the following:

(1) The PSAP's base amount. – The PSAP's base amount is the amount the PSAP received in the fiscal year ending June 30, 2007, and deposited in the Emergency Telephone System Fund of its local governing entity, as reported to the State Treasurer's Office, Local Government Division.

(2) The PSAP's per-capita amount. – The PSAP's per-capita amount is the PSAP's per-capita share of the amount designated by the Board under subsection (b) of this section for the per-capita distribution. The 911 Board must use the most recent population estimates certified by the State Budget Officer in making the per-capita distribution under this subdivision. A PSAP is not eligible for a distribution under this subdivision unless it provides enhanced 911 service.

(b) Percentage Designations. – The 911 Board must determine how revenue that is allocated to the 911 Fund for distribution to primary PSAPs and is not needed to make the base amount distribution required by subdivision (a)(1) of this section is to be used. The 911 Board must designate a percentage of the remaining funds to be distributed to primary PSAPs on a per-capita basis and a percentage to be allocated to the PSAP Grant Account established in G.S. 62A-47. If the 911 Board does not designate an amount to be allocated to the PSAP Grant Account, the 911 Board must distribute all of the remaining funds on a per-capita basis. The 911 Board may not change the percentage designation more than once each calendar year.¹⁶³

160. N.C. GEN. STAT. § 62A-46(a) (2008), *amended by* 2010 N.C. Sess. Laws 158 § 7.

161. *Id.*

162. *Id.*

163. *Id.* Other pertinent provisions of 2008 Revised Chapter 62A or NC E911 legislative funding scheme state that:

The 2008 NC E911 legislative funding scheme was a base rate and per-capita model with the base rate amount being the primary determinant of the amount of 911 fund distributions to local governments.¹⁶⁴ The base rate factor provided a stable source of PSAP funding and established a uniform allocation and distribution of funds throughout North Carolina.¹⁶⁵ The base rate model's uniform distribution that was not fully used by local governments created a 911 funding policy concern and agency management problem that raised serious doubts about

(c) Use of Funds. – A PSAP that receives a distribution from the 911 Fund may not use the amount received to pay for the lease or purchase of real estate, cosmetic remodeling of emergency dispatch centers, hiring or compensating telecommunicators, or the purchase of mobile communications vehicles, ambulances, fire engines, or other emergency vehicles. Distributions received by a PSAP may be used only to pay for the following:

- (1) The lease, purchase, or maintenance of emergency telephone equipment, including necessary computer hardware, software, and database provisioning, addressing, and nonrecurring costs of establishing a 911 system (paraphrased).
- (2) Expenditures for in-State training of 911 personnel regarding the maintenance and operation of the 911 system (paraphrased). Allowable training expenses include the cost of transportation, lodging, instructors, certifications, improvement programs, quality assurance training, and training associated with call taking, and emergency medical, fire, or law enforcement procedures (paraphrased). “Training outside the State is not an eligible expenditure unless the training is unavailable in the State or the PSAP documents that the training costs are less if received out-of-state. Training specific to the receipt of 911 calls is allowed only for intake and related call taking quality assurance and improvement. Instructor certification costs and course required prerequisites, including physicals, psychological exams, and drug testing, are not allowable expenditures.
- (3) Charges associated with the service supplier's 911 service and other service supplier recurring charges. The PSAP providing 911 service is responsible to the voice communications service provider for all 911 installation, service, equipment, operation, and maintenance charges owed to the voice communications service provider. A PSAP may contract with a voice communications service provider on terms agreed to by the PSAP and the provider.

(d) Local Fund. – The fiscal officer of a PSAP to whom a distribution is made under this section must deposit the funds in a special revenue fund, as defined in G.S. 159-26(b)(2), designated as the Emergency Telephone System Fund. The fiscal officer may invest money in the Fund in the same manner that other money of the local government may be invested. Income earned from the invested money in the Emergency Telephone System Fund must be credited to the Fund. Revenue deposited into the Fund must be used only as permitted in this section.

(e) Compliance. – A PSAP, or the governing entity of a PSAP, must comply with all of the following in order to receive a distribution under this section:

- (1) A county or municipality that has one or more PSAPs must submit in writing to the 911 Board information that identifies the PSAPs in the manner required by the FCC Order.
- (2) A participating PSAP must annually submit to the 911 Board a copy of its governing agency's proposed or approved budget detailing the revenues and expenditures associated with the operation of the PSAP. The PSAP budget must identify revenues and expenditures for eligible expense reimbursements as provided in this Article and rules adopted by the 911 Board.
- (3) A PSAP must be included in its governing entity's annual audit required under the Local Government Budget and Fiscal Control Act. The Local Government Commission must provide a copy of each audit of a local government entity with a participating PSAP to the 911 Board.
- (4) A PSAP must comply with all requests by the 911 Board for financial information related to the operation of the PSAP.

Id. § 62A-46(c)–(e) (2008), amended by 2010 N.C. Sess. Laws 158 § 7(c)–(d).

164. *Id.* § 62A-46(b), amended by 2010 N.C. Sess. Laws 158 § 7(b).

165. N.C. GEN. STAT. § 62A-46(a)(1)–(2) (2008), amended by 2010 N.C. Sess. Laws 158 § 7(a).

the validity and efficiency of the 2008 NC E911 legislative funding scheme.¹⁶⁶

The base rate model of the 2008 NC E911 legislative funding scheme was the most operative factor and demonstrated the disadvantages of using a base rate factor to create an E911 funding model. These disadvantages must be weighed and compared to the disadvantages of other factors of state E911 funding models. A base rate funding model can be inherently backwards looking by relying only on funding from some prior year or period, such as an arbitrary date of establishing a state E911 system.¹⁶⁷ Next, the base rate model can create disincentives to adopt new infrastructure, replace obsolete technologies, and modernize new telecommunications infrastructure.¹⁶⁸ The base rate model's reliance on an arbitrary past amount denies operational and administrative flexibility by failing to use cost as primary factor to fund PSAP operations.¹⁶⁹ Finally, the base rate model may not always allow PSAPs to increase operating expenses when they need to acquire additional resources and expertise needed to expand 911 services. In North Carolina, the base rate per-capita model had just the opposite effect, causing some PSAPs to receive excessive distributions of 911 funds but requiring no legitimate rationale for a PSAP's refusal to use 911 funds.¹⁷⁰

2. *Not Much Data for the Short Duration of 2008 Funding Scheme*

The base rate per-capita model of the 2008 NC E911 legislative funding scheme allocated and distributed funds over a short duration.¹⁷¹ This short duration made the task of collecting financial, cost, and other data more difficult. The 2008 legislative funding scheme established an E911 funding model in January 2008,¹⁷² and had not been implemented long enough for PSAPs to submit and the NC 911 Board to receive sufficient expenditure reports (containing financial, cost, and operational data) by September 2009,

166. See SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 11 (referencing the findings of the NC 911 board on the 2008 NC E911 legislative funding scheme).

167. N.C. GEN. STAT. § 62A-46(a)(1), *amended by* 2010 N.C. Sess. Laws 158 § 7(a)(1) (“The PSAP’s base amount is the amount the PSAP received in the fiscal year ending June 30, 2007, and deposited in the Emergency Telephone System Fund of its local governing entity, as reported to the State Treasurer’s Office, Local Government Division.”).

168. See generally Robertson, *supra* note 17, at B2 (recognizing that the 2008 NC E911 legislative funding scheme did not deny local governments the authority to accumulate \$91 million in 911 funds). The 911 funds had been collected from “each active voice communications service connection that is capable of accessing the 911 system.” N.C. GEN. STAT. § 62A-43(a) (2008), *amended by* 2010 N.C. Sess. Laws 158 § 4. One could reasonably infer that many counties and municipalities were reticent to find uses for 911 funds that were distributed under the 2008 NC E911 legislative funding scheme. 2010 N.C. Sess. Laws 158 § 9, *amending* N.C. GEN. STAT. § 62A-46 (2008).

169. N.C. GEN. STAT. § 62A-46(c)(1)–(2) (2008), *amended by* 2010 N.C. Sess. Laws 158 § 7(c).

170. N.C. GEN. STAT. § 62A-46(a)(1) (2008), *amended by* 2010 N.C. Sess. Laws 158 § 7(a)(1). The 2008 NC E911 legislative funding scheme included a statutory base rate imposed by the North Carolina General Assembly. *Id.* The 2010 NC E911 legislative funding scheme permitted the NC 911 Board to establish the base rate for each local government operating a primary PSAP. 2010 N.C. Sess. Laws 158 § 7(a)(1).

171. SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 9.

172. 2007 N.C. Sess. Laws 383 § 8, *repealing* N.C. GEN. STAT. § 62A-1-13 (1999) (Public Safety Telephone Service); N.C. GEN. STAT. § 62A-21-39 (2004) (Wireless Telephone Service).

the beginning of the NC E911 Funding Study.¹⁷³ A longer duration would have allowed PSAPs to submit more usable financial and cost data and allowed investigators to make valid findings and conclusions based on the operation of 2008 NC E911 legislative funding scheme. The NC E911 Funding Study preferred at least eighteen months or more of these data and information to determine the total NC-eligible E911 cost, propose a funding model, and make recommendations.¹⁷⁴

This short duration of the 2008 NC E911 legislative funding scheme was the reason the NC 911 Board decided not to propose revisions and make other decisions in reliance on the NC E911 Preliminary Report.¹⁷⁵ However, the NC 911 Board needed to find a means to provide more financial, cost, and operational data to complete its review of and revisions to the 2008 NC E911 legislative funding scheme. The NC 911 Board chose to provide additional expenditure reports that had been submitted to the now defunct NC Wireless 911 Board that was repealed by the 2008 NC E911 legislative act.¹⁷⁶ The NC 911 Board also hired contractors to collect additional cost data and information to determine the total NC-eligible cost of PSAP operations.¹⁷⁷ The contractor's data were not available when the NC Funding Study Final Report was drafted and presented to the NC 911 Board on April 6, 2010.¹⁷⁸ The NC Funding Study Final Report used cost data and information of one year of E911 expenditure reports submitted to the NC 911 Board and several years of expenditure reports submitted to the NC Wireless 911 Board.¹⁷⁹ The NC Wireless 911 Board was the predecessor to the NC 911 Board¹⁸⁰ and received annual expenditure reports that listed the uses of 911 funds to purchase equipment and services that had been used by PSAPs to provide *only* wireless E911 services.¹⁸¹ These PSAPs provided both wireline and wireless 911 services but could only use wireless 911 funds to fully or partially pay the cost

173. SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 9.

174. SEEMAN, FINAL REPORT, *supra* note 40, at 2–6.

175. *Supra* note 25.

176. NC 911 Bd. Minutes, *supra* note 130, at 3–5.

177. See Minutes, N.C. 911 Bd. 9 (May 14, 2010) available at https://www.nc911.nc.gov/Board/minutes/20100514_Minutes.pdf (referring to “two prospective contractors who will be collecting the additional data”).

178. *Supra* note 25.

179. See SEEMAN, FINAL REPORT, *supra* note 40, at 2 (detailing the sources of the data). The NC E911 Funding Study Final Report relies on three sources of cost data and information to propose an E911 funding model and make modified findings, conclusions, and recommendations:

- From the former Wireless 911 Board, cost reports from fiscal years 2006–2007, 2005–2006, and 2004–2005. Verified data is available from virtually all PSAPs.
- From the current 911 Board, six-month cost reports from January 2008 to June 2008. Verified data is available from virtually all PSAPs.
- From the current 911 Board, fiscal year cost reports from July 2008 to June 2009. Verified data is available for about one-third of the PSAPs.

Id.

180. N.C. GEN. STAT. § 62A-22 (2005), *repealed by* N.C. GEN. STAT. § 62A-42 (2008), *amended by* 2010 N.C. Sess. Laws 158 § 3.

181. *Id.* § 62A-25(b) (2005), *repealed by* N.C. GEN. STAT. § 62A-46 (2008), *amended by* 2010 N.C. Sess. Laws 158 § 7(c) (“Money from the PSAP Fund shall be used only to pay for the lease, purchase, or maintenance of emergency telephone equipment for the wireless Enhanced 911 system . . .”).

of equipment and services used to provide 911 services to wireless callers.¹⁸² These additional cost and financial data produced a more valid total NC-eligible E911 cost, which, in turn, were used to propose a valid E911 funding model and make policy and management recommendations to review and revise the 2008 E911 legislative funding scheme.¹⁸³

B. Criteria and Processes to Determine Allocation and Distribution Formula

Analytical criteria and processes were used to analyze data, estimate results, and make findings to review and revise the 2008 NC E911 legislative funding scheme that must equitably allocate and distribute 911 funds among 128 PSAPs in North Carolina. These criteria and processes include qualitative analysis and simple statistical methods that were employed by the investigators to manage and manipulate data to determine the NC-eligible E911 cost.¹⁸⁴ These analyses and methods also use cost and other findings, inferences, and conclusions to formulate a funding model and make policy and management recommendations. The criteria and processes were needed to design an E911 population-based funding model that would make both equitable and sustainable 911 distributions to local governments operating primary PSAPs.¹⁸⁵

1. Processes to Use Data to Develop E911 Funding Model

The processes include qualitative and statistical analyses of financial, cost, and operational data and information. These analyses are needed to classify or categorize PSAPs with similar characteristics, determine statistical trends, and manage and manipulate data. For example, one set of criteria and processes that was used to determine per-capita costs and other results consisted of seven steps that are as follows:

1. For each PSAP, determine the annual average of the Total Cost column from Wireless 911 Board reports. This average is about \$31.4 million per year
2. For each PSAP, determine the annualized average permitted expenditures from 911 Board reports. This average is about \$40.5 million
3. Obtain an overall weighted average for each PSAP from all available data. This overall average is about \$34.0 million Classify based on size and determine per-capita amounts[.]
4. Classify all PSAPs into one of 5 categories based on population size.

182. *Supra* note 25.

183. *See* SEEMAN, FINAL REPORT, *supra* note 40, at 1–6 (explaining how the additional data altered the report's analysis, findings, and recommendations).

184. *Id.*

185. *See infra* Part V.A and accompanying notes (discussing policy and management elements that underpin the E911 funding model and recommendations to ensure rational agency decision-making and legislative policy-making that were gleaned from the use of qualitative and statistical analysis to examine and analyze data, formulate paradigms, and evaluate findings to make recommendations).

5. Within each size category, determine a per-capita average expenditure for each PSAP and order all PSAPs in the category by their respective average.
6. Remove the top 10% and bottom 10% in each category to mitigate the effects of outliers
7. Determine an average per-capita distribution amount for all PSAPs in each size category using the middle 80% (approximate) that remains.¹⁸⁶ [The per-capita averages of TABLE I below are based on a total annual distribution of \$40 million to all PSAPs.]

The qualitative and statistical methods produce findings, results, and outcomes that are needed to design and propose an E911 funding model, determine costs, and make recommendations to revise the 2008 NC E911 legislative funding scheme.¹⁸⁷ TABLE I, Column A below contains PSAP categories that were produced by these methods to determine a total E911 annual distribution in Step 7 above. The seven-step criteria and process immediately above form an ongoing or iterative model-validation process that permits the NC 911 Board to add new E911 cost data to reevaluate and adjust future annual distributions.¹⁸⁸

These criteria and processes contain and rely on qualitative analysis and statistical methods. These frameworks and methods were employed to determine NC per-capita cost in TABLE I, Column B below and other results by gathering, managing, and analyzing PSAP cost data and information.¹⁸⁹

TABLE I

PER-CAPITA COST PER CATEGORY OF PSAPs¹⁹⁰

A	B
Category (PSAPs per Category)	Adjusted Per-Capita Cost
A/B (16 PSAPs)	\$3.30 (largest population)
C (19 PSAPs)	\$3.98
D (23 PSAPs)	\$5.17
E (23 PSAPs)	\$5.70
F (43 PSAPs)	\$8.96 (smallest population)

TABLE I illustrates the use of basis statistical and qualitative analyses to produce an adjusted per-capita cost, PSAP categories, and PSAPs per category.

186. SEEMAN, FINAL REPORT, *supra* note 40, at 3.

187. *See, e.g., id.* at 5 (“Adequate expenditure oversight and appropriate policy decisions require timely, accurate, and verifiable data.”).

188. *Id.*

189. *Id.*

190. SEEMAN, FINAL REPORT, *supra* note 40, at 3.

2. *Criteria to Explain Data to Determine E911 Cost*

Criteria are identified and used to recognize and classify characteristics and findings to determine NC-eligible E911 cost and propose a NC E911 funding model. Analytical criteria include qualities, factors, and characteristics describing local PSAPs, identifying PSAP similarities, setting PSAPs categories, setting funding model factors, and finding statistical measures.¹⁹¹ These criteria were used to determine the nature of an E911 funding model that would be used to distribute 911 funds to municipal and county governments operating PSAPs.¹⁹² For example, the population criterion includes five PSAP categories and each PSAP's per-capita costs.¹⁹³ The per-capita cost is determined based on the most recent population served by a specific PSAP.¹⁹⁴ The population categories and per-capita costs are listed in the TABLE I above and TABLE II, Columns A and B below. TABLE II's per-capita amount and PSAP categories were used to propose a population-based NC E911 funding model and make recommendations to revise the 2008 NC E911 legislative funding scheme.¹⁹⁵

191. *See id.* at 2–4 (discussing data, analysis, and recommendations).

192. *See id.* at 2–3 (proposing model and explaining criteria).

193. *See id.* at 3 (“Efficiencies in operations and economies of scale would suggest that the per capita operating costs would be lower for the larger PSAPs. Thus, we should expect that the per capita expenditures will increase as PSAP size decreases, and such is the case.”).

194. *Id.*

195. *See id.* at 2–4, 18–20 app. E (providing data taken from table 2 and explaining proposal).

TABLE II

EXCERPT OF PER-CAPITA AND PROPOSED NC FUNDING STUDY
DISTRIBUTION AMOUNTS¹⁹⁶

	PSAP NAME	A Category	B Per-Capita Amount (\$)	C Annual Per-Capita Distribution (\$/s)	D Proposed Annual Distributions (\$)
1	Alamance County Central Communications	C	3.98	580,922.00	605,922.00
2	Alexander County Communications	E	5.70	210,575.00	235,575.00
3	Alleghany County E911	F	8.96	99,644.00	124,627.00
4	Anson County Emergency Communications	E	5.70	144,558.00	169,558.00
5	Ashe County Communications	E	5.70	149,977.00	174,977.00
6	Avery County Communications Center	F	8.96	165,055.00	190,055.00
7	Beaufort County Communications Center	E	5.70	207,275.00	232,275.00
8	City of Washington	F	8.96	91,502	116,502.00
9	Bertie County Sheriff's Communications	F	8.96	179,798.00	204,798.00
10	Bladen County Sheriff's Communications	E	5.70	183,222.00	208,222.00
11	Brunswick County 9-1-1	C	3.98	375,913.00	400,913.00
12	Oak Island (Town of)	F	8.96	75,094.00	100,094.00
13	Buncombe County Emerg. Comm.	AB	3.30	355,167.00	777,863.00
14	Burke County Emerg. Communications	C	3.98	562,994.00	380,167.00
15	Cabarrus County Sheriff Communications	AB	3.30	318,447.00	587,994.00
16	Caldwell County Communications	C	3.98	209,786.00	343,404.00
17	Carteret County Communications	D	5.17	511,901.00	353,447.00
18	Caswell County 911 Communications	F	8.96	314,801.00	234,786.00
19	Catawba County Communications Center	AB	3.30	154,587.00	536,901.00

196. *Id.* at 18–20 app. E (using data excerpted from Appendix E). TABLE II lists only the first 25 PSAPs of the NC E911 system. TABLE II provides a sample that illustrates the cost findings and estimates used to create a population-based E911 funding model.

TABLE II continued

	PSAP NAME	A Category	B Per-Capita Amount (\$)	C Annual Per-Capita Distribution (\$/s)	D Proposed Annual Distributions (\$)
20	Chatham County Emergency Opns. Center	D	5.17	131,548.00	339,801.00
21	Cherokee County 911	E	5.70	93,670.00	179,587.00
22	Chowan Central Communications	F	8.96	343,188.00	156,548.00
23	Clay County E911 Communications	F	8.96	96,348.00	118,670.00
24	Cleveland County Communications Center	D	5.17	186,373.00	368,188.00
25	Kings Mountain (City of)	F	8.96	283,140.00	121,348.00

The proposed NC E911 funding model must allocate and distribute 911 funds based on one or two funding factors that could be PSAP population or PSAP cost. The NC-eligible E911 costs are based on actual expenditure reports of the NC Wireless 911 Board and NC 911 Board over four or more years.¹⁹⁷ TABLE II demonstrates a proposed funding model based on population used to estimate PSAP per-capita cost. The per-capita averages of TABLE I above and TABLE II, Column B above are based on an estimated annual distribution of \$40 million¹⁹⁸ and may change when additional expenditure reports are submitted and cost data are added to an iterative-validation process to estimate the annual distribution of 911 funds.¹⁹⁹ Column C includes an annual per-capita distribution. Column D includes the per-capita annual distribution plus a PSAP administrative amount of \$25,000.00. The PSAP administrative amount is an incentive to PSAPs to collect and submit timely and accurate expenditure and other data. This amount is also recognition that the collection and submission of accurate and timely information by PSAPs impose personnel costs on local governments. Still, a per-capita or population-based model still may not be the best E911 funding model to distribute 911 funds when a PSAP area is sparsely populated or recently replaced costly operating equipment.

C. Nature of Funding Models and Their Design and Impact

The NC E911 Funding Study was conducted to propose an E911 funding

197. SEEMAN, FINAL REPORT, *supra* note 40, at 2, 19 app. C.

198. *Id.* at 3.

199. *Id.* at 5.

model to revise the 2008 NC E911 legislative funding scheme.²⁰⁰ The NC Funding Study Preliminary Report identified the nature, benefits, and qualities of several E911 funding models.²⁰¹ The nature of an E911 funding models can be a single factor or two or more factors,²⁰² such as PSAP seats, PSAP population, and PSAP call volume.²⁰³ Each E911 funding model includes unique advantages and disadvantages as a method to allocate and distribute 911 funds to local governments that must fully or partially cover the cost of PSAP operations.²⁰⁴

1. *Advantages and Disadvantages of a One Factor Model*

E911 funding models or formulas rely on one or more factors, such as cost, population, or call volume to allocate and distribute 911 funds to PSAPs. The advantages and disadvantages of several E911 funding models or formulas must be examined to revise any E911 legislative funding scheme that must provide 911 funds to PSAP with different levels and kinds of E911 operations within the state. Specifically, the NC Funding Study Preliminary Report describes population-based and other models that are used to distribute 911 funds for different levels of PSAP operations within North Carolina.²⁰⁵ A population-based funding model is simple and straightforward. The state 911 funds are distributed based upon the population of municipality, county, or other areas served by a PSAP.²⁰⁶ The population data used in the population model would be taken from a state data center or another reliable source. A population-based model distributes more to larger counties and municipalities and does not take into consideration the cost of operating a PSAP at peak demand during summer or other seasons.²⁰⁷

The NC Funding Study Preliminary Report describes the allocation and distribution of 911 funds based on a population-based funding model that would determine the annual 911 distribution per PSAP.²⁰⁸ This description

200. *Id.*

201. *See* SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 11 (analyzing possible alternative models for revenue distribution). The NC E911 Funding Study Preliminary Report and NC E911 Funding Study Final Report addresses only the distribution of 911 revenues and does not address the collection of revenue to fund the North Carolina E911 System. *See* SEEMAN, FINAL REPORT, *supra* note 40 (recommending the implementation of a new distribution model but not discussing a revenue collection model); SEEMAN, PRELIMINARY REPORT, *supra* note 40 (ignoring collection of revenue to fund the North Carolina E911 System). NENA has issued a report listing and explaining state and federal models to fund state 911 systems. NAT'L EMERGENCY NUMBER ASS'N, FUNDING 9-1-1 INTO THE NEXT GENERATION: AN OVERVIEW OF NG9-1-1 FUNDING, MODEL OPTIONS FOR CONSIDERATION (2007), *available at* <http://www.nena.org/sites/default/files/NGFundingReport.pdf>.

202. *See* SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 11 (discussing single-factor and multi-factor distribution models).

203. *Id.*

204. *Id.* at 11–15.

205. *Id.* This Article does not recommend one funding model above all others and does not put forth an exhaustive list of funding models for PSAP operations. In fact, each state should design a funding model that provides the most E911 services for its citizens at the least cost to each PSAP.

206. *Id.* at 12–13.

207. *Id.* at 13.

208. *Id.* at 12–13, 19 app. E.

explains the impact of a population-based funding model on the distribution of 911 revenues to municipal and county governments operating PSAPs. North Carolina's population was approximately 9,217,514,000 in July 2008, and the average population of each PSAP was 74,335.²⁰⁹ The population ranged from a high of 805,410 in the Charlotte-Mecklenburg Police Department PSAP area to a low of 384 in the Beech Mountain Police Department PSAP area.²¹⁰ The population of 80% of North Carolina PSAPs falls in a range of 10,383 to 156,744.²¹¹ A population-based model will distribute available funds solely on the basis of the resident population served by the PSAP. Assume that in fiscal year 2008–2009 the total distribution of 911 revenues is \$63,273,118.00.²¹² If this amount were allocated solely based on population, the funding per resident would be \$6.86.²¹³ If the population-based model was used, 30 PSAPs would have increased funding of an average of \$356,875, and another 94 PSAPs would have decreased funding of an average of \$113,896.²¹⁴ The population-based funding model is easy to understand but may not always be an equitable and sustainable E911 funding formula or model to fund PSAPs.

Population is a smooth metric that drives changes in state-eligible E911 costs in a linear fashion. When the average demand for PSAP services is a function of the population served by the PSAP, then increases or decreases in population will increase or decrease the level of PSAP operations and cost.²¹⁵ PSAP population is easily determined and verifiable, but is a measure of average demand or activity.²¹⁶ The population funding model may not always reflect the true 911 cost among PSAPs with diverse economic, demographic, geographic, social, and other conditions and circumstances. The population-based model does not give any weight to maintaining peak demand and other operational costs that may impact PSAP operating costs.²¹⁷ Naturally, a population-based model tends “to allocate more to larger PSAPs and less to smaller PSAPs.”²¹⁸ The NC E911 Funding Study Preliminary Report also examined the use of the population-based model to distribute 911 funds to PSAPs, and the NC E911 Funding Study Final Report proposed a population-based E911 funding model to revise the 2008 NC E911 legislative funding scheme.²¹⁹

209. *Id.* at 13.

210. *Id.*

211. *Id.*

212. *Id.*

213. *Id.*

214. *Id.*

215. *Id.*

216. *Id.* The NC E911 Funding Study Final Report recommends a population model that divides North Carolina's 128 PSAPs into five classes based on population of the area covered by a PSAP. SEEMAN, FINAL REPORT, *supra* note 40, at 3.

217. SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 13.

218. *Id.*

219. SEEMAN, FINAL REPORT, *supra* note 40, at 2; SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 12–13.

2. *Advantages and Disadvantages of Two-Factor Funding Model*

A two-factor E911 funding model may take into account the size of the PSAP, call volume, or PSAP peak requirements.²²⁰ The two-factor model can minimize the bias toward either small or large PSAPs but is slightly more complex than the population, cost, or another single factor model.²²¹ The 2008 NC E911 legislative funding scheme employed a base rate-population funding model to allocate and distribute 911 funds.²²² The NC Funding Study Preliminary Report examined the nature of a two-factor funding model.²²³ The two-factor model may increase complexity and decrease understandability, decrease acceptance of a new funding model, and make the new model less equitable based on past overfunding and geographic conditions.²²⁴ To illustrate, the number of telecommunicator seats per PSAP and the PSAP population can be combined to form a seat-population E911 funding model. Among North Carolina PSAPs, a seat-population model that allocates 911 funds based on a 50:50 ratio (50% to PSAP seats and 50% to PSAP population) would increase 911 funding by an average increase of \$215,120.00 for 42 PSAPs, and another 82 PSAPs would have an average decrease of \$110,183.00.²²⁵ In another instance, a seat-population model that allocates 911 funds based on a 80:20 ratio (weighted 80% to seats and 20% to population) would increase 911 funds to 59 PSAPs with average increase of \$168,060.00, and another 65 PSAPs would have an average decrease of \$152,547.00 in 911 funds.²²⁶ Finally, a seat-population model that allocates 911 funds based on a 20:80 ratio (weighted 20% to seats and 80% to population) would increase 911 funds to 32 PSAPs with average increase of \$297,438, and another 92 PSAPs would have an average decrease of \$103,457.00 in 911 funds.²²⁷ Thus, seat-population models may exacerbate overfunding of PSAPs and may not always provide adequate funding to small rural PSAPs with only one seat and a small population and would likely undermine NC 911 public policy regarding the need to revise the 2008 NC E911 legislative funding scheme.

V. USE OF E911 FUNDING STUDY TO REVISE THE NC E911 FUNDING SCHEME

The NC 911 Funding Study proposed an E911 funding model and offered E911 legislative policy and agency management recommendations.²²⁸ The E911 funding model and recommendations were presented and submitted to the NC 911 Board to revise the 2008 NC E911 legislative funding scheme.²²⁹

220. SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 14–15.

221. *Id.* at 15.

222. N.C. GEN. STAT. § 62A-46(a) (2008), *amended* by 2010 N.C. Sess. Laws 158 § 7.

223. SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 14–15.

224. *Id.* Appendices I and J of the NC E911 Funding Study Preliminary Report compare various funding models. *Id.* at 19 apps. I, J.

225. *Id.* at 14.

226. *Id.* at 15.

227. *Id.*

228. SEEMAN, FINAL REPORT, *supra* note 40, at 2–6.

229. Minutes to Adopt the Report, *supra* note 43, at 11–12.

The NC 911 Board accepted the proposed funding model and policy and management recommendations to revise the 2008 NC E911 legislative funding scheme.²³⁰ This model and recommendations were underpinned by public policy and management elements, and these elements ensured that public policy-makers and managers were given valid findings and rational conclusions to revise the 2008 NC E911 legislative funding scheme.²³¹ These elements underpin the E911 funding model and recommendations that were given to solve management problems and policy concerns of disproportionate distributions of 911 funds.²³² The NC 911 Board considered the proposed E911 funding model and recommendations to revise the 2008 NC E911 legislative funding scheme.²³³ The NC 911 Board's funding revisions to the 2008 NC E911 legislative funding scheme²³⁴ were originally provisions of the North Carolina House of Representative Bill 1691, Use of 911 Funds.²³⁵

*A. Policy and Management Recommendations to Address
Concerns and Problems*

The NC 911 Board needed the NC E911 Funding Study to provide findings and conclusions to address E911 policy concerns and NC 911 Board management problems regarding the allocation and distribution of 911 funds under the 2008 NC E911 legislative funding scheme. State legislative policy concerns and agency management problems require rational revisions to the NC 2008 E911 legislative funding scheme based on or underpinned by fundamental policy and management elements.²³⁶ Rational revisions would allow effective and efficient allocation and management of 911 funds and would mandate equitable and sustainable distributions of 911 funds to PSAPs by the NC 911 Board.

Several policy and management elements ensure rational E911 recommendations, the E911 funding model, and other proposed revisions to the 2008 NC E911 legislative funding scheme. These elements are the grounds or basis for proposing an E911 funding model and each recommendation. These elements include effective state E911 information management,²³⁷

230. *Id.*

231. See SEEMAN, FINAL REPORT, *supra* note 40, at 2–6 (describing the proposed funding model).

232. See SEEMAN, FINAL REPORT, *supra* note 40, at 3–4 (describing how the distribution of 911 funds is calculated and proposing recommendations for distribution of those funds).

233. See Bill Draft 2009-TD-28 (v.17), *supra* note 17, at 6 (stating that the Executive Director of the NC 911 Board presented the NC E911 Funding Study to the House Select Committee).

234. N.C. GEN. STAT. § 62A-46 (2008), *amended by* 2010 N.C. Sess. Laws 158 § 7; *see supra* Part V.A and accompanying notes (explaining the impact of the policy and management elements on the design and implementation of a state E911 and NG911 legislative funding scheme).

235. H.B. 1691, Gen. Assemb., 2009 Sess. (N.C. 2010), *enacted as* 2010 N.C. Sess. Laws 158 §§ 1–11(b).

236. *See infra* Part V.C and accompanying notes (explaining the impact of NC E911 Funding Study on the 2010 NC E911 legislative funding scheme).

237. *See* NC 911 BD., *supra* note 43, at 26 (“[L]ocal governments and 911 directors could benefit from easy access to PSAP performance, statistical and operational data provided by other primary PSAPs in the state.”); SEEMAN, FINAL REPORT, *supra* note 40, at 6 (listing Recommendation 12 which requested the NC 911 Board to require PSAPs to categorize kinds of expenditures); SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 16 (listing Recommendations 3 and 8 which point out the need of the NC 911 Board to collect reliable and

efficient management of state 911 revenues,²³⁸ sustainable state distributions of 911 funds,²³⁹ uses of 911 funds to further state 911 objectives,²⁴⁰ and funding technological needs of the state E911 system.²⁴¹ Other policy and management elements include proportionate funding of large and small PSAPs,²⁴² timely decisions addressing changes in PSAP capital and operational costs,²⁴³ and integrating PSAP funding and state-mandated procedures, standards, and practices.²⁴⁴ These elements support and guide E911 policies and decisions that further the objectives of the state E911 system by recognizing and addressing agency management problems and legislative policy concerns.²⁴⁵ These concerns and problems include, among others, distributing too much or too few 911 funds to PSAPs, managing 911 funds inconsistent with PSAP and other state needs, and granting too little funding authority to the state 911 authority.²⁴⁶ These elements assist NC and other policy-makers to enact an equitable and sustainable²⁴⁷ E911 funding model and ensure that NC 911

timely financial and operational information from PSAPs).

238. See SEEMAN, FINAL REPORT, *supra* note 40, at 3–4 (identifying a funding model that distributed 911 funds to cover PSAP operational and administrative costs and did not allow PSAPs to accumulate unused 911 funds).

239. See *id.* (stating that the proposed E911 funding model was not based on the total state 911 revenues collected by the NC 911 Board). The NC E911 Funding Study Final Report states that:

It is important to note that an annual \$46.1 million distribution does not lay claim to all 911 Board funds. The 911 Board will have the financial flexibility necessary to allocate remaining collected funds to the Grant program, to disburse for permitted costs related to new technologies, accommodating anomalies arising from the process, or other appropriate uses.

Id. at 4.

240. NC 911 BD., *supra* note 43, at 15–16. The NC State 911 Plan recommended that “[a]n equitable and sustainable PSAP funding model be developed and the model be so designed to adjust appropriately the PSAP funding and the 911 fee on an annual basis.” *Id.* at 16.

241. *Id.* at 24 (recognizing that NG911 and IP-enabled infrastructure will place new demands on North Carolina and create the need to “establish . . . a funding mechanism that support[s] adequate growth.”).

242. See SEEMAN, FINAL REPORT, *supra* note 40, at 2 (“Across the state, there is significant variability in population served by each PSAP, from less than 400 individuals to over 800,000. As a result, per capita permitted expenditures will also vary widely.”).

243. See SEEMAN, FINAL REPORT, *supra* note 40, at 5 (developing an ongoing process that can adjust annual distributions of 911 funds to PSAPs).

244. See generally NC 911 BD., *supra* note 43, at 11, 24. In our opinion, the creation of new operational standards and implementation of NG911 and IP-enabled networks will impose new technical, personnel, equipment, and other demands and liabilities on municipal and county governments. These liabilities and demands may be unfunded or underfunded and will require more state or local 911 funds and other resources. These underfunded and unfunded liabilities that are imposed on municipal and county governments must be considered by the state 911 Board to rationally collect, allocate, and distribute a finite amount of 911 funds.

245. See *infra* Part V.B and accompanying notes (illustrating the presence of policy and management elements in the 2010 NC E911 legislative funding scheme).

246. *Supra* Part IV.

247. See N.C. GEN. STAT. § 62A-46(a)(1) (2008), *amended by* 2010 N.C. Sess. Laws 158 § 7(a)(1) (obligating the NC 911 Board to establish an equitable and sustainable funding model). A state E911 state legislative funding scheme must be equitable and sustainable. This scheme must also be efficient and effective to support PSAPs. An equitable and sustainable funding scheme collects, allocates, and distributes sufficient 911 revenues to ensure satisfactorily PSAP operations and timely development of PSAPs by weighing PSAP locations, technology trends, demographics, fiscal conditions, and other characteristics. Next, an effective and efficient funding scheme directs and proportionately allocates and distributes 911 funds to county and municipal PSAPs to provide satisfactorily 911 services and collects only enough 911 funds and revenues to further state and PSAP objectives and ensure technological growth and development of the state 911 system. Thus, the NC E911 Funding Study must set forth management and policy elements that guide NC policy-makers and agency managers to revise the 2008 NC E911 legislative funding scheme by making it efficient and effective as well as equitable and sustainable regarding the collection, allocation, and distribution of 911

Board managers make effective and efficient 911 funding decisions to implement state E911 legislative policies.

1. *Pertinent Recommendations of the Preliminary Report*

The NC Funding Study Preliminary Report made recommendations to address the shortcomings or disadvantages of collecting, relying on, or using only six months of E911 cost data and information.²⁴⁸ The NC Funding Study Preliminary Report was not conclusive regarding the total NC-eligible E911 cost but set forth several conclusive recommendations to address policy concerns and management problems.²⁴⁹ The NC 911 Board concluded that the findings and proposed funding model of the NC Funding Study Preliminary Report were not sufficient to make valid revisions to the 2008 NC E911 legislative funding scheme.²⁵⁰ The NC Funding Study Preliminary Report recommends that “[t]he [NC] 911 Board should not evaluate statewide 911 service cost until at least 18–24 months of accurate and verifiable PSAP expenditure data is available for analysis.”²⁵¹ The NC 911 Board agreed that cost data and other information were not reliable enough to make a determination of total NC-eligible E911 costs and propose a valid funding model.²⁵²

Although the data were not reliable enough to propose an E911 funding model, the NC Funding Study Preliminary Report addressed policy concerns and management problems by making several recommendations to the NC 911 Board. The NC Funding Study Preliminary Report suggests that the lack of information management, administrative, and regulatory procedures hindered the collection of reliable cost data and local management of 911 funds.²⁵³ The most pertinent recommendations are as follows:

3. [T]he [NC] 911 Board [should] seek the necessary legislative authority to increase the 911 revenue allocation from its current level of 1%. The new amount should provide sufficient resources to establish an appropriate level and expertise of staff and for other support structures order to meet the current and future needs of a

funds. *Infra* Part V.C.2 and accompanying notes.

248. SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 15–17.

249. *Id.*

250. N.C. 911 Bd. Minutes, *supra* note 130, at 3–5. The NC 911 Board concluded that the total NC-eligible cost of E911 services was an essential factor addressing the overfunding and underfunding of PSAPs by the 2008 NC E911 legislative funding scheme. The NC 911 Board would later provide the investigators additional information to aid in determining the cost of 911 in North Carolina. The NC 911 Board requested the investigators to identify a sample of the 128 PSAPs and use this sample to estimate the cost of 911. The sample would be based on size or other characteristics of PSAPs. *See id.* at 5 (Rob Smith, suggesting that “the Board use ECU to come up with a representative sample of PSAPs in the state, with ‘representative’ meaning grouping PSAPs by characteristics such as size, and that once those PSAPs have been grouped, staff can go to those PSAPs to verify that the Board gets an accurate view of what the costs are”).

251. SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 15.

252. *Supra* note 25.

253. *See* SEEMAN, PRELIMINARY REPORT, *supra* note 40, at 16 (making recommendations for data collection and fund management). Recommendations 4 and 9 recognize the need for regulatory standards, practices, and procedures. *Id.*

rapidly-changing industry and to continue to serve the citizens of the state.

4. [T]he 911 Board [should continue] its efforts to create uniform standards and definitions for expenditures, call volume, and reporting metrics

6. The [NC] 911 Board should consider whether to phase-in implementation of any new funding distribution model. This will mitigate any adverse fiscal impacts that may arise.

7. The [NC] 911 Board should consider allocating a portion of the funding to PSAPs to be used specifically to cover reporting costs. This allocation may require legislative action.

9. [The NC 911 Board should establish] procedures required to receiv[e] funding. [These regulations should] include reporting mechanisms to enable the acquisition of accurate and timely data required to administer an equitable model.

11. The revenue collections model and the PSAP distribution model should be subject to systematic and periodic review. This review should be consistent with local and state budget cycles and [NC] 911 Board reporting requirements as defined by statute.²⁵⁴

These policy and management recommendations responded to management problems and public policy concerns encountered in conducting the NC E911 Funding Study (collecting and analyzing cost data) to revise the 2008 NC E911 legislative funding scheme.²⁵⁵ These recommendations are policy and management advice and guidance to improve agency management of 911 funds and aid legislative policy-makers to draft an effective 2008 NC E911 legislative funding scheme.

2. *Pertinent Recommendations of the Final Report*

The NC Funding Study Final Report modified the NC Funding Study Preliminary Report's recommendations and made several new recommendations to revise the 2008 NC E911 legislative funding scheme. The NC Funding Study Final Report included more reliable findings and recommendations that were based on more financial and cost data and financial, policy, and economic analyses.²⁵⁶ These data and analyses also permitted automatic reconsideration of findings and recommendations that had been based on less data and analyses of the NC E911 Funding Study Preliminary Report. The most relevant policy and management recommendations were as follows:

[1.] [NC] 911 Board distributions [cannot] be categorized into operating and capital components. A concern with the previous dataset was that we generally had only six-months of information for each PSAP so natural variation in capital expenditures could skew

254. *Id.* at 15–17.

255. *Id.*

256. SEEMAN, FINAL REPORT, *supra* note 40, at 2.

the results. [There are] 3.5 to 4.5 years of data for each PSAP from which to obtain average annual expenditures. [T]he variability inherent in capital expenditures will[, in our opinion,] reasonably “wash out” in the averaging process using multiple years of data. This matter will become even less of a concern as additional years of data become available.

[2.] PSAPs [are categorized] into five different size groups to help account for economies of scale and to treat similarly-sized PSAPs in a similar manner.

[3.] [The NC911 Board should provide] a small additional per-PSAP distribution to help ensure timely cost reporting and response to inquiries of PSAPs.

[4.] [The NC911 Board should implement] a “hold harmless” provision to ensure each PSAP will receive a distribution at least equal to its average permitted expenditures over the period. Over time, the total amount for this provision is likely to decrease.²⁵⁷

The NC Funding Study Final Report responded to management problems and public policy concerns found in gathering E911 cost data and formulating an E911 funding model.²⁵⁸ The recommendations also responded to agency management problems and public policy concerns identified by the NC 911 Board as grounds to conduct the NC E911 Funding Study.²⁵⁹ These recommendations and their underpinning elements address the underlying need for E911 information management, efficient use of 911 funds, administrative cost of collecting information, and accounting for the cost of E911 services. Primarily, these recommendations provided policy and management guidance to the NC 911 Board’s decision to revise the 2008 NC E911 legislative funding scheme.

B. Proposed and Statutory Funding Model to Address Funding Concerns

The NC Funding Study Final Report used NC-eligible E911 costs to propose an E911 population funding model.²⁶⁰ This proposed funding model and its criteria included a state estimated annual E911 cost, addressed the PSAP cost of gathering information, estimated an annual E911 cost from two databases, and minimized the impact of a substantial change in PSAP distributions.²⁶¹ The proposed E911 funding model must be consistent with the policy and management elements to be a rational revision.

1. Comparing the Three Annual State E911 Costs

The NC E911 Funding Study determines various annual NC-eligible

257. *Id.* at 3–4.

258. *Id.* at 2.

259. *Id.* at 5–6.

260. *Id.* at 2.

261. *See id.* at 2–3 (referencing substantial changes in PSAP distributions: “[w]e also recommend providing each PSAP with \$25,000 per year to help them provide for the administrative and overhead costs”).

E911 costs and compares the past, present, and future annual costs of PSAP operations. North Carolina has 128 PSAPs, but the first twenty-five PSAPs are listed in alphabetical order in TABLE III. These total annual average costs were used to estimate the future cost of funding PSAP operations. First, the total average annual cost determined from NC Wireless 911 Board data was approximately \$31.4 million for all PSAPs.²⁶² The NC Wireless 911 Board average annual cost for each of the first twenty-five PSAPs is listed in Column A of TABLE III below. Second, the total annual average cost based on PSAP operations and 911 expenditures from 911 funds distributed by the NC 911 Board was approximately \$40.5 million for all PSAPs.²⁶³ The NC 911 Board average annual cost for each of first twenty-five PSAPs is listed in Column B of Table III below. The difference in annual average costs between Columns A and B is due to increased operating and administrative costs from 2004 through 2009.²⁶⁴ TABLE III lists the average annual costs of PSAP operations and 911 expenditures that were made by 911 funds distributed by the NC Wireless Board and NC 911 Board and that were used by the NC E911 Funding Study to determine an estimated average annual cost.

The NC E911 Funding Study determines the NC-eligible E911 cost and formulates an E911 funding model that is based on an estimated or projected annual cost of PSAP operations and 911 expenditures. Third, the total estimated average annual cost is the average annual per-capita cost of each population-size category of PSAP (including removal of outliers and averaging the remaining 80% of PSAPs).²⁶⁵ The total estimated average annual cost of each of the first twenty-five PSAPs is listed in Column C of TABLE III below. The total estimated average of annual costs for all PSAPs is approximately \$34 million, but this amount “does not take into account inflationary increases, increased costs for technological change, or differential permitted expenditures resulting from changes to NC statutes effective January 1, 2008.”²⁶⁶ The NC E911 Funding Study proposed an E911 population funding model that would distribute \$40 million, an approximation of the NC 911 Board’s current annual average.²⁶⁷ However, the NC E911 Funding Study requires another \$6.1 million distribution of 911 funds for the first two or three years to cover the administrative cost of gathering PSAP data and adjusting to smaller distributions of 911 funds.²⁶⁸ The NC 911 Board rejected this \$6.1 million distribution to propose revisions and amendments to the 2008 NC E911 legislative funding scheme.²⁶⁹

262. *Id.*

263. *Id.*

264. SEEMAN, FINAL REPORT, *supra* note 40, at 3.

265. *Id.*

266. *Id.*

267. *Id.* at 2–3 (“Based on evaluation of the expanded expenditure dataset, we recommend a distribution model based on PSAP population with a small additional per-PSAP distribution. The model is derived from PSAP expenditure reports provided to the 911 Board and the Wireless Board”); *see supra* TABLE I (listing the per capita averages for a distribution of \$40 million).

268. *See id.* at 3–4 (requiring \$3,125,000 for an additional \$25,000 per PSAP for administrative needs and reporting, and a hold harmless provision of \$2,970,378, which constitutes an additional \$6.1 million).

269. *See Minutes to Adopt the Report, supra* note 43, at 11 (“Joe Durham said he would make a motion

TABLE III

EXCERPT OF THE ANNUAL AVERAGE COST OF PSAP OPERATIONS
AND ADMINISTRATION²⁷⁰

	PSAPs	A Wireless Board Average Total Cost (\$)	B NC 911 Board Average Total Annualized Cost (\$)	C Estimated Average Annual Total Cost (\$)
1	Alamance County Central Comm.	549,844.57	740,630.06	597,541
2	Alexander County Communications	222,988.71	157,002.36	206,492
3	Alleghany County E911	132,519.85	204,949.24	150,627
4	Anson County Emergency Comm.	69,377.60	173,015.15	110,833
5	Ashe County Communications	133,341.18	90,394.16	122,604
6	Avery County Communications Center	154,573.08	143,447.54	150,123
7	Beaufort County Communications Ctr	158,694.63	106,229.70	145,578
8	City of Washington	Na	Na	Na
9	Bertie County Sheriff's Communications	121,884.15	86,759.62	113,103
10	Bladen County Sheriff's Communications	135,711.77	417,811.22	206,237
11	Brunswick County 9-1-1	406,666.23	606,403.10	456,600
12	Oak Island (Town of)	138,683.97	28,576.21	65,279
13	Buncombe County Emergency Comm.	258,604.99	2,124,118.06	724,983
14	Burke County Emerg. Communications	865,594.76	818,520.02	853,826
15	Cabarrus County Sheriff Communications	382,326.80	835,146.60	563,455
16	Caldwell County Communications	394,730.98	393,323.10	394,379
17	Carteret County Communications	125,234.70	156,408.30	133,028
18	Caswell County 911 Communications	73,471.33	43,000.00	65,854
19	Catawba Co Communications Center	131,641.30	1,200,605.32	398,882
20	Chatham County Emergency Opns. Ctr.	175,818.17	100,222.72	156,919
21	Cherokee County 911	166,576.41	155,664.68	162,212
22	Chowan Central Communications	71,919.04	249,483.58	142,945

to accept the report, but *not to use it as a funding model* The motion carried without objection.” (emphasis added).

270. SEEMAN, FINAL REPORT, *supra* note 40, at 11 (using data excerpted from Appendix C).

TABLE III continued

23	Clay County E911 Communications	198,853.97	199,950.78	199,128
24	Cleveland County Communications Ctr.	232,416.70	251,895.89	240,208
25	Kings Mountain (City of)	49,180.36	12,320.28	39,965

The NC E911 Funding Study proposed an E911 funding model that would allow the NC 911 Board to distribute 911 funds (more than the \$40 million) to municipal and county governments operating primary PSAPs.²⁷¹

This E911 funding model would allow the NC 911 Board to adjust annual distributions of 911 funds to offset county and municipal problems involving the management of E911 information, PSAP operations and administration, and large equipment purchases. First, an additional administrative distribution would be a modest minimum of \$25,000.00 per PSAP to support PSAP administration and operations.²⁷² The modest minimum would ensure that PSAPs complete and file accurate expenditure reports in a timely manner.²⁷³ The total state distribution would be approximately \$43,000,000.00 if the \$25,000-per-PSAP minimum distribution is included in the NC E911 funding model.²⁷⁴ Second, the NC E911 Funding Study uses per-capita averages to calculate the \$40 million annual distribution, and thus some PSAPs may receive a distribution that is less than their actual expenditures.²⁷⁵ The NC E911 Board should consider or implement a “hold harmless” mechanism to remedy underfunding some PSAPs.²⁷⁶ This mechanism ensures that PSAPs would receive a distribution at least equal to their historical average expenditures by being given an additional amount to get their total distribution up to the level of their historical average.²⁷⁷ Overall, the proposed NC E911 funding model would allocate and distribute 911 funds of \$46.1 million for normal PSAP operations, a modest administrative amount to support information gathering, and a hold harmless sum to offset underfunding.

A revised NC E911 legislative funding scheme must contain a funding model and other provisions permitting the equitable and sustainable distribution of 911 funds. A sustainable NC E911 funding model must be an ongoing or iterative process²⁷⁸ and provide for predictable distributions of 911

271. *Id.* at 3–4.

272. *Id.* at 3.

273. *Id.* at 3–4.

274. *Id.* at 4.

275. *Id.*

276. *Id.*

277. *Id.*

278. *Id.* at 5; *see also supra* Part IV.C and accompanying notes (explaining that an E911 or NG911 legislative funding scheme must include an adaptable funding model and related provisions). The NC Funding Final Report seeks to establish an E911 fund model that can be modified or adjusted as the NC 911 Board collects additional NC-eligible cost data. SEEMAN, FINAL REPORT, *supra* note 40, at 5. The NC E911 Funding Study Final Report states:

Ongoing Process

The process recommended herein can easily be repeated on an ongoing basis. As fiscal year

funds or offsetting state 911 services²⁷⁹ to PSAPs throughout the state. The per-capita averages and amounts will change with the completion and submission of annual expenditure reports and request for additional funds by PSAPs.²⁸⁰ However, these current and additional reports still do not justify distinct capital and operating components of any proposed 2008 NC E911 funding model.²⁸¹ Thus, an equitable and sustainable E911 legislative scheme must permit the NC 911 Board to adjust when necessary the distribution of 911 funds to meet technology, fiscal, and other needs.

2. *Proposed Amendments to 2008 Legislative Funding Scheme*

The NC E911 Funding Study provided advice and guidance to North Carolina policy-makers and agency managers to revise or amend the 2008 NC E911 legislative funding scheme. The NC 911 Board accepted the NC E911 Funding Study Final Report that contained the total NC-eligible E911 cost, an E911 funding model, and policy and management recommendations to propose and support revisions to the 2008 NC E911 legislative funding scheme.²⁸² Shortly thereafter, a subcommittee of the North Carolina General Assembly drafted House Bill 1691 that revised the 2008 NC E911 legislative funding scheme and was enacted in June 2010 as the 2010 NC E911 legislative funding scheme.²⁸³

The revisions to the 2008 NC E911 legislative funding scheme gave the NC 911 Board, the NC E911 regulatory authority, more authority to allocate and manage 911 funds. Foremost, the 2010 NC E911 legislative funding scheme delegates greater authority to the NC 911 Board, listed guidance for the determination of an E911 funding formula, and addressed underfunding and overfunding of PSAPs.²⁸⁴ It delegates to the NC 911 Board the authority to adopt an NC E911 funding model or formula to fund PSAPs²⁸⁵ and address the accumulation of 911 funds by PSAPs.²⁸⁶ It permits the NC 911 Board to use more 911 funds for administrative purposes.²⁸⁷ It delegates to the NC 911

data from PSAP reports are added to the database towards the end of a calendar year, the iterative process can be completed and new distribution amounts calculated for each PSAP, followed by timely notification. We expect per capita values will change over time, but we do not expect those changes to be dramatic.

As additional years of data are collected and added to the database, old data should be dropped from the per capita calculations. Our preliminary recommendation would be to incorporate only five years of data in the calculations since older data provides less meaningful information, particularly in a technologically-rich environment.

Id.

279. N.C. GEN. STAT. § 62A-42(b) (2010), *amended by* 2010 N.C. Sess. Laws 158 § 3(b) (permitting the NC 911 Board to acquire IP-enabled network services from one or more private providers throughout the state).

280. SEEMAN, FINAL REPORT, *supra* note 40, at 4–5.

281. *Id.* at 4.

282. *See generally* Minutes to Adopt the Report, *supra* note 43; SEEMAN, FINAL REPORT, *supra* note 40, at 4.

283. 2010 N.C. Sess. Laws 158 §§ 1–10, *amending* N.C. GEN. STAT. §§ 62A-40–47 (2008).

284. *Id.* § 7(a).

285. *Id.*

286. *Id.* § 7(b).

287. *Id.* § 5.

Board authority to provide additional distributions to PSAPs that did not receive enough 911 funds in a prior year to cover NC-eligible expenses.²⁸⁸ Thus, the 2010 NC E911 legislative funding scheme relied in part on policy and management recommendations that were underpinned by policy and management elements to make rational revisions.

The 2010 NC E911 legislative funding scheme amended the 2008 NC E911 legislative funding scheme to replace the NC E911 funding formula and other provisions. The pertinent funding provisions include the E911 funding formula and other related provisions that read as follows:

SECTION 7(a) G.S. 62A-46(a) reads as rewritten:

(a) Monthly Distribution. – The 911 Board must make monthly distributions to primary PSAPs from the amount allocated to the 911 Fund for PSAPs. A PSAP is not eligible for a distribution under this section unless it provides enhanced 911 service and received distributions from the 911 Board in the 2008-2009 fiscal year. The Board must comply with all of the following:

(1) Administration. – The Board must notify PSAPs of the estimated distributions no later than December 31 of each year. The Board must determine actual distributions no later than June 1 of each year. The Board must determine a method for establishing distributions that is equitable and sustainable and that ensures distributions for eligible operating costs and anticipated increases for all funded PSAPs. The Board must establish a formula to determine each PSAP's base amount. The formula must be determined and published to PSAPs in the first quarter of the fiscal year preceding the fiscal year in which the formula is used. The Board may not change the funding formula for the base amount more than once every year.

(2) Reports. – The Board must report to the Joint Legislative Commission on Governmental Operations, the Revenue Laws Study Committee, and the Joint Legislative Utility Review Committee within 45 days of a change in the funding formula. The report must contain a description of the differences in the old and new formulas and the projected distributions to each PSAP from the new formula.

(3) Formula. – The funding formula established by the Board must consider all of the following:

- a. The population of the area served by a PSAP.
- b. PSAP reports and budgets, disbursement histories, and historical costs.
- c. PSAP operations, 911 technologies used by the PSAP, compliance with operating standards of the 911 Board, level of service a PSAP delivers dispatching fire, emergency medical services, law enforcement, and

288. *Id.* § 7(a).

Emergency Medical Dispatch.

d. The tier designation of the county in which the PSAP is located as designated in G.S. 143B-437.08.²⁸⁹

e. Any interlocal government funding agreement between a primary PSAP and a secondary PSAP, if the secondary PSAP was in existence as of June 1, 2010, receives funding under the agreement, and is within the service area of the primary PSAP.

f. Any other information the Board considers relevant.

(4) Additional distributions. – In the first quarter of the Board’s fiscal year, the Board must determine whether payments to PSAPs during the preceding fiscal year exceeded or were less than the eligible costs incurred by each PSAP during the fiscal year. If a PSAP receives less than its eligible costs in any fiscal year, the Board may increase a PSAP’s distribution in the following fiscal year above the base amount as determined by the formula to meet the estimated eligible costs of the PSAP as determined by the Board. The Board may not distribute less than the base amount to each PSAP except as provided in subsection (B1) of this section. The Board must provide a procedure for a PSAP to request a reconsideration of its distribution or eligible expenses.

SECTION 7(b) G.S. 62A-46 is amended by adding a new subsection to read:

(b1) Carryforward. – A PSAP may carry forward distributions for eligible expenditures for capital outlay, capital improvements, or equipment replacement. Amounts carried forward to the next fiscal year from distributions made by the 911 Board may not be used to lower the distributions in subsection (a) of this section unless the amount is greater than twenty percent (20%) of the average yearly amount distributed to the PSAP in the prior two years. The 911 Board may allow a PSAP to carry forward a greater amount without changing the PSAP’s distribution.²⁹⁰

The E911 funding model and provisions of the 2010 NC E911 legislative

289. *Id.* The pertinent provision states that:

A development tier one area is a county whose annual ranking is one of the 40 highest in the State. A development tier two area is a county whose annual ranking is one of the next 40 highest in the State. A development tier three area is a county that is not in a lower-numbered development tier.

N.C. GEN. STAT. § 143B-437.08(a) (2008). Additionally, the North Carolina Department of Commerce notes:

The N.C. Department of Commerce annually ranks the state’s 100 counties based on economic well-being and assigns each a Tier designation. The 40 most distressed counties are designated as Tier 1, the next 41 as Tier 2 and the 19 least distressed as Tier 3. This Tier system is incorporated into various state programs

2010 *County Tier Designations*, N.C. DEP’T OF COMMERCE, <http://www.nccommerce.com/research-publications/incentive-reports/2010-county-tier-designations> (last visited Sept. 5, 2012).

290. 2010 N.C. Sess. Laws 158 § 7(a), (b) (to be codified at N.C. GEN. STAT. § 62A-46(a), (b1)) (amending N.C. GEN. STAT. § 62A-46 (2008)).

funding scheme that were enacted by the NC General Assembly substantially revised the 2008 NC E911 funding model and other provisions. The 2010 NC E911 legislative funding scheme permits NC 911 Board to adopt an E911 funding model or formula that uses cost, population, or another factor to allocate and distribute 911 funds and to adjust to changes in PSAP operational costs.²⁹¹ The 2010 NC E911 legislative funding scheme does not fully adopt the proposed funding model and recommendations of the NC E911 Funding Study.²⁹² Nevertheless, the 2010 NC E911 legislative funding scheme derives greatly from NC E911 Funding Study's policy and management elements underpinning the determination of E911 costs, proposed funding model, and policy and management recommendations.

C. Effects of Funding Study Results on Newly Enacted Funding Scheme

The 2010 NC E911 legislative funding scheme addresses state 911 funding policy concerns and management problems that must be addressed by revising the 2008 NC E911 legislative funding scheme. The NC E911 Funding Study studied and examined these concerns and problems through determining NC-eligible E911 costs of PSAP operations and formulating a population-based E911 funding model.²⁹³ The NC E911 funding study addressed these problems and concerns by proposing a population-based E911 funding model that includes a one-time distribution of 911 funds for administrative needs and hold harmless mechanism to offset reduced 911 fund distributions to revise the 2008 NC E911 legislative funding scheme.²⁹⁴ Most importantly, this determination of E911 cost, proposed E911 funding model, and policy and management recommendations are underpinned by policy and management elements to make rational revisions that further state E911 objectives.²⁹⁵ These revisions to the 2010 NC E911 legislative funding scheme include a cost-based

291. *Id.* § 7(a) (to be codified at N.C. GEN. STAT. § 62A-46(a)(3)) (amending N.C. GEN. STAT. § 62A-46 (2008)). House Bill 1691 grants the NC 911 Board authority to adjust annual distributions to cover eligible expenses. *Id.* § 7(a) (to be codified at N.C. GEN. STAT. § 62A-46(a)(4)) (amending N.C. GEN. STAT. § 62A-46 (2008)). The pertinent statutory language of the 2010 NC E911 legislative funding scheme states, “[a]dditional distributions. – In the first quarter of the Board’s fiscal year, the Board must determine whether payments to PSAPs during the preceding fiscal year exceeded or were less than the eligible costs incurred by each PSAP during the fiscal year.” *Id.*

292. *See generally* 2010 N.C. Sess. Laws 158 §§ 4–11(b) (listing various amendments to be made to the statutes governing emergency telephone service as recommended by the House Select Committee on the use of 911 funds).

293. *See generally* SEEMAN, FINAL REPORT, *supra* note 40, at 2–3 (providing data, analysis, and recommendations for 911 funding and distribution).

294. *Id.* at 3–4. The NC E911 Funding Study proposed a population-based distribution model and proffered a one-time additional administrative distribution and one-time hold harmless distribution. *Id.*; *see also supra* Part V.B and accompanying notes (discussing a proposed and statutory funding model to address 911 funding concerns).

295. *See supra* Part V.A and accompanying notes. The introduction of the Part V.A. explains the elements or concepts gleaned from creating and using criteria and processes that rely on and use qualitative and statistical methods to analyze data of, formulate models for, and recommend solutions to 911 funding policy concerns and management problems. *See supra* Part IV.B and accompanying notes (discussing the criteria and processes to determine the allocation and distribution formula). The policy and management elements that include advice and guidance underpin the NC E911 funding model and policy and management recommendations of the NC E911 Funding Study. *Supra* Part V.A and accompanying notes.

E911 funding model and restrict the amount of 911 funds PSAPs can retain and should eliminate the unnecessary overfunding and underfunding of PSAPs.²⁹⁶

1. Policy and Management Elements to Address Concerns and Problems

The 2010 NC E911 legislative funding scheme addresses legislative policy concerns of an excessive accumulation of 911 funds by local governments and agency management problems encountered by the NC 911 Board to manage 911 funding matters. Evidence of the impact of the policy and management elements are apparent in mandates requiring use of funds by local government to further NC E911 objectives and forcing the rational distribution of 911 funds by the NC 911 Board.²⁹⁷ The 2010 NC E911 legislative funding scheme delegates to the NC 911 Board the authority to establish and adjust the NC E911 funding model or formula,²⁹⁸ thus allowing the NC 911 Board to determine the amounts of 911 funds distributed to each municipal or county government operating a primary PSAP²⁹⁹ The 2010 NC E911 legislative funding scheme avoids overfunding by mandating that municipal and county governments operating primary PSAPs can make a one-time use of up to 50% of the accumulated 911 funds for 911 and other public safety uses³⁰⁰ and can carryover only 20% of all 911 distributions to future years.³⁰¹ It grants the NC 911 Board the authority to establish and implement the NC E911 funding model and adjust the NC E911 funding model to respond to each PSAP's need for more 911 funds.³⁰² In sum, 2010 NC E911 legislative funding scheme makes substantial change to the NC E911 funding model and grants the NC 911 Board more authority to implement and adjust the NC E911 funding model. The NC 911 Board can use and rely on established criteria and processes to incorporate new E911 cost data and weigh PSAP funding needs.

The 2010 NC E911 legislative funding scheme addresses policy concerns and management problems of selecting the most appropriate E911 funding model factor or factors. Further evidence of policy and management elements is demonstrated by the E911 funding model factors that the NC 911 Board must consider and select to determine and adjust distributions of 911 funds under the NC E911 funding model. The NC E911 Funding Study's population-based funding model relies on per-capita cost as a criterion to estimate and make population-driven annual distributions of 911 funds to

296. 2010 N.C. Sess. Laws 158 § 7(a) (to be codified at N.C. GEN. STAT. § 62A-46(a)) (amending N.C. GEN. STAT. § 62A-46 (2008)).

297. *Id.*

298. 2010 N.C. Sess. Laws 158 § 7(a) (to be codified at NC GEN. STAT. § 62A-46(a)) (amending NC GEN. STAT. § 62A-46) (2008)).

299. *Id.*

300. *Id.* § 9.

301. *Id.* § 7(b) (to be codified at N.C. GEN. STAT. § 62A-46(b1)) (amending N.C. GEN. STAT. § 62A-46) (2008)).

302. *Id.* § 7(a) (to be codified at N.C. GEN. STAT. § 62A-46(a)) (amending N.C. GEN. STAT. § 62A-46) (2008)).

PSAPs.³⁰³ The 2010 NC E911 legislative funding scheme permits the NC 911 Board to use PSAP cost, population, or other factors to determine distributions of 911 funds to local governments.³⁰⁴ The 2010 NC E911 legislative funding scheme delegates to the NC 911 Board the authority to determine an E911 funding model that must “ensure[] distributions for eligible operating costs and anticipated increases for all funded PSAPs.”³⁰⁵ Explicitly, the 2010 NC E911 legislative funding scheme mandates that the NC 911 Board consider NC-eligible costs for E911 services to determine annual distributions of 911 funds.³⁰⁶ The 2010 NC E911 legislative funding scheme allows the NC 911 Board to use PSAP cost among other factors to determine annual distributions of 911 funds.³⁰⁷

The 2010 NC E911 legislative funding scheme addresses an agency management problem regarding the technical and analytical needs of the NC 911 Board. Policy and management elements underpin the cost findings and recommendations that support provisions of 2010 NC E911 legislative funding scheme directly addressing the need for more NC 911 Board expertise and tools. The NC E911 Funding Study recommends that the NC 911 Board acquire 911 funds for more experienced staff to manage and analyze data and information.³⁰⁸ The NC General Assembly creates the need for this expertise and responds by providing 911 funds to acquire more expertise and tools.³⁰⁹ In acquiring expertise, the 2010 NC E911 legislative funding scheme requires the NC 911 Board to consider population, PSAP cost, PSAP operational levels, and technical standards to establish a funding model or formula³¹⁰ and to consider local economic development tier designations, inter-local funding agreements, and several other factors,³¹¹ but does not mandate that the NC 911 Board select more than one factor for the NC E911 funding model. Definitely, the NC 911 Board will need more expertise and tools to evaluate and reevaluate the factors that are considered relevant by the NC General Assembly. Consequently, the NC General Assembly provides additional 911 funds to the NC 911 Board and delegates to the NC 911 Board the administrative authority to acquire management tools and expertise to provide technical and operational expertise to PSAPs.³¹² The 2010 NC E911 legislative funding scheme grants the NC 911 Board the authority to set aside

303. SEEMAN, FINAL REPORT, *supra* note 40, at 10.

304. N.C. GEN. STAT. § 62A-46(a)(3) (2008), *amended* by 2010 N.C. Sess. Laws 158 § 7(a)(3).

305. *Id.* at § 62A-46(a)(1), *amended* by 2010 N.C. Sess. Laws 158 § 7(a)(1).

306. *Id.* at § 62A-46(a)(3)(b), *amended* by 2010 N.C. Sess. Laws 158 § 7(a)(3)(b).

307. House Bill 1691 permits the NC 911 Board to establish a funding formula and states that:

(3) Formula.—The funding formula established by the Board must consider all of the following:

a. The population of the area served by a PSAP.

b. PSAP reports and budgets, disbursement histories, and historical costs.

Id. § 62A-46(a), *amended* by 2010 N.C. Sess. Laws 158 § 7(a).

308. SEEMAN, FINAL REPORT, *supra* note 40, at 5.

309. N.C. GEN. STAT. § 62A-42(a)(4) (2008), *amended* by 2010 N.C. Sess. Laws 158 § 3(a)(4).

310. *Id.* § 62A-46(a)(3)(a)–(c), *amended* by 2010 N.C. Sess. Laws 158 § 7(a)(3)(a)–(c).

311. *Id.* § 62A-46(a)(3)(d)–(f), *amended* by 2010 N.C. Sess. Laws 158 § 7(a)(3)(d)–(f).

312. *Id.* § 62A-44(b), *amended* by 2010 N.C. Sess. Laws 158 § 5(b) (“The [NC] 911 Board must monitor the amount of funds required to meet its financial commitment to provide technical assistance to primary PSAPs and set the rate at an amount that enables the 911 Board to meet this commitment.”).

2% of the 911 fees collected from wireless and wireline devices for administrative and regulatory purposes, such as better E911 information management.³¹³ Unequivocally, the policy and management elements support and advance a rational NC E911 funding model and other provisions that further the North Carolina E911 objectives of the 2010 NC E911 legislative funding scheme.

2. *Benefits of Policy and Management Elements of a Funding Study*

The NC E911 Funding Study studied and examined 911 funding policy concerns and management problems preventing or restricting an effective and efficient allocation and distribution of 911 funds to PSAPs. These concerns and problems required the determination of total NC-eligible E911 costs of PSAP operations, formulation of an effective E911 funding model to allocate and distribute 911 funds, and creation of policy and management recommendations to manage 911 funds.³¹⁴ The E911 Funding Study sets forth public policy and public management elements to guide and support revising the state E911 legislative funding scheme and making of local and state decisions to further state E911 policy objectives.

The E911 funding study identifies legislative policy and agency management elements that underpin, support, or justify the making of rational policy and management recommendations and an E911 funding model. These elements are the grounds or basis for an E911 funding model and recommendations to revise an E911 legislative funding scheme. As stated in Part V.A above, these elements are: effective state E911 information management; efficient management of state 911 funds and revenues; sustainable state distributions of 911 funds; rational uses of 911 funds to further state 911 objectives; and, the technological development of the state E911 system.³¹⁵ Other elements include the proportionate funding of large and small PSAPs, funding mechanisms to provide for PSAP capital needs, ongoing processes to respond to changes in PSAP costs, and linking PSAP funding to state E911 procedures, standards, and practices.³¹⁶ These elements are applied to policy-making and management to test or judge E911 funding policies and decisions to revise an E911 funding scheme that addresses management problems and policy concerns.

The policy and management elements point to a thorough legislative or management review of the state E911 legislative funding scheme. This review includes, among others, an E911 funding study capable of addressing policy concerns and management problems hindering current operations and transition of the state E911 system. First, a state review must be a

313. *Id.*

314. *See supra* Part II.A and accompanying notes (explaining the need for the NC E911 Funding Study to assist legislative policy-makers and administrative managers).

315. *See supra* Part V.A and accompanying notes (explaining the need for the funding study and its impact on public policy and management).

316. *See supra* Part V.A and accompanying notes.

comprehensive analysis and examination of local PSAP administrative and operation costs and state administrative, cost-recovery, grants, and PSAP costs to determine total state E911 costs. Second, a state review must be a comprehensive analysis and formulation of collection, allocation, and distribution formulas and methods to manage 911 funds. Third, a state review must include an extensive analysis of cost, population, PSAP seats, and other factors that can be used singly or jointly to formulate an E911 funding model to allocate and distribute 911 funds to PSAPs. As part of the review, the comprehensive funding study must collect data, conduct analysis, and make recommendations to address policy concerns and management problems affecting the management of state 911 funds.

As part of the legislative or management review, a comprehensive E911 funding study proposes an E911 funding model and makes policy and management recommendations to revise an E911 legislative funding scheme. These elements provide benefits and impose limits on E911 legislative and regulatory revisions to establish an efficient and effective³¹⁷ E911 funding scheme that is sustainable and equitable³¹⁸ among PSAPs and other entities. A revised state E911 funding scheme must control the amount of 911 funds local governments and state officials can receive and use to perform and support PSAP operations. Next, this funding scheme must delegate to one state 911 authority the power to adjust the collection and allocation of 911 funds to respond to the need for and control of the distribution of 911 funds to PSAPs and other entities. Finally, the revised E911 funding scheme must prevent unnecessary accumulation or reallocation of unused 911 funds to local governments for non 911 uses. The policy and management elements underpin a revised state E911 legislative funding scheme to further E911 funding policy and management objectives for PSAP operations, 911 agency administration, local carrier cost recovery, and E911 capital equipment needs.

VI. CONCLUSION

The North Carolina 911 Board sponsored the NC E911 Funding Study to determine the total NC-eligible cost of E911 services, propose a NC E911 funding model, and make policy and management recommendations to review and revise the 2008 NC E911 legislative funding scheme. The NC E911 Funding Study determined the NC-eligible cost of E911 services and used the NC-eligible cost to propose a population-based E911 funding model and make policy and management E911 recommendations to the NC 911 Board. The proposed E911 funding model and recommendations were underpinned by public policy and management elements. These elements provide guidance and advice to NC policy-makers and agency managers making a thorough review of and proposing rational revisions to the 2008 NC E911 legislative funding scheme. The NC 911 Board accepted the findings and conclusions of

317. See *supra* note 247 and accompanying text (defining effectiveness and efficiency in the context of collecting, allocating, and distributing 911 funds under a state E911 legislative funding scheme).

318. See *supra* note 247 and accompanying text.

the NC E911 Funding Study and proposed a cost-based E911 funding model and other revisions that were adopted by a NC General Assembly Subcommittee and enacted by the NC General Assembly as the 2010 NC E911 legislative funding scheme. Yet, the NC E911 Funding Study is only the first step in fully modernizing state PSAPs that prepare the transition to a state NG911 system and migrate to an IP-enabled communications network.