

Summary of the Legal and Policy Landscape Surrounding Accessibility and 911

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Introduction

This white paper summarizes the current landscape of federal, state, and local regulations as they relate to provisioning 911 emergency service for deaf, hard of hearing, and speech disabled communities in Colorado. This document also looks ahead to those regulations that are currently under consideration at the federal, state, and local levels that may affect 911 accessibility.

Our research was conducted at the request of the Colorado Public Utility Commission's 911 Task Force. Next-generation 911 (NG911) applications such as text-to-911 (TT911), are especially important to people who are deaf, hard of hearing, and speech disabled, who may not be able to directly access emergency services through traditional means. In addition, NG911 access will benefit all members of a community by offering additional means of access during emergencies when calling may not be feasible or safe.

Much of the focus of this paper reflects the current state of technology used, with TT911 at the forefront of NG911 technologies being implemented. It is important to note that TT911 and other NG911 applications currently being considered at the federal, state, and local levels may not directly serve the DeafBlind community or even all members of the deaf and hard of hearing communities. Further research is necessary to determine how TT911 may resolve the emergency access problems facing these communities, and how or whether other NG911 technologies such as video or multi-mode communications may better address the accessibility of emergency services.

In Colorado, the decision to upgrade to NG911 rests largely with individual public-safety answering points (PSAPs). The Federal Communications Commission (FCC) has authority over wireless carriers, but almost none over PSAPs. The Department of Justice (DOJ) has issued PSAP requirements for ensuring 911 accessibility for all users, but has not taken action on that issue in more than four years. Several Colorado counties have implemented TT911 already, but many more have not due to budget or logistical reasons.

¹ This paper is endorsed by Prof. Blake Reid at Colorado Law, who directs the Clinic.

The paper concludes by exploring several case studies of TT911 implementation in other states, including states with total TT911 across the state.

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I. Federal regulatory framework

A. *The Federal Communications Commission*

The FCC is an important part of the 911 system, but the agency only has authority over certain aspects of the 911 system. Broadly speaking, the FCC has authority over wireless carriers, and can mandate that these carriers deliver text messages sent by their customers to 911 (or elsewhere).

In 2012 the FCC struck an agreement with the four major wireless carriers—AT&T, Verizon, Sprint, and T-Mobile—to support texts sent to 911.² Those carriers agreed to deliver emergency text messages to Public Safety Answering Points (PSAPs) and to provide an automatic bounce-back message in cases where customers sent an emergency text in an area where the local PSAP was not equipped to receive the message.³ Bounce-back message wording is not standardized, but such messages generally inform the customer that texting 911 is not supported in their area, and urges them to call. In 2014, the FCC clarified wireless carrier obligations regarding emergency message delivery.⁴

i. Current legislation

The Twenty-First Century Communications and Video Accessibility Act of 2010 (CVAA) gives the FCC authority to promulgate regulations, standards, and procedures that enable reliable communication and ensure access by individuals with disabilities to an IP-based emergency network.⁵ Specifically, the CVAA requires that interconnected and non-interconnected VoIP service, electronic messaging services (email, IM, text messaging, etc.), and video services be accessible by people with disabilities. It also updates the definition of relay services (TRS) to include users who are deaf-blind and to allow communication between and among different types of relay users, and directs that up to \$10 million per year be allocated from the Interstate TRS Fund to help low-income deaf-blind users access the Internet and telecommunications services.

The CVAA also created the Emergency Access Advisory Committee (EAAC), a group formed in 2011 with representatives from state and local governments, disability rights groups, service providers, and subject-matter experts.⁶ The EAAC was formed to make

² *Wireless Carrier Text-to-911 Voluntary Commitment Reports*, Federal Communications Commission, <http://www.fcc.gov/help/wireless-carrier-text-911-voluntary-commitment-reports> (last accessed Apr. 24, 2015).

³ *Chairman Genachowski Announces Commitments to Accelerate Text-to-911*, Federal Communications Commission, <http://www.fcc.gov/document/chairman-genachowski-announces-commitments-accelerate-text-911> (last accessed Apr. 24, 2015).

⁴ *Second Report and Order and Third Further Notice of Proposed Rulemaking*, Federal Communications Commission, PS Docket Nos. 11-153 and 10-255 (Aug. 13, 2014), https://apps.fcc.gov/edocs_public/attachmatch/FCC-14-118A1.pdf.

⁵ Twenty-First Century Communications and Video Accessibility Act, Pub. L. No. 111-260, 124 Stat. 2751 (2010).

⁶ *Id.* § 104.

recommendations to the FCC on equal access to emergency services. In July 2011 the EAAC made a formal report to the Commission, detailing the extent to which people with disabilities are able to access emergency services.⁷ The report surveyed thousands of people with disabilities and summarized the technologies and methods they use (or would use) to access 911.

The EAAC made specific policy recommendations to the FCC in 2013 on the subjects of TT911 implementation, PSAP upgrade timetables, the NENA i3 specification, and TTY-to-text-message conversions.⁸ Generally speaking, the EAAC advocated for:

- The accelerated deployment of NG911 services.
- Interoperability (to the greatest extent possible) between technologies such as TTY and SMS.

The EAAC's charter expired later in 2013.⁹

Along with the Telecommunications Act of 1996, which establishes the FCC's authority over communications networks, the CVAA is the FCC's major legislative "hook" for emergency services. Yet while state- and locally-led progress toward NG911 and E911 has been slow in many areas, the FCC has been reluctant to speed up transitions at a state level or compel PSAPs or local authorities to take action.

In addition to the CVAA, there are three legislative acts which give the FCC authority to "support and assist states in implementing effective state E911 and NG911 systems."¹⁰ The first relevant act is the Wireless Communications and Public Safety Act of 1999 ("911 Act"), which encourages coordination among emergency service providers in a particular state.¹¹ It provides funding for the development and deployment of E911 technology and requires the FCC to support state 911 and E911 efforts.¹²

The second act is the Ensuring Needed Help Arrives Near Callers Employing 911 Act of 2004 (ENHANCE), which coordinates federal, state, and local 911/E911 efforts. The ENHANCE Act requires that funds collected from telecom bills for enhancing emergency services be used

⁷ *Report on Emergency Calling for Persons with Disabilities, Survey Review and Analysis*, Emergency Access Advisory Committee report to Federal Communications Commission (July 21, 2011), <http://transition.fcc.gov/cgb/dro/EAAC/EAAC-REPORT.pdf>.

⁸ *Emergency Access Advisory Committee*, Federal Communications Commission, <http://www.fcc.gov/encyclopedia/emergency-access-advisory-committee-eaac> (last accessed Apr. 24, 2015).

⁹ *Id.*

¹⁰ James E. Holloway, et al., *State, Agency, and Local Next Generation (NG) 911 Planning and Coordination to Implement State NG911 and Internet Protocol (IP) Enabled Network Policies*, 11 U. Pitt. J. Tech. L. & Pol'y 3 (Fall 2010).

¹¹ Wireless Communications and Public Safety Act, Pub. L. No. 106-81, 113 Stat. 1286 (1999).

¹² *Id.*

only for that purpose, and requires the Government Accountability Office to study the collection and use of 911 fees.¹³

Finally, the New and Emerging Technologies 911 Improvement Act of 2008 (NET Improvement Act) provides federal funds to states to encourage the implementation of E911 services.¹⁴ This grant program is overseen not by the FCC, but by the National Highway Traffic Safety Administration (NHTSA) and National Telecommunications and Information Administration. The Act encourages the transition from a POTS network to an IP-based emergency network, and “[p]rovides planning frameworks, technical guidance, and financial assistance to states that are capable of using this information and funds to implement a state NG911 system operating on an IP-enabled emergency services network infrastructure.”¹⁵

ii. Open FCC dockets

There are several FCC dockets, grouped together here by general subject matter, that affect 911 access for relay users in Colorado. Not all of these dockets impact the provision of accessible 911 services, but they are discussed here because they address critical roadblocks to 911 service more generally.

The first set of dockets (11-153 and 10-255) address the general NG911 framework and TT911 applications, including how such applications could improve accessibility for emergency services. The November 22, 2011 *Notice of Proposed Rulemaking* seeks to incorporate texting, videos, photos, and data into the national 911 system, with the assumption that a richer set of data will empower PSAPs to quickly analyze incoming messages and to be able to gain a more complete picture of ongoing emergencies.¹⁶ The NPRM also assumes that SMS will be used as an interim TT911 solution, since the format is nearly ubiquitous and is relatively easy to implement, in that it can be converted to and from TTY format, in spite of significant limitations on message length and delivery. Users with speech and hearing disabilities may be able to send a text message to 911 in situations where they would be unable to place a voice call.

The second set of dockets (14-193, 14-186, and 13-75) address the issues of 911 reliability, governance, and accountability. The latest NPRM on these dockets, released 11/21/14, addresses the responsibilities of 911 service providers, meaning any company or organization that provides a PSAP or emergency authority with call routing, automatic location info (ALI), automatic number identification (ANI), location information servers (LIS), TT911, or an equivalent.¹⁷

¹³ Ensuring Needed Help Arrives Near Callers Employing 911 Act, Pub. L. No. 108-494, 118 Stat. 3986 (2004).

¹⁴ New and Emerging Technologies 911 Improvement Act, Pub. L. No. 110-283, 122 Stat. 2620 (2008).

¹⁵ Holloway.

¹⁶ *FCC Adopts Next Generation 911 NPRM*, Federal Communications Commission, PS Docket Nos. 11-153 and 10-255 (Sep. 22, 2011), <http://www.fcc.gov/document/fcc-adopts-next-generation-911-nprm>.

¹⁷ *911 Governance and Accountability; Improving 911 Reliability*, Federal Communications Commission, PS Docket Nos. 14-193 and 13-75 (Nov. 21, 2014), <https://www.federalregister.gov/articles/2015/01/22/2015-00940/911-governance-and-accountability-improving-911-reliability>.

These service providers would be required to have circuit diversity, backup power, and network monitoring so that access is reliable under all conditions, and would have to annually certify their measures to maintain reliable 911 service.¹⁸ Public notification would be required for changes in multi-state 911 services, and Commission approval would be required for discontinuing 911 services. Finally, one covered 911 service provider in each area (the one who transports 911 traffic to PSAPs in that area) would be required to take the lead in the event of an outage, to triage and mitigate the severity of the outage.

The final relevant docket (07-114) addresses location accuracy for wireless 911 calls. The Fourth Report and Order (released 2/3/15) gives PSAPs enhanced powers to identify wireless 911 call location when the caller is indoors, and in a more general way strengthens E911 location accuracy rules.¹⁹ The Report recognizes that technology exists that can give PSAPs specific information about call location (street address + floor + room number) so they can dispatch emergency services, and says that wireless carriers must provide PSAPs with either dispatchable location, or location accurate to 50 meters (horizontal) for a certain percentage of wireless 911 calls, increasing up to 80 percent within 6 years. These rules may not directly impact 911 accessibility, but address more broadly the technological issues that will improve 911 access for all users.

The Report also requires that wireless carriers provide PSAPs with barometric data (which is useful for obtaining vertical location of a call that's coming from a multistory building), and must also come up with a vertical location accuracy metric and submit it to the FCC. Finally, the Report specifies that wireless carriers have 30 seconds to get a location fix on outdoor calls and report it to PSAPs. It imposes no similar requirement for indoor calls.

Some disability rights groups have worried that correct location information may not always be gathered in cases where relay services are used for emergency calls. (In such a case, the relay operator's address, rather than the address of the originating party, might be transmitted to the PSAP.) This could result in calls being routed improperly. The FCC has a temporary solution to this problem in the form of ten-digit numbers that can be registered by individuals using video or IP relay services.^{20,21} In the event of an emergency call, the person's registered

¹⁸ Id.

¹⁹ *Fourth Report and Order*, Federal Communications Commission, PS Docket No. 07-114 (Feb. 3, 2015), https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-9A1.pdf.

²⁰ On April 14, 2015, FCC Chairman Tom Wheeler announced that the Commission was launching a year-long program to expand video relay service to additional government agencies and private companies by evangelizing the FCC's existing ASL Support Line, and creating a technological platform that will make it easier for ASL users to connect through a relay service. See *Direct Video Communication: Access for People who are Deaf, Hard of Hearing and Speech Disabled in an IP World*, Federal Communications Commission (Apr. 14, 2015), <http://www.fcc.gov/blog/direct-video-communication-access-people-who-are-deaf-hard-hearing-and-speech-disabled-ip-world>.

location information will be transmitted to the appropriate PSAP; however, this solution only works if the person is calling from their pre-registered number and from the location that is on file.

While not all PSAPs are prepared to use location information, the FCC still chose, as part of the ENHANCE Act, to mandate that wireless providers furnish location info to the PSAPs. This means that all PSAPs, regardless of whether they currently accept emergency texts, are being furnished with the information that would allow them (from a technical perspective) to implement this feature. The FCC has mandated that wireless carriers respond to PSAP requests to deliver information to allow TT911 service by June 30, 2015 or six months from the date of the PSAP's request, whichever is later.

The FCC has encouraged PSAPs generally to implement TT911 and suggests that non-NG911 PSAPs use web browsers, gateway centers, or SMS-to-TTY conversion to process incoming text messages.²² Additionally, on May 8, 2015, the FCC will host a public workshop discussing how smartphone applications may play a role in contacting 911.²³

Overall, the FCC's authority over state and local 911 authorities is extremely limited, and the agency seems unlikely to attempt to impose direct requirements that PSAPs upgrade to NG911 capabilities.

B. The Department of Justice and the Americans with Disabilities Act

i. Overview

Emergency services provided by state and local governments are also subject to federal-level regulation by the Department of Justice (DOJ) under Title II of the Americans with Disabilities Act (ADA). Title II of the ADA applies to state and local government entities and prohibits discrimination on the basis of disability in services, programs, and activities.²⁴ This prohibition extends to all activities of state and local governments regardless of whether these entities receive federal financial assistance.²⁵

²¹ *Ten-Digit Numbering and Emergency Call Handling Procedures for Internet-Based TRS*, Federal Communications Commission, <http://www.fcc.gov/guides/ten-digit-numbering-and-emergency-call-handling-procedures-internet-based-trs> (last accessed Apr. 24, 2015).

²² David Simpson, Chair of the FCC's Public Safety and Homeland Security Bureau, said at the National Emergency Number Association's "911 Goes to Washington" event on February 24, 2015 that "Decisions at this point to make this [TT911] happen are not national ... they're local decisions by PSAPs." See *Simpson: PSAPs Should Accept Texts, Hold Carriers Accountable on Accuracy*, National Public Safety Telecommunications Council (Feb. 28, 2015), <http://blog.npstc.org/2015/02/28/simpson-psaps-should-accept-texts-hold-carriers-accountable-on-accuracy>; For information about NG911 technologies, see *infra* Part II.

²³ *Public Safety and Homeland Security Bureau Announces workshop on the use of smartphone "apps" to assist in the provision of 911 service*, Federal Communications Commission (April 1, 2015), http://transition.fcc.gov/Daily_Releases/Daily_Business/2015/db0401/DA-15-411A1.pdf.

²⁴ 42 U.S.C §§ 12131-32 (1990).

²⁵ *Id* at §§ 12131-65 (1990).

In the context of emergency services, the House Report on the ADA stated that Title II requires local governments to ensure that these telephone emergency number systems are equipped with technology that will give deaf, hard of hearing, and speech disabled individuals a *direct line* to these emergency services.²⁶ The legislative history further indicates that Congress contemplated the necessity of installation of TDDs (telecommunications devices for the deaf) or compatible ASCII (American Standard Code for Information Interchange) or Baudot computer modems by PSAPs, but also suggested that future technological advances might offer other means of affording direct and equally effective access for people with disabilities.²⁷

The ADA requires that the DOJ promulgate regulations to implement the requirements of Title II, including for PSAP accessibility.²⁸ However, the current DOJ regulations governing PSAP obligations under the ADA were enacted in 1991 and have not been revised since.²⁹

The DOJ regulations under Title II require public entities to use TTYs or an equally effective telecommunications system to communicate with individuals who are deaf, hard of hearing, or speech disabled.³⁰ Additionally, in the case of telephone emergency services, including 911 services, public entities must provide direct access to individuals who use TDDs and computer modems.³¹ TDDs are more commonly referred to as TTYs.³² PSAPs must also respond to telephone calls from a telecommunications relay service established under title IV of the ADA in the same manner that it responds to other telephone calls.³³ While the regulations do not require a public entity to take any action that it can demonstrate would result in a fundamental alteration in the nature of a service, program, or activity or cause undue financial or administrative burden, the DOJ has maintained the position that the burden test will rarely be satisfied in the context of emergency services.³⁴

²⁶ H. Rep. No. 485, Part 2, 101st Cong., 2d Sess. 84-5 (1990). Similar language is found in the ADA Conference Committee Report. Conf. Rep. No. 596, 101st Cong., 2d Sess. 67-8 (1990).

²⁷ *Id.*

²⁸ 42 U.S.C §§ 12134 (1990).

²⁹ 28 C.F.R. §§ 35.101-35.190 (2006), first published in the Federal Register on July 26, 1991; Final Rule, 56 Fed. Reg. 35694 (July 26, 1991).

³⁰ 28 C.F.R. §35.161(a) (2010).

³¹ 28 C.F.R. § 35.162; TDDs or telecommunication devices for the deaf include TTYs or teletypewriters

³² “A TTY is essentially the same as a TDD. The phrase TTY (or Teletype device) is how the deaf community used to refer to the extremely large machines used to type messages back and forth over the phone lines. A TDD operates in a similar way, but is a much smaller desktop machine. Since the deaf community has used the phrase “TTY” for so many years, it is still used interchangeably with “TDD.” See Gallaudet University, *What’s a TTY? What’s a TDD? What’s a Relay System?* (last visited Apr. 2015), http://www.gallaudet.edu/dpn_home/tty_relays_and_closed_captions.html.

³³ *Id.* at §35.161(c); 47 U.S.C. § 225(b)(3) (Title IV requires the FCC to ensure that interstate and intrastate telecommunications relay services are available to hearing-impaired and speech-impaired individuals in the United States)

³⁴ 28 C.F.R. § 35.164; Letter from Eve L. Hill, Senior Counselor to the Attorney General, Civil Rights Division, to Marlene H. Dortch, Office of the Secretary, Federal Communications Commission (Mar. 8, 2013), <http://apps.fcc.gov/ecfs/document/view?id=7022129201>.

To help state and local governments comply with Title II of the Americans with Disabilities Act (ADA), the DOJ issued a guidance document in 1993 which explains each section of Title II and discusses how the law applies in various situations.³⁵ The DOJ emphasized the importance of direct access, meaning that PSAPs must be able to directly receive TTY calls without relying on an outside relay service or third-party services.³⁶ The services provided for TTY users must be as effective as those provided for persons who make voice calls in terms of response time, response quality, hours of operation, and all other features offered (e.g. ALI, ANI, automatic call distribution).³⁷

TTYs provide direct access to emergency services, but as new technologies replace TTYs, access to 911 is increasingly dependent on relay services. The Appendix of the 1991 regulations indicates that public entities must take appropriate steps, including equipping their emergency systems with modern technology, as may be necessary to promptly receive and respond to a call from users of TTYs and computer modems. Entities are allowed the flexibility to determine what is the appropriate technology is for their particular needs; however, this guidance only refers to users of TDD's and computer modems, and not users of new technologies.³⁸ The DOJ encouraged, but did not require, the use of other assistive technologies such as the use of speech amplification devices on the handset of the dispatcher's telephone to amplify the dispatcher's voice for people who are hard of hearing.³⁹

ii. Shift in Telecommunications Technologies

As discussed below, the DOJ recognized a shift in technology usage in a 2011 *Advanced Notice of Proposed Rulemaking*, but has not yet amended its Title II regulations. However, in a 2013 letter to the FCC, the DOJ discussed the application of the current regulations to text messaging, although the interpretation of this letter remains ambiguous.

TTYs are electronic devices for text communication that were designed to work on analog phone lines.⁴⁰ TTYs can be modified to work with digital or IP technologies; however, people who are deaf, hard of hearing, or speech disabled are increasingly using newer, more efficient technologies besides TTYs to communicate.⁴¹ Email, text and video messaging, and instant messaging can be done from a computer or phone without a TTY. With a web camera, signed messages can be recorded and sent, or conducted in real time via wireless internet

³⁵ Title II Technical Assistance Manual (2003), <http://www.ada.gov/taman2.html>.

³⁶ *Id.*

³⁷ ADA Best Practices Tool Kit for State and Local Governments (Feb. 27, 2007), <http://www.ada.gov/pcatoolkit/chap4toolkit.htm>.

³⁸ *See* Guidance on ADA Regulation on Nondiscrimination on the Basis of Disability in State and Local Government Services, 28 C.F.R. § Pt. 35, App. B (July 26, 1991).

³⁹ *Id.*

⁴⁰ Expectations of the Deaf and Hard of Hearing Communities for Comprehensive Federal Action to Accelerate Emergency 911 Access, <http://www.911.gov/pdf/TDI-11072006.pdf>.

⁴¹ *Id.*

connections. Additionally, with the proliferation of smartphones, these technologies can be used to communicate with other individuals from almost any location. However, as mentioned previously, a relay service is necessary in order to use these new technologies to contact 911, unless the local PSAP has upgraded to accept TT911.

In 2006, the E-911 Stakeholder Council, supported by the Telecommunications for the Deaf and Hard of Hearing, Inc. issued a report expressing concern that people moving to the newer technologies are not able to directly access 911.⁴² Without federal or state mandates, only some PSAPs have begun to upgrade to an IP environment that is compatible with advanced technologies.⁴³ Because many consumers no longer use older technologies, the ADA's requirement of direct access has become undermined.

iii. DOJ Response

The DOJ issued an *Advanced Notice of Proposed Rulemaking* (ANPRM) in 2011 to address in what manner PSAPs should be required to make changes in telecommunication technology to reflect developments that have occurred since the publication of the Department's 1991 regulation.⁴⁴

The ANPRM sought information on possible revisions to ensure direct access to NG911 services for individuals with disabilities.⁴⁵ The ANPRM considered whether the DOJ should designate TT911 as essential to providing access to 911 to individuals with disabilities, and specifically which types of text might be required: real time, SMS, IM, email, analog gateway, or other modes of text.⁴⁶ Additionally, the ANPRM sought comment as to whether the DOJ should require PSAPs to provide Video Remote Interpreting through call routing, and/or require that interpreters be specifically trained to handle emergency calls. VRI would allow the PSAP to view the video of both the caller and the interpreter.⁴⁷ Other considerations in the ANPRM were possible solutions for interim plans, whether to require performance based or technical standards, and whether to amend the regulation to address the sending of emergency alerts to text, video, and other devices used by individuals with disabilities.⁴⁸

The DOJ has received 129 comments on the ANPRM, but as of April 2015 the rulemaking is still pending on the DOJ's agenda.⁴⁹ The DOJ has not indicated if or when the agency will issue an NPRM on the issue. As states transition to new technologies, it is important

⁴² Id.

⁴³ *Infra* at Part IV.

⁴⁴ Nondiscrimination on the Basis of Disability in State and Local Government Services; Accessibility of Next Generation 9-1-1, Department of Justice, CRT Docket No.111; AG Order No. RIN 1190-AA62, http://www.ada.gov/anprm2010/nextgen_9-1-1%20anprm_2010.htm.

⁴⁵ Id.

⁴⁶ Id.

⁴⁷ Id.

⁴⁸ Id.

⁴⁹ Id.

to note that the ANPRM indicates that state and local government agencies must include specific plans for equal access to NG911 for individuals with disabilities in developing new or reviewing current NG911 plans.⁵⁰

A more recent, although still relatively ambiguous, indication of the DOJ's stance on PSAP obligations to provide TT911 can be found in the DOJ letter to the FCC Dockets 11-153 and 10-255, In the Matter of Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications.⁵¹ The DOJ recognized that some PSAPs may choose to use IP systems to accept SMS-originated calls, and stated that the DOJ considers the use of IP to accept SMS calls to be an "equally effective telecommunications system" under 28 C.F.R. § 35.161(a).⁵² The DOJ opined that if PSAPs do not state a preferred text delivery option for carriers, the default should be text-to-TTY since that option should be available without further PSAP action.⁵³ Significantly, the letter states that in fulfillment of PSAPs' existing obligations to provide effective communication under title II of the ADA, PSAPs must accept a call from a person with a hearing or speech disability that originates as an SMS call, but reaches the PSAP as a TTY call.⁵⁴ It remains unclear, however, whether this letter indicates that the DOJ requires text capability by the PSAP.

C. The Department of Transportation

Finally, an important source of federal funding for 911 upgrades is formula-based grants distributed to state and local authorities by the Department of Transportation. The DOT's funding for this purpose comes from the proceeds from spectrum auctions. The statutory authority for the latter comes from the Middle Class Tax Relief and Job Creation Act of 2012, which outlines how incentive auctions are to be conducted.⁵⁵ DOT receives a portion of these proceeds (after they are distributed to other agencies for purposes such as FirstNet funding and federal debt reduction) and, within a year of receiving the money, is responsible for drafting regulations governing grant application requirements.⁵⁶ Grant guidelines are then opened for public comment.

⁵⁰ Id.

⁵¹ Letter from Eve L. Hill, Senior Counselor to the Attorney General, Civil Rights Division, to Marlene H. Dortch, Office of the Secretary, Federal Communications Commission (Mar. 8, 2013), <http://apps.fcc.gov/ecfs/document/view?id=7022129201>.

⁵² Id.

⁵³ Id.

⁵⁴ Id.

⁵⁵ Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96 (2012).

⁵⁶ Funds are deposited into the Public Safety Trust Fund, and distributed in the following order: NTIA (up to \$2M to pay for FirstNet), State and Local Implementation Fund (\$135M), FirstNet Construction Fund (up to \$7M), NIST Public Safety Research (\$100M), Treasury General Fund (\$20.4B for deficit reduction), NHTSA (\$115M for NG911 implementation), NIST Public Safety Research (an additional \$200M), further deficit reduction (whatever amount remains). See Id.

States, or in some cases, individual PSAPs may apply for grants from the DOT for upgrading their 911 capabilities. The most recent grants, awarded in 2009, were formula-based. Grant guidelines for the most recent spectrum auction, AWS-3, which concluded on January 29, 2015 and raised a total of more than \$40 billion, will open for public comment early in 2016.⁵⁷

II. State and Local Regulatory Framework

A. Overview

Regulation of 911 in Colorado is divided between the PUC and local 911 authority boards. The PUC promulgates rules concerning 911 and regulates telecommunications carriers that provide basic emergency service.⁵⁸ The legislature has stated that the PUC will continue to have authority over 911 regardless of changes in technology.⁵⁹ The PUC also calculates the percentage each 911 authority board is to receive from the prepaid revenue collected from 911 surcharges.⁶⁰ The PUC also established the 911 Advisory Task Force to investigate 911 service in Colorado, and to make recommendations to the PUC about this service.⁶¹

The local 911 authority boards are charged with implementing 911 in their area PSAPs. In Colorado, 911 authority boards are governing bodies established as a local council, a county commission, or an intergovernmental organization between multiple political entities.⁶² 911 authority boards get revenue from 911 surcharges, taxes, or dues collected from members of the intergovernmental organization. They use these funds to assist their area PSAPs by providing equipment and supplementing personnel costs.⁶³ Local ordinances, in the cases of cities, and resolutions, in the case of counties, specify the surcharges charged to customers monthly to maintain and upgrade 911 service.⁶⁴ The PUC approves any surcharge above \$0.70.⁶⁵

The PUC requires Basic Emergency Service Providers to ensure, to the extent possible and in the most efficient manner, that telecommunication services are available for transmitting

⁵⁷ *Advanced Wireless Services (AWS-3)*, Federal Communications Commission, http://wireless.fcc.gov/auctions/default.htm?job=auction_factsheet&id=97 (last visited Apr. 24, 2015).

⁵⁸ *9-1-1 Organizational Chart*, Colorado 9-1-1 Resource Center, <https://sites.google.com/site/co911rc/resources> (last visited Apr. 24, 2015).

⁵⁹ Transcript of Testimony of Representative Williams before the House Business, Labor, Economic and Workforce Development Committee, March 25, 2014.

⁶⁰ Colorado 9-1-1 Resource Center, *supra* note 50; Colo. Rev. Stat. § 24-11-102 (2)(b) (2001); Colo. Rev. Stat. § 29-11-102.5 (3)(e)(III) (2011).

⁶¹ 4 Colo. Code Regs. § 723-2-2145 (2007).

⁶² Colo. Rev. Stat. § 29-11-101 (4) (2011).

⁶³ Colo. Rev. Stat. § 29-11-102 (2011).

⁶⁴ *Id.*

⁶⁵ *Id.*

911 calls from hearing and speech impaired persons to the appropriate PSAP.⁶⁶ The PUC also requires ALI Database providers to interconnect its database to PSAPs.

The PUC has not promulgated specific rules about the transfer of ALI for relay users. This is an area of particular concern to the deaf, hard of hearing, and speech disabled communities because their relay service may not transfer their location information with the call.

B. TT911 Implementation in Colorado

Since major carriers are required to send text messages to PSAPs, the next step is for PSAPs to begin accepting these texts. Colorado PSAPs are gradually implementing TT911 in order to provide more reliable service to all of their customers, and especially customers who are deaf, hard of hearing, or speech disabled.

There are three different ways for a PSAP to receive text messages: First, TT911 calls can be received through an Internet browser.⁶⁷ This is one of the most affordable options for PSAPs. The drawbacks are that information must be manually entered into Computer-Aided Dispatch systems, which takes extra time, and the PSAP must have a dedicated IP circuit to the 911 text gateway. This method also requires dispatchers to have an additional screen to watch during their shift which can be burdensome.

A second method, often viewed as a superior delivery option, is the Direct IP system. This software is the most expensive and requires an NG911 network or a dedicated IP circuit to the 911 text gateway. However, this method is integrated into the current dispatcher system so additional screens are not required.

The last method to receive texts is as a TTY call. In this system, the carrier converts text messages to ASCII so that they can be received and replied to using the same equipment the PSAP uses for communicating with callers using TTYs. While being affordable and integrated into the current dispatch system, this method is less reliable and produces more errors.

Once a PSAP decides to implement a TT911 system, the PSAP must notify the FCC that they want to provide TT911 and fill out a certification form.⁶⁸ The FCC will register the PSAP's readiness in their Text-to-911 Readiness and Certification Database, which serves as notification to carriers that the PSAP has requested the service. The carriers then have six months to begin delivering TT911 to the PSAP.⁶⁹

⁶⁶ 4 Colo. Code Regs. § 732-2-2136(f) (2007).

⁶⁷ Colorado 9-1-1 Resource Center, Presentation at the Colorado APCO/NENA/CCNC Conference (2013) (presentation available at https://docs.google.com/presentation/d/1IB7IPqp2BMMxCG8cd2CmsSgNdsHdmjtlqmLZBitSnSY/pub?start=false&loop=false&delayms=60000&slide=id.g10d034b87_064).

⁶⁸ FCC, *PSAP Text-to-911 Readiness and Certification Registry* (Apr. 7, 2015), www.fcc.gov/encyclopedia/psap-text-911-readiness-and-certification.

⁶⁹ FCC, *What You Need to Know About Text-to-911* (Apr. 20, 2015), <http://www.fcc.gov/text-to-911>.

Currently, in Colorado, several counties and a few individual PSAPs have begun to implement TT911. Pitkin County was the first county in Colorado to implement TT911, and they also helped Eagle County develop their own texting system. Larimer County also has texting capability, and they are working with several other counties, such as Mesa County and Garfield County, to receive text messages on their behalf and forward them to the appropriate PSAP. Montrose County, Broomfield County, and Jefferson County have also implemented TT911. Most recently, Rio Blanco County announced its readiness to receive text messages and carriers are working to meet this request. Several other counties are expected to roll out TT911 systems in the coming months, such as Douglas County, Adams County, and Boulder County. There are also individual PSAPs that have begun TT911 implementation exclusive of their county such as the city of Westminster. So far, every PSAP that accepts texts is using the web browser technology to do so. PSAPs interested in upgrading their systems to provide TT911 can look to these PSAPs and counties for guidance, as well as the success of TT911 in other states.

III. Case Studies

A handful of states are TT911 capable in every county.⁷⁰ These states have chosen to implement a statewide 911 authority to oversee the deployment of NG911 technology. In Maine, for example, The Emergency Service Communications Bureau, with input from the Enhanced 9-1-1 Council, has agency authority to oversee the implementation and operation of the statewide Enhanced 9-1-1 system.⁷¹ Currently all of Maine's counties are NG911 capable with all PSAPs accepting texts utilizing Direct IP technology.⁷² Vermont has followed a similar statewide approach. The Vermont Enhanced 911 Board is the state agency responsible for the statewide 911 system.⁷³ Each municipality was allowed to choose to participate through its legislative body.⁷⁴ Currently all of Vermont's PSAPs utilize Direct IP technology to receive texts. In Indiana, the State Treasurer's office oversees the Indiana Statewide 911 board.⁷⁵ The 911 Board in Indiana is a quasi-state agency established by Indiana Code in 2012.⁷⁶ Their main responsibilities are to collect and distribute surcharges from all communication service providers to local units of government, as well as maintain the operation of a statewide public safety ESInet for 911 calls.⁷⁷ Indiana receives texts through a text-to-TTY platform.⁷⁸

⁷⁰ The states surveyed in this white paper were taken from the registry provided by the FCC, which is not an exhaustive list. The Text 911 Master PSAP Registry can be found at fcc.gov/text-to-911. The Registry is updated monthly, and reflects voluntary registration from the counties themselves.

⁷¹ The Emergency Service Communications Bureau is an agency created within the Public Utilities Commission by Maine Revised Statute tit. 25 §2925.

⁷² *Frequently Asked Questions*, Maine 911 <http://www.maine911.com/faq/index.shtml> (last visited Apr. 24, 2015).

⁷³ *Enhanced 911 Board*, State of Vermont, <http://e911.vermont.gov/forms/statute> (last visited Apr. 24, 2015).

⁷⁴ Vt. Stat. Ann. tit. 30, § 7056 (2011).

⁷⁵ *911 Board*, IN911, <https://www.in911.net/911-Board> (last visited Apr. 24, 2015).

⁷⁶ Ind. Code Ann. § 36-8-16.7-24 (LexisNexis 2012).

⁷⁷ *911 Board*, *supra*, note 62.

Most states utilize a combination of different local 911 authorities. For example, in Texas seventy-eight total PSAPs accept texts through various county entities. The North Central Texas Council of Governments is a voluntary association of county governments that is centered around the two urban areas of Dallas and Fort Worth.⁷⁹ The Council has introduced TT911 in the sixteen counties it serves. Call centers run by the North Central Texas Council of Governments already had an Internet-based calling system that enabled cost-free installation.⁸⁰ A similar approach was used by the Greater Harris County network, which includes both Harris county and Fort Bend county.⁸¹ The network serves 49 cities, and thirty PSAPs are TT911 capable through Direct IP technology.⁸² Most recently, Cameron and Galveston counties in Texas have enabled TT911 in all of the PSAPs in their districts.⁸³

Conclusion

As it stands, the decision to upgrade to NG911 services in Colorado is almost entirely up to PSAPs, many of which have not yet proceeded due to various financial and administrative concerns. The current federal regulatory scheme does not explicitly require PSAPs to make upgrades; however, the desirability of NG911 services, particularly TT911, is the subject of much discussion at the FCC and the DOT. Federal authority over PSAPs rests largely with the DOJ under the ADA, and the DOJ is considering requiring PSAP upgrades under Title II in order to ensure accessibility to emergency services.

The experiences of the states and counties that have implemented TT911 and other NG911 services serve as useful case studies illustrating the feasibility of implementing NG911 services. Those states which do have statewide (or nearly statewide) NG911 services have a statewide 911 authority. However, several Colorado counties have successfully upgraded to NG911 capabilities, and Larimer county has implemented a cost-sharing system whereby it receives and routes incoming emergency text messages for neighboring counties.

The implementation of TT911 is an important step toward increasing direct access to 911 for many people who are deaf, hard of hearing, or speech disabled. Furthermore, TT911 and other NG911 applications have the potential to improve emergency services for all Americans,

⁷⁸ *IN911*, IN911, <https://www.in911.net> (last visted Apr. 24, 2015).

⁷⁹ *About NCTCOG*, North Central Texas Council of Governments, <http://www.nctcog.org/about.asp> (last visted Apr. 24, 2015).

⁸⁰ *Id.*

⁸¹ *Who is GHC*, Greater Harris County Emergency Network, <http://www.911.org/WhoIsGHC.asp> (last visted Apr. 24, 2015).

⁸² *Coverage Areas*, Greater Harris County Emergency Network, <http://www.911.org/CoverageArea.asp> (last visted Apr. 24, 2015).

⁸³ *Agencies We Serve*, Cameron County 911, <http://cameroncounty911.com/what-we-do/agencies-we-serve> (last visted Apr. 24, 2015); *Galveston County 911*, Galveston County 911, <http://www.galco911.org> (last visted Apr. 24, 2015).

not only by enhancing the information provided to PSAPs and emergency responders, but also by allowing individuals to contact 911 in situations when a call is not feasible or safe.