submitted by the Association of State and Territorial Solid Waste Management Officials (attachment one of document No. EPA–HQ–RCRA–2009–0640–3936 and EPA–HQ–RCRA–2009–0640–8787), the Environmental Council of the States (attachment one of document No. EPA–HQ–RCRA–2009–0640–4003 and EPA–HQ–RCRA–2009–0640–8854) and 36 states. All of the states' comments are available in the docket to the proposed rule.

VIII. What new materials on beneficial uses are being noticed?

The Agency received a significant amount of additional data and other factual information relating to the beneficial reuse of CCR, such as the use in concrete, bricks and wallboard, during the comment period. EPA also obtained additional data as a result of further research. EPA is requesting comment on whether this information should be considered in the development of the final rule. All of these documents are available from the docket to this Notice.

IX. What new information and potential modeling analyses to update and enhance the risk assessment are being noticed?

EPA is considering updating its risk assessment prepared in support of the 2010 proposed rule based upon public comments and additional information made available since the publication of the proposed rule. The 2010 Risk Assessment, ''Draft: Human and Ecological Risk Assessment of Coal Combustion Wastes,'' April 2010 (''2010 Risk Assessment'') is available in the docket to the proposed rule (EPA–HQ–RCRA–2009–0640–0002). As noted previously, EPA is requesting comment only for the narrow purposes described in Unit II—i.e., on the validity and propriety of using the information, data, and analyses associated with this notice. As also noted previously, although EPA is singling out the information and data specifically listed below and in the docket for further public comment, it should not be assumed that this information/data is the full sum of the information/data received in comments that will be considered or that will influence the Agency's decisions in this rulemaking.

1. EPA is considering updating its pore water data by adding pore water data submitted by public commenters (previously discussed in Section IV). EPA is also considering the use of alternative statistical analysis, such as the use of quartiles or bootstrapping, in place of site averages for pore water data in order to retain intra-site variability in these data while not biasing results from the sites with greater numbers of sampling points.

2. EPA is considering using the latitude and longitude data (obtained from additional information sources discussed in Section V) to estimate the distances from CCR waste management units to human and ecological receptors. EPA is considering updating its estimated distances to groundwater wells based on modeled population estimates discussed in the Agency's RIA for the proposed rule. Further documentation and the modeled population estimates based on synthesized population data sets are accessible at: *ftp://ftp.epa.gov/coal-combustion-residues/NODA-1*.

3. EPA is considering updating the estimated distances from CCR waste management units to the nearest surface water bodies, based on the new latitude and longitude data (obtained from additional information sources discussed in Section V).

4. EPA is considering modeling both landfills and surface impoundments throughout the operational life of the waste management unit and post-closure using the same modeling approach utilized in the 2010 Risk Assessment.

5. EPA is considering revisiting its screening assessment based on the new data and analyses above. EPA is also considering the use of the peer reviewed models, AERSCREEN and AERMOD, to evaluate fugitive dust (*http://www.epa.gov/ttn/scram/dispersion_prefrec.htm#aermod*). Depending on screening results, EPA may consider CCR fugitive dust and other above-ground exposure pathways from the open CCR waste management units for further modeling.

Dated: September 30, 2011.

Mathy Stanislaus,

Assistant Administrator, Office of Solid Waste and Emergency Response.

[FR Doc. 2011–26086 Filed 10–11–11; 8:45 am]

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FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 1

[PS Docket No. 11–153; PS Docket No. 10–255; FCC 11–134]

Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications; Framework for Next Generation 911 Deployment

AGENCY: Federal Communications Commission.

ACTION: Proposed rule.

SUMMARY: In this document, the Commission seeks to accelerate the development and deployment of Next Generation 911 (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. This Notice of Proposed Rulemaking seeks comment on a variety of issues related to the short-term and long-term transition to NG911.

DATES: Submit comments on or before December 12, 2011. Submit reply comments on or before January 10, 2012.

ADDRESSES: You may submit comments, identified by PS Docket No. 11–153 and/or PS Docket No. 10–255, by any of the following methods:

- *Federal Communications Commission's Web Site: http://fjallfoss.fcc.gov/ecfs2/.* Follow instructions for submitting comments.
- *People with Disabilities:* Contact the FCC to request reasonable accommodations (accessible format documents, sign language interpreters, CART, etc.) by *e-mail: FCC504@fcc.gov* or *phone:* 202–418–0530 or TTY: 202–418–0432.

For detailed instructions for submitting comments and additional information on the rulemaking process, see the **SUPPLEMENTARY INFORMATION** section of this document.

FOR FURTHER INFORMATION CONTACT: Patrick Donovan, Attorney Advisor, (202) 418–2413. For additional information concerning the Paperwork Reduction Act information collection requirements contained in this document, contact Judith Boley-Herman, (202) 418–0214, or send an e-mail to *PRA@fcc.gov.*

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Notice of Proposed Rulemaking (NPRM) in PS Docket No. 11–153, PS Docket No. 10–255, FCC 11–134, released on September 22, 2011. The full text of this document is available for public inspection during regular business hours in the FCC Reference Center, Room CY–A257, 445 12th Street, SW., Washington, DC 20554, or online at *http://transition.fcc.gov/pshs/services/911-services/.*

I. Introduction and Executive Summary

1. In the Notice of Proposed Rulemaking, we seek to accelerate the development and deployment of Next

Generation 911 (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. Sending text messages, photos, and video clips has become commonplace for users of mobile devices on 21st century broadband networks, yet our legacy circuit-switched 911 system does not support these forms of communication. While continuing to ensure reliable voice-based 911 service will always be essential as we migrate to NG911, adding these non-voice capabilities to our 911 system will significantly improve emergency response, save lives, and reduce property damage. Incorporating text and other media into the 911 system will make it more accessible to the public, both for people with disabilities and for people in situations where placing a voice call to 911 could be difficult or dangerous.

2. In addition, these 21st century communications technologies will provide PSAPs with better information that can be synthesized with existing databases to enable emergency responders to assess and respond to emergencies more quickly and effectively. Not only will PSAPs be able to receive text messages, photos, and video clips from the public, but also NG911 can provide them with the tools they need to quickly process and analyze the incoming information. In addition, PSAPs and emergency responders will be able to combine information received from the public with other information sources (e.g., video feeds from traffic or security cameras, automated alarms or sensors in a neighborhood, building, or vehicle) to develop a detailed and data-rich assessment of the emergency in real time. This in turn will enable public safety officials to decide on the appropriate response more quickly, saving precious minutes and seconds that can be critical in many emergencies.

3. In this NPRM, we provide a procedural history, together with technical background, regarding three broad classes of text-capable communications, namely Short Message Service (SMS), IP-based messaging, and Real-Time Text (RTT), comparing their characteristics, strengths, and limitations in supporting emergency communications. This description relies largely on current industry standards, early prototypes, and the record in this proceeding.

4. We then examine potential short-term methods for sending text messages to 911. We do so because of the widespread availability and increasing use of text in communications systems and because many of the emerging IP-based mechanisms for delivering text also have the capability, with relatively minor technical adjustment, to support delivery of photos, videos, and other data as well. We seek comment on what role the Commission should play to facilitate—and, if necessary, accelerate—the implementation of text-to-911 capabilities by providers in the short term. We explore the full range of options for the FCC, including both non-regulatory and regulatory approaches, and seek to adopt the least burdensome approach that would achieve the desired result. We also recognize that we must carefully assess the costs and benefits of different regulatory options to determine the Commission's proper role.

5. We seek to strengthen the record to determine whether to encourage development of interim text-to-911 solutions and, if so, how to maximize their effectiveness and utility to the public and to PSAPs, while minimizing cost and the potential for negative PSAP operational impacts or consumer confusion. Specifically, we explore the potential for using SMS as an interim solution for text-based communication to 911, given the near-universal availability and consumer familiarity with SMS. The responses to our December 2010 Notice of Inquiry in this proceeding identify a number of possible limitations when using SMS for emergency communications, but some commenters also contended that these limitations could be surmounted by appropriate engineering approaches. We also examine other short-term options that would rely on software applications capable of delivering text over the existing IP-based infrastructure. We examine the potential costs and benefits of both SMS-based and software-based interim approaches as compared to developing more comprehensive text-to-911 solutions over the longer term that will provide more reliable real-time communication and can also support delivery of photos and video.

6. Next, we seek comment on whether 911 traffic should be prioritized to ensure that people in need of assistance have reliable access to emergency services, especially during times of serious emergencies such as large-scale natural and manmade disasters. The August 23, 2011 East Coast earthquake and Hurricane Irene have been recent reminders that concentrated demands on the capacity of commercial communications networks during and immediately after emergencies can hinder the ability of consumers to make voice calls, which in turn can jeopardize their ability to contact 911. We seek comment on how best to address this concern in both legacy networks and the emerging broadband networks that will support NG911, including options for prioritizing 911 traffic.

7. We then turn to long-term implementation of NG911, with particular focus on IP-based alternatives for delivering text, photos, videos, and other data to 911 that would leverage the increasing percentage of mobile devices that have the ability to access the Internet. We seek comment on the potential for developing downloadable smartphone applications that both consumers and IP-capable PSAPs could acquire to support capabilities for an early roll-out of text and mulitimedia functionality. We note that such applications could also provide early access to key NG911 capabilities for mobile callers, especially those with hearing and speech disabilities.

8. We also seek comment on the path towards integration and standardization of IP-based text-to-911 as commercial providers migrate to all-IP networks and as 911 authorities deploy Emergency Services IP networks (ESInets) that will enable PSAPs to receive the full range of IP-based traffic, including voice, text, photos, video, and data. In this all-IP environment, text-to-911 is one of several non-voice services that will be supported by ''native'' IP communications end-to-end solutions, such as the Internet Multimedia Subsystem (IMS). However, providers may have varying timetables for developing the capacity to deliver IMS communications to PSAPs. PSAP deployment of ESINets is also likely to be non-uniform. We seek comment on the necessary steps for providers and PSAPs to support integrated IMS-based communications and the time that this process is likely to take.

9. With over 6,800 PSAPs in the United States, spanning a wide range of sizes and resources, individual PSAPs are likely to have highly varying timetables for developing the technical and operational capability to handle incoming texts in the short term, as well as texts and other media in the longer-term implementation of NG911. While there are significant public safety benefits to enabling the public to send texts and other media to 911 in areas where PSAPs are capable of receiving and processing them, we seek to avoid imposing unnecessary costs on providers to implement NG911 in areas where PSAPs have not yet achieved

such capability. For this reason, we seek comment on whether PSAPs should demonstrate a threshold level of technical NG911 capability as a precondition to any obligation by providers to deliver text or other media to PSAPs and whether such demonstration should be at the state or regional level. We also seek comment on potential state or local regulatory barriers to NG911 deployment and whether states should demonstrate that they have adopted legal or regulatory measures to eliminate such barriers to facilitate NG911 deployment.

10. Given that text-to-911 and other NG911 capabilities will likely not be simultaneously deployed nationwide, consumers may be uncertain where non-voice communication with 911 is available. Even where text-to-911 or other NG911 applications are available, the specific capabilities and operational characteristics of these applications may vary. We therefore seek comment on how to best educate consumers about the availability and limitations of text-to-911 and other NG911 solutions, particularly during the transition from legacy 911 to full implementation of NG911, without imposing an undue burden on providers.

11. As noted above, adding text and other media capabilities to our 911 system promises to bring significant benefits for people with disabilities. In this regard, we seek comment on the relationship between this proceeding and our ongoing implementation of the Twenty-First Century Communications and Video Accessibility Act of 2010, which, among other things, sets goals for achieving equal access to emergency services for people with disabilities ''as a part of the migration to a national Internet protocol-enabled emergency network.'' We believe that the transition to NG911 and the implementation of the CVAA can be achieved through development of common text-to-911 and multimedia-to-911 solutions that serve both objectives. In this NPRM, therefore, we seek comment on the potential for coordinating the two proceedings to promote broader and more rapid NG911 deployment.

12. Throughout this NPRM, we seek comment to further strengthen our record on these important aspects of the evolution towards NG911 systems and capabilities. In particular, we seek detailed data that quantifies the benefits that text-to-911 and other NG911 applications will bring to the public and to emergency responders, while also quantifying the costs to providers, PSAPs, and consumers. We emphasize the importance of comments being detailed, specific, and supported by data where appropriate. We intend to confer particular weight on arguments and estimates that are supported by data or are otherwise well documented.

II. Background

13. In this section, we review the procedural history leading up to this NPRM. We also provide technical background information classifying the likely technical options for text-to-911, and we recap the record on those options that the Commission received in response to the Notice of Inquiry.

A. Procedural History

14. In December 2010, as recommended in the National Broadband Plan, the Commission released a Notice of Inquiry on NG911 (FCC 10–200, released Dec. 21, 2010), which initiated a comprehensive proceeding to address how NG911 can enable the public to obtain emergency assistance by means of advanced communications technologies beyond traditional voice-centric devices. The Notice of Inquiry sought comment on a number of issues related to the deployment of NG911 networks, including: (1) NG911 capabilities and applications; (2) NG911 network architecture; and (3) the proper roles of the FCC, other federal agencies, and state, tribal, and local governments.

15. In the last several years, there have been other important efforts to address the need for a transition to an NG911 network. In the New and Emerging Technologies 911 Improvement Act of 2008, Congress tasked the National E9–1–1 Implementation Coordination Office (ICO) with developing ''a national plan for migrating to a national [Internet Protocol] IP-enabled emergency network capable of receiving and responding to all citizen-activated emergency communications and improving information sharing among all emergency response entities.'' The Department of Commerce's National Telecommunications and Information Administration (NTIA) and the Department of Transportation's (DOT's) National Highway Traffic Safety Administration (NHTSA) jointly manage ICO and released its migration plan in September 2009.

16. In March 2010, the National Emergency Number Association (NENA) released a handbook to serve as a guide for public safety personnel and government officials responsible for ensuring that federal, state, and local 911 laws and regulations effectively enable the implementation of NG911 systems. Specifically, the NENA Handbook provides an overview of key policy, regulatory, and legislative issues that need to be considered to enable the transition to NG911. The NENA Handbook states that ''it is critical that state regulatory bodies and the FCC take timely and carefully scrutinized action to analyze and update existing 9–1–1, PSTN, and IP rules and regulations to ensure they optimize 9–1–1 governing authority choices for E9–1–1 and NG9–1–1 and foster competition by establishing a competitively neutral marketplace.''

17. 3GPP has also published a report on the use of Non-Voice Emergency Services (NOVES) that provides a general description of perceived needs. In addition, ATIS has created its own Interim Non-voice Emergency Services (INES) Incubator. The ATIS INES Incubator ''provides the industry with a 'fast-track' process for resolving technical and operating issues'' and serves as ''an alternative approach toward solutions development.''

18. On October 8, 2010, the President signed the CVAA into law. As directed by the CVAA, the Chairman established the Emergency Access Advisory Committee (EAAC) for the purpose of achieving equal access to emergency services by individuals with disabilities as part of our nation's migration to NG911. The EAAC is composed of state and local government representatives responsible for emergency management and emergency responder representatives, national organizations representing people with disabilities and senior citizens, communications equipment manufacturers, service providers, and subject matter experts. The CVAA directed the EAAC to conduct a national survey of people with disabilities and then to make recommendations on the most effective and efficient technologies and methods to enable NG911 access. The EAAC conducted its survey from March 16, 2011, to April 25, 2011, and received over 3,000 completed responses. On July 21, 2011, the EAAC submitted the report on the completed survey to the Commission. The EAAC will make its recommendations to the Commission in December 2011, which the Commission is then empowered to implement by regulation.

19. In addition, other federal agencies have initiated efforts to address access to 911 in an Internet-enabled environment for people with disabilities. On March 17, 2010, the United States Access Board proposed draft guidelines for real-time text functionality for adoption by federal agencies as part of its efforts to update guidelines on section 508 of the Rehabilitation Act. In a separate

proceeding, the Department of Justice is currently reviewing comments received in response to an Advanced Notice of Proposed Rulemaking (ANPRM) on NG911 access to emergency services by people with disabilities. Current DOJ regulations under the Americans with Disabilities Act (ADA) require direct and equal access to telephone emergency services for people with disabilities who use TTYs. In its ANPRM, DOJ notes that many individuals with disabilities are now relying on IP-based and digital wireless devices instead of TTYs as their primary mode of telecommunications ''and that 9–1–1 call-taking centers are shifting from existing traditional telephone emergency services to new IP-enabled NG 9–1–1 services.'' The ANPRM addresses two objectives: (1) To identify and remove accessibility barriers for people with disabilities and who attempt to use personal digital or telecommunications devices to directly interact with PSAPs in voice, sign language, or text; and (2) to enhance the ability of PSAPs to incorporate essential accessibility elements into their IP-based system in a coordinated and effective manner. Finally, in compliance with the NET 911 Act, the ICO's national plan for migrating to an IP-enabled emergency network explored various solutions for providing enhanced 911 access to people with disabilities.

20. In March 2011, the Communications Security, Reliability, and Interoperability Council's (CSRIC's) Working Group 4B (CSRIC 4B) released a report entitled ''Transition to Next Generation 9–1–1.'' CSRIC is a Federal Advisory Committee that was tasked with providing guidance and expertise on the nation's communications infrastructure and public safety communications. Notably, the CSRIC 4B Report highlighted that ''the FCC must establish clear rules for accomplishing the transition to NG9–1–1'' and that ''[i]f SMS has a role as an interim non-voice service used to contact a PSAP, how it is deployed * * * will need to be resolved by the FCC.''

21. On August 30, 2011, the Transportation Safety Advancement Group (TSAG) released a report summarizing information that experts in law enforcement, fire-rescue, emergency medical services (EMS), and transportation operations would like to receive as end users of NG911 systems. The report provides insight into the cultural, organizational, and operational environments of these organizations.

B. Technical Background

22. In the Notice of Inquiry, we distinguished between use of ''primary'' and ''secondary'' media types to communicate with PSAPs. In brief, primary media types are those that are used to initiate a call or communications session with the PSAP, while secondary media types are those that are used to provide additional information to the PSAP after the call or session has been established. In 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.

23. In addition, while we focus in this NPRM on enabling consumers to deliver text and other non-voice media to PSAPs, we note that the adoption of NG911 technology will also provide PSAPs with new tools to process and analyze this information. In the Notice of Inquiry, we cited the potential for NG911 to accommodate a full range of specialized devices and functionalities that would enable PSAPs to combine multiple streams of information in real time to fashion responses to particular emergency scenarios. Examples of such devices and functionalities include environmental sensors capable of detecting chemicals, highway cameras, security cameras, alarms, gunshot sensors, personal medical devices, and telematics in vehicles or on consumer devices. For example, in a traffic accident, NG911 would not only enable the PSAP to receive the 911 call for help from the caller seeking assistance, but also would enable it to correlate the call with 911 calls from others at or near the scene and combine the information with video from nearby traffic cameras to assess the impact on traffic and identify the first responders that could reach the scene the fastest. In addition, if any vehicles in the accident had automatic collision notification systems, the PSAP would receive additional information regarding the severity of the crash that could help determine the likely medical needs of accident victims and the appropriate emergency medical response. Similarly, in a 911 call scenario reporting a crime such as a robbery or assault, NG911 would enable the caller to send important visual information such as a photo of the suspect or a vehicle involved in the crime, and would enable first responders to correlate this information with other sources, such as nearby security cameras, gunshot sensors, or alarm systems, and to quickly access relevant databases that could help identify the suspect or the suspect's vehicle.

24. In this NPRM, we primarily focus on developing text-based mechanisms that would serve as new primary media types for contacting a PSAP, supplementing voice calling capability and also supplementing or replacing TTY-based text. We consider photos and video as secondary media that may be used to augment a voice or text call. We recognize that this to some degree oversimplifies the potential media combinations that NG911 will ultimately support, ranging from single-medium communications (i.e., voice-only or text-only) to multi-media ''calls'' that may encompass combinations of interactive and stored media, including interactive voice, message-based and real-time text, photos, and both stored (previously recorded) and live video. However, for purposes of this NPRM, we focus on text as a primary media type and photos and video as secondary media types because in early NG911 deployments, primary communication between a caller and a PSAP is most likely to be voice-only or text-only and the availability of secondary media may differ based on caller device capabilities, PSAP and ESInet capabilities, and PSAP operational choices.

25. Based on the comments we received in response to the Notice of Inquiry, we can distinguish between a number of technical options for providing text-based and, in some cases, visual information (photos, video) to the PSAP. We briefly summarize these approaches below. We note that these options are not exclusive (i.e., a mobile device may support more than one option, either as an interim measure, or over the longer term). For purposes of this NPRM, we use the term ''caller'' to refer to the originator of the 911 communication, whether based on a traditional voice call, TTY call, or text message. We also discuss (1) mechanisms for providing caller location, both for routing and dispatch; (2) the ability of a caller to know whether his or her text message has been received by the PSAP; and (3) the possibility of establishing a session that permits the caller to conduct a conversation with the call taker.

26. TTY. With a TTY, a person with a hearing or speech disability can use a special text telephone to directly contact the PSAP, where the call taker uses a similar device to receive and transmit text. TTYs have a keyboard and allow people to type their telephone conversations. This two-way typing communication can occur with the person with the disability and the PSAP

call taker reading each other's responses on a small LED or backlit LCD screen. The disabilities community considers TTY an antiquated technology with technical and functional limitations, including its slow speed and half duplex mode; the inability of TTY tones to travel well using IP audio compression, transmission, and packet loss repair techniques without introducing text errors; and its Baudot text encoding standard used in the United States that does not include all of the characters used in modern text communication. Consequently, it is difficult for users to communicate URLs or email addresses, for example.

27. Text-to-Voice TTY-based telecommunications relay service (TRS). A TRS system is a telephone service that allows persons with hearing or speech disabilities, or who are deaf-blind, to place and receive telephone calls. With traditional TRS, a person with a communications disability uses a TTY to make a call through a communications assistant (CA), who is located at a relay center. To make a relay call, a TTY user calls a TRS relay center and types the number of the person he or she wishes to call, including 911. The CA then makes the call to the receiving party and relays the call back and forth between the parties by speaking what a text user types and typing what a voice telephone user speaks.

28. SMS-based. In SMS-based systems, the caller uses a mobile phone to send a short text message to the destination, which is typically either another mobile phone or an Internet-connected receiver. SMS messages are usually limited to 160 characters, although many modern handsets support concatenated messages that exceed this limit. Almost all existing mobile phones support SMS, except that non-service initialized (NSI) devices currently do not permit a caller to send an SMS message. SMS messages do not contain any information about the caller's location and do not identify the cell tower that received the SMS message from the caller's handset. SMS messages are delivered through an SMS gateway that relays the messages when capacity is available. Thus, SMS messages could in some circumstances be delayed, or even occasionally lost, when there is network congestion. Senders of SMS messages also may not receive confirmation that their message was delivered. More importantly, the sender may not receive an error message if the message was not delivered. SMS also does not support two-way real-time conversation, although SMS messages have identifiers that can allow users to exchange messages in a conversation-like manner.

29. IP-based messaging. There are at least three IP-based messaging mechanisms. However, not all of the IP-based messaging mechanisms are based on Session Initiation Protocol (SIP), which can be offered as part of the Internet Protocol Multimedia Subsystem (IMS). We provide a brief description of the three IP-based messaging mechanisms below.

- SIP-based pager-mode. In this mode, the mobile or stationary device uses SIP MESSAGE method to send text or Multipurpose Internet Mail Extensions (MIME) attachments, including photos, to a SIP user agent. Due to the messaging method employed, this method is often referred to as pager-mode, in contrast to session mode, which uses Message Session Relay Protocol (MSRP). Pager-mode requires an end-to-end IP connection between the originator and the PSAP, and either the originator or the SIP proxy may insert caller location using the SIP Geolocation header field. SIP responses allow the originator to determine whether the message has been delivered to the recipient. The SIP Call-ID may be used to maintain a conversation.
- Message Session Relay Protocol (MSRP). MSRP establishes a session between the message sender and the receiver that allows the exchange of a series of related instant messages. Typically, MSRP sessions are set up via SIP, similar to an audio or video session. As with SIP pager-mode, MSRP exchanges complete instant messages; however, MSRP imposes less of a burden on the signaling infrastructure.
- Other IP-based message-based protocols. We note that there are other proprietary and standards-based Internet text messaging protocols, such as Extensible Messaging and Presence Protocol (XMPP). However, it appears unlikely that a PSAP would be able to support all Internet text messaging protocols; thus, we believe that proprietary protocols are likely to be converted to one of the options above or to XMPP.

30. Real-Time Text (RTT). In RTT, individually-typed characters or groups of characters are transmitted as separate media packets, using the same basic protocol as audio and video sessions. This means that with RTT, unlike SMS or IP-based messaging, the recipient sees each character or word in the message almost immediately after the sender types it. RTT sessions can be established along with audio and video sessions and typically use SIP for session signaling.

31. The table below compares some of the core technical characteristics of the options discussed above.

	TTY	SMS-based	IP-based messaging	Real-time text (RTT)
Delivery to PSAP	Voiceband modem	SIP MESSAGE	SIP MESSAGE or MSRP	RTP payload.
Text	Only upper case letters, numbers, limited punctuation.	160 characters of plain text (some may allow longer text).	Any amount of text	Any amount of text.
Photos, videos in same message?	No	No	Yes	No.
Real-time audio and video in same session?	No	No	Yes	Yes.
Real-time text	Yes	No	No	Yes.
Full-duplex conversation (both sides can send messages at the same time).	No	Limited	Yes	Yes.
Location information	Yes, like voice call	Maybe (cell tower; may require cellular system changes).	Yes	Yes, via SIP signaling.
End-to-end message reliability and delivery confirmation.	No	No (may provide some confirmation for delivery to SMSC).	Yes	Loss detection and redundancy.
Message delay	Minimal	Variable—seconds to minutes.	Almost always < 500 ms	Almost always < 100 ms.

	TTY	SMS-based	IP-based messaging	Real-time text (RTT)
Authentication and message integrity.	None	Limited (relies on caller ID)	Messages can be cryptographically signed.	SRTP.
Conversation (session)	Like voice call	Only based on caller ID	Yes	Yes.

32. We seek comment on whether our description of texting methods and their capabilities in the above discussion is accurate and complete. Are there additional technical options that are likely to be available in the next few years? Are there additional key characteristics that the Commission should consider in evaluating these alternative technologies?

III. Discussion

33. Based on our analysis of information submitted in response to the Notice of Inquiry, we find that additional information is needed on the following issues related to text-to-911 and multimedia NG911 applications, and we therefore seek comment on these issues. First, what role, if any, should the Commission play in facilitating the short-term deployment of text-to-911 using existing infrastructure? Second, what role, if any, should the Commission play in facilitating the long-term deployment of non-voice emergency messaging services, including IP-based messaging and RTT, as well as multimedia applications that support delivery of voice, text, photos, video, and other data? Third, 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 Commission play in such efforts? Underlying all three of these issues is the question of whether the benefits of any potential Commission action to consumers and to public safety will substantially outweigh the associated costs. While acknowledging the potential difficulty of quantifying benefits and burdens, we need to determine whether those benefits outweigh the costs that enabling text-to-911 and other NG911 services impose on providers and PSAPs. Fourth, we seek comment on how best to coordinate this proceeding with our implementation of the CVAA and the recommendations of the EAAC. Fifth and finally, we consider the Commission's legal authority to take the regulatory and non-regulatory actions discussed in this Notice based on the record that develops on the issues described herein.

A. Facilitating the Short-Term Deployment of Text-to-911

34. In the Notice of Inquiry, the Commission highlighted the popularity and ubiquity of text messaging and the increasing likelihood that consumers will expect to be able to text to 911 during an emergency. Indeed, consumers send billions of SMS messages per day and more than two-thirds of mobile phone users have used text messaging. At the same time, many consumers are acquiring more advanced mobile devices (e.g., 3G and 4G handsets) that enable them to send texts using ''over the top'' software applications that they install on their phones and computers. Hence, any discussion about possible short-term deployment of text-to-911 must consider the feasibility of both SMS and currently available software applications (or software applications that could be developed relatively quickly) as interim platforms for text-to-911 until providers deploy more advanced NG911 technologies based on SIP and RTT. In deciding what role, if any, the Commission should play in such an interim deployment, we seek to maximize the benefits to consumers while also considering the burden on providers. We therefore seek comment on the expected benefits of facilitating NG911 deployment, the results of any ongoing trials and standards activities involving SMS and software applications, and the relative merits of using various approaches to achieve those benefits. When evaluating submitted comments, we intend to place more weight on the estimated impacts that are supported by hard data or are otherwise well-documented.

1. Expected Benefits of Text-to-911 Availability

35. Although quantifying the benefits of short-term deployment of text-to-911 may be difficult, we need to determine whether such a deployment will significantly benefit consumers and public safety. On this issue, responses to the Notice of Inquiry were divided. Several commenters argue that PSAPs and service providers should support SMS-based text-to-911 on an interim basis. Conversely, a number of commenters highlight the disadvantages of using SMS for emergency communications and argue that supporting SMS as an interim approach would undermine and divert resources from efforts to develop more comprehensive long-term solutions. These commenters urge the Commission to support standards-setting bodies that are working to develop a uniform approach for the delivery of NOVES. No comments were received on application-based approaches to text-to-911. Accordingly, we seek further comment on the benefits of using SMS and software applications for emergency communications, particularly with respect to improving 911 accessibility for people with disabilities, meeting consumer expectations, providing PSAPS with valuable additional information that they can in turn share with first responders on the ground, and increasing reliability and resiliency of 911 networks.

36. Accessibility of 911. The ability to text to 911 in the short term could substantially improve accessibility to 911 services for people with disabilities. In recent years, people with hearing and speech disabilities have increasingly migrated away from specialized legacy devices such as TTYs and towards more widely available forms of text communications because of the ease of access, availability, and practicability of text-capable communications devices. This migration is most apparent in the declining use of telecommunications relay service (TRS) over the PSTN, where the average monthly usage for TTY-voice based relay service dropped 87% between 2000 and 2010. Moreover, as noted in the NOI, the ICO Plan found that ''[t]he biggest gap between the technologies used for daily communication and those that can access 9–1–1 services is that for the deaf and people with hearing or speech impairments.'' In the EAAC's survey, in which respondents were primarily drawn from people with disabilities, 48.1% of respondents stated that they would prefer to use text messaging to contact 911.

37. Developing text-to-911 capability in the short term could also provide benefits by making 911 accessible to consumers in the so-called ''silent call'' scenario (i.e., in situations where the caller needs to contact the PSAP silently or surreptitiously because placing a voice call could put the caller in danger). Commonly cited examples of

the silent call scenario include burglaries, home invasions, kidnappings, and hostage situations where a crime is in progress and the caller does not want to attract the perpetrator's attention.

38. Toward that end, we seek more information on the benefits and associated costs of facilitating short-term text-to-911 solutions that can quickly improve the accessibility of the 911 system. To what extent can such short-term solutions assist individuals with hearing or speech disabilities? How frequently do people in emergencies encounter a silent call scenario where inability to send a text message to 911 could compromise the caller's safety? Can SMS provide significant accessibility benefits in these situations even if it does not offer real-time connectivity or enable the caller to send photos or videos, unlike some longer-term solutions under development? How, if at all, will receipt of texts allow PSAPs to better communicate information about an emergency situation to first responders on the ground? What, if any, costs will PSAPs incur to implement short-term text-to-911 solutions? Are there capacity limits on PSAPs' ability to accept texts to 911? With respect to interim text-to-911 solutions based on software applications, these may only be available on some mobile devices and may require additional steps by the user, both to install the application and to send the 911 text message. Is this a worthwhile trade-off to allow for earlier access to such capabilities than might otherwise be available if we were to wait for device replacement and fully-integrated NG911 services?

39. Consumer expectations. Another potential benefit of implementing text-to-911 in the short term is that it could help meet rapidly changing consumer expectations regarding the desired capabilities of the 911 system. According to the Pew Center, more than 7 out of 10 cell phone users send or receive text messages. With the increased use of text messaging, consumers could expect that their use of SMS extends to 911. We seek comment on whether promoting or requiring short-term text-to-911 solutions accurately reflects current and evolving consumer expectations and the needs of PSAPs and first responders. Does the rapid growth in the popularity of SMS messaging generate consumer expectations that SMS will support 911 texting? We seek information regarding how many people have attempted to text to 911 during emergencies but failed. Have there been instances where the ability to send a text message to 911 could have made a significant difference in the ability of first responders to assist the caller or the speed of the response? We also seek information that quantifies the impact that incorrect consumer expectations about the ability to text to 911 may have on the health and safety of the public.

40. Improved information for PSAPs. As we have noted above, in addition to improving communications between consumers and PSAPs, NG911 has the potential to enhance the ability of PSAPs and first responders to assess and respond to emergencies in real-time based on the texts, photos, and videos that consumers send to them, combined with information gathered and correlated from other sources. In this regard, what benefits, if any, could the short-term deployment of text-to-911 (which would not include the capability to transmit photos or video) provide PSAPs and first responders? For example, could texts to 911 provide additional information to assess the nature and severity of an emergency, help apprehend criminal suspects, speed emergency response, reduce the need to dispatch multiple types of emergency response (e.g., sending police, fire, and emergency medical personnel to a scene because the nature of the emergency is undetermined), or make it easier to screen potentially fraudulent or malicious calls? How do such benefits compare to the cost of short-term deployment of text-to-911? Would short-term implementation of text-to-911 increase the volume of 911 traffic or the time and resources required for PSAPs to process information as compared to handling voice calls? If so, are PSAPs equipped to handle such increases? If not, what do PSAPs need to do to prepare and what resources do they require?

41. Improved reliability and resiliency. In large-scale disasters, circuit-switched landline and mobile networks may become overloaded, making it more difficult to place a 911 voice call. As landline and mobile networks migrate from circuit-switched to IP-based packet-switched technology, the risk of overload or congestion may dissipate, but in the interim, enabling SMS and IP-based text messages to 911 could be beneficial because text consumes far less bandwidth than voice and may use different spectrum resources or traffic channels. Thus, people in disaster areas may still be able to send text messages to 911 even if they cannot place a voice call. Similarly, with improved technology, PSAPs may be able to filter text messages by incident, so that they spend less time with voice callers who report the same incident. We seek comment on the prospective impact of text messaging on PSAP operations and emergency response during large-scale disasters, with particular emphasis on experiences of overload-induced 911 failures. For example, there have been news reports that cell phone service, including the ability to reach 911, was impaired immediately after the August 23, 2011 East Coast earthquake, while SMS and email did not experience service disruptions.

2. Ongoing Text-to-911 Trials

42. To date, there have been only a small number of SMS-to-911 trials in the United States, although a number of jurisdictions are reportedly considering trials or near-term implementations. In 2009, Intrado and i wireless, a T–Mobile affiliate, initiated an SMS-to-911 trial in Black Hawk County, Iowa. In this trial, only Black Hawk County residents who subscribed to i wireless were able to make use of the text-to-911 service. Text messages sent in the trial did not carry location information, so users were prompted to enter their zip codes before the text message was forwarded to the PSAP. Despite the limited nature of the trial, county representatives have credited text-to-911 with positive outcomes in several emergency situations. On the other hand, AT&T contends that publicity about the Black Hawk County trial resulted in confusion that ''spread throughout the country'' regarding where text-to-911 was available.

43. In August 2010, the Marion County, Florida, Sheriff's Office developed an in-house text message to 911 system. Named ''ADD IT NOW,'' the program enables the Sheriff's Office Communications Center to receive urgent text messages on a dedicated screen that uses a yellow indicator light to signal incoming texts. The Sheriff's Office has advertised the availability of the number and has encouraged local citizens to add the number to their phone directories. The Sheriff's Office reports that the system cost $1,000 to develop and costs approximately $50 per month to maintain. The system does not convey location information.

44. On August 3, 2011, the City of Durham, North Carolina, announced an SMS-to-911 trial in partnership with Intrado and Verizon Wireless. According to Durham, the trial is specifically designed for two types of emergency scenarios: emergency help requests from people with disabilities and from people not wanting someone to hear them make a 911 call. When receiving a text, the Durham PSAP will not be able to automatically determine

the caller's location. To ensure that consumers are aware of this limitation, the city is making efforts to educate the public that they must include location information when sending an SMS-to-911. Durham has scheduled the trial to conclude on January 31, 2012, and will restrict the trial to Verizon Wireless customers in areas served by the Durham PSAP.

45. In June 2011, Cassidian Communications announced the successful completion of a ''simulation'' SMS-to-911 trial in Harris County, Texas, involving the Greater Harris County backup PSAP. According to Cassidian, ''[t]he testing during the trial utilized automatic location identification (ALI) capabilities allowing for the call takers to identify the location of the caller * * * Many operational implementation and procedure related elements remain to be discussed and ultimately implemented * * * It is anticipated that the technology will be available to the deaf and hard of hearing population in the GHC 9–1–1 territory within a year [after June 20, 2011] and subsequently will be offered to the rest of the population.'' Unlike the Black Hawk County and Durham trials, this trial did not involve members of the public.

46. Several European countries, including Estonia, Iceland, Luxembourg, Sweden, and the United Kingdom offer emergency SMS services or are planning to offer such services in the near future. In all of these countries, the SMS message does not automatically include location information, which the sender of the SMS message is expected to provide manually. The Swedish SMS system, however, is capable of determining cell-tower location. In all of these countries, the SMS service is primarily directed towards people with disabilities and requires users to register in advance of using the service. Additionally, after the SMS PSAP receives and processes a text message, it forwards the necessary information to the appropriate voice PSAP. We seek comment on the above-described text-to-911 trials and on text-to-911 services offered in these countries. What are the advantages and disadvantages of the various approaches to text-to-911? What lessons could the United States draw from the international examples?

47. Standards. We seek comment on any standards-development activities by industry or standards-setting bodies that may play a role in the short-term deployment of text-to-911 services based on SMS or software applications. We also seek comment on whether there are any additional text-to-911 trials or standards efforts that have been conducted thus far or that are contemplated in the near future. We request that commenters provide the Commission with any relevant data that has been gathered from these trials and standards-setting efforts, including the number of individuals who sent text messages to 911 during the trials, whether PSAPs could locate those callers, and the effectiveness of texting as a means of communicating with PSAPs.

3. Approaches Based on SMS and Existing Infrastructure

48. In the Notice of Inquiry, the Commission sought comment on a number of issues related to SMS-to-911. The Notice of Inquiry recognized that SMS is not a synchronous messaging service and therefore does not provide a means for the sender to know whether and when his or her message has reached its destination. It also noted that because each SMS message is independent of its predecessors and successors, messages within the same logical conversation may not be routed to the same destination or in the proper sequence. Further, the Notice of Inquiry referenced concerns about whether the recipient of an SMS message could reliably and accurately determine the sender's geographic location.

49. Comments. Wireless providers and some industry standards bodies are generally opposed to adopting or requiring SMS-to-911 as an interim solution. Many wireless providers argue that SMS is unreliable and should not be used for emergency communications. AT&T contends that ''SMS suffers from significant limitations that make it both dangerous and infeasible to rely on for emergency communications,'' because there is no guarantee of delivery for SMS messages and no acknowledgment provided to the sender. AT&T characterizes SMS as ''a best-effort, store-and-forward service [making] it unreliable and prone to unacceptable delays for purposes of emergency communications.'' T-Mobile and Verizon similarly argue that SMS lacks important functionalities and reliability that are needed for a viable emergency communications service. Verizon argues that the interests of PSAPs, consumers, and service providers ''would be better served by focusing on incorporating RTT and more advanced messaging technologies into IP-based platforms and into the wireless industry's deployment of 4G LTE technology.'' ATIS notes that current SMS standards do not support automated routing to the PSAP or automated location information, which are critical to emergency communications. Further, ATIS argues that because of ''the higher probability of SMS-to-911 message failure, liability protection for SMS-to-911 services must be far stronger than that currently provided for voice calls.''

50. Public safety commenters express similar concerns about SMS-to-911. NENA states that ''[t]oday, SMS lacks many of the characteristics needed to support quality emergency communications.'' NENA therefore ''does not advocate the use of SMS as a means to access 9–1–1 systems.'' APCO notes that ''there are a number of Quality of Service concerns with the use of SMS to 911.'' Wichita-Wilbarger states that ''SMS messaging is distinctly unsuitable for communications with emergency services [because] SMS messaging does not allow for real-time communication [which] raises the possibility of miscommunication with the PSAP.''

51. However, some 911 technology and software providers support the use of SMS as an interim solution for emergency communications and contend that there are ways to overcome some of its technical limitations. TCS states that ''based on existing public expectations both from current SMS users and members of specialized communities, it is generally accepted that the introduction of SMS to 911 is inevitable.'' TCS also notes that ''SMS to 9–1–1 communication can be controlled so that a Dispatcher receives information that is timely, dependable, and adequate enough to make a professional dispatch decision.'' Moreover, TCS states that it has ''demonstrated in its laboratory and in limited field experiments that SMS emergency service can be provided reliably and in the near term.'' TSAG maintains that ''under certain emergency settings, SMS messaging represents an important (at times only) alternative to voice communications [and] public expectations suggest NG911 systems be configured to accept and manage SMS based emergency communications, notwithstanding the technical and operational 'challenges'.'' Intrado maintains that ''SMS is a viable, reliable, interim solution for situations in which those who are in emergencies are not in a position to place a voice call to 9–1–1.'' The ATIS INES Incubator is considering several interim solutions for text-to-911 and divides these solutions into two groups, ''consumer to PSAP'' and ''consumer to relay services to PSAP.'' Among the ''consumer to PSAP'' solutions that the ATIS INES Incubator is considering are: emergency voice call then SMS, emergency voice then web chat, instant messaging, RTT direct to PSAP, RTT converted to TTY,

TTY emulation, video ASL, and SMS direct to PSAP. Among the ''consumer to relay services to PSAP'' solutions that the ATIS INES Incubator is considering are: IP relay service, video relay service, national SMS relay, national RTT relay, and home PSAP relay.

52. L.R. Kimball (Kimball) ''supports the development of a SMS to 911 solution'' and believes that many of the limitations cited by other parties can be resolved by ''[s]electing a different point of interconnection between the SMS system and 911.'' According to Kimball, such limitations are the ''consequence of the selected point-of-interconnection (POI) between the SMS system and 911, namely, at the store-and-forward service,'' however, selecting a different POI ''may permit many of these problems to be resolved and, if implemented properly, should not seriously or significantly impact the operation of the existing SMS system.'' Specifically, Kimball argues that ''a store-and-forward function need not exist between the SMS originator and [a] PSAP, provided a suitable POI can be found ahead of the store-and-forward function.'' Further, according to Kimball, specific elements of the telephone industry standard Signaling System 7 (SS7) network can provide ''an effective and convenient POI for interconnecting SMS systems with a new 911-specific SMS service'' and many mobile telephone switches allow for the design of ''several possible mechanisms that can be used to separate SMS to 911 messages from normal SMS processing.'' Consequently, Kimball contends that ''with SMS to 911 messages separated from the SMS system, it becomes possible to implement a dedicated SMS to 911 [Signaling Control Point (SCP)] [that] can address most, or even all, of the technical objections to a SMS to 911 service and can do so without impacting the SMS store-and-forward functions that are in widespread use today.'' An SMS to 911 SCP can perform functions such as ''gateway and protocol conversion functions from SS7 to NG911, including signaling and media conversion''; ''assigning a 'session identifier,' so that successive SMS messages (from the same phone) reach the same dispatcher via the NG911 network''; ''providing acknowledgement or negative delivery text messages back to the originator of the emergency text message''; and ''querying the wireless carrier's position determining system in an attempt to locate the originator's location.''

53. Discussion. The record indicates that SMS-to-911 has a number of technical limitations that affect its ability to support reliable emergency communications. SMS is essentially a store-and-forward messaging service that is not designed to provide immediate or reliable message delivery; does not support two-way real-time communication; does not provide the sender's location information; and does not support the delivery of other media such as photos, video, and data. All of these factors appear to make SMS inappropriate as a long-term text-to-911 solution and warrant caution in encouraging it as a short-term solution. At the same time, SMS-to-911 offers certain significant potential benefits as an interim solution. It can be deployed relatively quickly, consumers have already embraced the technology, and the vast majority of wireless providers and mobile devices support SMS. Moreover, the trials in other countries that we described above indicate that SMS can supplement voice-based 911 services. In addition, some commenters have suggested that it is possible to overcome or mitigate some of the technical limitations of SMS at a reasonable cost to providers, PSAPs, and consumers.

54. Balancing these considerations, we believe that PSAPs, providers, and vendors should have the option to implement SMS-to-911 as a short-term alternative. We seek comment on this view and on whether the benefits of leveraging SMS-to-911 on an interim basis outweigh the limitations of SMS. We also encourage SMS-to-911 trials by interested parties to develop improved information about the strengths and limitations of this approach, and we request that participants in ongoing and future trials (existing and future) submit their trial data and findings in this proceeding.

55. We also seek comment on the feasibility of overcoming or mitigating SMS technical limitations at a reasonable cost to providers, PSAPs, and consumers. Specifically, we seek comment on Kimball's proposal regarding selecting a different point of interconnection between the SMS system and 911. How technically feasible is this solution, and on what percentage of mobile switching infrastructure could it work? Kimball notes that ''there is no business or regulatory driver to implement a SMS to 911 interconnection [and] implementation and maintenance would be an additional cost to providers and there is no process in place to recoup those expenditures.'' We seek comment on the costs of implementation of this proposal, including ongoing maintenance and operation costs. We also seek comment on any activities by standards-setting bodies that may play a role in the short-term deployment of SMS-based text-to-911 services. Intrado argues that any text-to-911 ''solution should use the digits 9–1–1.'' We seek comment on whether a national short code for SMS-to-911 should be designated by the Commission, a standards-setting body, or some other entity. If so, how should this short code be designated and implemented?

56. Further, one limitation that most commenters recognized is the inability of SMS to provide accurate location information for routing or PSAP dispatch purposes. To overcome this limitation, would it be technologically feasible for the recipient of an emergency SMS, such as the ALI database provider, to query for the location using the phone number provided, assuming that it can identify the originating provider? Have such techniques been tested experimentally? If this is feasible, could such a query work for all SMS messages or would it only be available for certain classes of messages (e.g., only for messages sent while the user is not roaming or for domestic customers)? Are there other limitations? If there are such limitations, is there data to quantify the fraction of SMS messages or users likely to be affected, extrapolating from non-emergency use of SMS? What costs would be associated with such a solution? How much time would separately checking the ALI database to determine the location of an individual texting to 911 add to response time?

4. Approaches Based on Software Applications

57. As noted above, many consumers are acquiring more advanced mobile devices (e.g., 3G and 4G handsets) that enable them to install applications on their phones, including applications to send text messages without using SMS or MMS, sometimes referred to as ''over the top.'' We seek comment on the feasibility of using general texting or 911-specific applications to support a transitional non-voice NG911 system that would allow consumers to send text and other non-voice media to PSAPs. Such a system would consist of two components: (1) One or more databases that describe where text-to-911 capabilities are available and how to reach the appropriate PSAP; and (2) one or more software applications for smartphone operating systems. Providers and third parties, including but not limited to systems vendors that currently provide services and equipment to PSAPs, could develop such applications. The application

would obtain location information, including cell tower identity, from smartphone operating systems and would rely on standard IP connectivity to deliver a message to the right destination based on a location database. The database would map approximate location data to a PSAP or ESInet IP address or indicate that text service is not available for that location.

58. This system architecture has several potential benefits, including the fact that it could be rolled out in a relatively short period of time and that it would not require any major provider network or mobile handset upgrades. We seek comment on the costs and timeframe for deploying such a system. How would such a system be structured to reduce the time to deployment, minimize the effort required by providers, and maximize the operational reliability of the system? We also seek comment on whether it would be possible for this system to support other media besides text, including voice, video, images, and data. Could the system be made compliant to existing and emerging standards? Would PSAPs need to have access to broadband IP connectivity or should the system allow for translation of text messages (e.g., to TTY-based messaging)? Would PSAPs need to install any additional software or hardware? If so, what specific costs would be associated with such installation? Is it possible for an application to automatically detect whether a PSAP is capable of receiving only text or also other advanced media types, such as images? How would an entity or entities be selected to build and maintain the national database(s) of where text-to-911 applications work and what costs are associated with creating and maintaining a database? Who should bear those costs? What entities would provide the smartphone application? Should there be a process whereby applications are certified in some way? If so, what entity should perform this certification?

59. Under this system, only users of smartphones would be able to install the applications that would enable them to send text messages to 911. How, if at all, should the Commission address this issue? Could the system outlined above be adapted to handle SMS messages after translation to a SIP-based message format? Are there prototypes or alternatives of application-based NG911 systems that the Commission should consider as models? Are there any activities by standards-setting bodies that may play a role in the short-term deployment of text-to-911 services based on software applications?

B. 911 Prioritization in Major Emergencies

60. A critical feature of public safety is the ability of persons in need of assistance to have reliable access to emergency services, especially during times of major disasters such as large-scale natural and man-made disasters. The August 23, 2011 East Coast earthquake and Hurricane Irene demonstrated that concentrated demands on the capacity of commercial communications networks during and immediately after emergencies can hinder the ability of consumers to make voice calls. This, in turn, could jeopardize consumers' ability to contact 911, potentially leaving 911 callers without the assistance they need. We seek comment on how best to address this concern in both legacy networks and the emerging broadband networks that will support NG911.

61. One way to enhance consumers' ability to contact 911 in the wake of a disaster is to prioritize 911 traffic over non-911 traffic. Accordingly, we seek comment on whether GSM and CDMA networks are able to support prioritization of 911 calls. If so, are wireless providers currently prioritizing 911 calls to their respective radio access networks (both for GSM and CDMA networks)? What are the costs of incorporating 911 prioritization technology, to the extent it exists, into these networks? What are the qualitative and quantitative benefits of doing so? Are 911 prioritization technologies for GSM or CDMA networks used outside of the United States today, and if so, where and what has been the experience with these technologies, including with respect to their reliability? If not, can anything be done to improve them to support 911 use? Are there similar concerns about network congestion inhibiting 911 calls on wireline networks? If so, do providers prioritize wireline 911 calls, or should they? What are the advantages and disadvantages of doing so? Would prioritizing 911 calls during and after a major emergency limit the ability of consumers to complete non-911 calls that serve a socially important purpose, such as calls to confirm the safety or whereabouts of family members?

62. Another way to improve consumers' ability to reach 911 in the wake of a disaster is to encourage users to limit their use of the network so that calls to 911 are more likely to go through. Could legacy service providers take preparatory or preventive measures to mitigate congestion and thereby increase the likelihood that consumers are able to contact 911 during major disasters? Are there best practices that providers or others could encourage consumers to follow to mitigate congestion after major disasters? Would the network protocols and systems used for Wireless Priority Services (WPS) be suitable for prioritizing 911 calls, and if so, would any adjustments be needed?

63. As discussed above, after the East Coast earthquake on August 23, 2011, many consumers were unable to make voice calls, but they could send text messages. To what degree would the deployment of text-to-911 capability improve the ability of consumers to reach 911 during a major disaster by reducing network congestion? What are the relative costs and benefits of short-term deployment of this capability through retrofitting of legacy networks versus developing text-to-911, as well as the priority mechanisms discussed above, as basic components of emerging and future broadband networks? We seek comment on these issues and ask commenters to address any other significant considerations with respect to industry standards and practices, including any evolving trends and industry initiatives addressing the avoidance or mitigation of 911 service disruptions during major disasters.

64. We also seek comment on the potential for prioritization of 911 traffic in existing and future mobile broadband networks. For example, Long Term Evolution (LTE) provides mechanisms for prioritizing traffic through capabilities such as Allocation Retention Priority (ARP), which assigns fifteen levels of priority. We seek comment on whether these capabilities and/or other LTE and IMS capabilities can support prioritization for 911 calls. We seek comment on the technical feasibility, potential benefits, and costs of doing so. Do wireless providers intend to prioritize 911 calls on LTE or IMS networks? Are they incorporating this technology into their commercial networks today? What costs are associated with incorporating such technology into LTE or IMS networks, and what are the qualitative and quantitative benefits of doing so? Would PSAPs need to make any changes to their facilities to ensure appropriate prioritization of 911 calls delivered over LTE or IMS? If so, what costs would be associated with such changes? What NG911 standards are being developed for LTE or IMS technologies and networks, if any, that would reduce the risk of network congestion? Should standards-setting bodies consider additional standards to address this matter? Should broadband networks be configured to support prioritization of

911 calls? If so, how can that be done cost effectively?

65. We note that in the Open Internet Order, the Commission specifically stated that nothing in our Open Internet rules ''supersedes any obligation or authorization a provider of broadband Internet access service may have to address the needs of emergency communications or law enforcement, public safety, or national security authorities, consistent with or as permitted by applicable law, or limits the provider's ability to do so.'' We believe that to the extent the 911 prioritization alternatives considered here would apply to broadband Internet access service providers, they fall within this provision. We seek comment on this view. In addition, in the Open Internet Order, we declined to adopt a requirement that network managers provide public safety users with advance changes in network management practices that could affect emergency services, but we ''encourage[d] broadband providers to be mindful of the potential impact on emergency services when implementing network management practices, and to coordinate major changes with providers of emergency services when appropriate.'' Would the same approach be appropriate in the context of 911 prioritization?

66. Are there any other legal issues involved in prioritizing 911 traffic? For example, to the extent a 911 call is carried by a provider subject to section 202(a), would prioritization of a 911 call be considered ''discrimination,'' and if so, would it be considered a reasonable form of discrimination? What other legal issues, if any, would need to be considered and addressed?

67. Further, with respect to legacy networks and emerging broadband networks, we seek comment on how service providers and public safety officials would manage and coordinate prioritization of 911 traffic in emergency situations. What role should service providers and public safety officials play in determining the need for and scope of prioritization in mobile wireless networks? Should 911 prioritization be implemented temporarily based on the specific conditions of the emergency, or should it be implemented on a permanent basis? If prioritization were temporary, who should determine when to initiate it and when to terminate it?

C. Facilitating the Long-Term Deployment of NG911 Text and Multimedia Applications

68. In deciding what role, if any, the Commission should play in the long-term deployment of NG911 text and multimedia alternatives, we seek to maximize the benefits to consumers from any action we would take while taking into consideration the costs of compliance for providers and PSAPs. We therefore seek comment on the expected benefits of facilitating that deployment, the results of any ongoing trials and on the activities of standards-setting bodies involving texting services and multimedia applications (including data, photos, and video), and the relative merits of using various technical approaches to achieve those benefits. As in our prior evaluation of short-term alternatives, when evaluating the record with respect to long-term alternatives, we intend to place significantly more weight on the estimated impacts that are supported by hard data or are otherwise well-documented.

1. Expected Benefits of Availability of NG911 Text and Multimedia Applications

69. Although quantifying the benefits of a long-term deployment of texting and multimedia applications for emergency communications may be difficult, we need to determine whether such deployment will significantly benefit consumers. Therefore, as in the case of short-term alternatives, we seek more information on the benefits of long-term NG911 applications, particularly with respect to improving 911 accessibility for people with disabilities, meeting consumer expectations, providing PSAPs with valuable additional information, and increasing reliability and resiliency.

70. Accessibility of 911. Long-term NG911 applications based on based on SIP and RTT also have the potential to provide substantially improved accessibility to 911 services for people with disabilities, as well as to provide an alternative means for non-disabled people to access 911 when voice access is unavailable or could pose risks to the caller, for example in a silent call scenario. This finding is supported by EAAC survey data showing that 48.1% of respondents drawn primarily from the disabilities community would prefer to use text messaging to contact 911. Further, as noted in the Notice of Inquiry, the ICO Plan found that ''[t]he biggest gap between the technologies used for daily communication and those that can access 9–1–1 services is that for the deaf and people with hearing or speech impairments.'' In addition, to the extent that long-term alternatives support not only text, but also video and multimedia applications, they could enhance accessibility for people with disabilities who rely on media other than text to communicate.

71. We therefore seek more information on the benefits and associated costs of facilitating advanced text-to-911 and multimedia services, such as those based on SIP and RTT, to improve the accessibility of the 911 system. How do these benefits and costs compare to the benefits and costs of the short-term solutions discussed earlier? To what extent can advanced text and multimedia services assist individuals with hearing or speech disabilities or those who are deaf-blind? What benefits are created by the ability of these services to offer real-time connectivity or to enable the caller to send photos, videos, or data? To what degree will improvements in accessibility associated with text and multimedia services be limited to people with advanced mobile devices? If so limited, what are the likely consequences for people with disabilities who may not be able to afford smartphones that provide such capabilities?

72. Consumer expectations. SIP-based text-to-911 capable of supporting RTT could help ensure that the 911 system meets consumer expectations regarding the ability to make multimedia transmissions to PSAPs in a next-generation environment. We therefore seek comment on whether promoting or requiring delivery of text and multimedia communications accurately reflects current and evolving consumer expectations and the needs of PSAPs and first responders. We seek information regarding how many people have attempted to send multimedia applications (including data, photos, or video) to 911 during emergencies but failed. Have there been instances where the ability to send multimedia applications to 911 could have made a significant difference in the ability of first responders to assist the caller or the speed of the response? We also seek information that quantifies the impact that incorrect consumer expectations about the ability to send multimedia applications to 911 may have on the health and safety of the public.

73. Improved information for PSAPs. Long-term NG911 alternatives founded on SIP-based standards will not only support text-to-911, but also will support multimedia sessions that combine voice, text, photo, and video capability. Such multimedia applications will provide PSAPs and first responders with valuable additional information to assess the nature and severity of an emergency and determine the appropriate response. PSAPs and first responders may use such additional information to speed

their response or determine the type of response required (e.g., whether to dispatch police, fire, or EMT units). For example, as noted above, in a traffic accident, NG911 would not only enable the PSAP to receive the 911 call for help from the caller seeking assistance, but also would enable it to correlate the call with 911 calls from others at or near the scene and combine the information with video from nearby traffic cameras to assess the impact on traffic and identify the first responders that could reach the scene the fastest. In addition, if any vehicles in the accident had automatic collision notification systems, the PSAP would receive additional information regarding the severity of the crash that could help determine the likely medical needs of accident victims and the appropriate emergency medical response. In some cases, enhanced information could lead to quicker apprehension of criminal suspects or could facilitate screening of potentially fraudulent or malicious 911 calls. For example, the PSAP could ask a caller to take a picture or video of the scene of an alleged incident to verify that the caller is indeed close to the scene. In the Technical Background section, we explained that NG911 technologies also include a number of multimedia applications, which are broader than just person-to-person text and messaging services. Are there any steps the FCC should take now to encourage further development of those technologies?

74. We seek comment on the benefits of providing additional information to PSAPs, particularly if supported by data, for example on the incidence of fraudulent calls, or descriptions of emergency incidents where multimedia information could have been helpful. We also seek comment on the benefits of supporting video communications for people with disabilities who have come to rely on this mode of communication on a daily basis, such as persons who use American Sign Language. Finally, we seek comment on whether PSAPs are equipped to handle an increased volume of data from multimedia applications. How will PSAPs process and sort through such information? What additional resources, if any, will they need to be able to do so?

75. Improved reliability and resiliency. IP-based messaging services could contribute to improved reliability and resiliency of emergency response networks because they generally consume less bandwidth than voice calls and may use different spectrum resources or traffic channels. This may enable people in disaster areas to send text messages to 911 even if they cannot place a voice call. Similarly, as 911 network technology migrates from circuit-switched to packet-switched networks with improved technology, PSAPs will have more tools to filter text messages by incident, so that they can spend less time with multiple callers reporting the same incident. For example, IP-based text and multimedia could be combined with other technologies such as device-to-device communication (e.g., automatic crash detection) to process information more efficiently. We seek comment on the impact of IP-based messaging solutions on PSAP operations and emergency response during large-scale disasters. How do the benefits and costs compare to the benefits and costs of short-term text-to-911 solutions discussed earlier?

2. Standards Development for NG911 Applications

76. Standards. We also seek comment on ongoing activities of standards-setting bodies regarding deployment of IP-based text and multimedia emergency services for next generation networks. In the Notice of Inquiry, the Commission noted that ''[w]hile the basic components of identification, location lookup, and call routing are present in all NG911 proposals, there have been at least three different proposed approaches for how to implement these elements in specific networks.'' The three proposals noted by the Commission were the ATIS 'Considerations for an Emergency Services Next Generation Network (ES–NGN)'; the NENA architecture based on Internet Engineering Task Force (IETF) protocols; 'NENA Functional and Interface Standards for Next Generation 9–1–1 Version 1.0 (i3)'; and the 3rd Generation Partnership Project architecture; 'IP Multimedia Subsystem (IMS) Emergency Sessions.

77. NENA has noted that NENA and 3GPP requirements must be aligned to make NG911 available. We seek comment on whether such alignment is necessary and, if so, how much time is needed to effectuate an alignment. What benefits would such alignment provide? The 3GPP architecture is compatible with NENA's i2 architecture. While NENA's i2 permits VoIP providers to send 911 voice calls and location information to PSAPs, 3GPP extends the i2 solution to include text and video. We seek comment on whether aligning 3GPP with NENA's i3 requirements would result in substantive changes to NENA specifications, 3GPP specifications, or both. What costs, if any, are associated with aligning NENA and 3GPP requirements? We also seek comment on whether it would be necessary to align these requirements and specifications with ATIS' proposals. Can protocol gateways be used to connect i3 systems to, for example, 3GPP IMS systems? What functionality would these gateways need to support? Do these gateways pose potential scaling or reliability problems? Are there any technical specifications or requirements needed to further the development of the more advanced devices and functionalities that are broader than just person-to-person text and messaging services?

78. NENA has also indicated that more recent versions of its NG911 technical specifications and its NG911 transition plan will be needed for the 3GPP/NENA alignment. As noted above, 3GPP has published a report on the use of NOVES that provides a general description of perceived needs. In addition, ATIS has created its INES Incubator. We seek comment on when these interim and final specifications for handling NOVES are likely to be published. Will there be alignment issues involving NOVES and INES? Are there additional specifications or requirements needed to implement long-term NG911 solutions for text and multimedia? Have any additional efforts to develop NG911 standards been conducted to implement these specifications, requirements, or solutions? We request that commenters provide the Commission with any relevant data that has been gathered from these efforts to develop NG911 standards.

3. Approaches Based On IP-Based Messaging or Real-Time Text

79. As noted above, there are at least three IP-based messaging mechanisms, including SIP-based pager-mode, MSRP, and XMPP. We also provided a description of RTT, which permits characters to be sent when typed. Further, we described ATIS' INES Incubator program and other next generation text-to-911 standards-setting initiatives.

80. Comments. Wireless providers generally argue that SMS-to-911 should not be part of the NG911 framework. Instead, providers maintain that industry should be given additional time to develop standards for IP-based emergency services, such as NOVES. According to T-Mobile ''[r]ather than expend resources trying to make SMS work for 911, stakeholders should instead focus on next-generation communications services that will provide better 911 access to all consumers.'' CTIA argues that ''[a] new messaging suite will provide functionality similar to and exceeding

current messaging services and is expected to be incorporated into a future release of the LTE standard.'' According to CTIA, NOVES is anticipated to be finalized by September 2012 as part of 3GPP Release 11. CTIA argues that ''industry and the Commission need to weigh the benefits of proposed interim solutions against the risk of delay to such long term solutions for which development efforts are entering the advanced stages.'' AT&T recommends that the Commission ''encourage work by industry groups such as NENA, ATIS, and 3GPP to develop standards for NOVES for next generation networks that include non-SMS text based messaging options.'' Verizon states that ''significant activities are under way to develop a uniform approach for the delivery of * * * NOVES * * * including the use of messaging for emergency services. RTT, which will be feasible for NG911 networks and consumer equipment, is still undergoing assessment but has been standardized by 3GPP as the optimal replacement for legacy TTY/TDD devices in 4G wireless communications networks [and] the Commission should support and monitor these efforts, and not be distracted by less effective interim measures.''

81. CSRIC 4B notes that ''a long term solution may be provided by * * * NOVES * * * a new service for which requirements are being developed in the NENA Next Generation Messaging Group and in the 3GPP SA1 group.'' According to CSRIC 4B, ''The NENA Next Generation Messaging Working Group is currently developing use cases and requirements for NOVES, and those requirements are expected to be aligned with those in the ATIS Wireless Technology and Systems Committee (WTSC) and 3GPP SA1, which will be, at some future point, standardizing NOVES. Further, according to CSRIC, ''When 3GPP SA1 completes the requirements for NOVES, other 3GPP groups will determine whether network architecture changes are needed and whether any new protocols (or changes to existing protocols) are needed to support NOVES.'' CSRIC 4B estimates that work on NOVES industry standards may be completed by March 2012.

82. Public safety commenters also have concerns about SMS-to-911 and generally support RTT as a text-to-911 solution. APCO notes that ''there are a number of Quality of Service concerns with the use of SMS to 911'' and that ''RTT has the potential benefit of allowing hearing-impaired or speech-impaired individuals to communicate directly, in real time, with an NG911 capable PSAP, rather than having to be routed through an intermediary service.'' NENA states that ''[d]ue to its more conversational flow, Real-Time Text * * * is a preferred method of communication for many text users, and particularly for individuals with disabilities.'' NENA also notes that ''standards-compliant RTT should be supported in all NG9–1–1 deployments.''

83. Discussion. We seek comment on the timeframe in which standards are likely to be completed for RTT or other IP-based messaging solutions, and how much additional time will be required for providers to implement these solutions in their networks. What are the advantages and disadvantages of RTT and other IP-based messaging solutions, and which solutions show the most potential for allowing individuals to communicate with 911? Should the Commission play a more active role in monitoring or facilitating the standards-setting process, or should it not act until next generation non-voice emergency messaging standards are closer to being finalized? Should the Commission coordinate a voluntary industry-wide timetable or establish a mandatory timetable for standardization, implementation, and roll-out to facilitate planning by manufacturers, software vendors, and PSAPs?

4. Approaches Based on Software Applications

84. In our discussion of short-term alternatives, we sought comment on developing ''over the top'' software applications that would enable consumers to send text messages and other non-voice media to PSAPs using IP networks. We specifically sought comment on the feasibility of developing a non-voice NG911 system in the short term that would consist of two components: (1) A database or databases that would identify where text-to-911 capabilities are available and how to reach the appropriate PSAP and/or text answering center; and (2) one or more software applications for smartphone operating systems. We noted that this system could be rolled out quickly and would not require any major provider network or mobile handset upgrades.

85. We seek comment on whether ''over the top'' software applications such as the one described above have long-term as well as short-term potential to support delivery of text and other media to 911. Are there additional software-based applications that we should consider as long-term options even if they are not viable in the short term? We seek comment on the costs and timeframes for deploying such applications. Could we use software-based applications to reduce the time to deployment, minimize the effort required by and costs for providers, and maximize the operational reliability of NG911?

86. We also seek comment on the potential for long-term software applications to support voice, text, video, and images, both separately and in combination. Could such applications be made compliant to existing and emerging standards? What level of broadband IP connectivity would PSAPs need to support multimedia applications, particularly bandwidth-intensive applications such as video? Would PSAPs need to install any additional software or hardware? If so, how much would such additional software or hardware cost? Would applications be capable of automatically detecting the capability of individual PSAPs to receive particular media? To what degree would PSAPs using software-based applications require access to regional or national databases? Who would build and maintain such databases? How much would such databases cost and who would bear that cost? What entities would provide the smartphone applications? Should such applications be certified, and if so, who should perform the certification?

D. The Commission's Role in Expediting Deployment of Text-to-911 and Other NG911 Applications

87. In this section, we seek comment on the role the Commission should play to expedite the development and widespread deployment of the short-term text-to-911 and long-term text and multimedia solutions discussed above.

1. Incentive-Based vs. Regulatory Approaches

88. In response to the Notice of Inquiry, wireless providers generally argue that the Commission should not adopt any text-related requirements at this time. Instead, providers maintain that the Commission should wait until standards, such as IMS and NOVES, are more fully adopted. For example, AT&T states ''the Commission should not specify which technologies should be used in the NG911 environment, but should allow standards to define these technologies.'' Sprint Nextel highlights that it ''supports efforts to deploy an NG911 service that will include both voice and text capabilities'' but that ''there are many technical considerations that must be resolved * * * through standards-setting organizations before NG911 implementation can move forward.'' On

the other hand, NENA argues that ''waiting until all or most PSAPs have NG9–1–1 capabilities and all access network providers support NG9–1–1 standards and then simultaneously enabling text support is an untenable model. Consumers expect to access 9–1–1 by text now, not many years from now. * * *. It would be best, in our opinion, for text to be enabled soon, nationwide, over a short deployment period. We believe that can be accomplished.''

89. We seek comment on whether there are any incentive-based approaches that the Commission could or should adopt to encourage the rapid development of text-to-911 solutions. Should the Commission develop best practices for deploying text-to-911 and other multimedia applications, for example through CSRIC? Alternatively, should the Commission adopt deadlines, timetables, or uniform network interface standard requirements? Do providers have an incentive to rapidly develop NG911 solutions if the Commission does not impose such measures? If so, what are those incentives? Are there any actions that the Commission could take to act as a catalyst or facilitator for early operational prototypes? Should the Commission defer additional regulatory action until standards are more universally adopted? If so, what specific set of standards would have to be completed to trigger such action? What degree of flexibility should the Commission afford to providers in their efforts to deploy NG911 solutions? Which mobile devices and networks should be subject to requirements? For example, should requirements apply only to devices capable of accessing the Internet or sold after a specific date established by the Commission?

2. PSAP-Based Triggers for Providers To Provide NG911 Solutions for Non-Voice Emergency Messaging to 911

90. In the NG911 environment, PSAPs will need certain equipment and operational procedures in place to receive text and other media types from wireless providers. In response to the Notice of Inquiry, many commenters argued that the Commission should not require wireless providers to make investments in their networks to provide NG911 solutions until PSAPs are able to receive text and other media. We seek comment on the degree to which PSAP readiness should be factored into Commission action relating to NG911 implementation. What are the advantages and disadvantages of waiting until PSAPs can receive text and other media?

91. The Commission's existing E911 rules require CMRS providers to make Phase I and Phase II service available ''only if the administrator of the designated Public Safety Answering Point has requested the services required * * * and is capable of receiving and utilizing the data elements associated with the service.'' We seek comment on whether a similar process would be appropriate in the NG911 context, such that PSAPs would have to request delivery of text or other media to 911 and demonstrate the capability to receive such traffic. If so, what specific showing should a PSAP be required to make to establish its ability to receive text and other media types? For example, NENA states that ''[a] transition to NG9–1–1 starts when an ESInet is deployed and one PSAP is ready to utilize NG9–1–1.'' Should ESINet deployment be a required element of the PSAP showing? Should the PSAP demonstrate that it supports IP-based message routing (e.g., by advertising its geographic coverage region via a national, state-wide or regional LoST server?

a. State or Regional Approaches

92. With over 6,800 PSAPs in the United States, spanning a wide range of sizes and resources, individual PSAPs are likely to have highly varying timetables for developing the technical and operational capability to handle text as well as other media. Therefore, while there is significant benefit to having providers provide text-to-911 to individual PSAPs that are capable of receiving it, implementing this approach at the individual PSAP level could impose inefficiencies and burdensome costs on providers. Our experience with deployment of E911 on a PSAP-by-PSAP basis is instructive in this regard, as it resulted in providers frequently implementing E911 capability in areas where PSAPs were not yet E911-capable. For this reason, we seek comment on whether we should assess PSAP NG911 readiness at the state or regional level rather than the individual PSAP level. What are the advantages and disadvantages of such an approach?

93. We envision that state and regional entities will play a significant role in the deployment of NG911. The ICO Plan states that a successful transition will depend on a high level of coordination, cooperation, and planning among the state, regional, and local 911 authorities. NENA notes that ''state and local public safety agencies and 9–1–1 authorities must begin to take a hard look at the cost savings that could be realized through regionalization of non-PSAP NG911 components such as ESInets.'' NENA also highlights that ''each state will need to coordinate the deployment of ESInets statewide'' and ''explicitly include appropriate tools and mechanisms to ensure that future upgrades can be deployed state-wide in a small number of years.'' NENA envisions that state transition plans would ''provide for seamless interoperability between legacy networks and NG9–1–1 networks.''

94. Sprint Nextel contends that ''[c]oordinated implementation * * * will be even more essential to NG911 deployment, since the NG911 system will be based on a system of [ESInets] deployed at the local state level.'' T-Mobile argues that ''the Commission should ensure that there is at least a substantial level of regional coordination with respect to the conversion to, and implementation of, NG911 systems.'' Absent such coordination, T-Mobile contends, interoperability benefits will be lost, and NG911 implementation costs for providers may be substantially higher if providers have to simultaneously support legacy 911 systems and upgraded NG911 systems in the same region.

95. We seek comment on steps the Commission could take to facilitate such a coordinated approach. Specifically, we seek comment on whether the Commission should require PSAPs to demonstrate a specified level of technical NG911 capability at the statewide or regional level as a precondition to providers being subject to any Commission requirement to deliver text or other media to PSAPs in the state or region. What are the advantages and disadvantages of such an approach? For example, should the Commission refrain from requiring wireless providers to support delivery of text or other media to 911 in a given state or region until the state or region meets certain conditions, such as the deployment of an ESInet? If we adopted a state or regional approach and the deployment of an ESInet served as the trigger, what would happen if not all PSAPs in the state or region were upgraded to link to the ESInet? Should the state or region be required to meet other technical conditions?

96. We also seek comment on any legal or regulatory barriers that may exist at the state or local level that could hinder the deployment of NG911. A number of commenters contend that outdated state regulations have hampered the deployment of NG911 networks. For example, NENA asserts that ''[m]any existing laws, regulations and tariffs make specific reference to

older technologies or system capabilities which may inadvertently inhibit the migration to NG9–1–1.'' According to NENA, examples include:

• Provisions that require specific technology components for E911 service delivery that are not necessarily the same for NG911.

• Regulations that ''assume the existence of legacy components,'' such as the selective router, which may impede the transition to ''NG9–1–1 deployments.'' For example, NENA refers to current Commission rules requiring ''the delivery of wireless and voice over IP (VoIP) 9–1–1 'calls' over the 'wireline E9–1–1 network.'''

• State regulations, laws, or tariffs that currently do not allow 911 authorities or new 911 SSPs to receive relevant routing, location, and other related 911 information in the possession of the incumbent SSPs at reasonable rates and terms.

• Existing 911 service arrangements and tariffs that inhibit new entrants from making similar competitive services available on a component-by-component basis, where technically and operationally feasible.

• In some states, liability protection for 911 service providers may be provided only through the tariff of a Local Exchange Carrier (LEC) rather than via statute. In such cases, if a LEC withdraws its tariff or NG911 services fall outside the scope of the tariff, providers of NG911 services, and possibly PSAPs as well, will not receive liability protection.

97. States are also concerned about outdated regulations that may hinder the deployment of NG911 networks. The Public Safety Communications Office (PSCO) of the California Technology Agency notes that it is ''currently exploring state and local barriers and will seek to remove them'' and ''recommend[s] that the FCC do the same at the federal level.'' The Texas 9–1–1 Agencies request that the Commission address interconnection disputes and the registration and certification of NG911 SSPs. The Ohio PUC supports ''a dual state-federal regulatory framework for NG911 in which the FCC establishes broad, national objectives, standards and benchmarks, but leaves coordinating the implementation and transition to the states.''

98. Providers and 911 SSPs are similarly concerned about regulatory obstacles that may hinder NG911 development. Dash asserts that ''requirements for CLECs to purchase 9–1–1 or CAMA trunks any time the CLEC seeks to deploy interconnection facilities * * *. imposes burdens on the PSAPs because [PSAPs] have to conduct interoperability testing on each trunk and otherwise be prepared to receive 9–1–1 calls from those trunks regardless of whether the CLEC is actually using them.'' In Dash's view, ''this discriminatory behavior'' results in CLECs being ''bound to the ILEC's outdated model.'' Dash argues that ''CLECs, VoIP providers and other competitive service providers should be permitted to use * * * new 9–1–1 solutions and not be required to purchase services that they would not absent regulatory or monopoly mandates.'' AT&T contends that ''[s]tate laws and regulations governing the types of devices and 'calls' allowed to access the NG911 network will also require modifications'' in the following areas: (1) Determining ''the eligible use of NG911 funds''; (2) ensuring that requirements do not mandate ''technology components for E911 service delivery that are incompatible with NG911 service''; and (3) ensuring that laws and regulations are ''functional, standards-based, and performance-based without reference to any specific proprietary technology, manufacturer, or service provider.'' Further, L.R. Kimball maintains that ''[r]evisions to or the elimination of older laws and tariffs would be necessary in order to require interconnections.'' Moreover, L.R. Kimball argues for ''overhaul'' of ''the 911 regulatory environments at both the federal and state level * * * to promote competition.'' L.R. Kimball also observes that ''[t]here are currently no regulations in place to drive carriers to implement a SMS to 911 interconnection.''

99. In light of these concerns, we seek comment on whether as a precondition to Commission action, states should be required to demonstrate that they have adopted appropriate or removed outmoded legal or regulatory measures to facilitate NG911 deployment, such as deregulation of legacy 911 interconnection arrangements and enactment of liability protection for NG911 providers and service providers. Would this approach incentivize states to eliminate outdated laws and regulations? Are there other steps that we should take to encourage the elimination or mitigation of state and local regulatory barriers to NG911?

100. We also seek comment on what statutory or regulatory changes, if any, would be necessary for the Commission, other federal agencies, states, tribes, or localities to facilitate and oversee the deployment of NG911 networks. Are there specific FCC regulations that the Commission should eliminate or modify to facilitate the deployment of NG911 networks? What specific actions can the Commission take that would incentivize states and localities to eliminate outdated regulations that hinder the deployment of NG911 networks?

b. Advanced Regional 911 Centers

101. AT&T contends that consumer confusion occurred during previous deployment of basic 911 and E911 service and is equally likely with respect to the deployment of NG911. AT&T describes the launch of basic 911 service as having been ''accompanied with significant consumer confusion regarding whether or not there was access to a particular service in a particular area.'' AT&T also contends that widespread publicity concerning the Black Hawk County, Iowa, text-to-911 trial caused confusion elsewhere in the country regarding the availability of text-to-911. AT&T warns that if ''the Commission fails to establish clear direction for a standardized design for non-voice emergency communications, the result will be a patchwork implementation of non-voice emergency capabilities and additional consumer confusion.''

102. NENA has noted the need for additional technical requirements to address this issue, stating that ''while all [NG911] PSAPs must handle all media, a legacy PSAP behind [an ESInet-to-legacy PSAP gateway] would only handle voice media and TTY. There is no mechanism by which a caller could discover what media the PSAP supports. This will be covered in a future edition of [the NENA i3 Solution].'' We invite comment on the amount of time that will be required for the issuance of such requirements, as well as their adequacy for avoiding caller confusion.

103. AT&T states that use of the aforementioned ''gateways to interwork [ESInets] with legacy PSAPs will only further complicate implementation of NG911.'' Instead, AT&T proposes building ''regional entities to handle non-voice emergency services media types when the local PSAP cannot.'' The regional centers would ''support NG911 capabilities so that every PSAP need not be updated before certain advanced services can be supported.'' According to AT&T, ''[n]ot only will this [approach] ensure interoperability, but it will also limit the capital outlay required to deliver NG911 services, thereby accelerating deployment.'' We seek comment on AT&T's proposal. In particular, we seek comment on the costs and practicability of AT&T's proposed regional PSAP approach relative to the upgrading of individual

PSAPs. Would the AT&T approach reduce the amount of capital outlay required as compared to upgrading individual PSAPs? Would it enable more rapid deployment of NG911? How long would it take to implement AT&T's approach? Are there benefits to co-locating a regional center with a PSAP that is already being upgraded to NG911? Are there benefits to co-locating a regional center with another location that already supports some NG911capabilities, such as a TRS or VRS center? We also seek comment on the specific protocol interfaces and functionality that should be in place at the advanced 911 centers before providers are required to provide text and other media types to these call centers. AT&T also states that the Commission should limit ''advanced functionality in NG911 systems until a baseline network'' of the regional centers exists. Should the Commission go so far as to limit advanced functionality in such circumstances or in any other circumstances?

E. Consumer Education and Disclosure Mechanisms

104. The Notice of Inquiry sought comment on how to educate and prepare consumers for disparate PSAP capabilities in an NG911 environment. Commenters generally agreed that NG911 applications such as text-to-911 will not be deployed uniformly and that a nationwide education effort will therefore be needed during the transition. Motorola warns that while ''the transition to NG911 is underway, misinformation and confusion about the deployment details are likely to spread'' and maintains that an ongoing ''comprehensive and multifaceted public education effort'' that is ''keyed to the actual deployment of new services'' will be key to helping civilians understand the capabilities and limitations of the NG911 system.'' NENA urges that ''left unchecked, this confusion could lead consumers to waste time texting 9–1–1 or leave unused other means of communications at their disposal, wasting precious seconds in an emergency.''

1. Expected Benefits

105. Even using the most optimistic assumptions about the deployment of NG911, consumers are unlikely to have access to text or other NG911 applications everywhere in the United States at the same time. Access to these applications will vary depending on the consumer's location, and even in areas where NG911 is deployed, specific applications may vary locally or regionally depending on the PSAP's policies for accepting text or multimedia messages. In addition, technical factors such as variations in the capabilities of different caller handsets may lead to non-uniform access. At the same time, as NG911 deployment occurs in certain communities or regions, consumers elsewhere are likely to learn through the media, social networking, and other sources that text, photos, and video to 911 are available in some places, which may lead consumers to be uncertain or confused about availability of these capabilities in the consumer's own community.

106. Given the significant risk of consumer uncertainty and confusion, there are clear benefits to be gained from providing the public with accurate and up-to-date information about the availability or non-availability of NG911 applications in their home communities and in other locations where they may travel. For example, if the public is not adequately informed about the availability or non-availability of text-to-911 in specific areas, consumers could put themselves at risk by attempting to send text messages to the local PSAP and being unaware that the text has not been received. In deciding how the Commission can most effectively minimize consumer confusion throughout the transition to NG911, we seek to maximize the benefits to consumers from any action we would take while taking into consideration the burden of compliance to providers. We therefore seek comment on the expected benefits and costs of implementing various approaches to consumer education and implementing disclosure mechanisms. We also ask whether there are any contractual issues that might deter consumers from texting or sending photos or video to 911. How many subscribers would face additional charges for sending texts, photos, or video to PSAPs from their mobile devices? Could such additional charges in some cases deter them from doing so? If so, should providers, the Commission, or others develop practices to address this situation?

2. Approaches for Education and Disclosure

107. Commenters agree that there is a significant need for a nationwide education effort while text-to-911 is being rolled out. We seek comment on the types of educational programs that should be created to abate and prevent consumer confusion as text-to-911 services are deployed in the short term. Are there lessons that we can draw from educational efforts that were conducted during the deployment of basic 911 or E911 service? Have other countries developed text-to-911 education programs? Can current 911 educational programs be adapted to help individuals understand text-to-911? Should educational programs differ depending upon the group that is being targeted, such as the disabilities community or non-English speakers? How should educational programs evolve as text-to-911 services become more prevalent? Would any of the educational approaches that the FCC used in the past, such as the campaign to inform purchasers of wireless microphones of the need to clear the 700 MHz band for public safety purposes, be useful here?

108. We also seek comment on the appropriate role for the Commission and for other government and private sector entities in any public education effort. Motorola notes that ''[e]ntities at the local, state, and federal levels all need to be thinking about how to disseminate accurate information to the public'' and suggests that ''beyond formal education efforts, providers of next generation communications services need to clearly communicate to their users any limitations with respect'' to 911 service access. Qualcomm suggests that federal agencies, including the FCC and DHS, in conjunction with state and local governments, take responsibility for consumer education. The State of California suggests that the Commission should take a role in education akin to its role in the digital television transition by creating a national public information campaign. More specifically, NENA suggests ''the FCC should collaborate with industry and media partners and public safety to educate consumers about the current and ongoing limitations of SMS for emergency communications.'' TSAG, however, comments that education ''begins with a nationally recognized institution, driving a baseline national program * * * supportive of state and local efforts'' but leadership ''should reside in states and [be] delivered through regional and local NG911 organizations and institutions.'' Wichita-Wilbarger believes the Commission should not ''require states to specifically designate an organization to be responsible for the statewide organizing, planning or implementing of NG9–1–1.'' We seek further comment on what entities should be involved in educational programs. What role should the Commission play? What role can other federal agencies, state and local entities, and those in the public and private sectors play? Where would the Commission or other federal agencies obtain funding for consumer education efforts? What are the advantages and

disadvantages of various approaches to consumer education? How can the Commission and other federal agencies support local agencies and the media as they work to educate their communities? What are the best methods of educating consumers about the availability or non-availability of NG911 applications in their communities? Should we require providers to disclose limitations on the availability of NG911 applications? If so, should we require such notice at the physical point-of-sale, online, in bill inserts, or elsewhere? Could providers leverage existing marketing and billing practices to provide notice to consumers on a cost-effective basis?

109. Aside from educational programs, could other resources be developed to help individuals learn about where text-to-911 services are and are not available? For instance, what is the feasibility of developing a consumer-focused map or website showing such availability, possibly building on the PSAP database that the Commission maintains or on other sources? Could local availability information be built into text-to-911 applications themselves, so that the application would automatically indicate whether text-to-911 is available at the caller's current location? What would the cost be of developing such resources initially and of updating them as the availability of text-to-911 expands to new areas? Could information be provided in bills sent to consumers and instructional materials included with new mobile devices to increase awareness?

110. Finally, despite educational programs and resources, some individuals will likely attempt to send text messages to 911 in locations where text-to-911 is not supported. AT&T notes that ''there is a chance that a failed non-voice emergency call could result in no immediate feedback.'' This could put consumers at risk if they were unaware that an emergency text did not go through or were uninformed about alternative means of reaching the PSAP. To mitigate such risk, we believe that in situations where a consumer attempts to text 911 in a location where text-to-911 is not available, the consumer should receive an automatic error message or similar disclosure that includes information on how to contact the PSAP (e.g., a message directing the consumer to dial a 911 voice call). We seek comment on this approach, including what methods are necessary to ensure that such disclosure is accessible to people with different types of disabilities. What currently happens when consumers attempt to send SMS or other text-based messages to 911? Do wireless providers send an error message in response? If so, what information does the error message convey? Is it technically feasible for all providers to provide such error messages to consumers? What would the cost be to implement this capability across all providers and regions? Should error messages contain certain standardized information? What role, if any, should the Commission play in developing best practices, model responses, or requirements for the provision of standardized error messages?

F. Overlap With CVAA and EAAC

111. In October 2010, Congress enacted the CVAA, which amends the Communications Act and imposes a variety of new obligations on service providers, equipment manufacturers, and the Commission that relate to providing access to communications services for people with disabilities. Section 106 of the CVAA requires the Commission to take certain steps ''[f]or the purpose of achieving equal access to emergency services by individuals with disabilities, as a part of the migration to a national Internet protocol-enabled emergency network.'' Specifically, Section 106 requires the Chairman, within 60 days after enactment of the Act, to establish the EAAC. Within one year of its establishment, the EAAC must: (1) Conduct a national survey of individuals with disabilities to determine the most effective and efficient technologies and methods by which to enable emergency access; and (2) submit to the Commission recommendations to implement such technologies and methods. Section 106 grants the Commission ''the authority to promulgate regulations to implement the recommendations proposed by the Advisory Committee, as well as any other regulations, technical standards, protocols, and procedures as are necessary to achieve reliable, interoperable communication that ensures access by individuals with disabilities to an Internet protocol-enabled emergency network, where achievable and technically feasible.''

112. As required by the CVAA, the Chairman established the EAAC in December 2010, 60 days after enactment of the statute. The EAAC is composed of state and local government representatives responsible for emergency management and emergency responder representatives, national organizations representing people with disabilities and senior citizens, communications equipment manufacturers, service providers, federal agency representatives responsible for implementation of the NG911 system, and subject matter experts. Section 106(c) of the CVAA specifically requires the EAAC to provide recommendations to the Commission:

(1) With respect to what actions are necessary as a part of the migration to a national Internet protocol-enabled network to achieve reliable, interoperable communication transmitted over such network that will ensure access to emergency services by individuals with disabilities;

(2) For protocols, technical capabilities, and technical requirements to ensure reliability and interoperability necessary to ensure access to emergency services by people with disabilities;

(3) For the establishment of technical standards for use by public safety answering points, designated default answering points, and local emergency authorities;

(4) For relevant technical standards and requirements for communication devices and equipment and technologies to enable the use of reliable emergency access;

(5) For procedures to be followed by IP-enabled network providers to ensure that such providers do not install features, functions, or capabilities that would conflict with technical standards;

(6) For deadlines by which providers of interconnected and non-interconnected VoIP services and manufacturers of equipment used for such services shall achieve the actions required in paragraphs (1) through (5), where achievable, and for the possible phase out of the use of current-generation TTY technology to the extent that this technology is replaced with more effective and efficient technologies and methods to enable access to emergency services by individuals with disabilities; and

(7) For the establishment of rules to update the Commission's rules with respect to 9–1–1 services and E–911 services (as defined in section 158(e)(4) of the National Telecommunications and Information Administration Organization Act (47 U.S.C. 942(e)(4))), for users of telecommunications relay services as new technologies and methods for providing such relay services are adopted by providers of such relay services;

(8) That take into account what is technically and economically feasible. Since its establishment, the EAAC has met on a monthly basis and has conducted the required survey of people with disabilities, which was released in July 2011. In December 2011, one year after its establishment, the EAAC will

submit its recommendations to the Commission on the NG911 accessibility issues set forth above. The CVAA then empowers the Commission to implement the EAAC's recommendations by regulation, to the extent such recommendations are achievable and technically and economically feasible.

113. There is considerable overlap between the NG911 text and multimedia capabilities discussed in this Notice and the NG911 accessibility issues being considered by the EAAC in its implementation of the CVAA. As we have observed in our discussion of potential benefits earlier in this Notice, adding text and multimedia applications to the 911 system can provide significant benefits to both people with disabilities and non-disabled people. Moreover, we believe it is important to encourage to the fullest extent possible the development of common text-to-911 and multimedia-to-911 solutions that serve both the broad goals of NG911 and the NG911 accessibility goals of the CVAA. By focusing on developing common solutions rather than developing specialized technologies solely for use by people with disabilities, we are more likely to be able to spread the cost of such technology across all network users and providers and to generate economies of scale that lower such costs. We seek comment on this approach. Will the development of common text-to-911 and multimedia-to-911 solutions benefit both people with disabilities and non-disabled people and lead to greater cost efficiencies? Are there limitations to this approach, such as instances where people with disabilities may still require development of more specialized technology to meet their emergency accessibility needs?

114. In light of the overlapping issues, we also seek comment on the relationship between this proceeding and our implementation of the CVAA and the work of the EAAC. Should we incorporate the EAAC's recommendations into the record in this proceeding? Would coordinating or combining the two proceedings promote broader and more rapid NG911 deployment?

G. Legal Authority

115. Background. In the Notice of Inquiry, the Commission recognized that ''[s]tate, Tribal, and local governments are the primary administrators of the legacy 911 system and are responsible for establishing and designating PSAPs or appropriate default answering points, purchasing customer premises equipment, retaining and training PSAP personnel, and purchasing 911 network services.'' Nevertheless, the Commission noted that ''[c]ertain communications technologies * * * necessitated the adoption of a uniform national approach'' and sought comment on whether there should be some level of federal oversight for the transition to NG911. Further, the Commission sought comment ''on the extent of the FCC's jurisdiction to oversee the transition to NG911, since PSAPs, service providers, consumer device manufacturers, and software developers will all be involved.'' The Commission also invited comment on the role that other federal agencies, such as ICO, should play in the transition to NG911.

116. Comments. Several commenters encourage the Commission to implement a uniform national approach. Other commenters, however, assert that the Commission's authority over certain providers, such as broadband access providers, is still undetermined and will require further clarification or legislation. For instance, CTIA states that ''some of these providers of current and future application-based communications services are not FCC licensees and thus fall outside the FCC's regulatory jurisdiction entirely.'' CTIA argues that while the CVAA gives the Commission some regulatory power to enact the recommendations of the EAAC, ''it does not give the Commission plenary authority over electronic messaging and video conferencing services''and ''the limits of the Commission's authority under the [CVAA] are unclear.''

117. Discussion. Since 1996, the Commission has exercised authority under Title III of the Communications Act to require CMRS providers, as spectrum licensees, to implement basic 911 and E911 services. This authority includes—as a fundamental and pervasive element of the Commission's licensing authority—the power and obligation to condition its licensing actions on compliance with requirements that the Commission deems consistent with the public interest, convenience, and necessity. Existing E911 requirements for wireless service providers clearly further the public interest in ways directly connected to the Commission's mandate in section 151 to ''promot[e] safety of life and property through the use of wire and radio communication.'' Similarly, the options we consider in this proceeding to facilitate availability of text-to-911 and other NG911 capabilities to consumers would fall within our broad Title III authority over spectrum licensees as requirements that serve the public interest, convenience, and necessity by, for example ''promoting safety of life and property.'' Therefore, we believe that we have well-established legal authority under sections 151, 301, and 303(r) and other Title III provisions to take the regulatory and non-regulatory measures described herein that would apply to users of spectrum. We seek comment on this analysis.

118. We also believe that the CVAA confers authority with respect to implementation of text-to-911 and other NG911 features to the extent that such implementation serves the statutory goal of ''achieving equal access to emergency services for people with disabilities, as a part of the migration to a national Internet protocol-enabled emergency network.'' As noted in the previous section, the CVAA authorizes the Commission to promulgate regulations to ''ensure the accessibility, usability, and compatibility of advanced communications services and the equipment used for advanced communications services by individuals with disabilities'' and to do what is necessary to ''achieve reliable, interoperable communication that ensures access by individuals with disabilities to an Internet protocol-enabled emergency network, where achievable and technically feasible.'' The CVAA defines ''advanced communications services'' to include electronic messaging service, defined as a ''service that provides real-time or near real-time non-voice messages in text form between individuals over communications networks.'' The CVAA also includes in the definition of ''advanced communications services'' ''interconnected VoIP service'' and ''non-interconnected VoIP service.'' The CVAA's mandate to ensure ''the accessibility, usability, and compatibility'' of this broad category of advanced communications services provides generous authority to cover many of the actions we consider in this proceeding, including, for example, requiring 911 capabilities for text-based communications services. We seek comment on this reading of the CVAA and whether there are any limitations to the scope of this authority relevant to our proposals in this proceeding.

119. Furthermore, we believe that the Commission would also have the ancillary authority to regulate certain entities over which (or over whose actions at issue) we may not have express regulatory authority. Under section 4(i) of the Communications Act and the judicial precedent recognizing the Commission's ancillary authority,

the Commission is empowered to impose requirements when it lacks specifically enumerated authority, provided its actions fall within the agency's general grant of jurisdiction over ''interstate and foreign communication by wire or radio'' and the regulation is reasonably necessary to effectuate the Commission's responsibilities under the Act and rules promulgated pursuant to the Commission's express authority. Applying this principle to the NG911 context, it appears that the successful application of text-to-911 and other multimedia NG911 requirements to communications providers pursuant to the direct mandates of Title III or the CVAA may require that we impose certain requirements on broadband access providers, System Service Providers (SSPs), network operators, and other entities involved in the provision of broadband Internet access and other network services. For instance, a CMRS provider may be unable to provide text-to-911 without adjustments to the database management and call routing services currently provided by the SSP. In addition, a non-interconnected VoIP provider may need the cooperation of the operator of the broadband network over which the text to 911 travels to identify the user's location. In such instances, we would have ancillary authority to impose rules on entities that fall under our subject matter jurisdiction as necessary to ensure that Title III licensees, entities subject to our authority under the CVAA, and other entities subject to direct statutory authority can fulfill their new NG911 obligations. Similarly, we may also decide, pursuant to our direct, express mandate under the CVAA, that individuals with disabilities must have access to an IP-enabled emergency network that allows them to send text and other multimedia information to the PSAP, without further delay. In this case, we would also have ancillary authority to require action that has broader effects on the non-disabled community, should it be infeasible at this time, for technical or other reasons, for providers to tailor implementation of their CVAA obligations only to individuals with disabilities. We seek comment on this analysis. We also ask commenters to address other potentially relevant sources of authority.

120. A number of commenters note that liability protection will need to be expanded to include all entities that participate in the NG911 environment. The Commission recognizes that existing sources of liability protection will possibly need to be updated to accommodate the range of parties, services, and devices that will be involved in the provisioning of NG911 services. The primary basis for liability protection related to the provisioning of NG911 services stems from section 201 of the New and Emerging Technologies 911 Improvement Act (Net 911 Act). Under this section, a ''wireless carrier, IP-enabled voice service provider, or other emergency communications provider * * * shall have'' the same liability protection as a local exchange carrier under federal and state law. We seek comment on whether the NET 911 Act's extension of liability protection embraces the full range of technologies and service providers that will be involved in the provisioning of NG911 services. We also seek comment on whether the Commission has the authority to extend liability protection to entities involved in the provisioning of NG911 services or whether Congressional action is necessary.

IV. Procedural Matters

A. Ex Parte Presentations

121. The proceeding initiated by this Notice of Proposed Rulemaking shall be treated as a ''permit-but-disclose'' proceeding in accordance with the Commission's ex parte rules. Persons making ex parte presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral ex parte presentations are reminded that memoranda summarizing the presentation must: (1) list all persons attending or otherwise participating in the meeting at which the ex parte presentation was made; and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter's written comments, memoranda, or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during ex parte meetings are deemed to be written ex parte presentations and must be filed consistent with § 1.1206(b) of the Commission's rules. In proceedings governed by § 1.49(f) of the Commission's rules or for which the Commission has made available a method of electronic filing, written ex parte presentations and memoranda summarizing oral ex parte presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding and must be filed in their native format (e.g., .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission's ex parte rules.

B. Comment Filing Procedures

- Pursuant to §§ 1.415 and 1.419 of the Commission's rules, 47 CFR 1.415, 1.419, interested parties may file comments and reply comments in response to this Notice of Proposed Rulemaking on or before the dates indicated on the first page of this document. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS). See Electronic Filing of Documents in Rulemaking Proceedings, 63 FR 24121 (1998).
- *Electronic Filers:* Comments may be filed electronically using the Internet by accessing the ECFS: *http://fjallfoss.fcc.gov/ecfs2/.*
- *Paper Filers:* Parties that choose to file by paper must file an original and one copy of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number.
- Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.
- All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th St., SW., Room TW–A325, Washington, DC 20554. The filing hours are 8 a.m. to 7 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes and boxes must be disposed of before entering the building.
- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW., Washington DC 20554.

C. Accessible Formats

123. To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to *fcc504@fcc.gov* or call the Consumer & Governmental Affairs Bureau at 202–418–0530 (voice), 202–418–0432 (tty).

D. Regulatory Flexibility Analysis

124. As required by the Regulatory Flexibility Act of 1980, see 5 U.S.C. 604, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities of the policies and rules addressed in this document. The IRFA is set forth in the Appendix. Written public comments are requested on the IRFA. These comments must be filed in accordance with the same filing deadlines as comments filed in response to this Notice of Proposed Rulemaking as set forth on the first page of this document and have a separate and distinct heading designating them as responses to the IRFA.

E. Paperwork Reduction Act Analysis

125. The Notice of Proposed Rulemaking contains proposed new information collection requirements. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public and OMB to comment on the information collection requirements contained in this document, as required by Paperwork Reduction Act. In addition, pursuant to the Small Business Paperwork Relief Act of 2002, we seek specific comment on how we might ''further reduce the information collection burden for small business concerns with fewer than 25 employees.''

V. Ordering Clauses

126. *It is ordered,* pursuant to sections 1, 2, 4(i), 7, 201, 222, 251(e), 301, 302, 303, 307, 308, 309, 310, 319, and 332, of the Communications Act of 1934, as amended, 47 U.S.C. 151, 152, 154(i), 157, 201, 222, 251(e), 301, 302, 303, 307, 308, 309, 310, 319, and 332; section 706 of the Telecommunications Act of 1996, as amended, 47 U.S.C. 1302; section 4 of the Wireless Communications and Public Safety Act of 1999, as amended by the New and Emerging Technologies 911 Improvement Act of 2008, 47 U.S.C. 615a; and sections 104 and 106 of the Twenty-First Century Communications and Video Accessibility Act of 2010, 47 U.S.C. 615c, 617, that this Notice of Proposed Rulemaking is hereby *adopted.*

127. *It is further ordered* that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, *shall send* a copy of this Notice of Proposed Rulemaking, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

Federal Communications Commission.

Marlene H. Dortch,

Secretary.

[FR Doc. 2011–26258 Filed 10–11–11; 8:45 am]

BILLING CODE 6712–01–P

DEPARTMENT OF TRANSPORTATION

Surface Transportation Board

49 CFR Chapter X

[EP 712]

Reducing Regulatory Burden; Retrospective Review Under E.O. 13563

AGENCY: Surface Transportation Board.

ACTION: Request for information.

SUMMARY: In accordance with Executive Order 13563, ''Improving Regulation and Regulatory Review,'' and Executive Order 13579, ''Regulation and Independent Regulatory Agencies,'' the Surface Transportation Board is undertaking review of its existing regulations to evaluate their continued validity and determine whether they are crafted effectively to solve current problems facing shippers and railroads. As part of this review, the Board seeks public comments on whether any of its regulations may be outmoded, ineffective, insufficient, or excessively burdensome, and how to modify, streamline, expand, or repeal them, as appropriate.

DATES: Comments are due by January 10, 2012.

ADDRESSES: Comments may be submitted either via the Board's e-filing process or in the traditional paper format. Any person using e-filing should attach a document and otherwise comply with the instructions at the E-Filing link on the Board's Web site, at *http://www.stb.dot.gov.* Any person submitting a filing in the traditional paper format should send an original and 10 copies to: Surface Transportation Board, *Attn:* Docket No. EP 712, 395 E Street, SW., Washington, DC 20423–0001.

Copies of paper comments will be available for viewing and self-copying at the Board's Public Docket Room, Room 131; paper and electronic copies will be posted to the Board's Web site.

FOR FURTHER INFORMATION CONTACT: Christopher Oehrle at 202–245–0375. Assistance for the hearing impaired is available through the Federal Information Relay Service (FIRS) at 1–800–877–8339.

SUPPLEMENTARY INFORMATION: On January 18, 2011, President Obama directed executive agencies to take steps to improve federal regulation and regulatory review. *See* Executive Order 13563, 76 FR 3,821–23 (January 31, 2011). In particular, the President directed executive agencies to conduct a retrospective analysis of existing regulations and develop a preliminary plan to review periodically significant regulations to determine if such regulations should be modified, streamlined, expanded, or repealed so as to make the agency's regulatory program more effective or less burdensome in achieving the regulatory objectives. The order also called for public participation in this regulatory process.

Although Executive Order 13563 did not apply to independent agencies, the Board reported its ongoing efforts to conduct, on a voluntary basis, an analysis of its existing regulations. On May 18, 2011, the Board's Chairman sent a letter to the Administrator of the Office of Information and Regulatory Affairs that described the regulatory review the Board had already initiated and outlined the review the Board had planned for the next 2 years and beyond. The letter described two major initiatives to review significant areas of regulation that have not been comprehensively reviewed and amended over the last two decades: competition in the rail industry and environmental regulations. The Board listed several other initiatives to amend its regulations and procedures to make them more efficient and effective. *See, e.g.,* EP 707, *Demurrage Liability;* EP 706, *Reporting Requirement for Positive Train Control Expenses and Invs.;* EP 702, *Nat'l Trails System Act & R.R. Rights-of-Way;* EP 699, *Assessment of Mediation and Arbitration Procedures;* EP 684, *Solid Waste Rail Transfer Facilities.* The Board also stated that it was reviewing the Uniform Rail Costing System, which is the Board's general purpose costing methodology for the nation's largest railroads, and planning to update it. A copy of the letter is available on the Board's Web site at *http://www.stb.dot.gov/stb/docs/2011AgencyPreliminaryPlan%20—%20signed%20final%20051811.pdf.*

On July 11, 2011, President Obama requested that independent agencies comply with Executive Order 13563, to