Report on
Next Generation 9-1-1
in California Public Meetings

Submitted by the:

California 9-1-1 Emergency Communication Division

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PREFACE

I am pleased to present this report of the recent public meetings held throughout the State on the subject of Next Generation 9-1-1 (NG9-1-1) in California. The Public Safety Communications Office, a division of the California Technology Agency, views the modernization of California's 9-1-1 System to NG9-1-1 as a necessary and important goal for California.

California's citizens, visitors and stakeholder community at large stand to greatly benefit from the implementation of NG9-1-1 in California and their input into this process is critical. We believe that to achieve the goal stated in our 9-1-1 Strategic Plan of rolling out NG9-1-1 across the state that a collaborative process that engages stakeholders at many levels is necessary. These meetings are only the beginning of a sustained effort to involve the greater community.

An effort like this cannot be achieved without the assistance and support of many people. While the Acknowledgements section of this document details those who participated in the conduct of the meetings I wish to offer special thanks to Acting Secretary of the California Technology Agency, Christy Quinlan for her sponsorship and continued support, the California 9-1-1 Advisory Board for their advice and leadership and to Assemblymember Norma J. Torres who is a longstanding supporter and advocate for the California 9-1-1 Community and who attended the Ontario public meeting.

I wish to express appreciation to the agencies who allowed us to use their facilities to hold these meetings:
- ➢ *City of Redding*
- ➢ *State of California, Department of Consumer Affairs*
- ➢ *San Diego County Administration Center*
- ➢ *California Public Utilities Commission*
- ➢ *City of Fresno*
- ➢ *Ontario Police Department*

The effort involved in putting these meetings together was significant and I'd like to extend my personal gratitude to the following staff for support, assistance and long hours in the execution of these meetings: Ryan Dulin, Judy Quezada, Paul Dumetz, Philip Killion, and the California 9-1-1 Emergency Communications Division as a whole.

I am firmly convinced that the transition of California's 9-1-1 System to a more robust, resilient and feature-rich NG9-1-1 System will significantly enhance the delivery of 9-1-1 Services in California. The Public Safety Communications Office is actively engaged in seeing this goal achieved.

Signed,

*Karen Wong
Deputy Director
Public Safety Communications Office
California Technology Agency*

EXECUTIVE SUMMARY

The California (CA) 9-1-1 Emergency Communications Division (CA 9-1-1 Division), a division of the Public Safety Communications Office (PSCO), conducted a series of six public meetings focused on soliciting comment on NG9-1-1. The CA 9-1-1 Strategic Plan, released in July 2010, included a goal to transition CA's 9-1-1 System to NG9-1-1, and the recently Proposed CA NG9-1-1 Roadmap provides a tactical approach to executing that goal.

NG9-1-1 will provide the ability to accept multimedia data (e.g. text, video and photo), improve interoperability, call routing, public safety answering point (PSAP) call overflow, and location accuracy. NG9-1-1 will strengthen system resiliency and reliability, as well as increases opportunities to achieve fiscal and operational efficiency through cost-sharing arrangements.

As part of a sustained effort to proactively engage the CA stakeholder community, the CA 9-1-1 Division held a total of six public meetings throughout the State in Redding, Sacramento, San Diego, Fresno, San Francisco and Ontario. The meetings included various NG9-1-1 presentations designed to educate the public and provide an opportunity for them to provide comment in response to a defined list of questions found in *Appendix A - Notice of Public Meetings* and covered the following four major topic areas:

- NG9-1-1 Capabilities and Applications
- NG9-1-1 Capabilities and Applications for persons with disabilities or special needs
- Legal, Regulatory and Funding
- Other NG9-1-1 Issues

In addition to the public meetings, the CA 9-1-1 Division solicited written comments as an additional method to gather public comment for those not able to participate in person. Written comments were received from entities representing non-profit civil liberties and consumer education firms, equipment vendors, service providers, industry associations and public safety entities. The following themes emerged as important topics to address as CA embarks on its NG9-1-1 journey:

**Figure 1: Themes from Public Meetings
on NG9-1-1 in CA**

- What does NG9-1-1 mean to CA?
- Training and Support (e.g. Dispatcher / Call Taker and awareness)
- Cost and Funding of NG9-1-1
- The importance of standards for NG9-1-1
- Maintaining Privacy within NG9-1-1

The review of the public meetings and written comments highlight the complexity of issues that must be dealt with in planning for NG9-1-1. It demonstrates the diversity of participants that CA 9-1-1 should partner with and whose opinions and input will be critical to the success of a NG9-1-1 initiative. The CA 9-1-1 Division was pleased to learn that all of the issues raised in both written and verbal form were addressed explicitly or implicitly in the Proposed CA NG9-1-1 Roadmap. The PSCO will leverage the themes identified in this process as it defines its vision for NG9-1-1 in CA. In the future, additional public meetings, workshops and the execution of the Proposed CA NG9-1-1 Roadmap will benefit from the information learned here. These meetings are an important step in the process of transforming CA's 9-1-1 System into a more robust, resilient and feature-rich NG9-1-1 solution that meets CA's unique and diverse needs.

1. INTRODUCTION

1.1 Background

In 2010, CA's 9-1-1 System answered 23.8 million 9-1-1 calls with approximately 70 percent of the total 9-1-1 call volume originating from wireless phones. The underlying legacy 9-1-1 network that transports these calls was primarily designed to serve the analog wireline telephone system. The technology landscape is rapidly changing, and communication utilizing text, photo and video is now commonplace among many wireless users. Additionally, Voice over Internet Protocol (VoIP) and the ubiquitous availability of broadband access dictate that improvements to the network must be made in order to fully support these and future technologies, and meet the expectations of the citizens and visitors of CA.

NG9-1-1 provides the ability to accept multimedia data (e.g. text, video and photo) and improves interoperability, call routing, PSAP call overflow and location accuracy. NG9-1-1 strengthens system resiliency and reliability, as well as increases opportunities to achieve fiscal and operational efficiency through cost-sharing arrangements.

The CA 9-1-1 Division, a division of the PSCO, operating in its role as the administrator of the CA 9-1-1 System, released the CA 9-1-1 Strategic Plan in July 2010. One of the stated goals of that plan is the transition of CA's 9-1-1 system to NG9-1-1. The tactical approach to accomplishing this transition is described in the Proposed CA NG9-1-1 Roadmap (Roadmap). The Roadmap is a step-by-step process that describes how the CA 9-1-1 system can be migrated to NG9-1-1 in a collaborative, logical and phased manner. The CA 9-1-1 Division, through collaboration with key stakeholders, aims to proactively lead the CA 9-1-1 community through the transition to NG9-1-1 and is actively seeking the engagement of the stakeholder community to begin the execution of this initiative.

1.2 Purpose

In late 2010, the Roadmap was published to provide a tactical approach to implementing NG9-1-1 in CA. Figure 2, below, provides a high level overview of the Roadmap steps. Engagement of the CA stakeholder community is a critical element in all phases of the Roadmap. As part of a sustained effort to engage the CA stakeholder community throughout CA's journey to NG9-1-1 the series of meetings described in this document was held.

Figure 2: Proposed CA NG9-1-1 Roadmap Phases

The CA 9-1-1 system is a complex and diverse system covering CA's unique and diverse geography and demographics. It currently serves 37 million residents through 465 PSAPs, and in 2010 handled 23.8 million 9-1-1 calls. Today, California 9-1-1 calls are translated into approximately 91 different languages with support for up to 150 total languages. These statistics demonstrate the complexity, scale and uniqueness of the CA 9-1-1 system and why it is critical to seek opinions, questions and participation from as many sources as possible while trying to modernize the system.

The CA 9-1-1 Division sought public comment (both written and/or verbal) on the following subject areas:

- NG9-1-1 Capabilities and Applications
- NG9-1-1 Capabilities and Applications for persons with disabilities or special needs
- Legal, Regulatory and Funding
- Other NG9-1-1 Issues

The public meetings consisted of a panel of CA public safety and 9-1-1 professionals, as well as presenters from various private and public sector entities concerned with public safety response. Meetings were held in Redding, Sacramento, San Diego, Fresno, San Francisco and Ontario, CA. These meetings were designed to solicit public input, questions, comments and responses from a far ranging cross section of the state, as well as educate the CA stakeholder community and the broader CA public. The meeting sites were selected based on state demographics to try to capture as broad and diverse a spectrum of participation as possible.

The official notice of public meeting is contained in Appendix A and a summary of the comments is noted in Section 2. Appendix B provides high level meeting details. Public meetings were recorded and can be viewed from the CA 9-1-1 Division's Website.

In addition to the public meetings, CA solicited written comments on issues related to the implementation of NG9-1-1 in the state. Written comments, summarized in Section 2, were received from 11 entities representing non-profit civil liberties and consumer education firms, equipment vendors, service providers, industry associations and public safety entities. The detailed written comments are available on the CA 9-1-1 Division's Website.

This document provides a summary of the public meetings, presentations, discussions and written comments. If applicable, it denotes if or how issues or responses are addressed in the Roadmap. Finally, if applicable, the document identifies any issues or planning gaps discovered in the course of these discussions that are not specifically addressed in the Roadmap and, where applicable, makes recommendations for dealing with those topics.

Disclaimer: The submission and subsequent publishing of verbal or written comments should not be construed as consent or support of a comment or issues by the California Technology Agency.

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2.   SUMMARY OF PUBLIC COMMENTS (Verbal & Written)

This section contains a high level summary of the public comments (verbal and written). Comments fell into five major themes described below and depicted in figure 3. These themes are explored in more detail in the following sections where comments (verbal and written) are summarized by question as noted in the original meeting notice (see appendix A).

- **What does NG9-1-1 mean to CA?**—Many times both in written or verbal form the subject of defining NG9-1-1 in the context of what it will mean for CA was raised. For example, the criteria by which new applications are identified and approved for use in the CA NG9-1-1 System (e.g. texting, sensors, telematics, etc) , or how those with disabilities or special needs might benefit from new applications introduced in CA's NG9-1-1 System were noted. Geographic Information Systems (GIS) were noted as critical elements to building a successful NG9-1-1 infrastructure as were legislative, regulatory and governance issues related to supporting CA's defined vision for NG9-1-1.

Figure 3 Themes from Public Meetings on NG9-1-1 in CA

- **Training and Support (e.g. Dispatcher / Call Taker and awareness)**— – Ensuring that dispatchers/call takers are properly trained on the operational impacts of new forms of multimedia (e.g. texting, sensor data, video, etc) and potential change in the traditional call taker job role was of notable concern to respondents. In specific, the need to consider post traumatic stress training for call takers who may be exposed to graphic images of crimes or accidents in progress was noted. In addition to dispatcher and call taker training, the importance of educating the general public through user awareness campaigns and other similar activities was described as significantly important.

- **Cost and Funding of NG9-1-1**—As expected, concerns on how to fund NG9-1-1 within CA, as well as how much it will cost, were raised several times. For example, questions included whether the current revenue levels of the State Emergency Telephone Number Account (SETNA) will cover NG9-1-1 during and after the transition? Will CA's recent budget constraints restrict or delay execution of this large scale, multiyear, multiphase initiative? Is the State considering any additional funding sources beyond the SETNA?

- **The importance of standards for NG9-1-1**—The need to utilize standards and best practices including specific emphasis on open-based standards and architectures, like those underway by the National Emergency Number Association (NENA) were raised on several occasions.

- **Maintaining Privacy within NG9-1-1**—The need to ensure that the privacy of individual's records including things like location and medical information were raised with great detail and concern in several of the written comments.

2.1   NG9-1-1 Capabilities and Applications

Question A: Which of the following capabilities are most important when planning California's NG9-1-1 system (e.g. texting, video, pictures, call routing, location, call congestion treatment, medical information, interaction with social media, and instant messaging etc)?

The overwhelming theme among responders to this query was not on a specific capability, but rather that standards are established. It was the opinion of many respondents that standardization was the key to the successful planning of and transition to a NG9-1-1 system. The need for network architecture and interface standardization that was based on open architecture and non-proprietary was stressed. Respondents urged CA to continue to work with the National Emergency Number Association (NENA) towards completion and adoption of NENA i3. Some respondents stated that any system deployed must be capable of supporting all of these capabilities, with the stipulation that it be a phased implementation and that standards be developed to support capabilities prior to that implementation. Standardization was also urged in the area of privacy. It was recommended that clear guidelines be established if data is to be obtained through social media websites.

Question B: What capabilities should be incorporated into California's NG9-1-1 system that could deliver ancillary data such as building floor plans, locations of hazardous materials, locations of utilities such as gas lines, locations of and other important geographic information?

Accurate Geographic Information System (GIS) data and Global Positioning System (GPS) location information were common themes in response to this question. The need for a NG9-1-1 standard was again stressed here. Also, highlighted was the serious technical limitation that currently exists with Short Message Service (SMS). CA was urged to continue to stay informed and active in this arena. Other capabilities mentioned were acoustic sensor technology (e.g. gunshot detection, etc), as well as promoting the normalization of the various crash severity algorithms and of uniform presentation for data.

Question C: Should other kinds of devices be allowed to connect to California's NG9-1-1 network other than traditionally-defined communications devices used by the public (e.g. devices that connect to the Internet)? If so, what kinds?

Comments to this query ranged from a definite No to a Yes (e.g. sensors and other non-standard forms of content), but with the limitations that private call centers receiving emergency requests should screen those calls for legitimate emergencies, prior to routing to 9-1-1. Creating well defined standards, no matter what device was used, was once again, a primary theme here.

Question D: What access should be provided to California's NG9-1-1 network from devices that can't or won't deliver sufficient information to identify the calling party's telephone number and location (for example, non-initialized cellular telephones)?

The general consensus to this question was that location information is paramount in 9-1-1's ability to deploy resources in real emergency situations. Suggestions such as a "master database" that all wireless service providers could access to decode the phone identification and not allowing any media type that is not built to mission critical standards access were put forth.

However, comments displayed a wide range of opinion on this question. They varied from "the State of California should consider limiting access to the NG9-1-1 network to only those devices that provide sufficient authentication, identification or security characteristics" to "the network should deliver calls from devices that do not provide sufficient information".

The issue of privacy was discussed extensively here. Serious concerns were raised if providing location data was mandated. The rights to anonymous speech and First Amendment rights to speak were also addressed. Comments also suggested that location information not be delivered to third parties by the Internet service provider (ISP), but rather, delivered to the user's device, where the user could then decide how and when to use the information. It would be a user-controlled feature on the device.

Question E: What other capabilities or applications should California consider in implementing NG9-1-1?

Comments to this question included suggestions to focus on hosting, information sharing and consolidation to provide efficiencies and then utilizing monies saved through these activities to drive increased dispatcher training and public education programs. Additional capabilities suggested by respondents included:

- Features that deliver confirmation "callers" to let them know their text message has been received and the current status of their request,
- Ensuring that the needs of non-English speakers are addressed and that they are provided the same access as others, as well as
- Providing a seamless interface for telematics that permits unencumbered and affordable access to all PSAPs

2.2   NG9-1-1 Capabilities and Applications for Persons with Disabilities or Special Needs

Question A: How might NG9-1-1 technologies help persons with disabilities or special needs?

The consensus amongst respondents to this question was that text messaging may provide the most benefit to persons with disabilities or special needs. It was pointed out, however, that there simply is no current capability in the SMS network for communicating subscriber location to the PSAP. Some near term solutions, such as a national SMS relay center and the use of real time text (RTT), were offered, but respondents also noted that further investigation and development work is likely necessary. For example, it was asserted that modification of SMS to provide real-time, two-way communications may require significant re-engineering over a long period of time and furthermore it was suggested that industry time would be better spent on a new text-based standard conforming to Non-Voice Emergency Services (NOVES).

Question B: What other issues or opportunities related to persons with disabilities or special needs should California consider in implementing NG9-1-1?

Once again, defining industry and technical requirements was deemed to be extremely important to effectively use NOVES. Items, such as transmitting patient medical information via NG9-1-1, that could assist secondary PSAP dispatchers with response without speaking or texting with the caller heart monitoring devices, equipped with alerting devices, and geo-fencing capabilities that would alert when a special needs person wandered outside of predefined boundary, were also suggested here.

2.3   Legal, Regulatory and Funding

Question A: Will the advancement in capabilities and applications NG9-1-1 provides generate increased funding requirements and if so, how will these be addressed?

The general belief amongst respondents was that there would be an increased cost to deploy NG9-1-1 which would result in a need for increased funding. One of the reasons identified for the increase was that the phased implementation would require that both the legacy and Internet protocol (IP) networks be functional and maintained for some period of time. It was suggested that a move to hosted solutions could offset some of the increased funding

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requirements. The point was made that reliance on federal funding should be as a supplement and not a substitute for funding at the state level. It was stated that in order to avoid placing undue financial burden on local governments or PSAPs, the state should ensure that an effective mechanism for collecting and distributing 9-1-1 funds exists.

In the verbal comments, discussions concerning funding and estimating the cost of NG9-1-1 took place on multiple levels. The cost issue was addressed in terms of not only building out an IP backbone infrastructure, but on maintaining, at least for some period of time, the existing legacy 9-1-1 network. The question was raised as to whether or not SETNA was adequate to fund NG9-1-1 development while maintaining the legacy network.

Other respondents discussed whether economies of scale will come into play. One presenter suggested that the provider cost of maintaining an IP network may be much lower than that of the current legacy network which may be especially true in a hosted solution environment. They suggested that deploying shared, hosted, regional and geo-diverse systems will typically lower the initial cost of ownership and, subsequently, the maintenance of less hardware. This would result, they posited, in scenarios where back room and infrastructure costs can then be shared between multiple agencies, leaving only the cost of answering positions. Using this model, respondents believe that if these savings are multiplied across the many PSAPs in CA, extensive savings may be realized.

Question B: What are the benefits and risks to ensuring CA provides an open and competitive regulatory environment for 9-1-1 System (e.g. liability, cost redistribution, technology replacement)?

It is generally agreed that CA statutes and rules will need to be reviewed to ensure that they accommodate new technologies, enable competitive service providers and provide an equitable funding mechanism that is competitively neutral. One respondent commented that upgrading to new architecture hardware and software for such a small market could make it difficult for service providers to meet profit margin goals, since the cost of upgrading could outweigh the revenues. Concerns were also voiced that smaller PSAPs may find it difficult to locate funding to enable an upgrade for NG9-1-1.

Question C: Should technology requirements be functional, performance based and neutral with regard to technologies, manufacturers or providers?

Well-defined standards, once again, were pointed out as an important piece when creating technology requirements. Respondents also stated that CA should promote open standard architecture and non-proprietary technology, and that the technologies deliver meaningful improvements to the quality and speed of response and governance model that embrace such technologies.

Under the premise of this question and during the verbal comments, defining NG9-1-1 for CA was a topic that included many viewpoints. For example, the ongoing work being done by organizations like NENA, what vendors are selling as "NG9-1-1," and the fact that many states are already at different phases of planning and implementation all have created some complexity and confusion in defining "true" NG9-1-1. Respondents suggest that CA may also experience some difficulty in defining a CA-version of NG9-1-1.

Question D: What jurisdictional issues might arise when implementing an IP-enabled NG9-1-1 system (e.g. when call congestion overflow occurs and calls are automatically routed to other PSAPs)?

Those submitting comments clearly suggested that governance (or who/how decisions are made) and policy will be essential for a smooth and successful transition to NG9-1-1. It was noted that the roles and responsibilities for NG9-1-1 will need to be defined across jurisdictional frameworks and that inter-jurisdictional agreements should be reviewed and amended, as appropriate, to maximize the benefits that will come with NG9-1-1 routing flexibility.

Question E: With the ability to gather increased information with NG9-1-1 how will an individual's confidentially and privacy be maintained (e.g. medical information)?

The issue of privacy spawned much comment. It was noted that privacy is extremely important especially if and when medical history data is accessed and transmitted. The need and ability to tightly control user access and the ability to respond to possible compromised access were cited as essential in this new environment. Privacy advocacy groups urged the agency to respect the wishes of consumers in deciding whether to share their location or to authenticate their identities. Additionally, advocacy groups fear that a systematic attempt to access location or identity of online users will create a framework that facilitates more routine tracking of individuals and could jeopardize online anonymous speech.

In particular, privacy of consumer medical information was a focus with respect to the existing federal medical privacy laws. A question included whether dispatchers would be considered covered entities under those laws. It was also suggested that medical history data not be considered part of the public call record and that the data be held to the standards of state and federal privacy laws. Individuals recommended that the Agency consider best practices for the security of transmission, reception and storage of this data.

Question F: What other legal, regulatory and funding issues should California consider in implementing NG9-1-1?

Respondents identified liability issues as an area of attention for CA. The potential for liability issues to arise and complexity of those issues will increase with the complexity of the NG9-1-1 service delivery environment. It was suggested that full liability protection be afforded to all originating network providers in order to encourage successful deployment.

Some comments expressed that CA continue its stated efforts to remove any legal and regulatory barriers to implementing NG9-1-1 while others want CA to maximize funding by collecting the state 9-1-1 surcharge from all who have access to 9-1-1.

State laws and regulations governing the type of devices and "calls" allowed to access the NG9-1-1 network might require modifications. For example, respondents request that CA do the following:

- Review laws and regulations concerning the eligible use of NG9-1-1 funds
- Ensure that laws or regulations do not require specific technology components for 9-1-1 service delivery that are incompatible with NG9-1-1 service
- Eliminate laws and regulations that inhibit efficient sharing of NG9-1-1 data, but retain appropriate safeguards for privacy protection; craft uniform requirements for all NG9-1-1 service providers that meet accepted industry standards
- Ensure that laws and regulations are functional, standards-based, and performance-based, without reference to any specific proprietary technology, manufacturer, or service provider
- Ensure that state and local government should be prohibited from reallocating funds intended for existing 9-1-1 and new NG9-1-1 services to other purposes

2.4   Other NG9-1-1 Issues

Question A: What type of education, awareness, or training would you consider important for the public, PSAP staff, and/or first responders once NG9-1-1 is implemented in California?
Comments contained a wide variety of training and awareness suggestions including:

➢   Training generated from the state level.

➢ Training in the use of Web-based tools.
➢ Training 9-1-1 coordinators to be experts who take the lead in each county or region to ensure quality control for training and assisting with investigations of system abuse that cross jurisdictional lines.
➢ Training PSAP staff and first responders in the benefits of NG9-1-1.
➢ Conducting a public awareness campaign leveraging all popular media outlets.
➢ Conducting a public campaign regarding the new capabilities and limitations of NG9-1-1.
➢ Ensuring that each first responder and/or PSAP staff member must receive extensive and ongoing training on handling sensitive medical data. They must understand the governing laws and policies.

Of particular note during the verbal comments, attendees addressed the possible disturbing images and real time data that dispatchers/call takers could face in a NG9-1-1 environment. It was emphasized that improved systems will need to be in place to support and train dispatchers. This new technology will result in new avenues of stress and at times traumatic stress. Attendees stressed the importance of funding and training to address this increased level of strain that dispatchers will face.

Question B: *With an IP-enabled NG9-1-1 system that interconnects all of California's PSAPs, how will California address cyber security concerns so as to assure that the system remains available and protected?*

Those commenting reiterated their desire for CA to engage in a study to identify the risks and vulnerabilities in a NG9-1-1 environment. CA was encouraged to incorporate the highest level of cyber-security firewalls and anti-virus/spyware at each node that accesses the Emergency Services Internet Protocol Network (ESInet). It was the general consensus that NG9-1-1 providers follow security policies, standards (e.g. International Standards Organization 27002, etc), and guidelines compliant with industry best practices along with engaging an information security consulting firm to contribute criteria to ensure the highest level of security is attained.

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3. CONCLUSIONS

Throughout the six public meetings and in the written comments, many issues relevant to the subject of NG9-1-1 in CA were raised, discussed or submitted. The review of these comments unveiled the complexity of issues that must be dealt with while planning for NG9-1-1 in CA. The following conclusions can be derived from this activity:

- **Defining NG9-1-1 for CA is important** to ensure the complexities unique to CA, its diverse public safety environment and its applicable stakeholder communities are all effectively represented.
- **Conducting effective education and awareness programs is crucial** in addressing concerns related to operational impacts and general public concerns that NG9-1-1 may bring to the table.
- **Focusing (comprehensively) on funding matters will be instrumental** in ensuring that NG9-1-1 can be affordably deployed throughout the state and maintained in the future.
- **Implementing an open standards-based NG9-1-1 system helps assure interoperability** throughout the system
- **Maintaining privacy and security throughout the system is vital** to protect appropriate interests at all levels.

A key objective of the public meetings was to help identify any specific areas that the proposed Roadmap may have inadvertently missed. The CA 9-1-1 Division was pleased that the issues identified in both the public meetings and comments are addressed either directly or indirectly in the Roadmap. The subject of privacy concerns, while indirectly addressed as a security element in the Roadmap, appears to be worthy of a more formal approach and should be addressed in the applicable phases of the Roadmap. Even still, the overall input received during these meetings has confirmed the value of the Roadmap.

> **Note:**
> During this process, respondents raised several issues related to the *legacy* 9-1-1 system. These issues, while not explicitly relevant to the domain of NG9-1-1, were noted by the CA 9-1-1 Division. In many cases these issues are being already addressed through normal operations of the CA 9-1-1 Division (e.g. how telematics are introduced to the system).

The public meetings had an overarching focus of bringing awareness to public safety professionals and partners while educating people on key issues related to NG9-1-1 by expanding the scope of primary and secondary stakeholders. Some of the audiences included: medical industry, application providers, legislative and executive decision makers, persons with disabilities or special needs, non-English speaking parties and more. The need for stakeholder collaboration amongst all parties is clear and governance models that accommodate the introduction of new types of technologies and services will become invaluable.

This effort also revealed the diversity of participants that CA will need to partner with and whose opinions and input will be critical to the success of the overall NG9-1-1 initiative to the more immediate task of finalizing the Roadmap. The value in further public meetings, focus groups and roundtable discussions is clear. While participation in this first round of outreach was respectable, more efforts are needed in the future, including: active and targeted press releases and, marketing efforts to solicit and engage a wider audience, an increase in available time for participants as well as the need for an even broader range of topics for discussion.

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4.   NEXT STEPS

While the CA 9-1-1 Division executes its present operational mission, it seeks to modernize the CA 9-1-1 System in order to continue to deliver robust and effective 9-1-1 services into the future. The first step in that effort is to refine and finalize the Roadmap, which, when completed, will provide a detailed overview of the tasks and activities necessary to transition CA to NG9-1-1.

The CA 9-1-1 Division will continue to lead the CA 9-1-1 community through the migration to NG9-1-1 and to engage the State 9-1-1 Advisory Board, PSAPs, first responders, officials and the broader stakeholder community at large (including new partners) in this important effort. The CA 9-1-1 Division seeks the continued support of the State 9-1-1 Advisory Board to represent their respective constituents and advise the office on policies and practices related to 9-1-1, technical and operational standards, training standards, funding and reimbursement related to SETNA, and any useful projects that may benefit the State.

While CA establishes itself as a national leader, the initiative to migrate the State to NG9-1-1 will be a priority. CA is committed to becoming a strategic frontrunner in the NG9-1-1 conversation, including sharing the lessons learned from NG 9-1-1 projects (e.g. Enhanced 9-1-1 Grant Project), participating in the development and adoption of national standards and contributing to the Federal Communication Commission (FCC) and California Public Utilities Commission activities. Wherever possible, CA will seek to advance the national discourse and agenda to benefit the 9-1-1 community, citizens and visitors of CA.

The public meetings were an important step towards the overall goal of transforming CA's 9-1-1 System into a robust, resilient and feature-rich NG9-1-1 solution that meets CA's unique and diverse needs. The ongoing collaboration through roundtable discussions, focus groups, meetings, and sustained legislative and executive support, is essential in helping to advance that goal. With an established sense of urgency, the CA 9-1-1 Division intends to leverage the themes identified in these public meetings as it finalizes and executes the Roadmap during this historic initiative.

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5. ACKNOWLEDGEMENTS

The California Technology Agency, Public Safety Communications Office wishes to thank the following individuals and agencies, both public and private, for their contributions and support in hosting and presenting at these public meetings. Their expertise in NG9-1-1, Public Policy, Dispatch/Call Taking, and First Responder operations were invaluable in this process. This public/private partnership is extremely important and is a vital step in California's proposed NG9-1-1 roadmap as it helps to ensure that public concerns and questions are considered during the transition to NG9-1-1.

Panelists

- Penny Adams, Sacramento Regional Fire/EMS Communications Center
- Sheriff Tom Bosenko, Shasta County Sheriff
- Lieutenant, Unit Commander Michael Brand, Fresno County Sheriff's Department
- Chief John Browning, San Diego State University Police Department
- Interim Fire Chief Peter Bryan, State 9-1-1 Advisory Board for CA
- Chief Reginald Chappelle, California Highway Patrol
- Ryan Dulin, California 9-1-1 Emergency Communications Division
- Captain John Feeney, San Francisco Police Department
- Lorretta Fine, Public Safety Communications Services Division
- Chris Hinshaw, State 9-1-1 Advisory Board for CA
- Lisa Hoffman, State 9-1-1 Advisory Board for CA

- Chief Eric Hopley, Ontario Police Department
- Captain Jennifer Horton, Fresno County Sheriff's Office
- Chief Kevin Kreitman, Redding Fire Department
- Chief Robert Lehner, Elk Grove Police Department
- Sandy Maraviov, Citrus Heights Police Department
- Battalion Chief Denise Newman, San Francisco Fire Department
- Dory Rousseau, 9-1-1 County Coordinator, Fresno County
- Chief John Salvate, San Bernardino County Fire Department
- Retired Chief Sam Spiegel, City of Folsom, State 9-1-1 Advisory Board for CA
- Kurt Wallner, California Highway Patrol
- Lesli Wilson, State 9-1-1 Advisory Board for CA
- Chip Yarborough, State 9-1-1 Advisory Board for CA

Presenters

- Brian Acosta, 9-1-1 County Coordinator, San Bernardino County
- Michael Aguilar, California Public Utilities Commission
- Sam Bard, MicroDATA GIS, Inc.
- Ryan Dulin, California 9-1-1 Emergency Communications Division
- Dr. James Dunford, City of San Diego
- Paul Fahey, PlantCML
- Shelby Geez, 9-1-1 County Coordinator, Tulare County
- Hanan Harb, 9-1-1 County Coordinator, San Diego County
- Lisa Hoffman, CA 9-1-1 Advisory Board
- Mark Holmes, L.R. Kimball

- John Hunt, TeleCommunication Systems, Inc.
- Thomas Jeffers, OnStar
- Catherine McCormick, OnStar
- Dave Peck, Pictometry of California
- Richard Ray, ADA Compliance Coordinator, City of Los Angeles
- Don Reich, Public Safety Network
- Anthony Signorelli, PlantCML
- Jeremy L. Smith, L.R. Kimball
- Ron Stein, ShotSpotter, Inc.
- Paul Troxel, Sacramento Police Department
- Gary Wallace, ATX Group, Inc.
- Darold Whitmer, Intrado
- Joy Willis, Shasta Area Safety Communications Agency

The PSCO extends special thanks to Acting Secretary of the California Technology Agency, Christy Quinlan for her executive sponsorship and continued support, the California 9-1-1 Advisory Board for their advice and leadership and to Assemblymember Norma J. Torres who is a longstanding supporter and advocate for the California 9-1-1 Community and who attended the Ontario public meeting

APPENDIX A–NOTICE OF PUBLIC MEETINGS

CA TECHNOLOGY AGENCY

PUBLIC SAFETY COMMUNICATIONS OFFICE

CA 9-1-1 EMERGENCY COMMUNICATIONS

NOTICE OF PUBLIC MEETINGS ON NEXT GENERATION 9-1-1 IN CA

Date of Notice: Friday, January 14, 2011

NOTICE IS HEREBY GIVEN that the California 9-1-1 Emergency Communications will hold six public meetings on Next Generation 9-1-1 (NG9-1-1) in CA. The California 9-1-1 Emergency Communications seeks public comment on the specific questions included in this notice.

All agenda items are appropriate for action if the California Technology Agency wishes to take action. Public meetings are subject to change and/or cancellation. Specific public meeting agenda information will be posted and available prior to each meeting.

The public meeting**s** are scheduled for the following dates and locations:

February 14, 2011, from 12:00 p.m. to 3:00 p.m., PST, at Redding City Council Chambers, 777 Cypress Avenue, Redding, CA 96001

February 18, 2011, from 9:00 a.m. to 12:00 p.m., PST, at Department of Consumer Affairs, 1625 North Market Blvd, Sacramento, CA 95834

February 23, 2011, from 2:00 p.m. to 5:00 p.m., PST, at the San Diego County Administration Center, Room 310, Pacific Highway, San Diego, CA 92101

February 25, 2011, from12:00 p.m. to 3:00 p.m., PST, at Fresno City Council Chambers, 2600 Fresno St, Fresno, CA 93721

February 28, 2011, from 2:00 p.m. to 5:00 p.m., PST, at the CA Public Utilities Commission, 505 Van Ness Avenue, San Francisco, CA 94102

March 4, 2011 – from 2:00 p.m. to 5:00 p.m., PST, at the Ontario Police Department, 2500 S. Archibald Avenue, Ontario, CA 91761

Background:

For more than forty years Californians have been served by a capable 9-1-1 system. Recently, California published the CA 9-1-1 Strategic Plan to emerge as a nationwide leader in the 9-1-1 community. California's commitment to NG9-1-1 continued by creating a proposed CA NG9-1-1 Roadmap that outlines the steps necessary to design and builds a robust and comprehensive NG9-1-1 system.

The US Department of Transportation (US DOT) has conducted efforts at the national level to understand the impact of Next Generation 9-1-1 (NG9-1-1) and recently the Federal Communications Commission (FCC) initiated a request for commentary on issues related to implementing NG9-1-1.

In 2009, the California 9-1-1 System handled 24.8 million calls alone. However, while the current 9-1-1 system has functioned efficiently for many decades, the core infrastructure is built on a legacy telephony-based platform unable to support new demands and capabilities.

Widespread adoption of rapidly advancing technologies like text, video, Voice over Internet Protocol (VoIP) and the saturation of high-speed broadband access has raised the expectations of 9-1-1 services for Californians. Improvements are needed to support new requirements and expectations. To that end, California is seeking comment on topics related to NG9-1-1.

Supplementary Information:

Entities, organizations, and individuals who wish to present comments at a particular meeting are encouraged to register at least five business days in advance of the meeting date. Organizations should designate no more than one individual to speak on behalf of the organization. Persons who register in advance should report to the registration desk at least one-half hour prior to the start of the meeting in order to confirm the time and order of their public comment.

Comments will be limited to three minutes per person or organization and should address the questions included in this Notice. Those providing public comment may choose to supplement their testimony with written statements that will be made part of the official public meeting record. If the Agency determines that there is not enough time to hear from all those wishing to present comments, the Agency will select among those wishing to testify to ensure representation of a range of viewpoints and interests.

If time allows on the meeting day, attendees can also make public comments by expressing written interest on a sign-up sheet that will be available at the meeting location. Please note that persons who register in advance will receive speaking priority and persons registering at the meeting will only be able to make public comments if time allows.
This meeting is accessible to the physically disabled. Anyone needing disability-related accommodations or modifications in order to participate in the meeting should contact Paul

Dumetz at least five (5) business days before the meeting date to best allow us to meet your needs.

Those persons who are not able to participate in the public meetings are encouraged to submit written comments electronically or by mail as follows:

Comments may be submitted via email to: NG911COMMENTS@state.ca.gov

Or
California Technology Agency
Public Safety Communications Office
Attention: Next Generation 9-1-1 Public Meeting Comments
California 9-1-1 Emergency Communications
601 Sequoia Pacific Boulevard
Sacramento, CA 95811

All comments must be received by March 18, 2011.

General Information
Advance Registry for Public Comment
Disability-Related Accommodation Requests

Contact:

Paul Dumetz, Administrative Liaison, at (916) 657-9494 or via email at
Paul.dumetz@state.ca.gov.

Media Information

Contact:

Bill Maile, Public Information Officer, California Technology Agency, at (916) 549-2845
or via email at bill.maile@state.ca.gov.

QUESTIONS

Summary:
NG9-1-1 provides the ability to accept multimedia data (e.g. text, video and photo) and improves interoperability, call routing, PSAP call congestion/overflow treatment, and location accuracy. NG9-1-1 strengthens system resiliency and reliability, as well as increases opportunities to achieve fiscal and operational efficiency through cost-sharing arrangements. California is seeking public comment on the following:

I. NG9-1-1 Capabilities and Applications

A. Which of the following capabilities are most important when planning California's NG9-1-1 system (e.g. texting, video, pictures, call routing, location, call congestion treatment, medical information, interaction with social media, and instant messaging etc)?

B. What capabilities should be incorporated into California's NG9-1-1 system that could deliver ancillary data such as building floor plans, locations of hazardous materials, locations of utilities such as gas lines, locations of and other important geographic information?

C. Should other kinds of devices be allowed to connect to California's NG9-1-1 network other than traditionally-defined communications devices used by the public (e.g. devices that connect to the Internet)? If so, what kinds?

D. What access should be provided to California's NG9-1-1 network from devices that can't or won't deliver sufficient information to identify the calling party's telephone number and location (for example, non-initialized cellular telephones)?

E. What other capabilities or applications should California consider in implementing NG9-1-1?

II. NG9-1-1 Capabilities and Applications for persons with disabilities or special needs

A. How might NG9-1-1 technologies help persons with disabilities or special needs?

B. What other issues or opportunities related to persons with disabilities or special needs should CA consider in implementing NG9-1-1?

III. Legal, Regulatory and Funding

A. Will the advancement in capabilities and applications NG9-1-1 provides generate increased funding requirements and if so, how will these be addressed?

B. What are the benefits and risks to ensuring California provides an open and competitive regulatory environment for 9-1-1 System (e.g. liability, cost redistribution, technology replacement)?

C. Should technology requirements be functional, performance based and neutral with regard to technologies, manufacturers or providers?

D. What jurisdictional issues might arise when implementing an IP-enabled NG9-1-1 system (e.g. when call congestion overflow occurs and calls are automatically routed to other PSAPs)?

E. With the ability to gather increased information with NG9-1-1 how will an individual's confidentially and privacy be maintained (e.g. medical information)?

F. What other legal, regulatory and funding issues should California consider in implementing NG9-1-1?

IV. Other NG9-1-1 Issues

A. What type of education, awareness, or training would you consider important for the public, PSAP staff, and/or first responders once NG9-1-1 is implemented in California?

B. With an IP-enabled NG9-1-1 system that interconnects all of California's PSAPs, how will California address cyber security concerns so as to assure that the system remains available and protected?

APPENDIX B–PUBLIC MEETING DETAILS

Meeting: Redding, CA

Date: February 14, 2011
Time: 12:00 p.m. to 3:00 p.m.
Location: Redding City Council Chambers (777 Cypress Ave, Redding, CA)

PANELISTS

NAME	AGENCY	TITLE
Karen Wong	California Technology Agency, Public Safety Communications Office	Deputy Director
Ryan Dulin	California Technology Agency, Public Safety Communications Office	Chief, CA 9-1-1 Emergency Communications Division
Reginald Chappelle	CA Highway Patrol	Chief Information Officer, Information Management Division
Sam Spiegel	State 9-1-1 Advisory Board for CA	Member
	City of Folsom Police Department	Retired Chief
Tom Bosenko	Shasta County Sheriff's Office	Sheriff
Kevin Kreitman	City of Redding Fire Department	Chief

PRESENTERS

NAME	AGENCY	TITLE	TOPIC
Thomas Jeffers	OnStar	Vice President of Public Policy	General Overview of Telematics
Jeremy L. Smith, CISSP, CISA	L.R. Kimball	Sr. Consultant	National NG9-1-1 Update
Ryan Dulin	California Technology Agency, Public Safety Communications Office	Chief, CA 9-1-1 Emergency Communications Division	NG9-1-1 in California
Joy Willis	SHASCOM9-1-1	Director	NextGen 9-1-1: A PSAP Perspective
Darold Whitmer	Intrado	Vice President of Strategic Relationships	9-1-1 Then & Now

Meeting: Sacramento, CA

Date: February 18, 2011
Time: 9:00 a.m. to 12:00 p.m.
Location: Department of Consumer Affairs (1625 North Market Blvd, Sacramento, CA)

PANELISTS

NAME	AGENCY	TITLE
Loretta Fine (representing Ms. Karen Wong)	California Technology Agency, Public Safety Communications Office	Assistant Deputy Director
Ryan Dulin	California Technology Agency, Public Safety Communications Office	Chief, CA 9-1-1 Emergency Communications Division
Reginald Chappelle	CA Highway Patrol	Chief Information Officer, Information Management Division
Peter Bryan	State 9-1-1 Advisory Board for CA	Member
	Wheatland Fire Authority	Interim Chief
Penny Adams	Sacramento Regional Fire/EMS Communications Center	Center Manager
Robert Lehner	Elk Grove Police Department	Chief
Sandy Maraviov	Citrus Heights Police Department	Support Services Manager

PRESENTERS

NAME	AGENCY	TITLE	TOPIC
Catherine McCormick	OnStar	Public Policy Manager	Telematics Overview
Jeremy L. Smith, CISSP, CISA	L.R. Kimball	Senior Consultant	National NG9-1-1 Update
Ryan Dulin	California Technology Agency, Public Safety Communications Office	Chief, CA 9-1-1 Emergency Communications Division	Next Generation 9-1-1 in California
Sam Bard	MicroDATA GIS, Inc.	National Sales Manager	Status of the Industry Today
Paul Troxel	Sacramento Police Department	Supervising Dispatcher	NG9-1-1: Issues that Need to Be Addressed, PSAP View
Paul Fahey/Anthony Signorelli	Plant CML	Director of Business Development / Sr. Solutions Engineer	9-1-1 Communications Infrastructure

Meeting: San Diego, CA

Date: February 23, 2011
Time: 2:00 p.m. to 5:00 p.m.
Location: San Diego County Administration Center (Room 310, Pacific Highway, San Diego, CA)

PANELISTS

NAME	AGENCY	TITLE
Karen Wong	California Technology Agency, Public Safety Communications Office	Deputy Director
Ryan Dulin	California Technology Agency, Public Safety Communications Office	Chief, CA 9-1-1 Emergency Communications Division
Kurt Wallner	CA Highway Patrol	Project Manager, Callbox Program
Lesli Wilson	State 9-1-1 Advisory Board for CA	Member
	North County Dispatch JPA	Administrator
John Browning	San Diego State University Police Department	Chief

PRESENTERS

NAME	AGENCY	TITLE	TOPIC
Jeremy L. Smith, CISSP, CISA	L.R. Kimball	Sr. Consultant	National NG9-1-1 Update
Ryan Dulin	California Technology Agency, Public Safety Communications Office	Chief, CA 9-1-1 Emergency Communications Division	Next Generation 9-1-1 in California
Gary Wallace	ATX Group, Inc.	Vice President of Corporate Relations	Telematics Overview
Hanan Harb	San Diego County	9-1-1 County Coordinator	NG9-1-1: A PSAP Perspective
Dave Peck	Pictometry of CA	District Manager	Aerial Imagery, GIS and Mapping Applications in NG9-1-1
Don Reich	Environmental and Occupational Health and Safety (Echo911)	Vice President	State Wide Data- How Do We Use It
Dr. James Dunford, MD	City of San Diego	Medical Director	Emergency Medicine In NG9-1-1
John Hunt	TeleCommunication Systems, Inc.	Director for NG9-1-1	Status of the 9-1-1 Industry Today

Meeting: Fresno, CA

Date: February 25, 2011
Time: 12:00 p.m. to 3:00 p.m.
Location: Fresno City County Chambers (2600 Fresno Street, Fresno, CA)

PANELISTS

NAME	AGENCY	TITLE
Karen Wong	California Technology Agency, Public Safety Communications Office	Deputy Director
Ryan Dulin	California Technology Agency, Public Safety Communications Office	Chief, CA 9-1-1 Emergency Communications Division
Reginald Chappelle	CA Highway Patrol	Chief Information Officer, Information Management Division
Chip Yarborough	State 9-1-1 Advisory Board for CA	Member
	Heartland Fire Communications Authority	Director
Michael Brand	Fresno County Sheriff Communications Department	Unit Commander / Lieutenant
Jennifer Horton	Fresno County Sheriff Patrol Bureau	Captain
Dory Rousseau	Fresno County	9-1-1 County Coordinator

PRESENTERS

NAME	AGENCY	TITLE	TOPIC
Shelby Geezer	Tulare County	9-1-1 County Coordinator	NG9-1-1: A PSAP Perspective
Mark Holmes, GISP	L.R. Kimball	Sr. Consultant	NG9-1-1 A National Update
Ryan Dulin	California Technology Agency, Public Safety Communications Office	Chief, CA 9-1-1 Emergency Communications Division	Next Generation 9-1-1 in California
Gary Wallace	ATX Group, Inc.	Vice President Corporate Relations	Telematics Overview
Sam Bard	MicroData GIS, Inc.	National Sales Manager	Status of the 9-1-1 Industry Today

Meeting: San Francisco, CA

Date: February 28, 2011
Time: 2:00 p.m. to 5:00 p.m.
Location: CA Public Utilities Commission (505 Van Ness Ave., San Francisco, CA)

PANELISTS

NAME	AGENCY	TITLE
Karen Wong	California Technology Agency, Public Safety Communications Office	Deputy Director
Ryan Dulin	California Technology Agency, Public Safety Communications Office	Chief, CA 9-1-1 Emergency Communications Division
Reginald Chappelle	CA Highway Patrol	Chief Information Officer, Information Management Division
Lisa Hoffman	State 9-1-1 Advisory Board for CA	Member
	San Francisco Department of Emergency Management	Deputy Director, Division of Emergency Communications
Denise Newman	San Francisco Fire Department	Battalion Chief
John Feeney	San Francisco Police Department Police Liaison to San Francisco Department of Emergency Management	Captain

PRESENTERS

NAME	AGENCY	TITLE	TOPIC
Mark Holmes, GISP	L.R. Kimball	Senior Consultant	National NG9-1-1 Update
Ryan Dulin	California Technology Agency, Public Safety Communications Office	Chief, CA 9-1-1 Emergency Communications Division	Next Generation 9-1-1 in California
Lisa Hoffman	San Francisco Department of Emergency Management	Deputy Director, Division of Emergency Communications	NG9-1-1: A PSAP Perspective
Michael Aguilar	CA Public Utilities Commission	Regulatory Analyst, Communications Division	California PUC Regulatory Program and Policy: An Overview
Gary Wallace	ATX Group, Inc.	Vice President Corporate Relations	Telematics Overview
John Hunt	TeleCommunications Systems, Inc.	Director, Next Generation 9-1-1	The 9-1-1 Industry Perspective
Ron Stein	ShotSpotter, Inc.	Director, Product Management, Product Marketing and Partnerships	Sensors and Surveillance Systems: Benefits to Public Safety and Emergency Response

Meeting: Ontario, CA

Date: March 4, 2011
Time: 2:00 p.m. to 5:00 p.m.
Location: Ontario Police Department (2500 South Archibald Avenue, Ontario, CA)

PANELISTS

NAME	AGENCY	TITLE
Karen Wong	California Technology Agency, Public Safety Communications Office	Deputy Director
Ryan Dulin	California Technology Agency, Public Safety Communications Office	Chief, CA 9-1-1 Emergency Communications Division
Reginald Chappelle	CA Highway Patrol	Chief Information Officer, Information Management Division
Chris Hinshaw	State 9-1-1 Advisory Board for CA	Member
	CA National Emergency Number Association	President, CA Chapter
Eric Hopley	Ontario Police Department	Chief
John Salvate	San Bernardino County Fire Department	Division Chief

PRESENTERS

NAME	AGENCY	TITLE	TOPIC
Jeremy L. Smith, CISSP, CISA	L.R. Kimball	Senior Consultant	NG9-1-1 National Update
Ryan Dulin	California Technology Agency, Public Safety Communications Office	Chief, CA 9-1-1 Emergency Communications Division	Next Generation 9-1-1 in California
Catherine McCormick	OnStar	Public Policy Manager	Telematics Overview
Brian Acosta	San Bernardino County	9-1-1 County Coordinator	NG9-1-1: A PSAP Perspective
Darold Whitmer	Intrado	Vice President, Strategic Relationships	9-1-1 Then and Now
Richard Ray	City of Los Angeles	ADA Compliance Coordinator, Department of Disability	NG9-1-1 in California for Deaf, Deaf-Blind, and Hard of Hearing or Have a Speech Disability