

AI-Driven Transformation in 9-1-1 Operations: Modernizing Emergency Communications

APCO AI Summit 2025



Introductions



Jeremy Hill

Public Safety Advisor, NTIA

- Focuses on stakeholder engagement and technology modernization
- Former ECC director and national 9-1-1 policy contributor



About NTIA

The National Telecommunications and Information Administration (NTIA), part of the U.S. Department of Commerce, is the Executive Branch agency that advises the President on telecommunications and information policy issues.

NTIA's programs and policymaking focus largely on:

- Expanding broadband Internet access and adoption in America
- Expanding the use of spectrum by all users
- Advancing public safety communications
- Ensuring that the Internet remains an engine for innovation and economic growth

Our Research

Cross-Country Analysis

9-1-1 Center Engagement & Site Visits

Stakeholder Symposium

Summary of Key Findings Submitted to Assistant Secretary

NTIA conducted a national landscape analysis of AI in 9-1-1 operations.

Methods:

- 14 interviews with ECC leaders
- 4 site visits
- National AI Symposium

Focused on real-world insights from frontline professionals.

9-1-1 Center Site Visit Map

Legend

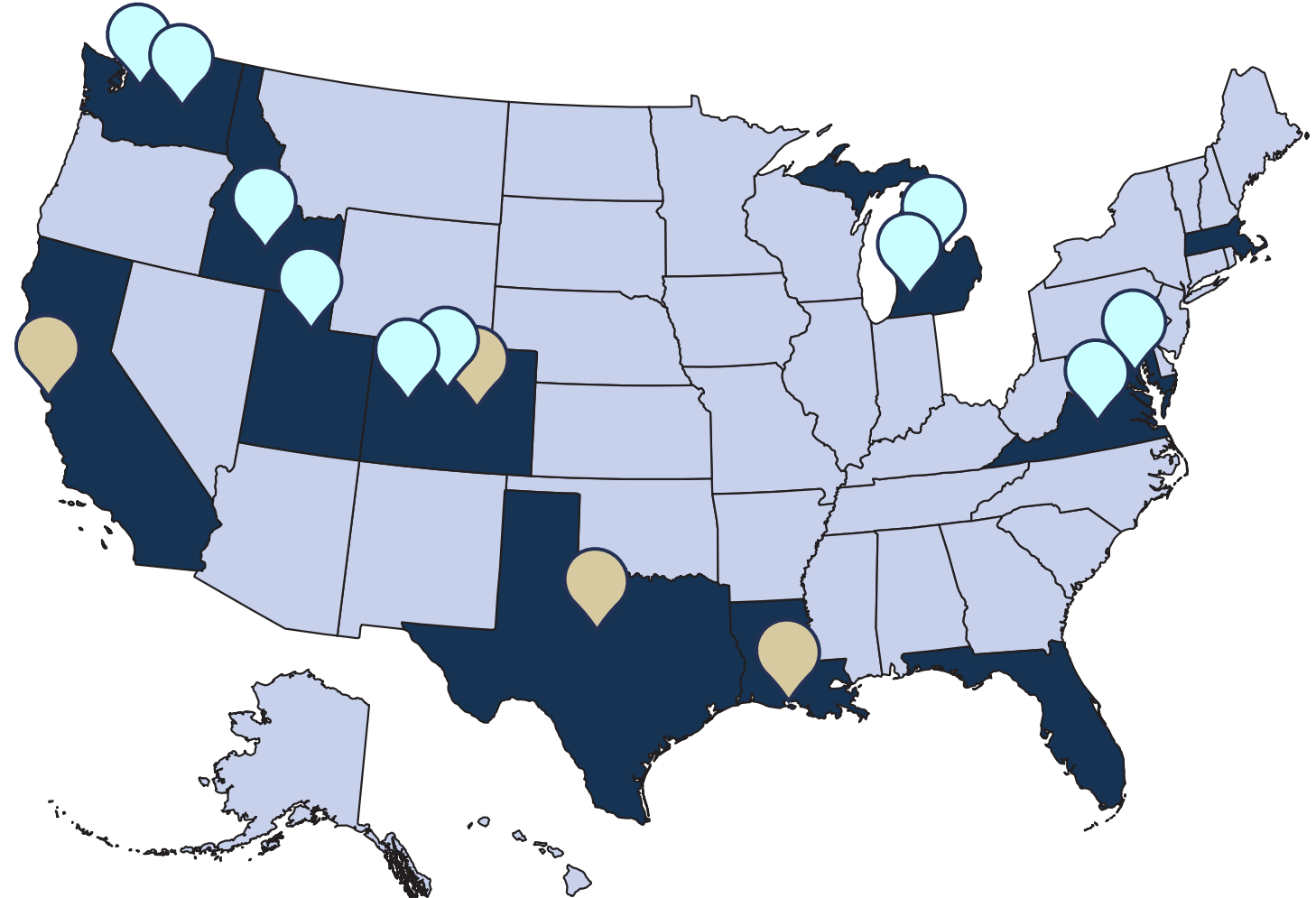


Phone
Interview



Site Visit

- **Orleans Parish (LA)** – January
- **Monterey County (CA)** – February
- **North Central Texas 911 (TX)** – March
- **Jefferson County Communication Authority (CO)** – April
- Additional phone interviews took place across the country at:
 - Aurora Police Department (CO)
 - Denver ECC (CO)
 - Orange County ECC (VA)
 - Idaho State Police (ID)
 - Saginaw 911 (MI)
 - Seattle ECC (WA)
 - Multi Agency Communication Center 911 (WA)
 - Baltimore City (MD)
 - Kalamazoo (MI)
 - Weber (UT)



Executive Summary



Artificial Intelligence (AI) is no longer a distant concept. It is here, transforming how 9-1-1 centers save lives and serve communities.

- AI offers enormous potential and requires thoughtful leadership to capture its benefits while safeguarding public trust.
- Swift action is paramount to ensure all 9-1-1 Centers can access these tools before the technology gap widens.

9-1-1 By The Numbers

82% of 9-1-1 centers have vacancies. The average rate is 25%

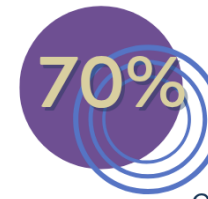


of 9-1-1 centers lack funding to grow or replenish their workforce

5,748 nationwide 9-1-1 centers manage **240M**

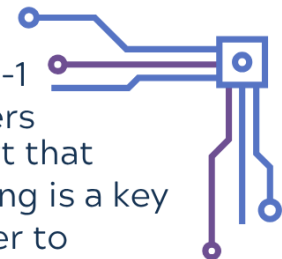


emergency calls each year.



of calls come from wireless devices, emphasizing the need for location technologies

68% of 9-1-1 centers report that funding is a key barrier to modernization



AI Impact and Current State

- **The 9-1-1 community is at a critical juncture**, navigating rising demands with evolving technology.
- AI is increasingly viewed as a **foundational component of NG9-1-1 modernization**, not just a parallel innovation.
- **Key AI Capabilities:**
 - Natural Language Processing (NLP)
 - Large Language Models (LLMs)
 - Predictive Forecasting
- **Cloud-native platforms** enable scalable call handling, rapid tool deployment, and disaster resilience.



Future State

The future of 9-1-1 is a rapidly approaching reality where advanced AI enhances operational efficiency, situational awareness, and telecommunicator support.

- **Multimodal LLMs:** Process text, audio, and video simultaneously for structured data and seamless CAD-to-CAD exchange.
- **Real-Time Translation:** Identify language and generate transcripts instantly.
- **Predictive Forecasting:** Anticipate call surges and optimize resource deployment.
- **Voice Biometrics:** Enhance security and efficiency.

Proven Impact on Operations

- **Reduced Administrative Volume:** Monterey County ECD – AI reduces non-emergency call volume by about 36% on average, with a peak near 39% in late 2024. On a typical day, AI resolves over 100 non-emergency calls without human intervention.
- **Improved Answer Times:** Jeffcom 911 – AI deployment produced an initial **40% year-over-year reduction** in administrative calls, stabilized at **33%**, and a **5% or greater improvement** in the share of 9-1-1 calls answered within 15 seconds.
- **Enhanced Training:** Monterey County ECD – Retention improved from **43%** to **67%** after AI integration.
- *(Internal stat for context: QA program reviewed 24,000 calls with 86% protocol adherence.)*



Solutions



- **Procurement Reform:** Develop model RFP templates and cooperative purchasing guides.
- **Interoperability:** Establish open API standards and embed cybersecurity safeguards.
- **Training:** Support peer-led training, transition templates, and immersive learning initiatives.
- **Vendor Partnerships:** Prioritize vendors who tailor solutions to 9-1-1 operations and engage telecommunications directly.

A Day in the Life: FUTURE 9-1-1 CENTER

A text-to-9-1-1 message comes in: "Incidente d'auto. Non posso parlare. Sto sanguinando"

The telecommunicator completes the call and documentation without typing a word.

Real-time translation identifies Italian-speaking caller & generates an English transcript.

AI automatically conducts quality assurance on the call.

AI triage assigns a high-priority score using NLP & sentiment analysis.

The telecommunicator dispatches the call in under 90 seconds.

The caller sends a blurred video feed that provides additional scenario details.

Predictive analytics alert the supervisor to a spike in calls due to icy roads.

Translation allows the telecommunicator to provide triage-level directions in English.

AI trims the most actionable segment of the video feed to send to paramedics en route.

The AI bot auto-translates everything it hears, bidirectionally & in real time.

CAD auto-populates with caller location, vehicle data, & prior incident history.



Opportunities for Directors



- **Procurement Reform:** Advocate for model RFP templates and cooperative purchasing guides.
- **National AI Governance Framework:** Support voluntary standards for transparency, explainability, and human-in-the-loop safeguards.
- **National AI Training & Testbed Initiatives:** Champion immersive training, peer-led modules, and regional testbeds.
- **Data Clearinghouse & Metrics Model:** Advocate for a national clearinghouse for anonymized 9-1-1 data.
- **Cybersecurity & Resilience:** Push for national cybersecurity standards and shared service models.

Call to Action

- **Prioritize AI Adoption:** Leverage AI to enhance telecommunicator support, reduce administrative burdens, and improve public safety outcomes.
- **Address Foundational Issues:** Focus on data standardization, governance, and security.
- **Advocate for Support:** Advocate for the support needed to advance procurement reform, training, and testbeds, particularly for smaller or under-resourced 9-1-1 Centers.
- **Embrace Collaboration:** Partner with federal entities, industry leaders, and professional associations.



By taking measured steps today, 9-1-1 leaders can ensure their centers are prepared to adopt AI in ways that strengthen public trust and improve outcomes tomorrow.



Thank You!

Jeremy Hill
jhill@ntia.gov