Mission and Overview
What’s New in the 9-1-1 Branch?
Connecting the Technology
2017 Statistics
9-1-1 Branch Update
Business Management Division
Technology Division
Text to 9-1-1
Next Gen 9-1-1
What’s New in CA 9-1-1 Branch?

Six new 9-1-1 Staff
Five new Broadband Services Staff

California 9-1-1 Emergency Communications Branch

PAT MALLON
ASSISTANT DIRECTOR
(916) 657-9454
pat.mallon@caloes.ca.gov

BUDGE CURRIER
BRANCH MANAGER
(916) 657-9915
budge.currier@caloes.ca.gov

JOSEPH MARUCA
Administrative Support
(916) 657-9269
joseph.maruca@caloes.ca.gov

SHELLY HUTCHENS
Telecom Systems Manager
CALIFORNIA BROADBAND SERVICES DIVISION
(916) 657-3710
shelly_hutchens@caloes.ca.gov

L J NIELSEN
Deputy Director
(916) 657-9119
lj.nielson@caloes.ca.gov

MICHAEL ELDER
Chief Advisor
(916) 657-8295
michael.elder@caloes.ca.gov

JOHN FEDERER
Unit Supervisor
RECONCILIATION UNIT
(916) 657-9287
john.federer@caloes.ca.gov

Micheal Elder
San Francisco
San Joaquin
Santa Clara
San Diego
Ventura

VICTORIA SOLIS
Chief Advisor
Chairman of the Policy Team
(916) 657-6038
victoria.solis@caloes.ca.gov

ALICIA FULLER
Unit Supervisor
ADVOCACY AND COMPLIANCE UNIT
(916) 657-9119
alicia.fuller@caloes.ca.gov

THERESA FRYER
Chairman of the Board
(916) 657-9145
theresa.fryer@caloes.ca.gov

PAVEL KIROGLO
Chief Advisor
(916) 657-9902
pavel.kiroglo@caloes.ca.gov

ANDREW MATTISON
Program Facilitator
(916) 657-9459
andrew.mattison@caloes.ca.gov

RUYEN TANA
Staff Accountant
(916) 657-9193
ruyen.tana@caloes.ca.gov

CHERISE BARRETT
Emerging Technologies
(916) 657-9235
cherise.barrett@caloes.ca.gov

RONIQUE SHELLS
Chief Advisor
(916) 657-9343
ronique.shells@caloes.ca.gov

LORI TOY
Chief Advisor
(916) 657-9183
lori.toy@caloes.ca.gov

DEIRDRE MORTENSEN
Deputy Director
(916) 657-9188
doirde.mortensen@caloes.ca.gov

CURT GUILLOT
Chairman of the Board
(916) 657-6080
curt.guillot@caloes.ca.gov

YVONNE WINN
Chairman of the Board
(916) 657-9479
yvonne.winn@caloes.ca.gov

JILL THOMPSON
Website & Emergency Technologies
(916) 657-9236
jim.thompson@caloes.ca.gov

Office Contact Information:
Main Line: (916) 657-9369
Fax: (916) 657-9882
CA 9-1-1 Branch@caloes.ca.gov
www.caloes.ca.gov/9-1-1

Effective: February 2018
Connecting the Technology

Next Generation 9-1-1

FirstNet Broadband Services

Emergency Responders

CPE – Customer Premise Equipment used to answer 9-1-1 calls
CAD – Computer Aided Dispatch used to dispatch emergency responders
LMR – Land Mobile Radio used for mission critical voice communications

Landline 9-1-1

Wireless 9-1-1

Voice over IP 9-1-1

Text to 9-1-1

VoIP Service Provider

Local Authority

Public Safety Answering Point

Radio

CPE

CAD

Alerts and Warnings

Broadcast Message

Slide 5
2017 California 9-1-1 Call Statistics

Total 9-1-1 Calls  28,129,927

- 80% Wireless
- 15% Wireline
- 4% Voice over IP
- 1% Other to include Telematics
- ~ 18,200 Text Messages
Updates and Overview

Presented by

Alicia Fuller

9-1-1 Advisory & Compliance Unit
Program Management Division

- Statewide PSAP advisement and support
- Procurement of 9-1-1 systems and services using CPE Contract Agreements, CMAS, CALNET, and tariff
- PSAP call volume standards and network integrity to assist PSAPs in maintaining call answering standards
- Fiscal and Operational Review (FOR) Process
- 9-1-1 Operations Manual
- Budget and SETNA fund reporting
- Contract and Procurement oversight
- Invoice and reimbursement validation and reconciliation
Key PSAP Funding

- Foreign Language Emergency Interpretation Services (Chapter VII)

- 9-1-1 Annual Training Allotment (Chapter III) - $3,000 per fiscal year

- 9-1-1 CPE Systems, Network Services, GIS Allotment, and Incremental Items (Chapter III)
PSAPs will continue to have two Direct Funded Options (9-1-1 calls only)

- Direct Funded Option 1: CA 9-1-1 State Contract
- Direct Funded Option 2: CA Multiple Award Schedule (CMAS) – Purchase Order required

PSAPs also have an option to utilize reimbursement for 9-1-1 foreign language interpretation services
Direct Fund Option 1: CA 9-1-1 State Contract

- Per Minute Interpretation State Rate: $0.58
- Statewide Contractor: Voiance (a CyraCom Intl. Co.)
- Voiance will contact PSAPs choosing option 1 with further instructions
  - No action required by the PSAP
  - Dedicated state account team

CA 9-1-1 State Contract Benefits

- CA 9-1-1 Branch contract administration and oversight
- Monthly performance reports are required
- Service issues can be submitted online
- Consolidated billing and reporting
Foreign Language Contract

- Direct Fund Option 2: CA Multiple Award Schedule (CMAS)
  - PSAP chooses CMAS vendor
  - Purchase Order (PO) required
  - PSAP determines contract term and SLAs
  - Per minute rate cannot exceed state rate of $0.58

- Reimbursement Option
  - PSAPs may procure/pay their own 9-1-1 interpretation services
  - Per minute rate cannot exceed state rate of $0.58
  - Requires submission of Reimbursement Claim Form TDe-290 (minimum quarterly submission)

- PSAPs may have more than one service provider

- Questions - contact Lori Toy at (916) 657-9183 or Lori.Toy@caloes.ca.gov
Training Allotment

- Available to PSAPs and 9-1-1 County Coordinators
- Annual Training Allotment (ATA) of $3,000 is available each fiscal year (Jul-Jun)
- Unspent ATA balance cannot be rolled over or applied to the next fiscal year
- Training must be pre-approved by CA 9-1-1 Branch
- State Travel Rates must be followed
- Training must be specific to 9-1-1 and take place within California
- Funding is received by following the Reimbursement Claim process
Travel reimbursement and activity related claims must be submitted no later than 90 days (Sept 30) after the close of the State’s fiscal year end (June 30)

- Annual Training Allotment (ATA) claims
- 9-1-1 County Coordinator/PSAP Manager claims

Reimbursement Claim Forms

- Reimbursement Claim, TDe-290 (Rev. 07/2014)
- Reimbursement Claim Support Document, TDe-290A (Rev. 07/2014)
- Other required supporting documentation (receipts)
- Forms are available on our website
CA 9-1-1 Branch PSAP Advisors

Theresa Fryer
- Bay Area
- Riverside & San Bernardino

Curt Guillot
- Sacramento & Sierra Nevada
- Central Coast/ Tri-Counties
- San Diego & Imperial
- Cal Fire Statewide

Pavel Kioroglo
- North Coast
- Los Angeles

Yvonne Winn
- Northern CA
- Central Valley
- Orange

Alicia Fuller
- CHP Statewide
Role of 9-1-1 PSAP Advisor

- State liaison for PSAP managers and communications personnel
- Primary point of contact for 9-1-1 equipment or service related questions
- Responsibilities are split geographically by county (See Directory for current county assignments)
- Travel to public safety agencies throughout CA to:
  - Perform Fiscal and Operational Reviews (FOR)
    - Goal is to visit each PSAP every 3-5 years
    - Contact your Advisor to request a FOR
  - Attend and present at PSAP Manager meetings
Help with CPE Replacements and CPE Contracts

- Advise PSAP managers on the usage of:
  - State contracts available to purchase 9-1-1 system and equipment
  - CA 9-1-1 Branch funding policy

- Provide general information on contracted vendors

- Facilitate fiscal approval for purchases

- Answer questions and address issues throughout the replacement process including:
  - Vendor selection, installation, and acceptance of CPE system
  - Contract terms and maintenance support

- First point of contact to escalate contract compliance issues between PSAP and contractor vendors
9-1-1 Operations Manual Updates

- Host-Remote Funding Model & Agreement Form
  - Network Configuration
- Updated System Acceptance Forms (TDe-284/284a)
- Incremental Equipment/Services
  - 25% of total funding fixed allotment for certain items
  - Furniture and chairs are no longer eligible items for new funding allotments
- PMP/ENP certified profession consulting services
- Public safety AVL to support 9-1-1 call answering
- Text-to-9-1-1 Deployment Schedule
- Text-to-9-1-1 Integration
Contract Updates

- CPE Contract Agreements
  - 9 contractors available
  - [www.caloes.ca.gov/911](http://www.caloes.ca.gov/911)

- Foreign Language Emergency Interpretation Services

- Text-to-9-1-1
  - Contract extension in process
Technology Division

Updates and Overview

Presented by

Ryan Sunahara

Technology Division Chief
Technology Division - Roles

Chereise Bartlett
- Text to 9-1-1
- Procurement
- Emerging Tech

Donna Peña
- VoIP/GIS
- NG Vehicle Emer Data
- Regulations/CPUC

Andrew Mattson
- NG 9-1-1 Project Management
- PSAP Regionalization
- County Coordinator Task Force

Jim Thompson
- Wireless Coordinator
- Wireless Technical Routing Analysis Project (WTRAP)
### Deployed Counties/PSAPS

<table>
<thead>
<tr>
<th>County</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alamenda County (Partial)</td>
<td>2</td>
</tr>
<tr>
<td>Butte County</td>
<td>7</td>
</tr>
<tr>
<td>Contra Costa County (Partial)</td>
<td>3</td>
</tr>
<tr>
<td>Imperial County (partial)</td>
<td>3</td>
</tr>
<tr>
<td>Los Angeles County</td>
<td>75</td>
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<tr>
<td>Monterey County (Monterey EC for entire county)</td>
<td>4</td>
</tr>
<tr>
<td>Riverside County (partial)</td>
<td>5</td>
</tr>
<tr>
<td><strong>San Bernardino County (2 CHPs)</strong></td>
<td><strong>15</strong></td>
</tr>
<tr>
<td>San Luis Obispo County</td>
<td>7</td>
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<tr>
<td>San Mateo County (Partial)</td>
<td>9</td>
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<tr>
<td>Santa Clara County (partial)</td>
<td>2</td>
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<tr>
<td>Santa Cruz/San Benito (Partial)</td>
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<tr>
<td>CHP Statewide</td>
<td>25</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>158</strong></td>
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### Selected TCC

<table>
<thead>
<tr>
<th>County</th>
<th>Count</th>
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</thead>
<tbody>
<tr>
<td>Alameda (Partial)</td>
<td>3</td>
</tr>
<tr>
<td>Contra Costa County (Partial)</td>
<td>8</td>
</tr>
<tr>
<td>Imperial</td>
<td>1</td>
</tr>
<tr>
<td>Kern County</td>
<td>12</td>
</tr>
<tr>
<td>Lake County</td>
<td>1</td>
</tr>
<tr>
<td>Mendocino County</td>
<td>3</td>
</tr>
<tr>
<td>Merced</td>
<td>8</td>
</tr>
<tr>
<td>Riverside County (partial)</td>
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<tr>
<td>Sacramento (partial)</td>
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<tr>
<td>San Francisco</td>
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<tr>
<td>San Joaquin (Partial)</td>
<td>2</td>
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<td>San Mateo County</td>
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<td>Santa Clara County</td>
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<td>Santa Cruz County</td>
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<td>Shasta County</td>
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</tr>
<tr>
<td>Sutter County (partial)</td>
<td>1</td>
</tr>
<tr>
<td>Tehama County (partial)</td>
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</tr>
<tr>
<td>Touleurne County</td>
<td>1</td>
</tr>
<tr>
<td>Ventura (partial)</td>
<td>1</td>
</tr>
<tr>
<td>Yolo</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>61</strong></td>
</tr>
</tbody>
</table>
9-1-1 Outage Reporting

- Staff on call 24/7/365
- Interface with carriers and providers
- 911 Branch may contact PSAP for more info
- What to do for TDOS or DDOS
  - Contact Telecom Vendor
  - Cal OES State Threat Assessment Center (STAC)
### WTRAP Status for Calendar year 2017

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Total Reviewed</th>
<th>Total Reroute</th>
<th>PSAP to CHP</th>
<th>PSAP to PSAP</th>
<th>CHP to PSAP</th>
<th>CHP to CHP</th>
<th>Routing % Change</th>
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</thead>
<tbody>
<tr>
<td>Q1</td>
<td>90,762</td>
<td>10,117</td>
<td>1,680</td>
<td>1,003</td>
<td>7,149</td>
<td>275</td>
<td>11.15%</td>
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<tr>
<td>Q2</td>
<td>142,306</td>
<td>15,591</td>
<td>2,417</td>
<td>2,415</td>
<td>10,372</td>
<td>385</td>
<td>10.96%</td>
</tr>
<tr>
<td>Q3</td>
<td>69,378</td>
<td>5,088</td>
<td>941</td>
<td>597</td>
<td>3,399</td>
<td>152</td>
<td>7.33%</td>
</tr>
<tr>
<td>Q4</td>
<td>28,136</td>
<td>4,415</td>
<td>535</td>
<td>384</td>
<td>3,428</td>
<td>68</td>
<td>15.69%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>330,582</td>
<td>35,211</td>
<td>5,573</td>
<td>4,399</td>
<td>24,348</td>
<td>880</td>
<td>11.28%</td>
</tr>
</tbody>
</table>

Next step is to work with Wireless carriers to complete the reroutes
Plan is to review only the new cell sectors added since 2017 analysis was completed.

- To prevent repetitive analysis of the same sectors since the 2017 updates are still being implemented.

- By Jan 2019, all sectors should have a full year of new data and be ready for re-evaluation in accordance with the WTRAP instructions.
Next Gen 9-1-1 in California
Why Next Gen 9-1-1?

- Faster call delivery
- Increased routing accuracy and redundancy
- Increased efficiency
- Increased routing => call overflow and backup
- Updated Geographic Information System (GIS)
- Prepared for Wireless Location Data
- Prepared for newer technologies
Next Gen 9-1-1 Concept

- CPE – Customer Premise Equipment
- ESN - Emergency Service Number
- ALI – Automatic Location Information
- ANI – Automatic Number Identification
- pANI - Psuedo ANI
- VoIP – Voice over IP
- MSC – Mobile Switching Center
- VPC – VoIP Positioning Center

CPE sends number to data base for caller location

VoIP Service Provider

VoIP
9-1-1

Data Bases

MSC or VPC

End-Office Switch

Phone Number and Voice

Selective Router

Call and ANI sent to PSAP

PSAP

Text Control Center

VoIP Location Info

Wireless Location Info

Text to 9-1-1

Landline 9-1-1

Wireless 9-1-1

VoIP 9-1-1
Next Gen 9-1-1 Concept

- CPE – Customer Premise Equipment
- ESN - Emergency Service Number
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VoIP Service Provider
MSC or VPC
End-Office Switch
Selective Router

Emergency Service Number
Automatic Location Information
Automatic Number Identification
Psuedo ANI
Voice over IP
Mobile Switching Center
VoIP Positioning Center

End-Office Switch

Next Gen 9-1-1 Core Services

VoIP Location Info
Wireless Location Info
Data Bases

PSAP
Text Control Center

Landline 9-1-1
Wireless 9-1-1
VoIP 9-1-1

Text to 9-1-1

VoIP Service Provider
MSC or VPC
End-Office Switch
Selective Router

Next Gen 9-1-1 Core Services

CPE sends number to data base for caller location

VoIP Location Info
Wireless Location Info
Data Bases

PSAP
Text Control Center

Landline 9-1-1
Wireless 9-1-1
VoIP 9-1-1
Next Gen 911 ESInet Statewide Regional Map

Map Depicts:
- 58 Counties
- 24 CHP Communications Centers (■)
- 4 Defined ESInet Regions plus Prime

All four identified regions shall have the capability to interconnect to all other regions.

Northern Region
7,492,162 Calls / Year
163 PSAPS

Central Region
4,908,919 Calls/Year
110 PSAPS

Southern Region
6,929,512 Calls/Year
89 PSAPS

Los Angeles Region
8,514,105 Calls/Year
79 PSAPS

Prime Next Gen 9-1-1 Core Services
## What will it cost?

<table>
<thead>
<tr>
<th>Year</th>
<th>Legacy 9-1-1 Costs</th>
<th>NG9-1-1 Costs</th>
<th>Estimated Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2017-18</td>
<td>$104,446,000</td>
<td>$10,000,000</td>
<td>$114,446,000</td>
</tr>
<tr>
<td>FY 2018-19</td>
<td>$103,123,384</td>
<td>$25,000,000</td>
<td>$128,123,384</td>
</tr>
<tr>
<td>FY 2019-20</td>
<td>$94,441,114</td>
<td>$44,000,000</td>
<td>$138,441,114</td>
</tr>
<tr>
<td>FY 2020-21</td>
<td>$75,010,114</td>
<td>$66,000,000</td>
<td>$141,010,114</td>
</tr>
<tr>
<td>FY 2021-22</td>
<td>$64,110,114</td>
<td>$88,000,000</td>
<td>$152,110,114</td>
</tr>
<tr>
<td>FY 2022-23</td>
<td>$59,641,114</td>
<td>$97,020,000</td>
<td>$156,661,114</td>
</tr>
</tbody>
</table>
Submitted Budget Change Proposal as part of Governor’s FY 2018 Budget

- Stop gap to provided necessary funding
- Ensures 9-1-1 Branch has long term sustainability

Submitted trailer bill language to change SETNA funding model

- Removes technology specific language and reliance on Intrastate voice revenue
- Proposes surcharge for all subscriptions that can access 9-1-1
How will Funding affect PSAP

- If Governor’s Budget approved
  - Provides funding needed to sustain 9-1-1 today
  - Provides funding needed to build out Next Gen 9-1-1
  - Provides stable funding model needed for planning

- What can you do to help?
  - Contact 9-1-1 Branch if you have questions
  - Invite your representatives into your PSAP
  - Reach out to associations and organizations for support
Updated SETNA Graph

Based on proposed FY 2018-2019 Budget

- Total Revenues (Surcharge Revenues + Prior Year Balance)
- 9-1-1 SETNA Expenditures
- Total Surcharge Revenues

*Shaded area represents projections
**Dotted red line represents 9-1-1 SETNA Expenditures projected to exceed Total Revenues
Procurement Plan

- Existing 9-1-1 system is procured through Tariff
- Nov 2017 CPUC guidance:
  - All 9-1-1 services must have a Tariff
- Four major areas that Cal OES has defined
  - Transitional Services – Legacy to Next Gen 9-1-1
  - Next Generation 9-1-1 Core Services
  - NG 9-1-1 Trunk Services
  - 9-1-1 Call Aggregation Services
- Working through additional details
What we know today:

- All providers must have a CPCN – Start now!
- All NG 9-1-1 services must have an established tariff
- Pricing should be at or near cost
- Tariff Guidance document has been published
- Feedback is expected on the tariff guidance document and if possible by March 12, 2018
- Tariff submission timeline determined by feedback
- Cal OES will use a fair competitive process to select vendor(s) for each region in order to provide a resilient, redundant, fault tolerant 9-1-1 network
### Procurement Plan (Cont.)

**Next Gen 911 NG Core Services**

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of PSAPs</th>
<th>Total Population (2017)</th>
<th>2017 Total Region Call Volume</th>
<th>Average Busy Hour Volume (1)</th>
<th>2017 Busiest Hour (2)</th>
<th>Regional Monthly Volume (Average) (3)</th>
<th>Regional Monthly Volume (Single Busiest Month) (4)</th>
<th>Average Call Duration (Seconds) (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Region</td>
<td>163</td>
<td>10,749,128</td>
<td>7,492,162</td>
<td>1,278</td>
<td>13,805</td>
<td>616,403</td>
<td>713,406</td>
<td>99.81</td>
</tr>
<tr>
<td>Central Region</td>
<td>110</td>
<td>6,518,467</td>
<td>4,918,909</td>
<td>864</td>
<td>8,087</td>
<td>410,171</td>
<td>487,606</td>
<td>108.75</td>
</tr>
</tbody>
</table>

- CHP Communications Centers (●)

---

**Northern Region**
7,492,162 Calls / Year 163 PSAPS

**Central Region**
4,918,909 Calls / Year 110 PSAPS

Slide 37
Next Gen 911 NG Core Services

Los Angeles Region
8,514,105 Calls/Year
79 PSAPS

-CHP Communications Centers (■)

Southern Region
6,929,512 Calls/Year
89 PSAPS

-CHP Communications Centers (■)

<table>
<thead>
<tr>
<th></th>
<th>Los Angeles Region</th>
<th>Southern Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of PSAPs:</td>
<td>79</td>
<td>89</td>
</tr>
<tr>
<td>Total Population:</td>
<td>9,951,690</td>
<td>10,780,593</td>
</tr>
<tr>
<td>2017 Total Region Call Volume:</td>
<td>8,514,105</td>
<td>6,929,512</td>
</tr>
<tr>
<td>Average Busy Hour Volume:</td>
<td>(1) 1,413</td>
<td>1,196</td>
</tr>
<tr>
<td>2017 Busiest hour:</td>
<td>(2) 7,830</td>
<td>7,014</td>
</tr>
<tr>
<td>Regional Monthly Volume (Average):</td>
<td>(3) 715,298</td>
<td>577,713</td>
</tr>
<tr>
<td>Regional Monthly Volume (Single Busiest Month):</td>
<td>(4) 995,212</td>
<td>643,892</td>
</tr>
<tr>
<td>Average Call Duration (Seconds):</td>
<td>(5) 96.08</td>
<td>97.10</td>
</tr>
</tbody>
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Deployment Timeline

- Prime ESInet – **Sept** 2018 – **Sept** 2020
- Northern ESInet – **Oct** 2018 – **Oct** 2020
- LA County – **Nov** 2018 – **Nov** 2020
- Southern ESInet – Jan 2019 – Jan 2021
- Central ESInet – Mar 2019 – Mar 2021
- All selective routers decommissioned - 2022
- NG 9-1-1 Act – Federal Legislation
- Text to 9-1-1 Standards
- Text from 9-1-1 Standards
- Cellular network hardening requirements
  - Redundant Power and Backhaul (Data Connections)
Location Accuracy

- We have heard your voice – This is needed now
- On average most PSAPs see about 50% of calls arrive with location in 2-3 seconds
- What are the manufactures doing?
- What is Cal OES doing?
- What is the FCC doing?

<table>
<thead>
<tr>
<th>Date</th>
<th>X/Y Benchmark</th>
</tr>
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<tbody>
<tr>
<td>2017</td>
<td>40% of all wireless 911 calls</td>
</tr>
<tr>
<td>2018</td>
<td>50% of all wireless 911 calls</td>
</tr>
<tr>
<td>2020</td>
<td>70% of all wireless 911 calls</td>
</tr>
<tr>
<td>2021</td>
<td>80% of all wireless 911 calls</td>
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</tbody>
</table>
Emerging Technologies

- Cloud Based Services
- Real Time Text
- Data Applications over Priority Broadband
Questions