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GOVERNOR'S OFFICE  
OF EMERGENCY SERVICES



**Next Gen 9-1-1  
Town Hall Meetings  
Sept – Oct 2019**

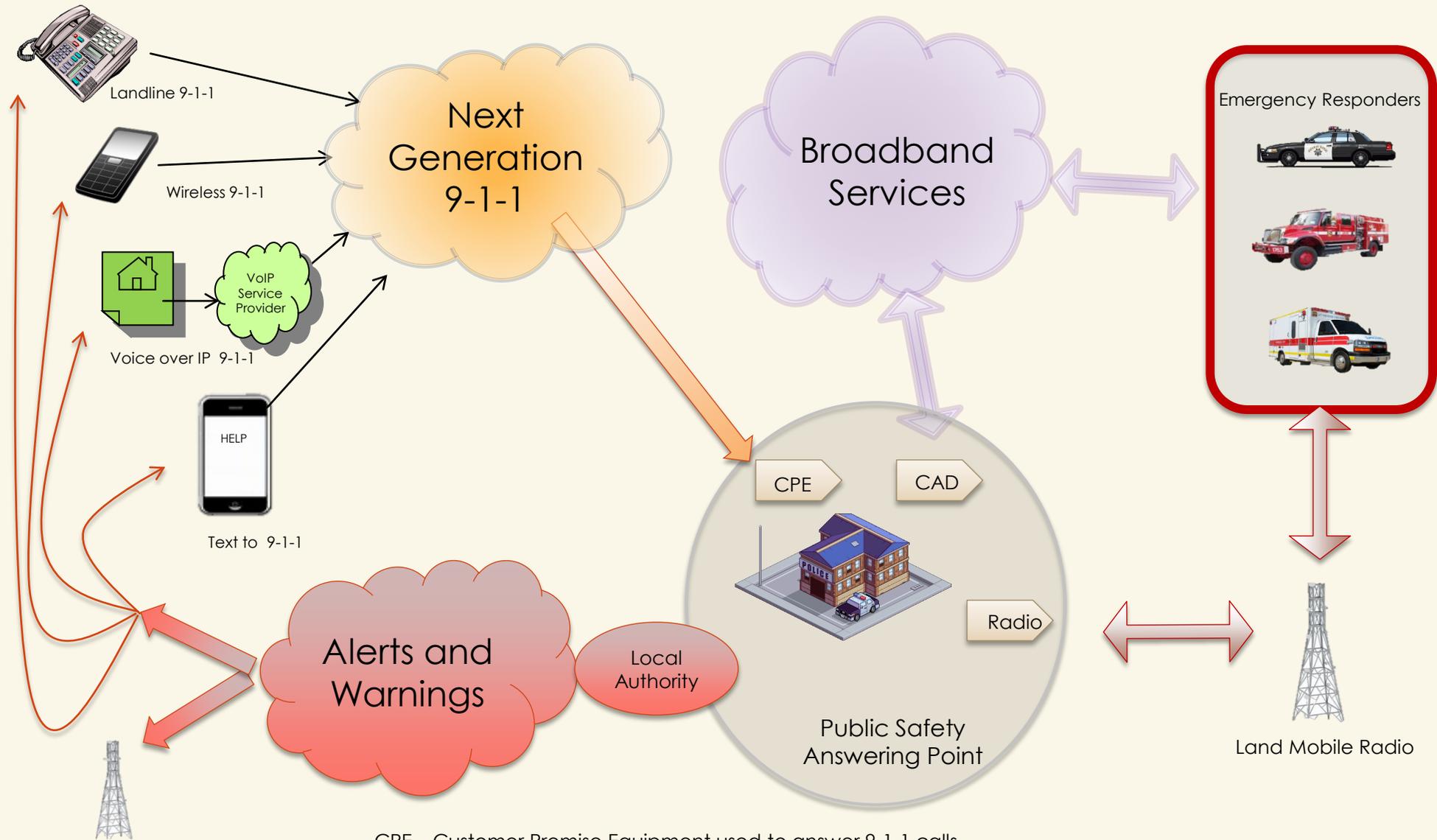


# Briefing Overview

- Importance of Next Gen 9-1-1
- The RFP and Contract Award Process
- Overview of Next Gen 9-1-1 in California
- How will Next Gen 9-1-1 impact my PSAP?
- Other Projects
  - Location Accuracy/RapidDeploy, GIS project, CPE Contract
- Discussion and Questions
- Follow CA 9-1-1 Branch on Twitter - @CalOES\_911

Send email to: [Andrew.Mattson@caloes.ca.gov](mailto:Andrew.Mattson@caloes.ca.gov) for slides

# Connecting the Technology



Broadcast Message

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



# Importance of Next Gen 9-1-1

- **Next Generation 9-1-1 will:**
  - Increase resiliency by hardening the system to withstand disasters
  - Allow agencies to re-route 9-1-1 calls to each other during disasters
  - Reduce 9-1-1 system downtime. Outages in the current 9-1-1 system are an ongoing problem with the aging infrastructure currently being used in California
  - Allow the NG 9-1-1 system to be used as a common delivery system for Alerts and Warnings at little additional expense, saving local agencies funding individual systems
  - Ensure emergency calls are quickly and accurately delivered
  - Support text to 9-1-1 delivery into the dispatch center and text from 9-1-1
  - Deliver increased location accuracy for all 9-1-1 calls
  - Provide the ability to integrate other 9-1-1 technologies over secure IP connections

# Next Gen 9-1-1 Partners



**Northern Region**  
**State PM: Angela Chen**  
**Vendor: Synergem**



## Deployment Timeline

- Statewide Prime – **Aug 2019 – Mar 2021**
- Northern Region – **Aug 2019 – Apr 2021**
- LA Region – **Aug 2019 – Jun 2021**
- Southern Region – **Aug 2019 – Jul 2021**
- Central Region – **Aug 2019 – Aug 2021**
- All selective routers decommissioned - **2022**



**Prime**  
**State PM: Anne Leal-Abdallah**  
**Vendor: Atos**

**Central Region**  
**State PM: Tiffany Howard**  
**Vendor: NGA 911**



**Los Angeles Region**  
**State PM: Chereise Bartlett**  
**Vendor: NGA 911**



**Southern Region**  
**State PM: Curt Guillot**  
**Vendor: CenturyLink**



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# The RFP Process

- Competitive bid process used to select qualified Next Gen 9-1-1 service providers
- A total of 8 Bidders participating in the RFP process
- Bidders were required to file Next Gen 9-1-1 tariffs
- Cal OES established Not to Exceed pricing to ensure bids were at or near cost
- Bidders were required to comply with functional requirements needed to ensure project success
- Bidders submitted narrative responses that were evaluated and scored
- Only qualified bidders with NENA i3 compliant Next Gen 9-1-1 solutions were selected
- All four regions have a capable, qualified NG 9-1-1 Service Provider
- Winning bidders were notified at 9-1-1 Advisory Board on August 20, 2019



# Next Gen 9-1-1 RFP Timeline

RFP Pre-Solicitation Released	February 15, 2019
Confidential Discussions	March 19-21, 2019
RFP Released	April 1, 2019
Last day to submit Intent to Bid	April 12, 2019
Last day to submit Proposal	May 17, 2019
Last day to submit tariffs to CPUC	June 7, 2019
Cost Worksheets due	June 27, 2019
Notice of Intent to Award	August 20, 2019
All contracts signed	By August 30, 2019
Tariff filing process completion	By November 30, 2019



# How does the NG 9-1-1 Contract address the needs and concerns of California

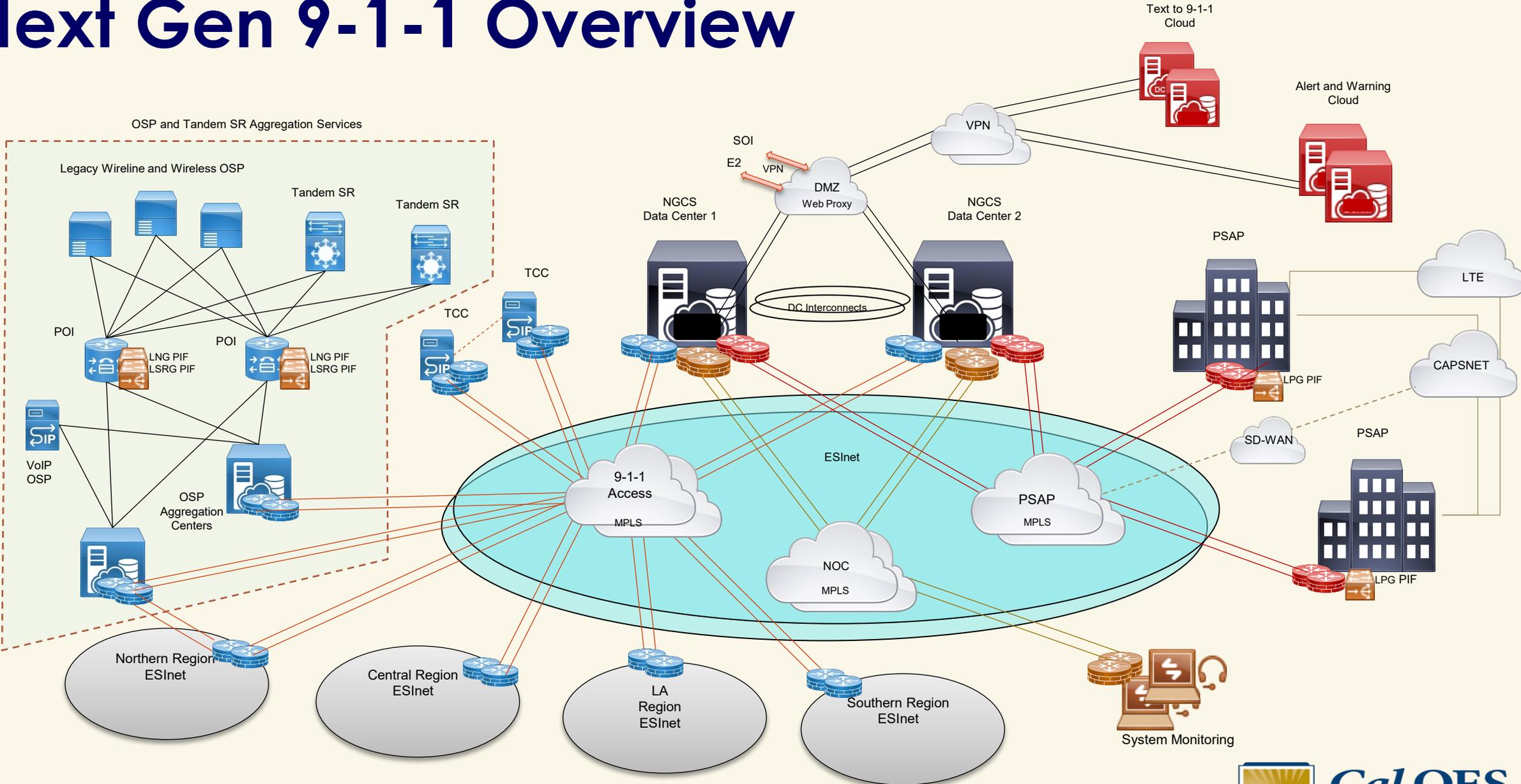
- Diverse connections into each PSAP
- Ability to route 9-1-1 calls to any PSAP and willingness to work with other Next Gen 9-1-1 providers
- Security – Protecting against DDoS, TDoS and Cyber security attacks
- 99.999% reliability and eliminating outages
- System failover and redundancy
- Accurate system monitoring
- Integration of Alert and Warning



# Next Gen Vendor POC

- **Atos (Statewide Prime)**
  - Cal OES Project Manager: Anne Leal-Abdallah; Anne.Leal-Abdallah@CalOES.ca.gov; (916) 657-9152
  - NG9-1-1 Project Coordinator : Jennifer Sebastian; jennifer.sebastian@atos.net; (804) 281-5010
- **Century Link (Southern Region)**
  - Cal OES Project Manager: Curt Guillot; Curt.Guillot@CalOES.ca.gov; (916) 657-9600
  - NG9-1-1 Project Coordinator: Earl Luhn; Earl.Luhn@CenturyLink.com; (703) 387-9099
- **Synergem (Northern Region)**
  - Cal OES Project Manager: Angela Chen; Angela.Chen@CalOES.ca.gov; (916) 657-9177
  - NG9-1-1 Project Coordinator: Danny McGinnis; dmcginnis@synergemtech.com; (206) 310-3369
- **NGA 911 (Central Region)**
  - Cal OES Project Manager: Tiffany Howard; Tiffany.Howard@CalOES.ca.gov; (916) 657-9233
  - NG9-1-1 Project Coordinator: Alicia Caddy; Alicia.Caddy@NGA911.com; (951) 551-8405
- **NGA 911 (L.A. Region)**
  - Cal OES Project Manager : Chereise Bartlett; Chereise.Bartlett@CalOES.ca.gov; (916) 657-9235
  - NG9-1-1 Project Coordinator: Kim Aleman; Kim.Aleman@NGA911.com; (916) 213-8091

# Next Gen 9-1-1 Overview





# Next Gen 9-1-1 Vendor Responsibilities

- Prime Vendor Responsible for:
  - Next Gen 9-1-1 Core Services
  - Aggregation of all Originating Service Provider (OSP) traffic except wireless, AT&T, Consolidated, and Frontier wireline
  - System monitoring
  - Interface standards
  - Text to 9-1-1
  - Next Gen 9-1-1 Alert and Warning
- Region Vendor Responsible for:
  - Next Gen 9-1-1 Core Services
  - Aggregation of all wireless, AT&T, Consolidated, and Frontier wireline OSP traffic in awarded region
  - Compliance with interface standards
  - System monitoring

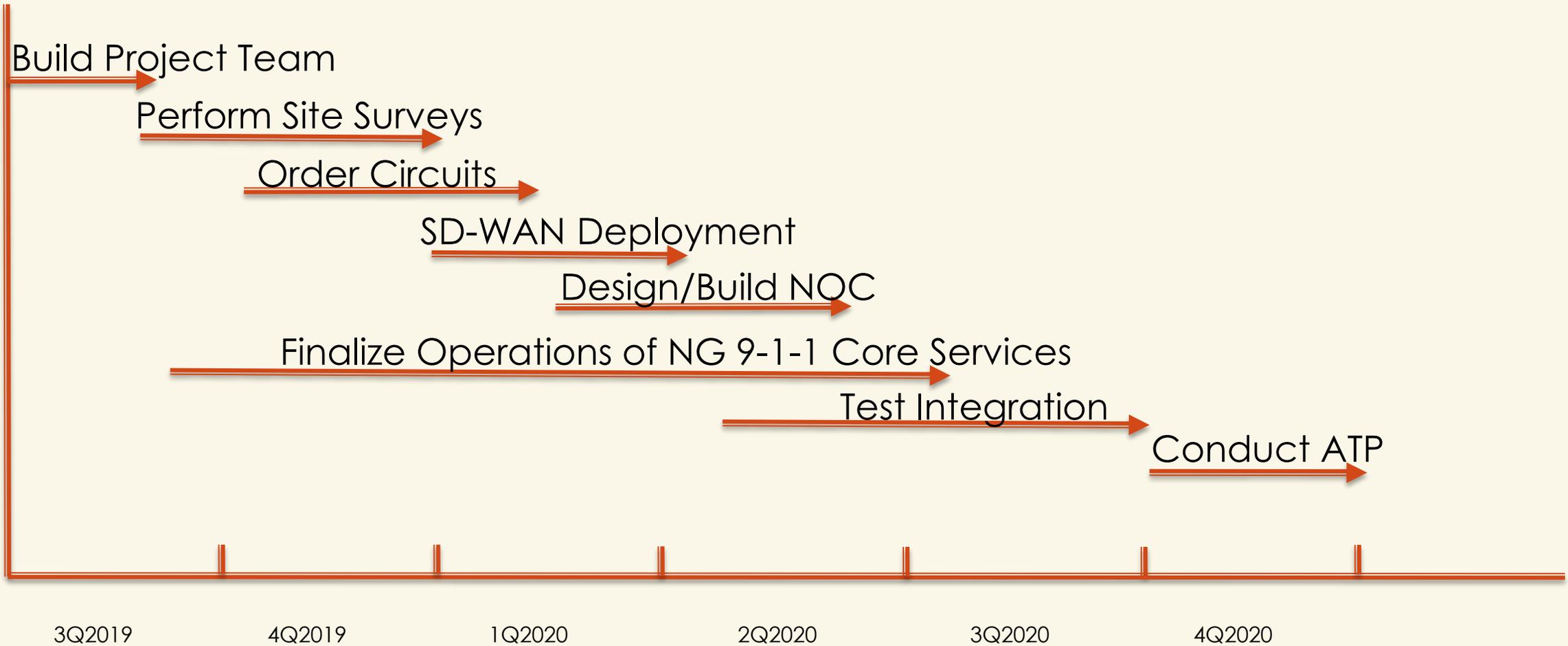


# Next Gen 9-1-1 Project Status

- Project Initialization meetings, Sept 4-11, 2019
  - Established priorities, meeting schedules, and clarified roles & responsibilities
- Cal OES Project Managers will be your main point of contact
- Continue to work with your PSAP Advisors
- Cal OES is conducting town hall meetings in Sept – Oct 2019
- Cal OES will send coordinating instructions via email by Oct 18
- Expect PSAP site surveys to begin in November
  - Both Atos (Prime) and your region vendor will be visiting your PSAP



# Optimistic Next Gen 9-1-1 Project Timeline





# Project Risks

- Availability of network connectivity to each PSAP
- Available space in PSAP equipment room
- PSAP coordination
- Input and concerns from local IT personnel
- Connections to Originating Service Providers



# How will this project affect my PSAP?

- Equipment will be installed in your backroom
  - Anticipate 1 rack of additional equipment
  - Vendors will identify equipment location
  - Atos (Prime) and your regional vendor will label rack space allocations in each PSAP
  - Goal is standard rack configuration in each PSAP
- Reality is that some PSAPs may not have space
  - Cal OES will work with partners to develop solutions



# How will this project affect my PSAP?

- Multiple IP connections will be brought to your PSAP
  - Demark location will be important
  - These connections are needed to deliver 9-1-1 calls
  - These connections will replace the existing 9-1-1 trunks
  - Existing 9-1-1 trunks will remain in place until after system acceptance

Connections will not interface with existing IT infrastructure at PSAP



# Who will be visiting my PSAP?

- A representative from both Atos (Prime) and your Regional NG 9-1-1 Service provider will visit your PSAP
  - They will complete a site survey
  - They will return and install equipment
  - There will be multiple visits scheduled to complete acceptance testing
  - We need to know your specific security requirements for access to your equipment room
- You will continue to work with your CPE technician for all CPE related work
- The CPE technician and the NG 9-1-1 Service provider technician will work together to integrate NG 9-1-1 with CPE



# Role of the PSAP

- Goal is to ensure Next Gen 9-1-1 does not disrupt PSAP operations
- Communication with CA 9-1-1 Branch and Next Gen 9-1-1 service providers
  - Let us know if you have concerns about site surveys
  - What information do you want to see about the Next Gen 9-1-1 system?
  - Trouble reporting to vendor and CA 9-1-1 Branch
  - Providing network performance feedback after cutover
- We want to make sure that the PSAP has input into approach and strategy



# Additional PSAP considerations

- What policy based routing means to you
- What happens with a 10 digit / 7 digit transfers?
- How will alternate answer work with Next Gen 9-1-1?

## ROUTING ON POLICY

Realtime Everywhere, Any Condition Routing

### EVERYWHERE

*City*  
*County*  
*State*

### ANY CONDITION

*Outage*  
*Overflow*  
*Special Skill*  
*Resource Available*  
*Chicken Switch*

REALTIME  
SITUATIONAL  
AWARENESS  
ROUTING

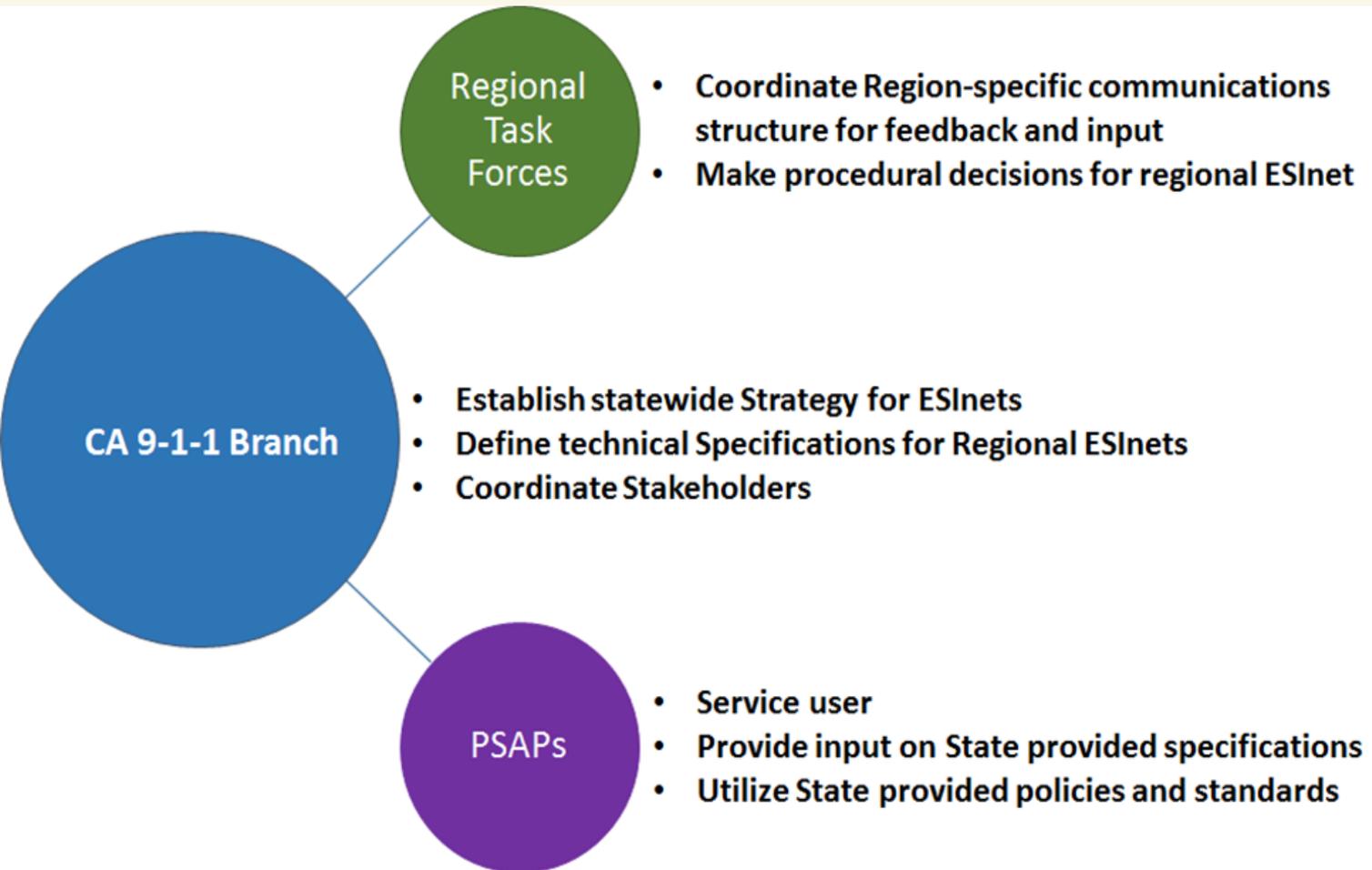


# Role of Cal OES

- Responsibility for procurement, design, and implementation of the Next Gen 9-1-1 Solution
- Develop policies and standards for the system based on PSAP operational requirements
  - 9-1-1 Branch needs feedback from PSAPs
  - 9-1-1 Branch will work with 9-1-1 Advisory Board, LRPC, and NG 9-1-1 Regional Task Force
- Establish policies and best practices for NG 9-1-1 activities across the state including network operation, monitoring, and service management
- Manage regional and prime vendors
- Coordinate GIS data
- Align California Next Gen 9-1-1 program with national efforts and vision for a nationwide system.



# Next Gen 9-1-1 Regional Task Force



- Build and strengthen the PSAP community's relationship to the CA 9-1-1 Branch through communication and mutual regard for the rollout of Next Gen 9-1-1 in California
- Give input on the needs of the region's PSAPs
- Give feedback on the configuration of NG 9-1-1 at the regional level
- Quarterly meetings throughout the state



# Regional Task Force PSAP Representatives

## Northern Region

Katie Braverman  
Courtney Lamet  
Laurie Sowder  
Marie Silva  
Jennifer Gibson  
Mark Chase  
Rosa Ramos  
Gus Ulloth  
Eric Gornitsky

Roseville PD  
CHP - HQ  
SHASCOM  
San Mateo PD  
Rocklin PD  
Palo Alto PD  
Alameda County FD  
Napa County Comm.  
San Francisco DEM

## Central Region

Ron Dunn  
Michael Flory  
Dennis Kidd  
Nicole Phillips  
Kris Zuniga  
Brian Pichette  
Scott Deaver  
Steve Loftus  
Olivia Madrigal

Santa Barbara PD  
Ventura SO  
Santa Cruz Regional  
San Joaquin SO  
Kings SO  
CSU Channel Islands PD  
Cal Fire – Mariposa  
CHP – Bakersfield  
Monterey County Comm.

## Southern Region

Kim Turner  
Rebecca Meeks  
Kurt Wallace  
Bruce Baumann  
Christine McMillen  
Mike Bell  
Brian MacPherson  
Brian Acosta  
Lori Brown

San Bernardino SO  
Garden Grove PD  
Anaheim PD  
USMC Miramar  
La Mesa PD  
CONFIRE  
UC San Diego PD  
Ontario FD  
Indio PD

## Los Angeles Region

Greg Pascal  
Josh Armstrong  
Sheryl Davis-Moore  
Brian Flinn  
Ella Sotelo  
Todd Austin

CSU Long Beach PD  
El Camino College  
Glendale PD  
Downey PD  
LA County Coordinator  
LAPD



# Other Projects currently in progress

Break for 15 minutes:

- Text to 9-1-1 (part of Next Gen 9-1-1)
- Alert and Warning (part of Next Gen 9-1-1)
- GIS data needed to route a 9-1-1 call
- The next CPE contract
- RapidDeploy Location Accuracy project



# Text to 9-1-1

- AB 1168 requires all PSAPs to accept Text to 9-1-1 by January 2021
  - This answers the question: Will I take Text to 9-1-1?
  - The NG 9-1-1 project will define how and when each PSAP will take Text to 9-1-1
  - We need your input and support for this project.
- Services will be transitioned from existing contract to the Next Gen 9-1-1 contract
- Agent 511, as the subcontractor to Atos, will provide the service
- Agent 511 will connect to each of the TCCs
- Text to 9-1-1 delivery to the PSAP will use the Next Gen 9-1-1 infrastructure
- PSAPs currently accepting Text to 9-1-1 will be transitioned first
- Existing delivery method (integrated or web) will be supported
- Goal will be to transition current Text to 9-1-1 PSAPs by April 2020



# Next Gen 9-1-1 Alert and Warning Integration

- Provide a common technology platform that can be used by local agencies to issue alerts and warnings
- Shall be fully integrated with IPAWS (including WEA) and the California Earthquake Early Warning system.
- Shall be fully integrated with the NG 9-1-1 core services
  - Leverage NG 9-1-1 data and information
  - Ensures Alert and Warning database remains current and secure
  - Facilitates developing, implementing and training for best practices to support the statutory requirements outline in SB 833
- Shall support the ability to import data from locally managed commercial Alert and Warning system
- Delivered at no cost to local agencies



# NG 9-1-1 Alert and Warning Integration

- Currently, WEA messages can only be credentialed for an entire county, which means that cities in the county could potentially send a WEA that is outside their jurisdiction. The NG 9-1-1 Alert and Warning will provide increased capability to ensure local agencies only send an Alert and Warning to their jurisdiction
- Provides the ability to send notifications to other jurisdictions in the region when an Alert and Warning has been sent, which will increase situational awareness
- Does NOT supersede local authority to issue alerts (i.e., locals retain authority to issue alert in their jurisdictions)
- Mitigates the problem of numerous/disparate commercial A&W systems
- Did we mention that this is at no cost to the local agency



# GIS data

- DDTI will complete GIS dataset needed to route 9-1-1 calls by Jan 1, 2020
- GeoComm and 9-1-1 Datamaster (subcontractors to Atos – Prime) will begin transition of GIS dataset from DDTI
- Target date of Summer 2020 for an operational GIS dataset
- Cal OES has established an updated GIS funding policy
  - Counties are eligible for a minimum of \$50k to support GIS data efforts
    - Cities can directly ask for funding, but must provide data to County
    - Address points cannot be counted for both a County and a City
  - Larger Counties and state agencies are eligible for \$0.44 per address point up to \$500k
- The GIS funding model will be updated in FY 2020/2021 to support maintaining the data based on feedback from GIS Task Force



# Authorized GIS funding

- Must follow authorized use of GIS allotment in the CA 9-1-1 Branch Operations Manual

1. Road centerlines

2. Address points

3. PSAP boundary polygons

- a. Personnel time to produce initial data set and maintain the agency portion of the NG9-1-1 GIS database

- b. Verification of map dataset accuracy

4. Consulting services for NG9-1-1 GIS to provide services above

Contact PSAP advisor and/or Natasha Potter for additional information

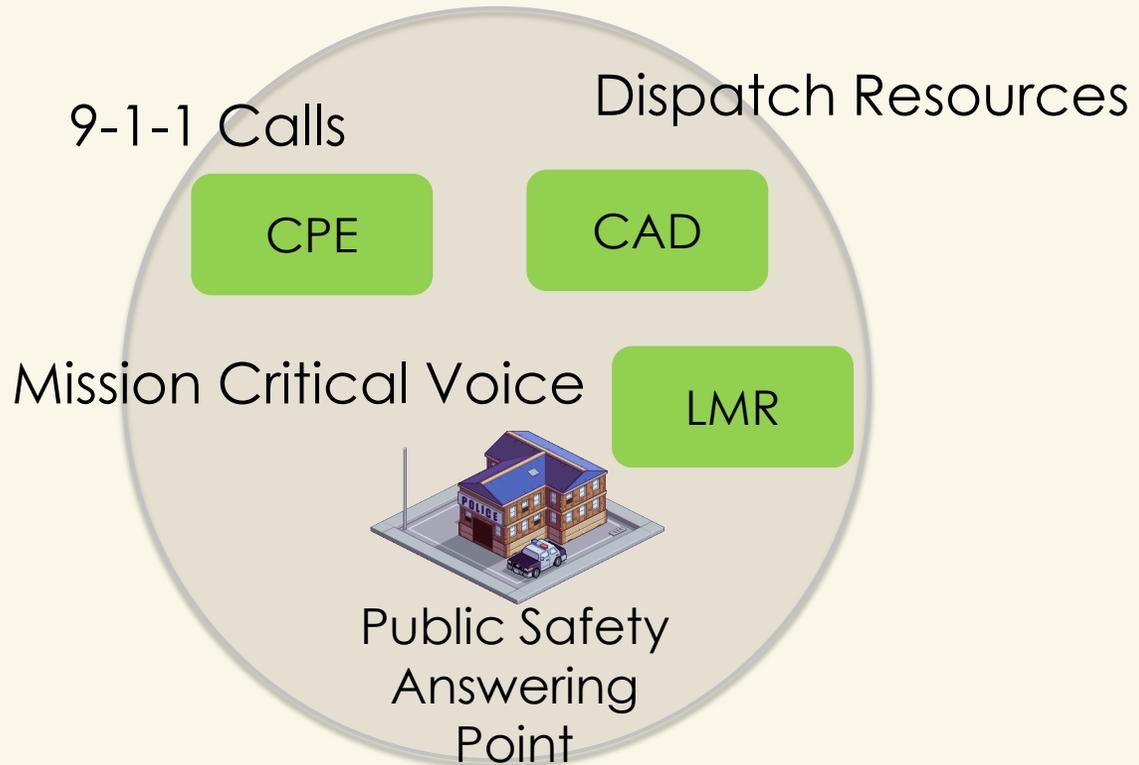


# CA 9-1-1 Branch Operations Manual updates

- GIS funding allotment
- Increased ATA allotment from \$3K to \$10k per PSAP
  - Supports training with CA 9-1-1 Branch pre-approval
  - Includes NENA, APCO and POST training
  - NENA Center Managers Course has received POST approval
- Updates to approved list of authorized use of residual funds
- Friendly reminder: Call answer time standards
  - 95% in 15 seconds



# Technology Integration at the PSAP



CPE – 911 Call Processing Equipment

CAD – Computer Aided Dispatch

LMR – Land Mobile Radio

## Legacy 9-1-1 System Limitations

- 1) Only 50% of calls arrive with location data
- 2) Limited to 512 bytes of location data in ANI/ALI
- 3) Lack of ability to integrate new technology
- 4) Requires onsite technicians for most upgrades
- 5) Slow deployment and refresh cycle
- 6) Lack of reliability (typically 99.9%)
- 7) Inability to integrate with other Emergency Management technologies
- 8) Inability to integrate with Alerts and Warnings
- 9) Limited security capabilities
- 10) Does not align with available technology



# Why Cloud? NG 9-1-1 Interoperability doesn't end with answering the 9-1-1 call

- Access to maps and GIS data of other jurisdictions
- Ability to transfer incidents, not just calls
- Visibility into unit availability, location, and status
- Ability to provide surge capacity staffing without having to physically relocate
- Integrated visibility into alerts and warnings and other emergency management functions
- Provides consistent baseline of service for agencies of all sizes
- Potential cost savings and faster speed to deployment
- Facilitates technology innovation, no infrastructure required at PSAP
- Increased security capability
- Flexible. Features and functions can be added as needed and available
- No downtime for PSAPs as new features are deployed, non-intrusive software vs intrusive hardware upgrades

Difficult in legacy on-premise environment – easy in a cloud-native environment



# How to increase security, reliability, and availability through Cloud Computing



- FedRAMP certified systems
  - The Federal Risk and Authorization Management Program (FedRAMP) enables agencies to rapidly adapt from old, insecure legacy IT to mission-enabling, secure, and cost effective cloud-based IT.
  - Developed using experts from GSA, NIST, DOD, and NSA
- High Availability
  - Multiple instances of software across multiple datacenters
  - Each instance supports 100% of the need
  - Active / Active deployment of each Instance with automatic failover
  - Secure network connections with logical and physical diversity
- Dedicated and Secure
  - Private, closed network for each region
  - Highest level of cyber security, actively deployed in over 3000 government agencies



# Moving toward newer technologies

- CPE and Cloud / Data Center Model
  - Moving away from per position costs and toward call volume pricing
  - Equipment for positions will still be provided by Cal OES
  - Developing RFP for cloud-based or data center solutions
  - Cal OES will release pre-solicitation (RFP) in winter 2019
  - We need your input on functional requirements
    - Example: Functional versus technical requirements
  - Contract should be awarded by June 2020

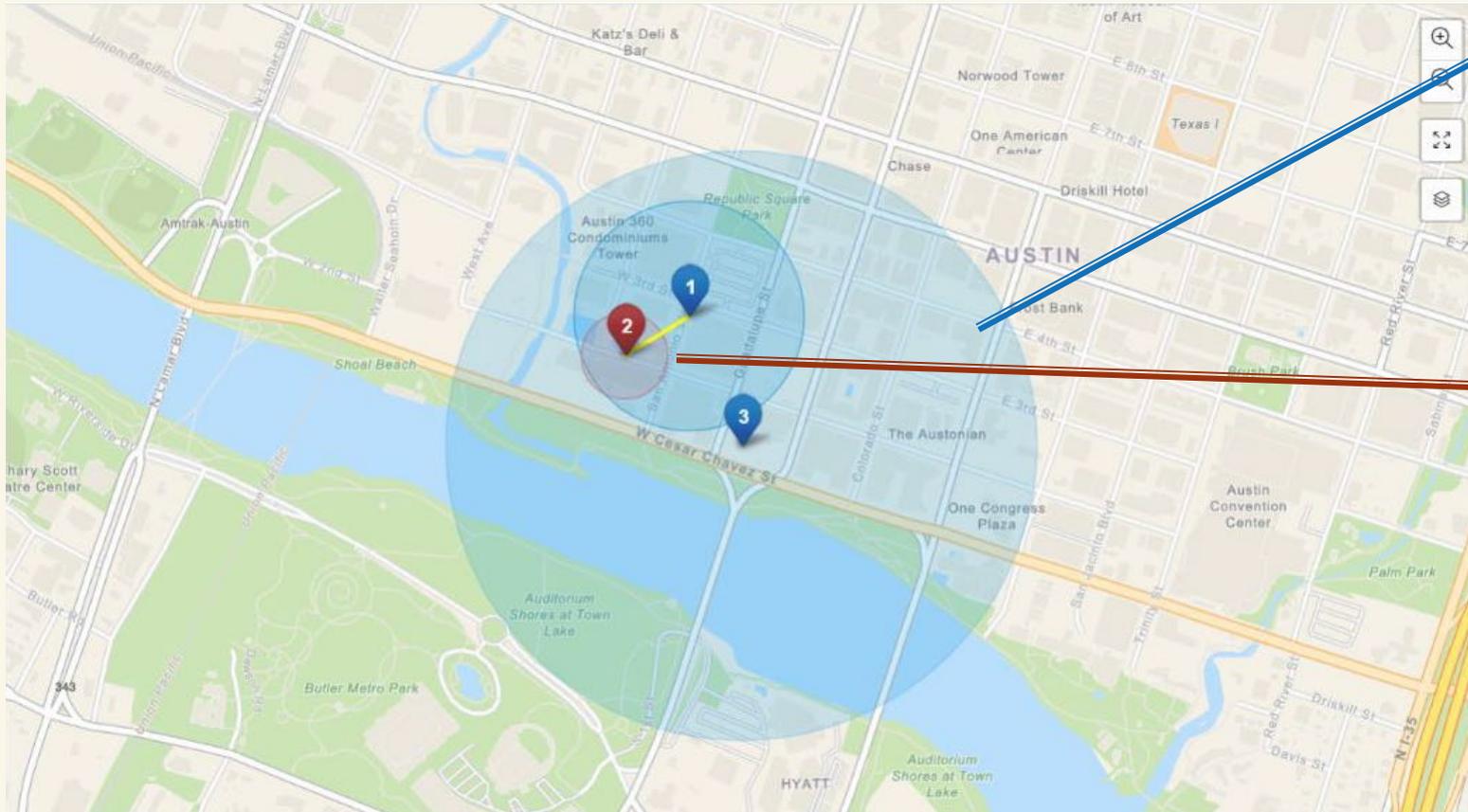


# First Cloud-based Implementation: Location Accuracy Project

- Contract awarded to RapidDeploy
  - Software solution uses device based data from Google and Apple, provided by RapidSOS
- RapidDeploy software at no cost to PSAP will provide:
  - RapidSOS supplemental device based location to PSAP via web interface
  - Automatic location updates for RapidSOS wireless 9-1-1 calls with ANI/ALI
  - Ability to display both ANI/ALI data and RapidSOS data via a web interface
  - Map data & GIS layers across jurisdictions
  - Additional situational awareness tools (RapidSOS additional data: Uber, and other RapidDeploy data: weather, traffic, etc.)
  - Cal OES will provide the IP connection for web interface



# Tactical Mapping User Interface



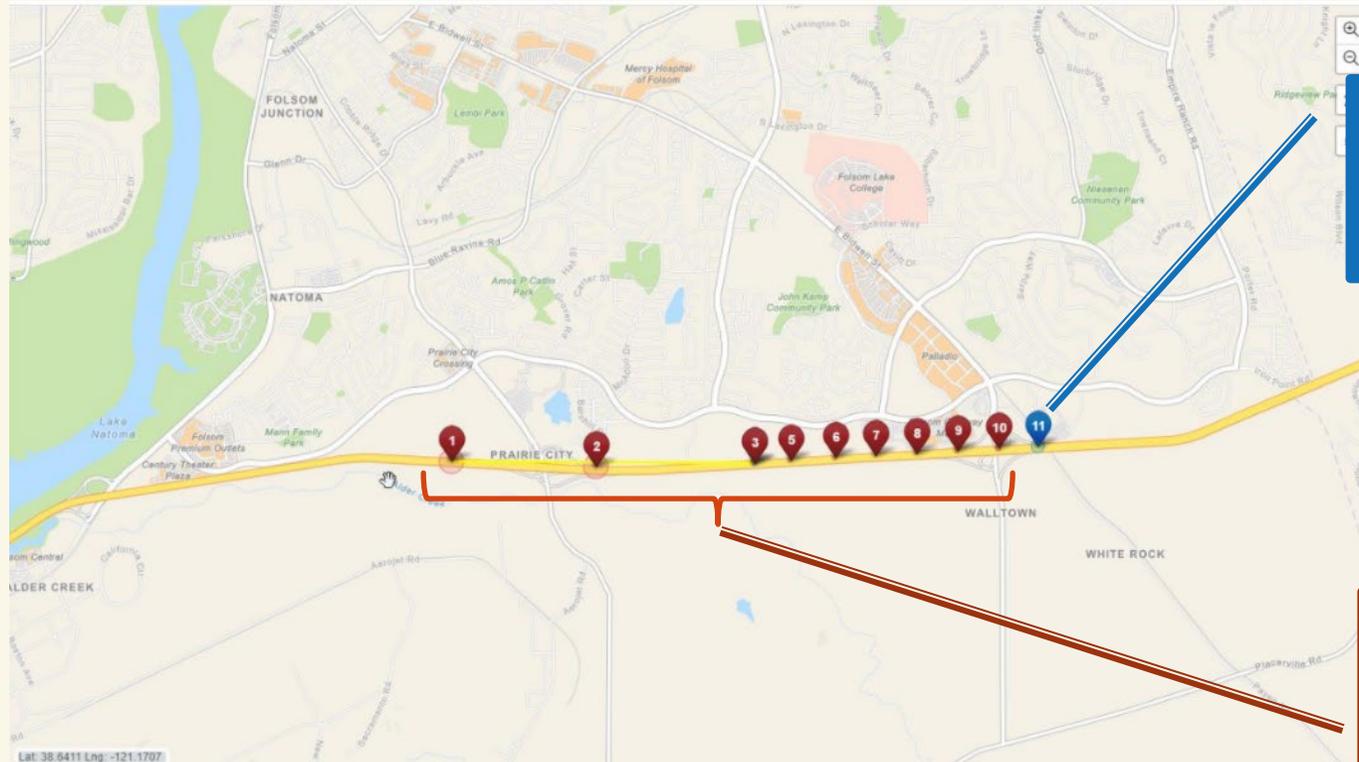
ALI/ANI Location

RapidSOS  
Supplemental Location





# Use case example: Caller in motion



ALI/ANI Location

RAPIDSOS 

RapidSOS Supplemental Location



# Why a Location Accuracy Project?

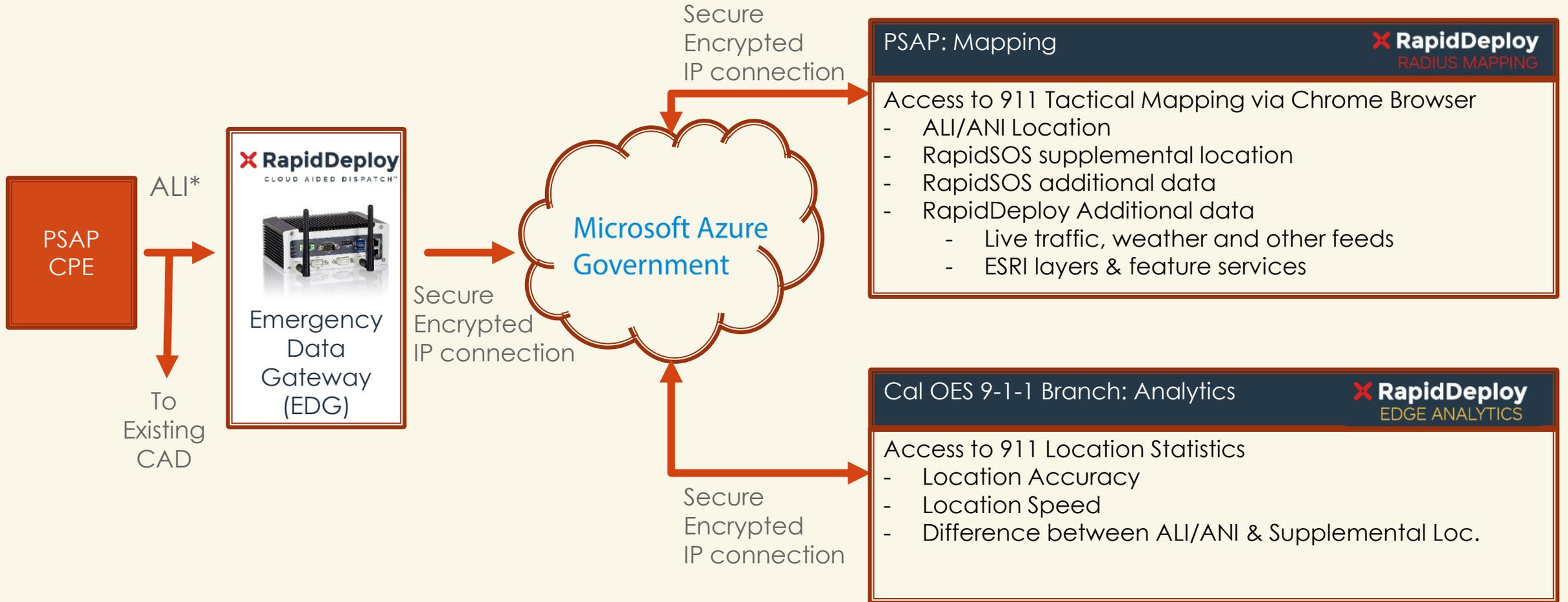
“This morning we received a 911 call from a male that had crashed into a ditch that had water in it and it was filling up his car and he could not get out. Long story short he was diabetic and his blood sugar was low. He did not know where he was at and was disoriented and could not tell us where he was at. Since it was a 911 call RapidDeploy pinged his location within 5 meters and we were able to get him help and get him out of the car. This no doubt saved his life but only because of the location accuracy of RapidDeploy.

So for the PSAP's that think this is one more thing that they have to monitor or use, **it's worth it**. We are here to serve the public and get them the help that they need and if I have one more thing to monitor that's ok that is what we are here for.”

*Source: Wave 1 PSAP, September 2019*



# RapidDeploy Solution Overview



\* Similar to ALI Spill to CAD

EDG Device Deployed in Every PSAP



# Location Accuracy Project Status

- Pilot and Wave 1 deployment completed (48 PSAPs)
- Cal OES is validating call location data analytics provided by the onsite RapidDeploy EDG
  - Validating device based location data increases location accuracy
- Comcast is working to deploy 10 Mbps network connections with managed router services to the Pilot and Wave 1 PSAPs
- All remaining PSAPs are scheduled for Wave 2 deployments which are to be completed by the end of 2019
- Historic Call Data Records request exercise completed
  - One day turn around time



# Wave 2 Deployment Process

- Email was sent to all Wave 2 PSAPs
  - Included overview of project and other important information
- Cal OES Technicians will install a Cradlepoint LTE Router
- AT&T will work with your CPE Vendor to install connections from EDG device to CPE
- Cal OES will coordinate with your CPE vendor
- Cal OES and RapidDeploy will coordinate training and go live date for your PSAP
  - Training and technical data webinars are available every week
  - Train the trainer approach
  - Integrated training platform, Zendesk available to the PSAPs
  - Videos and 'How to Guides' are available
- If you have any questions, contact Curt Guillot



# PSAP Feedback & Success Stories

- Cal OES & RapidDeploy are looking for product feedback and improvement ideas
- First set of ideas have already been implemented and updated in the mapping application (e.g., view locations of all 9-1-1 calls currently active at PSAP, zooming behavior, hide historic locations)
- Please also share your success stories & saves!



# Next Gen 9-1-1 PSAP Meetings

## **Sept 17 – Redding (North)**

12:00 PM - 3:00 PM (PST)  
City of Redding Electric Utility,  
3611 Avtech Parkway, Redding, CA

## **Sept 18 – Ukiah (North)**

12:00 PM - 3:00 PM (PST)  
Mendocino County Sheriff Office  
951 Lowgap Road, Ukiah, CA

## **Sept 19 – Santa Rosa (North)**

9:00 AM - 12:30 PM (PST)  
Finely Community Center,  
2060 West College Ave, Santa Rosa, CA

## **Sept 24 – Palo Alto (North)**

12:00 PM - 3:00 PM (PST)  
Mitchell Park Community Center,  
El Palo Alto West Room  
3700 Middlefield Rd, Palo Alto, CA

## **Sept 25 – Atwater (Central)**

9:00 AM - 12:00 PM (PST)  
Merced County Emergency Operations Center,  
3500 Apron Ave, Atwater, CA

## **Sept 26 – Rocklin (North)**

12:00 PM - 4:30 PM (PST)  
Rocklin Police Department,  
4080 Rocklin Road Rocklin, CA

## **Oct 1– Anaheim (South)**

12:00 PM - 3:00 PM (PST)  
Anaheim Police Department,  
425 South Harbor Blvd, Anaheim, CA

## **Oct 2 – Hawthorne (LA)**

9:00 AM - 12:00 PM (PST)  
Hawthorne Memorial Center, Sun & Venus Rooms  
3903 West El Segundo Blvd, Hawthorne, CA 90250 –, CA

## **Oct 3 – Santa Barbara (Central)**

9:00 AM - 12:00 PM (PST)  
Chase Palm Park,  
232 E Cabrillo Blvd, Santa Barbara, CA

## **Oct 8, Encinitas (South)**

12:00 PM - 3:00 PM (PST)  
Encinitas Community Center - Banquet Hall B,  
1140 Oakcrest Park Dr, Encinitas, CA

## **Oct 9 – San Bernardino (South)**

9:00 AM - 12:00 PM (PST)  
San Bernardino County Sheriff's Department  
Main Conference Room of Headquarters,  
655 East Third Street, San Bernardino, CA



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# Questions and Discussion



# Next Gen 9-1-1 Components

- **ESRP** - Emergency Services Routing Proxy essentially replaces the selective routers in NG 9-1-1.
- **ECRF** - Emergency Call Routing Function is the functional element where caller location and routing information for that call is stored.
- **PRF** – The Policy Routing Function is where default, alternate, contingent, and emergency routes are located. The PRF is the specific functionality regarding how those routes are changed.
- **ALI DB service** - The Automatic Location Information DataBase is being used to route calls in a legacy system
- **LDB** – Location DataBase server retains all of the current information, functionality, and interfaces of today's ALI and can utilize the new protocols required in an NG 9-1-1 deployment
- **LIS** – Location Information Server will transition the ALI database transition into the ESInet / NG 9-1-1 core
- **LVF** - The ECRF connects to the LIS to determine location and validates it through a Location Validation Function (LVF).
- **LSRG** – Legacy Selective Router Gateway
- **LNG** – Legacy Network Gateway
- **LPG** – Legacy PSAP Gateway