State 9-1-1 Advisory Board

June 28, 2017
9:00 a.m.
9-1-1 & SETNA OVERVIEW

Presented by
Budge Currier

California 9-1-1 Emergency Communications Branch
(CA 9-1-1 Branch)

June 28, 2017
Purposes

- Overview of California 9-1-1 System
- Overview of SETNA revenue & expenditures
- Overview of Next Gen 9-1-1 Transition
Presentation Roadmap

- Trace 9-1-1 call through 9-1-1 Architecture
- Define existing SETNA fee structure
- Identify and define the major SETNA expenditures
- Match the SETNA expenditure to the payment classification using the 9-1-1 Architecture
- Discuss how Next Gen 9-1-1 will change 9-1-1 in California
2016 California 9-1-1 Call Statistics

- Total 9-1-1 Calls: 28,507,534
  - 80% Wireless
  - 16% Wireline
  - 3% Voice over IP
  - 1% Other to include Telematics
  - ~ 5k Text Messages
Basic 9-1-1 Architecture

- 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

VoIP Service Provider

End-Office Switch

Selective Router

MSC or VPC

Data Bases

ALI Data Base

Public Safety Answering Point

Text Control Center

Landline 9-1-1

Wireless 9-1-1

VoIP 9-1-1

Phone Number and Voice

Call and ANI sent to PSAP

CPE sends number to data base for caller location

pANI

VoIP Location Info

Text to 9-1-1
Current 9-1-1 System

- Based on 1970’s technology
- Supports voice and limited data
- Infrastructure beyond end of life
- Does not meet needs of current technology
SETNA Fee Structure

• Established in 1970’s through Warren Act
• Collects percentage of Intrastate voice call revenue (0.50% - 0.75%)
• Intrastate voice call revenue determined by carriers and regulated through CPUC
• Revenue is declining
  – Primarily due to decrease in Wireless Intrastate Voice Revenue
CPUC Intrastate Revenue

Decrease 6.79% 6.28% 5.66% 9.64% 1.09%
SETNA Graph

- **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**
SETNA Expenditures

- Average of $102 million per year in SETNA expenditures
- Expenditures cover:
  - 9-1-1 Database
  - 9-1-1 Network
  - 9-1-1 Call Answering Equipment
Basic 9-1-1 Architecture

<table>
<thead>
<tr>
<th>FY 2015-2016 Expense Category</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database</td>
<td>$30,709,386</td>
<td>31.2%</td>
</tr>
<tr>
<td>CPE, Maintenance</td>
<td>$29,589,673</td>
<td>30.1%</td>
</tr>
<tr>
<td>9-1-1 Network</td>
<td>$17,343,109</td>
<td>17.6%</td>
</tr>
<tr>
<td>Next Generation 9-1-1</td>
<td>$5,248,740</td>
<td>5.3%</td>
</tr>
<tr>
<td>CalFIRE</td>
<td>$4,051,000</td>
<td>4.1%</td>
</tr>
<tr>
<td>Network - Wireless</td>
<td>$2,940,969</td>
<td>3.0%</td>
</tr>
</tbody>
</table>
## SETNA Expenditure Categories

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>Percentage</th>
<th>TARIFF</th>
<th>CALNET2+3</th>
<th>CMAS</th>
<th>TEXT to 9-1-1</th>
<th>CA 911 BRANCH</th>
<th>State Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database</td>
<td>31.2%</td>
<td>$30,709,386</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPE- Maintenance</td>
<td>30.1%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$29,589,673</td>
<td></td>
</tr>
<tr>
<td>9-1-1 Network</td>
<td>17.6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$17,343,109</td>
<td></td>
</tr>
<tr>
<td>NG-9-1-1 Network</td>
<td>5.3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$5,248,740</td>
<td></td>
</tr>
<tr>
<td>CalFIRE</td>
<td>4.1%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$4,051,000</td>
</tr>
<tr>
<td>Network - Wireless</td>
<td>3.0%</td>
<td>$2,940,969</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9-1-1 Branch</td>
<td>2.6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$2,486,000</td>
<td></td>
</tr>
<tr>
<td>BOE</td>
<td>1.8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$1,783,000</td>
</tr>
<tr>
<td>Graphical Info Sys.</td>
<td>1.3%</td>
<td></td>
<td>$207,631</td>
<td></td>
<td>$1,080,810</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECaTS</td>
<td>1.0%</td>
<td>$1,020,541</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>County Coordinator</td>
<td>0.5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$483,677</td>
<td></td>
</tr>
<tr>
<td>CLEC</td>
<td>0.4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$380,692</td>
<td></td>
</tr>
<tr>
<td>CHP</td>
<td>0.4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$352,348</td>
<td></td>
</tr>
<tr>
<td>Foreign Language</td>
<td>0.3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$322,255</td>
<td></td>
</tr>
<tr>
<td>Annual Training</td>
<td>0.2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$182,554</td>
<td></td>
</tr>
<tr>
<td>TEXT to 911</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$35,000</td>
</tr>
<tr>
<td>Other Reimbursements</td>
<td>0.0%</td>
<td>$23,522</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dollar amount reflects 2015-16 data.
9-1-1 Architecture

Tariff Process

- Tariffs are established with CPUC
- Must follow CPUC Guidelines and Procedures
- Competitive pricing is not part of process
- CA 9-1-1 Branch is not part of the process
Customer Premise Equipment Master Service Agreement Contract

Call Answering Equipment located at the PSAP (~30% of SETNA)

- CPE Purchases
- CPE Maintenance
- CPE Incremental costs
CPE Funding Process

Well defined process in place
Variable cost depending PSAP CPE replacement cycle
• Typically ~30% of SETNA
Replacement cycle is 5-7 years
9-1-1 Branch does not reimburse maintenance past year 7.
Reimbursements based on call volume
Only used for Call Answering Equipment (Less than 20% of total PSAP costs)
PSAP must cover 80% of costs for:
• Computer Aided Dispatch (CAD)
• Radio Console Interface
• Records Management System
• Personnel Costs
• Training Costs
• All other PSAP costs
9-1-1 Network and Services Tariff Process

- 17% of SETNA Fund
- PSAP and End Office Trunks
- Verizon / Frontier ALI Network
- Alternate Answer Circuits
- Tandem to Tandem Trunks
9-1-1 Architecture

Landline 9-1-1

Wireless 9-1-1

VoIP 9-1-1

VoIP Service Provider

MSC or VPC

Data Base

End-Office Switch

Selective Router

Call and ANI sent to PSAP

CPE sends number to data base for caller location

VoIP Location Info

Wireless Location Info

ALI Data Base

ANL

EAN

PSAP

85% of SETNA Funds up to this point

9-1-1 Network and NG 9-1-1 Projects using CalNET 2 and CalNET 3 Process

- 8% of SETNA Fund through competitive bid process
- T-1’s and MPLS for regional call handling systems
- NG 9-1-1 ESINet routing and call handling components
- AT&T ALI Network
- ECaTS
9-1-1 Architecture

Wireless ALI Database Process

- 3% of SETNA Fund
- Wireless Database look-ups paid to AT&T and Frontier
- AT&T Tariff is 13 cents per call
- Frontier incorporates into monthly service charge
9-1-1 Architecture

Landline 9-1-1

Wireless 9-1-1

VoIP 9-1-1

VoIP Service Provider

End-Office Switch

MSO or VPC

Selective Router

MSC or VPC

Data Base

Phone Number and Voice

Call and ANI sent to PSAP

CPE sends number to database for caller location

VoIP Location Info

pANI

pANI

pANI

ANI

Location Info

PSAP

VoIP Service Provider

VoIP Location Info

Wireless Location Info

ALI Data Base

91% of SETNA Funds up to this point

Other PSAP Contracts

- 2% of SETNA FUND
- Foreign Language Contract
- Text to 9-1-1
- CMAS – Goods and Services not on other Contracts
## State Agency Expenditures

<table>
<thead>
<tr>
<th>FY 2015-2016 Expense Category</th>
<th>Contract #</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Forestry and Fire Protection (CALFIRE)</td>
<td>Governor's Budget</td>
<td>$4,051,000</td>
<td>4.1%</td>
</tr>
<tr>
<td>CA 9-1-1 Branch (Cal OES)</td>
<td>CA Revenue and Taxation Code Sections 41001-41176</td>
<td>$2,586,000</td>
<td>2.6%</td>
</tr>
<tr>
<td>State Board of Equalization (BOE)</td>
<td>CA Revenue and Taxation Code Sections 41001-41176</td>
<td>$1,783,000</td>
<td>1.8%</td>
</tr>
<tr>
<td>Financial Information System for California (Fi$CAL)</td>
<td>Governor's Budget</td>
<td>$15,000</td>
<td>0.0%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$8,435,000</td>
<td>8.6%</td>
</tr>
</tbody>
</table>

Average $102 Million in annual SETNA expenditures
Current Cost Savings Activities

• Competitive Bid Contract Process (~$1M annually)
• Reconciliation process (~$400K annually)
• Foreign Language Interpretation (~$138K annually)
• Cancelled Wireless Technical Overview Service contract with Public Safety Network (2015 $1.4M annually)
• Sunset Wireless Service Provider Policy (2013 $19M annually)
• VoIP E911 Project (2012 ~$3M annually)
• Update obsolete CPUC code 2883 (~$4M annually)
• RED Project (2011 $21.4M annually)
• Wireless E911 Project (2001 ~$11M annually)
# SETNA Fund Details

## 2015-16

<table>
<thead>
<tr>
<th>Account Description</th>
<th>2015-16</th>
<th>2016-17</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BEGINNING BALANCE:</strong></td>
<td>$72,374,000</td>
<td>$53,451,000</td>
</tr>
<tr>
<td><strong>REVENUES, TRANSFERS, AND OTHER ADJUSTMENTS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4140500 Emergency Telephone User’s Surcharge</td>
<td>$81,605,000</td>
<td>$75,549,000</td>
</tr>
<tr>
<td>Prepaid</td>
<td>-</td>
<td>$11,181,000</td>
</tr>
<tr>
<td>Total Revenues, Transfers, and Other Adjustments</td>
<td>$81,606,000</td>
<td>$86,730,000</td>
</tr>
<tr>
<td>Total Resources:</td>
<td>$153,980,000</td>
<td>$140,181,000</td>
</tr>
<tr>
<td><strong>EXPENDITURE AND EXPENDITURE ADJUSTMENTS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expenditures:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0690 Office of Emergency Services (State Operations)</td>
<td>$2,586,000</td>
<td>$2,430,000</td>
</tr>
<tr>
<td>0690 Office of Emergency Services (Local Assistance)</td>
<td>$87,727,260</td>
<td>$88,700,000</td>
</tr>
<tr>
<td>Next Generation 9-1-1</td>
<td>$5,248,740</td>
<td>$5,300,000</td>
</tr>
<tr>
<td>0860 State Board of Equalization (State Operations)</td>
<td>$1,125,000</td>
<td>$1,759,000</td>
</tr>
<tr>
<td>3540 Department of Forestry of Fire Protection (State Operations)</td>
<td>$3,827,000</td>
<td>$3,815,000</td>
</tr>
<tr>
<td>8880 Financial Information System for California (State Operations)</td>
<td>$15,000</td>
<td>$12,000</td>
</tr>
<tr>
<td>9900 Statewide General Administrative Expenditures</td>
<td>-</td>
<td>$260,000</td>
</tr>
<tr>
<td>Total Expenditures and Expenditure Adjustments</td>
<td>$100,529,000</td>
<td>$102,276,000</td>
</tr>
<tr>
<td><strong>FUND BALANCE</strong></td>
<td>$53,451,000</td>
<td>$37,905,000</td>
</tr>
</tbody>
</table>

**Key Note:** Actual Revenues and Expenditures are not shaded. Projected Expenditures shaded in orange are based on DOF Fund Condition Statement. Projected Revenues shaded in blue are based on historical data and predicted CPE replacements.
### SETNA Fund Details

#### State Emergency Telephone Number Account - CA 9-1-1 Emergency Communication Branch

<table>
<thead>
<tr>
<th></th>
<th>2015-16</th>
<th>2016-17*</th>
<th>2017-18*</th>
<th>2018-19*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BEGINNING BALANCE:</strong></td>
<td>$72,374,000</td>
<td>$53,451,000</td>
<td>$37,905,000</td>
<td>$2,926,000</td>
</tr>
<tr>
<td><strong>REVENUES, TRANSFERS, AND OTHER ADJUSTMENTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4140500 Emergency Telephone User’s Surcharge</td>
<td>81,605,000</td>
<td>$75,549,000</td>
<td>$69,573,000</td>
<td>$69,573,000</td>
</tr>
<tr>
<td>Prepaid</td>
<td>-</td>
<td>$11,181,000</td>
<td>$9,900,000</td>
<td>$9,900,000</td>
</tr>
<tr>
<td><strong>Total Revenues, Transfers, and Other Adjustments</strong></td>
<td>$81,606,000</td>
<td>$86,730,000</td>
<td>$79,473,000</td>
<td>$79,473,000</td>
</tr>
<tr>
<td><strong>Total Resources:</strong></td>
<td>$153,980,000</td>
<td>$140,181,000</td>
<td>$117,378,000</td>
<td>$82,399,000</td>
</tr>
<tr>
<td><strong>EXPENDITURE AND EXPENDITURE ADJUSTMENTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expenditures:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0690 Office of Emergency Services (State Operations)</td>
<td>$2,586,000</td>
<td>$2,430,000</td>
<td>$2,430,000</td>
<td>$2,900,000</td>
</tr>
<tr>
<td>0690 Office of Emergency Services (Local Assistance)</td>
<td>$87,727,260</td>
<td>$88,700,000</td>
<td>$96,000,000</td>
<td>$94,000,000</td>
</tr>
<tr>
<td>Next Generation 9-1-1</td>
<td>$5,248,740</td>
<td>$5,300,000</td>
<td>$10,000,000</td>
<td>$25,000,000</td>
</tr>
<tr>
<td>0860 State Board of Equalization (State Operations)</td>
<td>$1,125,000</td>
<td>$1,759,000</td>
<td>$1,726,000</td>
<td>$1,726,000</td>
</tr>
<tr>
<td>3540 Department of Forestry of Fire Protection (State Operations)</td>
<td>$3,827,000</td>
<td>$3,815,000</td>
<td>$3,815,000</td>
<td>$3,815,000</td>
</tr>
<tr>
<td>8880 Financial Information System for California (State Operations)</td>
<td>$15,000</td>
<td>$12,000</td>
<td>$10,000</td>
<td>$10,000</td>
</tr>
<tr>
<td>9900 Statewide General Administrative Expenditures</td>
<td>-</td>
<td>$260,000</td>
<td>$471,000</td>
<td>$471,000</td>
</tr>
<tr>
<td><strong>Total Expenditures and Expenditure Adjustments</strong></td>
<td>$100,529,000</td>
<td>$102,276,000</td>
<td>$114,452,000</td>
<td>$127,752,000</td>
</tr>
<tr>
<td><strong>FUND BALANCE</strong></td>
<td>$53,451,000</td>
<td>$37,905,000</td>
<td>$2,926,000</td>
<td>($45,523,000)</td>
</tr>
</tbody>
</table>

Key Note: Actual Revenues and Expenditures are not shaded.

Projected Expenditures shaded in orange are based on DOF Fund Condition Statement
Projected Revenues shaded in blue are based on historical data and predicted CPE replacements.
Why Next Gen 9-1-1?

• Faster Call Delivery
• Increased routing accuracy
• Increased efficiency
• Increased routing => call overflow and backup
• Updated Graphical Information System (GIS)
• Prepared for Wireless Location Data
• Prepared for newer technologies
• Keeps California in driver’s seat
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

![Diagram of Next Gen 9-1-1 Concept](Image)

Text to 9-1-1
Potential Next Gen 9-1-1 Design

Note: Number of Regional ESI Nets not determined
All seven identified regions shall have the capability to interconnect to all other regions via the ESInet Prime.
Implementation Timeline for CA

Transition Plan completed June 30, 2017

Regional ESInets
  Northeast Project - Contract Award May 12 to ROI / Synergem
  Pasadena RING – Contract Intent to Award to AT&T

PSAP Discussions – July 2017

Vendor Discussions – Week of August 6th
  Please contact 9-1-1 Branch if you are interested
  Goal is to schedule individual meetings with each vendor

Nationwide ESInet deployment by 2020...
Next Gen 9-1-1 PSAP Meetings

July 14 – Bay Area Region
10:00 – 13:30
Alameda County OES facilities
4985 Broder Blvd.
Dublin, CA 94568

July 18 – Sacramento Region
09:00 – 12:00
Rocklin Police Department
4080 Rocklin Road
Rocklin, CA 95677

July 20 – Northern Region
(Joint NG9-1-1 / Firstnet Meeting)
09:00 – 15:00
Redding City Council Chambers
777 Cypress Ave.
Redding, CA 96001

July 25 – Los Angeles Region
09:00 – 12:00
USFS – Angeles National Forest HQ
701 S. Santa Anita Ave.
Arcadia, CA 91006

July 26 – Inland Region
09:00 – 12:00
Ontario Police Department
2500 S. Archibald Ave.
Ontario, CA 91761
QUESTIONS
Subscriber Data

Voice - Wireline
Voice - Wireless
Voice - VoIP
Broadband - Mobile
Broadband - Fixed
Subscriber Total