



**Federal Communications Commission  
Public Safety and Homeland Security Bureau**

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# **FCC NG911 Update**

**NARUC Summer Meeting  
Nashville, Tennessee  
July 25, 2016**

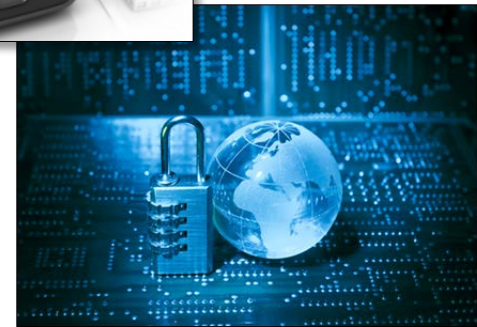
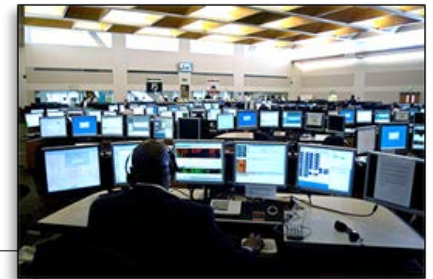
David L. Furth  
Deputy Chief, Public Safety and Homeland  
Security Bureau  
Federal Communications Commission



# 911-Related Proceedings/Initiatives



- Location Accuracy
- Text-to-911
- 911 Outage Reporting
- 911 Reliability Certification
- Annual 911 Fee Report
- NSI Phones
- TFOPA
- CSRIC V
- 911 Apps
- GIS Mapping





# E911 Location Accuracy



## Fourth Report and Order (Jan. 2015)

- New location accuracy benchmarks for indoor as well as outdoor wireless 911 calls
- Encourages development of “dispatchable location” as alternative to coordinate-based location
- Adds vertical location (z-axis) requirements for 911 calls from multi-story buildings
- Location technology test bed to begin testing in August 2016
- Carrier compliance with accuracy standards will be measured based on live 911 call data starting in April 2017



# Location Accuracy Timeline

2016	2017	
August	February	April
Launch of technology test beds: Atlanta and San Francisco	Quarterly reporting of live 911 call data from 6 Test Cities (NYC, San Francisco, Atlanta, Chicago, Denver, Philadelphia) and elsewhere at PSAP request	<b><u>First Accuracy Benchmark:</u></b> 50m accuracy or dispatchable location for 40% of calls

2018	
April	August
<b><u>Second Accuracy Benchmark:</u></b> 50m accuracy or dispatchable location for 50% of calls	Carriers must provide uncompensated barometric data from capable devices Carriers submit proposed z-axis metric to FCC

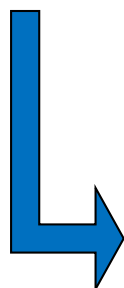
2020	2021	2023
April	April	April
<b><u>Third Accuracy Benchmark:</u></b> 50m accuracy or dispatchable location for 70% of calls	<b><u>Fourth Accuracy Benchmark:</u></b> 50m accuracy or dispatchable location for 80% of calls Z-axis in top 25 markets	Z-axis in top 50 markets



# T911 Deployment – Total Counties



State	ME	NH	PR	VT	IN	ND	NJ	HI	NC	MT	MI	CO	OR	VA	ID	PA
Total Counties and Independent Cities	16	10	78	14	92	53	21	5	100	56	83	64	36	133	44	67
Total Counties Where Text to 911 is Available	16	10	78	14	89	52	18	4	58	14	18	11	6	22	7	10
%	100%	100%	100%	100%	97%	96%	86%	80%	58%	25%	22%	17%	17%	17%	16%	15%



State	TX	NY	WA	UT	MO	CA	IA	IL	FL	SC	WI	MD	KS	OH	GA	AR	WV	KY	AL	OK
Total Counties and Independent Cities	254	62	39	29	114	58	99	102	67	46	72	23	105	88	159	75	55	120	67	77
Total Counties Where Text to 911 is Available	33	8	5	3	10	5	8	8	5	3	4	1	4	3	5	2	1	2	1	1
%	13%	13%	13%	10%	9%	9%	8%	8%	7%	7%	6%	4%	4%	3%	3%	3%	2%	2%	1%	1%



# 7<sup>th</sup> Annual 911 Fee Report

(December 2015 – reporting CY 2014 data)



Report	Key Metrics	
<b>Total States Filing</b>	48 states (Louisiana and Missouri did not file) District of Columbia, American Samoa, the Navajo Nation, and three Bureau of Indian Affairs (BIA) offices	
<b>Total 911 Fees Collected (Calendar Year 2014)</b>	<b>\$2,527,625,360.85</b>	
<b>Total Fees Diverted</b>	<b>\$223,420,909</b> (approximately 8.8 percent of total 911/E911 fees collected)	
<i>States Diverting 911 Funds for Non-911 Purposes</i>	<i>Diverting to support other public safety emergency response-related programs uses</i>  California, New Hampshire, New Jersey, Virginia, and West Virginia	<i>Diverted a portion of their 911/E911 funds for either non-public safety uses</i>  Illinois, New York, and Rhode Island
<b>Next Generation 911 Expenditures</b>	Twenty-eight states and the District of Columbia reported spending 911/E911 funds on Next Generation 911 programs	
<i>Total NG911 Expenditures</i>	<b>\$227,574,995.97</b> (approximately 9 percent of total 911/E911 fees collected)	
<i>ESInet Deployments</i>	<ul style="list-style-type: none"><li>11 states reported having deployed state-wide ESInets – 498 total PSAPs</li><li>11 states reported having regional ESInets within the state – 170 total PSAPs</li><li>7 states reported local-level ESInets – 85 total PSAPs</li></ul>	
<i>911 Cybersecurity Preparedness</i>	<ul style="list-style-type: none"><li>38 states spent no 911 funds in 2014 on PSAP–related cybersecurity programs</li><li>5 states and the Navajo Nation stated that they had made cybersecurity-related expenditures</li><li>Total - <b>\$25,306,952.16</b></li></ul>	



# FCC Resources



Indoor Location Accuracy Benchmarks	<a href="https://www.fcc.gov/public-safety-and-homeland-security/policy-and-licensing-division/911-services/general/location-accuracy-indoor-benchmarks">https://www.fcc.gov/public-safety-and-homeland-security/policy-and-licensing-division/911-services/general/location-accuracy-indoor-benchmarks</a>
FCC Text to 911 PSAP Registry	<a href="https://www.fcc.gov/encyclopedia/psap-text-911-readiness-and-certification">https://www.fcc.gov/encyclopedia/psap-text-911-readiness-and-certification</a>
FCC Master PSAP Registry	<a href="https://www.fcc.gov/general/9-1-1-master-psap-registry">https://www.fcc.gov/general/9-1-1-master-psap-registry</a>
Public Safety Support Center	<a href="https://www.fcc.gov/public-safety-support-center">https://www.fcc.gov/public-safety-support-center</a>
911 Apps Workshop	<a href="https://www.fcc.gov/events/911-apps-workshop">https://www.fcc.gov/events/911-apps-workshop</a>
911 Fee Reports	<a href="https://www.fcc.gov/encyclopedia/911FeeReports">https://www.fcc.gov/encyclopedia/911FeeReports</a>
Task Force on Optimal PSAP Architecture	<a href="https://www.fcc.gov/encyclopedia/task-force-optimal-public-safety-answering-point-architecture-tfopa">https://www.fcc.gov/encyclopedia/task-force-optimal-public-safety-answering-point-architecture-tfopa</a>
CSRIC	<a href="https://www.fcc.gov/encyclopedia/communications-security-reliability-and-interoperability-council">https://www.fcc.gov/encyclopedia/communications-security-reliability-and-interoperability-council</a>





# **FEDERAL COMMUNICATIONS COMMISSION**

***TASK FORCE ON OPTIMAL  
PUBLIC SAFETY ANSWERING POINT ARCHITECTURE  
(TFOPA)***

***JIM GOERKE***

***JULY 25, 2016***



# HIGH LEVEL TASK FORCE OBJECTIVE AND SCOPE

- Examine current and future structure and architecture of nation's PSAPs with an aim towards optimal system and network configuration
- Examine cost and funding environment surrounding PSAP operations and migration to NG9-1-1

# STRUCTURE

- Federal advisory committee chartered under the Federal Advisory Committee Act
- Two year charter
- Organized around three Work Groups, addressing optimization of:
  - Cybersecurity for PSAPs
  - NG9-1-1 Architecture
  - NG9-1-1 Resource Allocation

# WORK TO DATE

- First year: adopted a final report, January 29, 2016  
[https://transition.fcc.gov/pshs/911/TFOPA/TFOPA\\_FINALReport\\_012916.pdf](https://transition.fcc.gov/pshs/911/TFOPA/TFOPA_FINALReport_012916.pdf)
- Second year:
  - Further study the concept of an “Emergency Communications Cybersecurity Center”
  - NG9-1-1 Readiness Guides using the first year report
  - Workforce Training and Education
  - Funding Sustainment
  - ESInet Deployment



# FUNDING SUSTAINMENT

- Goal: A funding model to help 9-1-1 Authorities calculate financial need associated with migration to NG9-1-1
- Includes a breakdown of common PSAP and 9-1-1 system costs
- And, identifies current and potential contribution/funding sources, recognizing that traditional funding mechanisms may no longer be sufficient and/or apply



# 911 Topics for NARUC

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Daryl Branson, MPA ENP RPL  
Sr. 911 Telecom Analyst  
Colorado Public Utilities Commission



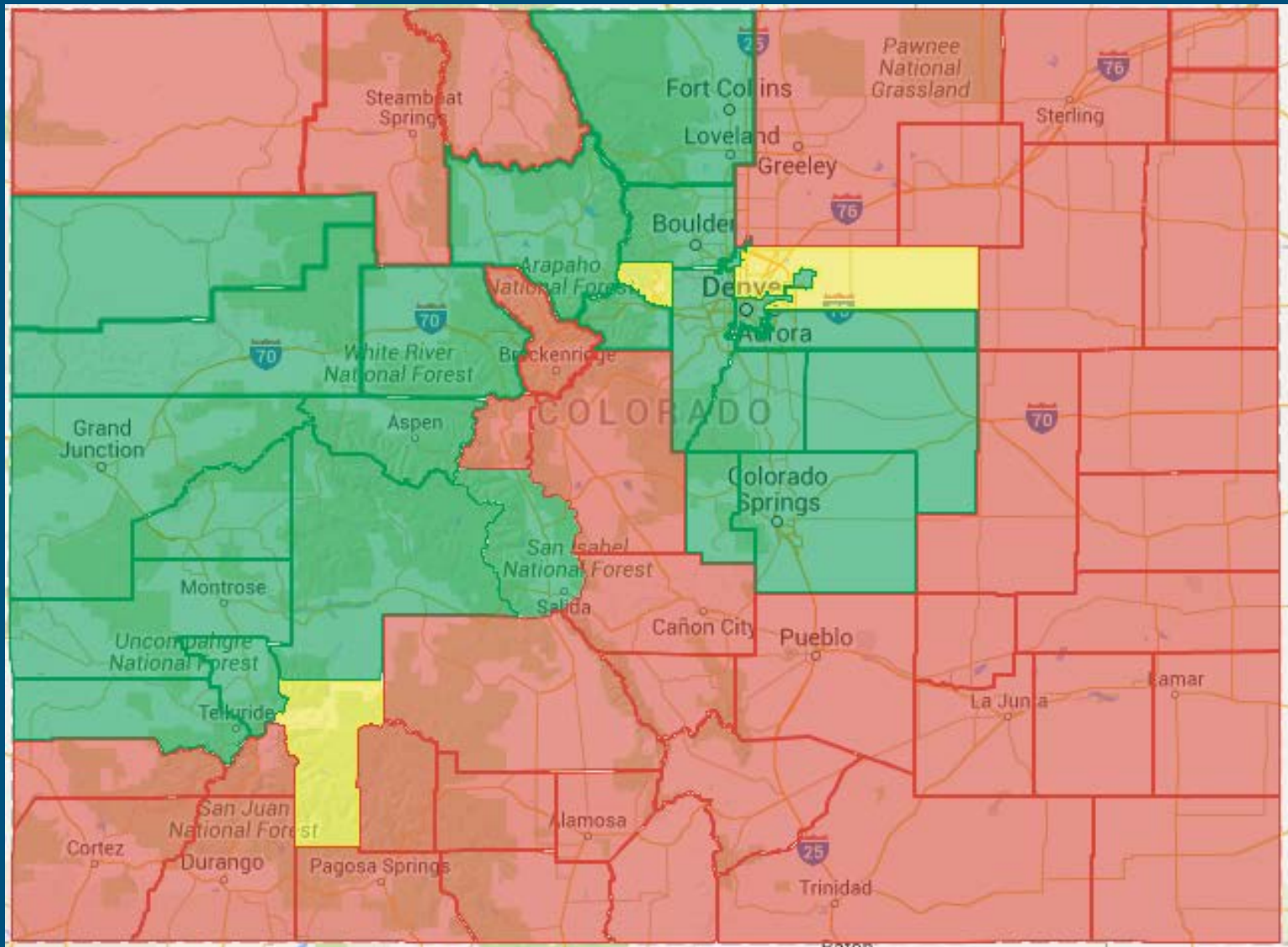
## Text-to-911

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Myth: It will overload our PSAPs.

Myth: It's too hard to implement.

Myth: It's too expensive!

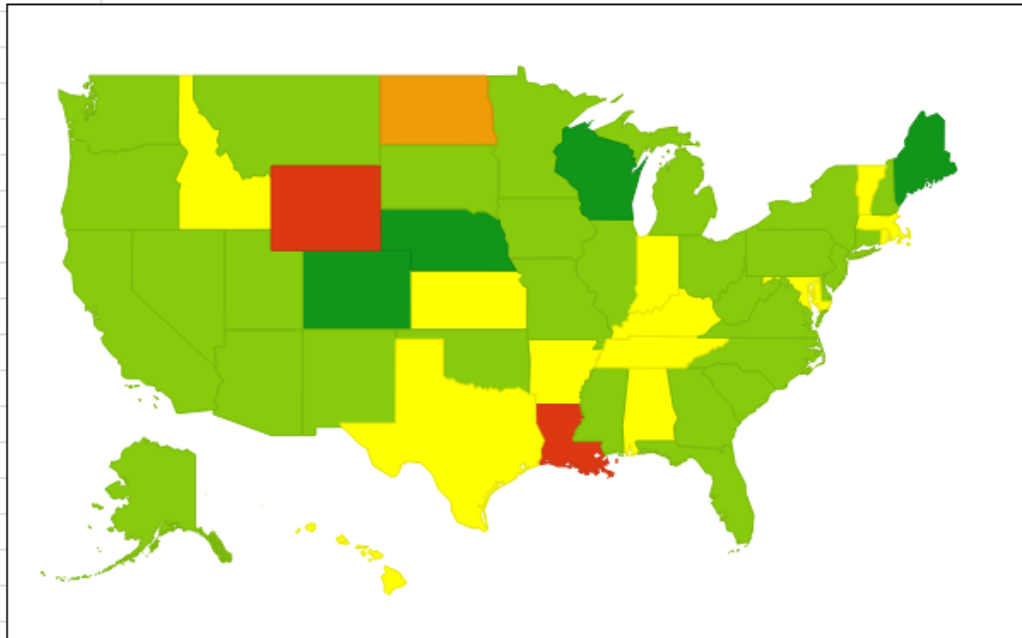


76% of the state is now covered by text-to-911 by population.



# NG911 Models by State

State 911 Programs by Structure



NOTE: This is a work in progress! Several state 911 contacts have provided additional information that has not yet been incorporated.

## Legend

Red (1) = No state 911 program, local authority only

Orange (2) = Non-state, statewide entity

Yellow (3) = State 911 board, commission, or council

Light green (4) = State agency

Dark green (5) = Public utilities commission or public service commission

# 911 Outage Tracking and Trending

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Colorado has been collecting outage reports from the 911 System Service Provider and from ILECs since 2010.

In the last year, we have digitized these report records and begun subjecting it to statistical analysis.

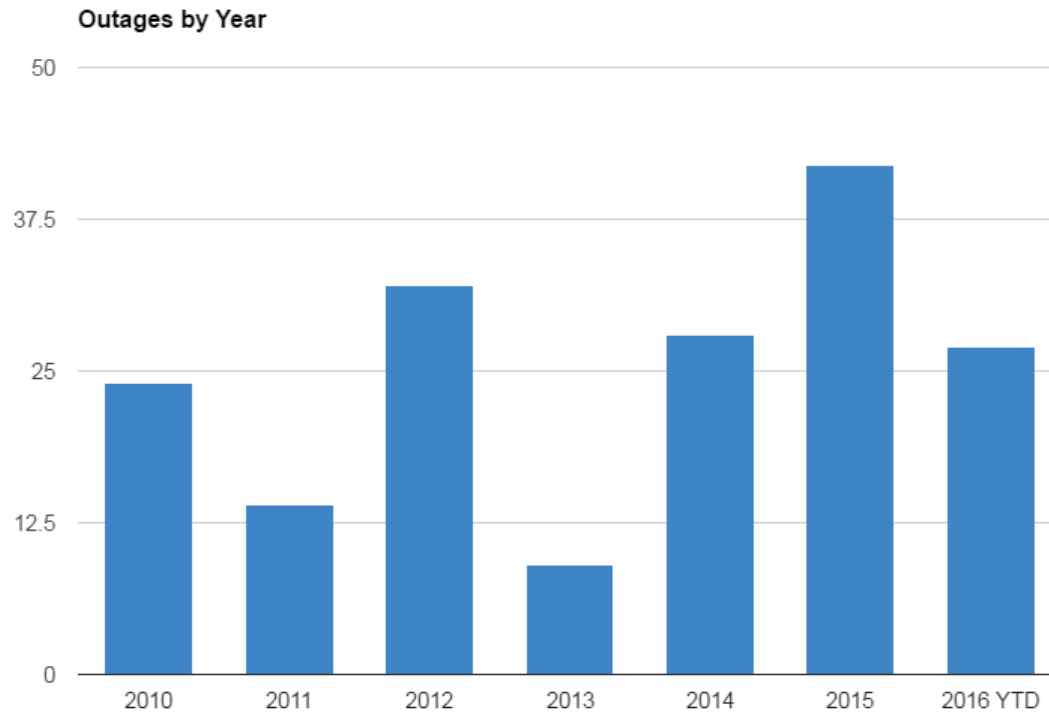
Reports include anything that disrupts the ability to deliver 911 calls from the selective router to the PSAP, including outages affecting the 911 System Service Provider or rural ILECs serving as the last mile from the Central Office to the PSAP.

Most ILECs report outages affecting customers' ability to call 911.

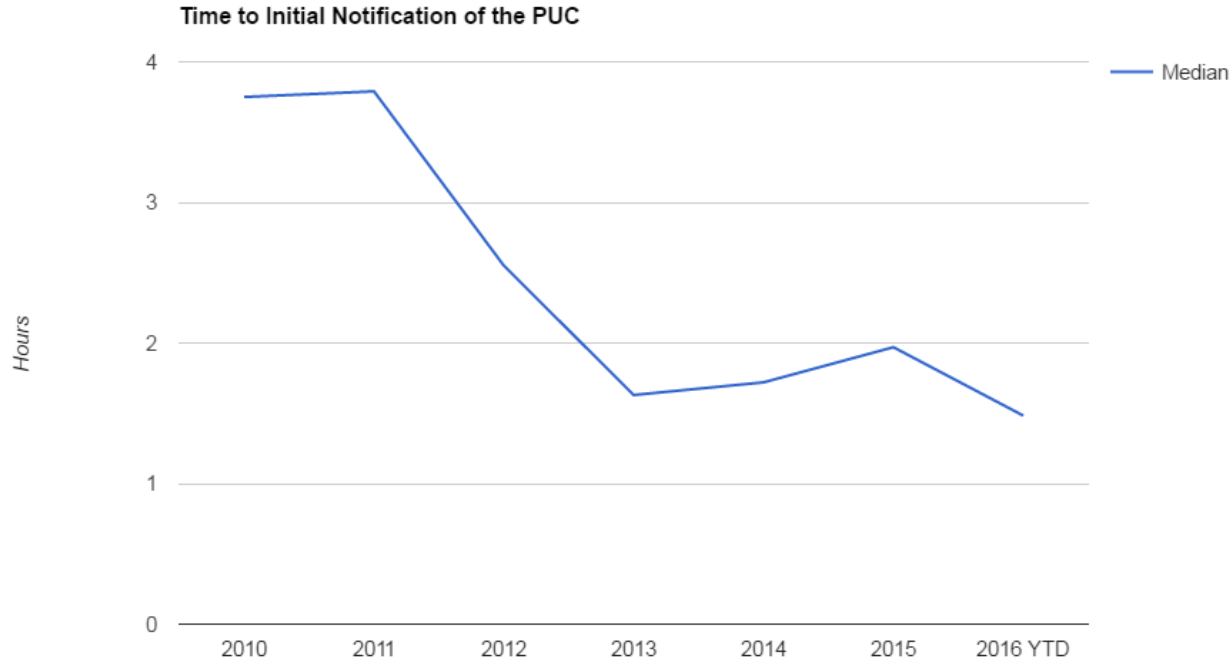
Wireless and VoIP outages are generally not reported, although there are exceptions. Because our data collection for wireless and VoIP are not consistent, they are not included in the data.

# Number of Outages by Year

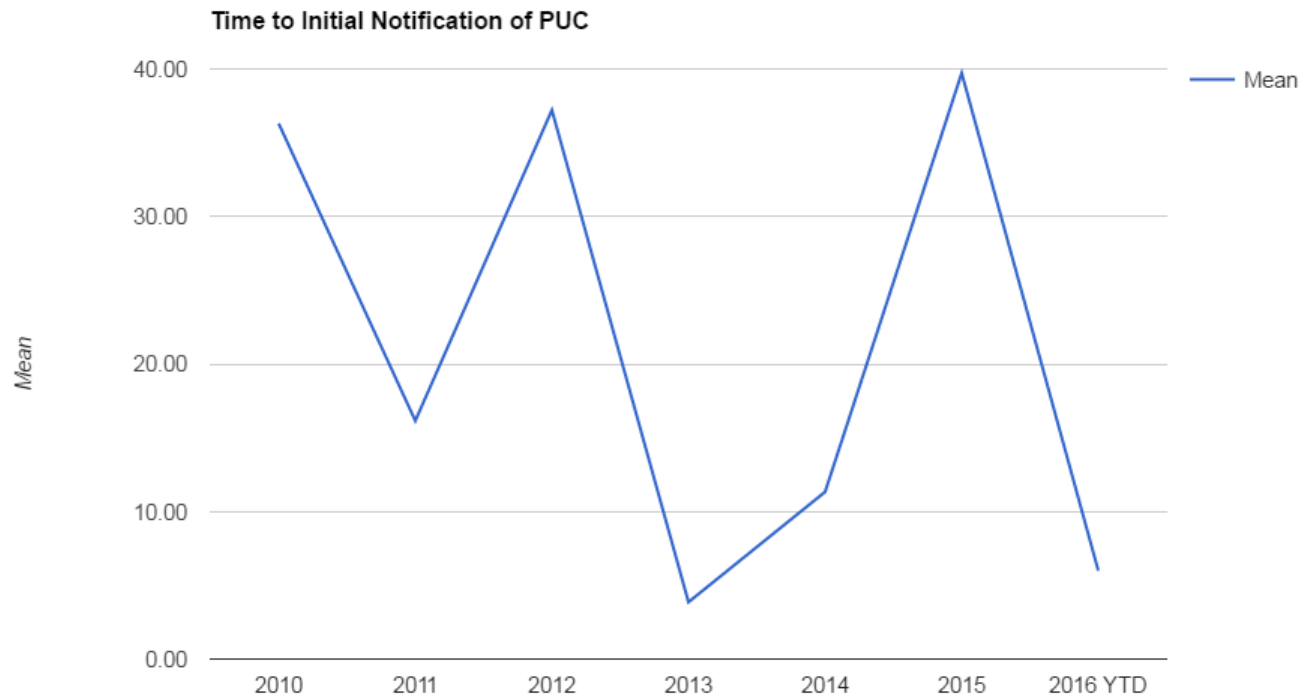
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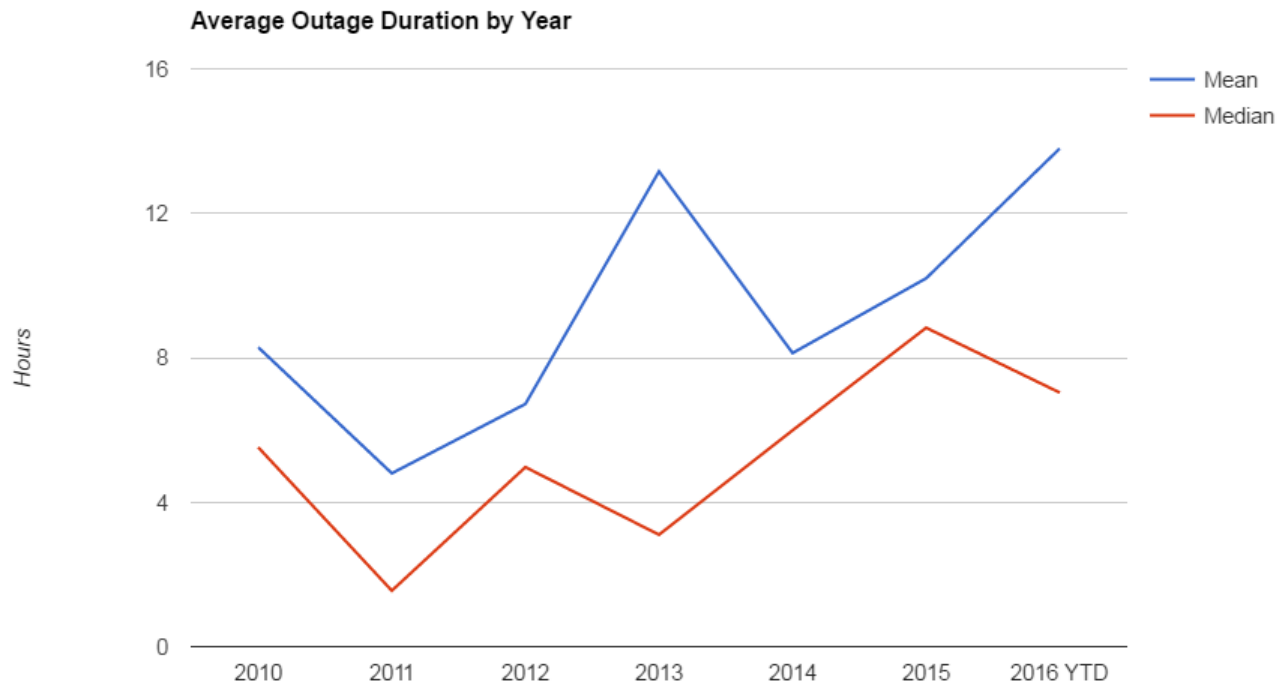
# Average Time to Notification - Median



# Average Time to Notification - Mean

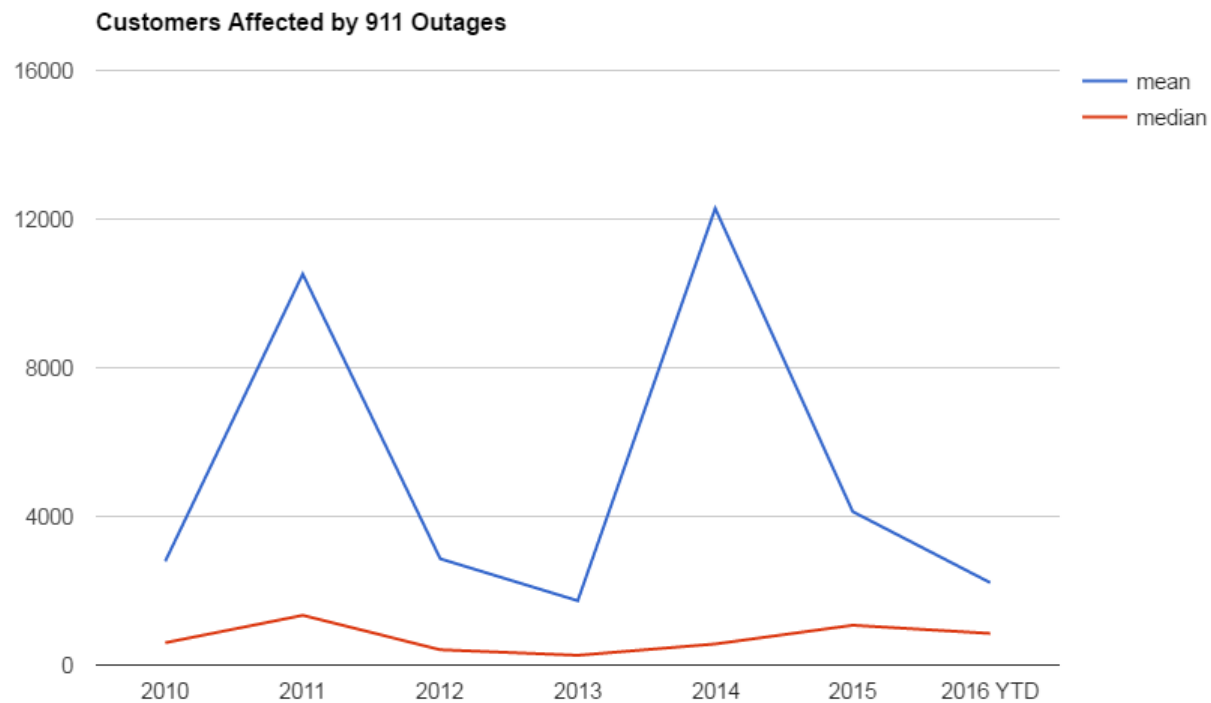


# Average Outage Duration



*\* 2013 spike due to 97.8 hour outage in Estes Park due to flooding.*

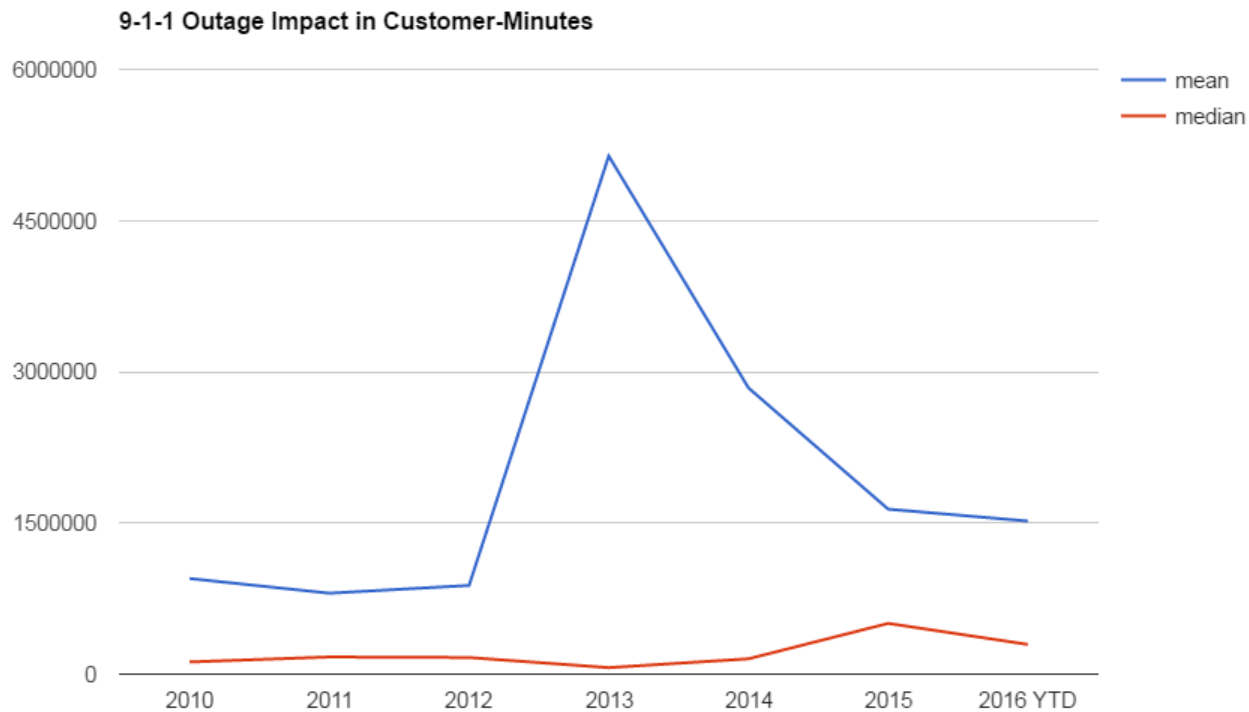
# Average Number of Customers Per Outage



*\* 2014 spike due to large statewide outage on October 2.*

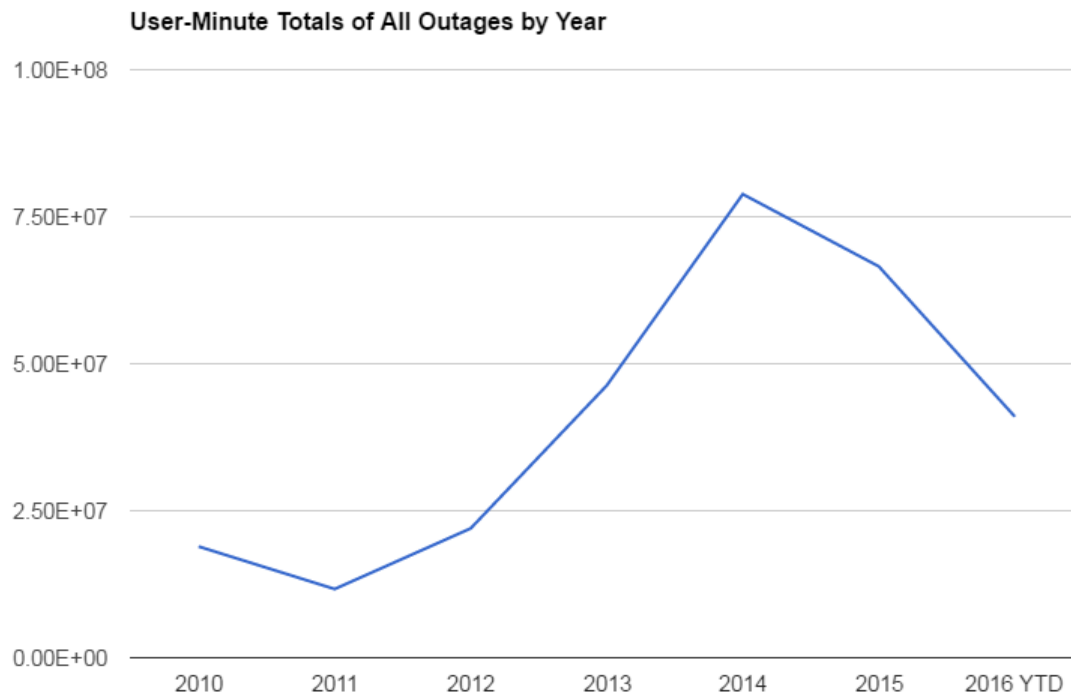


# 911 Outage Impact in User-Minutes



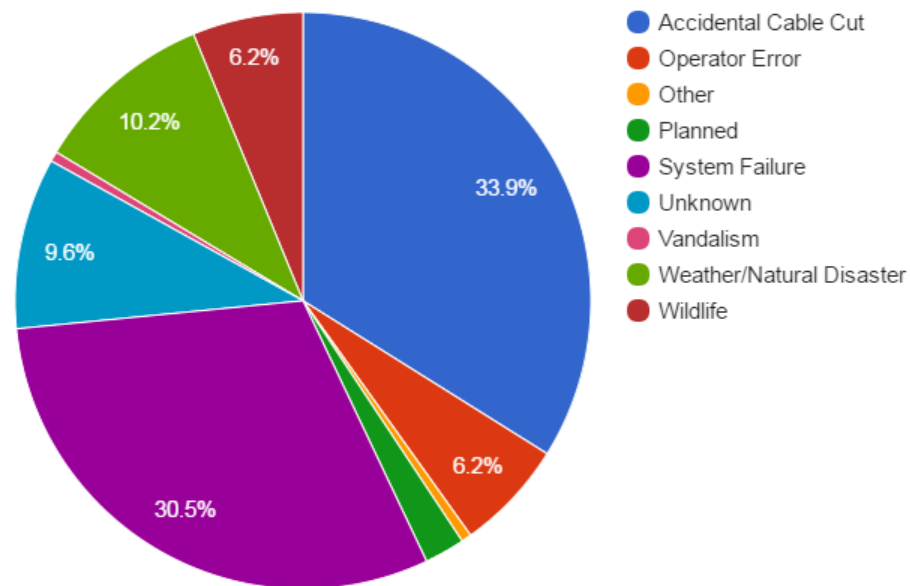
*\* 2013 spike due to Estes Park flooding outage.*

# User-Minute Totals of All Outages by Year



# Causes, 2010-2016 (YTD)

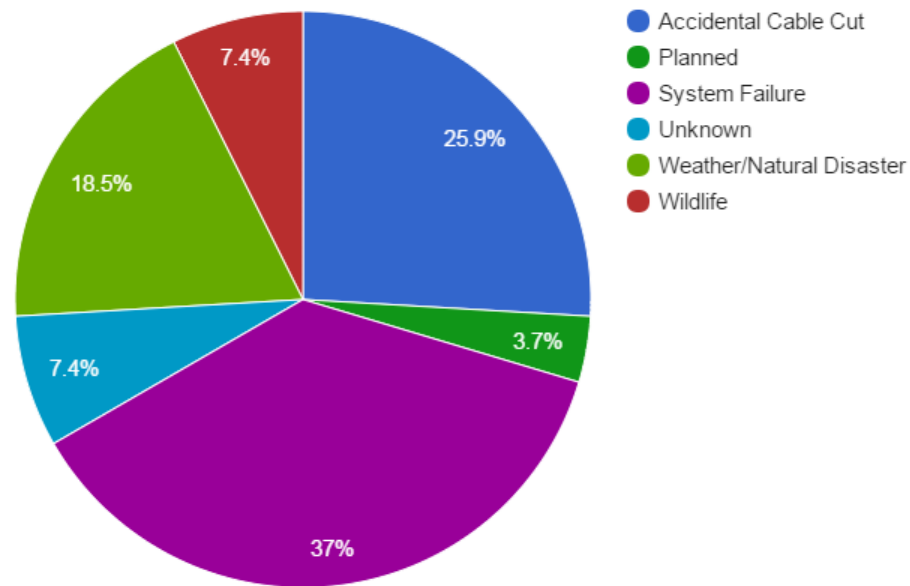
Outage Cause by Type, 2010-2016 (YTD)



# Causes, 2016 (YTD) only

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Outage Cause by Type, 2016 (YTD)



# Thank You

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# NG9-1-1 DEPLOYMENT CHALLENGES

Unforeseen obstacles for small and mid sized 9-1-1 centers

# THE NEED FOR HIGHLY ACCURATE GIS DATASETS

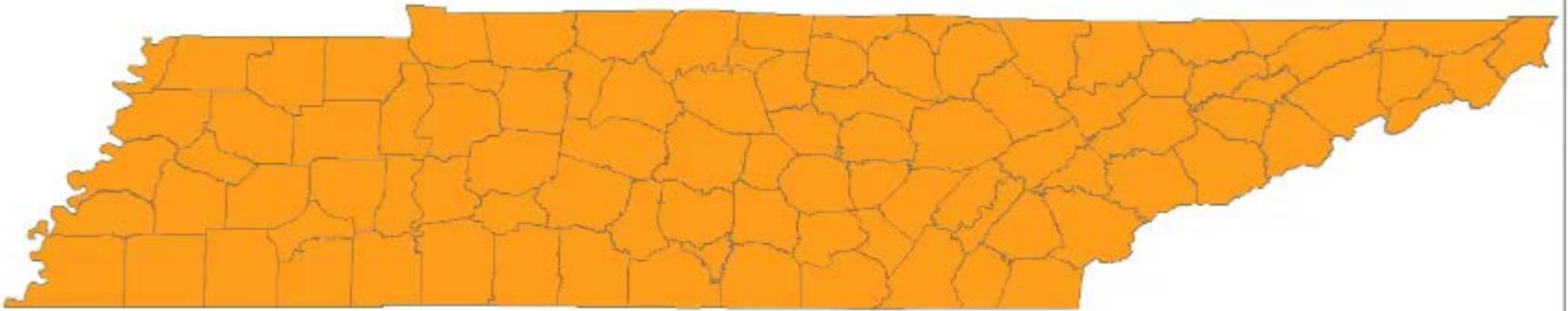
- 2003 – GIS Mapping Maintenance Grant
  - \$10,000/ yr
  - Could be spent on salary, equipment, data, or contracted services.
- May 2011 – GIS Incentive Funding
  - \$20,000 base
  - Quarterly Disbursements if Districts showed improvement on compliance
  - In 2012, the TECB gave out \$2,750,000 from VoIP remittances
- September 2012 – Greater than 98% Accuracy
  - Address Pointfile to Legacy MSAG
  - Legacy MSAG to Centerline Dataset
  - Legacy ALI to Address Pointfile
  - Emergency Services Routing Zones

“Ground Truth”



95 County Boundaries

2,263 Emergency Services Routing Boundaries



523,370 Street Centerline Segments

3,266,348 Site Address Points

# ✓ CHALLENGES TO LOCAL PSAP/DISTRICT

- Hiring competent GIS professionals or contract services
- Defining seamless geo-political datasets
  - County Boundaries
  - Municipal Boundaries
  - PSAP Call Routing Boundaries
- Updating legacy MSAG to reflect “Ground Truth”
- Migration to a Centerline Based MSAG

# THE NEED FOR I-3 COMPLIANT CONTROLLERS

- State Specifications for Grant in 2011
  - Prior to the NENA i3 Document finalization
- Smaller PSAPs have Controller acting as a PBX
- Down range - Additional funds needed for NetTN Compliance
  - Many controllers 5+ years old at time of NetTN Transition

# ✓ CHALLENGES TO LOCAL PSAP/DISTRICT

- IP enabled Controller Grant (pre-i3)
  - May require significant upgrades to meet specification
- Controller as Admin Phone system
  - Can't move to network based controller w/o new admin system
- Duplicate services cost as we maintain CAMA and transition to NetTN
- Vendors must comply with specs before moving to Stage 3
  - Stage 2 (IP / CAMA Gateways) present many complexities
  - Partnerships with SMEs / Consultants to assist.

# UNFORESEEN FEATURES

- Content Rich Tactical Maps
- Partnerships with Community Development Projects
- Clearly Defined Response and Authority Boundaries
- "Hey, can you...."



# NG9-1-1 DEPLOYMENT CHALLENGES

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