UTAH COMMUNICATIONS AUTHORITY

Statewide 911 Emergency Services Strategic Plan

FINAL

March 8, 2024

UTAH COMMUNICATIONS AUTHORITY

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Executive Summary

The Utah Communications Authority (UCA) is preparing to update the State of Utah Public Safety Radio, NG911, and Interoperability Strategic Plans in accordance with Utah Code Ann. §63H-7a-206. For over half a century, Utah has provided a statewide public safety communications network.

This document is an update to the 2018 “911 Strategic Plan." To create the plan, UCA has reviewed the 911 Strategic Plan prepared in 2018 and revised in 2022, the annual performance data collected by UCA and ECaTS data from the PSAPs, held stakeholder meetings both in-person and virtually with stakeholders from PSAPs throughout the State, as well as with UCA itself. Attention was devoted to providing consideration of current initiatives, changes in technology, local and federal legislative changes, changes in public perception, as well as any issues encountered since the last update of the Plan. UCA retained multi-discipline subject matter experts to apprise the data previously gathered and to obtain missing baseline information necessary for assessing UCA’s operations, performance goals, and technology to determine strategic goals.

Created by the "Utah Communications Authority Act", UCA provides administrative and financial support for statewide 911 emergency services. UCA established and maintains a statewide public safety communications network for all state, city, county, and local governmental entities. With these two main programs, UCA has provided services to law enforcement, life and property protection services, and support services throughout the State of Utah. The Next-Generation 911 system provided by UCA handled more than 1 million 911 calls in 2022. The same call-handling solution handled an additional 3.1 million administrative calls during the same year.

This document provides a review of the newly installed NG911 system and accompanying statewide telephone system, input from in-person and virtual meetings conducted with stakeholders in Utah, and strategic goals in the form of action items for UCA to employ.

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The findings from the initial report were used as the foundation upon which to build this 911 Emergency Services Strategic Plan (Plan), and the development of the following recommendations:

1. Make certain all telecommunications carriers deliver NG911-compliant location data with every call.
2. Provide standardized Over the Top (OTT) style services as part of the NG911 service offering.
3. Support system capabilities that promote virtual consolidation and continuity of operations.
4. Fine tune policy routing rules

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1. Background

Through its 911 Division, the Utah Communications Authority (UCA) supports Utah's Public Safety Answering Points (PSAPs) in their effort to provide the highest quality and most cost-efficient emergency 911 call delivery system to the citizens and visitors of Utah as well as to its first responders. Regardless of the location of the caller, UCA's mission is that every 911 caller receives high-quality service. This requires UCA and Utah's PSAPs to adhere to nationally recognized "standards of care" for both their clients (the citizen callers) and the networks they administer to make excellent service not just possible, but the expected result. The implementation of new technologies, training for our users and the public, and the willingness to change with new technologies are all necessary "keys" for achieving and maintaining the standard of care our clients expect.

To accomplish this important goal, UCA updates its strategic plan annually to guide the efforts of the 911 Division as it works with PSAPs to improve 911 service in Utah. This NG911 Strategic Plan (Plan) outlines initiatives to improve 911 capabilities throughout the State of Utah and provides suggested actions that UCA can evaluate, embrace, and execute. It is provided in accordance with Utah's statutory requirements.[1]

Previous Strategic Plans along with current UCA-wide goals and objectives were reviewed to build a foundation for this assessment and Strategic Plan. Stakeholder meetings, both in-person and virtual, with stakeholders from PSAPs throughout the State as well as within UCA itself were conducted with subject matter experts. The meetings included a project initiation meeting at UCA headquarters and a subsequent series of four virtual meetings to enable the widest possible participation, gathering stakeholder input, guidance, and concerns.

This document provides an overview of 911 services in Utah, UCA's governance structure currently in place to provide NG911 services and concludes with a set of recommendations.

[1] *Utah Communications Authority Act*, Utah Code Ann. §63H-7a-206, *et. seq.*

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2. Overview and Assessment

The Utah Communications Authority (UCA) was created by the "*Utah Communications Authority Act*" to provide administrative and financial support for statewide 911 emergency services, as well as establishing a statewide public safety communications network for all state, city, county, and local governmental entities in Utah.[2] The Act provides continuing authority to maintain Utah's statewide public safety communications network.

Within UCA's operational structure are the Radio, 911[3], P25, and Interoperability Divisions, with each cooperatively providing administrative management, technical oversight, and field support for the users of UCA's statewide systems. PSAPs throughout the state and every person who dials "911" from a device in Utah depends upon UCA and its 911 Division to provide a reliable and effective system to process and deliver those calls for help.

To accomplish these actions UCA supports 27 Primary PSAPs[4] and four Backup PSAPs, with 246 active answering positions plus fourteen additional positions total at the four backup centers. There are an additional 26 positions supported by the NG911 system: six fixed call taking positions that are paid for by PSAPs, three mobile call taking positions that are paid for by PSAPs, and 17 positions at four Dispatch Centers that do not receive financial support from UCA.

In addition, UCA provides ongoing planning and implementation services to manage the NG911 system and provide the necessary direction and project management for the system, with the input and assistance of the PSAP advisory committee.[5]

This plan will guide the expenditure of 911 funds in the Unified Statewide 911 Services Account, as required by the *Utah Communications Authority Act.*[6]

[2] UCA, founded in 2014, is the successor agency to the Utah Communications Agency Network (formed in 1997) and the Utah 911 Committee (formed in 2004).
[3] The 911 Division was created in 2015 as a result of House Bill 343; further responsibilities were added in 2016 requiring the creation of a "Strategic Plan" by passage of House Bill 380. *See* Utah Code Ann. §63H-7a-206(1)
[4] "Primary" PSAP means the answering point which first receives a 911 call, as distinguished from "Dispatch Centers", which receive only transferred calls. 911 Call Handling Equipment at Primary PSAPs and the four backup centers are funded by UCA.
[5] *See* Utah Code Ann. §63H-7a-208, *et. seq.*
[6] *See* Utah Code Ann. §63H-7a-206(4)

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2.1 Next Generation 911

UCA contracted in 2020 with Vesta Solutions, a subsidiary of Motorola Solutions, Inc. to provide a turnkey NG911 solution, structured as a Software as a Service (SaaS) system, in which ownership of all equipment and software in both the network core and the PSAPs, PSAPs, as well as participating entities remains with Vesta, including all maintenance and required updates, as well as all required network connectivity. This includes call handling equipment at the PSAPs, redundant and geographically diverse core equipment that provides resilient call routing and switching, and redundant network connectivity from the system core to each of the PSAPs.

During the transition period, PSAPs – even those who had earlier moved to an ESInet for the delivery of E911 calls over IP – were still dependent upon legacy selective routing services. UCA was able to alleviate the costs to the affected PSAPs as a result of UCA's contract with Vesta, and thereby remove some of the financial pressure on PSAPs during the transition period.

The statewide NG911 system migration was finally completed on August 11, 2022. Location-based routing is in place and utilized as part of each call processed by UCA's call routing network. As a result of the application of location-based routing, Utah has realized a reduction of approximately 50% in secondary 911 call transfers based upon the location of the caller. The end result is more calls being answered initially by the correct jurisdictional PSAP and reducing the time between call receipt and the caller speaking to the correct PSAP.

This location based routing approach works well for the majority of 911 calls where the originating service provider for a given call provides a location of the caller within the time window required, before a call routing decision must be made. For the balance of calls, where the OSP does not respond within the established time window, routing is determined based on wireless cell sector vs. the location of the caller's device. This results in less accurate call routing, and the potential for the call to require secondary transfer to the correct PSAP. This is not due to a lack of capability of Utah's NG911 system but instead is related strictly to the carrier delivering the call to the NG911 system. There are several initiatives that UCA is participating in and/or tracking that are anticipated to increase the accuracy, consistency, and quality of caller location and NG911 call related data from carriers. Many of these initiatives are listed later in this document.

The existing contract, signed in 2020, runs for five years and can be renewed twice, for a total of fifteen years.

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2.2 Geographic Information Services

Geographic Information Systems (GIS) are one of the essential building blocks of NG911. The concept of a unified map, spanning PSAP boundaries and providing the ability to use the caller's location in real-time to route emergency calls to the correct PSAP is at the heart of why NG911 is such an improvement over E911. GIS comes with complexities, of course. Managing the map layers used by NG911 and making certain they are up to date is a never-ending challenge, just as keeping the Master Street Address Guide (MSAG) and its corresponding emergency response zones up to date was the challenge in the past.

In Utah, the State has created the Utah Geospatial Resource Center (UGRC). State law specifies that the State Geographic Information Database (SGID), managed by UGRC, is the central clearinghouse for geospatial data in Utah.[7] The SGID includes road centerline, address data, boundary, ownership, aerial photography, and base map services that are utilized by local, state, federal, and tribal agencies across Utah. UCA provides a subsidy to the UGRC by statute,[8] such monies to be used to maintain the statewide geospatial database for 911 service.

Ongoing maintenance of the NG911 map will require coordinating between PSAPs, Participating Entities, UCA, the UGRC, and Vesta. Vesta Solutions has implemented a process and procedure for updates to be made to the NG911 map, with different levels of scrutiny based upon risk to the system – for example, additions to centerline addresses can be made freely, but changes to polygons require additional scrutiny and approvals before they can proceed. With so many players involved that need to be notified so they can weigh in on any changes to rules and policies, procedures will need to be in place and clearly understood by all parties to avoid routing problems and maintain an excellent NG911 system.

[7] *See* Utah Code Ann. §63A-16-505(2)
[8] *See* Utah Code Ann. §63H-7a-304(4)

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2.3 "Over the Top" Applications

"Over the Top" (OTT) applications, such as Carbyne, RapidSOS, and Smart911 are programs from 3rd-party vendors that arose in the 911 industry as PSAPs, and citizens experienced very real problems with location information available to PSAPs and Participating Entities at the time of a 911 call.

When Enhanced 911 (E911) services replaced "basic" 911 in the 1980s, it was rightly hailed as the massive improvement that it was. Each call from a landline phone could now be identified with a verified address because the provisioning systems of the incumbent telephone providers were very accurate. With the assistance of local emergency service providers who verified the Master Street Address Guide[9] and its routing pointers (often by driving every street of their response areas), the system provided actionable information for PSAPs even if the caller could not speak or hang up on the call taker, introducing the concept of responding to 911 hangup calls.

[9] MSAG (Master Street Address Guide) was a database of street names and house number ranges within their associated communities defining Emergency Service Zones and their associated Emergency Service Numbers to enable proper routing of 9-1-1 calls in an Enhanced 9-1-1 system.

In the 35 – 40 years since the introduction of E911, the telecommunications world has been turned on its head by the emergence and ubiquity of cellular phone technology. Early efforts across the country to handle the new cellular phone 911 calls by routing them to State Police locations seem almost quaint at this point. Approximately 90 percent of all 911 calls made today come from a mobile or IP device of some sort, and 73 percent of homes in the US do not have a landline phone.[10] As a result of this change in 911 calling patterns, and under pressure from PSAPs and national organizations such as APCO and NENA, the FCC stepped in prior to 1996 to require mobile telephone providers to deliver cell site, and later cell site and sector information to PSAPs. Routing was still manual, based upon a static table linking tower sector coverage to an emergency service zone, and was prone to errors. As a result, misrouted calls and therefore the number of 911 transfers remained far too high. Each transferred call results in approximately 40 seconds lost[11] due to the time it takes to query the caller and recognize the need for transfer, initiate the transfer, and for the target PSAP to pick up the call and repeat the location and type of emergency part of the exchange. Utah is aware of how critical avoiding misroutes/transfers is, and UCA provides monetary incentives to PSAPs whose transfer rates are below 2 percent.

Meanwhile, cell phones were evolving and contained sophisticated location engines using GPS and other technologies which could be used to locate the phone far more accurately than even Phase II of the FCC requirements for 911 call location. Accurate GPS-based mapping applications were in wide use by motorists everywhere. Commercial applications such as Uber and Lyft provided mobile applications to their users that allowed them to locate their clients for pickup. All of this created pressure on PSAPs: “Uber can find me, why can’t you?”[12]

Into this vacuum stepped the 3rd party providers. Sensing the delay in the progress in the 911 industry towards implementing NG911, they saw an opportunity to provide location-based services to PSAPs, bypassing the need to wait for NG911. These apps provided dramatically improved real-time location to PSAPs using additional connections and screens inside PSAPs.

[10] *Washington Post, June 23, 2023:* “*Barely a quarter of Americans still have landlines. Who are they?*” https://www.washingtonpost.com/business/2023/06/23/landline-telephone-holdouts/
[11] Snohomish County, Washington study (2014) .esri.com/library/userconf/proc15/papers/19_248
[12] *Wall Street Journal, January 7, 2018: “Why Uber can find you but 911 can’t.”* https://www.wsj.com/articles/why-uber-can-find-you-but-911-cant-1515326400

In many cases provided for free to the PSAP, the applications depended upon other revenue streams for funding, and constantly sought to expand the services they could offer through their connection to the PSAP. Some allowed users to add personal information, which could be displayed to the PSAP at the time of a call. Some provided text-to-911 capability before that was available through the 911 network itself. Some provided the reverse of that – the ability to automatically text back to an abandoned 911 caller to ascertain if they meant to call 911 and if they had an emergency.

All of these features provided real value to PSAPs, and some have been adopted in Utah. These applications come with a price, however. In addition to the obvious problems of "yet another screen" at each dispatch position – and dispatch "real estate" is a very real issue in PSAPs – there are other issues, some subtle and some obvious.

Subtle issues include the difference in 911 service from PSAP to PSAP within Utah in a situation where PSAPS may pick different OTT providers. The interface for citizens to add information at call time will differ from PSAP-to-PSAP. A call that overflows to an adjacent PSAP may not come with the added information that was expected. Restating from the 911 Division's goal statement in the 2022 Strategic Plan, "the 911 Division's primary goal is for every 911 caller to receive ***consistent***, high-quality service, no matter where in the state a call is placed" [Emphasis added]. Having different methods of receiving critical call information depending upon which PSAP happens to answer a call diverges from the "consistent" concept.

A more obvious issue is training, which will be different between PSAPs for what will be a critical user interface, used every day by telecommunicators. It limits the ability of PSAPs to share telecommunicators when that is needed and makes the prospect of creating a virtual consolidation between PSAPS that much more difficult.

The FCC has not been silent on this issue, either. While acknowledging the existence of OTT providers and the location requirements that more traditional carriers need to comply with, the FCC has been steadily working towards requiring device-provided improved location to be delivered from mobile providers directly to PSAPs. In a series of Report and Order documents that are part of PS Docket No. 07- 114, the FCC is requiring steadily improving accuracy over time, with no requirement for an OTT to make it happen. The most recent of these in 07-114, the FCC's 6th Report and Order[13] delivered July 17, 2020, has set out accuracy requirements which include

/docs.fcc.gov/public/attachments/FCC-20-98A1.pdf

"dispatchable address" and Z-Axis[14], with timelines for improved accuracy each year through 2026.

Based upon all of this information, UCA, with the assistance of the PSAP Advisory Committee, would need to decide if incorporating one or more OTT applications into the standard NG911 offering is worthwhile. Interviews with PSAP managers have indicated a desire to have some of the advanced capabilities currently possible with OTT providers incorporated into the current Call Handling as a Service offering provided by UCA, thereby eliminating the need for additional screen(s) and simplifying and standardizing the delivery of these advanced services to Utah.

2.4 PSAPs Equipment and Performance

2.4.1 PSAP Call Handling Equipment Distribution

Currently, the State of Utah has 27 primary PSAPs, four backup PSAPs (one each at St. George, Kane, Logan and Weber EOCs), and 4 dispatch centers (Capital Security – DPS, Salt Lake Communications – DPS, University of Utah PD, and Utah Valley University Police). There is a total of 286 911 call-taking positions in the state, of those there are 260 for which UCA is financially responsible. Six positions are funded by PSAPs which wanted more positions than the state would support (Uintah Basin – DPS with 2; St. George with 3; and Emery County with 1). There are three mobile call taking positions, which are laptops, that are funded by the PSAPs (Layton with 1; Summit with 2). The remaining 17 call-taking positions were funded by the four unfunded dispatch centers.

PSAP Name	PSAP or Dispatch Center	UCA Funded Consoles	Locally Funded Consoles
Beaver County Sheriff's Office	PSAP	2	
Bountiful Police Department	PSAP	5	
Box Elder Communications (DPS)	PSAP	4	
Cedar Communications (DPS)	PSAP	6	
Central Utah 911	PSAP	19	
Davis County Sheriff's Office Dispatch	PSAP	6	

[14] "Z-Axis" information is information regarding the height above an agreed-upon plane of a subscriber unit making a 911 call.

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PSAP Name	PSAP or Dispatch Center	UCA Funded Consoles	Locally Funded Consoles
Emery County Sheriff	PSAP	2	1
Garfield County Sheriff's Office	PSAP	2	
Grand County Sheriff's Office Dispatch	PSAP	3	
Kane County Sheriff's Office Dispatch	PSAP	4	
Layton Police Department Dispatch	PSAP	9	1
Logan City Police Communications	PSAP	11	
Metro Emergency Communications Center	PSAP	13	
Millard County Sheriff's Office	PSAP	2	
Price Communications	PSAP	8	
Rich County Sheriff's Office	PSAP	2	
Richfield Communications (DPS)	PSAP	4	
Salt Lake City 911 Communications Bureau	PSAP	34	
Sanpete County Sheriff's Office	PSAP	3	
Salt Lake Valley Emergency Communications Center (VECC)	PSAP	52	
Springville Public Safety Department	PSAP	3	
St George Consolidated Communications Center	PSAP	10	3
St George EOC	PSAP Back Up	6	
Summit County Public Safety Dispatch	PSAP	8	2
Tooele County 911 Dispatch Center	PSAP	6	
Uintah Basin Communications (DPS)	PSAP	6	2
Wasatch County Sheriff's Office Dispatch	PSAP	4	
Weber Area Dispatch 911 and Emergency Services District	PSAP	22	
Weber EOC	PSAP Back Up	4	

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PSAP Name	PSAP or Dispatch Center	UCA Funded Consoles	Locally Funded Consoles
Capital Security DPS	Dispatch Center		4
Salt Lake Communications (DPS)	Dispatch Center		7
University of Utah Police Department Dispatch	Dispatch Center		4
Utah Valley University Police	Dispatch Center		2
	Subtotals:	**260**	**26**
	Total Dispatch Positions:	**286**	

PSAPs in Utah are split between four types of operators: County PSAPs, operated by the Sheriff's Office; Wide area stand-alone PSAP organizations; Municipal PSAPs, operated by a municipality and often providing services outside their borders; and Utah DPS (Highway Patrol) dispatch locations, most of which are also providing regional call taking and dispatching services for their county or counties.

Not all DPS locations are PSAPs – for example, Salt Lake Communications and Capital Security are not, and are considered "Dispatch Centers" in Utah state statute. UCA cannot pay for Dispatch Centers, so Dispatch Centers (with UCA approval) must purchase their positions through the existing Utah Statewide Contract.

2.4.2 PSAP Performance

During the calendar year 2022, there were no outliers in call-taking performance across the state, except VECC. VECC was not able to meet the 95th percentile (the 20-second requirement), reaching the mark in only 2 of 12 months. However, VECC did achieve 12 out of 12 months for the 90th percentile (15 seconds) requirement.

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2022 PSAP Statistics	Call Performance						
PSAP	911 Calls Delivered	911 Calls Abandoned	Aband. %	≤ 15 sec	%	≤ 20 sec	%
Beaver Sheriff	3,440	463	13.46%	101	93.92%	125	97.56%
Bountiful PD	23,797	2,497	10.49%	165	99.50%	70	99.79%
Box Elder DPS	17,726	1,919	10.83%	523	96.91%	194	98.00%
Cedar DPS	18,137	2,167	11.95%	353	99.24%	67	99.61%
Central Utah 911	91,192	12,236	13.42%	4,117	98.69%	790	99.55%
Clearfield	10,966	987	9.00%	102	99.08%	63	99.65%
Davis Sheriff	37,431	3,885	10.38%	1,146	97.88%	583	99.43%
Emery Sheriff	4,622	389	8.42%	54	99.20%	20	99.63%
Garfield Sheriff	2,974	529	17.79%	51	95.02%	75	97.55%
Grand Sheriff	8,727	1,018	11.66%	180	95.70%	101	96.86%
Kane Sheriff	5,038	601	11.93%	77	97.66%	69	99.03%
Layton PD	19,920	1,995	10.02%	87	99.57%	74	99.94%
Logan PD	26,403	3,517	13.32%	188	99.72%	51	99.91%
Metro 911 (Provo)	29,980	4,530	15.11%	631	96.28%	633	98.39%
Millard Sheriff	6,107	749	12.26%	156	96.33%	64	97.38%
Orem City CLOSED > Provo	30,375	3,591	11.82%	144	99.00%	52	99.17%
Price DPS	10,330	905	8.76%	53	99.65%	15	99.80%
Rich Sheriff	2,268	397	17.50%	67	96.03%	24	97.09%
Richfield DPS	9,786	875	8.94%	66	99.46%	17	99.63%
San Juan CLOSED > Price DPS	2,412	398	16.50%	71	94.07%	30	95.32%
Sanpete Sheriff	6,644	815	12.27%	98	98.30%	35	98.83%
SL VECC	295,877	34,280	11.59%	4,951	90.28%	4,478	91.79%
SLC 911	164,677	12,528	7.61%	1,602	95.34%	1,376	96.18%
Springville PD	8,619	1,020	11.83%	69	99.14%	26	99.44%
St George PSAP	58,802	7,085	12.05%	201	99.94%	29	99.99%
Summit Sheriff	23,054	2,656	11.52%	162	99.59%	48	99.80%
Tooele Sheriff	24,976	2,781	11.13%	194	99.32%	75	99.62%
Uintah Basin DPS	14,782	1,985	13.43%	354	98.11%	152	99.14%
Wasatch Sheriff	10,459	1,608	15.37%	264	96.92%	136	98.22%
Weber Area 911	87,290	6,399	7.33%	1,014	96.83%	601	97.52%
Totals Statewide:	**1,056,811**	**114,805**	**10.86%**	**17,241**	**95.63%**	**10,073**	**96.58%**
		9-1-1 Calls per day:	**2,895**				

[15] *See* Utah Code Ann. §63H-7a-304.5(2)(a)(iv)
[16] *Statescoop, June 9, 2023: "Utah's new 911 call-routing system reduced misrouted calls by half"*https://statescoop.com/utah-ng911-call-routing-emergency-calls/

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2.5 Policy Routing Considerations

As usual with the implementation of a large new system such as NG911, it is prudent to reduce the number of immediate changes to policy as new systems are installed. During interviews in October, none of the PSAP managers reported having made any changes to their standard operating procedures to address the new routing functions available in NG911.

Older E911 systems used routing based upon emergency service numbers (ESN) that delivered calls based upon the table listing of emergency service zones under an ESN, which would route the call to the PSAP associated with that ESN.

Normally, the only additional routing considerations in E911 were instructions to the selective router in case the PSAP was off-line, or in the case that every one of the 911 trunks into the PSAP was busy. These additional instructions often consisted of routing to 10-digit numbers within that same PSAP, or a selected alternative PSAP which would receive every call that was not handled by the first PSAP, or default to some simple routing method that was not very flexible.

NG911 uses a far more flexible capability that is called the "Policy Routing Function" (PRF). Policy Routing Rules (PRRs) are applied against every call delivered to a PSAP, not just those in certain circumstances. This allows for more flexibility, for example, when a Regional PSAP is unable to answer a call from the far south of their service area and can route that call to a PSAP that has agreed to take perhaps not all calls from the original PSAP, but only those calls closer to the alternate. At the same time, the Regional PSAP can have a call they cannot answer be sent to a PSAP to their north for a caller that is in the north, and so forth.

[17] The *NENA Knowledge Base* (https://kb.nena.org/wiki/COOP_(Continuity_of_Operations_Plan) states that "COOP (Continuity Of Operations Plan) is a plan to ensure that Primary Mission Essential Functions continue to be performed during a wide range of emergencies, including localized acts of nature, accidents and technological or attack-related emergencies."

[18] *NFPA #1225* (2022) requires every Communications Center to have a Comprehensive Emergency Management Plan (CEMP) and include the CEMP in the Standard Operating Procedures for the Center. COOP is one part of a CEMP.

[19] *See* Utah Code Ann. §63H-7a-30

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Those capabilities represent just one type of change in the day-to-day experiences of PSAPs who very well understood the old system which PSAPs had them as their first alternate, and vice-versa. Therefore, when the NG911 cutover occurred, simple Policy Routing Rules that mimicked the 1st, 2nd, and perhaps 3rd choice alternative PSAPs were entered into the PRF.

Now that NG911 has been in use for a year, the time is right to start formulating PRRs that take advantage of NG911's capabilities and fine-tune what happens to calls at certain call volume levels, or under certain other circumstances such as natural disasters. Changes like that will need to be negotiated between the involved PSAPs with the assistance of UCA and Vesta Solutions (who will need to do the configuration work) so that they can make certain that the change will accomplish what they hope will happen, and so that PSAPs do not take undue advantage of another.

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3. Recommendations

3.1 Ensure all Telecommunications Carriers Delivering NG911-compliant Location Data with Every Call

While the statewide NG911 system migration was completed in August of 2022, some service providers are not providing the needed location information within the allowed window of time before the call routing decision for each call is made, and on that subset of calls, traditional E911 routing methods continue to be used. However, while this problem is related strictly to the carrier delivering the call to the NG911 system, it requires attention to be resolved.

Because of problems entities (such as the State of Utah) have had with getting carriers to connect the ESInet and deliver calls in a format that enables NG911 to work correctly, the Federal Communications Commission (FCC) has issued a Notice of Proposed Rulemaking (NPRM) #23-47, Docket 21-479, released on June 9, 2023. If adopted as written it will require wireline, voice over IP and telecommunications relay service providers to deliver "*911 calls, along with relevant location information, in the requested IP-based format". These providers would be considered presumptively responsible for the costs associated with the delivery to the designated point(s).*" The last part of the sentence "*in the requested IP-based format"* should assist UCA and the state's call routing service provider in getting the last of the non-compliant carriers delivering i3-compliant data with their 9- 1-1 calls. The final sentence makes it clear that the costs for the IP connection will be on the carrier, not on the 911 Authority.

UCA should monitor the progress of the NPRM, and presuming these provisions survive in the final, adopted version, in cooperation with Vesta Solutions, should follow up with the offending carrier(s) to finish the NG911 transition for the entire State.

3.2 Provide Standardized OTT-style Services as Part of the NG911 Service Offering

The OTT marketplace has exploded with a confusing array of "over the top" service offerings and PSAP managers are concerned about the need for standardization, maximizing their use of screen space at the workstation, and simplifying the work for the benefit of their employees. UCA will need to decide if incorporating one or more OTT applications into the standard NG911 offering is worthwhile, as detailed in the assessment section of this plan. UCA should utilize the PSAP Advisory Committee to ascertain the

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level of support within the PSAP community for these capabilities, and which specific capabilities would be most useful to them. The services could be procured in several ways: UCA should investigate the capability of the current NG911 provider integrating such solutions into the Vesta call handling solution, the cost benefits of doing so through the existing NG911 contract, and concern with respect to security of the statewide NG911 system. If the NG911 provider is unable to offer such solutions integrated, UCA could contract with one of the existing providers, some of whom are already providing services to some Utah PSAPs.

3.3 Fine Tune Policy Routing Rules

The NG911 has been in use for a year, and the simple Policy Routing Function rules that facilitated the cutover have done their job. It is now the correct time to work with the PSAPs to consider what changes to the rules would be appropriate today.

Working with the PSAP Advisory Committee, UCA should work with PSAPs and Participating Entities to take advantage of NG911's abilities to fine-tune what happens to calls at certain call volume levels, or under certain other circumstances such as natural disasters.

UCA should work in concert with Vesta Solutions to implement any requested changes that come out of the process and review the results with the affected PSAPs at the six-month mark and again in one year to make certain that the changes worked as expected.

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4. Conclusion

We believe that the implementation of the recommendations outlined in this strategic plan will allow Utah to continue to maintain an effective, accurate, and reliable 911 system into the future, keeping Utah in its position as a pioneer in the use and improvement of NG911 systems. While the list of goals is short, they will not be simple to achieve. Doing so will help continue to provide the highest quality 911 service possible to our citizens and visitors to our state, as well as our first responders.