District's 911 System: Reforms Needed to Meet Safety Needs

October 19, 2021

A report by Federal Engineering, Inc., for the Office of the D.C. Auditor

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ODCA Office of the District of Columbia Auditor

October 19, 2021

The Hon. Muriel Bowser
Mayor of the District of Columbia
The John A. Wilson Building
Washington, DC 20004

The Hon. Phil Mendelson
Chairman, Council of the District of Columbia
The John A. Wilson Building
Washington, DC 20004

Dear Mayor Bowser and Chairman Mendelson:

I am pleased to share this report, ***District's 911 System: Reforms Needed to Meet Safety Needs.*** The audit, prepared by Federal Engineering, Inc. (FE) for the Office of the D.C. Auditor (ODCA), provides an evaluation of the effectiveness of the Office of Unified Communications (OUC) Operations Division against national standards, a review of a sample of 911 call recording and data, an evaluation of OUC culture and training, along with a review of OUC's technological capabilities and OUC's internal investigations of past incidents. This report also includes recommendations intended to change the environment and enable OUC personnel to improve services provided to the District.

The comprehensive findings include inadequate supervision of the call-taking and dispatch operations, inconsistent or ineffective use of call script protocols, inconsistent use of location determining technology tools to determine locations, and insufficient management follow-up on after-action reviews. At the same time, the report notes that OUC is staffed with dedicated, well-intentioned professionals and that the issues identified by FE regarding call-taking and dispatch operations can be corrected to improve service to citizens and responders. The report makes several recommendations that, once implemented, we believe will successfully address these issues.

We appreciate the cooperation of the OUC and everyone who provided information and shared their experiences. We note the written comments of Interim OUC Director Cleo Subido, including areas where reforms are now underway. We are grateful for the expertise on call center operations and functions demonstrated by the Federal Engineering team and hope the findings and recommendations in this report will assist District policymakers in continuing to improve the vital functions and operations of our 911 operations.

Sincerely yours,

Kathleen Patterson
District of Columbia Auditor

cc: D.C. Councilmembers

Office of Unified Communications
9-1-1 Operations Division
Audit and Process Improvement Recommendations

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Executive Summary

Federal Engineering, Inc. (***FE***) is pleased to provide the Office of the District of Columbia Auditor (ODCA) with the following *Office of Unified Communications (OUC) 9-1-1 Operations Division Audit and Process Improvement Report.* This submission is made in support of the ODCA's request for *Consulting Services for Audit of the Office of Unified Communications (OUC).*

This Audit of the Office of Unified Communications (OUC) is in response to the ODCA's request for Consulting Services for Audit of the Office of Unified Communications (OUC) dated December 22, 2020.

FE was tasked with assessing "…*the effectiveness of OUC's 911 Operations Division against national standards, review a sample of 911 call recording and data, evaluate OUC culture and training, review OUC's technological capabilities, and review OUC's internal investigations of past incidents*." ***FE*** conducted this project in accordance with the scope of work as detailed in Contract #ODCA 2021-07.

Approach

To prepare this report, ***FE*** followed a data collection process which included the submission of a Request for Information (RFI) to obtain call receipt and processing data for calendar years 2019 and 2020, and the completion of onsite stakeholder interviews, meetings, observations, and focus groups. The data collected was then analyzed by ***FE***'s subject matter experts (SMEs), who applied their collective experience and knowledge of industry best practices and standards. ***FE's*** observations, conclusions, and recommendations are the opinions of ***FE*** and are based upon the information provided by OUC, including the above referenced interviews, focus groups, and in-person observations of operations at the primary OUC Public Safety Answering Point.

Challenges in the Current System

Throughout ***FE's*** interaction with OUC and its team, ***FE*** met with staff who were pleasant and who readily engaged in the process of interviews and cooperated during site observations. Through data collection and analysis process, it was determined that there are several material issues creating risks, impeding overall center performance, and preventing OUC from operating in a more efficient manner.

This Audit found the following five key issues:

1. There is a lack of adequate oversight of call-taking and dispatch operations.

2. There is inconsistent or ineffective use of scripted call handling protocols, Criteria-Based Dispatch (CBD), by call-takers. This is evident in improvised questioning of callers by the call-takers.

3. There is an inconsistent use of Location Determining Technologies (LDTs) by call-takers to locate callers or confirm location of reported events. This is a result of the Call Handling Equipment (CHE) configuration that does not automatically re-bid/re-transmit cell callers' locations for better accuracy. The decision to invoke and maintain this configuration has contributed to call-takers' distrust of the map tools and LDTs.

4. There is an over-complicated "event type" (Chief Complaint) selection process due to an excessive number of Chief Complaints and associated priorities available to select. This is a provisioning issue created in the Computer-Aided Dispatch (CAD) system with the transition to the scripted protocols CBD.

5. There is a policy requiring documented follow-up from Operations to the Office of Professional Standards and Development (OPSD) regarding the results of QA reviews with operations staff. Operations management staff is inconsistent in conducting this follow-up and therefore is not in compliance with the policy.

Recommendations

FE's recommendations, as summarized below, are intended to change the environment and enable OUC personnel to improve services provided to the District.

1. Expand Supervisor training to include professional development topics such as leadership and mentorship. Assign a minimum of three supervisors around the clock on the operations floor with assigned discipline focus on call-taking, Metro-Police Department (MPD) dispatch, and Fire and Emergency Medical Services (FEMS) dispatch.

2. Reassess and improve the integration of the scripted protocols CBD into the call handling process. Reduce improvising and adlibbing by ensuring personnel are adhering to the scripted questions in the CBD call processing standard.

3. Train staff on use of LDTs followed by effective supervision and QA to monitor use.

a. Configure the work screen to stop other applications from popping up in front of the maps and other LDTs.

b. The current call-taking policy includes having the caller advise of their location twice. This policy should be revised to allow an initial (single) confirmation of a caller's location if an exact match is found between the caller reported location and LDT map pinpointing of the caller's location. This will save time in gathering information.

c. Require the use of LDTs to locate a caller that cannot immediately state a precise location of an incident, including situations where the caller does not know the address of an incident.

4. Evaluate and reduce the number of event types (Chief Complaints) and associated priorities. Assign supervision and QA to monitor and encourage a method(s) for quickly identifying and selecting the correct Chief Complaint.

5. Select and implement a dispatch notification system to automate the announcement of the event type and location of FEMS calls.

6. Improve documentation concerning the completion and follow up of regular Quality Assurance (QA) reviews with staff.

7. Create an implementation plan to put recommendations from this Audit into practice including:

   a. Create and implement a plan for change management that coincides with the larger implementation plan focused on informing and involving critical stakeholders such as operational staff, field staff and responders, allied agencies, and leadership about the changes, their impacts, and the why, what, who and how of implementing the recommendations. Effective change management tools that are people-centric are critical to ensuring success in any project implementation and in improving performance.

   b. Monitor and evaluate implemented changes for impacts on performance and maintain or revise as necessary. Additionally, communicate findings and report to stakeholders, particularly where there are improvements in performance, and/or where revisions have been made. Evaluations of overall OUC performance should be ongoing, with formal reviews scheduled annually.

1. Background

1.1 Scope of Audit

The Office of the District of Columbia Auditor (ODCA) as the auditor of the District of Columbia has contracted with Federal Engineering, Inc. (***FE***) to conduct an Audit of the Office of Unified Communications (OUC). This Audit is titled *OUC 9-1-1 Operations Division Audit and Process Improvement Recommendations* (Audit).

By contract, a summary of the scope of this Audit is to *"evaluate the effectiveness of OUC's 9-1-1 Operations Division against national standards, review a sample of 9-1-1 call recording and data, evaluate OUC culture and training, review OUC's technological capabilities, and review OUC's internal investigations of past incidents."*

This Audit has been conducted at the request of ODCA and is intended to support OUC in improving its performance and accountability.

1.2 Information Gathering Process

The initial information gathering phase and on-site interviews of OUC personnel occurred during the latter part of March 2021 and continued through the early part of April 2021 and the information gathered from OUC was reviewed by and relied upon by ***FE*** in many areas of this Audit.

The bulk of the information gathering occurred at the primary OUC Public Safety Answering Point (PSAP) located on Martin Luther King Jr Avenue, SE. A visit to the back-up PSAP facility, commonly referred to as the Public Safety Communications Center (PSCC), also occurred. This visit was necessary because OUC was operating in a split-location model, which allowed for better physical distancing of staff during the COVID-19 pandemic. OUC received 9-1-1 calls at both sites and dispatched MPD events from both sites depending on the channel monitoring assignments. The primary site dispatched all Fire/Emergency Medical Service (FEMS) events.

The face-to-face meetings with OUC staff were productive and an essential part of the Audit process. Staff appeared eager to meet with the ***FE*** staff, and the on-site interviews provided a great deal of valuable information.

2. Methodology

2.1 Data Collection

FE requested specific information and data sets to be provided by OUC and Office of the Chief Technology Officer (OCTO). The data requested and received from OUC comprised the call receipt and call processing data from 2019 and 2020. This data was used to analyze answering and call processing times.

FE identified six arbitrary dates from which data for 72 randomized calls were requested from and provided by OCTO. OCTO also provided composite data regarding call processing times as companion data to OUC provided call processing information to allow ***FE*** to determine compliance with industry call processing standards.

FE provided a Survey Workbook for OUC to complete for compiling demographic information, statistical data, and a technology inventory.

FE requested and received:

- Program description and associated policies from OPSD's Training and QA programs
- A digital version of OUC Operations Standard Operating Procedures (SOPs)
- Call recordings, radio recordings and CAD entries relating to the high priority investigations

2.2 On-Site Interviews, Meetings, and Observations

To satisfy the Audit scope ***FE*** gathered data, conducted staff interviews and focus group meetings, and performed observations of OUC operations. These efforts covered a broad range of issues including:

- History and background of OUC and its employees
- Staffing issues that included schedules, succession planning, attrition, remediation, and discipline
- Training
- Quality Assurance processes and methodologies
- Investigative processes and policies
- Management of technical services
- Features and capabilities of PSAP technologies
- Emergency Operations Plan content and backup planning impact
- PSAP management

3. Assessment

FE was tasked with reviewing a representative sampling of 9-1-1 call recordings, CAD data and radio dispatches, along with any event related internal documentation. This review was to determine the following:

- If accurate information was being entered and conveyed by OUC to emergency responders
- If appropriate call priorities were being assigned
- If correct location information was obtained and relayed to responders
- If other actions related to the quality of call receipt and dispatch were taken by OUC

FE selected random dates over a two-year span from February 2019 through March of 2021, requesting from OCTO a complete set of calls for six days in that period. This provided a group of 9,503 possible calls to review.

FE selected a sample size appropriate for determining the operating effectiveness of internal controls, using a statistical sampling to determine if highly critical controls for compliance with OUC's Standard Operating Procedures for the processing of 9-1-1 calls were being followed.

ODCA directed ***FE*** to apply the PricewaterhouseCoopers (PwC) standard for sampling data sets. The PwC standard for sampling is an audit standard followed and adhered to by the ODCA. The PwC standard as applied to the 9,503 sample 9-1-1 and 10-digit emergency calls for calendar years 2019 and 2020 required at least 60 calls to provide a 95% certainty of compliance.

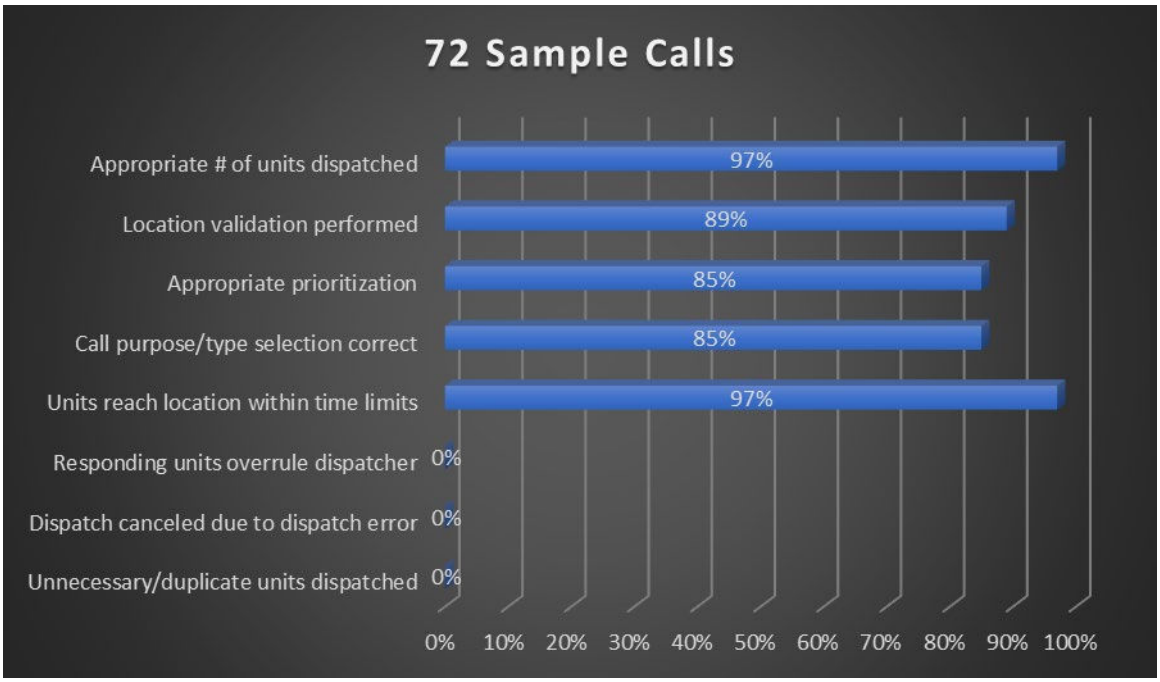
FE randomly selected 72 priority one calls from the 9,503 data set returned by OCTO. A selection of 72 calls allowed for ensuring that there would be at least 60 complete packages of data and recordings for review. The twelve extra sample calls allowed for any calls missing data or recordings to be dropped from the sampling.

The calls were divided into approximately two-thirds FEMS calls and one-third MPD calls. OCTO delivered packages for all 72 calls requested, and all were reviewed by the ***FE*** team. *Chart 1* shows the results of this review in percentages of calls reviewed. This chart also shows the percentage of the sample calls that met or included the action noted. As an example, the first two data points shows the *appropriate number of units* were

dispatched in 97% of the 72 calls reviewed and the *location validation* was performed in 89% of the 72 calls reviewed.

Results based upon the 72 call sample:

Chart 1 - Sample Call Review Results[1]



*Note that the percentages are representative of the number of calls that do or do not comply with the audit questions out of the 72 Call Samples.

3.1 Call Processing Time

This section deals with the response time continuum that is initiated at the first appearance of a call within OUC and has specific milestones that are used to measure the center's performance. These are:

1. Call appearance – clock starts
2. Call answered – call-taker begins interrogation
3. Call available for dispatch – call-taker has supplied CAD with sufficient information to allow dispatch
4. Call assigned to unit(s) – Dispatcher has taken the call from CAD and assigned it to responder(s)

[1] Source: ***FE*** Analysis

5. Unit responding
6. Unit arrival

The last two items "5" and "6" are not under the control of OUC but are part of the total response time seen by the public.

3.1.1 Comparison with National Standards

To address the Audit question of "*What Percentage of Calls Meet National Standards?*" ***FE*** provides the following explanation of which standards apply to the call processing activities of OUC. Specifically, ***FE*** uses two standards to evaluate call performance, the National Fire Protection Association (NFPA) #1221[2] and the National Emergency Number Association (NENA) STA-020.1-2020[3]. The scope of this Audit focuses on the call processing standards contained in these standards, such as NENA STA 020.1-2020 Sections 2.2.1 and Section 2.2.5.1. A review of SOPs and observation of workflow found OUC in compliance with applicable standards addressed in the NFPA and NENA documents.

Evaluating OUC's performance against the call answering and processing national standards required different sets of data that aligned with the Audit questions and matched against the NFPA, and NENA standards used for evaluation. For example, the NFPA call processing time requirement – from call answer to first unit notification – applies only to Priority 1 Fire and medical calls and does not apply to Police calls. Conversely, the NENA standard applies to all calls when looking at the call appearance to call answering elapsed time requirements. This is because it is unknown at the time of answer of the call if it's an actual emergency, what its priority is, or to which agencies it will be assigned, so it is necessary to look at the entire universe of inbound calls to evaluate that performance.

The data set used to evaluate what percentage of calls meet national standards was the approximately 2.013 million total reported inbound emergency calls for 2019 and 2020. Included within this data set was a total of 196,904 Priority 1 FEMS dispatched calls.

At ***FE's*** request, OCTO provided detailed monthly call counts, including the metrics for call processing.

[2] National Fire Protection Association (NFPA) #1221, "*Standard for the Installation, Maintenance and Use of Emergency Services Communications Systems*", 2019 Edition
[3] National Emergency Number Association (NENA) "*Standard for 9-1-1 Call Processing*", NENA-STA-020.1-2020, approved 4/16/2020

There are two time components of call processing. The first time component is "time to answer." Time to answer performance is most closely linked with the number of call-taking staff available in the PSAP and logged in during the period relative to the number of calls received. Both NFPA and NENA standards require calls to be answered within 15 seconds, 90% of the time, and within 20 seconds 95% of the time. Both standards require monthly performance evaluations.

The second time component of call processing is the period from the call being answered to the initial notification of the responding unit(s). This is an NFPA #1221 requirement, and PSAP performance for this requirement corresponds to the efficiency of the technology systems in use in the PSAP, the quality of training for the operators of those systems, and the workload in the PSAP for the period under study. NFPA #1221 requires completion of this portion within 60 seconds 90% of the time for the highest priority emergency events (Priority 1 in OUC). The NFPA does not specify a required period of assessment for this determination, though they do indicate that this metric be evaluated within a period as established by the Agency Having Authority (AHA).

NENA requires that PSAPs establish and maintain operational standards that address call processing protocols. OUC has established operational standards for call answering, though does not have an operational standard for "call received in CAD (ready for dispatch) to notification of units (actual dispatch)" time period. The "ready for dispatch to actual dispatch" time period is a metric of interest and sometimes tracked by response agencies as part of their total call response times.

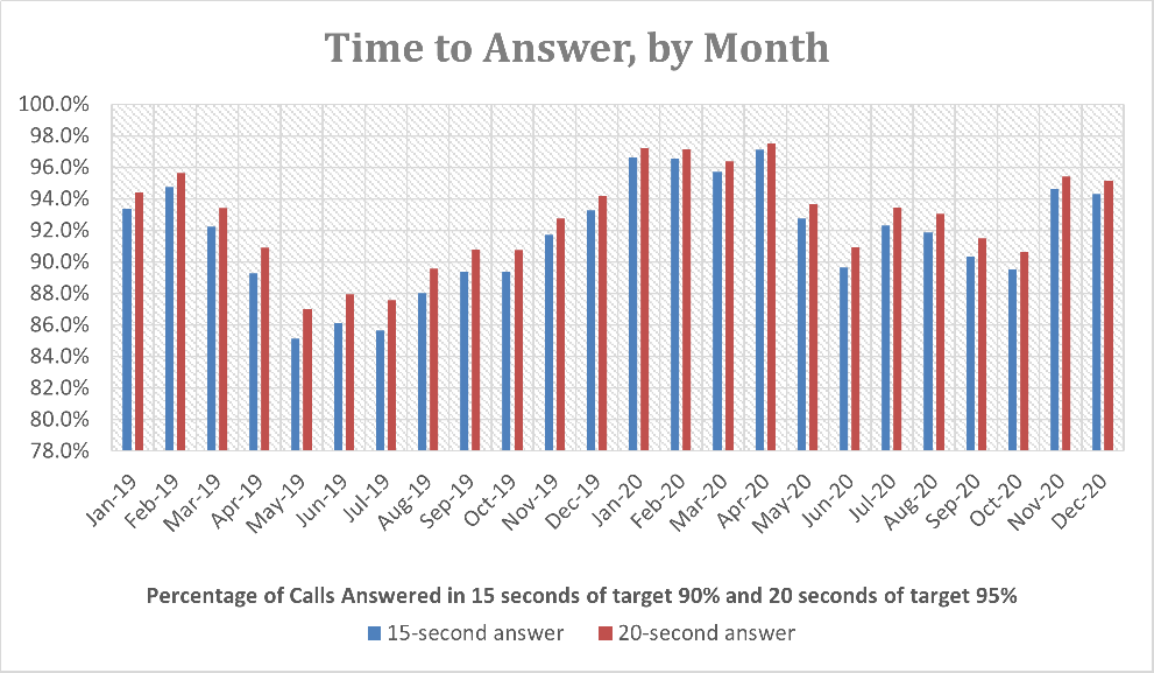
FE requested and received from OCTO an aggregated data set of all dispatched Priority 1 FEMS calls for calendar years 2019 and 2020, including the metrics for call processing times. ***FE*** evaluated compliance with this requirement by month.

3.1.2 Time to Answer Findings

For 2019, OUC was not in compliance with the 15-second answer, 90th percentile time requirement for seven months (April through October), and not in compliance with the 20-second answer, 95th percentile time requirement for any month except February.

For 2020, OUC was not in compliance with the 15-second answer, 90th percentile requirement for two months (June and October) and not in compliance with the 20-second answer, 95th percentile requirement for six months (May through October). These findings are represented in *Chart 2*.

Chart 2 – Call Answer Times by Month from January 2019-December 2020[4]



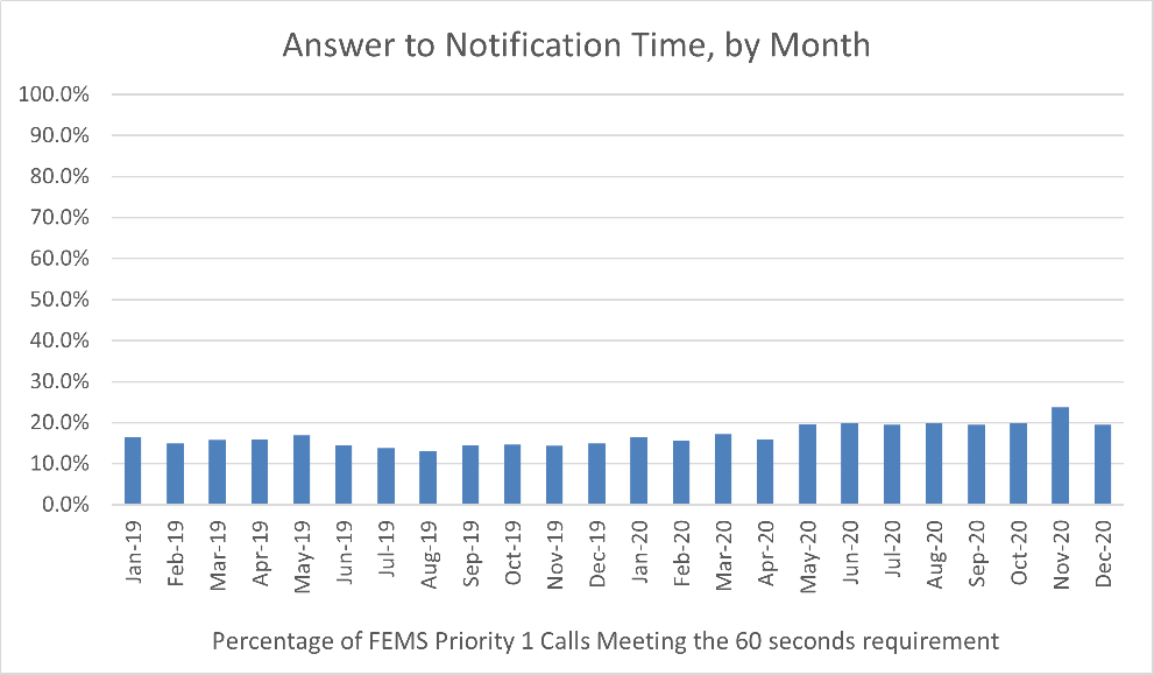
3.1.3 Answer to Notification Findings

OUC tracks "answer to notification" time in a manner different than what ***FE*** has experienced in reviewing other PSAPs across the country. OUC CAD captures time from call answer to the call becoming available in CAD for dispatch ("call to queue"), and it captures the time from when the call becomes available in CAD for dispatch until an actual dispatch occurs ("queue to dispatch"). Tracking these queues as two distinct metrics does not allow for alignment with the previously noted NFPA requirement of 60 seconds for answer to dispatch 90 percent of the time for Priority 1 fire calls. Therefore, ***FE*** asked OUC to provide a report showing the time from call answer to first unit notification for Priority 1 FEMS calls to allow for a review of OUC's capability to meet this requirement.

For 2019 and 2020, OUC was not in compliance with the 60-second answer to notification requirement for any part of the 24-month period. The highest performance was November 2020 when OUC dispatched 23.7% of all FEMS Priority 1 calls for service within the 60-second period. This information is represented in *Chart 3*.

[4] Source: ***FE*** Analysis

Chart 3 – Answer to Notification Time by Month[5]



An internal OUC reason for not meeting the 60 second to notification requirement is the lack of automation in the dispatching or broadcasting of FEMS events. The current method is that a FEMS CAD event is read by the dispatcher to be clear on what is being reported, then the dispatcher must verbally announce the event type and location, along with pertinent information to the response, such as stating “CPR is in progress” or “caller reports flames visible.” ***FE*** observed that during busy periods FEMS calls were being dispatched one after the other, and one element of the delay to dispatch is caused by the time it takes the FEMS dispatcher to read through the details of the call. While that call is being announced over the dispatch talk group, other calls stack up and cannot be dispatched.

Depending on the type of call and the number of units assigned as well as the complexity of the address being read, each incident voice dispatched in the current system can take from 15 to 30 seconds or more to complete. This can be improved by utilizing an automated dispatch notification system to automate the process of FEMS unit notification. Used by many PSAPs across the country, automated dispatch notification systems are connected to the CAD system and allow stacked calls to be simultaneously dispatched to fire stations more quickly than a dispatcher can, with a calm and consistent sound and quality of speech. Such systems offer a benefit to FEMS employees as well. They include “heart-saver” ramped alerting tones (tones that start softly and

[5] Source: ***FE*** Analysis

gradually increase in volume and intensity as they progress) along with visual signboard-style notifiers in fire stations that make it clear which units are going and to what location, prior to hearing any voice announcement. Automated systems achieve shorter notification times because they activate all methods of unit notification simultaneously and do not depend upon just the voice over the radio system to deliver the information. They reduce stress on the dispatch position, allowing the dispatchers to better perform the duties of that position.

The verbal announcement precedes a handoff of the event to a FEMS tactical dispatcher that provides all other dispatch support services to the apparatus and units responding. Therefore, the automation of the initial dispatch would enhance and improve the overall process. As example, the automated dispatch would read the event type and location while the primary dispatcher readies the event for the tactical dispatcher.

3.1.4 Mean and Median Call Processing Times

This Audit tasked ***FE*** with determining OUC's mean and median call dispatch times, broken out by Ward and Agency. Mean is defined as the average of a set of data, while median is the central data point that can separate the higher and lower data sets. Dispatch time is a two-part process of call to queue (entry of a call in CAD making it ready for dispatch) and queue to dispatch (the point when a resource(s) is assigned to the call).

FE reviewed the total calls dispatched in 2019-2020 by FEMS and MPD. There were 410,832 FEMS total calls dispatched in 2019-2020, and 1,196,250 MPD total calls dispatched for 2019-2020.

FEMS – ***FE*** found that all FEMS mean and median dispatch times to be flat or consistent for all Wards. This is because FEMS has nearly infinite resources at their disposal. If FEMS were to exhaust all available units, there are mutual aid agreements in place with adjacent jurisdictions for supporting response needs in the District. This is a typical intergovernmental agreement or arrangement for Fire and medical response services across the country.

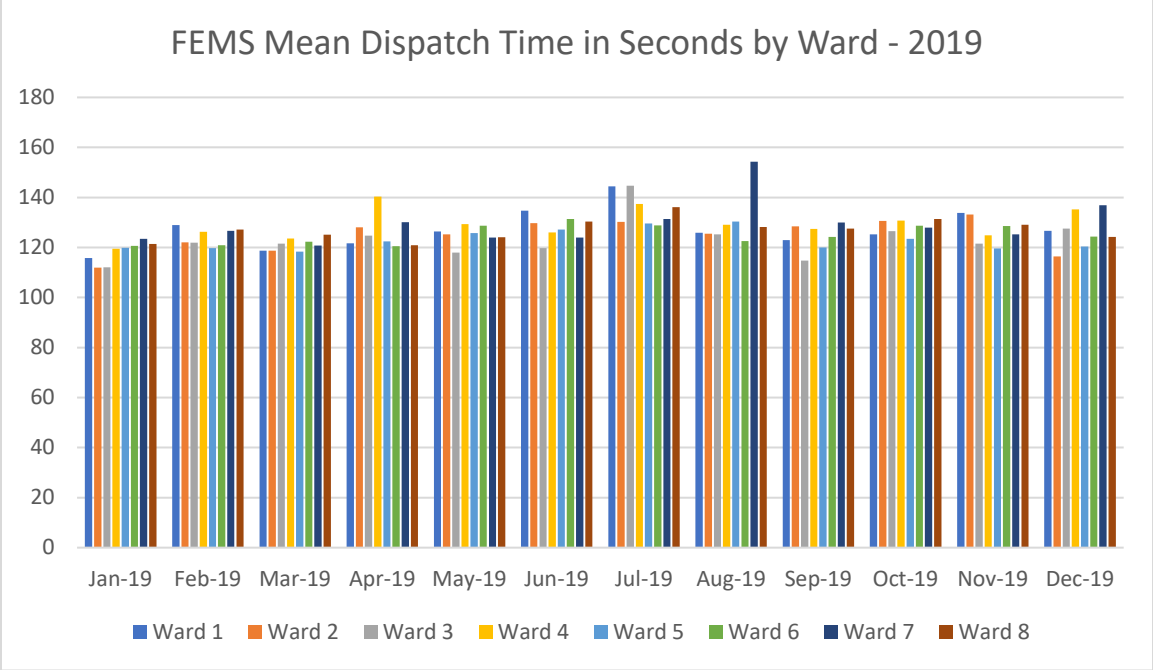
MPD – ***FE*** found that conversely MPD mean and median dispatch times vary widely based on available MPD units/resources. MPD, like all other U.S. local and state government law enforcement agencies, are confined to responding within their legal jurisdiction. There are agreements in place with adjacent agencies to enforce law such as executing a warrant; however, the legal jurisdiction restriction only allows MPD to handle daily operations, e.g., patrol and servicing 9-1-1 calls.

Charts 4 through *11* illustrate the variations of mean and median dispatch times as described in the previous paragraphs for Priority 1 calls for 2019-2020. Note that there

are two outlier data points for Ward 2 in the MPD 2019 and 2020 mean dispatch times that are most likely the result of an individual call(s) that was left open for a long period of time in CAD or there was an error in CAD.

The mean and median dispatch times for Wards 7 and 8 are approximately 20% longer than other Wards for Priority 1 calls during the months of May through October, peaking in July each year. This is due to elevated call volumes from these Wards in the summer months. The call volumes are reported to be more than twice that of other Wards for Priority 1 calls. This increased call volume from Wards 7 and 8 require the MPD to increase the number of units in these Wards during this period.

Chart 4 – FEMS Mean Dispatch Time by Ward for 2019[6]



[6] Source: ***FE*** Analysis

Chart 5 – FEMS Median Dispatch Time by Ward for 2019[7]

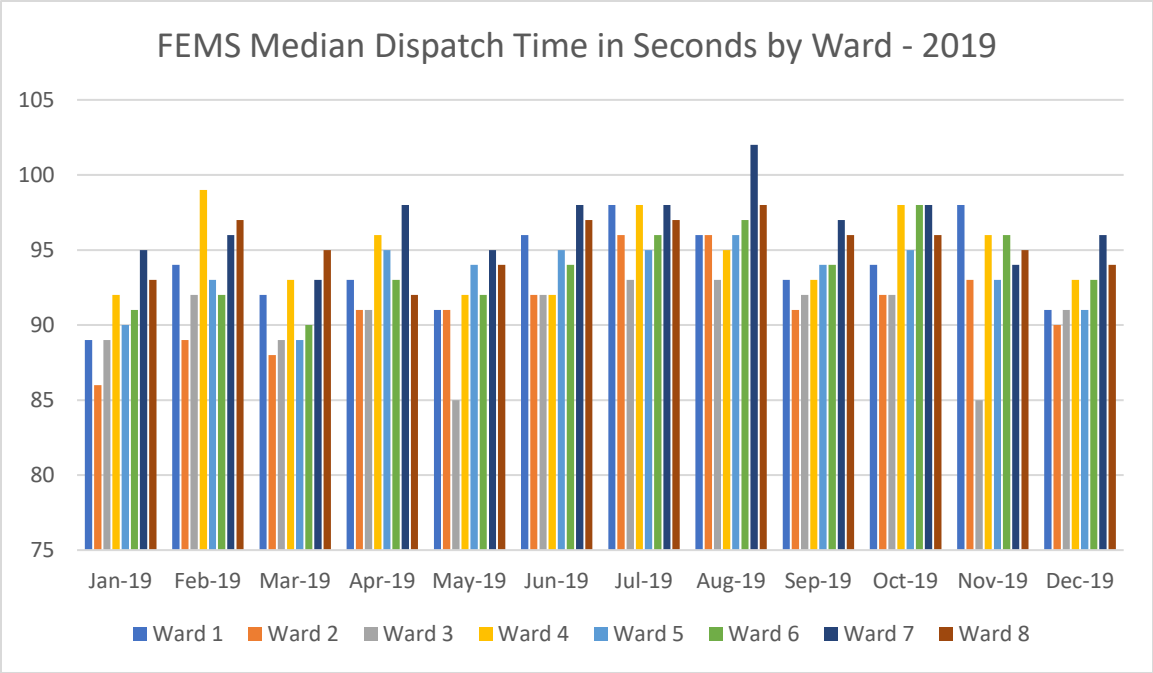
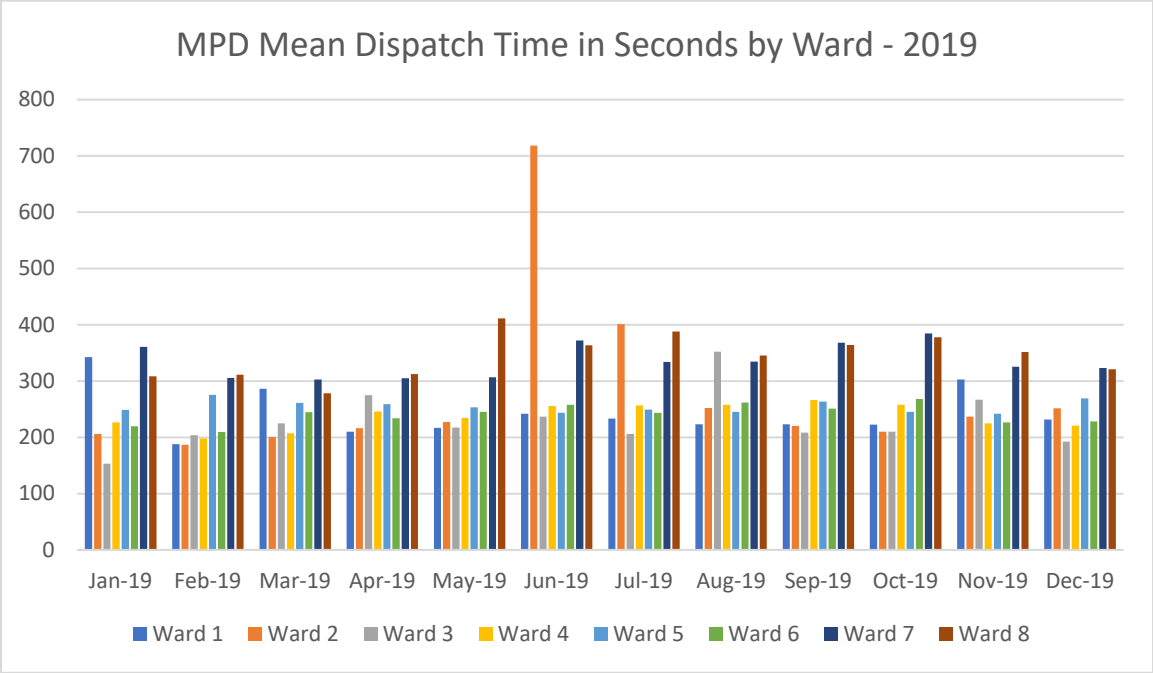


Chart 6 – MPD Mean Dispatch Time by Ward for 2019[8]



[7] Source: ***FE*** Analysis
[8] Source: ***FE*** Analysis

Chart 7 – MPD Median Dispatch Time by Ward for 2019[9]

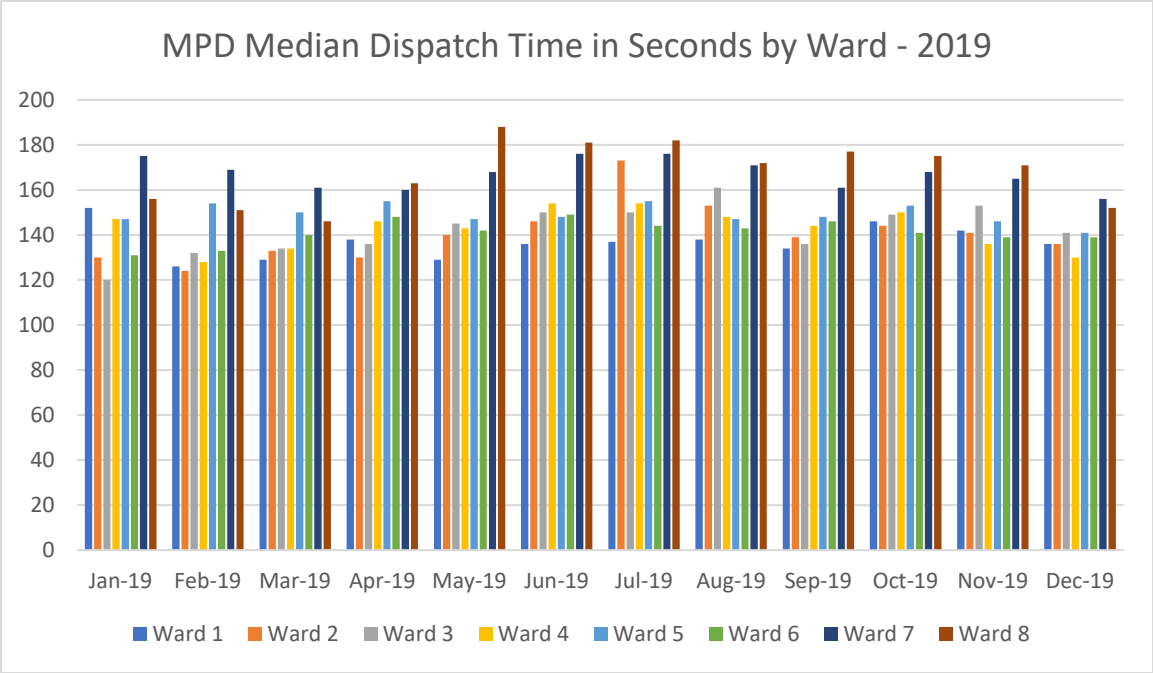
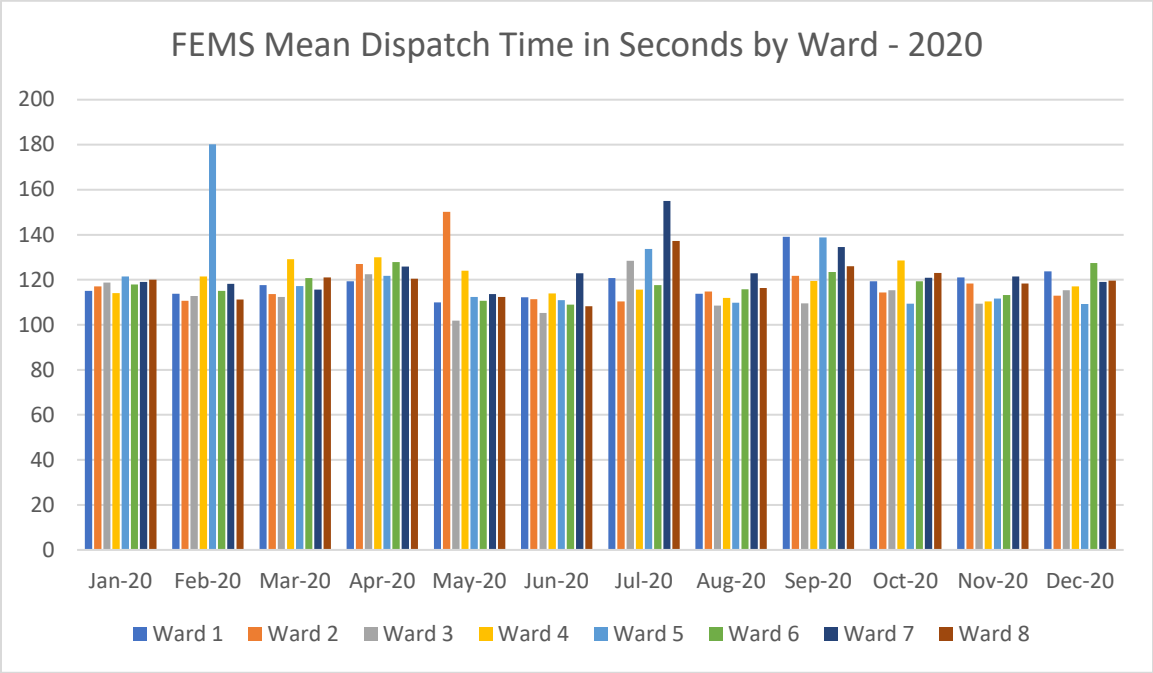


Chart 8 – FEMS Mean Dispatch Time by Ward for 2020[10]



[9] Source: ***FE*** Analysis
[10] Source: ***FE*** Analysis

Chart 9 – FEMS Median Dispatch Time by Ward for 2020[11]

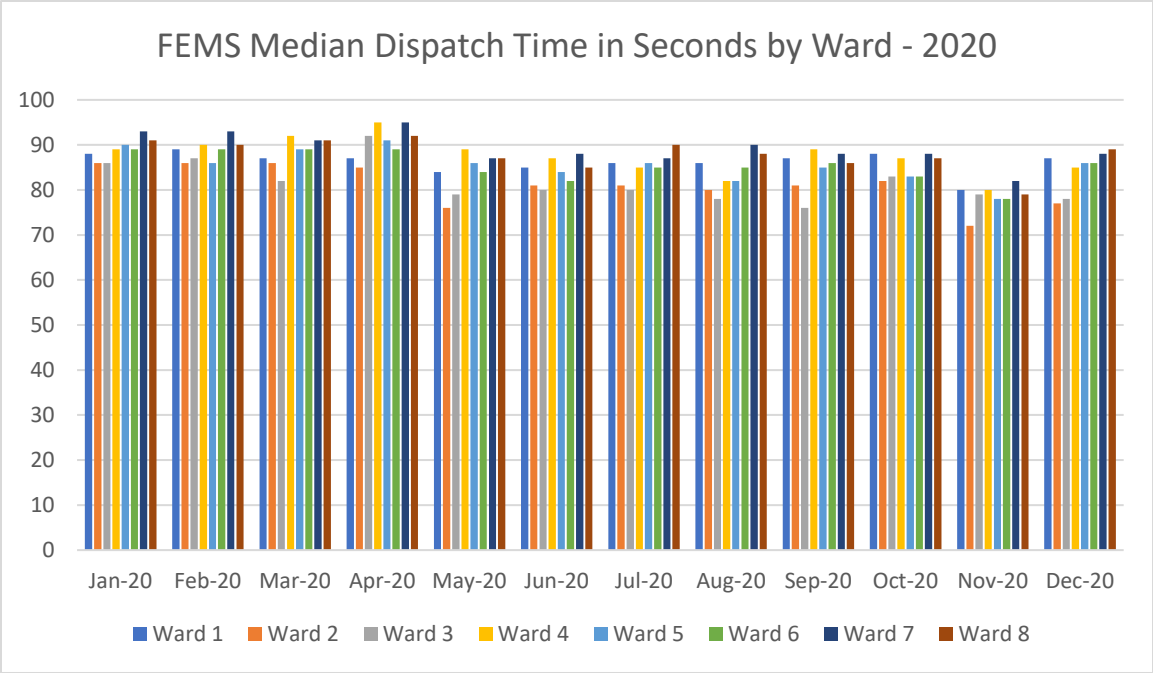
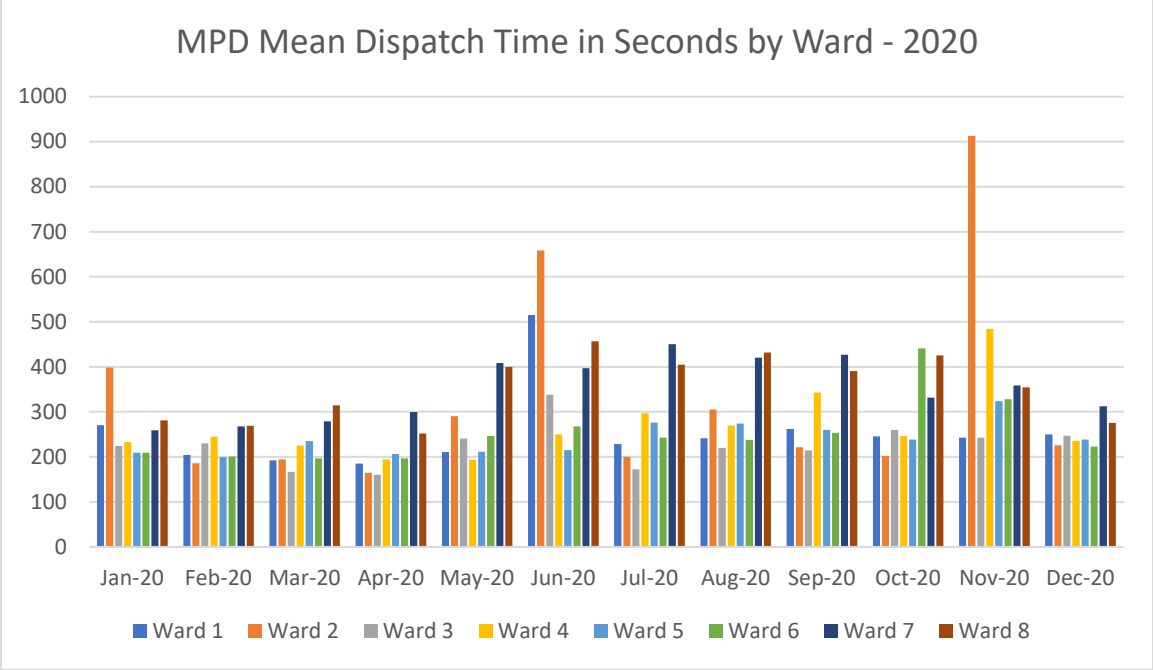
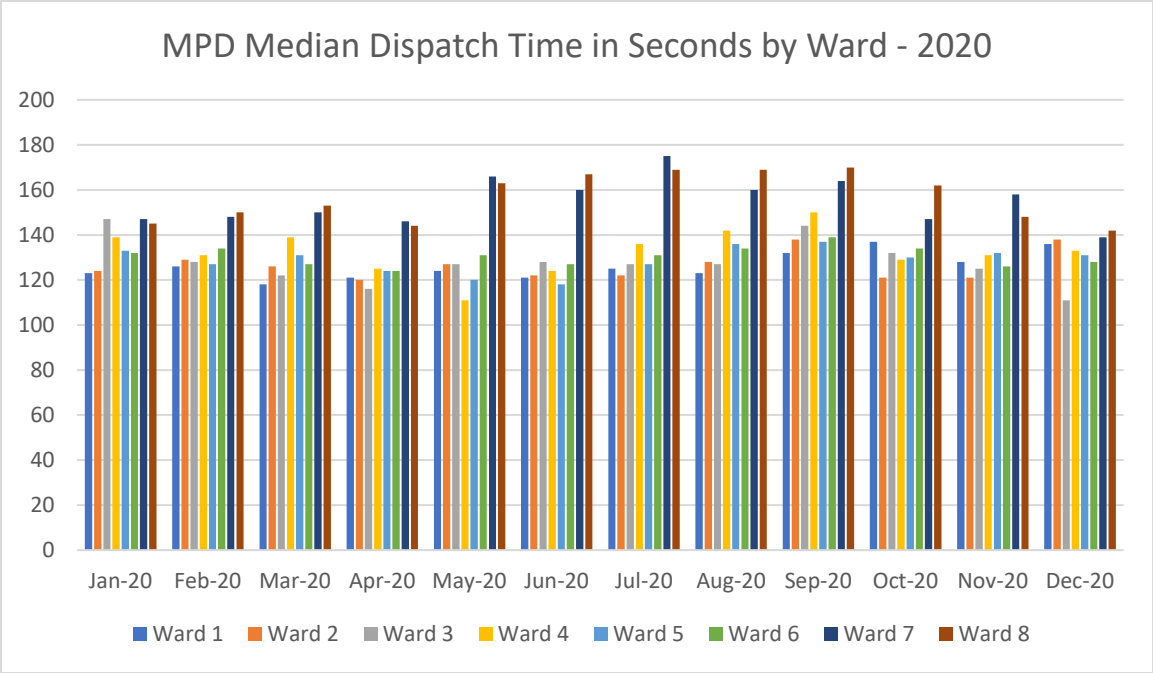


Chart 10 – MPD Mean Dispatch Time by Ward for 2020[12]



[11] Source: ***FE*** Analysis
[12] Source: ***FE*** Analysis

Chart 11 – MPD Median Dispatch Time by Ward for 2020[13]



Conclusion: First responder agency resources are dispatched agnostically across the District based on call volume for FEMS and MPD, and on availability of resources for MPD. ***FE*** found that mean and median dispatch times for FEMS and MPD had no correlation, and therefore showed a lack of bias on the part of the dispatcher, as it related to any of the jurisdictional Wards.

3.1.5 Call Priorities

The ODCA Audit request asked ***FE*** to determine "*What Percentage of Each Call Priority (Alpha-Echo) does OUC Receive*?" To answer this ***FE*** must first explain that the priorities of Alpha-Echo are part of a scripted protocol product called Medical Priority Dispatch System® (MPDS®). MPDS is no longer in use at OUC.

The system currently in use at OUC is called Criteria-Based Dispatch (CBD) which uses numerical priorities. CBD is a scripted protocol system that is interfaced with the CAD system to provide a guideline for questioning callers. CBD differs from MPDS in that CBD allows for discretion in use of the protocols and classifies and prioritizes calls/events differently than MPDS.

[13] Source: ***FE*** Analysis

In alignment with CBD, the CAD system accepts priorities from 1 to 9, with an additional "no priority" of zero that can be used. Most incidents in the system are Priorities 1, 2, and 3. Priority 1 being the highest priority meaning there is a threat to life. Priority 2 meaning there is a potential for the incident to escalate or worsen toward becoming a threat to life or is a threat to property. Priority 3 is the lowest to be used when there is no immediate threat to life or property. All other priorities are used for assigning or holding report type incidents, past non-reportable incidents, or other follow-up or investigative incidents, none of which are necessarily dispatchable within the context of assigning responders.

Priorities are assigned during the call entry based upon the call type selection by the call-taker. The priority of a call is often changed based on subsequent information received either during the first caller's interaction with the call-taker, or due to subsequent callers or information received from field units. Call-takers are encouraged to quickly pick the most appropriate call type based on the information provided by the caller. This allows for the expeditious dispatch of the call. The CAD system needs at least two inputs to properly select units for dispatch: the type of call, and the location. Once a call has been entered into CAD for dispatch, the call-taker may need to stay on the line with the caller to acquire more detail, such as direction of travel, the medical needs of victims and so on. Many times, the additional details require an update to the call such as the event type, priority, and additional narrative that impacts citizen and responder safety. The nature of emergency call-taking must allow flexibility in adjusting/updating the type of call and the priority based on the intake of information from one or more callers, and from what responders find when arriving on scene.

Chart 12 shows the percentages of each call priority, for the combined calendar years 2019 and 2020:

Chart 12 – 2019-2020 Dispatched Calls Priority Classification[14]

3.1.6 Calculating Delay for Mis-prioritized Calls

As described above, there are multiple reasons why a call's priority may change. It is common in a CAD system for subsequent information to cause a change in priority and in the resulting response. Because the reason for a priority change is not captured in OUC's CAD system, ***FE*** was unable to determine if calls were mis-prioritized nor was it able to determine if priority changes were due to errors or natural call progression. It must be noted that the reason for a priority change is not typically captured in most CAD systems. ***FE*** submits that the data point of the most relevance is any increase in the time from call answer to arrival of the correct unit on the scene for incidents in which the priority level had changed. However, determining this involves multiple factors outside the scope of this Audit to determine impacts on agency response times. These factors include time of day, traffic conditions, weather, and the workload of FEMS and/or MPD at that moment

[14] Source: ***FE*** Analysis

in time. These have a profound impact on the availability of units, and therefore which ones CAD selects to service a call. For these reasons, calculating the ratio of priority changes would result in an invalid and inflated report that could not differentiate between valid changes and erroneous changes.

3.2 Training and Quality Assurance (QA)

Training and quality assurance are critical components in creating consistency in the delivery of call processing and dispatching. The prominent areas that exemplified the need for additional focus of training, supervision, and QA were in the following observed behaviors:

- Inconsistencies in the call-taking processes that were procedural in nature
- Improvising or adlibbing and a lack of use of protocols. This affects the consistency and efficient acquisition of information and adds additional call processing time. All contribute to a delay in the dispatch of resources.
- Failure in obtaining the complete name of the caller
- Not verifying, collecting, or entering apartment numbers into CAD, and not relaying apartment numbers to responders correctly or not at all
- Inconsistent customer service and the audible level of frustration with certain call-taking staff members

3.2.1 Training Elements

The training program syllabus and subject matter is consistent with programs found in other large busy centers comparable to OUC. There were gaps found in the administering of training and refresher training of call-takers and dispatchers on the use of technology and oversight of the same.

3.2.1.1 District Geography

The District geography is a component of the OPSD Training Program in classroom instruction, learning the use of the call handling mapping, CAD mapping, RapidSOS, and other LDTs and other methods for locating callers. These other methods include persistent questioning, internet sources, and engaging supervisors for assistance. Recent additions to the training content are focused on geography training exercises to enhance

knowledge of quadrants, waterways, unique addressing features, multiple same/similar cross-streets, and parks, foot and bike paths.

The Training Program includes use of LDTs and there is a reported recent increased focus on use of the LDTs. However, the use of LDTs was found to be inconsistent by call-takers. The call-takers interviewed and observed indicated it is not common practice to use the LDTs only when a caller cannot advise a geographically verified address as the call-takers do not trust the maps for locating cell phones.

The OUC Chief Information Officer (CIO) expressed, in an interview, that the CHE is not set up to automatically re-bid or re-transmit the X/Y coordinates. This is reportedly due to a lack of trust in the location plotting. When a cell phone calls 9-1-1 the location data sent with the call is for the cell tower that the call is routed through. This is called a Phase 1 call. A re-bid or re-transmission of the location of the cell phone is manually or automatically re-sent to 9-1-1 usually within seconds of the initial location. This is called a Phase 2 call.

In recent years the location accuracy of cellular carriers has improved making the Phase 2 location more accurate, faster, and more reliable. Observations of call-takers found no one using the map to plot the location of a caller but instead relying solely on questioning the caller for a location. Observations also found that call-takers were routinely erasing the X/Y coordinates that auto-populate the CAD event from the CHE and replacing it with the caller's reported location. It appears that call-takers have been conditioned not to trust the location of cell phone callers.

FE also found that the CBD protocols launch (appear) at the start of a CAD event over the CHE map. This set up would require the call-taker to move the CBD window to see the map. Anecdotal information and observations of call-takers found that call-takers did not move the CBD window and did not consistently use the map.

The RapidSOS application is the most accurate LDT available to call-takers at the center. The CIO detailed how the new RapidSOS application will be integrated in the call handling process and how training of call-takers is planned. This plan was reported to be rolled out in the weeks following the observation period in April 2021.

3.2.1.2 Coordination with Surrounding Jurisdictions

In the call data events reviewed, ***FE*** found that coordination with surrounding jurisdictions and other levels of government response was handled appropriately. However, issues in locating callers or events occur in transferred emergency calls because 9-1-1 calls cannot be transferred from one 9-1-1 line to another 9-1-1 line across jurisdictional boundaries,

such as city to city or across state lines. The transfer of a 9-1-1 call from one jurisdiction to another is made to a 10-digit line. No location data can be routed with the voice call when making this type of transfer.

The transferring call-taker should verbally provide the 9-1-1 location data of the caller to the answering 9-1-1 center. As an example, routine or non-life-threatening calls are transferred to and from the District daily without incident via 10-digit non-emergency/administrative lines. High acuity[15], low frequency calls that are transferred may not be transferred via 9-1-1. If a call is not or cannot be transferred via 9-1-1, there is no location data for identifying the location of a caller.

Similarly, in other incidents, the caller may not be on the scene and cannot provide an accurate location. The exception to this is if a 9-1-1 caller is on or near the location of an event, RapidSOS, or similar LDT, may be used to attempt to locate the cellular device by entering the phone number and receiving the known location of the device. These instances are sometimes outside the capabilities and available tools of many 9-1-1 centers. The implementation of Next Generation 9-1-1 and Emergency Services IP-Network(s) in the National Capital Region[16] will help to mitigate these issues as 9-1-1 transfers with location data will be possible and LDTs integrated in CHE will better pinpoint a caller or an event location.

3.2.1.3 Quality Assurance (QA)

The QA process is inconsistent in its delivery and program structure, and therefore is viewed as being ineffective. Currently, completed QA reviews are forwarded to the Operations Management team who administer the review with the call-taker or dispatcher, and often there appears to be no required follow up. The completion of the reviews with the staff are not well documented nor are they routed consistently and timely back through the Operations Management to the OPSD team. The Operations Team does not routinely check or document review processes for regularity and sign off.

There were several references by operations staff in group interviews about a lack of confidence in the OPSD staff to impartially review calls, citing a lack of training, appearance of favoritism, inadequate knowledge base, and experience of some of the OPSD staff. However, ***FE*** did not find these issues in interviewing OPSD staff, nor in reviewing their work product from QA reviews and training materials. ***FE*** did find that there is inconsistent follow up by Operations management to ensure and document that call-

[15] High acuity is a term used in the 9-1-1 industry to describe the acute severity of an event. This is applied to high priority situations that have or may cause a loss of life.
[16] The National Capital Region (NCR) encompasses D.C.; Montgomery and Prince George's counties in Maryland; and Arlington, Fairfax, Loudon, and Price William counties in Virginia.

takers and dispatchers have or have not corrected their actions or behavior based on the QA review and the necessary corrective actions. Whether perception or reality, the relationship between the Operations unit administration, operations staff, and OPSD can be improved through better communication and coordination of workflow.

3.2.1.4 Call Center Policies and Procedures

A review of OUC policies and procedures found that they were consistent with industry best practices. However, ***FE*** found that there is inconsistent application and adherence to policies and procedures due to insufficient supervision and a lack of QA follow up to ensure uniform compliance with the policies and procedures in place. Enforcing policies requires alert supervisors and a complete cycle of information and follow up in a QA program. The inconsistent application and adherence to policies is a direct result of minimal operations floor supervision. The inconsistencies continue to call-taker and dispatcher behaviors and habits that are unchecked by an incomplete QA review and follow up process. ***FE*** found that the OPSD maintains detailed QA review records. However, ***FE*** found that much of the required documentation response from Operations Management and follow up with the reviewed staff members were missing or incomplete. It will require both the Operations and OPSD units to work together to enforce adherence to their process policies. These units must also be subject to internal reviews to ensure ongoing policy compliance.

3.3 Staffing / Scheduling

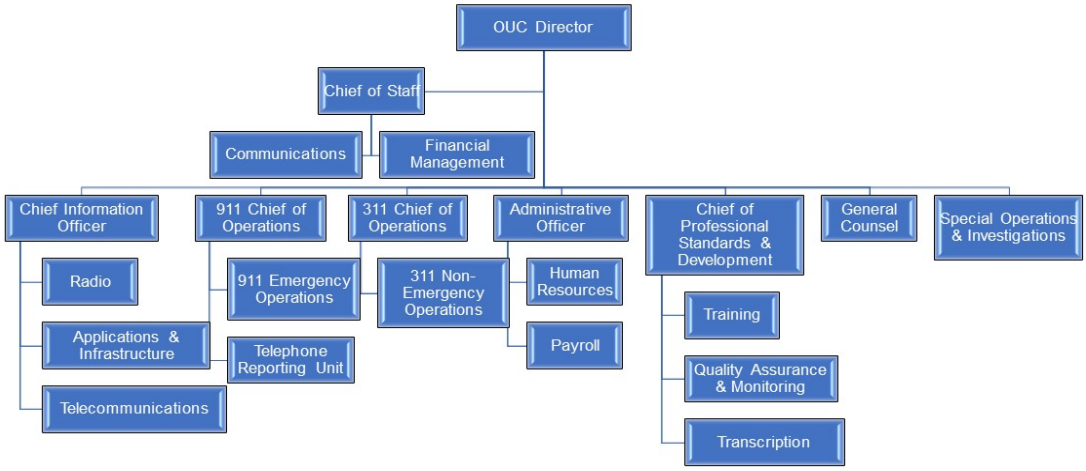
The following sections provide current information regarding OUC supervision, staffing, employees, and scheduling environment. Note that OUC uses the supervisory role titles of Watch Commanders and Assistant Watch Commanders. For the purposes of this section, ***FE*** will refer to all oversight staff as supervisors.

3.3.1 Administration

OUC is under the management and control of an Interim Director appointed by the Mayor[17]. Reporting to the Interim Director is the 9-1-1 Chief of Operations (9-1-1Ops), and has two 9-1-1 Managers, three Watch Commanders and nine Assistant Watch Commanders assigned to supervise the day-to-day operations. The following organizational figure depicts the current reporting structure of OUC.

[17] https://ouc.dc.gov/release/cleo-subido-appointed-interim-director-office-unified-communications

Figure 1 – OUC Organizational Structure[18]



3.3.2 Current Employees[19]

Table 1 provides the number of authorized and actual employees assigned to work within OUC in March – April of 2021. All the employees are full time, and all are civilian employees. The Authorized Employees shown in *Table 1* are the number of employees allocated to staff the positions and Actual Employees is the number of current employees.

Table 1 – Current OUC Employees[20]

Current Employees – OUC		
OUC	**Authorized Employees - Full Time**	**Actual Employees - Full Time**
Watch Commanders	2	2
Assistant Watch Commanders	10	9
Call-Takers	95	84
Dispatchers	107	103
Total	**214**	**198**

[18] Source: Washington D.C. Office of Unified Communications
[19] As with any agency, the exact number of employees fluctuates continuously with hiring and attrition.
[20] Source: Washington D.C. Office of Unified Communications

3.3.3 Shifts

Employees assigned to OUC work twelve-hour shifts with shift changes at 06:00 to 06:30 and 18:00 to 18:30. Each employee has 120 minutes allotted to lunch and break time.

3.3.4 Minimum Staffing

The staffing needs of a 24/7 public safety operation require constant monitoring of workload and staffing assignments to maximize coverage across all shifts. For call-taking, this is an important factor to consider since incoming call volume fluctuates significantly throughout the day and night. The work hours and assigned positions per shift are based on call volume, skill sets, experience, and workload. The center management and supervisory staff are responsible for monitoring these factors and assigning staff based on these factors.

Table 2 and *Table 3* depict OUC's reported current minimum staffing requirements and the reported normal staffing levels. As ***FE*** has found in most PSAPs, OUC has difficulty maintaining a minimum number of employees on staff and available for work.

Table 2 – OUC Required Minimum Staffing[21]

Minimum Staffing					
Shift	**Days**	**Call-Taker**	**FEMS Dispatcher**	**MPD Dispatcher**	**Total**
06:00 to 18:30	All	18-20	6	14-16	**38-42**
18:00 to 06:30	All	15-18	6	14-16	**35-40**

Table 3 – OUC Normal Staffing[22]

Normal Staffing					
Shift	**Days**	**Call-Taker**	**FEMS Dispatcher**	**MPD Dispatcher**	**Total**
06:00 to 18:30	All	14-17	6	12	**32-35**
18:00 to 06:30	All	14-17	6	12	**32-35**

[21] Source: Washington D.C. Office of Unified Communications
[22] Source: Washington D.C. Office of Unified Communications

3.3.5 OUC Reported Telephone Answering Statistics

OUC reported the following information from their CHE Management Information System (MIS). This data was used in the calculations to determine how many call answering positions are needed to handle the volume of incoming calls and how many people are needed around the clock to staff these positions.

The average time for OUC to answer a 9-1-1 call is 5.2 seconds.

The average talk time for a 9-1-1 call is 111.2 seconds.

The average time to process a 9-1-1 call from call answer to queue (CAD) ready for dispatch:

- Police – 1 minute, 40 seconds
- EMS – 1 minute, 23 seconds
- Fire – 1 minute, 15 seconds

The busiest day of the week is Friday.

The busiest hour of the day is 3:00 p.m.

The busiest month of the year is July.

3.3.6 Staffing Impacts

To provide quality service to the public and local emergency services, OUC must always maintain an adequate number of qualified staff on duty. When this does not occur, service quality can diminish. The short and long-term effects on employees often lead to additional staffing shortages, overworked personnel, increased attrition, increased stress, illness, and absenteeism. External effects include increased complaints from citizens and response agencies, and a reduced level of confidence in OUC's operations.

The following sections describe the data used and the process of calculating staffing projections specific to OUC's call volume.

3.3.6.1 Call-Taking Staff Levels

Call volume is the prime factor in determining the number of lines, workstations and call-taking positions needed to handle OUC's projected call-taking workload. Of equal importance in determining the number of staff is the recommended standard by which an

agency complies with regarding call answering. As previously mentioned, the NENA standard is to answer 90% of 9-1-1 calls within 15 seconds and 95% of 9-1-1 calls answered within 20 seconds. The NFPA standard, used by the Insurance Services Office (ISO)[23], is to answer 90% of calls on emergency lines (9-1-1 and 10-digit emergency) within 15 seconds, and 95% answered within 20 seconds. The answer time requirements are the same, however the NENA standard is only applied to 9-1-1 calls, while the NFPA standard is applied to emergency lines which are 9-1-1 and 10-digit emergency lines. As example, 10-digit emergency lines are often used by alarm companies.

The first step in calculating staffing levels is to verify the total telephone call volume OUC handles, including both 9-1-1, ten-digit emergency, non-emergency, and outgoing phone calls. To determine these statistics, ***FE*** used the reported 2020 total call volumes provided by OUC. This includes incoming 9-1-1 calls, ten-digit emergency and non-emergency phone calls and total outgoing phone calls.

As reflected in *Tables 4, 5*, and *6*, OUC's combined 9-1-1 call volume that includes wireline, wireless and text-to-9-1-1 in 2020 was 941,958 calls. The combined ten-digit emergency and non-emergency call volume was 321,312 and the total outgoing calls were 174,873.

Table 4 – All Telephone Calls – 2020[24]

Annual Call Volume Statistics	
Call Type	**2020**
Total Wireline 9-1-1 Calls	200,225
Total Wireless 9-1-1 Calls	739,023
Text-to-9-1-1 Calls	2,710
Total Non-Emergency & 10-digit Emergency	321,312
Outgoing Calls	174,873
Total	**1,440,163**

[23] ISO Mitigation "ISO Community Hazard Mitigation actively works with fire departments, building departments, water suppliers, and municipalities with our Public Protection Classification (PPC®), Building Code Effectiveness Grading Schedule (BCEGS®), water outreach, and emergency communication center review programs."
[24] Source: Washington D.C. Office of Unified Communications

Table 5 – Percentage of All Calls – 2020[25]

% of All Calls	2020
Total Calls	1,440,163
% of All Calls that were 9-1-1	65.5%
% of All Calls that were Ten-Digit	22.3%
% of All Calls that were Outgoing	12.2%

Table 6 – Percentage of 9-1-1 Calls – 2020[26]

% of Total 9-1-1 Calls	2020
Total 9-1-1 Calls (wireline, wireless, text)	941,958
% of 9-1-1 calls that were Wireline	21.3%
% of 9-1-1 calls that were Wireless	78.5%
% of 9-1-1 calls that were Text-to-9-1-1	0.3%

The next step is calculating the number of call-taker positions requiring 24/7 staff to manage the total call volume expected for a communications center.

Table 7 reflects several items. It shows the monthly and per-hour estimated call volumes determined by the busiest month from the 2020 annual statistics by hour supplied to ***FE***. OUC provided hourly call volumes for 2020 and that data was used to determine the combined busy hour estimates. The busiest month in 2020 was determined to be the month of July.

Table 7 also highlights the slowest and busiest hours in a 24-hour period in an hourly table. ***FE*** arrived at the number of call-taker positions listed in the hourly table by performing Erlang C calculations. Erlang C is a traffic modeling tool developed in the 1970s by telephone companies to project the number of operators needed to handle specified call volume. This tool is the foundation of the current 9-1-1 industry staffing standards and tools available through Association of Public Safety Communications Officials (APCO) and NENA. The Erlang C calculations are enhanced by 9-1-1 industry and individual 9-1-1 center data to form a methodology that projects how many full-time equivalent (FTE) staff are needed to process calls. Note that call-taking positions and number of call-takers are the only data these staffing tools can accurately project. These

[25] Source: ***FE*** Analysis
[26] Source: ***FE*** Analysis

tools cannot project the number of dispatchers needed. See *Section 3.3.6.2* on how the number of dispatch positions and staff are projected.

The Erlang C calculations performed by ***FE*** provides the call-taking performance standards desired to be entered to arrive at the correct number of physical call-taking workstations that needs to be staffed by hour of the day. Calculations do not allow two separate service level objectives for emergency and non-emergency calls, therefore the more stringent NENA standard of 90% within fifteen seconds or less is used for both 9-1-1 and ten-digit incoming calls as part of the combined call load.

The call-taker performance standards used in these calculations are 111 seconds of call time, as provided by OUC, and 30 seconds of call wrap up time, which is the best practice minimum recommendation. Wrap up time is the time needed after the call has ended to finish up documenting a CAD incident with notes and narrative and then to prepare for the next call.

Table 7 also indicates 04:00 as the slowest hour of the day and 15:00 as the busiest hour of the day. These periods are highlighted in the table. This table provides upper and lower call volume from which staffing projections can be made. When looking at scheduling on a more granular level, determining the busiest and slowest days of the week and hour of those days allows OUC supervision to staff shifts more efficiently based on actual workload.

Note that staffing adjustments based on workload is not occurring in OUC. ***FE*** was informed that at the beginning of each shift (06:00 a.m. and 06:00 p.m.), a full scheduled assembly of staff report for duty and if fewer people are needed, staff are sent home. This means that there are no adjustments made to how many staff are needed based on hour of day or day of week. The same number of people are scheduled for every shift leaving some shifts with too many people and others without enough people.

During an interview with Operations Management a plan was shared detailing how OUC will begin using call volume trend reports to begin staffing based on workload fluctuations. OUC uses the application Emergency Call Tracking System (ECaTS©)[27] to monitor and track workload statistics and trends. ECaTS is a Management Information System (MIS) that extracts call processing data from the CHE. This data is used by individual call centers and state 9-1-1 offices across the country to monitor performance and identify trends that are used to forecast future call processing needs.

[27] ECaTS: Information into Insights (ecats911.com) owned by Intrado©

For the purposes of this staffing estimate, the average number of workstations that need to be covered is used. In this case, the average number of call-taker positions needed to manage the incoming call volume is 10.54. Since call volume is not evenly distributed around the 24-hour clock, *Table 7* shows some hours of the day requiring five call-taking positions to meet low call volume demands and other hours of the day requiring 14 positions to meet peak call volume demands.

In summary, the following best practice and current PSAP call performance standards are the metrics used to align the calculations with OUC workload:

- Service level objective of 90% calls answered within 15 seconds or less
- Average talk time of 111 seconds
- Average after-call wrap up time of 30 seconds

Table 7 – Hourly Incoming Call Volume Distribution and Call-taker Count[28]

Hourly - All Calls			
Hour	**Average 9-1-1 Calls/Hour for One Month**	**Percentage of Overall 9-1-1 Call Volume/Hour for One Month**	**Call-Takers Needed**
0:00	141.9	3.52%	9
1:00	112.8	2.80%	8
2:00	85.3	2.11%	7
3:00	69.0	1.71%	6
4:00	56.7	1.41%	5
5:00	60.9	1.51%	5
6:00	80.6	2.00%	6
7:00	116.7	2.89%	8
8:00	149.7	3.71%	10
9:00	181.8	4.51%	11
10:00	201.9	5.01%	12
11:00	216.5	5.37%	13
12:00	225.7	5.60%	13
13:00	232.4	5.76%	14
14:00	238.6	5.92%	14
15:00	239.3	5.93%	14
16:00	223.6	5.55%	13
17:00	208.5	5.17%	13
18:00	203.4	5.04%	12
19:00	199.5	4.95%	12

[28] Source: ***FE*** Analysis

Hourly - All Calls			
Hour	**Average 9-1-1 Calls/Hour for One Month**	**Percentage of Overall 9-1-1 Call Volume/Hour for One Month**	**Call-Takers Needed**
20:00	195.5	4.85%	12
21:00	210.5	5.22%	13
22:00	203.3	5.04%	12
23:00	177.8	4.41%	11
		Average	**10.54**

3.3.6.2 Dispatching Staff Levels

The next step in estimating staffing is determining the number of dispatch positions requiring staff 24/7. Currently, there is no nationally recognized calculation/formula to determine the number of dispatchers needed based on workload. However, if congestion is an issue, radio traffic/usage studies can be conducted to determine the level of use or available airtime of a talkgroup or channel to make certain talkgroups or channels are not too busy for individual dispatchers to manage. This type of study can assist a PSAP in determining the number of channels needed to support operations but does not directly provide the number of dispatchers needed to staff the required channels. Using the NENA and APCO calculation base of requiring five FTEs to occupy one position around the clock, then projecting the number of dispatchers needed becomes a calculation of how many talkgroups/channels require monitoring around the clock. For example, if congestion requires the expansion of dispatch talkgroups/channels from five to six, then the number of dispatchers would expand from 25 to 30.

While there is no complex formula for calculating the number of needed dispatch positions based on the number of incidents or CAD events, ***FE*** uses a combination of reported CAD events and the number of primary dispatch channels currently in use. This information is collected and reviewed along with the other types of criteria listed below when estimating dispatch workstation numbers. *Table 8* shows the number of CAD events dispatched for 2019 and 2020, as well as the average and totals for each type of incident.

Table 8 – CAD Events[29]

Number of CAD Events Dispatched		
	2019	**2020**
Law Enforcement Incidents	671,109	579,553
Fire Incidents	40,398	36,783
EMS Incidents	175,088	156,469
EMS Incidents transferred to AMR	56,981	46,364
Total	**945,595**	**821,189**

If OUC determines there is excessive congestion on any talkgroup/channel, ***FE*** recommends a traffic study be pursued to determine the optimum number of talkgroups/channels needed to alleviate the congestion.

FE observed some additional tasks assigned to the primary dispatchers such as phone calls and follow up requests for information from responders. ***FE*** also observed heavy radio traffic on several of the busier MPD channels and FEMS, particularly when high priority events are occurring such as shootings or structure fires. The observed fluctuations in radio traffic and additional tasks were not to a level of concern. However, workload should be under consistent review to ensure the dispatch staff are not overwhelmed.

It is not a recommended best practice to assign additional tasks to primary dispatchers other than dispatching events. Dispatchers must be available and ready as soon as a new event arrives and are ready for dispatch or when a field unit has a radio message for the dispatcher.

Table 9 illustrates the number and type of existing dedicated dispatch positions currently being staffed in OUC. A dedicated dispatch position requires an employee to be assigned 24/7/365. All positions are equipped with CAD and radio dispatch consoles.

[29] Source: ***FE*** Analysis

Table 9 – Dedicated Dispatch Positions[30]

Number of Positions	Position Type
1	Law - 1D (MPD District 1 Dispatch Channel)
2	Law - 2D (MPD District 2 Dispatch Channel)
3	Law - 3D (MPD District 3 Dispatch Channel)
4	Law - 4D (MPD District 4 Dispatch Channel)
5	Law - 5D (MPD District 5 Dispatch Channel)
6	Law - 6D (MPD District 6 Dispatch Channel)
7	Law - 7D (MPD District 7 Dispatch Channel)
8	Law - CW1 (MPD Citywide Dispatch Channel)
9	Fire/EMS - 01 DISP (Dispatch Channel)
10	Fire - 02 MAIN (Dispatching Hailing Channel)
11	Fire - 011 EMS1 (FEMS Tactical Channel)
12	Fire - 012 EMS2 (FEMS Tactical Channel)
13	Fire - 013 EMS3S (FEMS Tactical Channel)
14	Fire - 014 EMS4S (FEMS Tactical Channel)

3.3.7 Staffing Recommendation Methodology

FE uses the APCO Project "*Responsive Efforts to Address Integral Staffing Needs*" (RETAINS) criteria to determine the number of employees required to staff the projected number of workstations. The following steps, data application and calculations, are performed in accordance with the RETAINS guidance.

The annual number of work hours per employee working twelve-hour shifts is 2,184 hours as reported by OUC. The formula begins by subtracting the reported standard leave such as vacation, personal, training, and sick time, to arrive at the total available work hours per employee. The total number of annual available work hours in this study is 1,242 hours per employee, based on the following adjustments of average hours per employee per year provided by OUC.

- Vacation, compensation, and holiday time – 113 hours
- Sick – 77 hours
- Personal leave – 370 hours
- Training – 0 hours*
- Military, FMLA leave, etc. – 134 hours

[30] Source: Washington D.C. Office of Unified Communications

- Lunch/Breaks – 2 hours per shift

*Note that OUC reported no hours for training. This occurs when a 9-1-1 center considers and tracks training as part of the employees on duty time. The employee is compensated financially or with compensatory time for training hours.

3.3.7.1 Supervision

Public safety best practices require that PSAPs provide 24/7 supervision for their staff. NFPA has developed codes, standards, and recommended practices through a process approved by the American National Standards Institute (ANSI). The NFPA Technical Committee on Public Emergency Service Communication prepared the latest edition of NFPA #1221, *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems (Edition 2019).* Chapter 7 sets forth the standards for Emergency Communications Center (ECC) operations: Section 1 of Chapter 7 addresses supervision as follows:

> ***7.3 Staffing.***
>
> ***7.3.4***
>
> *Supervision shall be provided when more than two telecommunicators are on duty.*
>
> ***7.3.4.1***
>
> *Supervision shall be provided by personnel located within the communications center who are familiar with the operations and procedures of the communications center.*
>
> ***7.3.4.2***
>
> *The supervisor shall be allowed to provide short-term relief coverage for a telecommunicator, provided that the telecommunicator does not leave the communications center and is available for immediate recall as defined in the policies and procedures of the AHJ.*
>
> ***A.7.3.4***
>
> *The supervisor position(s) in the communications center are provided in addition to the telecommunicators positions. Although supervisory personnel are intended to be available for problem solving, the supervisor position is permitted to be a working position.*

The *Standards for Public Safety Communications Agencies* (SPSCA), established jointly by the Commission on Accreditation for Law Enforcement Agencies (CALEA) and APCO, does not specifically address staffing or supervision in a 9-1-1 center. However, both sets of standards reference utilizing Incident Command System (ICS) protocols further described below. The specific standards applied to the use of ICS as it relates to oversight in an emergency communications center are CALEA Standard 46.1.2 and SPSCA Standard 7.1.2.

The U.S. Department of Homeland Security, coordinating with federal, state, and local governments, established the National Incident Management System (NIMS). ICS falls under the Command and Management element of NIMS. ICS represents best practices and is the standard for emergency management across the country. ICS requires a supervisor when there are between three and seven persons performing similar functions (the optimal span of control is five persons). A manageable span of control allows supervisors to supervise and control their subordinates, while allowing for efficient communications between all parties.

While NFPA standards and ICS require dedicated supervisory personnel, there are operational benefits to dedicated supervision as well. The benefits of dedicated supervision assigned to each shift include:

- Providing coordination and direction during major emergency incidents, such as severe weather, high profile incidents.
- Availability for problem solving.
- A single point of contact and authority for subscriber agencies.
- Ability to identify areas for growth among subordinates.
- Allowing for formalized development of career paths.
- Documenting employees' performance for annual/periodic reviews.
- Providing a focused scope of supervision when implementing new policies and procedures.
- Providing more supervision for diversified complex tasks.
- Ability to stay current with technological changes/advancements.
- Providing mentoring to existing employees and guidance to new employees who have less training and experience.
- Providing greater knowledge of laws, procedures, and administrative processes.
- Providing focus on the overall operations of the 9-1-1 center and not on responsibilities of sitting at a call-taker or dispatch position.
- Focusing on customer service to public and subscriber agencies.
- Allowing for improved communications with management, subordinates, and subscriber agencies.
- Spending more time with subordinates individually, daily.
- Allowing for operational efficiency.

- Identifying areas for remedial training, counseling, or discipline, when appropriate.
- Addressing issues upon occurrence, not after the fact.
- Setting operational priorities.
- Allowing for delegation of tasks/responsibilities.

For the purposes of the supervisor staffing estimate ***FE*** reviewed the number of call-taker and dispatch positions that needed to be staffed for each hour of the day. Then using the recommended optimal span of control of one supervisor for every five employees the average number of supervisors per shift is 4.91 (rounded to 5). Assigning five supervisors per shift will allow the scheduling of a minimum of three to four supervisors on duty at any given time. Assigning the five supervisors in this manner will allow for supervisors to take turns off the operations floor to perform administrative duties, attend training, and take accumulated leave, while leaving the three or four operations floor assigned supervisors to provide direct operational oversight and mentoring.

3.3.8 Recommended Staffing Model

To arrive at the recommended model, the final number of employees required to cover call-taking functions, dispatch functions, and supervisor positions are added together to determine the total number of recommended OUC staff.

Tables 10 and 11 provide the recommended personnel count for OUC, with and without turnover. Turnover accounts for the number of employees that transition out of employment. The national 9-1-1 industry turnover rate is between 17% – 19%. OUC was not able to provide the data to determine their exact turnover rate. However, based on the longevity of their tenured staff and number of training sessions conducted annually, ***FE*** was able to estimate their turnover rate as approximately 8.7%. In an industry where a call-taker/dispatcher career averages two to three years, OUC is unique in that many staff have an average of 25 - 30 years of service. ***FE*** provides the following staffing projection totals with and without turnover factored in. These figures are to be used to guide staffing decisions at OUC. By hiring to maintain the recommended number of staff with turnover, there is an opportunity to be less impacted when there are staff shortages and when the tenured staff begin to retire.

Table 10 – Recommended OUC Employees - No Turnover[31]

	OUC Employees - No Turnover	
Position Title	**Number of Employees (March 2021)**	**Total Number of Employees**
Shift Supervisors	11	35
Call-Takers	84	74
Dispatcher	103	98
Total ECC Staff	**198**	**207**

Table 11 – Recommended OUC Employees - With Turnover[32]

	OUC Employees - With Turnover	
Position Title	**Number of Employees (March 2021)**	**Total Number of Employees**
Shift Supervisors	11	38
Call-Takers	84	81
Dispatchers	103	107
Total OUC Staff	**198**	**226**

The staffing model above assumes the following:

- 12-hour shifts
- An operational model using dedicated call-takers
- Dedicated shift supervisors who are not tasked with answering calls or dispatching units, or relieving call-takers or dispatchers.
- Supervisors focused on the operations floor to satisfy best practices span of control
- The same number of primary law enforcement and Fire/EMS primary dispatch positions as exists today

Based on Erlang C calculations and the RETAINS formula, the minimum projected communications staff needed in the communications center is 24 (total call-takers, dispatchers, and supervisors) during low call volume periods and 34 (total call-takers, dispatchers, and supervisors) during the peak call volume periods. The projections are shown in *Table 12* and include the fluctuation in staffing needed to best handle the

[31] Source: ***FE*** Analysis
[32] Source: ***FE*** Analysis

reported workload year-round. ***FE*** calculated this minimum projection, using the reported 9-1-1, administrative/ non-emergency call volume and required number of primary dispatch positions. It is important to remember these positions are listed here more as functions and not necessarily as specific employee trained skills (e.g., Fire/EMS and PD dispatcher).

The specific hourly projections allow scheduling within a shift, while the projected averages are to be used to determine total shift staffing needs. For example, if OUC has four squads of 35 people, the averages help schedulers determine the minimum number of people per shift. Inside the shift the 35 people would then be assigned to shift periods and positions (e.g., call-taking, dispatching) based on peak periods. The entire shift of 35 people would only be needed during these peak periods. Another benefit to peak and average projections is that schedulers can use this projection data to adjust for seasonal or event specific fluctuations in workload based on known trends. As previously noted, in March - April 2021 the Operations unit was preparing to roll out a staffing model and scheduling process based on trends and peak periods identified in their ECaTS system. See *Table 12* below for recommend staffing by hour of the day based on OUC's reported workload as determined by the APCO RETAINS calculations.

Table 12 – Recommended Staffing by Hour of the Day[33]

Hourly - All Calls						
Hour	Per Hour for Month	% Per Hour	Call-Takers Needed	Dispatch Needed	Supervisors Needed	Total Positions
0:00	141.9	3.52%	9	14	5	28
1:00	112.8	2.80%	8	14	4	26
2:00	85.3	2.11%	7	14	4	25
3:00	69.0	1.71%	6	14	4	24
4:00	56.7	1.41%	5	14	4	23
5:00	60.9	1.51%	5	14	4	23
6:00	80.6	2.00%	6	14	4	24
7:00	116.7	2.89%	8	14	4	26
8:00	149.7	3.71%	10	14	5	29
9:00	181.8	4.51%	11	14	5	30
10:00	201.9	5.01%	12	14	5	31
11:00	216.5	5.37%	13	14	5	32
12:00	225.7	5.60%	13	14	5	32
13:00	232.4	5.76%	14	14	6	34
14:00	238.6	5.92%	14	14	6	34
15:00	239.3	5.93%	14	14	6	34
16:00	223.6	5.55%	13	14	5	32
17:00	208.5	5.17%	13	14	5	32
18:00	203.4	5.04%	12	14	5	31
19:00	199.5	4.95%	12	14	5	31
20:00	195.5	4.85%	12	14	5	31
21:00	210.5	5.22%	13	14	5	32
22:00	203.3	5.04%	12	14	5	31
23:00	177.8	4.41%	11	14	5	30

Note, these recommendations do not include administrative and any required support/maintenance positions, such as training, QA, systems administrator(s) or technical support for CAD, telephone, and radio.

The staffing projections represent the number of full-time equivalent (FTE) employees needed to staff, at a minimum, five call-taking positions, 14 dispatch positions, and four supervisor positions during all slower periods of the day. During the busier times of the day 14 call-taking, 14 dispatch and six supervisor positions would be needed.

[33] Source: ***FE*** Analysis

A re-evaluation of available statistical call volume and data should be performed bi-annually to validate accuracy in staffing recommendations. Annual audits and calculations should be performed toward tracking with workload fluctuations and to provide support/justification during budget planning when additional staff is needed.

3.3.9 Standards and Best Practices

Key public safety industry organizations recognize the on-going evolution of 9-1-1 requires establishing minimum standards for 9-1-1 center employee training, operations, technology, and facilities.

These organizations include:

- International City/County Management Association (ICMA)
- National Emergency Number Association (NENA)
- Association of Public-Safety Communications Officials – International (APCO)
- International Association of Fire Chiefs (IAFC)
- Commission on Accreditation for Law Enforcement Agencies (CALEA)
- National Fire Protection Association (NFPA)

The specific standards applicable to OUC operation include the following service quality and performance goals in call-taking. These specific standards align with the ODCA Audit request.

NENA-STA-020.1-2020, 9-1-1 Call Answering Standard, states, "*90% of all 9-1-1 calls arriving at the Public Safety Answering Point (PSAP)*:

- *SHALL be answered within (≤) 15 seconds. Ninety-five percent of all 9-1-1 calls SHOULD be answered within (≤) 20 seconds."*
- *The interval between Call Arrival and Call Answer should be evaluated, at a minimum, for each preceding month using a full month of data. Determining if a PSAP has successfully met the call interval metric of 90% in 15 seconds (and 95% in 20 seconds), should be based upon the one-month evaluation. An authority having jurisdiction (AHJ) may measure this metric on a weekly or daily basis for a more detailed analysis.*
- *"Ninety percent of all 9-1-1 calls arriving at the Public Safety Answering Point (PSAP) shall be answered within ten seconds during the busy hour (the hour*

each day with the greatest call volume, as defined in the NENA Master Glossary 00-001). Ninety-five percent of all 9-1-1 calls should be answered within 20 seconds."

NFPA 1221 (2019) also provides call answering standards, specifically the two answering times to consider are 15 seconds and 20 seconds. Referenced excerpt:

7.4 Operating Procedures.

7.4.1 *Ninety- percent of events received on emergency lines shall be answered within 15 seconds, and 95 percent of alarms shall be answered within 20 seconds. (For documentation requirements, see* 12.5.2*)*

7.4.1.1 *Compliance with 7.4.1 shall be evaluated monthly using data from the previous month.*

7.4.2 *Call processing time shall include the time from call answer to initial notification of the responding ERU(s).*

7.4.3 *Emergency alarm processing for the highest prioritization level emergency events listed in 7.4.3.1 through 7.4.3.2 shall be completed within 60 seconds, 90 percent of the time.*

7.4.3.1 *The following types of calls where there is an imminent threat to life shall be included in the highest prioritization level:*

(1) Trauma (penetrating chest injury, GSW, etc.)
(2) Neurologic emergencies (stroke, seizure)
(3) Cardiac-related events
(4) Unconscious/unresponsive patients
(5) Allergic reactions
(6) Patient not breathing
(7) Choking
(8) Other calls as determined by the AHJ (Authority Having Jurisdiction)

7.4.3.2 *The following types of calls where significant property loss/damage is likely or actively occurring shall be included in the highest prioritization level:*

(1) Fire involving or potentially extending to a structure(s)

(2) Explosion

(3) Other calls as determined by the AHJ

7.4.3.3 *The following types of calls shall be exempted from the requirements of 7.4.3:*

(1) Joint responses with law enforcement (involving weapons)

(2) Hazardous materials incidents

(3) Technical rescue

7.4.3.4 *The following types of mitigating circumstances shall be exempted from the requirements of 7.4.3:*

(1) Language translation

(2) TTY/TDD

(3) Incomplete location

(4) SMS message to 9-1-1

(5) Calls received from outside the normal area of responsibility and/or service area

(6) Calls requiring use of a PSAP registry or similar tool to determine the appropriate PSAP and/or transfer location

(7) Calls received during a significant disaster that severely and significantly depletes available resources, impacts local infrastructure, and could result in changes to normal dispatcher procedures (disaster mode)

7.4.4 *For law enforcement purposes, the AHJ shall determine time frames allowed for completion of dispatch.*

3.4 Culture

OUC culture has some similarities with other large PSAPs in the United States. The call processing and dispatching are wholly focused on emergencies, with fewer administrative and non-emergency calls. The environment and expectation of staff is centered around the urgent and accurate handling of millions of emergency calls annually. This heightened sense of urgency, and the responsibility of the public and responders' safety exacts an emotional toll on OUC staff. Distinctive factors of OUC culture include a unique community in the District, as both a large metropolitan city and as the nation's capital.

Community influences on OUC culture include the international diversity of the residents, commuters and transient populations, and tourism. The culture and impacts of the community are reflected in the workforce, with many of the staff residing in the community where OUC is located while performing in this highly stressful environment for three or four decades. The decades length of service and depth of experience are unique to OUC and having a predominantly older tenured staff brings a stronger sense of community to the operations floor.

In ***FE***'s experience it is common to have a small number of staff nearing retirement, a larger number of staff with one-to-five years of experience, and a lesser amount with five-to-fifteen years of experience. There is value to the operation of OUC to have this unusual long-term employee depth; however, it is not by design nor is it entirely due to a loyal workforce. The reason for the longevity, as shared by staff, is the lack of a suitable retirement plan. As the pay and classification (rank, title, or role) and benefits are not part of this Audit scope, ***FE*** recommends a separate assessment be conducted to address retirement. There is no industry standard regarding length of service; however, the ability to maintain the pace and endure the stress of this type of emergency call center career is known to diminish over time.

Other cultural impacts include the results of call-takers and dispatchers working without direct supervision. Operations staff (call-takers and dispatchers) have become accustomed to performing without consistent and direct oversight. This autonomy creates independence and stronger skillsets in some, while creating stress, inconsistencies, and habitual errors, in others. This lack of consistent and present oversight has created a culture in which cliques, bullying, and uncorrected inappropriate behaviors exist. Anecdotal information from operations staff indicates that the supervisory staff may participate in and facilitate these behaviors.

There are some negative cultural impacts from the relationship between FEMS responders and FEMS dispatchers. ***FE*** monitored FEMS radio traffic for three days via programmed radios outside OUC. The FEMS talkgroups/channels are not encrypted and open to public monitoring by those that have programmed radio equipment or scanners. This monitoring revealed in some cases demeaning and unprofessional verbal mistreatment by the responders toward the dispatchers. As such, it should also be noted that ***FE***'s review of sample calls revealed questionable procedural issues from both FEMS dispatch staff as well as responders.

It is important to note that the administration of FEMS and OUC are aware of the operational and relationship issues between the organizations, and the impact on the culture that the FEMS dispatchers work in. The FEMS Chief of Staff and the Interim Director of OUC are working closely together to identify and improve the relationship and

professionalism of interactions between the FEMS responders and dispatchers. An anticipated outcome will be a positive impact on the culture in the FEMS dispatch area and staff in OUC.

FE was unable to monitor MPD radio traffic outside of observation periods in OUC because the MPD radio talkgroups are encrypted. That said, no disrespectful or unprofessional speech was heard during the MPD dispatch observation period.

Positive cultural impacts should also be the outcome of adding direct, dedicated, and well-developed supervision. Alert supervision is critical in a PSAP as it provides support for staff either upon request or upon detection of an issue. The current practice of having one or two supervisors focused on administrative tasks leaves no opportunity to interact with operations staff, nor time to dedicate to monitoring calls or dispatches.

In addition to alert supervision, the QA program must be an integral part of the operational oversight as it should help the operations management team identify and resolve issues. There is a gap in the communications, tracking, and follow up, between the QA and Operations Management. This appears to result in having staff left to look after themselves or do what they want or continue unchecked bad habits and practices. The information provided shows no immediate feedback regarding work product and customer services, and most importantly, no immediate consistent resource available for support on the floor.

Culture is shaped from the top down and from peer relationships. The relationships overall among the divisions of Operations, OPSD (training and QA), and Information Technology, are cordial, but not cooperative. There are gaps in the current configuration, such as between QA and Operations. There are also residual issues from the management style and reported conflict around a former Operations Manager. While this information was shared as anecdotal, it was a prevalent notion and one that continues to create misalignment among divisions.

Lastly, there is a cultural impact from the provisioning and configuration of the CAD system and the inconsistent use of Location Determining Technologies (LDTs). The cumbersome CAD event entry process and the inconsistent use of the LDTs to locate callers are primarily operational issues, however the culture is fed by the work environment and the tools. The OUC work environment is lacking oversight, mentorship, and guidance. The tools are not trusted and therefore not used with consistency. The impact on the staff is that call-takers are working within complex systems and tools which they perceive as ancillary or not trustworthy. Operations staff are left without direct and consistent guidance in the call handling process that is supposed to be guided by scripted protocols. They are also left to aggressively interrogate callers for locations without the

confidence in the LDTs available to them. They are also stymied by the complexity of the call event entry process in CAD that is weighed down and slowed by the exorbitant number of event types and associated priorities. Added to the lack of consistent and present supervision, these technical factors set the call-takers and dispatchers up for failure.

Operations is being driven by technology when technology should be driven by operations.

3.5 Technological Capabilities

One of the primary call-taking tools is a map integrated and/or interfaced with the CHE and/or the CAD system. Like PSAPs across the country, most emergency calls are received from wireless devices. In test calls performed by the ***FE*** team, and observed call-taking, there appears to be a high degree of accuracy in the longitude and latitude (also known as X/Y coordinates) location data received and plotted on the CHE map at initial call answer. As detailed in *Section 3.2 Training and Quality Assurance*, *Sub-Section 3.2.1.1* the call-takers are unfortunately conditioned not to trust the map data and are therefore relying on querying the caller for location information. This lengthens the call-taking process.

Along with the map, the call-takers will reportedly have access to RapidSOS which is an application that can pinpoint the location of a phone. For example, RapidSOS technology is like that used by Uber to locate riders and what Domino's Pizza utilizes in locating delivery sites. The use of RapidSOS, or other applications not integrated with the CAD or CHE is not automatically documented in the call processing effort. These applications are known as Location Determining Technologies (LDTs) and are designed and intended to augment the caller location plotting at call answer. As a call-taking tool, LDTs assist in identifying a caller's location quickly. LDTs are not yet commonly integrated in CAD systems, so they are used as stand-alone applications that do not update CAD when they are used. Updating CAD with the location data is done manually currently in OUC and many other 9-1-1 centers. OUC Chief Information Officer (CIO) shared plans to interface/integrate the RapidSOS application with the CAD system. This will allow tracking or documenting the use of the LDT.

During observations of call-takers and during sampling of call reviews it appeared as if the LDTs were not consistently used to locate callers. ***FE*** did not observe any use of the LDTs and was unable to verify the frequency of use of RapidSOS or other LDTs in the reviewed calls because this is not documented or captured in the CAD. In listening to the recordings of the sample calls, in most cases LDTs were not used to determine a caller's

location. Call reviews that contained confused callers or callers that could not express their location were clearly not subjected to the use of LDTs as the call-takers simply continued to query the caller to try to find a correct location. This is problematic as the LDTs are the most accurate resources for this information.

The data collected by call-takers and dispatchers in call handling and dispatching is entered, altered, stored, and distributed, in and by the CAD system. The CAD system is mission critical technology that must operate without interruption 24/7/365. OUC maintains use of the CAD around the clock and has procedures in place to allow operations to continue in the absence of a CAD system due to failure. The system can allow offline entry of data and allows a catch up of data via data entry after the system is brought back online. This is consistent in all modern PSAPs with modern CAD systems.

The future capabilities of OUC and other PSAPs will include Next Generation 9-1-1 (NG9-1-1) features and functions that will enhance the ability to locate callers. Some of the relevant enhancements available in NG9-1-1 are:

- The capability to process of all types of emergency calls, including voice, data, and multimedia information.
- The acquisition and integration of additional emergency call data useful to call routing and handling like LDTs.
- The network components and data interoperability between and among PSAPs to share data and improve the routing of emergency calls.

OUC is actively working with the adjacent states toward the data interoperability and IP-capable systems and network components necessary to advance a regional approach to the transition to NG9-1-1.

3.5.1 Handling Issues in the Anacostia and Potomac Rivers

As described, there are several tools that support call-taker efforts to locate callers or the incidents they are reporting. These tools include the initial answer Automatic Number Identifier/Automatic Location Identifier (ANI/ALI), which is data delivered by the telephone company with the voice call on 9-1-1. For wireless (cell phone) 9-1-1 calls, the ANI/ALI is fairly accurate; however, use of RapidSOS products increases the accuracy of locating a caller when they are not able to confirm their location, or the location of the reported event. The ANI/ALI data contains data from a Master Street Address Guide (MSAG) that includes the Emergency Services Zone (ESZ). The ESZ is preset with which law, fire, and

medical agency/jurisdiction responds to that location. For addresses inside the District, the ESZ indicates MPD and FEMS.

As detailed in *Section 3.6, GIS Data Review*, the Geographical Information System (GIS) data, address points, and attributes, are accurate and appropriately maintained. This data includes all waterways, water features and attributes such as marinas, boat ramps and docks, markers, and address points associated with landmarks along the waterways. This data is coupled with the ESZ within the CAD to pinpoint locations and which agency(ies) respond to law, fire, and medical events.

Proper use of these tools allows a call-taker to identify the location of a caller or event on land or water in the District. The tools in place in OUC, if used, greatly enhance the call-taking process.

There are callers who simply do not know where they are or where an event is taking place. These third-party callers may be on the scene and just cannot provide an address, or they may be relaying on second-hand information from another location. In many cases, it is common for distressed or confused callers to misrepresent where they are calling from or a location they are calling about. A distressed or confused caller has significant impact on the call-taker's ability to verify a location especially if the call-taker is not relying on the technology at hand. This explanation applies to the Audit question about locating callers on waterways because there is far less signage or landmarks for a caller to use to advise of a location.

3.5.2 Use and Efficiency of Scripted Protocols

OUC uses a scripted call handling protocols system called Criteria Based Dispatch (CBD). This system provides scripts to guide call-takers in querying callers for information such as location of an event, type of event and response needed, and scene safety issues. CBD also guides the administration of pre-arrival instructions as determined by the call type, e.g., law, fire, or medical. Like other scripted protocol systems, CBD questions are designed to align with a Chief Complaint (event type or call purpose) in CAD.

For example, a caller may report a vehicle accident with the airbag deployed, from which the call-taker would begin a CAD event by identifying the location of the crash and assigning the CAD event a Chief Complaint for a vehicle accident with injuries. The call-taker would then follow the scripted questions to determine injury, extent of injury, how many persons, entrapment, fuel spill, and so on. The scripted protocols also enable call-takers to provide instructions germane to the situation and may include:

- Medical direction
- Building evacuation
- Caller safety issues
- In the case of a crime scene, forensic preservation of evidence

An example of how scripted protocols are applied would be for a call where a person is not breathing. In this example a call-taker would use the scripted protocols to guide the caller to perform Cardio-Pulmonary Resuscitation (CPR). The scripted protocols give step-by-step instructions that the call-taker conveys to the caller. In critical medical emergencies the call-taker must stay on the line with the caller until the medics arrive.

The effectiveness of a scripted protocol system depends on the proper application of the script within the call handling process. Without appropriate application, oversight, and QA of the use of the protocols, the system is unsuccessful in rendering critical pre-arrival instructions.

FE found inconsistencies in the application of the protocols in the call-taking processes observed on site, in its review of the 72 sample calls, and in the review of the high priority events detailed in *Section 3.7, Internal Investigations*.

In at least 27 of the 72 sample call reviews ***FE*** found evidence of call-takers adlibbing or improvising, and clearly not following the script. This adversely impacts the uniformity and detail of information acquired from callers. Improvising occurs in the absence of a structured protocol interrogation query and often results in acquiring unnecessary information, which is not germane to the event, and in missing critical information that may impact the safety of the caller and the responders. It can also impede timely dispatch of resources and impact appropriate prioritization of the call which also places the public and responders at risk.

The scripted protocols are launched as an interfaced application to the CAD system. When a call-taker initiates an event (begins call entry in CAD), the CBD script appears in a separate window prompting the call-taker to begin the query. CBD allows for discretion by the call-taker whether to follow the script exactly (for high acuity, low frequency events), or to use their discretion for some of the questions based on what a caller may have already volunteered. It was clear in observations and call reviews that unnecessarily deviating from the script by discretion and improvising are common.

By OUC policy, the first question a call-taker asks of a caller is “Where is the emergency?”. ***FE*** observed call-takers were not consistently using the LDTs, so most call

locations are determined via the outmoded caller interrogation and verification of the entered event location.

As an example, Event #F210002651 a Motor Vehicle Accident (MVA) on a freeway was reported by a caller who did not know which freeway they were on. The interrogation went on for several minutes querying the caller whereas a check of the Wireless Service Provider's (WSP's) displayed X/Y coordinates showed that the caller was on or near the I-695 freeway. This plotted location would have shortened the call processing time as well as the subsequent response times.

The following CAD entry excerpt in *Figure 2* captures the initial call receipt that includes X/Y coordinates of the referenced caller highlighted in yellow.

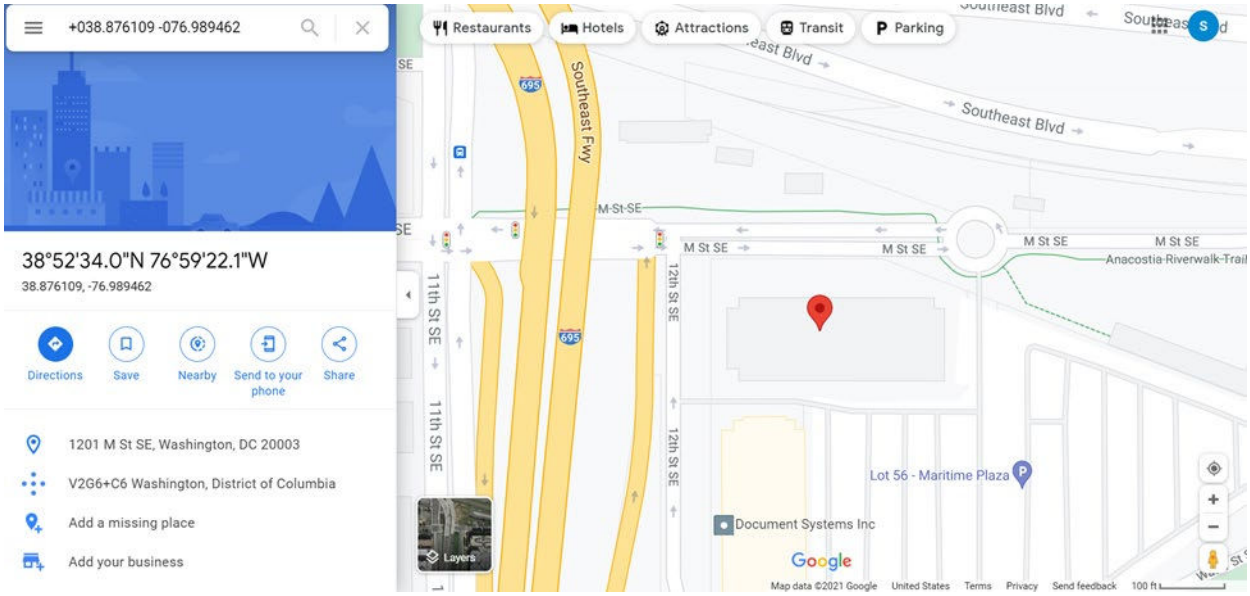
Figure 2 – X/Y Coordinates Excerpt[34]

01/05/2122:14:02	c113	0	- **Phone** -, **Lat**: +038.876109, **Lon**: -076.989462, **Call ID**:20210105000099202 58
01/05/2122:18:41	c113	29099635	- **Call Source**: ANI/ALI, **Caller Name**: , **Caller Phone Number**: - -, **Caller Address**: 1201 M ST SE DC: @MARITIME PLAZA 1
01/05/2122:18:41	c113	29099635	-076.989462 +038.876109
01/05/2122:18:42	c113	29099635	- **Type**: MVAUNKNOWN - ACCIDENT UNKNOWN INJURIES - CALLERPASSERBY, **Location**: I695 WB DC: @I695 WB/8TH ST SE, **Agency**: DCFEMS, **Group**

[34] Source: Washington D.C. Office of Unified Communications

The following Google Maps screenshot illustrating the X/Y coordinates plotting the location of the caller as being close to I-695. This would be how and where OUC map would have plotted this location as well.

Figure 3 – Plotted X/Y Coordinates[35]



Also, by OUC policy through the scripted protocols, the call-taker is to ask for caller or event information that includes apartment numbers. There were several observed instances of addresses where apartment numbers were either not collected, not entered in CAD, or not relayed to responders correctly or at all.

3.5.3 Translation/Interpreter Services (Language Line Solutions®)

In the sampling of 72 calls reviewed, there was one Spanish speaking caller who required the assistance of the Language Line® translation services. The Language Line is a commonly used service across the country in 9-1-1 centers. Access to a translator required the call-taker to add a third number to the line and key in or make selections based on the account number of OUC, the language requiring interpretation, and then wait for an interpreter to join the call. In the reviewed call the call-taker manually dialed the Language Line number, then listened to and keyed in selections from multiple prompts. The call type was a disorderly person trespassing on the caller's property. The introduction of the interpreter to the call took approximately two minutes. This lost time could have had a negative outcome if the event had escalated.

[35] Source: ***FE*** Analysis

Call-taker and dispatcher interviews on site, and observations, found several Spanish speaking staff who noted the value of dual languages in call-taking. A separate phone interview with the U.S. Attorney's Office for the District of Columbia found that many of the domestic violence cases involving Spanish speaking victims required use of the Language Line service in the initial 9-1-1 call. In the experience of the U.S. Attorney's Office the recordings of 9-1-1 calls that they must review when handling cases reveal a cumbersome, time consuming, and manual procedure that adds minutes to the call handling process. ***FE*** recommends that OUC engage the Language Line, and other online interpretation services, to seek a more automated way to gain access to interpreters for call-takers to use when assisting the non-English speaking callers.

3.5.4 CAD Impact on Call-taker and Dispatcher Performance

The adoption of the CBD system was accompanied by an increase in the number of call/event types, referred to as Chief Complaints. It was reported that there are over 270 Chief Complaint types each for Fire and medical, and over 250 Chief Complaint types for law enforcement. This complex list contains many similar Chief Complaints and associated priorities making it difficult and time consuming for a call-taker to make an appropriate selection and continue with gathering other pertinent information for the event.

Associated with each Chief Complaint are variations of priority. For example, a domestic assault may be a Priority 1 if it is in progress, a Priority 2 if just occurred and the assailant may still be in the area, or a lower priority if the caller is reporting a past event and does not require medical attention. Every Chief Complaint has with it a series of associated priorities. This association is appropriate and necessary; however, a significant number of Chief Complaints are configured in the CAD system to default to Priority 2. Upgrading any event to a Priority 1 event, such as high acuity/low frequency events, is required of the call-taker. This adds a step to the call handling process for these high stress events. It is more appropriate to have any event that could be reported as life threatening to have the default priority of 1. The call-taker could then downgrade the event based on the information gathered in the call process. This aligns with the level of urgency associated with calls that could range from urgent to informational.

While on site at OUC, ***FE*** was advised that OUC Operations is in the process of reducing the variations and permutations to a more manageable set of Chief Complaint types. There is not an identified target number for the reduction or a timeframe for completing this initiative. ***FE*** recommends OUC Administration direct OUC's CIO and OPSD to develop a plan, implementation timeline, and associated training materials, toward the completion of this initiative.

3.6 GIS Data Review

3.6.1 Methodology

The GIS portion of this report focuses on the road centerline, address point, and boundary data along with non-spatial tabular data in the form of the Automatic Location Identification (ALI) data and Master Street Address Guide (MSAG) for the District of Columbia. The assessment uses several tools, including analysis tools utilizing Environmental Systems Research Institute (Esri) ArcGIS Desktop tools to perform the queries and analysis.

A physical analysis was performed of the data provided. The analysis reviewed all the data for attribute and spatial accuracy and completeness. The data was also reviewed for Next Generation 9-1-1 (NG9-1-1) readiness. This is critical to OUC's transition to NG9-1-1 and the core services that will allow for data interoperability across the National Capital Region (NCR) and beyond. For GIS data used for Next Generation 9-1-1 (NG9-1-1) spatial call routing, according to the NENA informational document 71-501 v1 – *Synchronizing GIS with MSAG and ALI,* data, the GIS, MSAG and ALI should be synchronized to 98% to meet requirements for NG9-1-1. This document was utilized as the guiding precepts for the analysis.

3.6.2 Current Information and Analysis

The existing GIS data model for OUC is not mapped to the NENA-STA-006.1.1-2020 - NENA Standard for NG9-1-1 GIS Data Model for NG9-1-1; however, this will not be an issue as the data can be translated into the NENA data model for use in Next Generation Core Services (NGCS). This translation process could be performed using Extract, Transform, and Load functions (ETL) to copy data from OUC GIS database into a NENA standard format database. This common GIS practice uses the NENA-STA-004.1-2014 – NENA Next Generation United States Civic Location Data Exchange Format (CLDXF) process to create consistency during translation from OUC data model to one for use in Next Generation Core Services (NGCS).

Table 13 shows GIS data provided by OUC. This shows all GIS data sets, the number of records within each data set, and the number of records that were processed in the analysis of the GIS data.

Table 13 – OUC Provided GIS Data[36]

GIS Data Sets	Number of Records	Number of Records Analyzed
Address Points	145,206	145,206
Road Centerlines	15,805	15,805
MSAG	1,943	1,937 *
ALI	216,812	216,812
PSAP Boundary	3	3
Provisioning Boundary	1	1
Law Boundary	3	3
Fire Boundary	3	3
EMS Boundary	3	3

*Note: records related to VoIP Call, Wireless Call, Foreign Exchange, Information Requests, and those listed as D-E-F-A-U-L-T were removed from the analysis because they do not represent a street within Washington, DC.

Table 14 shows a representative sample of issues found while making comparisons of datasets provided by OUC. From the example query and analysis there are a few items that may appear to be issues; however, a further review of the data reveals the issues noted are not problematic. The sections that follow *Table 14* provide details about each of the GIS data sets. Within each section are explanations about the issues found (Issues Count), and how or if the issues are resolved.

Key to *Table 14*:

Road Centerline – Physical center of roadways

Road Segments – Portion of road

Parity Left or Right – Do the house numbers match the correct side of the road (odd or even, sequential ordering)

Municipal, County of State Left or Right – Discerns ownership and jurisdiction of roads that span municipal, county, or state boundaries

[36] Source: Washington D.C Office of Unified Communications

Emergency Service Boundaries – Agencies and agencies' jurisdictional or response boundaries

Address Point – Physical address or location of structures

MSAG – Master Street Address Guide Address is a Public Safety database used for the dispatch of emergency first responders

Table 14 – Data Set Comparison[37]

GIS Data Sets Reviewed	# of Issues Found	Types of Issues Found
Road Centerline	1,556	Road Segments with 0-0 in both from and to address fields
Road Centerline	0	Missing value in Parity Left or Parity Right
Road Centerline	0	Missing value in Incorporated Municipality Left or Right
Road Centerline	0	Missing value in County Left or Right
Road Centerline	0	Missing value in State Left or Right
Address Points	0	Missing House Number
Address Points	0	Missing Street Name
Address Points	0	Missing Street Type
Address Points	0	Missing Incorporated Municipality
Address Points	0	Missing County
Address Points	0	Missing Country
Address Points	0	Missing State
Address Points	0	Address Points outside Boundary
Address Points	0	Address Points outside PSAP Boundary
Address Points	0	Address Points outside Emergency Service Boundaries
Address Points	1	Duplicate Address Point
Law	0	Missing required attributes
Fire	0	Missing required attributes
EMS	0	Missing required attributes
Provisioning	0	Missing required attributes
PSAP	0	Missing required attributes
Road Centerline/ALI	3499	Road Centerlines without matching ALI record
ALI/Road Centerlines	0	ALI records without matching Road Centerlines

[37] Source: ***FE*** Analysis

GIS Data Sets Reviewed	# of Issues Found	Types of Issues Found
Master Street Address Guide (MSAG)/Road Centerlines	63	MSAG records without matching Road Centerlines
Road Centerline/MSAG	1319	Road Centerlines without matching MSAG record

3.6.2.1 Road Segments With 0-0 in Both From and To Address Fields

Road segments with a 0-0 in both the from and to address fields could represent an issue with the data in relation to geocoding and locating addresses along these road segments. However, further review of the data reveals that most of the road segments do not have an address range on them. They represent road segments such as highway on/off ramps or road segments that do not require address ranges. *Figure 4* contains the sample data depicting road segments with 0-0 in the From and To address fields.

Figure 4 – Sample Referenced Segment Data[38]

Table

DC_Centerline_WGS_v6

OBJECTID_12 *	Shape *	OBJECTID	DIRPRE	FEANME	FEATYP	DIRSUF	FRADDL	TOADDL	FRADDR	TOADDR	MUNL	MUNR	CLASS	BLOCKAGE_M	UNIQ
22	Polyline ZM	1592		RAMP I695 WB - I395 NB			0	0	0	0	DC	DC	LOCAL ROAD	256	
40	Polyline ZM	14089		ANACOSTIA	DR	SE	0	0	0	0	DC	DC	LOCAL ROAD	0	
46	Polyline ZM	8871		OBERLIN	AVE	SW	0	0	0	0	DC	DC	LOCAL ROAD	0	
49	Polyline ZM	15237		UPPER SERVICE	RD	NW	0	0	0	0	DC	DC	LOCAL ROAD	0	
64	Polyline ZM	13063		I395		NB	0	0	0	0	DC	DC	INTERSTATE	1	
65	Polyline ZM	13678		I295		SB	0	0	0	0	DC	DC	INTERSTATE	1	
70	Polyline ZM	15282		I66			0	0	0	0	DC	DC	INTERSECTION	1	
76	Polyline ZM	15650		THELMA JONES	WAY	SE	0	0	0	0	DC	DC	LOCAL ROAD	0	
95	Polyline ZM	7975		CEDAR	DR	SE	0	0	0	0	DC	DC	LOCAL ROAD	0	
97	Polyline ZM	13684		I395		NB	0	0	0	0	DC	DC	INTERSTATE	256	
113	Polyline ZM	14952		INDEPENDENCE	CT	SE	0	0	0	0	DC	DC	LOCAL ROAD	0	
138	Polyline ZM	14082		I395		NB	0	0	0	0	DC	DC	INTERSTATE	256	
148	Polyline ZM	14408		PERSIMMON	ST	SE	0	0	0	0	DC	DC	LOCAL ROAD	0	
159	Polyline ZM	12567		INDEPENDENCE	AVE	SW	0	0	0	0	DC	DC	MAJOR ROAD	1	
162	Polyline ZM	13270		EAST BASIN	DR	SW	0	0	0	0	DC	DC	LOCAL ROAD	0	
178	Polyline ZM	745		G	ST	NE	0	0	0	0	DC	DC	LOCAL ROAD	0	
179	Polyline ZM	15029		I295		NB	0	0	0	0	DC	DC	INTERSECTION	256	
220	Polyline ZM	74210		CRISPUS ATTUCKS	CT	NW	0	0	0	0	DC	DC	LOCAL ROAD	0	
225	Polyline ZM	15243		ROCK CREEK AND POTOMAC	PKWY	NW	0	0	0	0	DC	DC	MAJOR ROAD	0	
229	Polyline ZM	15563		OBSERVATORY	CIR	NW	0	0	0	0	DC	DC	LOCAL ROAD	0	

1 (1556 out of 15805 Selected)

DC_Centerline_WGS_v6 | DC_AddressPts_v1_Clip_WGS

[38] Source: ***FE*** Analysis

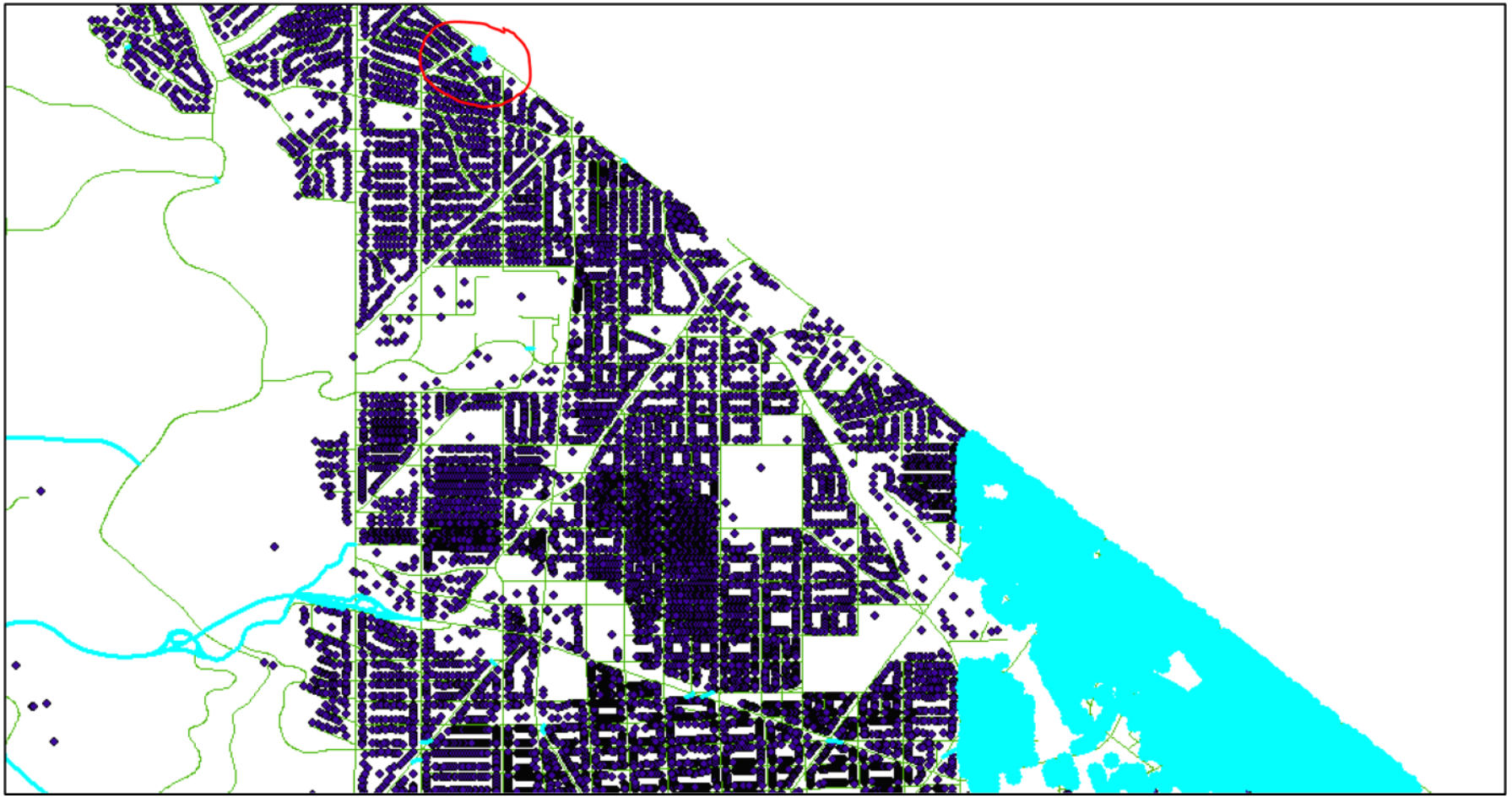
3.6.2.2 Address Point Duplicates with Mismatched Attributes

A Suffix Direction is North, South, East, or West, or a combination such as North East or South West. In street addressing it is placed as a suffix to an address and is displayed and used in an abbreviated format, such as 123 Main Street SE. The District is administratively divided into four quadrants, NW, NE, SW, and SE. The street and number addressing radiates out from the Capital into each of the quadrants. This has created multiple intersections of identically named cross-streets in each quadrant.

To discern identically named intersections, the quadrant is added to the address. The use of identical street names and intersections is not entirely unique to the District as the City of Atlanta, Georgia is also administratively divided into quadrants. The addressing is handled similarly by adding a unique identifier, such as a Suffix Direction, to a street address.

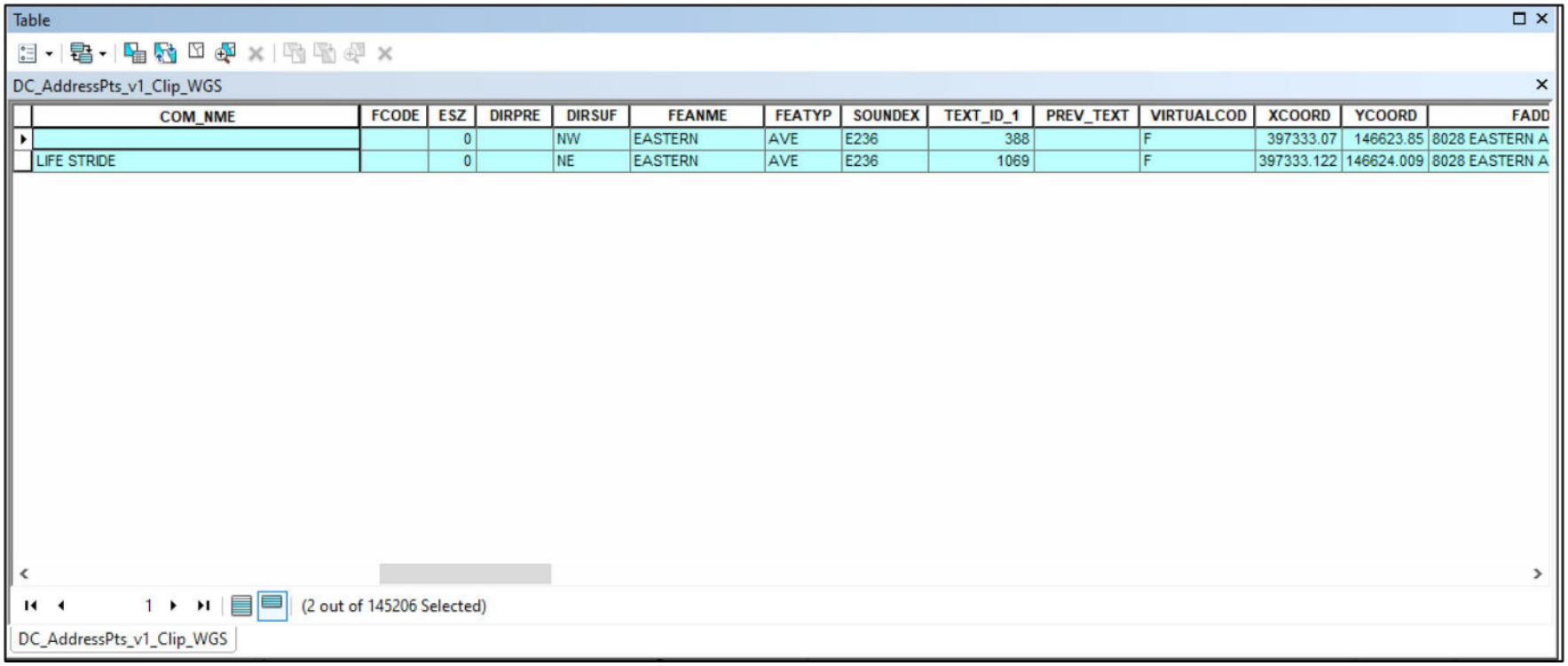
While comparing Suffix Direction, one address point in the North West quadrant of the city appears to have a North East Suffix Direction. Further review shows that there is a duplicate address point at this location with mismatched information. One record in over 145,000 address points with an issue is a minor issue and can quickly be resolved. *Figure 5* depicts the one address point in the North West quadrant that appears to have a North East suffix. *Figure 6* shows the duplicate address point with mismatched information.

Figure 5 – The One Suffix Issue[39]



[39] Source: ***FE*** Analysis

Figure 6 – The One Duplicate Address[40]



COM_NME	FCODE	ESZ	DIRPRE	DIRSUF	FEANME	FEATYP	SOUNDEX	TEXT_ID_1	PREV_TEXT	VIRTUALCOD	XCOORD	YCOORD	FADD
		0		NW	EASTERN	AVE	E236	388		F	397333.07	146623.85	8028 EASTERN A
LIFE STRIDE		0		NE	EASTERN	AVE	E236	1069		F	397333.122	146624.009	8028 EASTERN A

[40] Source: ***FE*** Analysis

3.6.2.3 Road Centerlines Without Matching ALI Record

Analysis revealed 3,499 records within the Road Centerline data without a matching record in the ALI database. The road centerline and ALI databases typically do not ever have a one-to-one match because there will be roads within the GIS data that do not have a matching record in the ALI database. This is not an issue that would affect the use of both data sets; however, it is also good information to be aware of for future review of data.

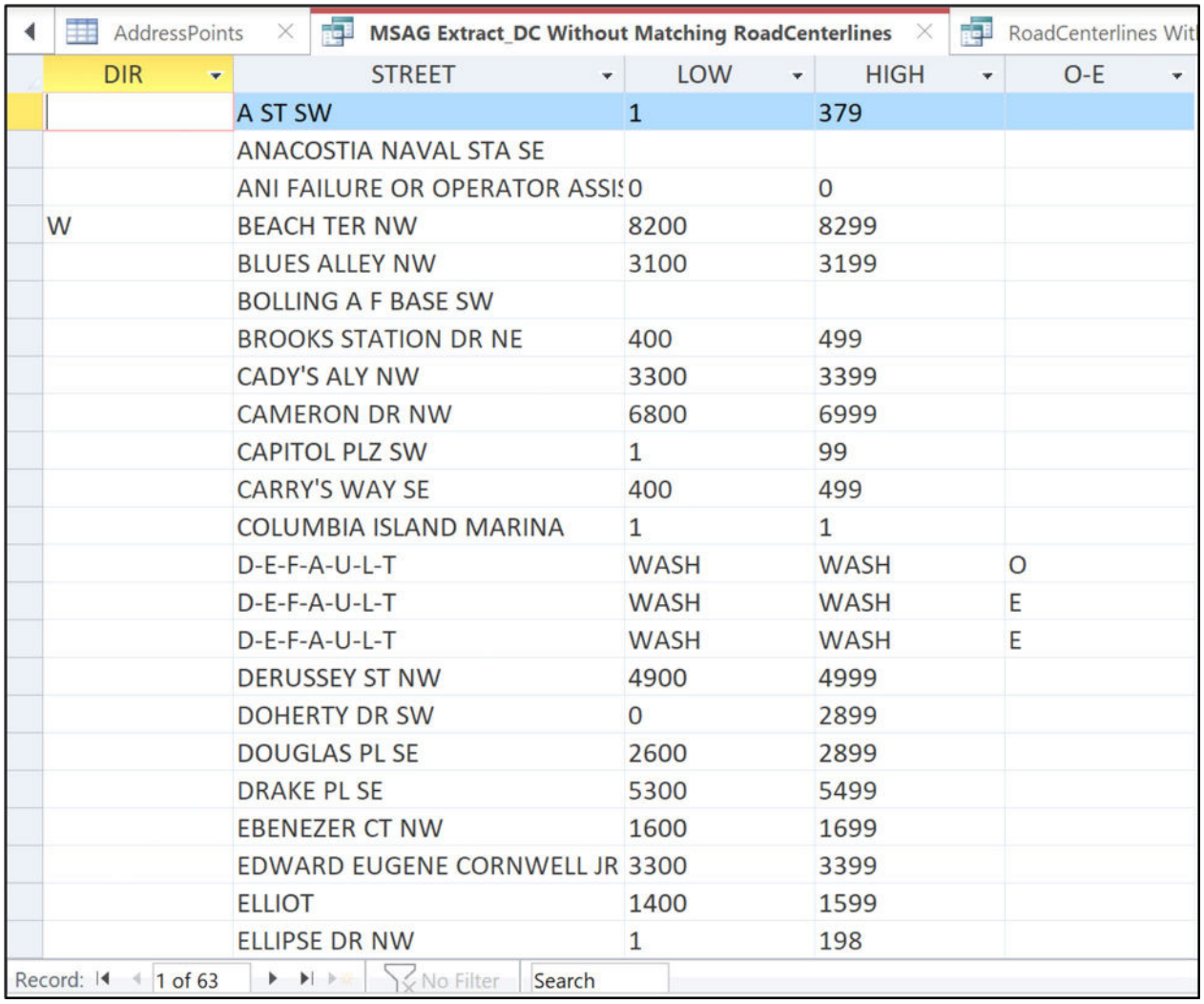
3.6.2.4 ALI Records Without Matching Road Centerlines

ALI records without matching Road Centerlines would highlight discrepancies between the two datasets. If an ALI record exists without a matching centerline the civic location may not properly geocode. ***FE's*** analysis showed that there are no mismatches.

3.6.2.5 MSAG Records Without Matching Road Centerlines

Analysis showed 63 records in the MSAG that do not match road centerlines. This is a minor number of anomalies but one which should be corrected for consistency across all datasets. The example shown in *Figure 7* is A St SW in the MSAG and A Rd SW in the GIS data for the address range. Each record should be reviewed and resolved, if possible.

Figure 7 – MSAG Records Without Matching Road Centerlines[41]



AddressPoints | MSAG Extract_DC Without Matching RoadCenterlines | RoadCenterlines Wit

DIR	STREET	LOW	HIGH	O-E
	A ST SW	1	379	
	ANACOSTIA NAVAL STA SE			
	ANI FAILURE OR OPERATOR ASSI	0	0	
W	BEACH TER NW	8200	8299	
	BLUES ALLEY NW	3100	3199	
	BOLLING A F BASE SW			
	BROOKS STATION DR NE	400	499	
	CADY'S ALY NW	3300	3399	
	CAMERON DR NW	6800	6999	
	CAPITOL PLZ SW	1	99	
	CARRY'S WAY SE	400	499	
	COLUMBIA ISLAND MARINA	1	1	
	D-E-F-A-U-L-T	WASH	WASH	O
	D-E-F-A-U-L-T	WASH	WASH	E
	D-E-F-A-U-L-T	WASH	WASH	E
	DERUSSEY ST NW	4900	4999	
	DOHERTY DR SW	0	2899	
	DOUGLAS PL SE	2600	2899	
	DRAKE PL SE	5300	5499	
	EBENEZER CT NW	1600	1699	
	EDWARD EUGENE CORNWELL JR	3300	3399	
	ELLIOT	1400	1599	
	ELLIPSE DR NW	1	198	

Record: 1 of 63 | No Filter | Search

[41] Source: ***FE*** Analysis

3.6.2.6 Road Centerlines Without Matching MSAG Record

Analysis showed 1,319 road centerlines without matching MSAG records. The road centerlines must answer the same questions as the MSAG. This analysis indicates that there are roads that do not have an MSAG record. The centerline file may contain roads not reflected in the MSAG, such as on/off ramps, non-addressed or navigable roads. Although this is not a critical issue, it may indicate new development not reflected in the MSAG and may impact the effective routing of calls.

Figure 8 contains a sample list of Road Centerlines Without Matching MSAG Record

Figure 8 – Road Centerlines Without Matching MSAG Record[42]

Table

DC_Centerline_WGS_v6

OBJECTID_12 *	Shape *	OBJECTID	DIRPRE	FEANME	FEATYP	DIRSUF	FRADDL	TOADDL	FRADDR	TOADDR	MUNL	MUNR	CLASS	BLOCKAGE_M	UNIQ
3851	Polyline ZM	13172		A	RD	SW	100	298	101	299	DC	DC	LOCAL ROAD	0	
1416	Polyline ZM	14906		A	ST	NE	200	214	201	217	DC	DC	LOCAL ROAD	0	
10027	Polyline ZM	6609		A	ST	NE	216	298	219	299	DC	DC	LOCAL ROAD	0	
13076	Polyline ZM	5688		A	ST	NE	300	348	301	349	DC	DC	LOCAL ROAD	0	
6602	Polyline ZM	14900		A	ST	SE	300	348	301	349	DC	DC	LOCAL ROAD	0	
14889	Polyline ZM	<Null>		A	RD	SW	300	398	301	399	DC	DC	LOCAL ROAD	0	
11437	Polyline ZM	14752		A	ST	NE	350	398	351	399	DC	DC	LOCAL ROAD	0	
7995	Polyline ZM	11443		A	ST	SE	350	398	351	399	DC	DC	LOCAL ROAD	0	
5703	Polyline ZM	5689		A	ST	NE	400	498	401	499	DC	DC	LOCAL ROAD	0	
7948	Polyline ZM	11444		A	ST	SE	400	498	401	499	DC	DC	LOCAL ROAD	0	
8142	Polyline ZM	5690		A	ST	NE	500	598	501	599	DC	DC	LOCAL ROAD	0	
13635	Polyline ZM	11445		A	ST	SE	500	598	501	599	DC	DC	LOCAL ROAD	0	
8584	Polyline ZM	5691		A	ST	NE	600	698	601	699	DC	DC	LOCAL ROAD	0	
15204	Polyline ZM	11446		A	ST	SE	600	698	601	699	DC	DC	LOCAL ROAD	0	

11 (40 out of 15805 Selected)

DC_AddressPts_v1_Clip_WGS | DC_Centerline_WGS_v6

[42] Source: ***FE*** Analysis

3.6.3 GIS Conclusions

In reviewing the GIS data for OUC, a herculean effort has occurred on the part of OCTO's GIS team to meet the requirements for Next Generation 9-1-1 and serviceability within the systems utilized for public safety for Washington, DC. The data meets the requirements needed for spatial call routing.

Previous analysis of data provided by consultants has outlined areas that the GIS staff at OUC need to address. These include overlapping address ranges, and topology issues with gaps and overlaps between neighboring jurisdictions which have been resolved in the data provided for this analysis.

Issues and anomalies that present themselves in the data do not impact the usability of the data within the PSAP. OUC has a policy in place for reporting issues and anomalies found during the handling of 9-1-1 calls.

Previous analysis also showed that the overall health of the GIS data for OUC is close to or exceeds the 98% synchronization outlined in NENA informational document 71-501 v1 – *Synchronizing GIS with MSAG and ALI* data.

FE encourages the GIS team of OUC to continue their business processes as they currently exist. Regular deep analysis of the GIS, ALI, and MSAG data to ensure data is synchronized is also highly encouraged. Using third-party consultants to assist or develop and deploy internal processes to automate data analysis could be beneficial if resources are not available within OUC to build and deploy these processes.

In general, the issues identified with the spatial and non-spatial GIS data are not significant enough to impact E9-1-1 or NG9-1-1 spatial call routing.

Note, calls transferred from adjacent/neighboring jurisdictions are often transferred to 10-digit lines where location information is not portable. The rollout of NG9-1-1 and NGCS will allow for seamless transfer of 9-1-1 calls and data, providing improved opportunities to receive location data. As noted in this review, the GIS data maintained and used by the District, and provided to ***FE,*** has no significant issues, and specifically has no issues with waterways and landmarks.

3.6.4 NG9-1-1 and NGCS

OUC is working with neighboring jurisdictions and states to advance the NG9-1-1 and NGCS for the NCR. The Commonwealth of Virginia and the State of Maryland are in the process of building out their statewide Emergency Services IP Networks (ESInets). These

build outs will have a profound impact on OUC by providing opportunities for data interoperability and shared NGCS. At the time of this Audit OUC CIO was actively participating in planning for a regional approach to NG9-1-1 and NGCS.

3.7 Internal Investigations

3.7.1 Initiating Investigations

In most PSAP environments, there are generally two instances where an investigation occurs.

The first is when a call for service ends in tragedy, usually with the loss of life. High profile situations of this nature may appear in the media and garner a great deal of publicity.

The second instance is the result of a QA review, or an internal observation, wherein it is discovered that standard operating procedures have not been followed, or when the behavior or actions of an employee are observed by a supervisor. This may include a particular procedural issue or an outcome that cast the PSAP, or an employee, in a bad light. Internal investigations of this nature are not typically made public and are resolved within the scope of operations within the PSAP.

Prior to October 2020 the OPSD lacked a consistent method for the capture, packaging, storage, and access, of calls/events that were reviewed for QA or investigative (complaints) purposes. There is an OPSD policy in place that details procedures for conducting and managing investigation findings and actions taken, however prior to October 2020 there were no dedicated staff to manage this process end-to-end.

Since October 2020, the OPSD has been able to leverage the use of a stand-alone application, Quickbase®, to capture, package, store, and access, call/event voice and data by investigation. A change in OPSD administration and the addition of Special Operations and Investigations staff has improved the quality and consistency of the investigative process.

3.7.2 Patterns Uncovered by Investigations

The one dominant issue or common thread in the analysis of calls for service processed by OUC is the issue of accurately identifying the address (or location) of the call for service. As evident in the review of the call samples and in media reports, caller location issues continue to be an ongoing problem for OUC call-taking staff.

As previously noted, the migration to CBD resulted in the creation of over 500 Chief Complaint types for both law-enforcement and FEMS situations. This has unnecessarily complicated the complaint type assignment process resulting in Chief Complaint selection errors in the scramble to get high-acuity/low-frequency calls processed. The selection of an incorrect Chief Complaint has a ripple effect on response including a default to a lower priority. Lower priority calls in a high-volume event environment do not receive the level of attention as do calls of a higher priority and may be overlooked by dispatch staff.

Other issues, such as how a particular emergency service responds to an event, are determined by the emergency service, and are outside the operational purview and control of OUC.

3.7.3 Investigations Thoroughly Conducted by Policy

Investigations are conducted by the Office of the Chief of Special Operations and Investigations. This office is responsible for managing special projects that include but are not limited to executive investigations, curriculum development and extensive research and data analysis. In the case of OUC, most of the high-profile investigations have been due to situations that have resulted in the loss of life.

FE found established policies in place to ensure that all investigations are conducted in a timely and thorough manner. The addition of the centralized filing process as described in *Section 3.7.1* above has improved the organization and access to complete investigative documentation.

It is the opinion of ***FE*** that investigations are conducted in a thorough and open manner with all aspects of the event in question reviewed in detail. A full report is prepared for each situation along with recommendations for improvement.

As noted, use of Quickbase since October 2020 has greatly improved the organization and accessibility of data associated with call reviews, investigations, and remediation where appropriate.

3.7.4 Soundness of Judgements and Conclusions

It is the opinion of ***FE*** that the judgements and conclusions of the internal investigation processes are sound, and that appropriate efforts have been made to ensure that where appropriate, corrective action has occurred. There is an ongoing effort to identify and resolve internal procedural matters and improve call processing methodologies.

Observations and group interviews with operations and support staff revealed the following issues that directly contribute to the type and frequency of errors revealed in the investigative process:

- A lack of dedicated and present supervision on the operations floor
- A deficient path of communication between Management, OPSD, Operations, and supervisors
- Ineffective lines of communications from supervisors to and from call-takers and dispatchers

Expansion of the development, increased number of supervisors, and addition of formalized lines of communication between OPSD and Operations, will allow more thorough follow up and resolution of QA, remediation, and investigation processes. The result of this effort is expected to improve the overall quality of the processing of high acuity, low frequency events. These high acuity and low frequency events are the types of calls that are at most risk of error due to insufficient supervision.

3.7.5 Sample Incidents

The ODCA provided a list of four high-profile calls for review by ***FE***. These events are detailed in *Sections 3.7.5.1* through *3.7.5.4*. The following areas were examined for each event:

- Incident Summary
- Extent of the Investigation
- Actions Taken
- Information Made Public

Overall, the high-profile calls reviewed appeared to be thoroughly investigated and resolved by OUC's OPSD with appropriate disposition and resolution. ***FE***'s review revealed direct correlations between these high-profile calls and the common issues found in the 72 sample calls reviewed by ***FE***.

These focal issues are:

- Ineffective use of the Location Determining Technologies available to the call-takers to accurately determine and confirm the exact location of incidents

- Ineffective use of scripted protocol questions that result in certain questions being asked out of order or not asked at all
- Improvising or adlibbing questions during call handling resulting in inconsistencies in information collected
- Inconsistencies with the posing of questions regarding scene safety issues that include asking about the presence of weapons, alcohol or drugs, suspect descriptions, and direction of travel
- Inconsistent or ineffective use of the technique of "repetitive-persistence" concerning caller management. (*Note that "repetitive-persistence" is a recognized technique of caller management that involves the call-taker making a repeated request to a caller, along with a reason for the request, that aids in obtaining information during situations when callers are uncooperative.*)
- The provisioning and configuration of the CBD system as interfaced to the CAD system with an excessive number of Chief Complaint/Event types along with pre-assigned associated priorities
- A span of control of supervision that makes it impossible to provide adequate oversight to the floor operation, and no direct discipline monitoring of call-taking, and dispatching
- Incomplete follow up of QA findings, to include employee performance issues and follow up, between OPSD and Operations management. Ongoing perception of inequities in relationships between and among supervisory and operations staff
- Inconsistent customer service to include unprofessional behavior

3.7.5.1 Capitol Cove Marina – Event F200132043

3.7.5.1.1 Incident Summary

This incident was reported to OUC at 17:35 on August 2, 2020, by the FEMS fireboat over the radio to the FEMS dispatcher. The fireboat reported that they had received a call from the Joint Base Anacostia-Bolling in SW quadrant stating that they had received a maritime radio distress call concerning a possible boat collision. The call was coded as a BOATCOL - BOAT-COLLISION event and assigned a high priority (Priority 1). The

location of the incident was reported by the FEMS fireboat as being near Georgetown Waterfront Park. OUC dispatcher incorrectly entered the call location in CAD as the Anacostia Community Boathouse in the 1900 block of M Street, SE and sent additional FEMS units to this incorrect location.

Approximately fifteen minutes after the initial dispatch, the FEMS fireboat located the scene of the collision and reported that three people had fallen overboard and requested additional resources. The fireboat reported the location to be the Capital Cove Marina at the Joint Base Anacostia Bolling. The dispatcher upgraded the coding of the CAD event to be a water rescue (RESWATER) and additional resources were dispatched. Although the call was upgraded, the incorrect location was not, and the additional resources were sent to the wrong location. The FEMS fireboat then corrected the dispatcher and resources were re-routed to the Capitol Cove Marina.

3.7.5.1.2 Extent of the Investigation

This event was thoroughly investigated, and the results of the investigation made public by OUC PIO through press releases to the local media outlets.

3.7.5.1.3 Actions Taken

A thorough review of the circumstances revealed that the dispatcher failed to accurately determine the location of the incident. As a result, it was reported that the employee was counseled appropriately, and was reported to have received remedial training.

3.7.5.1.4 Information Made Public

This incident was reported in detail by The Washington Post[43]. This incident was also discussed on the Kojo Nnamdi radio program that aired on September 2, 2020[44]. The results of the investigation and subsequent efforts to improve the verification of the location of all marine-centric events have all been made public.

[43] Police identify bodies of men found in Potomac River after boating mishap - The Washington Post
[44] 911 In The DMV: When Help Is Not On The Way - The Kojo Nnamdi Show

3.7.5.2 Southern Avenue – Event F200145676

3.7.5.2.1 Incident Summary

This incident was reported to OUC at 15:49 on August 25, 2020, by a female caller who was not at the scene or location of the event. According to CAD entries, the caller reported that her daughter had been shot in the hand, that she was not with her daughter but enroute to her daughter whom she believed was at The True Gospel Church located at 4201 Wheeler Road SE. The mother reported that her daughter was near a liquor store and a car wash. It should be noted that there is a liquor store and a car wash located near the church.

The call was coded as a SHOT-SHOOTING and assigned a high priority (Priority 1). Four minutes into the call, the caller reported that two male suspects had also shot a male in the leg at this same location. It was unclear to the call-taker how the third-party (mother) was receiving this information, e.g., via text or previous call from the daughter.

According to the CAD entries, there was some confusion on the part of the caller concerning the actual location of the incident. The initial dispatch was to 4201 Wheeler Road SE, which is the address of the True Gospel Church. However, shortly after the initial dispatch, the caller reported that the address was 4405 Southern Avenue which is approximately 4.6 miles from the original reported location. There is also a liquor store and a car wash near this location.

Approximately eight minutes into the call, the responders arrived at the Wheeler Road address and the victims were nowhere to be found.

Twelve minutes into the call, the location was changed to 4405 Southern Avenue which is a single unit residence. Responders were redirected and started arriving at the new location about thirteen minutes into the call.

3.7.5.2.2 Extent of the Investigation

This event was the subject of a thorough internal investigation following OUC policy.

3.7.5.2.3 Actions Taken

This case involved a third-party distraught mother reporting that her daughter had been shot. As the mother was not actually on scene, the details of the call were being relayed from a call that was placed to her from her daughter. High acuity events, complicated by

obtaining accurate information from callers who are emotionally elevated, further exacerbate confusion regarding location, as well as what exactly has happened. Events reported by third-party callers are the most difficult calls to identify a location as many third-party callers are not at the scene of the incident. No action was documented.

3.7.5.2.4 Information Made Public

This incident was discussed on the Kojo Nnamdi radio program that aired on September 2, 2020[45].

3.7.5.3 Randolph Place – Event F200149263

3.7.5.3.1 Incident Summary

This incident was reported to OUC at 15:47 on August 31, 2020, by a third-party caller, a delivery driver. The caller reported that a male had been shot in the ankle, and reported his location as 1724 Randolph Street NE. The call was coded as a SHOT-SHOOTING and assigned a high priority (Priority 1).

When responders arrived at Randolph Street NE, the victim could not be located. Two separate officers asked the dispatcher if the correct address might be on Randolph Place NW.

The dispatcher called the reporting party back only to be told the same incorrect address. MPD units independently moved to Randolph Place NW and located the victim and caller.

It should be noted that the caller's cell phone GPS coordinates were reported by the LDT, and placed the caller in the 1700 block of Randolph Place NW. It was clear that the LDT was not used to confirm the location of the caller.

3.7.5.3.2 Extent of the Investigation

This event was the subject of a thorough internal investigation by OUC policy.

3.7.5.3.3 Actions Taken

A thorough review of the circumstances was conducted according to policy. This case was a high acuity event involving a robbery and a shooting. These types of calls are

[45] 911 In The DMV: When Help Is Not On The Way - The Kojo Nnamdi Show

complicated by difficulties in obtaining accurate information from callers who are emotionally elevated, and unsure of their location. As noted above, the LDT available to OUC staff was not used in this call, although a GPS plotting of the Phase II wireless data presented to the call-taker placed the caller exactly where the incident occurred. No action was documented.

3.7.5.3.4 Information Made Public

This information was not made public.

3.7.5.4 Suitland Parkway – Event F200145449

3.7.5.4.1 Incident Summary

This incident was initially reported to OUC at 08:47 on August 25, 2020, by several callers.

The first caller reported that a serious rollover motor vehicle accident had occurred and gave the location as Stirling Parkway across from the Anacostia Station. The caller disconnected before further details regarding injuries could be obtained.

Subsequent callers reported that the event was at Suitland Parkway SE/Firth Stirling Avenue NE, and this was entered into CAD.

About six minutes later, another caller reported this event as being located on the Suitland Parkway near Stanton Road heading away from DC (eastbound towards Maryland) and indicated to the call-taker that an ambulance would be required as there appeared to be an airbag deployment.

Another caller reported that there was smoke coming from the scene and that it appeared there was a vehicle on fire.

Each location and description of the event were entered into CAD. As the information came in, the CAD events were updated and cross-referenced to align duplicate information.

According to CAD entries, an engine was dispatched. The engine advised the dispatcher that they would investigate and advise if further response was needed. In ***FE***'s opinion, due to several errors, this incident was improperly handled by the call-takers, dispatcher, and the responding unit. It appears that the seriousness of this incident, based on the initial callers' interrogation, was underestimated.

The errors that occurred include the following:

- Call-takers improvising and not following scripted protocols,
- Inconsistent and contradictory CAD information entered by call-takers that did not convey what the callers had described
- A responding unit(s) failing to take charge of a call and advising the FEMS dispatcher that they would investigate
- The initial dispatch was unintelligible, with the dispatcher slurring and speaking too fast

3.7.5.4.2 Actions Taken

The internal investigation determined that there was no error made during the processing of this call. As such, there was no reported action taken in this case. This is the only investigation reviewed by ***FE*** where it disagrees with the findings.

3.7.5.4.3 Information Made Public

A complaint was lodged via social media. This incident was briefly discussed on the Kojo Nnamdi radio program that aired on September 2, 2020[46].

[46] 911 In The DMV: When Help Is Not On The Way - The Kojo Nnamdi Show

4. Recommendations

4.1 Technology-Centric Recommendations:

FE recommends that OUC take the following actions:

- Evaluate and reduce the number of event types and associated priorities.
- Streamline the call entry data formatting in the CAD system.
- Assess and improve the integration of the scripted protocols (CBD) into the call handling process.
- Train staff on use of Location Determining Technologies (LDTs) followed by alert supervision and QA to monitor use.
- Configure the work screen landscape of applications to bring the LDT solutions forefront in process and visibility. Do not allow other applications to pop-up in front of the maps and other LDTs displayed on screen.

4.2 Operational Recommendations

4.2.1 Call-Taking Processes

FE recommends that OUC address, through an effective QA process, the following inconsistencies in the call-taking processes:

- Reduce improvising and adlibbing by adhering to the scripted questions in the CBD call processing standard.
- Ensure the complete acquisition and entering of all caller/reporting party information.
- Verify address information as defined in OUC policy. Adapt policy to allow immediate confirmation of location if an exact match is found between caller reported location and LDT map pinpointing of location. This will save time in gathering information.

- Require the use of LDTs to locate a caller that cannot immediately state a precise location of an incident, and in situations where the caller does not know the address of an incident.
- Require apartment numbers to be collected and entered in CAD in the appropriate field and format for dispatch to responders.
- Monitor and encourage a method(s) for selecting the correct Chief Complaint (call type). Note that addressing the technology recommendation of reducing the number of event types (Chief Complaints) and associated priorities will simplify the selection process for the call-takers.
- Improve customer service through QA review and follow up and requiring training and in-service (ongoing education) that addresses tone, inflection, and professional presentation.

4.2.2 Dispatch

FE recommends the addition of an automated dispatch function to the CAD system and the FEMS dispatch process. Automating the broadcast announcement of event type and location, such as “Structure Fire – 123 Main St NW” or “Cardiac Arrest – 321 South Ave NE,” will enhance and improve the ability of the FEMS dispatchers to meet the 60 second notification to units NFPA standard.

4.2.3 Supervision

FE recommends the following actions regarding supervision:

- OUC develop and assign a minimum of three supervisors around the clock on the operations floor with assigned discipline focus on call-taking, MPD dispatch, and FEMS dispatch.
- A fourth supervisor be added as an available resource intended to provide backup to the on-duty supervisors and for the performance of required administrative duties such as evaluations, QA reviews and follow up, scheduling and call outs.

4.2.4 Translation Services

FE recommends the evaluation of the Language Line Solutions® translation services to:

- Determine if there are additional applications that would augment or replace this service.

- Investigate how translation processes are called upon to ensure maximum efficiencies and reduce call processing times through automation.

4.2.5 Cultural Issues

FE recommends implementing the recommendations cited for improving supervision, training, and QA, and thereby improve culture, in the following areas:

- Expand the training and development of supervisors specifically in leadership and soft skills.
- Include refresher or in-service training in call etiquette, professional tone.
- Enforce OPSD policy for returning completed QA reviews and for follow up to ensure the behavior is not repeated.

4.2.6 Quality Assurance

FE recommends the following improvements to established QA/QI processes:

- Improve documentation concerning the completion and follow up of QA reviews with staff.

- Provide timely feedback to staff through the OPSD. Industry best practice requires that QA reviews are completed within a few days of the call occurring, whenever possible, and that feedback be provided to the call-taker as soon as possible thereafter.

- Track corrective behavior outcomes including compliance to protocols and customer service. Ensure any training, action plans, or required coaching is discussed and documented, along with a set time for follow up and conclusion. The consistent methods in this approach will support improved call-taker performance and quality improvement center wide.

- Evaluate and document the results of remediation training efforts.

- Use the quality assurance data to identify training and process gaps and trends throughout the center. Also use this data to create a quality improvement

program that addresses additional training, policy changes, and support for consistent improvement in call-taker performance.

4.2.7 Staffing

FE recommends the following changes to staffing:

- Schedule staffing of call-taking positions according to predictable spikes in call volume over a 24-hour period as outlined in *Table 7* of this report.
- Review the daily break schedule of the MPD dispatchers with a view to maximize staff availability.
- Consider consolidating the back-up dispatcher role to support multiple (two or more) channels rather than a one-to-one assignment.
- Maintain staffing levels as outlined in *Table 15* that includes consideration and staff count to address known and projected turnover as detailed in *Section 3.3.8*.

Table 15 – Recommended OUC Employees - With Turnover[47]

Required OUC Employees - With Turnover	
Position Title	**Total Number of Employees**
Shift Supervisors	38
Call-Takers	81
Dispatchers	107
Total OUC Staff	**226**

4.2.8 GIS

FE recommends that OCTO maintain the current accuracy of GIS data:

- GIS team continues with their current business processes.
- Continue regular in-depth analysis of the GIS, ALI, and MSAG data to ensure synchronization.

[47] Source: ***FE*** Analysis

5. Summary

All OUC divisions are staffed with dedicated, well-intended professionals. The issues that plague the call-taking and dispatch operations are rooted in established processes and habits that can be corrected to improve service to citizens and responders. ***FE*** found that the errors in call-taking, and dispatching are primarily the result of five specific issues:

1. Too few supervisors on the operations floor
2. Workflow and follow up gaps in the QA process
3. Communications and cooperation gaps in and with the Operations unit and OPSD
4. A resistance to the use of helpful technologies such as LDTs
5. A CAD system that has an excessive number of Chief Complaints and associated priorities creating confusion for call-takers when entering an event

It is ***FE***'s opinion that these issues, and others noted in this Audit, can successfully be addressed by following the recommendations provided in this Audit. Highlights of ***FE's*** recommendations include:

1. OUC Administration should expand the number of trained supervisors to allow scheduling of up to five per shift. Focusing at least three of these on duty supervisors on each of the floor disciplines of call-taking, MPD dispatch, and FEMS dispatch.
2. OUC Administration should enforce policies for the review processes between OPSD and Operations to ensure QA reviews are documented from inception through follow up.
3. OUC Administration should enforce communications policies between the CIO, OPSD and Operations in daily operations, training, and technology use.
4. OUC Administration should require OPSD and CIO to work together to develop and implement a focused training initiative for the use of LDTs. Policies for use of LDTs must be enforced and refresher or ongoing training must be added to in-service curriculum.
5. OUC Administration should require the CIO and OPS911 to develop a timeline and work plan for reducing the total number of Chief Complaints and associated

priorities. This effort should include reconfiguring the default priority to Priority 1 for high acuity low frequency event types.

Appendix – Glossary of Terms

9-1-1 Chief of Operations	9-1-1OPS
Address Points	Site or structure point data that have associated information such as house number, street name, postal community, and postal code
Agency Having Authority	AHA
Agency Having Jurisdiction	AHJ
American National Standards Institute	ANSI
ArcGIS	Software provided by ESRI
Association of Public Safety Communications Officials	APCO
Attribute (GIS)	Information about the what, where, and why of GIS data
Attrition	Gradual reduction of a workforce
Automatic Number Identifier/Automatic Location Identifier	ANI/ALI - The telephone number associated with the call origination and the automatic display at the PSAP of the caller's telephone number, the address/location of the telephone and supplementary emergency services information of the location from which a call originates

Call Handling Equipment	CHE - Functional Element concerned with the details of the management of calls. It handles all communication from the caller. It includes the interfaces, devices and applications utilized by the Agents to handle the call
Cardio-Pulmonary Resuscitation	CPR
Chief Information Officer (Chief Technology Officer)	CIO/CTO
Civic Location Data Exchange Format	CLDXF - A set of standard data elements that describe detailed street address information
Commission on Accreditation for Law Enforcement Agencies	CALEA
Computer Aided Dispatch	CAD
Criteria Based Dispatch	CBD
Emergency Call Tracking System	ECaTS
Emergency Communications Center	ECC
Emergency Operations Plan	EOP
Emergency Services IP-Network	ESInet - A managed IP network that is used for emergency services

	communications, and which can be shared by all public safety agencies
Emergency Service Zone	ESZ - A geographical area that represents a unique combination of emergency service agencies (e.g., Law Enforcement, Fire and Emergency Medical Service) that is within a specified 9-1-1 governing authority's jurisdiction
Enhanced 9-1-1 or 9-1-1	E9-1-1 - A telephone system which includes network switching, database, and Public Safety Answering Point premise elements capable of providing automatic location identification data, selective routing, selective transfer, fixed transfer, and a call back number
Environmental Systems Research Institute	ESRI
Erlang-C	A traffic modeling formula used in call center scheduling to calculate delays or predict waiting times for callers
Extract, Transform, and Load	ETL - The general procedure of copying data from one or more sources into a destination system which represents the data differently from the source(s) or in a different context than the source(s)
Family Medical Leave Act	FMLA
Fire and Emergency Medical Services	FEMS

Full Time Equivalent	FTE
Geocoding	Techniques to derive estimates of geographic locations
Geographic Information System	GIS
High Acuity	A term used in the 9-1-1 industry to describe the acute severity of an event. This is applied to high priority situations that have or may cause a loss of life
Incident Command System	ICS
Insurance Services Office	ISO
International Association of Fire Chiefs	IAFC
International City/County Management Association	ICMA
Interoperability (voice or data)	The capability for disparate systems to communicate with one another
IP-Capable	Systems that are capable of exchanging information and data on the internet or other networks
Language Line Solutions	Translation services

Location Determination Technology	LDT - A system which computes the x and y coordinates of a wireless 9-1-1 caller
Management Information System	MIS
Master Street Address Guide	MSAG - A database of street names and house number ranges within their associated communities defining Emergency Service Zones (ESZs) and their associated Emergency Service Numbers (ESNs) to enable proper routing of 9-1-1 calls
Medical Priority Dispatch System	MPDS
Metropolitan Police Department	MPD
Mutual Aid Agreement	Terms under which one party provides resources—personnel, teams, facilities, equipment, and supplies—to another party
National Capital Region	NCR
National Emergency Number Association	NENA
National Fire Prevention Association	NFPA
National Incident Management System	NIMS

Next Generation 9-1-1	NG9-1-1 - An IP-based system comprised of hardware, software, data, and operational policies and procedures that: (a) provides standardized interfaces from emergency call and message services; (b) processes emergency calls, including voice, data, and multimedia information; (c) acquires and integrates emergency call data for call routing and handling; (d) delivers the emergency calls, messages, and data to the appropriate PSAP; (e) supports data or video communications needs for coordinated incident response and management; and (f) provides broadband service to PSAPs.
Next Generation Core Services	NGCS - The base set of services needed to process a 9-1-1 call on an ESInet
Office of Professional Standards and Development	OPSD
Office of the Chief Technology Officer	OCTO
Office of the District of Columbia Auditor	ODCA
Office of Unified Communications	OUC
Project RETAINS	APCO provided tool kit for surveying, calculating, and follow up for staffing projections

Provisioning Boundary	The geographic area of GIS data provisioning responsibility; determines the entity responsible for discrepancy resolutions. These boundaries need to be spatially coincident with all neighboring boundaries to ensure proper call routing and emergency service delivery.
PSAP Boundary	The geographic area of a PSAP that has primary responsibilities for an emergency request
Public Safety Answering Point	PSAP - Entity responsible for receiving 9-1-1 calls and processing those calls according to a specific operational policy
Public Safety Communications Center	PSCC
Quality Assurance	QA
QuickBase	An application development platform
RapidSOS	An emergency technology company providing a direct data link from connected devices to 9-1-1 and first responders
Road Centerlines	Vector line data that represent the geographic center of road
Short Message Service	SMS - A service typically provided by mobile carriers that sends short (160

	characters or fewer) messages to an endpoint
Standard Operating Procedure	SOP
Standards for Public Safety Communications Agencies	SPSCA
Talkgroup	Virtual radio channels created for/by a Trunked Radio Systems (TRS)
Turnover	The act of replacing an employee due to termination, retirement, death, interagency transfers, and resignations
U.S. Department of Homeland Security	USDHS
Voice over Internet Protocol	VoIP - A technology that permits delivery of voice calls and other real-time multimedia sessions over IP networks
Watch Commander or Assistant Watch Commander	Supervisor
Wireless 9-1-1	The delivery of a wireless 9-1-1 call with Phase I requirements plus location of the caller within 125 meters 67% of the time and Selective Routing based upon those coordinates
Wireless Service Provider	WSP

X/Y Coordinates	Longitude and Latitude

Agency Comments

On September 20, 2021, we sent a draft copy of this report to the Office of Unified Communications (OUC) for review and written comment. OUC responded with comments on October 7, 2021. Agency comments are included here in their entirety, followed by ODCA's response.

GOVERNMENT OF THE DISTRICT OF COLUMBIA
Office of Unified Communications

Muriel Bowser
Mayor

Cleo Subido
Interim Director

October 7, 2021

Kathleen Patterson
Auditor
Office of the District of Columbia Auditor
717 14th Street, NW, Suite 900
Washington, DC 20005

RE: Agency Responses to the "Office of Unified Communications 9-1-1 Operations Division Audit and Process Improvement Recommendations" Draft Report

Dear Ms. Patterson:

The Office of Unified Communications (OUC or the Agency) is in receipt of the draft report of the Office of the District of Columbia Auditor (ODCA) entitled, "Office of Unified Communications 9-1-1 Operations Division Audit and Process Improvement Recommendations." Thank you for the opportunity to review the draft audit report and provide our response.

Federal Engineering, Inc. (FE) was contracted to conduct the audit in collaboration with ODCA. FE was tasked with assessing "…the effectiveness of OUC's 911 Operations Division against national standards, review a sample of 911 call recording and data, evaluate OUC culture and training, review OUC's technological capabilities, and review OUC's internal investigations of past incidents." FE conducted this project in accordance with the scope of work as detailed in Contract #ODCA 2021-07.

We appreciate and value the effort of the ODCA and FE, along with the skills and insight of the respective staffs, to improve service to District of Columbia residents and visitors through oversight of accountability and effectiveness.

The mission of the OUC is to provide accurate, professional, and expedited service to District residents and visitors. This service is performed by a team of almost 400 dedicated public servants who handle emergency and non-emergency calls received when individuals dial 911 and 311 in the District. OUC also provides centralized, District-wide coordination and management of public safety voice radio technology and other public safety communications systems and resources to District government agencies and regional, state, and federal partners.

A. OUC undertook significant successful reforms in FY21

The draft audit report notes the important steps the Agency has undertaken to improve the delivery of services in 2021. Beginning in February, both during and after the audit review process, OUC made significant strides in call-taking metrics, continuing to create a culture of accountability and excellence, supporting our

staff's mental health, and building collaborative relationships with sister agencies to better serve District residents. Mayor Muriel Bowser's commitment to our success will help us build on these strides with significant investments in FY22.

Emergency calls (direct 3-digit dial of 9-1-1) constitute approximately 65% of calls handled by 911 call takers. Call volume ranges throughout the day. However, on average, three calls are handled per minute and 167 calls per hour. Calls for police service make up about 74% of events; 21% for emergency medical services; and 5% for fire. By numbers, EMS and MPD have a nearly equal number of high priority events. The agency has made significant progress in improving "speed of answer." This is a function of having call takers in position and ready to receive calls. The Agency was able to accomplish that with little to no mandatory overtime. OUC also identified the frequency of abandoned calls – those calls to 911 that did not get answered before the caller disconnected – as unacceptably high and focused on reducing this frequency in 2021. Our call takers have dramatically reduced the number of these unanswered calls through training and supervisory reinforcement.

Improving the accuracy of address locations and quality dispatch are continued areas of focus for agency leadership, and I am proud of the progress we made on both fronts in FY21. The deployment of the RapidSOS location determining technology (as described below) and continued engagement of call takers on the improved pinpointing of this technology has already paid dividends in call location accuracy.

And our employees shared with agency leadership that a perception of favoritism existed through selective enforcement of policy, or the absence of policy altogether. We have begun a comprehensive review of policies and procedures and have on-boarded staff to develop process and policy that is clear, concise, and enforceable. These policies are most effective, however, when implemented with the active engagement of our supervisors. As noted below, we are in the process of developing and rolling out a comprehensive supervisors' initiative, of which effective active management techniques will be a part.

B. OUC will continue to "measure and improve" in FY22

During FY22, OUC will build on the progress we made in FY21 with a focus on expanded programs on quality improvement and feedback, alternative responses to 911 calls, training with innovative and cost-efficient professional development opportunities, and innovative employee wellness programs. Each of these priorities will be possible as the Agency implements the recommendations contained in the draft audit report.

1. Expanding quality improvement and feedback

During FY22, we will focus on increasing the quality improvement evaluation and feedback program. This will allow us to apply consistent methodologies and compare our performance against industry standards. Our agency slogan is **Measure and Improve**. Every policy, procedure, process, and program will be designed, developed, and deployed with these tenets in mind.

2. Finding alternative responses to 911 calls

Non-emergency call operations – while not a focus of the audit – continue to provide excellent response to callers. We also know many calls to 911 do not require an immediate emergency response. OUC will build on our strong partnerships with agencies including the District Department of Transportation (DDOT), the Department of Public Works (DPW), the Department of Motor Vehicles (DMV), and the Department of

Behavioral Health (DBH). Our work with these partners has centered on transforming our response the District's emergency and non-emergency calls. This work began in 2018 with the implementation of the *Right Care, Right Now* Nurse Triage Line to divert non-acute patients who would otherwise be transported by FEMS from emergency departments. It continued during the COVID-19 pandemic response with the expansion of the MPD Telephone Reporting Unit.

In FY22, we will continue to prioritize helping establish alternative responses to 911 calls that adequately address residents' calls for assistance, but do not require MPD or FEMS to be dispatched. For example, we are collaborating with DDOT for OUC to dispatch 911 calls for minor traffic collisions where there are no injuries or criminal issues (such as a suspected drunk driver), and DPW will respond to priority parking complaints instead of police officers. OUC also has begun to dispatch mental health experts from DBH's specialized, rapid response teams for 911 calls that meet certain criteria, instead of the automatic deployment of police officers. Not only does this program build on our efforts to provide residents with the right care at the right time, we are hopeful that it will also strengthen community trust.

3. Maximizing innovative professional development opportunities

Our employees will benefit from innovative professional development opportunities that will help them become more confident in the performance of their jobs. In 2021, we encouraged co-training opportunities with our FEMS partners, and that program has been successful and allowed for a more cohesive understanding of one another's responsibilities. Each week we join the Fire Department at the Old Engine 22 Northern Training Facility to assist in the training and evaluation of the Battalion Chiefs while our dispatchers are simultaneously training to work tactical events. The ability to assist FEMS in tactical situations by documenting and providing support will make for a safer environment for our responders. In FY22, we plan to build on the success of this program by collaborating with MPD where possible in analogous training.

We will also for the first time pursue the APCO P33 Training Program Certification which is a recognition program for public safety communications training programs across the nation. The program requires agencies to meet or exceed the *APCO ANS 3.103.1-2010: Minimum Training Standards for Public Safety Telecommunicators*. OUC will also begin the process for Commission on Accreditation for Law Enforcement Agencies certification.

4. Focusing on employee wellness

Finally, as we discover more about secondary and vicarious trauma, the mental wellness of our employees is a priority. Mayor Bowser has made clear to agency directors the importance of supporting the wellbeing of each staff member and their ability to provide service to people experiencing the worst situations. We have undertaken a review of existing employee wellness initiatives and plan to expand this initiative in FY22: to be innovative in meeting our staff where they are. Both within the agency, and in collaboration with our partners in the National Capital Region, we will continue to pursue best practices in the development of peer support resources, health and wellness opportunities, critical incident stress management, and schedules that support life-work balance. First responder agencies in the District and emergency communications centers nationwide recognize this critical need, and we are grateful for the Mayor's commitment to wellness of all first responders.

C. Findings

OUC responds to the draft report's findings as follows:

1. *There is a lack of adequate oversight of call-taking and dispatch operations.*

Agency response: OUC is committed to improving supervisory oversight of call-taking and dispatch operations without comment on the characterization of this oversight during 2019-2020 as less than adequate.

As described below, OUC is developing a targeted initiative to address areas of improvement for supervision of call-taking and dispatch operations. We will conduct new, ongoing training of existing supervisors as well as develop a comprehensive training program for new and existing supervisors.

2. *There is inconsistent or ineffective use of scripted call handling protocols, Criteria-Based Dispatch (CBD), by call-takers. This is evident in improvised questioning of callers by the call-takers.*

Agency response: The Agency agrees with the report's narrative regarding the effective engagement of callers with the need for timely, accurate responses. We are in the process of reducing the number of event types across the board, a process started during the initial roll-out of CBD in 2017. This initial reduction dramatically improved the split of FEMS Advanced Life Support (ALS)/Basic Life Support (BLS) calls. This both improved patient care and leveraged FEMS EMS resources in a more efficient manner.

While we agree that integration of scripted protocols is critical to quality emergency call-taking, we are also cognizant of the need for professional call takers to do their jobs rapidly and effectively, without excess prescriptive language. CBD does not solely rely on scripted call handling protocols but is instead designed for call takers to rapidly prompt callers to provide accurate information to determine the nature of the emergency and the public resources to be dispatched. Call takers are trained to seek relevant information, however. The Agency's quality assurance (QA) process must be strengthened to both identify areas of concern with call taking, and to counsel call takers for improvement in the future.

OUC has made significant improvements to the QA process since the audit review period. The OUC has adopted the *APCO/NENA ANS 1.107.1.205: Standard for the Establishment of a Quality Assurance and Quality Improvement Program for Public Safety Answering Point*. Trained quality assurance specialists are now on shift with call taker and dispatchers assessing calls and working with shift leadership to identify areas of concern that can be addressed in a timely manner with operations employees. Additionally, the QA specialists are working with the Office of Professional Standards and Development to ensure training is targeted to the specific needs of employees in 911 Operations.

3. *There is an inconsistent use of Location Determining Technologies (LDTs) by call-takers to locate callers or confirm location of reported events. This is a result of the Call Handling Equipment (CHE) configuration that does not automatically re-bid/re-transmit cell callers' locations for better accuracy. The decision to invoke and maintain this configuration has contributed to call-takers' distrust of the map tools and LDTs.*

Agency response: OUC agrees with this finding. Since the audit review period, as described in the draft report, OUC integrated the RapidSOS application into our computer aided dispatch (CAD) system. RapidSOS enhances caller location plotting quickly and accurately. Recent improvements in technology, the deployment of

Next Generation 911 (NG911) location services, and ongoing training and familiarization for call-takers have begun to address this issue since the audit review period and this will be a focus of OUC into Fiscal Year 2022 (FY22) and beyond. We will continue to stress the accuracy of these technologies to our call takers to increase their confidence in this area.

4. *There is an over-complicated "event type" (Chief Complaint) selection process due to an excessive number of Chief Complaints and associated priorities available to select. This is a provisioning issue created in the Computer-Aided Dispatch (CAD) system with the transition to the scripted protocols CBD.*

Agency response: The actual number of event types was significantly reduced in the changeover from the previous ProQA system. The Agency agrees with this recommendation, however, and is completing a process in the first quarter of FY22 to evaluate event types with the goal of reducing the number of "Chief Complaints."

The Agency disagrees with the statement that event types increased with the implementation of Criteria Based Dispatch.

5. *There is a policy requiring documented follow-up from Operations to the Office of Professional Standards and Development (OPSD) regarding the results of QA reviews with operations staff. Operations management staff is inconsistent in conducting this follow-up and therefore is not in compliance with the policy.*

Agency response: The Agency agrees in part and disagrees in part. Quality assurance which is integrated into every step of the process is a hallmark of every highly effective call center, and we are wholly committed to improving QA within the Agency. We have undertaken several QA reforms in FY21 and will evaluate their effectiveness as part of the Agency's annual review of its performance.

D. Summary of Recommendations

OUC responds to the summary of recommendations on page 8 of the draft report as follows:

Number	Item	Comment	Agency response
1	Expand Supervisor training to include professional development topics such as leadership and mentorship. Assign a minimum of three supervisors around the clock on the operations floor with assigned discipline focus on call-taking, Metro-Police Department (*sic)* (MPD) dispatch, and Fire and Emergency Medical Services (FEMS) dispatch.	n/a	The Agency agrees with this recommendation. OUC is in the process of developing expanded training for supervisory staff and intends to include leadership and mentorship modules. The Agency is also evaluating supervisory staffing needs and will take the minimum supervisory staffing recommendation under advisement. The Supervisor Initiative Pilot will provide an opportunity to measure, evaluate, and make all necessary changes to supervisor roles, tools, development, and resources. We have already made the necessary changes to include each discipline in the teams of shift supervisors.
2	Reassess and improve the integration of the scripted protocols CBD into the call handling process. Reduce improvising and adlibbing *(sic)* by ensuring personnel are adhering to the scripted questions in the CBD call processing standard.	The Agency will roll out new event types in FY22 Q1. We are finalizing MPD event categories before we can implement. We will train all call taking staff before roll-out.	The Agency partially agrees with this recommendation. While we agree that integration of scripted protocols is critical to quality emergency call-taking, we are also cognizant of the need for professional call takers to do their jobs rapidly and effectively without excess prescriptive language. The Agency agrees with the report's narrative regarding the effective engagement of callers with the need for timely, accurate responses. We are in the process of reducing the number of event types across the board, a process started during the initial roll-out of CBD. The implementation of CBD dramatically improved the split of ALS-BLS calls which both improved patient care and leveraged FEMS resources in a more efficient manner.

Number	Item	Comment	Agency response
3	Train staff on use of LDTs followed by effective supervision and QA to monitor use.	There are many reasons an address may be recorded incorrectly by the OUC call taker. The call taker may receive the call as a transfer from another agency and not get the ANI/ALI (Automatic Number Identification/ Automatic Location Identification) or the geo-spatial feed and may simply have to rely on what the caller tells them as the address. The call-taker may make an error such as selecting the wrong address from the CAD choices dropdown; she/he may enter the address incorrectly; she/he may not confirm the location by using all the resources available to her/him.	The Agency agrees with this recommendation and will make policy changes as appropriate in FY22 Q1. As the report notes, OUC is in the process of integrating more location determining technologies into its protocols and will be training personnel in its use and effectiveness in call-taking. We have also migrated to NG911 with Next Generation Core Services to improve LDTs. It was not until recently that wireless call data became as reliable as it is now. We are working to build trust in the technology with call takers so they will have faith in what is being presented, versus ignoring the incoming information because of historic unreliability.
3a.	Configure the work screen to stop other applications from popping up in front of the maps and other LDTs.	n/a	The Agency agrees with this recommendation and will make policy changes as appropriate in FY22 Q1. The layout of windows on call-taker screens is managed by each user's preferences. Supervisors will engage personnel on the benefits of prioritizing the presence of maps on screen through verbal and written guidance.
3b.	The current call-taking policy includes having the caller advise of their location twice. This policy should be revised to allow an initial (single) confirmation of a caller's location if an exact match is found between the caller reported location and LDT map pinpointing of the caller's location. This will save time in gathering information.	n/a	The Agency agrees with this recommendation and will make policy changes as appropriate in FY22 Q1.

Number	Item	Comment	Agency response
3c.	Require the use of LDTs to locate a caller that cannot immediately state a precise location of an incident, including situations where the caller does not know the address of an incident.	Over 800 additional common place names have been added to CAD to help with this initiative so the call takers can use their knowledge of geography to help the caller identify where they are. Additionally, all call takers were taught how to enter Latitude and Longitude to help locate callers.	The Agency agrees with this recommendation and will make policy changes as appropriate as appropriate in FY22 Q1.
4	Evaluate and reduce the number of event types (Chief Complaints) and associated priorities. Assign supervision and QA to monitor and encourage a method(s) for quickly identifying and selecting the correct Chief Complaint.	n/a	The Agency agrees with this recommendation. The actual number of event types was significantly reduced in the changeover from the previous ProQA system. The Agency agrees with this recommendation and is beginning a process in FY22 Q1 to conduct an evaluation of event types with the goal of reducing the number of "Chief Complaints." The Agency disagrees with the statement that event types increased with the implementation of Criteria Based Dispatch.
5	Select and implement a dispatch notification system to automate the announcement of the event type and location of FEMS calls.	The Agency currently dispatches FEMS calls simultaneously on a citywide dispatch channel and through an automated alerting system (Purvis) in units and fire stations. The current process was developed in close collaboration with FEMS. During the exit conference, FE clarified that OUC should consider a comprehensive review of its fire dispatch protocols to include whether certain classes of dispatch automatically override human dispatch, rather than supplant the existing system.	The Agency agrees with this recommendation, to the extent that the recommendation calls for review of fire dispatch protocols. The current process was developed in close collaboration with FEMS and reflects that department's preference for citywide dispatch notifications. The Agency acknowledges that the current fire dispatch system can become backed up during the initial stages of critical incidents and will engage FEMS on this topic.

Number	Item	Comment	Agency response
6	Improve documentation concerning the completion and follow up of regular Quality Assurance (QA) reviews with staff.	Since the audit review period, the Agency has moved the QA personnel to the operations floor. This has allowed QA to have the ability to listen to live events and be in the position to intervene if necessary or otherwise assist. They can also be used to back up the call takers for overload calls.	The Agency agrees with this recommendation. Quality assurance that is integrated into every step of the process is a hallmark of every highly effective call center, and we are wholly committed to improving QA within the Agency. We have undertaken several QA reforms in FY21 and will evaluate their effectiveness as part of the Agency's annual review of its performance.
7	Create an implementation plan to put recommendations from this Audit into practice including:		
7a.	Create and implement a plan for change management that coincides with the larger implementation plan focused on informing and involving critical stakeholders such as operational staff, field staff and responders, allied agencies, and leadership about the changes, their impacts, and the why, what, who and how of implementing the recommendations. Effective change management tools that are people-centric are critical to ensuring success in any project implementation and in improving performance.	n/a	The Agency agrees with this recommendation. We have increased our communications with MPD and FEMS and will continue to provide opportunities to have their members at the table for technical decisions, deployment, and evaluation.
7b.	Monitor and evaluate implemented changes for impacts on performance and maintain or revise as necessary. Additionally, communicate findings and report to stakeholders, particularly where there are improvements in performance, and/or where revisions have been made. Evaluations of overall OUC performance should be ongoing, with formal reviews scheduled annually.	n/a	The Agency agrees with this recommendation.

E. Recommendations

OUC responds to the recommendations in Part 4 of the draft report as follows:

Number	Topic	Item	Agency response
4.1.1	Technology	Evaluate and reduce the number of event types and associated priorities.	The Agency agrees with this recommendation.
4.1.2	Technology	Streamline the call entry data formatting in the CAD system.	The Agency agrees with this recommendation.
4.1.3	Technology	Assess and improve the integration of the scripted protocols (CBD) into the call handling process.	The Agency partially agrees with this recommendation. While we agree that integration of scripted protocols is critical to quality emergency call-taking, we are also cognizant of the need for professional call takers to do their jobs rapidly and effectively without excess prescriptive language.
4.1.4	Technology	Train staff on use of Location Determining Technologies (LDTs) followed by alert supervision and QA to monitor use.	The Agency agrees with this recommendation.
4.1.5	Technology	Configure the work screen landscape of applications to bring the LDT solutions forefront in process and visibility. Do not allow other applications to pop-up in front of the maps and other LDTs displayed on screen.	The Agency agrees with this recommendation. The layout of windows on call-taker screens is managed by each user's preferences. We will engage personnel on the benefits of prioritizing the presence of maps on screen.
4.2.1.1	Call-taking processes	Reduce improvising and adlibbing *(sic)* by adhering to the scripted questions in the CBD call processing standard.	The Agency partially agrees with this recommendation. The Agency agrees with the report's narrative regarding the effective engagement of callers with the need for timely, accurate responses. We are in the process of reducing the number of event types across the board, a process started during the initial roll-out of CBD. The implementation of CBD dramatically improved the split of ALS-BLS calls which both improved patient care and leveraged FEMS resources in a more efficient manner.
4.2.1.2	Call-taking processes	Ensure the complete acquisition and entering of all caller/reporting party information.	The Agency agrees with this recommendation. It is existing OUC policy.
4.2.1.3	Call-taking processes	Verify address information as defined in OUC policy. Adapt policy to allow immediate confirmation of location if an exact match is found between caller reported location and LDT map pinpointing of location. This will save time in gathering information.	The Agency agrees with this recommendation. It is existing OUC policy and deviations from the policy are thoroughly investigated and addressed accordingly.

Number	Topic	Item	Agency response
4.2.1.4	Call-taking processes	Require the use of LDTs to locate a caller that cannot immediately state a precise location of an incident, and in situations where the caller does not know the address of an incident.	The Agency agrees with this recommendation and will make policy changes as appropriate.
4.2.1.5	Call-taking processes	Require apartment numbers to be collected and entered in CAD in the appropriate field and format for dispatch to responders.	The Agency agrees with this recommendation and will work to develop a solution.
4.2.1.6	Call-taking processes	Monitor and encourage a method(s) for selecting the correct Chief Complaint (call type). Note that addressing the technology recommendation of reducing the number of event types (Chief Complaints) and associated priorities will simplify the selection process for the call-takers.	The Agency agrees with this recommendation. The actual number of event types was significantly reduced in the changeover from the previous ProQA system. The Agency agrees with this recommendation and is beginning a process in FY22 Q1 to conduct an evaluation of event types with the goal of reducing the number of "Chief Complaints." The Agency disagrees with the statement that event types increased with the implementation of Criteria Based Dispatch.
4.2.1.7	Call-taking processes	Improve customer service through QA review and follow up and requiring training and in-service (ongoing education) that addresses tone, inflection, and professional presentation.	The Agency agrees with this recommendation. The Agency has moved the QA personnel to the operations floor. This has allowed QA to have the ability to listen to live events and be in the position to intervene if necessary or otherwise assist. They can also be used to back up the call takers for overload calls. Quality assurance that is integrated into every step of the process is a hallmark of every highly effective call center, and we are wholly committed to improving QA within the Agency. We have undertaken several QA reforms in FY21 and will evaluate their effectiveness as part of the Agency's annual review of its performance.

Number	Topic	Item	Agency response
4.2.2	Dispatch	Addition of an automated dispatch function to the CAD system and the FEMS dispatch process. Automating the broadcast announcement of event type and location, such as "Structure Fire – 123 Main St NW" or "Cardiac Arrest – 321 South Ave NE," will enhance and improve the ability of the FEMS dispatchers to meet the 60 second notification to units NFPA standard.	The Agency agrees with this recommendation, to the extent that the recommendation calls for review of fire dispatch protocols. The Agency currently dispatches FEMS calls simultaneously on a citywide dispatch channel and through an automated alerting system (Purvis) in units and fire stations. The current process was developed in close collaboration with FEMS. The current process was developed in close collaboration with FEMS and reflects that department's preference for citywide dispatch notifications. The dispatch of FEMS apparatus during critical or large incidents takes time to verbally announce on the citywide channel due to the number and variety of resources announced over the radio. We will engage FEMS on this topic.
4.2.3.1	Supervision	OUC develop and assign a minimum of three supervisors around the clock on the operations floor with assigned discipline focus on call-taking, MPD dispatch, and FEMS dispatch.	The Agency agrees with this recommendation. OUC is in the process of developing expanded training for supervisory staff and intends to include leadership and mentorship modules. The Agency is also evaluating supervisory staffing needs and will take the minimum supervisory staffing recommendation under advisement. The Supervisor Initiative Pilot will provide an opportunity to measure, evaluate, and make all necessary changes to supervisor roles, tools, development, and resources. We have already made the necessary changes to include each discipline in the teams of shift supervisors.
4.2.3.2	Supervision	A fourth supervisor be added as an available resource intended to provide backup to the on-duty supervisors and for the performance of required administrative duties such as evaluations, QA reviews and follow up, scheduling and call outs.	The Agency agrees with this recommendation. OUC is in the process of developing expanded training for supervisory staff and intends to include leadership and mentorship modules. The Agency is also evaluating supervisory staffing needs and will take the minimum supervisory staffing recommendation under advisement. The Supervisor Initiative Pilot will provide an opportunity to measure, evaluate, and make all necessary changes to supervisor roles, tools, development, and resources. We have already made the necessary changes to include each discipline in the teams of shift supervisors.
4.2.4.1	Translation (Language Line Solutions®)	Determine if there are additional applications that would augment or replace this service.	The Agency agrees with this recommendation.

Number	Topic	Item	Agency response
4.2.4.2	Translation (Language Line Solutions®)	Investigate how translation processes are called upon to ensure maximum efficiencies and reduce call processing times through automation.	The Agency agrees with this recommendation. We have been working with Office of Human Rights and will implement Interpreter Certification requirements within the call-center personnel.
4.2.5.1	Cultural issues	Expand the training and development of supervisors specifically in leadership and soft skills.	The Agency agrees with this recommendation.
4.2.5.2	Cultural issues	Include refresher or in-service training in call etiquette, professional tone.	The Agency agrees with this recommendation.
4.2.5.3	Cultural issues	Enforce OPSD policy for returning completed QA reviews and for follow up to ensure the behavior is not repeated.	The Agency agrees in part and disagrees in part with this recommendation. Quality assurance which is integrated into every step of the process is a hallmark of every highly effective call center, and we are wholly committed to improving QA within the Agency. We have undertaken several QA reforms in FY21 and will evaluate their effectiveness as part of the Agency's annual review of its performance.
4.2.6.1	Quality Assurance	Improve documentation concerning the completion and follow up of QA reviews with staff.	The Agency agrees with this recommendation. Quality assurance which is integrated into every step of the process is a hallmark of every highly effective call center, and we are wholly committed to improving QA within the Agency. We have undertaken several QA reforms in FY21 and will evaluate their effectiveness as part of the Agency's annual review of its performance.
4.2.6.2	Quality Assurance	Provide timely feedback to staff through the OPSD. Industry best practice requires that QA reviews are completed within a few days of the call occurring, whenever possible, and that feedback be provided to the call-taker as soon as possible thereafter.	The Agency agrees with this recommendation. Quality assurance which is integrated into every step of the process is a hallmark of every highly effective call center, and we are wholly committed to improving QA within the Agency. We have undertaken several QA reforms in FY21 and will evaluate their effectiveness as part of the Agency's annual review of its performance.
4.2.6.3	Quality Assurance	Track corrective behavior outcomes including compliance to protocols and customer service. Ensure any training, action plans, or required coaching is discussed and documented, along with a set time for follow up and conclusion. The consistent methods in this approach will support improved call-taker performance and quality improvement center wide.	The Agency agrees with this recommendation.
4.2.6.4	Quality Assurance	Evaluate and document the results of remediation training efforts.	The Agency agrees with this recommendation.

Number	Topic	Item	Agency response
4.2.6.5	Quality Assurance	Use the quality assurance data to identify training and process gaps and trends throughout the center. Also use this data to create a quality improvement program that addresses additional training, policy changes, and support for consistent improvement in call-taker performance.	The Agency agrees with this recommendation.
4.2.7.1	Staffing	Schedule staffing of call-taking positions according to predictable spikes in call volume over a 24-hour period as outlined in Table 7 of this report.	The Agency agrees with the recommendation to investigate minimum staffing levels at each level of call taking, dispatch, and supervising. We have begun this process and may engage ODCA further prior to the release of the final audit report. The Agency notes that any analysis concerning minimum staffing should consider peak call times throughout the year. We will continue to work with the Executive and our labor partners on staffing levels.
4.2.7.2	Staffing	Review the daily break schedule of the MPD dispatchers with a view to maximize staff availability.	
4.2.7.3	Staffing	Consider consolidating the back-up dispatcher role to support multiple (two or more) channels rather than a one-to-one assignment.	
4.2.7.4	Staffing	Maintain staffing levels as outlined in Table 15 that includes consideration and staff count to address known and projected turnover as detailed in Section 3.3.8.	
4.2.8.1	GIS	GIS team continues with their current business processes.	The Agency agrees with this recommendation.
4.2.8.2	GIS	Continue regular in-depth analysis of the GIS, ALI, and MSAG data to ensure synchronization.	The Agency agrees with this recommendation.

Thank you again for the opportunity to provide our response to the draft audit report. Please feel free to contact me with further questions or concerns.

Sincerely yours,

Cleo C. Subido

Cleo Subido
Interim Director

ODCA Response to Agency Comments

ODCA appreciates the responses to the draft report provided by the OUC and would like to reiterate our appreciation to the OUC for their cooperation and timely response to all inquiries and requests throughout the audit.

ODCA is pleased the OUC agrees with the recommendations included in the report, noting a few instances where OUC agrees in part. With regard to event types increasing with the implementation of Criteria Based Dispatch (CBD), Federal Engineering (FE)'s observations and review were only of the current CBD configuration, and comments are limited to CBD. With regard to reassessing and improving the integration of scripted protocols and reducing improvising and adlibbing, FE found that improvising to the point of repeating already answered questions, leaving out critical and relevant questions for which following the script or organizing by using the script would have better managed the call-taking process.

This report notes steps the OUC has begun to take including changes that are currently in development to improve the delivery of services. When these changes are implemented as planned, key issues such as staffing and supervision will allow the OUC to operate in a more efficient and successful manner.

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