Oahu Civilian E9-1-1

Status Report

January 1, 2020 – January 31, 2020



January 1, 2020 - January 31, 2020

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1. PSAP OPERATIONS

9-1-1 CALL VOLUME CIVILIAN PSAPS – JANUARY 2020

Source: Intrado Viper system

(*) Totals are based on calls to Primary PSAP.

| | 9-1-1 Primary PSAP Call Volume | | | | | | | | | | | | | | | | |
|------------------------------|--------------------------------|-----------------------------|---------------------|-----------------------------|---------------------|--------------------------------|----------|----------------------|---------------------|--------------------------------|---------------------|--------------------------|---------------------|------------------------------|---------------------|-----------------------|---------------------|
| Honolulu City & County PSAPs | | Wireline | | | Wireless | | VOIP | | | Calls With No Adr | | Admin Calls | | Abandoned Calls | | Other Calls | |
| 2020 | Total 9-1-1 Calls Processed | No. of Wireline Calls | % of Total Calls | No. of Wireless Calls | % of Total Calls | % of Wireless WPH1 Calls | Wireless | No. of VoIP Calls | % of Total Calls | No. of Calls with No ALI | % of Total Calls | No. of Admin Calls | % of Total Calls | No. of 9-1-1 Abandoned | % of Total Calls | No. of Other Calls | % of Total Calls |
| January | 88,552 | 16,967 | 19.16% | 68,441 | 77.29% | 38.46% | 38.83% | 3,117 | 3.52% | 27 | 0.03% | 559 | 0.63% | 13,536 | 15.29% | 848 | 0.96% |

9-1-1 CALL VOLUME CILILIAN PSAPS – CALENDAR YEAR 2020

| | 9-1-1 Primary PSAP Call Volume | | | | | | | | | | | | | | | | |
|---------|--------------------------------|-----------------------------|---------------------|-----------------------------|---------------------|--------------------------------|--------------------------------|----------------------|---------------------|--------------------------------|---------------------|--------------------------|---------------------|------------------------------|---------------------|----------------------------------|---------------------|
| Honolul | Honolulu City & County PSAPs | | Wireline | | Wireless | | | VOIP Calls | | Calls with No ALI | | Admin Calls | | Abandoned Calls | | Other Calls | |
| 2020 | Total 9-1-1 Calls Processed | No. of Wireline Calls | % of Total Calls | No. of Wireless Calls | % of Total Calls | % of Wireless WPH1 Calls | % of Wireless WPH2 Calls | No. of VoIP Calls | % of Total Calls | No. of Calls with No ALI | % of Total Calls | No. of Admin Calls | % of Total Calls | No. of 9-1-1 Abandoned | % of Total Calls | No. of Total Call Received | % of Total Calls |
| JAN | 88,552 | 16,967 | 19.16% | 68,441 | 77.29% | 38.46% | 38.83% | 3,117 | 3.52% | 27 | 0.03% | 559 | 0.63% | 13,536 | 15.29% | 848 | 0.96% |
| FEB | | | | | | | | | | | | | | | | | |
| MAR | | | | | | | | | | | | | | | | | |
| APR | | | | | | | | | | | | | | | | | |
| MAY | | | | | | | | | | | | | | | | | |
| JUNE | | | | | | | | | | | | | | | | | |
| JULY | | | | | | | | | | | | | | | | | |
| AUG | | | | | | | | | | | | | | | | | |
| SEPT | | | | | | | | | | | | | | | | | |
| ост | | | | | | | | | | | | | | | | | |
| NOV | | | | | | | | | | | | | | | | | |
| DEC | | | | | | | | | | | | | | | | | |
| YTD | 88,552 | 16,967 | | 68,441 | | | | 3,117 | | 27 | | 559 | | 13,536 | | 848 | |
| MON AVG | 88,552 | 16,967 | 19.16% | 68,441 | 77.29% | 38.46% | 38.83% | 3,117 | 3.52% | 27 | 0.03% | 559 | 0.63% | 13,536 | 15.29% | 848 | 0.96% |

NOTE:

- 11 Calls with No ALI for January 2020 = 0.03% Statewide average for 2019 = 0.04%
- Total call volumes does not include Administrative Calls. Administrative calls = Calls originating on Administrative lines that required 911 service.
- Abandoned Calls represent the number of incoming 9-1-1 calls for which the caller had hung up before a call-taker answered. Dropped Calls are hang ups after transfers.
- Abandoned Calls are not included in the Wireline and Wireless total counts respectively.
- All VoIP (Voice over Internet Protocol) types of 911 calls are combined in the Call Volume statistic.

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9-1-1 CALL VOLUME BY AGENCY – JANUARY 2020

| | | | | 9-1-1 | Call Volu | me by Age | ncy | | | | | |
|---------|-----------------------------------|---------------------|---------------------------------|------------|-----------------------------|-------------------------------|-----------------------------------|---------------------|-----------------------------|-------------------------------|--|--|
| 2020 | | Hor | olulu Poli | ce Departn | | Honolulu Fire Department | | | | | | |
| 2020 | No. of Total Calls Received | % of Total Calls | Number of Emergency Calls | | Number of Admin Calls | Number of Dropped Calls | No. of Total Calls Received | % of Total Calls | Number of Admin Calls | Number of Dropped Calls | | |
| January | 76,472 | 86.36% | 20,721 | 41,842 | 373 | 13,536 | 2,808 | 3.17% | 149 | 70 | | |

| | | | 9 | -1-1 Call Volui | me by Agen | су | | | | | |
|---------|--------------------------------------|---------------------|--------------------------|----------------------------|--------------------------------------|---------------------|--------------------------|-------------------------------|--|--|--|
| 2020 | Er | nergency M | edical Servic | es | Ocean Safety | | | | | | |
| | Number of Total Calls Received | % of Total Calls | Number of Admin Calls | Number of Dropped Calls | Number of Total Calls Received | % of Total Calls | Number of Admin Calls | Number of Dropped Calls | | | |
| January | 8,385 | 9.47% | 1 | 95 | 39 | 0.04% | 36 | 0 | | | |

9-1-1 CALL VOLUME BY AGENCY – CALENDAR YEAR 2020

| | | | | | | | 9 | -1-1 Cal | l Volun | ne by A | gency | | | | | | | |
|---------|--------------------------------------|----------------------------|------------------------------|----------------------------------|--------------------------|----------------------------|-----------------------------------|--------------------------|--------------------------|----------------------------|-----------------------------------|---------------------|--------------------------|----------------------------|-----------------------------------|---------------------|--------------------------|----------------------------|
| 2020 | | Honolulu Police Department | | | | | Honol | Honolulu Fire Department | | | Emergency Medical Services | | | Ocean Safety | | | | |
| | Number of Total Calls Received | % of Total Calls | No. of Emergency Calls | No. of Non Emergency Calls | No. of Admin Calls | No. of Dropped Calls | No. of Total Calls Received | % of Total Calls | No. of Admin Calls | No. of Dropped Calls | No. of Total Calls Received | % of Total Calls | No. of Admin Calls | No. of Dropped Calls | No. of Total Calls Received | % of Total Calls | No. of Admin Calls | No. of Dropped Calls |
| JAN | 76,472 | 86.36% | 20,721 | 41,842 | 373 | 13,536 | 2,808 | 3.17% | 149 | 70 | 8,385 | 9.47% | 1 | 95 | 39 | 0.04% | 36 | 0 |
| FEB | | | | | | | | | | | | | | | | | | |
| MAR | | | | | | | | | | | | | | | | | | |
| APR | | | | | | | | | | | | | | | | | | |
| MAY | | | | | | | | | | | | | | | | | | |
| JUNE | | | | | | | | | | | | | | | | | | |
| JULY | | | | | | | | | | | | | | | | | | |
| AUG | | | | | | | | | | | | | | | | | | |
| SEPT | | | | | | | | | | | | | | | | | | |
| ост | | | | | | | | | | | | | | | | | | |
| NOV | | | | | | | | | | | | | | | | | | |
| DEC | | | | | | | | | | | | | | | | | | |
| YTD | 76,472 | | 20,721 | 41,842 | 373 | 13,536 | 2,808 | | 149 | 70 | 8,385 | | 1 | 95 | 39 | | 36 | 0 |
| MON AVG | 76,472 | 86.36% | 20,721 | 41,842 | 373 | 13,536 | 2,808 | 3.17% | 149 | 70 | 8,385 | 9.47% | 1 | 95 | 39 | 0.04% | 36 | 0 |

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PSAP OPERATION NOTES:

- Total call volumes does not include Administrative Calls. Administrative calls = Calls originating on Administrative lines that required 911 service.
- Abandoned Calls represent the number of incoming 9-1-1 calls for which the caller had hung up before a call-taker answered. Dropped Calls are hang ups after transfers.
- Abandoned Calls are included in the Wireline and Wireless total counts respectively.
- All VoIP (Voice over Internet Protocol) types of 911 calls are combined in the Call Volume statistic.

FOR YOUR INFORMATION

| | FYIFor Your Information | | | | | | | | | | | | | |
|--|---|--------|---------|--------|---------|--------|---------|--------|---------|--------|--|--|--|--|
| PSAP Operations | | | | | | | | | | | | | | |
| | Statewide 911 Call Volumes | | | | | | | | | | | | | |
| PSAP | PSAP 2019 2018 2017 2016 2015 | | | | | | | | | | | | | |
| Oahu Civilian 1,075,726 69.67% 1,034,190 70.62% 1,022,818 72.16% 1,009,059 71.93% 1,019,402 70.94% | | | | | | | | | | | | | | |
| RDC Pearl Harbor | 37,905 | 2.45% | 37,068 | 2.53% | 27,916 | 1.97% | N/A | N/A | N/A | N/A | | | | |
| Hawaii County | 211,611 | 13.70% | 206,648 | 14.11% | 193,166 | 13.62% | 205,412 | 14.64% | 217,768 | 15.15% | | | | |
| Maui County | 157,127 | 10.18% | 133,869 | 9.14% | 123,685 | 8.73% | 137,333 | 9.80% | 142,952 | 9.95% | | | | |
| Kauai County | Kauai County 61,754 4.00% 52,623 3.60% 49,902 3.52% 50,955 3.63% 56,874 3.96% | | | | | | | | | | | | | |
| Total | Total 1,544,123 100.00% 1,464,398 100.00% 1,417,487 100.00% 1,402,759 100.00% 1,436,996 100.00% | | | | | | | | | | | | | |
| *2016 & 2015 Statewide avera | 2016 & 2015 Statewide average does not include Military 911 calls | | | | | | | | | | | | | |

| 911 Call Volume % increas | se from 2018 to 2019 |
|---------------------------|----------------------|
| Oahu | 4.02% |
| RDC | 2.25% |
| Hawaii | 2.40% |
| Maui | 17.37% |
| Kauai | 17.35% |
| State of Hawaii average | 8.68% |

| 911 Calls with No ALI % average for 2019 | | | | | | | | | |
|--|-------|--|--|--|--|--|--|--|--|
| Oahu | 0.03% | | | | | | | | |
| RDC | 0.01% | | | | | | | | |
| Hawaii | 0.10% | | | | | | | | |
| Maui | 0.05% | | | | | | | | |
| Kauai | 0.03% | | | | | | | | |
| State of Hawaii average | 0.04% | | | | | | | | |

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TEXT TO 911 OAHU CIVILIAN PSAPS – CURRENT MONTH – JANUARY 2020

NOTE:

• Although there is a "Text to 911" plot on the MapFlex, the location of the plot is not reliable. Text to 911 Dispatchers should use their skills to ascertain the exact location of the emergency response.

| | TEXT TO 911 Oahu Civilian PSAPs 2020 | | | | | | | | | | | | | |
|--------------|--------------------------------------|------|-----|-----|-----|------------------|--|--|--|--|--|--|--|--|
| Month | Total | HPD | HFD | EMS | OS | 911 (handled) | | | | | | | | |
| January | 119 | 69 | 2 | 2 | 0 | 46 | | | | | | | | |
| February | | | | | | | | | | | | | | |
| March | | | | | | | | | | | | | | |
| April | | | | | | | | | | | | | | |
| May | | | | | | | | | | | | | | |
| June | | | | | | | | | | | | | | |
| July | | | | | | | | | | | | | | |
| August | | | | | | | | | | | | | | |
| September | | | | | | | | | | | | | | |
| October | | | | | | | | | | | | | | |
| November | | | | | | | | | | | | | | |
| December | | | | | | | | | | | | | | |
| YTD | 119 | 69 | 2 | 2 | 0 | 46 | | | | | | | | |
| Monthly Avg. | 119.0 | 69.0 | 2.0 | 2.0 | 0.0 | 46.0 | | | | | | | | |

NOTE:

The 9-1-1 handled texts were incidents in which the Division conducted testing or the texter texted 911 in error.

| State of Hawaii 2019 | | | | |
|------------------------------------|-----------|--|--|--|
| TEXT TO 91: | 1 | | | |
| Oahu Civilian | 1,629 | | | |
| RDC Pearl Harbor | 43 | | | |
| Hawaii County | 275 | | | |
| Maui County | 228 | | | |
| Kauai County | 103 | | | |
| *Total 2,278 | | | | |
| *Totals may include PSAP training, | | | | |
| testing, and 911 Texti | ng errors | | | |

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911 WIRELESS OAHU CIVILIAN PSAP TESTING - JANUARY 2020

| OAHU CIVILIAN - JANUARY 2020 | | | | | | |
|------------------------------|---------|-----------------|-------------------|------------|-------------------|-----------|
| Date | WSP | Sites Tested | Sectors Tested | Tested By: | Test Pass/Fail | Comments: |
| 1/22/2020 | Verizon | 1 | 1 | Oahu PSAP | Pass | |
| | | | | | | |
| | | | | | | |

NOTES:

- There was one (1) scheduled Wireless 911 Test for the Oahu Civilian PSAP in January 2020.
- Verizon Wireless has completed migrating their Wireless network database from Intrado to ComTech.
- During the 4th quarter of 2018, there was an increasing amount of "MOBL" class of service type of 911 calls delivered to the State of Hawaii PSAPs. On January 15th, 2019, Intrado completed the position source mapping for ComTech which appears to have resolved this issue.

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2. MSAG (MASTER STREET ADDRESS GUIDE)

OAHU CIVILIAN MSAG TRANSACTIONS CURRENT MONTH/YEAR – JANUARY 2020

| OAHU | 9-1-1 TRANSACTIONS | | | | | | | | |
|---------------|--------------------|----------|-----------|-------------|----------|------|-----------------------|---------|-----------------------|
| CIVILIAN | | MSAG | Al | LI Submitte | ed | | Open ALI epancy Re | | Customer |
| 2020 | Total | MSAG (A) | TN CR (B) | ALI DR (C) | VoIP (D) | TNCR | ALI DR | VoIP DR | Addresses Affected |
| JANUARY | 232 | 116 | 115 | 0 | 1 | 638 | 0 | 0 | 4,128 |
| FEBRUARY | | | | | | | | | |
| MARCH | | | | | | | | | |
| APRIL | | | | | | | | | |
| MAY | | | | | | | | | |
| JUNE | | | | | | | | | |
| JULY | | | | | | | | | |
| AUGUST | | | | | | | | | |
| SEPTEMBER | | | | | | | | | |
| OCTOBER | | | | | | | | | |
| NOVEMBER | | | | | | | | | |
| DECEMBER | | | | | | | | | |
| TOTAL YTD | 232 | 116 | 115 | 0 | 1 | | | | 4,128 |
| AVG PER MONTH | 232 | 116 | 115 | 0 | 1 | | | | 4,128 |

Definitions

(A) Master Street Address Guide - Represents corrections made to street records including, street names, address ranges, MSAG Communities and ESNs.

- (B) **T**elephone **N**umber **C**hange **R**equest Represents address corrections on a specific TN or group of TNs. These "invalid" TNs usually have an associated ESN 199 attached to them which indicates the need for validation.
- (C) Automatic Location Information Discrepancy Record Represents an address discrepancy discovered during a live 9-1-1 call, from a landline. These record corrections are treated with a higher priority and should be processed within 48 hours as a general guideline.
- (D) **V**oice **o**ver **I**nternet **P**rotocol **D**iscrepancy **R**ecord Represents an address discrepancy discovered during a live 9-1-1 call, from a VoIP phone. These record corrections are treated with a higher priority and should be processed within 72 hours as a general guideline per Time Warner Operations Center. MSR tracking effective April 2014.

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OAHU CIVILIAN MSAG CURRENT MONTH NOTES:

A total of **232** MSAG transactions were processed in 9-1-1 Net during the current reporting month. One hundred sixteen (**116**) requests were processed relating to the MSAG database which include: changes to high – low street ranges, combining street records, deletion of invalid records, splitting street records to align with Police, Fire, EMS and Military response areas, and inserting new MSAG records.

There were 4,128 customer ANI/ALI (telephone/address) records updated as a direct result.

OAHU CIVILIAN TELEPHONE RECORD (ALI) TRANSACTIONS CURRENT MONTH NOTES:

Akimeka processed one hundred fifteen (115) TN CRs related to the Dispatchable Location Project during the current month.

One (1) VoIP DR was submitted as the result of 9-1-1 call from a business in Ewa Beach.

OAHU CIVILIAN OPEN TELEPHONE RECORD (ALI) DISCREPANCY STATUS:

• There are currently 638 Open TN CRs.

638 Open TN CR transactions are a result of the Dispatchable Location project. Akimeka continues to monitor and track the progress of the Referred records. Once a telephone number is submitted to Intrado for correction, it must be verified against HT records and/or approved by the customer. Intrado's internal process requires calling each telephone customer individually for approval to update an address in the 9-1-1 database.

- There are no Open ALI-DRs as of January 31, 2020
- There is no Open VoIP DRs as of January 31, 2020

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TNCR (TELEPHONE NUMBER CHANGE REQUEST) CURRENT STATUS – JANUARY, 2020

NOTE:

- 9-1-1 NET is a secure web-based application that provides access to request changes to the MSAG, ALI, TN, and ESN/ELT data supported and maintained by Intrado for the Telephone Company (TelCo).
- TNCRs are not requests to change Telephone Numbers (TNs); however, it is a corrective process within 9-1-1 NET to modify
 location information associated with an Automatic Location Identification (ALI) record to a valid MSAG address for 9-1-1
 purposes.

| | PSAP 9-1-1 Telephone Number Location Change Request | | | | | | |
|------------------|--|---|-----|-----|--|--|--|
| | (Telephone Number Change Request (TNCR) Status) | | | | | | |
| PSAP | TOTAL TNCR RECORDS SUBMITTED BY AKIMEKA OPENED TNCRS PENDING FURTHER ACTION BY INTRADO OPENED TNCRS REFERRED TO TELCO BY INTRADO TOTAL UNOPENE TNCR RECORDS | | | | | | |
| OAHU CIVILIAN | 638 | 1 | 221 | 416 | | | |

STATUS

TOTAL TNCRs SUBMITTED - The total number of TNCR requests for modification that have been submitted in 9-1-1

<u>PENDING STATUS</u> - TNCRs assigned this status are requests which have been reviewed by the 9-1-1 Database Service Provider Data Analyst, and are pending investigation whether the request is valid or invalid, and/or whether the request requires additional information to validate.

REFERRED STATUS - TNCRs assigned this status are requests which have been reviewed by the 9-1-1 Database Service Provider Data Analyst, and the request requires additional information to validate. The Intrado Data Analysts assigns this status to a TNCR and the request is referred to the telephone service providers for further research.

TOTAL UNOPENED TNCR RECORDS STATUS - The request is submitted by Akimeka on behalf the PSAP; however, processing by the 9-1-1 Database Service Provider Data Analyst has not begun.

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DISPATCHABLE LOCATION - STATUS AS OF - JANUARY 2020

NARRATIVE:

During the August 2015 State of Hawaii 911 Board meeting, Akimeka provided a "State of Hawaii PSAPs Proposed ALI Compliancy with FCC 15-9" presentation. Based on the 9-1-1 Board's confirmation to add the "Dispatchable Location" information into the ALI database, Akimeka researched the format standards of each pertinent field, and tested the delivery of the data to the PSAP. After a few configuration adjustments (eliminating the TelCo comments field from appearing on the ALI Screen), Akimeka standardized an additional information data format to proceed with this project.

The "Dispatchable Location" data is entered into the "Driving Directions" field in the 9-1-1 Net system, and will display on the Viper Power 911 ALI Screen in the "Exact" field should a 911 call be received from that telephone number. The Windward Mall will be the pilot location starting in March 2018. There were 416 transactions submitted and 115 processed in January 2020.

| Dispatchable Location | | | | | | |
|-----------------------|--|------------------------------|--------------------------|--|--|--|
| 2020 Quarter 1 | Common Name Place MSAG Address | TNCR* Transactions Submitted | Transactions Processed** | | | |
| 2019 carryover | | 5,722 | 4,884 | | | |
| | Queen Kapiolani Hotel, 150 Kapahulu Ave, Waikiki Waikiki Beach Hotel, 2570 Kalakaua Ave, Waikiki Waikiki Beach Marriot, 2552 Kalakaua Ave, Waikiki | 0 0 0 | 1 1 82 | | | |
| January | Aqua Ewa Beach Hotel, 2555 Cartwright Rd, Waikiki Waikiki Beach Hotel, 2570 Kalakaua Ave, Waikiki Park Shore Hotel, 2586 Kalakaua Ave, Waikiki | 0 0 0 | 2 5 20 | | | |
| | Kaimuki Shopping Center, 3221 Waialae Ave, Kaimuki St Augustine Church, 130 Ohua Ave, Waikiki | 0 12 | 4 0 | | | |
| | Hilton Waikiki, 2500 Kuhio Ave, Waikiki Waikiki Banyon, 201 Ohua Ave, Waikiki | 116 288 | 0 | | | |
| February | | | | | | |
| March | | | | | | |
| Q1 | | 416 | 115 | | | |
| Total | | 6,138 | 4,999 | | | |

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SPECTRUM (CHARTER) 9-1-1 VOIP DATABASE VERIFICATION PROJECT – JANUARY 2020

Akimeka received the Automatic Location Identification (ALI) records from Spectrum (formally known as Charter Communications) which is the predominant Voice over Internet Protocol (VoIP) provider in the State of Hawaii. As Akimeka has access to these ALI Records, Akimeka is researching and verifying the VoIP records against an MSAG valid address and the GIS data. This research is a validation of the ALI Record to ensure that the location as provided by the VoIP provider matches the GIS Information utilized by the Public Safety Agencies within their specific County 9-1-1 Service Area. This validation reduces the potential of address or location dispute during a 9-1-1 call.

The analysis of the database records indicates that there are invalid MSAG addresses utilized by the VoIP Provider. These records are being identified, and will be sent back to Spectrum for corrective action.

| *Spectrum (Charter) 9-1-1 VoIP Database Verification Project | | | | | | | |
|--|---|--------------|-------|-------|---------|--|--|
| PSAP | TOTAL RECORDS RECORDS MATCHING & RECORDS SUBMITTED BY SPECTRUM (A) (B) TOTAL NON PERCENT COMPLETED MATCHING RECORDS MATCHING CORRECTED BY AKIMEKA (C) | | | | | | |
| HAWAII County | 22,044 | 21,638 (98%) | 406 | 406 | 100.00% | | |
| KAUAI County | 8,936 | 8,695 (97%) | 241 | 241 | 100.00% | | |
| MAUI County | 18,256 | 17,517 (96%) | 739 | 739 | 100.00% | | |
| OAHU Cilivian | 87,414 | 85,329 (98%) | 2,085 | 2,085 | 100.00% | | |
| OAHU Military | 3,663 | 710 (19%) | 2,953 | 2,953 | 100.00% | | |
| TOTAL | 140,313 | **133,889 | 6,424 | 6,424 | 100.00% | | |

^{*} Spectrum VoIP Database received on June 21st, 2017

^{**} Akimeka provided VoIP Records with Latitude/Longitude coordinates

| (A) | VoIP Database records submitted by Spectrum to Akimeka for research and MSAG address validation. |
|-----|---|
| | Akimeka has researched and verified the VoIP record against an MSAG valid address and GIS data. Akimeka is tracking corrections needed to be performed by Spectrum. Addressing data will be updated or added in the GIS if the VoIP record is determined to be valid. |
| (C) | Verifcation Process Completed. |

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BANDWIDTH 9-1-1 VOIP DATABASE VERIFICATION PROJECT – JANUARY 2020

Akimeka received the Automatic Location Identification (ALI) records from Bandwidth which is a Voice over Internet Protocol (VoIP) provider in the State of Hawaii. As Akimeka has access to these ALI Records, Akimeka researched and verified the VoIP records against an MSAG valid address and the GIS data. This research is a validation of the ALI Record to ensure that the location as provided by the VoIP provider matches the GIS Information utilized by the Public Safety Agencies within their specific County 9-1-1 Service Area. This validation reduces the potential of address or location dispute during a 9-1-1 call.

The analysis of the database records indicates that there were invalid MSAG addresses utilized by the VoIP Provider. These records were identified, and sent back to Bandwidth for corrective action.

Akimeka will update the chart below as we receive updated ALI records from Bandwidth.

| *Bandwidth | | | | | | | | |
|---------------|--|---------------|----------|-------------------|-----------|--|--|--|
| 9-1-1 | 9-1-1 VoIP Database Verification Project **(Updated) | | | | | | | |
| | TOTAL | TOTAL NEW | TOTAL | NON | PERCENT | | | |
| | RECORDS | RECORDS | RECORDS | MATCHING | COMPLETED | | | |
| PSAP | SUBMITTED BY | VERIFIED WITH | NOT | RECORDS | | | | |
| ISAI | BANDWIDTH | 911 DATABASES | MATCHING | CORRECTED | | | | |
| | (A) | (B) | | BY AKIMEKA | | | | |
| | | | | (C) | | | | |
| HAWAII County | 545 | 85 | 0 | 0 | 100.00% | | | |
| KAUAI County | 306 | 41 | 0 | 0 | 100.00% | | | |
| MAUI County | 914 | 222 | 1 | 1 | 100.00% | | | |
| OAHU Cilivian | 4,065 | 888 | 1 | 1 | 100.00% | | | |
| OAHU Military | 56 | 7 | 0 | 0 | 100.00% | | | |
| TOTAL | 5,886 | 1,243 | 2 | 2 | 100.00% | | | |

^{*}Bandwidth VoIP Database received on April 5th, 2018

| (A) | VoIP Database records submitted by Bandwidth to Akimeka for research and MSAG address validation. |
|-----|--|
| | Akimeka has researched and verified the VoIP record against an MSAG valid address and GIS data. Akimeka is tracking corrections needed to be performed by Bandwidth. Addressing data will be updated or added in the GIS if the VoIP record is determined to be valid. |
| (C) | Verifcation Process Completed. |

^{**}Updated Bandwidth VoIP Database received on September 6th, 2018

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3. GEOGRAPHIC INFORMATION SYSTEM (GIS) – JANUARY 2020

MAPPING LAYERS UPDATED (PART I)

9-1-1 GIS layers provided by Akimeka to the PSAP are designed for use on E9-1-1 systems and NG9-1-1 systems.

| | | OAHU CIVILIAN PSAPS | | | | | |
|-----------------|---|---|--|--|--|--|--|
| Type of Layer | Akimeka GIS Server Date Created/ Edits Performed | GIS Delivery Dates/Remarks | | | | | |
| | CRITICAL 9-1-1 PUBLIC SAFETY LAYERS FOR DISPATCH & RESPONSE | | | | | | |
| | | (Listed Alphabetically) | | | | | |
| | 1/30/2020 | Next Delivery 2/14/2020 | | | | | |
| | To | Added new address point for one (1) record in Waikiki | | | | | |
| | 1/31/2020 | Added new address point for one hundred and twenty-one (121) records in Kaneohe | | | | | |
| | | Added building, added apartment, corrected spatial for one (1) record in Kaneohe | | | | | |
| | | Delivered 1/31/2020 | | | | | |
| | | Corrected spatial, added routingID for two (2) records in Pearl City | | | | | |
| | | Corrected spatial, added floor, added building, added apartment for one (1) record in Kaneohe | | | | | |
| | | Added new address point for two hundred and six (206) records in Kaneohe | | | | | |
| | | Added new address point for one (1) record in Makakilo | | | | | |
| | | Added location type, added building, added apartment, corrected spatial for one (1) record in | | | | | |
| | 1/17/2020 To | Kaneohe | | | | | |
| | | Added routingID for six thousand, six hundred and fifty-five (6655) records in Pearl City | | | | | |
| | | Corrected spatial, added floor, added apartment for three (3) records in Kaneohe | | | | | |
| | | Corrected location name for one (1) record in Kaneohe | | | | | |
| | 1/30/2020 | Added new address point for twenty (20) records in Makiki | | | | | |
| | | Added apartment, added building, added location type, corrected spatial for one (1) record in | | | | | |
| Address Points | | Kaneohe | | | | | |
| Address I omits | | Corrected spatial for nine (9) records in Makiki | | | | | |
| | | Corrected spatial for nine (9) records in Waikiki | | | | | |
| | | Added new address point for two (2) records in Kapolei | | | | | |
| | | Added new address point for one (1) record in Waikiki | | | | | |
| | | Corrected street, added routingID for one (1) record in Pearl City | | | | | |
| | | Added building, added apartment, corrected spatial for three (3) records in Kaneohe | | | | | |
| | | Delivered 1/17/2020 | | | | | |
| | | Added new address point for eighteen (18) records in Nuuanu | | | | | |
| | | Added apartment for one (1) record in Waianae | | | | | |
| | | Added new address point for twenty (20) records in Waianae | | | | | |
| | 1/3/2020 | Corrected spatial for twenty-five (25) records in Waianae | | | | | |
| | То | Added new address point for nine (9) records in Kailua | | | | | |
| | 1/16/2020 | Corrected spatial for twenty-one (21) records in Maili | | | | | |
| | | Added new address point for forty-seven (47) records in Kapolei | | | | | |
| | | Added routingID for thirty-five (35) records in Kalihi | | | | | |
| | | Corrected spatial for one (1) record in Pearl City | | | | | |
| | | Added routingID for sixteen (16) records in Nuuanu | | | | | |

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MAPPING LAYERS UPDATED (PART II)

9-1-1 GIS layers provided by Akimeka to the PSAP are designed for use on E9-1-1 systems and NG9-1-1 systems.

| OAHU CIVILIAN PSAPS | | | | | | |
|---|--|--|--|--|--|--|
| Type of Layer | Akimeka GIS Server Date Created/ | GIS Delivery Dates/Remarks | | | | |
| | Edits Performed | | | | | |
| CRITICAL 9-1-1 PUBLIC SAFETY LAYERS FOR DISPATCH & RESPONSE | | | | | | |
| | | (Listed Alphabetically) | | | | |
| | | Added new address point for one (1) record in Nanakuli | | | | |
| | | Added new address point for nineteen (19) records in Kalihi | | | | |
| | | Corrected location type, corrected spatial for one (1) record in Kalihi | | | | |
| | | Added location name, added location type, added building for one (1) record in Mililani | | | | |
| | | Added new address point for thirty-nine (39) records in Aina Haina | | | | |
| | | Added new address point for four (4) records in Kaimuki | | | | |
| | | Added new address point for seventeen (17) records in Mililani | | | | |
| | | Added apartment, corrected spatial for two (2) records in Kapolei | | | | |
| | | Added routingID, added building, added apartment, corrected spatial for one (1) record in Aina | | | | |
| Address Points | 1/3/2020 | Haina | | | | |
| | То | Added new address point for one (1) record in Makaha | | | | |
| | 1/16/2020 | Corrected spatial, added apartment for one (1) record in Kapolei | | | | |
| | | Added routingID for five thousand, five hundred and thirty-nine (5539) records in Waipahu | | | | |
| | | Added routingID, corrected location name for one (1) record in Nuuanu | | | | |
| | | Corrected location type, added apartment, corrected spatial for two (2) records in Kalihi | | | | |
| | | Added routingID for five (5) records in Kailua | | | | |
| | | Added routingID, corrected spatial, added apartment for one (1) record in Aina Haina | | | | |
| | | Added routingID for one thousand, six hundred and seventy-five (1675) records in Pearl City | | | | |
| | | Corrected routingID for eighty-seven (87) records in Waipahu | | | | |
| | | Added routingID, added building for one (1) record in Kaimuki | | | | |
| | | Corrected spatial for one (1) record in Kailua | | | | |
| | 1/1/2020 To | Delivered 1/3/2020 | | | | |
| | 1/2/2020 | Added routingID for one thousand, five hundred and eighty-five (1585) records in Waipahu | | | | |
| Airports | | | | | | |
| AMR Response Areas | | | | | | |
| Bridges | | | | | | |
| Building Footprints | | | | | | |
| Bus Stops | | | | | | |
| Churches | | | | | | |
| Coastal Names | | | | | | |
| Coastline | | | | | | |
| Common Places | | | | | | |
| Correctional Facilities | | | | | | |
| Emergency Callboxes | | | | | | |

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MAPPING LAYERS UPDATED (PART III)

9-1-1 GIS layers provided by Akimeka to the PSAP are designed for use on E9-1-1 systems and NG9-1-1 systems.

| OAHU CIVILIAN PSAPS | | | | |
|-------------------------|-----------------|---|--|--|
| | Akimeka GIS | | | |
| Type of Layer | Server | GIS Delivery Dates/Remarks | | |
| Type of Layer | Date Created/ | GIS Denvely Dates/Renaurs | | |
| | Edits Performed | | | |
| | CRITICAL 9-1 | -1 PUBLIC SAFETY LAYERS FOR DISPATCH & RESPONSE | | |
| | | (Listed Alphabetically) | | |
| Emergency Operation | | | | |
| Centers | | | | |
| Emergency Shelters | | | | |
| ESZ/ESN | | | | |
| Fire Beats | | | | |
| Fire Districts | | | | |
| Fire Response Areas | | | | |
| Fire Stations | | | | |
| Food & Beverage | | | | |
| Gas Stations | | | | |
| Gate Codes | | | | |
| Government Buildings | | | | |
| Harbors | | | | |
| Helipads | | | | |
| Hiking Trails | | | | |
| Hospitals | | | | |
| Hydrants | | | | |
| Hyrdology Layers | | | | |
| Incident Response Areas | | | | |
| Lodging | | | | |
| Major Roads | | | | |
| Medic Beats | | | | |
| Medic Districts | | | | |
| Medic Response Areas | | | | |
| Medic Stations | | | | |
| Medical Facilities | | | | |
| Milepost Markers | | | | |
| Military Response Areas | | | | |
| MSAG Communities | | | | |
| Net Junctions | | | | |
| Ocean Rescue Boundaries | | | | |
| Ocean Safety | | | | |
| Parcels | | | | |
| Parks | | | | |

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MAPPING LAYERS UPDATED (PART IV)

9-1-1 GIS layers provided by Akimeka to the PSAP are designed for use on E9-1-1 systems and NG9-1-1 systems.

| OAHU CIVILIAN PSAPS | | | | | | | |
|---|---|--|--|--|--|--|--|
| Type of Layer | Akimeka GIS Server Date Created/ Edits Performed | GIS Delivery Dates/Remarks | | | | | |
| CRITICAL 9-1-1 PUBLIC SAFETY LAYERS FOR DISPATCH & RESPONSE | | | | | | | |
| | (Listed Alphabetically) | | | | | | |
| Parks Polygon | | | | | | | |
| | | Delivered 1/31/2020 | | | | | |
| | 1/17/2020 | Corrected spatial, modified MSAG community for one (1) record in Waikiki | | | | | |
| | То | Corrected spatial for forty-two (42) records in Waikiki | | | | | |
| | 1/30/2020 | Corrected spatial for thirty-two (32) records in Punchbowl | | | | | |
| | | Corrected spatial for fifteen (15) records in Downtown | | | | | |
| | | Delivered 1/17/2020 | | | | | |
| | | Corrected spatial for one (1) record in Salt Lake | | | | | |
| Defeate of Landau and | 1/3/2020 To | Corrected spatial for three (3) records in Airport | | | | | |
| Points of Interest | 1/16/2020 | Corrected spatial for one (1) record in Aiea | | | | | |
| | 1710/2020 | Corrected spatial for twenty-nine (29) records in Downtown | | | | | |
| | | Corrected spatial for twenty (20) records in Kalihi | | | | | |
| | 1/1/2020 To 1/2/2020 | Delivered 1/3/2020 | | | | | |
| | | Corrected spatial for three (3) records in Aiea | | | | | |
| | | Corrected spatial for two (2) records in Wahiawa | | | | | |
| | | Corrected spatial for two (2) records in Pearl City | | | | | |
| | | Corrected spatial for one (1) record in Waipahu | | | | | |
| Police Beats | | | | | | | |
| Police Districts | | | | | | | |
| Police Response Areas | | | | | | | |
| Police Stations | | | | | | | |
| Post Offices | | | | | | | |
| Schools | | | | | | | |
| | 1/30/2020 To 1/31/2020 | Next Delivery 2/14/2020 | | | | | |
| | 1/31/2020 | New hiking trail one (1) record in Makaha | | | | | |
| Street Centerlines | 1/17/2020 To 1/30/2020 1/3/2020 To 1/16/2020 | Delivered 1/31/2020 | | | | | |
| | | Corrected range for one (1) record in Punchbowl | | | | | |
| | | Corrected range for one (1) record in Moanalua V | | | | | |
| | | Corrected range for three (3) records in Mililani | | | | | |
| | | Delivered 1/17/2020 | | | | | |
| | | Corrected elevation for two (2) records in Aiea | | | | | |
| | 1/10/2020 | Corrected spatial for two (2) records in Kapolei | | | | | |
| Subdivisions | | | | | | | |
| Tow Jurisdictions | | | | | | | |

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MAPPING LAYERS UPDATED (PART V)

9-1-1 GIS layers provided by Akimeka to the PSAP are designed for use on E9-1-1 systems and NG9-1-1 systems.

| OAHU CIVILIAN PSAPS | | | | | | |
|--------------------------|---|---|--|--|--|--|
| Type of Layer | Akimeka GIS Server Date Created/ Edits Performed | GIS Delivery Dates/Remarks | | | | |
| | CRITICAL 9-1 | -1 PUBLIC SAFETY LAYERS FOR DISPATCH & RESPONSE | | | | |
| | | (Listed Alphabetically) | | | | |
| Tsunami Evacuation Zones | | | | | | |
| Tsunami Heights | | | | | | |
| Waste Water Plants | | | | | | |
| | | Delivered 1/31/2020 | | | | |
| | 1/17/2020 | Added sixty-nine (69) sectors per Verizon Wireless CRS | | | | |
| | То | Updated three (3) sectors per AT&T CRS | | | | |
| | 1/30/2020 | Added twelve (12) sectors per AT&T CRS | | | | |
| | | Updated eighty-nine (89) sectors per Verizon Wireless CRS | | | | |
| WSP Cell Sectors | 1/3/2020 To 1/16/2020 1/1/2020 To 1/2/2020 | Delivered 1/17/2020 | | | | |
| | | Added forty-one (41) sectors per Verizon Wireless CRS | | | | |
| | | Updated nineteen (19) sectors per Verizon Wireless CRS | | | | |
| | | Added thirty (30) sectors per Sprint CRS | | | | |
| | | Delivered 1/3/2020 | | | | |
| | | Added six (6) sectors per AT&T CRS | | | | |
| | 1/17/2020 To | Delivered 1/31/2020 | | | | |
| | | Updated nineteen (19) towers per Verizon Wireless CRS | | | | |
| | 1/30/2020 | Added three (3) towers per Verizon Wireless CRS | | | | |
| | 1/30/2020 | Updated four (4) towers per AT&T CRS | | | | |
| WSP Cell Towers | 4 /0 /0000 | Delivered 1/17/2020 | | | | |
| | 1/3/2020 To 1/16/2020 | Added five (5) towers per Sprint CRS | | | | |
| | | Updated eleven (11) towers per Verizon Wireless CRS | | | | |
| | | Updated one (1) tower per Sprint CRS | | | | |
| | 1/1/2020 To | Delivered 1/3/2020 | | | | |
| | 1/2/2020 | Updated three (3) towers per AT&T CRS | | | | |

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GEOGRAPHIC INFORMATION SYSTEM (GIS) NARRATIVES

GIS KEY ACTIVITIES/UPDATES

• GIS Key activities include the events such as GIS deliverables, meetings, agreements, etc.

| Date | Key Activities/Updates |
|-----------|--|
| 1/31/2020 | Delivered Street Centerlines, Common Places, Police Beats, MSAG Communities to HPD for Motorola CAD. |
| 1/31/2020 | Delivered Street Centerlines, Address Points, Fire Response Areas, Medic Response Areas, and Display Address Points to HFD, EMS, and Ocean Safety for TriTech CAD. |
| 1/31/2020 | Delivered Address Points, Common Places, Street Centerlines, Police Response Areas, Fire Response Areas, Medic Response Areas, Ocean Safety Response Areas, ESN, MSAG Communities, Cell Towers, Cell Sectors to the Honolulu MapFlex system for HPD, HFD, EMS, and Ocean Safety. |
| 1/17/2020 | Delivered Street Centerlines, Common Places, Police Beats, MSAG Communities to HPD for Motorola CAD. |
| 1/17/2020 | Delivered Street Centerlines, Address Points, Fire Response Areas, Medic Response Areas, and Display Address Points to HFD, EMS, and Ocean Safety for TriTech CAD. |
| 1/17/2020 | Delivered Address Points, Common Places, Street Centerlines, Police Response Areas, Fire Response Areas, Medic Response Areas, Ocean Safety Response Areas, ESN, MSAG Communities, Cell Towers, Cell Sectors to the Honolulu MapFlex system for HPD, HFD, EMS, and Ocean Safety. |
| 1/3/2020 | Delivered Street Centerlines, Common Places, Police Beats, MSAG Communities to HPD for Motorola CAD. |
| 1/3/2020 | Delivered Street Centerlines, Address Points, Fire Response Areas, Medic Response Areas, and Display Address Points to HFD, EMS, and Ocean Safety for TriTech CAD. |
| 1/3/2020 | Delivered Address Points, Common Places, Street Centerlines, Police Response Areas, Fire Response Areas, Medic Response Areas, Ocean Safety Response Areas, ESN, MSAG Communities, Cell Towers, Cell Sectors to the Honolulu MapFlex system for HPD, HFD, EMS, and Ocean Safety. |

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HONOLULU POLICE DEPARTMENT TRITECH CAD PROJECT

On October 10, 2018, Akimeka participated along with the CAD project team of the Honolulu Police Department on a teleconference GIS kickoff meeting with the TriTech CAD Company. Items that were discussed were GIS requirements for the CAD and RMS systems.

On October 25, 2018, Akimeka's initial delivery of 11 GIS layers to the TriTech FTP site included: Address Points, Airports, Coastline, Fire Response Areas, Medic Response Areas, MSAG Communities, Parks, Police Beats, State Boundary, Streams, and Street Centerlines.

Two spreadsheets describing the layers were also provided on the FPT site.

MAPFLEX SYSTEM

Akimeka delivered GIS data to the MapFlex system on the following dates in January 2020.

Hawaii County – January 14th, 2020 and January 28th, 2020 **Maui County** – December 31st, 2019, January 15th, 2020 and January 29th 2020 **Kauai County** – January 2nd, 2020, January 16th, 2020, and January 30th, 2020 **Honolulu** – January 3th, 2020, January 17th, 2020, and January 31st

MAPFLEX ISSUES

Below is a detailed list of issues regarding the MapFlex systems throughout the State of Hawaii.

| DATE | ISSUE | DESCRIPTION | STATUS | | |
|---------|--------------------|---|---------------------------------|--|--|
| 8/2016 | Wireless Addresses | MapFlex system began displaying wireless information | Partially Resolved (Nov 2016) | | |
| | | incorrectly. MapFlex system is doing a reverse query for | The overriding ALI with | | |
| | | additional information in the GIS and this is overriding the | updated Lat/Longs from the | | |
| | | ALI information with the closest address in the GIS. | GIS is still occurring | | |
| 11/2016 | Phase I Display | Wireless Phase I calls plotting at centroid of coverage area | Partially Resolved (Dec 2016) | | |
| | | and landing in the ocean. After installation of new MapFlex | According to PSAPs, it's not | | |
| | | version to correct other issues, the configurations for | fully resolved. The icon of the | | |
| | | Wireless Phase I were not set up properly by Intrado, in | tower still doesn't plot for | | |
| | | which the mapping did not point to the correct information | Phase I. | | |
| | | in MapFlex. | | | |
| 11/2016 | Wireless | Sprint calls coming across with unusually high confidence. | Pending | | |
| | Confidence | Coordination is taking place with Sprint and Intrado. Intrado | | | |
| | | provides the PDE services for Sprint. | | | |

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| 3/22/2017 | ArcGIS Address | The locators in MapFlex have a configurations which does | Pending |
|-----------|---------------------|---|----------------------------------|
| 3/22/2017 | Locator | not include ESNs. A reported issue has occurred with the | A new SP 5.4 update by Intrado |
| | Locator | Sheraton in Waikiki. The address locator does not | is aimed to correct this issue. |
| | | differentiate between the Sheraton hotel and the surf break | is affice to correct this issue. |
| | | and plots on the surf break. The bigger issue is that this same | |
| | | issue will occur with complexes that have same primary | |
| | | address. | |
| 5/17/2017 | VoIP Calls Plotting | Recognized in late April and early May 2017, the PSAPs | Partially Resolved – the |
| 3/17/2017 | Incorrectly | have been receiving several VoIP calls which are plotting in | Lat/Longs are no longer being |
| | meditectry | the incorrect locations. After further research it was | plotted in MapFlex due to a |
| | | determined that it is because MapFlex is configured to plot | software release. |
| | | the received Lat/Long. The problem is that these are not | |
| | | always maintained properly and that ideally the system | |
| | | should first choose to match with the GIS data based on the | |
| | | provided address. | |
| | | During the September 20, 2017 PSAP conference call, HT | |
| | | relayed there was confirmation that the Time Warner | |
| | | records were in fact passing through the Intrado FMCC. | |
| 5/17/2017 | Landline Calls | It was determined that for normal landline calls, the X/Y | Intrado is looking into this |
| | Producing X/Y on | coordinates are being sent. The PSAPs have asked where | (May - June 2017) |
| | calls | these are being generated and why would they be sent for | |
| | | landline calls. | |
| 5/23/2018 | Phase I & Phase II | Phase I calls received at the Kihei Maui PSAP are displaying | Pending |
| | coverage area | a circular circumference area rather than a cone shaped | |
| | | directional coverage. Phase II calls are not plotting the COF | |
| | | meters correctly. | |
| 5/24/2018 | Incorrect Addresses | MapFlex system began displaying incorrect addresses in the | Pending |
| | | bubble display when an Address Point is right mouse clicked | |
| | | to see information by the PSAPs. However, the address in | |
| | | the data is still correct as shown on the left hand side. | |
| 6/27/2018 | Moving Labels | It was brought up during the PSAP teleconference with | Pending |
| | | Hawaiian Tel and Intrado that the Hawaii Fire Department | |
| | | submitted a trouble ticket regarding the parcel labels. When | |
| | | the base map is checked on for viewing the owner's names | |
| | | on the parcel layer, the names of some of the parcels will | |
| | | follow and leave their parcel as the map is panned following | |
| | | streets. This problem was also recreated at the Hawaii | |
| | | Police Department. | |

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STREET UTILITY CHECK

This is an ongoing project to correct the errors identified. A comparison of the raw CAD generated report from the Street Check Utility was performed between the Street Centerline GIS data on April 1, 2019 and April 30, 2019. There were no updates received for January, 2020.

| Street Utility Check | | | | | | | | |
|--------------------------------|--------------------------|------------------|-----------------------------|--------------------------|--|--|--|--|
| | First Report 06/01/13 | 3/31/2019 | 4/30/2019 | Improvements/Corrections | | | | |
| Total Number of GIS Records | 26,602 | 31,286 | 31,313 | Increased by 27 records | | | | |
| | | Errors Identifie | d | | | | | |
| Zero Errors | 5,112 | 1 | 4 | Increased by 3 records | | | | |
| Low > High Errors | 3 | 0 | 1 Increased by 1 record | | | | | |
| Mixed Parity Errors | 1 | 0 | 0 No change | | | | | |
| Changed Parity Errors | 105 | 1 | 2 Increased by 1 record | | | | | |
| Address Gap Errors | 2,629 | 25 | 7 | Decreased by 18 records | | | | |
| Address Overlap Errors | 423 | 26 | 9 Decreased by 17 records | | | | | |
| Flipped Link Errors | 1,030 | 368 | 20 Decreased by 348 records | | | | | |
| Total Errors | 9,303 | 421 | 43 | Decreased by 378 records | | | | |

In addition to Akimeka's internal validation tools, Akimeka will continue to utilize the various CAD reports to further identify and correct the multitude of discrepancies in the GIS data. This is an ongoing and routine process which Akimeka has been using to improve the accuracy of the GIS data for Public Safety.

As a result of the GIS efforts within the military jurisdictional areas covered primarily by the RDC, the GIS data is undergoing several changes within the bases which will cause a fluctuation in the Street Check results, which is to be expected. Any discrepancies that are identified will be corrected in the following GIS deliverable.

TRITECH CAD ADDRESS POINT PROJECT

During the month of February 2018 after several months of discussion and testing, the Address Points were loaded into TriTech and moved into the HFD/EMS shared CAD. Since that time, HFD, EMS, and Akimeka have been working closely together to identify and update subaddress location for various complexes around Oahu. Several hundred new address points have been added to the GIS as a result of this collaboration.

During the month of March 2018, there were only a couple minor updates communicated and one issue identified with addresses within close proximity to the H1 freeway.

- 1. Akimeka ran an analysis and added routing information into more than 27,000 Address Points to resolve the geotolerance within TriTech.
- 2. During the month of April 2018, it was identified that the issue related to the H1 Fwy still remain and after investigation it was determined that a component within the SQL server for TriTech requires a potential update to allow for routing to be overridden based off of the Routing ID information.
 - A trouble ticket has been opened with TriTech who is further investigating the potential correction, outside of the GIS
 data.

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- 3. During the month of February 2019, HFD has requested assistance with labelling the mobile map.
 - a. Akimeka worked with HFD to develop a labeling scheme that showed complex names, addresses, and apartment numbers, without label duplication. The labeling scheme requires three additional shapefiles, which will be provided to HFD as part of every deliverable.

SPEED LIMIT UPDATES

Beginning in April 2017, and now that the Street Centerline data has achieved not only an above 98% synchronization rating but also a high degree of accuracy in the spatial accuracy, a new project to correct speed limits has begun. The project is beginning in Waimanalo and continuing in a counter-clockwise patter around the island of Oahu. The initial focus is on Highways, Freeways, and other major roads, but also not limited to additional corrections, especially those which are immediately identified to positively impact vehicle routing, etc.

All updates are shared directly with the PSAPs and the agency most affected (positively) is HFD since they actively use vehicle routing and this will assist in better CAD unit recommendations. During each GIS deliverable, a list of updates are being provided.

- 1. During the 2017 year, from April 2017 to December 2017, more than 4,200 street segments were updated to reflect posted speed limit restrictions from Waimanalo to Nanakuli.
- 2. During January 2018, 1,187 segments were updated in Maili, Nanakuli, and Kapolei.
- 3. Throughout the month of February 2018, 2,025 speed limits were updated in Ewa Beach, Makakilo, and Iroquois.
- 4. During March 2018, 3,743 street segments were updated across Makakilo, Kunia, Iroquois, Pearl Harbor, Waipahu, Wahiawa, Waialua, and Mililani.
- 5. During the month of April 2018, Akimeka held on the speed limit updates until HFD has had a chance to test out the TriTech and to ensure the routing is correct (see TriTech Address Points Project narrative above for further information on routing items).
- 6. During the month of May 2018, Akimeka continued the hold on the speed limit updates until HFD has had a chance to test out the TriTech and to ensure routing is correct (see TriTech Address Points Project narrative above for further information on routing items).
- 7. During the month of June 2018, Akimeka continued the hold on the speed limit updates until HFD has had a chance to test out the TriTech and to ensure routing is correct (see TriTech Address Points Project narrative above for further information on routing items).
- 8. During the month of July 2018, Akimeka continued the hold on the speed limit updates until HFD has had a chance to test out the TriTech and to ensure routing is correct (refer to TriTech Address Points Project narrative above for further information on routing items).
- During the month of August 2018, Akimeka continued the hold on the speed limit updates until HFD has had a chance to test
 out the TriTech and to ensure routing is correct (refer to TriTech Address Points Project narrative above for further information
 on routing items).
- 10. During the month of September 2018, Akimeka resumed the speed limit updates. 1,081 street segments were updated across Waipio and Pearl City.
- 11. During the month of October 2018, Akimeka continued the speed limit updates. 1,094 street segments were updated across Aiea, McGrew Point (McGrew Pt) and Pearl City Peninsula (PC PEN).
- 12. During the month of November 2018, Akimeka continued the speed limit updates. 265 street segments were updated across Halawa and Moanalua Valley.
- 13. During the month of December 2018, Akimeka continued the speed limit updates. 1,978 street segments were updated across Hale Moku, Hokulani, Salt Lake, Mapunapuna, Radford Terrace, Halsey Terrace, Miller Park, Catlin Park, and Kalihi.

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- 14. During the month of January 2019, Akimeka continued the speed limit updates. 1,843 street segments were updated across Airport, Nuuanu, Downtown, Punchbowl, Makiki, Kakaako, Honolulu, and Ala Moana.
- 15. During the month of February 2019, Akimeka continued the speed limit updates. 956 street segments were updated across Manoa and McCully.
- 16. During the month of March 2019, Akimeka continued the speed limit updates. 518 street segments were updated across Waikiki, Fort DeRussy, and Kapahulu.
- 17. During the month of April 2019, Akimeka completed the speed limit updates. 2467 street segments were updated across Kaimuki, Kahala, Waialae, Aina Haina and Hawaii Kai.
- 18. During the month of May 2019, Akimeka updated speed limits on State highways. 453 segments were updated across Aiea, Airport, Downtown, Ewa Beach, Kalihi, Kapolei, Kunia, Nuuanu, Pearl City, Punchbowl, Waipahu and Waipio.
- 19. During the month of June 2019, no speed limit update requests were received. As of June 2019, the speed limit updates has been completed for all city streets that were previously 30 MPH, State streets that were previously 50 MPH, and other major roadways. If any requests for update are received in the future, Akimeka will update the speed limit(s).
- 20. No updates received in January 2020.

ROUTING ID UPDATES

Beginning in July 2019, all Address Points and Points of Interests will be assigned a Routing ID to ensure that routing to these addresses are correct. The project is beginning in Waimanalo and continuing in a counter-clockwise pattern around the island of Oahu.

All updates are shared directly with the PSAPs and the agency most affected (positively) is HFD since they actively use vehicle routing and this will assist in better CAD unit recommendations. During each GIS deliverable, a list of updates are being provided.

- 1. During the month of July, Routing IDs were assigned to seven thousand three hundred twenty eight (7328) Address Points and sixty eight (68) Points of Interests.
- 2. During the month of August, Routing IDs were assigned to eighteen thousand eight hundred ninety one (18,891) Address Points and one thousand two hundred twenty eight (1,228) Points of Interests across Aiea, Kaaawa, Kahaluu, Kailua, Kaneohe, MCBH and Waimanalo.
- 3. During the month of September, Routing IDs were assigned to fourteen thousand three hundred twenty seven (14,327) Address Points and seven hundred ninety (790) Points of Interest across Haleiwa, Kahuku, Laie, Wahiawa, Schofield, Wailua and Sunset.
- 4. During the month of October, Routing IDs were assigned to twenty four thousand nine hundred sixty seven (24,967) Address Points and one thousand fifty seven (1,057) Points of Interest across Waianae, Maili, Nanakuli, Kapolei, Makakilo and Ewa Beach.
- 5. During the month of November, Routing IDs were assigned to six thousand three hundred twenty one (6,321) Address Points and three thousand three hundred fifty four (3,354) Points of Interest across Makaha, Waianae, Nanakuli, Kapolei and Ewa Beach.
- 6. During the month of December, Routing IDs were assigned to seventeen thousand nine hundred thirty four (17,934) Address Points and two thousand fifty nine (2,059) Points of Interest across Kunia, Waipahu and Mililani.
- 7. During the month of January 2020, Routing IDs were assigned to fifteen thousand five hundred fourteen (15,514) Address Points across Waipahu and Pearl City.

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HONOLULU EMS RESPONSE AREA

During the month of December 2017, EMS requested a high resolution map of the Honolulu Response Area which will likely be divided into 5 separate response areas to better support the EMS operations and ambulance response times.

- 1. With HPD's approval, Akimeka prepared a map of the requested area and provided to EMS on December 12, 2017.
- 2. Considering the additional response areas will certainly require the creation of additional ESZ/ESNs; HPD, EMS, and Akimeka will be coordinating so that the project can be mapped out on a timeline so that the changes can take place while maintaining an above 99% synchronization level between GIS, MSAG, and ALI.
- 3. An operational consideration has already begun a discussion, in that the military ESNs will likely be reallocated to a new numbering so that both civilian and military responses will have enough ESNs to support their individual operations.
- 4. During the first half of 2018, there will be further discussion on the creation of the new Response Areas, allocation of military ESNs, and create of new ESZs/ESNs.

During the month of October 2019, EMS requested an updated map of the Honolulu Medic Response Area which was divided based on drive time analysis. There are now 21 (twenty one) Medic Response Areas in Oahu.

- 5. With EMS's approval, Akimeka prepared a map of the requested area and provided to EMS on October 24, 2019.
- 6. A new medic station and Response Area called Salt Lake (MED23) was added to the database.
- 7. The Honolulu Response Area was divided into 5 separate response areas to better support the EMS operations and ambulance response times. The 5 response areas are: Charlie 1 (MED01), Baker 1 (MED11), Makiki (MED20), Metro 1 (MED02), and Pawaa 1 (MED05).
- 8. The Metro 1 Response Area was divided into two separate areas using Wilder Avenue and Dole Street as the dividing line.
- 9. The additional response areas will require the creation of additional ESZ/ESNs; HPD, EMS, and Akimeka will be coordinating so that the project can be mapped out on a timeline so that the changes can take place while maintaining an above 99% synchronization level between GIS, MSAG, and ALI.

AMR-H

The American Medical Response Hawaii (AMR-H) Project is a joint venture by the Honolulu Emergency Services Department (HESD) to provide accurate address and location information to its other public safety agencies. This project is to ensure AMR-H is utilizing the same address and location information as the other HESD public safety agencies, and to ensure compliance with National 9-1-1 directives such as the FCC Docket 15-9 regarding location accuracy. The intent is to provide the same accurate location information to all the HESD public safety response agencies to help reduce response times to the 9-1-1 caller.

NOTE:

This work is performed under a separate contract.

This contract has lapsed and will be removed from this report pending further developments.

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AMERICAN MEDICAL RESPONSE (AMR) HAWAII PROJECT

Since the start of the GIS deliverable schedule with AMR, there have been no reported issues or concerns. In order to open up discussion on any operational improvements via the GIS data, or to identify any updates that can be made, AMR and Akimeka held a brief conference call on December 5, 2017.

- 1. During the discussion there was overwhelming agreement that the data provided by Akimeka is working great for the dispatchers and first responders at AMR.
- 2. There were some areas that were discussed where searching for certain addresses will prompt a list of invalid addresses.
 - a. Through the discussion it was identified that the CAD system is aggregating various data sources since they are dispatching throughout the State. The data that Akimeka provides for the island of Oahu is working great, however since the neighbor islands are using various sources of data in different formats, the accuracy of that data is greatly in question and is likely not fully supportive of the search requirements in the CAD.
- 3. A final topic of discussion was on training for the AMR dispatcher. Joe from AMR who was on the call, took this as an action item to prepare training material for searching criteria, especially intersections. Akimeka volunteered that they can make themselves available to collaborate on the training material if needed.
- 4. There are no follow up calls scheduled at this time, however Akimeka informed that any issues or improvements identified will be looked at immediately and to send the requests as they are identified.

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4. E9-1-1 OAHU CIVILIAN DATABASE SYNCHRONIZATION

(<u>Reference:</u> NENA 71-501, Version 1.1 – NENA Information Document for Synchronizing Geographic Information System databases with MSAG & ALI)

As part of Akimeka's value added services, Akimeka conducted a database synchronization audit for the Oahu Civilian PSAP on January 1, 2020.

The database synchronization effort included comparing Oahu Civilian's 9-1-1 MSAG received from the 911 Database provider, Intrado on January 1, 2020, against the PSAP's 911 GIS Street Centerline data. A total number of **7,920** 9-1-1 MSAG records were reviewed in the audit and analyzed. Results of the database synchronization audit completed on January 1, 2020 for the Oahu Civilian PSAP are reported below.

Database synchronization should be part of an ongoing and continuous process to ensure that the databases remain current and synchronized. Since neither database is static in nature, the synchronization process will never remain at a 100 percent match rate. It can be expected that the percentage will fluctuate by a small degree. As such, NENA's recommended minimum match rate is 98%.

The database synchronization process is essential to monitor and ensure the level of accuracy of the E9-1-1 databases and prepare for Next Generation 9-1-1 (NG9-1-1). As such, Akimeka will perform database synchronization audits on a quarterly basis as part of its ongoing maintenance process. Results of the database synchronization audit will be included and reported in the Monthly Status Report (MSR) accordingly.

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AUDIT SUMMARY RESULTS - 2019-2020

| | | As of April 1, 2019 | | As of July 1, 2019 | | As of October 1, 2019 | | As of January 1, 2020 | |
|--|-------|-------------------------------|-------|-----------------------------|-------|------------------------------|-------|-----------------------------|-------|
| 9-1-1 MSAG TO GIS STREET CENTERLINE AUDIT COMPARISON RESULTS | Notes | 9-1-1 MSAG S Dated 4-01-19 | | 9-1-1 MSAG Dated 7-01-19 | | 9-1-1 MSAG Dated 10-01-19 | | 9-1-1 MSAG Dated 1-01-20 | |
| AGDIT COM ANGON NEGOLIO | | # of Records | % | # of Records | % | # of Records | % | # of Records | % |
| Total 9-1-1 MSAG Records Reviewed | | 7,833 | | 7,834 | | 7,845 | | 7,920 | |
| Less: 9-1-1 MSAG Exception Records | (1) | 31 | 0.4% | 28 | 0.4% | 29 | 0.4% | 29 | 0.4% |
| Net 9-1-1 MSAG Records Eligible for Comparison | | 7,802 | | 7,806 | | 7,816 | | 7,891 | |
| Total 9-1-1 MSAG Records Match (9-1-1 MSAG GIS Match No Corrections Required) | | 7,792 | 99.9% | 7,798 | 99.9% | 7,794 | 99.7% | 7,881 | 99.9% |
| 9-1-1 MSAG GIS No Match - Minor Correction Required | (2) | 7 | 0.1% | 7 | 0.1% | 22 | 0.3% | 8 | 0.1% |
| 9-1-1 MSAG Record With No Matching GIS Record | (3) | 3 | 0.0% | 1 | 0.0% | 0 | 0.0% | 2 | 0.0% |
| Total 9-1-1 MSAG Records No Match | | 10 | 0.1% | 8 | 0.1% | 22 | 0.3% | 10 | 0.1% |

Objective: NENA Recommended Match Rate = 98%

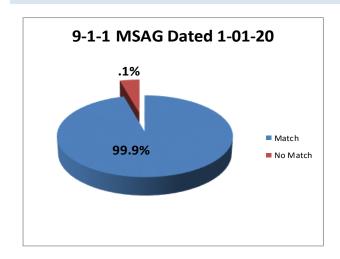
The two-way (MSAG – GIS) database synchronization audit for the City & County of Honolulu (Civilian PSAPs) was completed as scheduled. The match rate remained consistent from January 2020 with a 99.9% Match Rate to a 99.7% Match Rate as of October 2019.

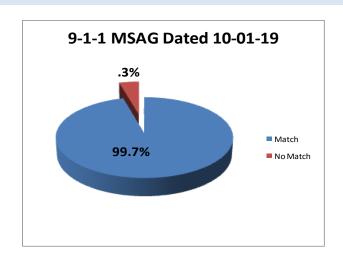
NOTES:

- (1) An MSAG Record that will not have a corresponding GIS Street Centerline Record but is required for the routing of E9-1-1 calls (i.e., Emergency Call Box, Foreign Exchange Records, Wireless Shell Records, etc.). No further action is required.
- (2) An MSAG Record that requires minor MSAG attention in 9-1-1Net to correct MSAG Records (i.e., Reassignment of an MSAG Community, modification of the Site Address Range, assignment of an ESN, performing a combine or insert of an existing MSAG Record, etc.).
- (3) An MSAG Record that does not have a corresponding GIS Record and will require additional research and validation. The GIS Section will assist with this effort.

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AUDIT SUMMARY RESULTS - JANUARY 1, 2020 MSAG VS OCTOBER 1, 2019 MSAG





Oahu Civilian's level of accuracy or 9-1-1 Match percentage remained consistent with a

99.9% as of January 1, 2020 compared to 99.7% as of October 1, 2019.

- As agreed between HPD PMT and Akimeka, Akimeka would initially focus on the <u>existing</u> MSAG and GIS records to produce a match which will benefit the PSAP in the interim.
- This effort would not include the MSAG Communities project to implement the <u>new MSAG Communities</u> and associated GIS Street Centerlines. This would be handled as a separate project as identified and agreed to.
- As a result of the MSAG Community and Street Segment Sweep project, the majority of the remaining discrepancies resides in the Honolulu MSAG Community and will be addressed during the Phase V effort.
- The previously completed MSAG Communities as a result of the MSAG Community and Street Segment Sweep project are now considered part of ongoing maintenance.
- * "MSAG GIS Minor Corrections" decreased (22 to 8) from October 2019 to January 2020. The non-match condition are a result of MSAG records submitted in 9-1-1 Net not completed prior to the end of month. Low and high address ranges, odd/even combines, and street suffixes were adjusted in the MSAG to correspond with the GIS record. Although identified as a minor correction, customer telephone numbers (TNs) must be validated in 9-1-1Net prior to correcting the MSAG record to ensure the correction will not result in an orphan ALI Record or TN Fall-out.

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AUDIT SUMMARY RESULTS- JANUARY 1, 2020 MSAG VS OCTOBER 1, 2019 MSAG CONTINUED

- ❖ MSAG Record with No GIS Record" increased (0 to 2) from October 2019 to January 2020. MSAG records with no matching record were due primarily to the verification of the MSAG records against multiple GIS databases to determine if the roads are existing within City and County of Honolulu.
- A constant effort to keep the databases synchronized and maintained are required to improve the level of accuracy of the E9-1-1 databases each time an MSAG or GIS record is "last modified".
- Accurate location and GIS information will ensure proper dispatching and response in a timely manner for all Public Safety agencies.

All the hard work to maintain and synchronize the E9-1-1 databases is validated when a life and/or property is saved.

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INVALID MSAG STREETS AND ADDRESS RANGES - ESN X99 RECORDS

At the request of the Kauai County and Hawai'i County Chief of Police, Hawaiian Telcom, Inc. (HTI) provided all State of Hawai'i PSAPs and Akimeka, as the PSAP's agent, with access and visibility to the ESN x99 MSAG records which are "known" invalid streets and address ranges. Akimeka will be investigating and reporting on these ESN x99 MSAG records as a separate project and add-on to the Database Synchronization quarterly report.

Results of the Oahu Civilian data provided are as follows:

| | Invalid MSAG Records | | | | | |
|------------------|---------------------------|---------------------------------------|--|--|--|--|
| OAHII | 9-1-1 MSAG Dated 01-01-20 | | | | | |
| OAHU CIVILIAN | Number of Records | % of Total Invalid MSAG Records | | | | |
| ESN 199 | 0 | 0.0% | | | | |

These invalid MSAG records represent **0%** of the Total MSAG records for the City & County of Honolulu as of the January 1, 2020 MSAG. The individual ALI records associated with these records are provided below.

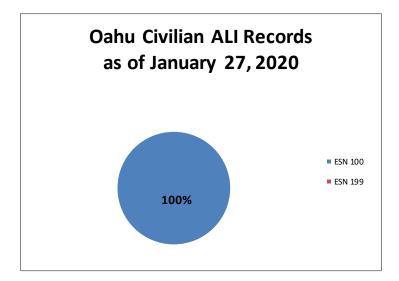
TN CRs are submitted by Akimeka when valid MSAG addresses are identified and validated against the GIS data. Akimeka will continue to investigate and report on these ESN 199 MSAG records as a separate project and add-on to the Database Synchronization quarterly report.

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AUTOMATIC LOCATION IDENTIFICATION (ALI) DATABASE DISCREPANCIES

As part of Akimeka's ongoing database synchronization efforts, Akimeka reviewed and summarized the ALI discrepancies by community in 9-1-1Net for the City & County of Honolulu (Oahu Civilian). As of January 27, 2020, there are **0** ALI records with an assigned ESN of 199, representing **0%** of the City & County of Honolulu (Oahu Civilian) total ALI records.

With Akimeka's continuing MSAG Community and Street Segment Sweep effort, the percentage of ESN 199 records may increase as low and high address ranges and new communities are verified.



The number of Ali records with an ESN 199 records remained consistent (0 to 0) from October 2019 to January 2020. The zero records were due primarily to Akimeka's effort to identify the invalid MSAG records and verify their correct locations against current County GIS data.

Although the ESN 199 is a "valid" MSAG utilized for overflow addressing, the voice portion of the 9-1-1 call will still be routed to the PSAP. However, the address information will present an invalid address/location to the dispatcher or a "No Record Found" condition which may affect the processing of the 9-1-1 response and/or cause confusion or delay during the dispatch of 9-1-1 resources to the caller's location.

The goal, which requires the cooperation among all service providers, is to clean-up all ESN 199 MSAG records to a valid City & County of Honolulu ESN 100 to ensure that all ALI records assigned to the City & County of Honolulu (Oahu Civilian) have an "MSAG valid address".