DRAFT OPD Service Call Data Analysis

Working Group of Budget & Data Analysis Advisory Board

Reimagining Public Safety Task Force

February 12, 2021

Executive summary

Our group has focused primarily on the 2019 Calls for Service (**CFS**) data provided by the City of Oakland Police Department (**OPD**) on November 5, 2020 to the Reimagining Public Safety Task Force (**RPSTF**). No other CFS data was provided by OPD. We analyzed CFS data provided in order to categorize how OPD patrol officers spend their time to quantify the impact of civilianizing specific types of calls. In addition, we also compared our analyses with those in the OPD requested Police Data and Analysis Report written by the Center For Public Safety Management (**CPSM**) and provided to us on December 28, 2020.

This report includes:

- Our methodology to ensure readers understand the data available and the limitations of the analysis
- A summary of high level analyses of the Calls for Service data with the goal of highlighting categories of Calls for Service that were suggested to be civilianized or addressed by an alternative response as suggested by other Advisory Boards
- A critique and contrast of our analysis with the CPSM report
- Challenges related to the CFS analysis
- Observations and Conclusions related to the work

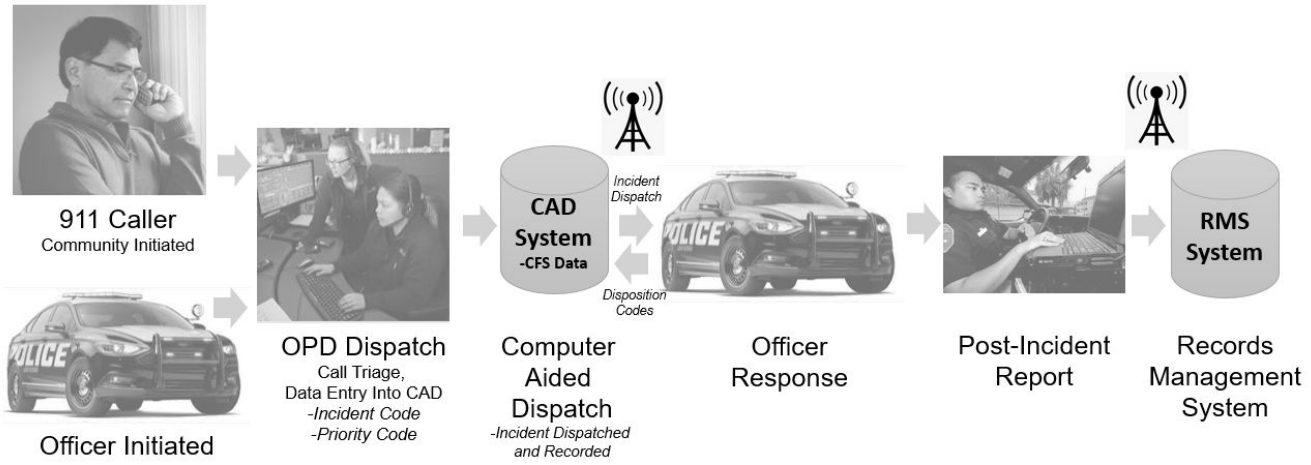
Methodology

The 2019 CFS data set provided by OPD corresponds to 442,223 individual calls made during the 2019 calendar year (January 1, 2019, through December 31, 2019). Each call contained data on:

- An incident code (nature of requested assistance)
- The CFS source (community or police initiated)
- A priority code
- The OPD police beat for the CFS address
- A de-identified address for the CFS (street addresses, at the block-level only)
- Five specific event times arising during the handling of each CFS:
- Create, Transmit, Dispatch, Arrival and Closed (see Appendix 1)
- The first five disposition codes

Much of our early effort went into interpreting the meaning of the incident codes (the nature of assistance requested), call source (community or officer initiated), priority (urgency of the CFS), various time stamps, and disposition codes (status codes submitted by the responding officer). Background research involved reference to the California Penal Code, information from public police data from other jurisdictions, National Institute for Criminal Justice Reform (NICJR) staff, insights of retired OPD officers, and an extended interview with the manager of OPD dispatch. We developed a "glossary" defining the various codes and terms used in the CFS data**;** this resource can be used for analysis of OPD data beyond the scope of the Reimagining Public Safety Task Force.

Incident Lifecycle Overview



Incident Codes: In the 2019 CFS data set, 367 different incident codes were included, some occur more frequently and some only once. The complete glossary identifies 7 top-level incident types and 57 more refined sub-categories.

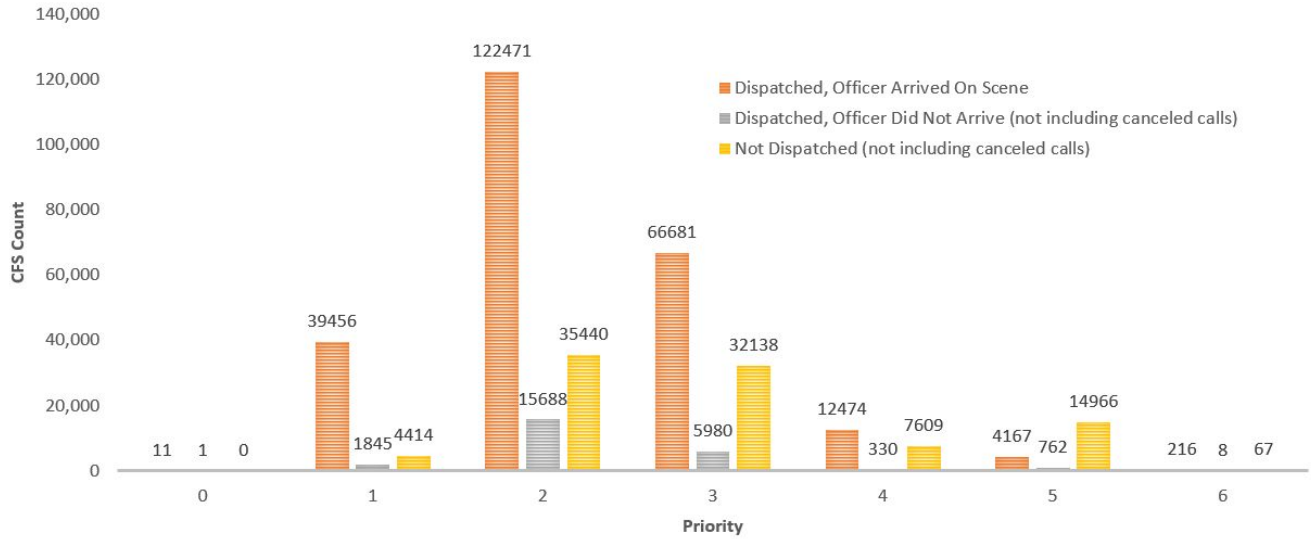
Disposition Codes: In the 2019 CFS data set, 87 disposition codes were referenced, with some dispositions only being referenced once or a couple times. Dispositions were organized into 16 categories.

Relationship Between Incident Code and Disposition: A key feature of the glossary is a classification system for both incidents and dispositions that organizes individual codes into meaningful groups. For example incident codes 270, 271, 272, 277, 601PU, 601R, FNDJUV were all determined to involve Child Welfare; disposition codes 905, BAV, PC, VT all involve Traffic.

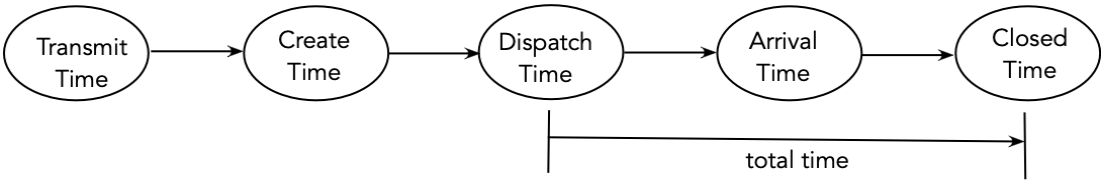
Call Source: CFS come into dispatch two ways: (1) community initiated (911 calls) and (2) officer initiated.

Priority: Calls are classified by the dispatcher from priority 0 (most urgent) to priority 6 (less urgent).

Officer Response to CFS: Nearly half of the CFS data were either not dispatched or an officer did not arrive on scene. In some cases, the CFS was canceled before it was dispatched or between dispatch and an officer arriving on scene. Those calls have been filtered out of the following graph.



***Time to complete a CFS*:** We determined it most informative to focus on the time between Dispatch and the Close of a CFS. Our analysis focused on CFS with complete call Dispatch and call Closed records.



We also found that some CFS close times were left open for extended periods, in some cases for months, thus distorting CFS durations. From our discussion with the OPD Dispatch Supervisor, we were informed that when an officer reopens a CFS for follow up investigation, the same incident ID is used. Because there is only one field in the computer aided dispatch (CAD) system for closing a call, it negates the original closing time, thus making it appear that the call has been open since the original dispatch. Our solution was to limit all CFS closed times to a maximum of 24 hours. See Appendix 1 for further details.

Specific Analyses

Overview of CFS Analysis

The CFS data was categorized into seven overarching types as follows:

***Admin* –** Dispatch calls related to administrative tasks (such as training, attending community meetings, writing and reviewing reports), collecting evidence, and officers notifying dispatch that they are out of service (such as taking personal breaks, fueling vehicles, etc).

***General* –** General calls for service. This includes 911 hang-ups, requests for assistance from outside agencies, event management, response to hazards, special assignments, and specialized units.

On View – These are officer initiated calls into dispatch where the nature of the incident is not immediately clear to the officer. In some cases, these calls are re-categorized with specific incident codes by dispatch after the incident is closed if the officer gives follow up information.

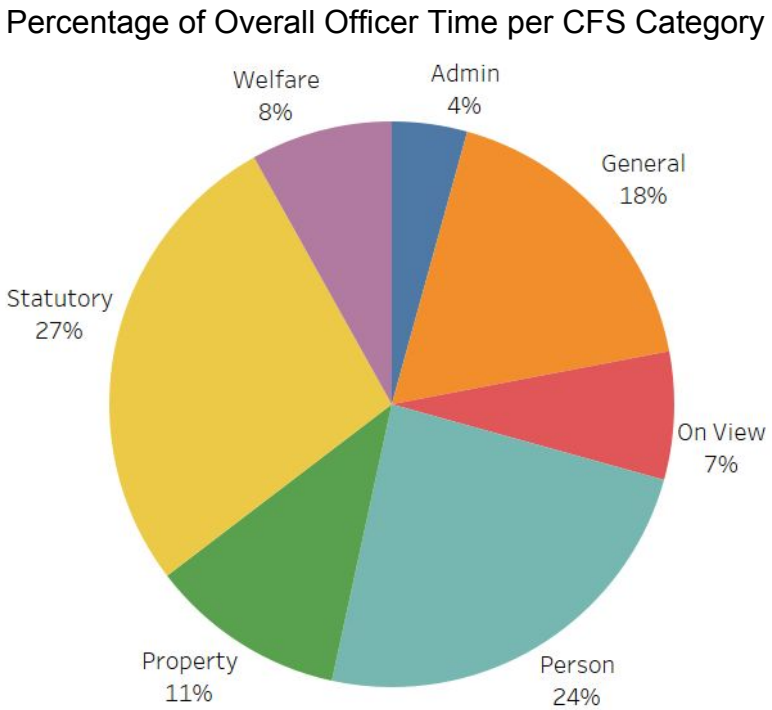
Person - Calls for service which involve crimes against a person. This includes aggrevated and simple assault, child abuse, domestic violence, hate crimes, homicide, indecent exposure, kidnapping, mayhem, robbery, sexual assault, stalking, and threats.

Property - Calls for service for property crimes. This includes arson, burglary, embezzlement, extortion, false personation, forgery, larceny, recovery, trespassing, and vehicle theft.

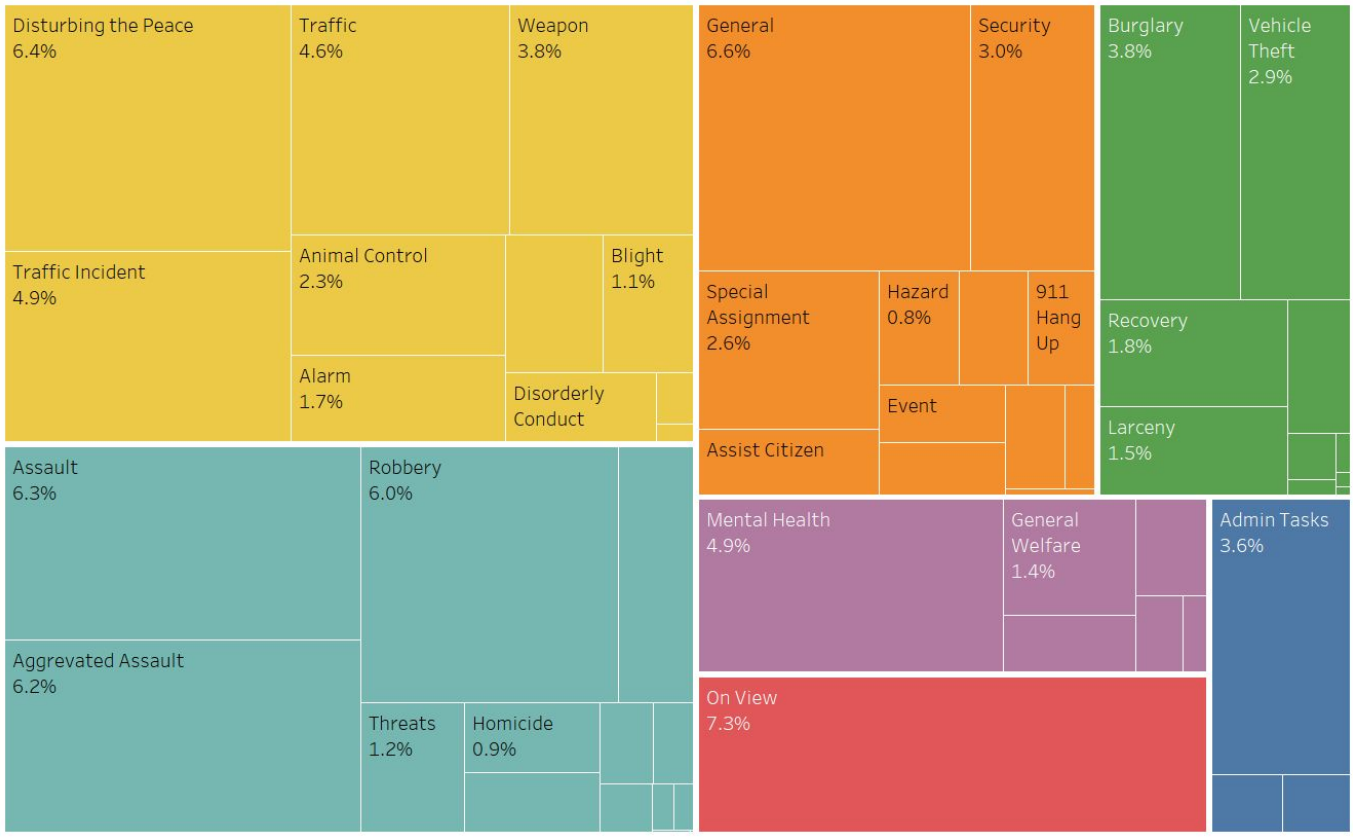
Statutory/Public Peace - Calls for service for statutory crimes and crimes against the public peace. This includes calls related to alarm, alcohol, animal control, blight, disorderly conduct, disturbing the peace, drugs, suspicious persons, traffic enforcement, traffic incidents, and weapons.

Welfare/Medical - Calls for service related to medical and welfare. This includes ambulance requests, child welfare, general welfare, mental health, missing person, and suicide.

CFS can be quantified by total call volume (number of calls per category), total duration of calls per category, and overall officer time per category. As we did not have access to the records management system (RMS) data which contains the number of officers that responded to each specific CFS and would have allowed us to accurately quantify the overall officer time, we calculated by the average number of units that respond to a call (average from CPSM report, Table 27) multiplied by the call time (dispatch to close). This is most likely an overestimation of officer time as not all officers stay on the scene for the entire call duration. Call durations were capped at 24hrs, as discussed in a previous section.



Percentage of Overall Officer Time per CFS Sub-Category



Highlighted CFS Categories

We performed analyses focused on specific incident categories with opportunities for civilianization or alternative response. These categories were identified as relating to potential for alternative services as identified in the recommendations from other Advisory Boards (with the exception of response to alarms). Complete results for each category are available in this folder. For each category, a first table (eg, mhealth-trans.csv) shows the *number* of CFS going from an incident code (row) to a disposition (column). A second table (eg, mhealth-time.csv) provides the total *time in hours* of OPD officer time that all these CFS consumed. For three of them, pictures of the graphs these produce have also been generated. These graphs show "flows" of CFS activity, from initial incident code nodes, through incident --> disposition links, and then from one disposition to the next. In the mental health graph, nodes and links of highest frequency have been highlighted.

Summarizing, with total OPD hours involved of areas that may be relevant to alternate response:

- **Mental Health:** 23,445 OPD officer hours involved, comprising **4.9%** of all CFS-related officer time. Suicide, Evalution and non-violent Mentally Ill calls consitute **4.2%** of all CFS-related officer time. See also: graph of mental health-related CFS flow
- **Welfare Checks:** In addition to the above, Welfare Checks constitute **1.3%** of CFS-related officer time.
- **Alarms:** 10,581 OPD officer hours were spent responding to alarm CFS in 2019. This analysis was used to support the recommendation from our working group regarding response to only verified alarms. See recommendation for Verified Response Ordinance to reduce OPD time responding to false alarms.

- **Domestic violence:** 8,991 hours, graph of domestic violence-related CFS flow
- **Disturbing the Peace:** Family, roommates and significant other-related Disturbing the Peace calls for service comprise **2.1%** of all CFS-related Officer Time. **Drugs:** 356 hours, graph of drug-related CFS
- **Traffic Incidents:** Non-Hit & Run, Non-DUI Traffic Incidents constitute **3.1%** of all CFS-related Office Time.

Frequent CFS addresses

A very large number of CFS refer to a very small set of the same addresses. Some of these simply reflect apparent reporting procedures. For example, 13,871 CFS use "400 7TH ST," OPD's headquarters, as their address. Other addresses, however, seem to indicate specific locations with repeated events requiring OPD attention. 695 distinct addresses are mentioned 100 or more times. Distinguishing addresses used in CFS reporting as a clerical short-hand vs. those that reflect consistent demands on OPD services is necessary. See Appendix 1 for further details.

Critique of CPSM Report

The CPSM Police Data and Analysis Report analyzed a 2019 CFS data set similar to that we evaluated, but with a different goal and objective: the report is a workload analysis of OPD patrol operations.)In order to prepare the report, OPD provided data to CPSM that was withheld from the 2019 CFS data set provided to the RPSTF (see Appendix 1 for a discussion of the two OPD data management systems). For example, CPSM had access to the Records Management System (RMS) which includes information such as how many officers responded to a call. This is a key variable in evaluating OPD activity, in particular CFS resources and officer time spent, that we were not able to accurately incorporate into our analysis. Because we did not have access to this information, we used the average number of *responding units* for each incident code shown in Table 27 of the CPSM Report.

CPSM also classified incident codes into a two-level system of "Figure" and "Table" categories. (See Table 27, page 52); however, there are some important differences in CPSM's classification of incidents relative to our own. For example, the CPSM report lumps crimes against a person, property crimes, and on-view all together under the category "investigation". Additionally, their subcategories are very broad so do not allow for a detailed understanding of how OPD spends their time. The CPSM report also includes an analysis of calls which might be suitable for an alternative response (see CPSM Report Appendix D) using the disposition to determine whether a call could have had an alternative response to come up with a percentage of each call type that could have been responded to by non-sworn personnel. This appendix feels like an afterthought to the report and believe this approach is lacking in the task of reimagining what calls OPD should not be responding to.

Challenges

Our work encountered a number of obstacles:

- Despite multiple requests, OPD did not provide the CFS data, it was not until November 5. 2020 that OPD provided any of the needed CFS data.
- OPD provided data for only one calendar year:, 2019.
- OPD's CFS data (especially CFS disposition information) is confusing and incomplete.
- The provided CFS data did not include identification numbers and other information that would have permitted a significantly more robust analysis..
- It was difficult to interpret the CFS records, especially as we lacked a key from OPD to define the various codes and terms.

- We were unable to determine the number of officers dispatched on CFS, even though this data was provided to the CPSM for their report.
- The schedule of the RPSTF was excessively ambitious resulting in limited time for analysis.

Conclusions and Observations

In the course of our analysis, we identify several key observations:

- OPD must prioritize effective IT procurement, staffing, and procedures to strengthen data collection, analysis, and transparency. See recommendation on OPD Data Collection & Analysis Staffing and Mechanisms
- OPD must become more transparent in its data collection and reporting. See recommendation on OPD Data Transparency.
- All three components of CFS data, incident type, incident frequency, and total time to service CFS must be considered in any decision making about reimagining public safety.
- Our CFS report is but one of many Advisory Board reports and it should be understood within the context of all other reports.
- The CFS data is insufficient to assess the efficacy and equity of the existing 35 policing beats that were designed in the early 1970's (Based upon 1960's CFS data) when the population of Oakland was 361,000 and dropping. The system has had no adjustments for the current and growing population of 425,000. Any reorganization proposed by the RPSTF must address the following questions and more, to assure that the reorganization provides equity in the services provided by OPD.
    - What is the impact of population density changes over the last 50 years?
    - How has the CFS data changed over this time, by area of the city?
    - What changes need to be made to ensure equity in service for the next 50 years?

Appendix 1: Methodology Details

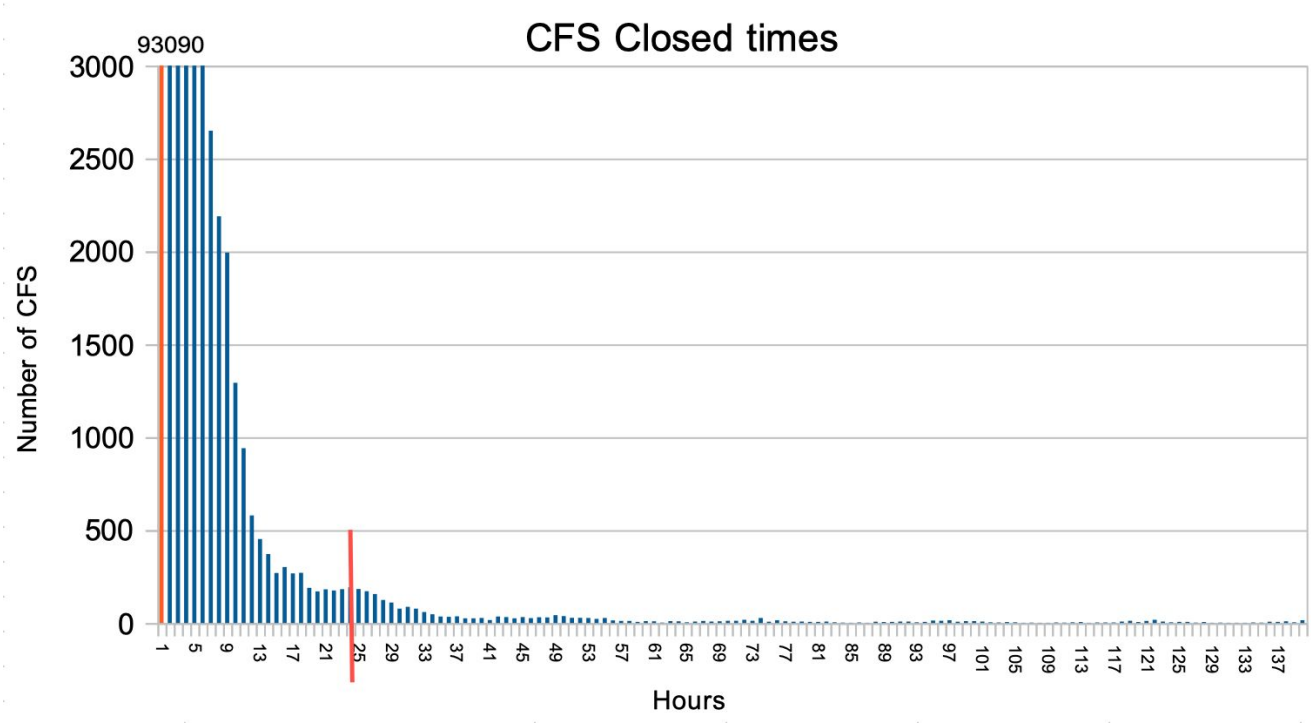
Python code supporting all these analyses is available here.

CFS Database Systems

There are two systems that OPD uses to manage their calls for service: computer aided dispatch (CAD) and records management system (RMS), which we did not have access to. The RMS data includes the details of the calls such as which officers responded, the number of officers that responded, notes, arrest or citation information, etc). The CFS data that we were provided is directly from CAD, but does not have any identifiers that would allow us to connect the CFS data to the RMS data set, so although there are some things we can determine from the data we've been given, there are details that we cannot analyze due to the limitations in the data OPD was willing to share with us.

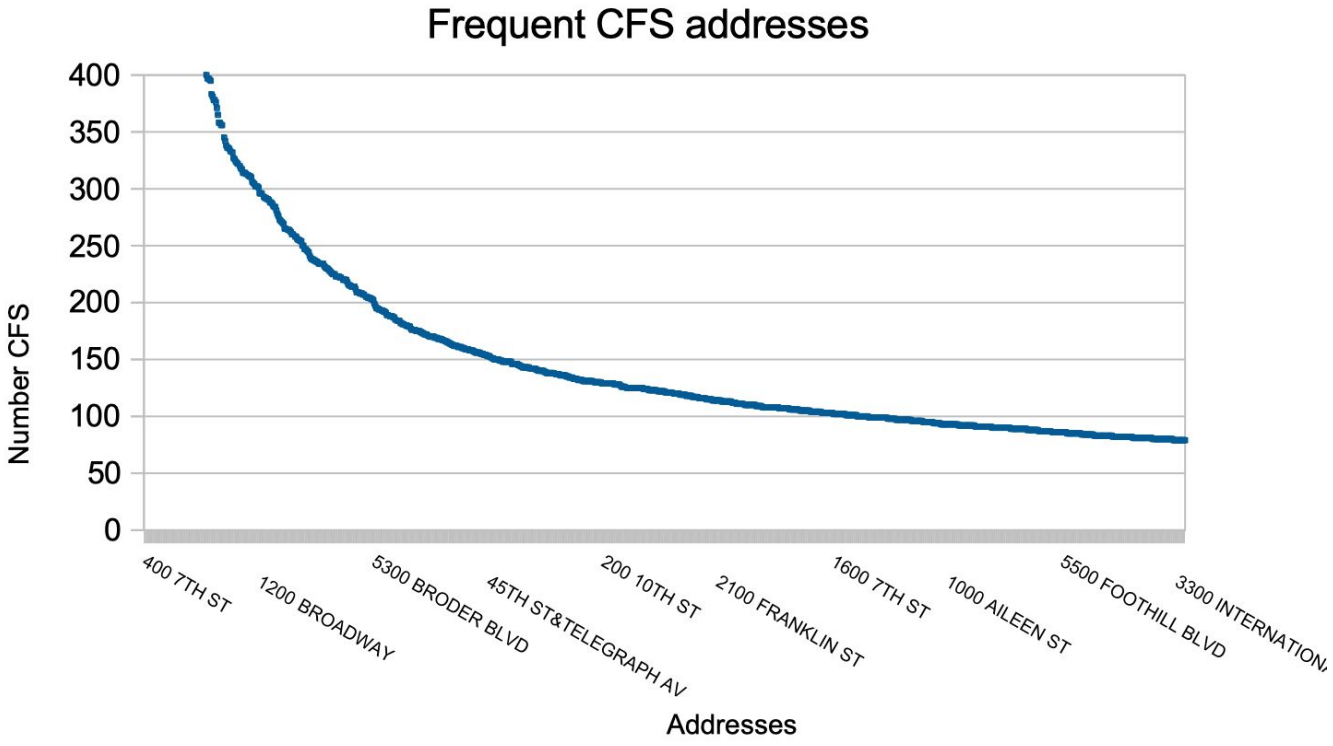
Time to Close CFS

A small fraction of CFS were not closed in a timely manner, apparently due to clerical errors. The figure below shows the distribution of closure times for all CFS. By far the majority of CFS are closed within an hour or two; these have been truncated in this figure. For example, the number of CFS closed within one hour (highlighted in red) was 93090. The red bar at 24 hours shows the tail of the distribution "chopped" by our imposition of a 24 hour maximum.



Frequent addresses

The chart below shows the number of CFS (Y-axis) associated with individual addresses (X-axis). (About 60 of the most frequent addresses are not shown because trying to do so would make the less frequent data illegible.) A sample of a few addresses have been labeled.


Frequent CFS addresses
Number CFS
400
350
300
250
200
150
100
50
0
400 7TH ST
1200 BROADWAY
5300 BRODER BLVD
45TH ST&TELEGRAPH AV
200 10TH ST
2100 FRANKLIN ST
1600 7TH ST
1000 AILEEN ST
5500 FOOTHILL BLVD
Addresses