

Evaluation of CONFIRE Dispatch Processing Changes

August 17, 2021

(Draft)

Background

In the continuing effort to provide efficient, effective, and rapid deployment of emergency fire and EMS resources, CONFIRE has adopted two new strategies for reducing 911 emergency call processing times. These include:

1. Adopting a “Quick Launch” criteria where specific caller complaints (CPR, Shortness of Breath, Chest Pain, Unconscious) temporarily forgo the standard EMD question process so that they are dispatched immediately. The questioning process then takes place after the call is forwarded to responding units.
2. Expanding the use of “Auto-Dispatch” on specific call types. This automates the notification of responding units which reduces processing time and workload.

The transition to these changes was made on June 7, 2021. Therefore, the amount of data available to measure changes is small. While it should not be considered conclusive at this point, the available data does suggest a trend of decreasing call processing times. The reporting will become more reliable over time as more data is available.

Summary of Findings

- The overall call processing time interval from call pick-up to when the first responding unit is notified of the call decreased by up to 21% for Echo and 14% for Delta level calls. Other call types showed a smaller decrease, and non-EMD fire/rescue showed an increase of 1 second, or 1%. (See Table 1).
- The implementation of the “Quick Launch” protocol resulted in a decrease of 13% for Echo calls and 6% of Delta calls in the time interval between when a CONFIRE dispatcher answers a 911 call to when the call is sent to queue (See Table 2). The processing times for these categories have potential to decrease further as dispatchers become more familiar with the process change.
- The implementation of the “Auto-Dispatch” protocol resulted in a decrease of 62% for Echo calls and 64% for Delta calls in the time interval between when a call is placed in queue to when the first responding unit is notified of the call (See Table 3). Currently, this protocol is only applied to Delta and Echo calls but has potential to be applied to other call types as well to achieve similar results.

Table 1: *Impacts on overall call processing.*

This table identifies the time lapse from when a 911 call is first answered at CONFIRE to when the first responding unit is notified of the call. These numbers reflect the overall impact of the dispatching processing changes.

	Alpha	Bravo	Charlie	Delta	Echo	No Determinant Code	All EMS	All Non-EMS Fire/Rescue
Pre June 7, 2021	0:03:29	0:03:23	0:03:37	0:03:02	0:02:18	0:02:33	0:03:12	0:02:41
Post June 7 through Aug. 17, 2021	0:03:00	0:03:23	0:03:32	0:02:36	0:01:50	0:02:34	0:02:59	0:02:43
Difference	-00:00:29	0:00:00	-00:00:05	-00:00:26	-00:00:28	0:00:01	-00:00:13	0:00:02
	-14%	0.0%	-2%	-14%	-21%	1%	-7%	1.3%

Table 2: *Impacts of “Quick Launch”.*

This table focuses on the time interval between when a 911 call is first answered at CONFIRE to when the call is sent to queue. This interval is where the impacts of Quick Launch are most evident. Since the criteria for Quick Launch is almost always in the Echo or Delta determinant code category, the most significant changes are found in those call types.

	Alpha	Bravo	Charlie	Delta	Echo	No Determinant Code	All EMS	All Non-EMS Fire/Rescue
Pre June 7, 2021	0:03:09	0:03:06	0:03:19	0:02:43	0:02:00	0:02:12	0:02:53	0:02:16
Post June 7 through Aug. 17, 2021	0:02:37	0:03:04	0:03:14	0:02:33	0:01:45	0:02:44	0:02:13	0:02:37
Difference	-00:00:32	-00:00:02	-00:00:05	-00:00:10	-00:00:15	-00:00:09	-00:00:03	-00:00:32
	-17%	-1%	-3%	-6%	-13%	-5%	-2%	-17%

Table 3: Impacts of “Auto Dispatch”.

This table focuses on the time interval between when a 911 call is sent to Queue to when the first responding unit is alerted to respond to the call. This interval is where the impacts of Auto Dispatch are most evident. Because CONFIRE is currently only using Auto Dispatch on Delta and Echo calls, the most significant changes are found in those call types.

	Alpha	Bravo	Charlie	Delta	Echo	No Determinant Code	All EMS	All Non_EMS Fire/Rescue
Pre June 7, 2021	0:00:31	0:00:27	0:00:27	0:00:28	0:00:24	0:00:31	0:00:29	0:00:40
Post June 7 through Aug. 17 2021	0:00:33	0:00:28	0:00:26	0:00:10	0:00:09	0:00:25	0:00:46	0:00:33
Difference	0:00:02	0:00:01	-00:00:01	-00:00:18	-00:00:15	-00:00:04	0:00:06	0:00:02
	8%	4%	-4%	-64%	-62%	-14%	15%	8%

Reporting Conventions

The above impact measurements were based on CONFIRE CAD data using the following conventions:

1. All data is taken directly from CONFIRE’s CAD server.
2. Reporting will cover a range from June 7, 2021 to August 17, 2021 (Post-Implementation period) and compare that to a period of the preceding 12 months prior to the June 7, 2021 implementation (Pre-Implementation period).
3. Calls with a total call processing time (Phone pick-up at CONFIRE to first unit assigned) of greater than 5 minutes were excluded from the reporting. These calls are evaluated separately as part of ongoing QA by CONFIRE staff. The longer processing times on these calls generally result from atypical factors such as language barriers, caller disconnect, lack of a valid location, etc., and not from dispatcher or system issues.
4. “Quick Launch” criteria includes caller complaints of shortness of breath, chest pain, CPR in progress, or unconsciousness. When these complaints are recognized by the dispatcher, the call is immediately forwarded to Queue for dispatching. The time savings for these calls is therefore measured as the difference between Call Pickup time and Call Entered into Queue time.
5. “Auto Dispatch” uses an automated CAD process to move calls from Queue to 1st Unit Assigned instead of a manual process performed by dispatchers. The time interval that captures these events is the difference between Call Entered Queue and First Unit Assigned time stamps.

6. Non-EMS, Fire/Rescue calls are those calls that require an emergency resource response but are not classified as medical emergencies. This includes (but not limited to) all fire types, ringing alarms, Haz-mat, technical rescue, watercraft and aircraft incidents, and technical rescue. Traffic collisions were considered mostly medical in nature and are not included in this grouping.