



Interim Recommendation for the Hub

APPROVED EMSAC · September 16, 2026 · Supported by 92 days of measured county data, June 1 – August 31, 2026

Purpose. This page states what EMSAC approved on September 16, 2026, and what follows from it. The evidence cover behind this page tests each element against the data; the analysis documents behind that are the data itself. This recommendation covers the next twelve months. It does not price the levy and it does not describe a publicly operated service — that remains the next drafting task once the Council agrees on spokes.

THE RECOMMENDATION · SIX ACTIONS

1

HUB OPERATOR

Continue with the existing hub operator (ORMICS).

EMSAC recommends continued support for ORMICS as the county's ALS transport hub.

2

SERVICE FLOOR

Adopt two staffed ALS crews, 24 hours a day, as the service floor — measured in crew-hours, verified monthly.

Not as a unit count. A shift rostered at three personnel is one ambulance plus a half-crew that cannot move without an outside driver, and it must not count as two.

3

STAFFING PRIORITIES

Focus staffing efforts where data shows greatest need.

The staffing study shows shortfalls on every shift, heaviest at certain times of day and days of the week. Monthly CAD reports will show where resources are needed first.

4

BACK-UP AMBULANCE

Pursue an Ottumwa Fire-operated back-up third-out ambulance.

Justified on relief of the hub and on the interdependence the two services already have.

5

INTERFACILITY TRANSFERS

Pursue a dedicated out-of-county transfer crew.

This doesn't have to be ORMICS. It can be agreements with other services to protect the availability of the 911 crews.

6

DISPATCH & RESPONSE

Develop a Recommended Unit Protocol short-term and Pursue EMD long-term.

Emergency Medical Dispatch would be the ultimate goal, but this is an interim step until staffing allows an EMD model.

END STATE

Two ALS crews for 911 response available around the clock, with **surge capacity** drawn from Ottumwa Fire, Blakesburg, and other transporting services.

2 ALS Crews

Staffed and available for 911 response

24 / 7

Around the clock, day and night shifts

Surge Capacity

Ottumwa Fire · Blakesburg · other transporting services

What is an ALS crew? Two EMS personnel staffing one ambulance, at least one of whom is a Paramedic.

Two ALS crews = four personnel, with a Paramedic on each crew.

Supporting points

ITEM 1 Why continued support for the existing hub

- The county fielded an average of **2.8 EMS personnel by day and 2.4 by night** against the four a two-crew minimum requires — **3,036 personnel-hours short** across the quarter. That is a staffing problem, and it follows the service rather than the operator.
- **Clinical capability held throughout.** Every call in the period was answered at ALS level, including those run by a half-crew with a fire driver and those run by management. **Nothing in the data suggests a capability failure that changing operators would fix.**
- The shortfall is already being absorbed off the EMS ledger — roughly **6.9 hours of fire department driver time** (modelled) and **74.3 measured hours of ORMICS management time** pulled out of administration on 110 occasions, a median of 39 minutes each. Any support figure built from ORHC's financials alone understates what the current arrangement really costs.

ITEMS 2 & 3 Why two crews before three — and where the need is greatest

- Two full ALS crews existed on **25.0% of day shifts and 12.0% of night shifts**. Across 92 days, both shifts met the minimum on 5 days; 63 days met it on neither.
- Of the **123 calls that arrived with no free crew, 97 (78.9%)** would have been covered by the second crew alone. Only 26 required a genuine third — about one every 3.5 days.
- Saturation tracks staffing sharply: on single-crew shifts **21.4%** of calls arrived with the only staffed crew already committed, against 1.9% on half-crew shifts and 4.1% on two-crew shifts.
- The penalty lands on the tail, where it matters most. With an ambulance free, the slowest tenth of calls was reached in 15.6 minutes; with one already committed, **34.1 minutes**.
- Nights averaged **1.22 crews** against 1.40 by day, and **Monday nights averaged exactly 1.00 across all thirteen Mondays** in the period.

ITEM 4 Why the Ottumwa Fire third-out unit, on relief grounds

- Ottumwa Fire absorbed **56.3 apparatus-hours** in three months holding scenes awaiting transport — roughly 225 hours a year at the summer rate, and several times that in personnel-hours, since the export records apparatus rather than riding strength.
- Ottumwa Fire drove **42 of the 61** half-crew ambulance returns, and fire units were on scene for **652 of 973** ambulance calls.
- The window is confirmed independently: **64.1%** of the hours with two ambulances simultaneously committed fall inside 09:00–18:59, against the **Medical Call Hourly Capacity Study's** 67.2%, with the 09:00–16:59 phase-in window matching to within a tenth of a point.
- **State the hold-time finding accurately before it is raised in the meeting.** The median In-Town hold is 3:36 — a normal tiered-response interval — as a description of the typical call. It does support the tail: **15.0%** of holds run past ten minutes, 55 ran past fifteen.

ITEM 5 Why a dedicated out-of-county transfer crew

- **Interfacility transfers do not appear in the CFS export** — it holds 911 calls only (confirmed in follow-up review). Every crew out on a transfer therefore counts as available in the packet's concurrency model, so the 123 saturated calls, the 56.0 concurrent hours and the 26 third-crew calls are all understated by an unknown margin.
- The objective is protecting 911 crew availability. The crew does not have to be ORMICS; agreements with other services meet the same objective.

ITEM 6 Why a response protocol now

- The protocol is an interim measure aimed at the demand side while the staffing floor is being built. A full Emergency Medical Dispatch model remains the objective, but EMD carries its own staffing and training requirement that the county cannot meet today. No figure in this packet measures how much of the current call volume a response protocol would divert; this item rests on operational judgment rather than on the data behind the other five.

INTERIM RECOMMENDATION CONFIRMED BY EMSAC ☒

Date: September 16, 2026 **Confirmed by:** Tim Richmond, Chair

Signature:



Amendments or dissent recorded: None recorded

What this rests on. All figures cited above are drawn from the analysis packet behind this recommendation and are sourced there in full.



Supporting Evidence

Everything from this page forward is the evidence behind the recommendation, not the recommendation itself.

How this package is put together. Pages 1 through 4 are the interim recommendation — what EMSAC is being asked to agree to. Pages 6 through 9 are the evidence cover, which tests each element of the recommendation against the data and marks plainly what the data supports and what it does not. Pages 10 through 58 are the analysis documents themselves, reproduced exactly as issued. Only the recommendation and the evidence cover have been revised; every analysis document is unaltered.

RECOMMENDATION

Interim Recommendation for the Hub · September 2026	1
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SUPPORTING EVIDENCE

The Evidence Behind the Recommendation · Jun–Aug 2026	6
ALS Crew Staffing Against Call Volume · Jun–Aug 2026	10
BLS First-Response Hold Time Awaiting Transport (v2.2) · Jun–Aug 2026	17
Combined Summer Analysis & Annualized Projection · 92-day window	24
Ambulance Response Time Report — June 2026	29
Ambulance Response Time Report — July 2026	39
Ambulance Response Time Report — August 2026	49

On the documents held back. Five documents carrying an internal-use marking are not included in this package, per follow-up item F5: the Flagged Response Time Details for June, July and August 2026, the Response-Time QA Follow-Up for July 2026, and the CAD Missing-Field Analysis for June–August 2026. They list CFS case numbers and are held by Wapello County EMA. Where a figure in the evidence cover was read from one of them, the cover names the document it came from.

On page numbers. The number at the foot of every page runs continuously from 1 to 58 across this package. Each analysis document also retains its own original internal page numbering, unaltered — so "Page 3 of 7" inside a report refers to that report, while the number at the centre of the foot refers to this package.

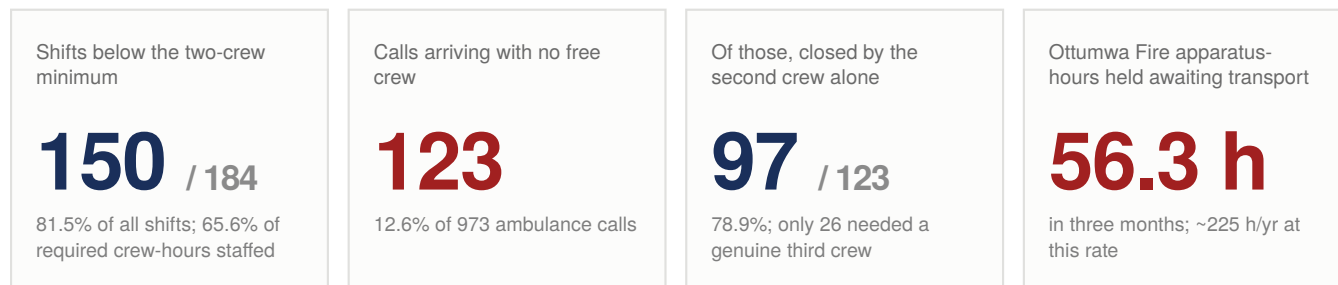


The Evidence Behind the Recommendation

Testing the current hub architecture against 92 days of measured Wapello County data · June 1 – August 31, 2026 · Prepared by Wapello County Emergency Management Agency

What this cover does. The interim recommendation sits in front of this page. This cover is the evidence behind it: it states the architecture EMSAC is working toward, tests each part of that architecture against the analysis documents that follow, and marks plainly which parts the data supports, which it only partly supports, and which it cannot speak to at all. Where an element is not supported, the follow-up item that would settle it is named — **F1** through **F13** on the recommendation pages.

1. The four numbers that frame the decision



The finding in one sentence. The end state EMSAC is aiming at — two ALS crews around the clock with surge capacity from Ottumwa Fire and Blakesburg — is the right target, and this evidence measures exactly how far the county is from it: **two full ALS crews existed on 25.0% of day shifts and 12.0% of night shifts**. The sequencing matters more than the target. Filling the second crew covers roughly 3.7 times more of the currently uncovered calls than adding a third would, so the third-out unit is a Phase 2 asset supporting a floor that has to be built first.

2. What is in this package

Pages	Document	Period
1–4	Interim Recommendation for the Hub	September 2026
6–9	The Evidence Behind the Recommendation (this cover)	Jun–Aug 2026
10–16	ALS Crew Staffing Against Call Volume	Jun–Aug 2026
17–23	BLS First-Response Hold Time Awaiting Transport (v2.2)	Jun–Aug 2026
24–28	Combined Summer Analysis & Annualized Projection (ad hoc, requested)	92-day window
29–38	Ambulance Response Time Report — June 2026	June 2026
39–48	Ambulance Response Time Report — July 2026	July 2026
49–58	Ambulance Response Time Report — August 2026	August 2026

Documents held back from this package. Five documents carrying an internal-use marking are not included here, per follow-up item F5: the Flagged Response Time Details for June, July and August 2026, the Response-Time QA Follow-Up for July 2026, and the CAD Missing-Field Analysis for June–August 2026. They list CFS case numbers and are held by Wapello County EMA. Figures below that were read from them are attributed to them by name. All figures in this package derive from computer-aided dispatch output originating with the Ottumwa Police Department Communications Division and from the Ottumwa Regional Health Center EMS Department crew-level report.



3. The current architecture, tested against the data

EMSAC's working design has four moving parts and a stated end state. Each is set out below with what the evidence supports, and — just as important — what it does not reach. Two parts are well supported by this data. One is partly supported. One is not measured here at all.

Element	What the evidence supports	What it does not reach
A. Support the existing hub (ORMICS) WELL SUPPORTED	The binding constraint is personnel, not operator or apparatus. Against the four EMS personnel a two-crew minimum requires, the county averaged 2.8 by day and 2.4 by night — 3,036 personnel-hours short over 92 days. Clinical capability held throughout: every one of these calls was answered at ALS level. Nothing here suggests a capability problem that a change of operator would fix.	The evidence does not evaluate ORHC's finances, and so cannot size any support amount. It also does not measure what support would actually buy — whether the shortfall is recruitable at this wage in this labor market is outside both source data sets.
B. Ottumwa Fire operates a back-up third-out ambulance SUPPORTED — ON RELIEF GROUNDS	The interdependence is already heavy and measured. Fire units were on scene for 652 of 973 ambulance calls (67%). Ottumwa Fire drove 42 of the 61 half-crew ambulance returns. And Ottumwa Fire absorbed 56.3 apparatus-hours in three months holding scenes awaiting transport — roughly 225 hours a year at the summer rate, before winter is counted, and several times that in personnel-hours since the export records apparatus rather than riding strength.	The pure capacity case is thin on this quarter: only 26 calls in 92 days found two ambulances already committed, about one every 3.5 days (37 once the modelled return trip is added). If the third-out unit is justified on 911 concurrency alone, this data does not carry it. On relief and interdependence, it does.
C. In place of Blakesburg responding into Ottumwa PARTLY SUPPORTED — VERIFY	Blakesburg's unit 90-76 is working more, not less: arrived calls rose 5 in June, 8 in July, 12 in August. Back-up BLS units carried the patient on 18 rural calls — 14.4% of all rural volume — and that figure matches the 18 rural calls never reached by an ALS hub unit exactly. Blakesburg also carries the longest rural hold profile of any department: median 10:18, 90th percentile 22:08, longest 27:58.	The frequency of Blakesburg running into Ottumwa is not visible in this data. Back-up units transported on only 2 In-Town calls in three months (0.2% of 804). Units 90-76 and 90-77 are excluded from every hub figure by design, so their activity is only partially characterised here, and the export carries no origin or destination field. See § 5.
D. Freeing an ORMICS third crew for interfacility transfers NOT MEASURED HERE	Nothing in this evidence supports or refutes it. Interfacility transfer appears exactly once across the analysis documents, and only as a possible cause of a hold.	The analysis is built from 911 CAD calls for service. If transfers are not dispatched through CAD, then a crew out on a transfer appears <i>available</i> in every concurrency figure — which would mean the saturation numbers are floors for a second, unquantified reason. This is checkable and should be checked. See § 5.
End state: two ALS crews 24/7 with OFD and Blakesburg surge TARGET CONFIRMED — DISTANCE MEASURED	The evidence measures the gap precisely: 150 of 184 shifts below the minimum, 1,518 crew-hours short of 4,416, two full crews on 5 of 92 days across both shifts, 63 days meeting it on neither. The longest unbroken run below the minimum was 24 consecutive shifts — 288 hours from August 13.	Where to start is in the data and is not where the capacity study pointed. Nights averaged 1.22 crews against 1.40 by day, and Monday nights averaged exactly 1.00 across all thirteen Mondays. If staffing is added incrementally, that is where the floor is lowest.

A fourth surge source is already emerging. ORMICS and the Emergency Department are developing RN Exempt availability to staff surge ambulances. That would give the system a resource drawing on neither fire departments nor administration — the two sources currently absorbing the gap. It belongs in the surge picture alongside Ottumwa Fire and Blakesburg.



Wapello County EMS Advisory Council

EMSAC · EVIDENCE BEHIND THE INTERIM RECOMMENDATION

4. Where this leaves the June worksheet

The *Hub & Spoke Scope Decisions Worksheet* remains the record of how EMSAC framed the hub decision. Three of its four hub items still stand; the framing question at the top of it does not.

Worksheet item	As written	Status against the current architecture and this data
HUB-1 Primary option selection	Choose among ORHC's four October 2024 options — A full takeover, B operating subsidy, C county-owned equipment, D county staff and equipment.	SUPERSEDED AS A FRAMING The live conversation is support for the existing hub plus a Fire-operated third-out unit, which is not one of the four as written. Amend the worksheet to record that and retain the four options as history. Nothing here requires choosing among A–D.
HUB-2 Key tradeoffs	Seven-dimension comparison, including transition risk and dependency on ORHC goodwill.	STILL USEFUL — REPOINT IT The same seven dimensions apply to the Fire third-out question. Transition risk is now quantifiable rather than adjectival: on single-crew shifts, 21.4% of calls arrived with the only staffed crew already committed.
HUB-3 Service continuity floor	One ALS unit 24/7; two ALS units 24/7 countywide with defined response zones; or two plus BLS backup at peak and surge.	MATERIALLY CHANGED The third choice is now EMSAC's stated end state, so the item is answered in principle. What changes is that it is a present deficit rather than a future promise, and that "countywide" means different things by jurisdiction: 14.4% of rural calls were never reached by an ALS hub unit, against 0.2% in town.
HUB-4 Outstanding information	Five gaps, all built around pricing the four ORHC options.	REPLACE THE LIST Three of the five — Option A startup, Option C fleet quotes, Option D staff transition — price options no longer under discussion. The gaps that matter now are in § 5 below. The County Counsel 28E item and the Auditor's valuation line carry forward unchanged.

The one place this evidence contradicts a prior EMSAC assumption. The Medical Call Hourly Capacity Study got the window right and the priority wrong. Its timing is confirmed independently — 64.1% of the hours with two ambulances simultaneously committed fall inside 09:00–18:59 against the study's 67.2%, with the 09:00–16:59 phase-in window matching to within a tenth of a point. Its baseline does not hold: it counted hours where demand exceeded a two-unit standard that was in place on 23 of 92 day shifts, and 97 of the 123 calls that found no free ambulance would have been covered by the second crew alone. That reorders EMSAC's August working draft, which funded the third crew in Phase 1.

One internal inconsistency, recorded rather than resolved. The staffing analysis states the pre-correction counts as 97 and 26 — a 3.7× second-crew advantage — in one paragraph, and as 96 and 25, a 3.8× advantage, a few lines later. Both ratios are correct on their own counts, so this is not a rounding difference. Only 97 + 26 reconciles to the 123 saturated calls cited throughout. EMSAC has directed that the published figures stand as written and the observation be recorded; see follow-up item F4.

5. Three premises this evidence cannot verify

Each is load-bearing for the architecture in § 3, answerable from a source already held, and carries a follow-up item on the recommendation pages.

Premise	Why this evidence cannot settle it	Follow-up
1. Blakesburg responds into Ottumwa often enough that an Ottumwa Fire third-out unit would displace those runs.	Units 90-76 and 90-77 are excluded from every hub figure by design, so their runs are characterised only in the per-unit tables of the flagged-response detail documents, which are held internally. Back-up units transported on 2 In-Town calls in 92 days, which does not read as frequent — but the export carries no origin or destination field, so direction of travel is not in the data at all.	F1
2. Interfacility transfer volume is large enough to justify a dedicated third ORMICS crew.	The analysis is built entirely from 911 calls for service. If transfers are not dispatched through CAD, every crew on a transfer counts as available in the concurrency model, and the 123 saturated calls, the 56.0 concurrent hours and the 26 third-crew calls are all understated by an unknown margin.	F2, F3
3. Ottumwa Fire can staff a third-out ambulance without degrading fire response.	Neither source data set records fire staffing, certification, or concurrent fire workload. The evidence establishes only that 85% of half-crew driver events fall inside 07:00–18:59 — the same daytime window in which fire departments carry their own call volume.	F7, F8



6. How far this evidence carries

Everything above rests on three months of summer data from a measurement that did not exist before June 1, 2026, when ORMICS began reporting unit status to dispatch. The following bound the conclusions and should travel with them.

Constraint	What it limits
No comparable period before June 1, 2026	These measures cannot be extended backward or aligned to the capacity study's 2024–2025 span. The two documents will always describe different periods, and no trend can be computed from one quarter.
Summer only	Excludes the winter months the capacity study shows running high. The 225-hour annual Ottumwa Fire hold figure and the ~3,936 annual dispatch projection are trajectories at the summer rate, not forecasts.
Concurrency figures are floors	CAD marks a unit "Completed" at scene departure, so transport and hospital turnaround fall outside every commitment interval. Adding the modelled return trip raises committed unit-hours 19% and hours with three or more units committed 119%. Hospital turnaround is not measurable from CAD at all, and interfacility commitment may not be either. The direction of this error is known and runs one way.
Back-up units are segregated by design	Units 90-76 and 90-77 are excluded from every hub figure. Their activity appears only in the per-unit tables of the flagged-response detail documents, held internally, so any conclusion about Blakesburg's workload drawn from this package is partial. The CAD Missing-Field Analysis, also held internally, records that 90-76 is coded to Blakesburg Fire Department in all three exports rather than to ORMICS; the exclusion is correct either way, but the stated reason should be corrected before it is carried into another report. See follow-up item F12.
June is a known undercount	46 June calls carry no unit-level timing at all and are absent from every June figure published to date. Recording practice improved sharply — calls with no enroute stamp fell from 14.0% in June to 0.0% in August — but June-to-August comparisons carry that asymmetry until the records are reconciled.
Small samples in two places	The third-crew case rests on 26 calls. Rural departments produced between 2 and 28 hold calls each. No conclusion about an individual rural department is supportable from the hold table alone, Blakesburg included.
Cause is not in the data	Why a crew was short on a given shift — vacancy, illness, training, overtime refusal — and why a first-response unit was not dispatched on a rural call are both outside the CAD export and the crew report.

7. Sources

- Ottumwa Police Department, Communications Division. (2026a). *Computer-aided dispatch calls for service export, June 2026* [Data set: June_2026.xls].
- Ottumwa Police Department, Communications Division. (2026b). *Computer-aided dispatch calls for service export, July 2026* [Data set: July_2026.xls].
- Ottumwa Police Department, Communications Division. (2026c). *Computer-aided dispatch calls for service export, August 2026* [Data set: Aug_2026.xls].
- Ottumwa Regional Health Center, EMS Department. (2026). *ALS crew staffing levels, June 1–August 30, 2026* [Unpublished operational report].
- Wapello County Emergency Management Agency. (2026). *ALS crew composition, half-crew driver requirement, and administrative backfill practice* [Operational definitions and August 31 staffing provided to the analyst, September 3, 2026].
- Wapello County EMS Advisory Council. (2026a). *Hub & spoke scope decisions worksheet* [Meeting preparation document; revision last saved June 8, 2026]. Wapello County Emergency Management Agency.
- Wapello County EMS Advisory Council. (2026b). *Medical call hourly capacity study: 2024–2025 comprehensive analysis, with a 2026 year-to-date addendum*. Wapello County Emergency Management Agency.
- Wapello County EMS Advisory Council. (2026c). *ALS crew staffing against call volume, June 1–August 31, 2026*. Wapello County Emergency Management Agency. [Pages 10–16.]
- Wapello County EMS Advisory Council. (2026d). *BLS first-response hold time awaiting transport, June–August 2026* (Version 2.2). Wapello County Emergency Management Agency. [Pages 17–23.]
- Wapello County EMS Advisory Council. (2026e). *Combined summer analysis and annualized projection, June–August 2026*. Wapello County Emergency Management Agency. [Pages 24–28.]
- Wapello County EMS Advisory Council. (2026f). *Ambulance response time reports, June, July and August 2026*. Wapello County Emergency Management Agency. [Pages 29–58.]
- Wapello County EMS Advisory Council. (2026g). *Flagged response time details, June, July and August 2026*. Wapello County Emergency Management Agency. [Internal; not included in this package.]
- Wapello County EMS Advisory Council. (2026h). *Response-time QA follow-up, July 2026*. Wapello County Emergency Management Agency. [Internal; not included in this package.]
- Wapello County EMS Advisory Council. (2026i). *CAD missing-field analysis, June–August 2026*. Wapello County Emergency Management Agency. [Internal; not included in this package.]

Note on material cited by description rather than by file. The four ORHC options referred to in § 4 are taken from the worksheet's own restatement of the October 7, 2024 ORHC proposal, not from the proposal document, which was not part of this review. The reference to a Phase 1 third crew is drawn from EMSAC's August 2026 working draft formal recommendation, likewise not among the materials reviewed here; the Council should confirm the current wording before treating the departure noted in § 4 as settled. The unit 90-76 arrived-call counts in § 3 (5 in June, 8 in July, 12 in August) are read from the per-unit tables in the three flagged-response detail documents, which are held internally and are not included in this package.



ALS Crew Staffing Against Call Volume

Wapello County / ORMICS · June 1 – August 31, 2026 · Prepared by Wapello County Emergency Management Agency

What this measures. Reported ALS crew staffing on each 12-hour shift, set against every 911 call an ORMICS ambulance was dispatched to in the same period, minute by minute. A **minimum staffing level of two full ALS crews at all times** is used throughout, per EMSAC direction. The question of a third crew is addressed only after that baseline is measured, because the answer depends on it.

1. The headline

Shifts below the 2-crew minimum

150 / 184

81.5% of all shifts

Required crew-hours actually
staffed

65.6%

1,518 crew-hours short of 4,416

Days meeting the minimum on
both shifts

5 / 92

63 days met it on neither

Calls arriving with no free crew

123

12.6% of 973 ambulance calls

The finding in one sentence. The two-crew minimum was met on 25.0% of day shifts and 12.0% of night shifts, and **78.9% of every call that arrived with no ambulance free would have had one if the two-crew minimum had simply been staffed.** Only 26 calls in 92 days — one every 3.5 days — would have needed a third crew. The gap this quarter is a *staffing* gap, not a *capacity* gap.

2. Where the staffing gaps are

Each square is one 12-hour shift. Shifts are treated as 07:00–18:59 (day) and 19:00–06:59 (night), per the schedule in use. Green is the only condition that meets the minimum.

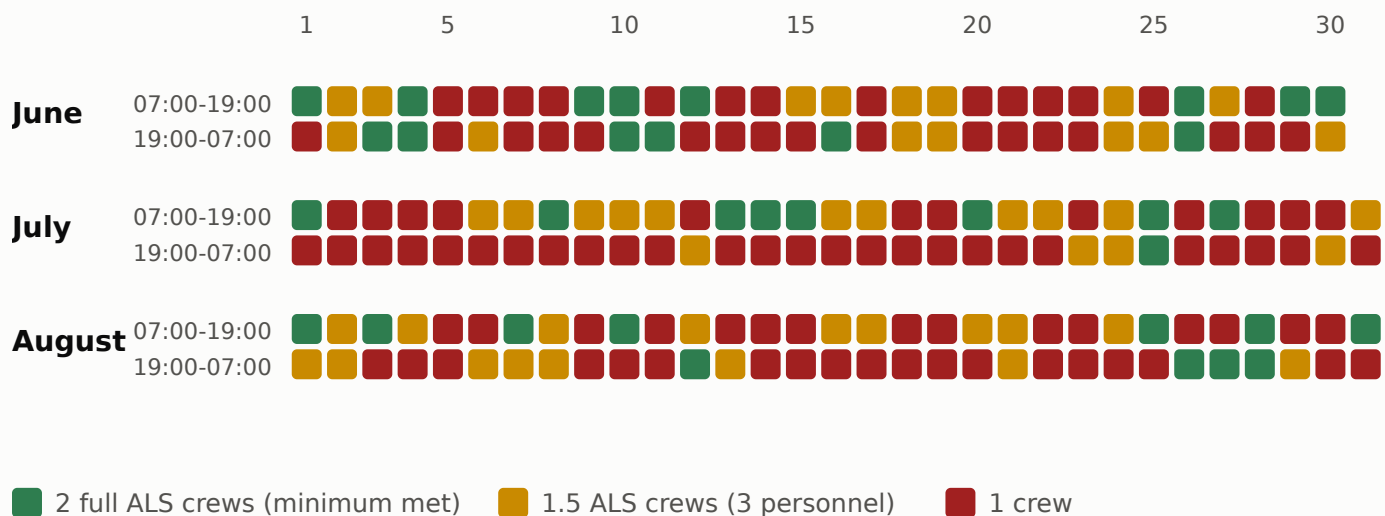


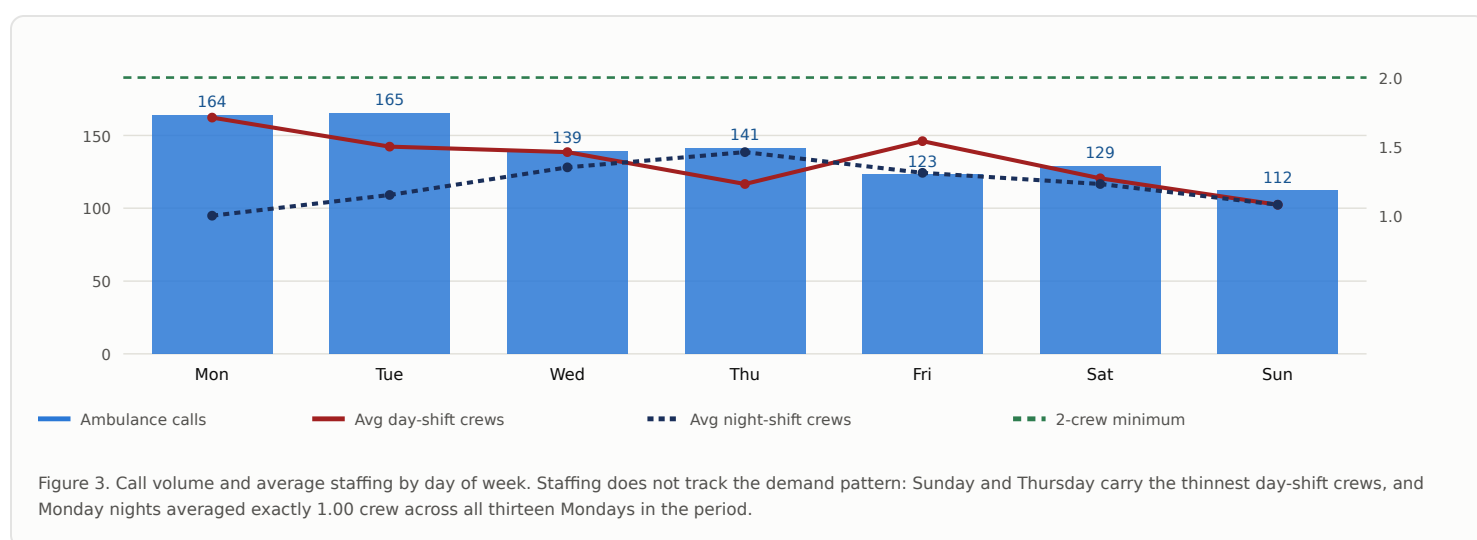
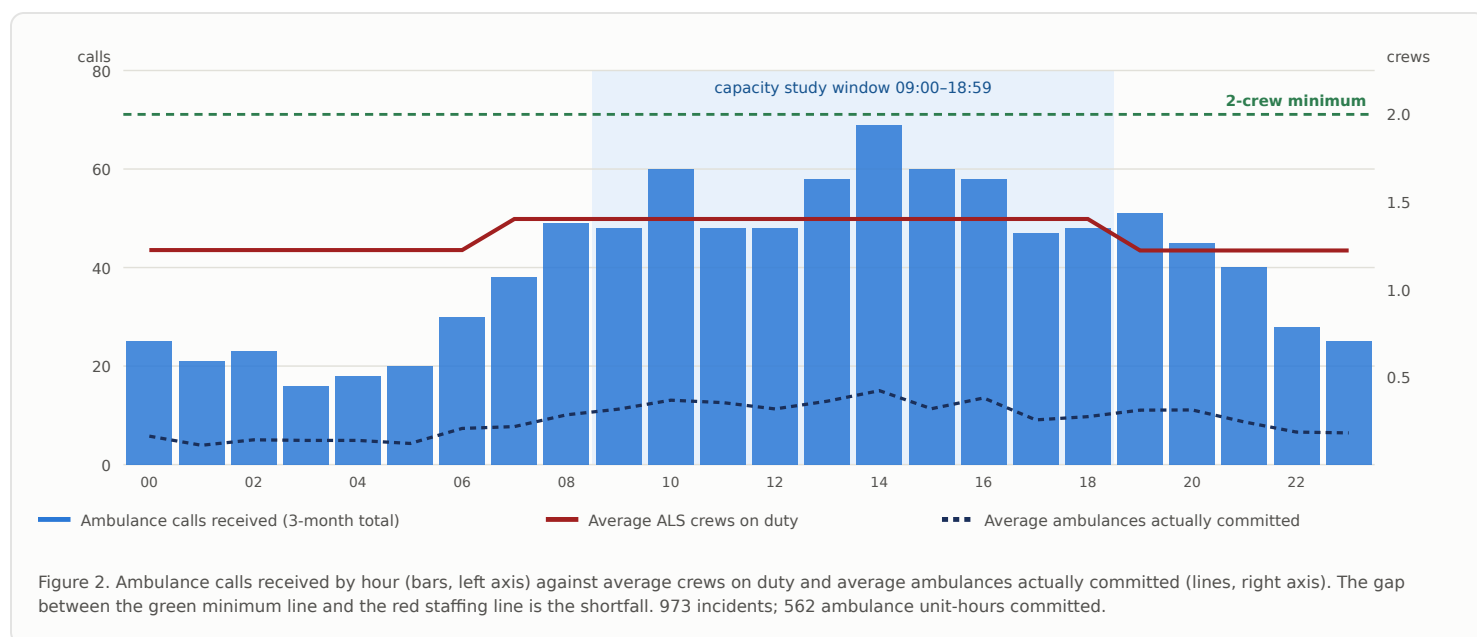
Figure 1. Reported ALS crew staffing by shift, June 1 – August 31, 2026. Source: Ottumwa Regional Health Center EMS Department crew-level report; August 31 supplied by Wapello County EMA.

Month	Avg day crews	Avg night crews	Shifts at full 2	Shifts below min
June	1.40	1.32	14 of 60	77%
July	1.44	1.10	9 of 62	85%
August	1.37	1.26	11 of 62	82%
All three months	1.40	1.22	34 of 184	81.5%

- Day shifts reached two full crews **23 times in 92** (25.0%). Night shifts reached it **11 times in 92** (12.0%).
- The longest unbroken stretch below the minimum ran **24 consecutive shifts — 288 hours**, beginning August 13 (day shift). There were **15 separate stretches of 48 hours or longer**.
- Nights are the weaker half. Night staffing averaged 1.22 crews against a required 2.00.

3. Staffing against call volume

Ambulance demand is not flat. Calls build from roughly 07:00, peak at **14:00** (69 calls over three months) and fall away after 21:00. 64.9% of all ambulance calls arrive on the day shift. Staffing follows the same shape — but from well below the line it needs to be on.



4. What the gap costs

A call arriving when every staffed crew is already committed does not vanish. It waits, or it draws a unit from further out. Across the quarter there were **291.9 hours** (13.3% of the period) in which no staffed ambulance was free, and **123 calls** arrived during them.

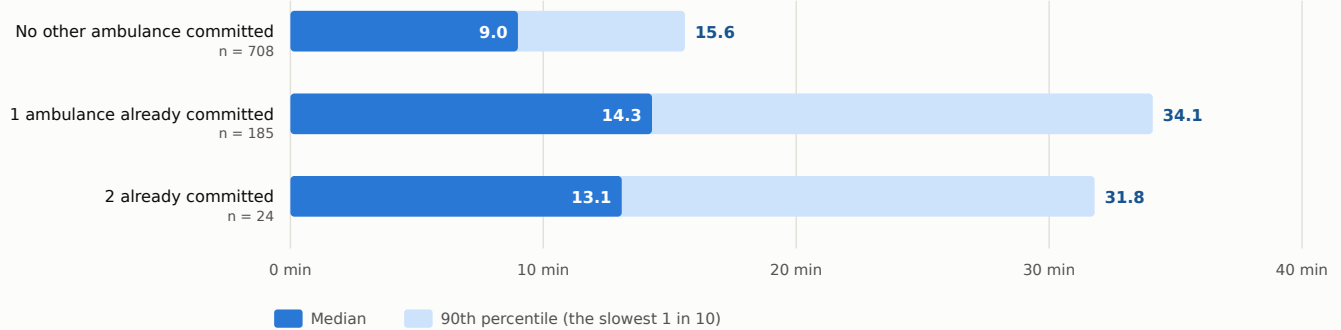


Figure 4. Time from call creation to the first ambulance on scene, by how many ambulances were already committed when the call came in. n = 917 calls with a recorded on-scene time.

The penalty is large and it lands on the tail. When an ambulance was free, half of calls were reached in 9.0 minutes and the slowest tenth took 15.6 minutes. When one was already committed, the median rose to 14.3 minutes — **5.3 minutes slower** — and the slowest tenth to 34.1 minutes, **18.5 minutes slower**. That worst tenth is where cardiac arrests, airway emergencies and trauma sit.

Crews on duty for that shift	Calls	Arrived with no free crew	Rate
1.0 crew	513	110	21.4%
1.5 crews	265	5	1.9%
2.0 crews	195	8	4.1%

Single-crew shifts are where the system breaks down: about one call in five arrives with the only staffed crew already committed.

An honest complication, stated plainly. Median response time does *not* vary meaningfully with the crew level on the roster (1.0 crews → 9.5 min, 1.5 crews → 9.8 min, 2.0 crews → 9.8 min). What predicts a slow response is not how many crews were scheduled but whether a unit was already tied up when the call came in. The explanation is in Section 5. CAD shows more ambulances committed than the roster says were staffed for **43.6 hours** of the quarter (1.98% of the period), because half-crew units with fire drivers and rigs backfilled by management are absorbing the gap before it reaches the patient — and both deliver ALS care, so the clinical quality of the response holds up. That absorption is not free. It is being paid in fire department hours and administrative hours rather than in a response-time number. **This report should not be presented as proving that thin staffing directly slows median response.** It shows that thin staffing produces far more saturated calls, and that saturated calls are much slower.

5. What the shortfall pushes onto others

The operational rules this section rests on (supplied by Wapello County EMA; CAD does not record crew assignment):

- Two EMS personnel staff one ambulance. A shift reported as **1.5 ALS crews** means three personnel on duty. The third can take a second ambulance to a call — and does — but **a fire department member must drive that ambulance back**.
- Where the shift carries the ALS designation, that third member is an **ALS provider**. The second ambulance therefore runs **at full ALS level** even with a fire driver aboard. It is not a downgraded or BLS unit.
- The fire driver **joins the call when the ambulance leaves the scene and is released on arrival at the hospital**. Their commitment is the transport leg only, not the whole call.
- CAD records **Completed at the moment the unit goes off scene**. The run back to the hospital is therefore not captured. As a planning assumption, the return trip is taken to **match the outbound trip** — the recorded enroute-to-on-scene travel time for that same call.
- On single-crew shifts there is no third person, and a second rig is staffed by **management coming out of administrative roles**. The ORMICS manager is a Paramedic, so those responses are also ALS.

What follows counts *occasions that required an outside driver or an administrative backfill*. Both categories deliver ALS care; the cost is not clinical capability but personnel drawn from somewhere else.

Half-crew shifts (3 personnel)

47 / 184

one driver short of two full crews

Calls requiring a fire driver

61

82% had a fire unit already on scene

Fire personnel-hours absorbed

6.9 h

median 6.5 min per call

EMS personnel-hours short

3,036

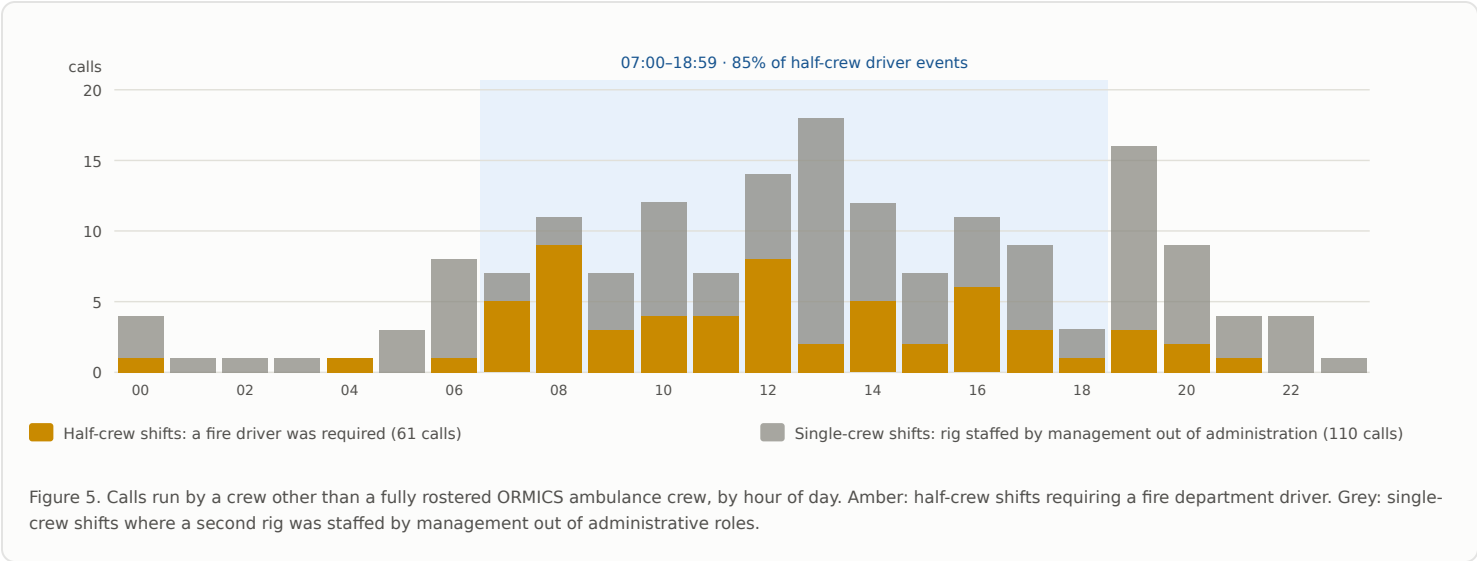
253 person-shifts below four

The fire department burden

On the 47 shifts staffed with three personnel, the half-crew ambulance was put in service **61 times**, each needing a fire department member to bring the unit back. Applying the planning assumption above — return trip equals outbound trip — the driver is held a median of **6.5 minutes** per call, and 11.8 minutes on the slowest tenth. Across the quarter that is **6.9 hours** of fire department personnel time (59 of the 61 events carry the travel field; scaled to all 61 it is 7.2 hours).

Two caveats on this figure. It is an estimate, and it may run slightly high. The return trip is modelled rather than measured — the outbound leg is a real recorded time for that same call and the run back covers the same ground, but it is the only modelled number in this report. And the count includes any occasion where the half-crew unit responded and the patient refused transport: with no run to the hospital there is no driver time, and CAD carries no disposition field to identify those calls. Both effects push the same direction, and the refusal share of second-unit responses is expected to be small, so 6.9 hours should be read as a reasonable upper estimate rather than a precise total. The ORMICS ePCR record carries actual depart-scene and arrive-destination times plus transport disposition and would settle both points.

85% of these events fall inside 07:00-18:59 — the same daytime window in which fire departments carry their own call volume — and Ottumwa Fire was on scene for 42 of the 61.



Department	Half-crew calls requiring a driver	All ambulance calls attended	Share
Ottumwa Fire Department	42	585	7%
Wapello County Rural Fire	5	39	13%
Blakesburg Fire Department	1	18	6%
Agency Fire Department	1	8	12%
Eldon Fire Department	0	6	0%
Eddyville Fire Department	1	4	25%

Fire units were on scene for 652 of the 973 ambulance calls in the period (67%) as a matter of normal first response. The first column isolates the subset where a driver was additionally required because the ambulance itself was short a member. Department names are taken from the Agency field of the CAD export, not inferred from unit codes; all counts below Ottumwa Fire rest on single-digit call numbers and should not be read as departmental trends.

The administrative burden

On the 103 shifts rostered at one crew there is no third person available, yet a second ambulance responded on **110 occasions** — staffed by management stepping out of administrative duties. Unlike the fire driver, a manager crews the rig for the whole call, so the full commitment applies: **74.3 hours** across the quarter, at a median of 39 minutes each. This figure needs no bounding — the interval is measured end to end and matches how the person is actually held. That is administrative capacity — scheduling, quality assurance, billing oversight, training, and the management of this staffing problem itself — converted into street time roughly 8 times a week.

The administrative burden dwarfs the fire burden. Against roughly 6.9 hours of fire driver time, management absorbed **74.3 hours** — more than ten times as much, and measured rather than modelled. A fire driver gives up part of one leg of a call; a manager gives up the whole call. ORMICS and the Emergency Department are developing **RN Exempt availability to staff surge ambulances**, which would give the system a fourth option drawing on neither fire departments nor administration.

The point for the Council. The staffing shortfall does not stop at ORMICS, and it is not a clinical-capability problem — every one of these calls was answered at ALS level. It is a personnel-sourcing problem. Of the four EMS personnel a two-crew minimum requires, the county averaged 2.8 by day and 2.4 by night — **3,036 personnel-hours short over the quarter**. That gap is being closed with fire department labor (about 6.9 hours this quarter) and, far more heavily, with management time (74.3 hours) — neither of which appears in an EMS staffing report, an EMS budget line, or a response-time statistic. Any cost comparison between filling ORMICS positions and standing up a third unit is incomplete unless those hours are counted on the current side of the ledger.

6. Would a third crew help?

This is the question the Call Hourly Capacity Study was built to answer, and this dataset can now be set against it directly. The distinction that matters: a third crew only earns its keep in the hours when two ambulances are already committed. Anything below that is a second-crew problem.

Hours with 2+ ambulances committed

56.0 h

2.54% of the quarter

Hours with 3+ committed

3.3 h

0.15% of the quarter

Calls needing a genuine 3rd crew

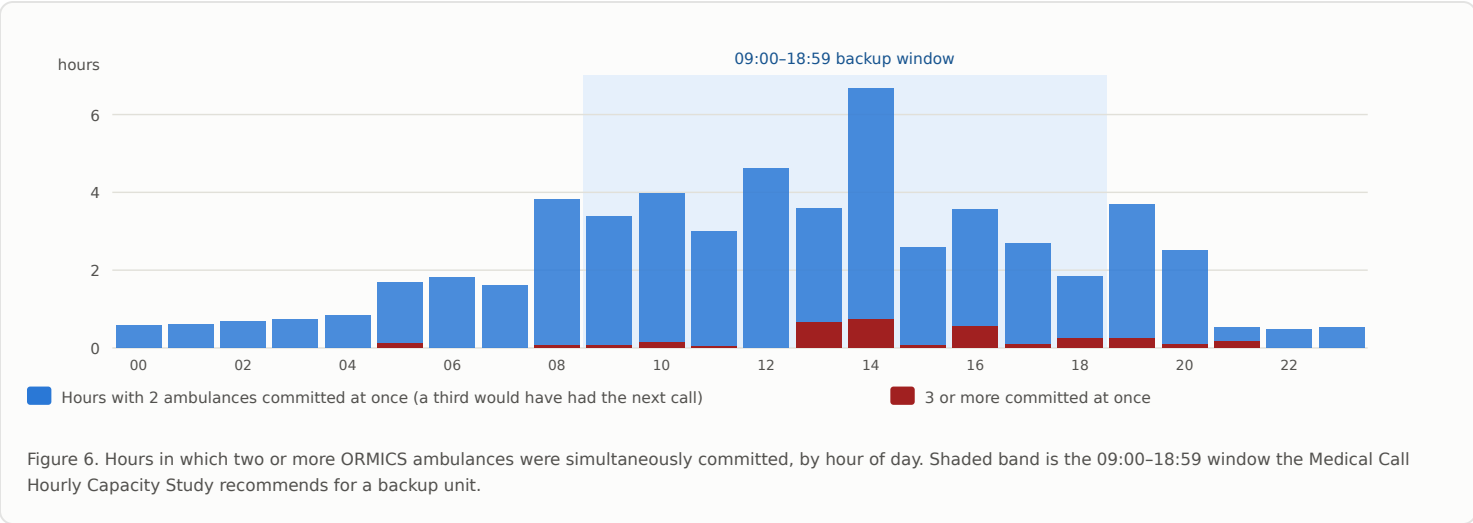
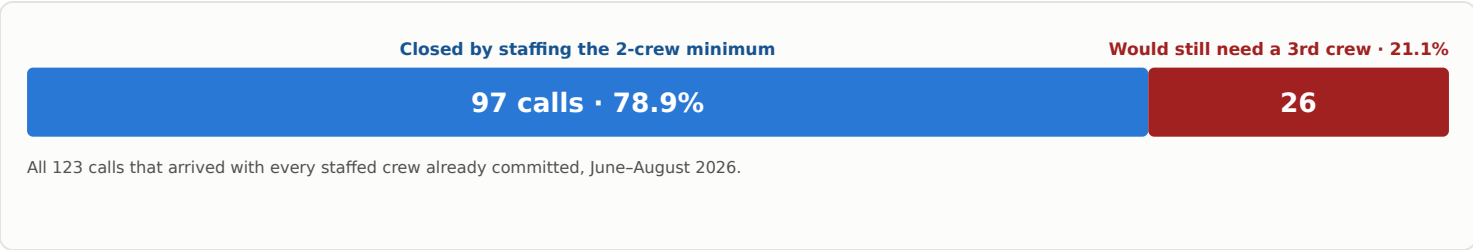
26

1 every 3.5 days

Of those, in 09:00-18:59

69.2%

the capacity study window



These concurrency figures are floors, and the reason matters. Because CAD marks a unit Completed when it goes off scene, every commitment interval in this report ends at scene departure — the run to the hospital and the turnaround there fall outside it. Rebuilding the minute-by-minute grid with the modelled return trip added raises the totals sharply:

Measure	As measured (ends at scene departure)	Plus modelled return trip	Change
Ambulance unit-hours committed	562 h	668 h	+19%
Hours with no free staffed ambulance	287.9 h	343.1 h	+19%
Hours with 2+ ambulances committed	54.4 h	75.3 h	+38%
Hours with 3+ committed	3.1 h	6.8 h	+119%

Hospital turnaround is still not counted in either column, so even the right-hand figures understate true unit commitment. **Every saturation and third-crew number in this report should be read as a conservative floor.** The direction of the error is known and it runs one way.

Against the Call Hourly Capacity Study

The two datasets agree closely on *when*, and disagree on *how much*.

Measure	Capacity Study (2024–2026 YTD)		This analysis (Jun–Aug 2026)	Agreement
Share of overload in 09:00–18:59	67.2%		64.1%	Confirmed
Share in phase-in window 09:00–16:59	55.9%		56.1%	Near-exact
Recurring overload days	Mon, Wed, Fri		Mon, Wed, Thu	Partial
Baseline assumed for “overload”	Two units always available	Two units available on 25.0% of days, 12.0% of nights		Does not hold

The conclusion this supports, and the one it does not.

Supported: the capacity study's *timing* recommendation holds up independently. 64.1% of the hours when two ambulances were tied up at once fall inside 09:00–18:59, against the study's 67.2%, and the 09:00–16:59 phase-in window matches to within a tenth of a point (56.1% here, 55.9% in the study). If a third unit is added, that is the window.

Not supported: that a third crew is the binding constraint today. The capacity study counts hours where demand exceeded a two-unit baseline — but that baseline was not in place. Two full crews existed on 23 of 92 day shifts. Of the 123 calls that found no free ambulance, 97 would have been covered by the second crew alone. A third crew addresses the remaining 26 — real, and concentrated in the afternoon, but roughly one call every 3.5 days. **Filling the second crew is worth about 3.7 times more coverage than adding a third.**

This ranking survives the floor correction. Rebuilt with the modelled return trip, the third-crew count rises from 25 calls to 37 and the second-crew count from 96 to 102 — the advantage narrows from 3.8× to 2.8× but does not reverse. The third crew becomes a stronger case as the intervals are corrected; it does not become the first move.

What this points to

- **Sequence matters.** Staffing the two-crew minimum reliably is the first-order fix. Adding a third crew on top of a system that fields 1.4 crews by day and 1.2 by night moves the ceiling without fixing the floor.
- **The Ottumwa Fire proposal is still on point — for a different reason.** A third out ambulance from OFD would cover the 26 genuine third-crew calls, but its larger value is as relief for a hub that cannot consistently field two. That is a different argument than the capacity study makes and should be made on its own terms.
- **Nights and Mondays first.** Night staffing averaged 1.22 crews and Monday nights averaged 1.00 across all thirteen. If staffing is added incrementally, that is where the floor is lowest.
- **Re-run in a quarter.** Three months is a snapshot. The staffing shortfall is large enough to be visible in a single quarter, but the third-crew figure rests on 26 calls and should not be treated as settled.

7. Method and limitations

How each figure was produced

- **Staffing.** Read directly from the Ottumwa Regional Health Center EMS Department crew-level report, one line per calendar day giving day and night crew counts, with August 31 supplied by Wapello County EMA. Nothing was interpolated. Shifts were treated as 07:00–18:59 and 19:00–06:59.
- **Call volume.** All call data is computer-aided dispatch output from the Ottumwa Police Department Communications Division. Unique CFS incidents in which an ORMICS hub ambulance (unit codes 90-70 through 90-75) was dispatched. Backup transport units 90-76 and 90-77 are excluded, consistent with the monthly Ambulance Response Time Reports, as they belong to covered fire departments. 973 incidents from 1006 ambulance unit-responses.
- **Commitment interval.** Each ambulance response was treated as occupying its unit from call creation to unit-completed, using the export's own duration fields. CAD marks Completed at scene departure, so transport and hospital turnaround sit outside this interval and all concurrency figures are floors; see the sensitivity table in Section 6. Median commitment 32.1 minutes, mean 34.3 minutes. These intervals were laid on a minute-by-minute grid across the quarter to count how many ambulances were committed at any instant.
- **Saturation.** A call is counted as arriving into a saturated system when the number of ambulances already committed at its creation minute was at or above the crews staffed for that shift.
- **Response time.** Time from call creation to the *first* ambulance on scene, from the export's “Created to Unit On Scene Time” field. Calls with no recorded on-scene time are excluded from response-time figures only, not from volume or saturation counts.

Limitations

- **The 1.5-crew definition is applied, not assumed.** A 1.5-crew shift means three EMS personnel: enough for one full ambulance plus a half-crew unit that requires an outside driver. All 47 such shifts are counted as below the two-crew minimum, which follows directly from that definition. The driver-requirement counts in Section 5 follow from the same rule; CAD does not record crew assignment, so those are counts of occasions requiring a driver rather than confirmed driver assignments.
- **The fire-hour figure is modelled; the administrative figure is measured.** The 6.9-hour fire figure rests on the planning assumption that the return trip matches the outbound trip, and it counts all 61 half-crew responses including any that ended in a patient refusal, which would require no driver. CAD has no disposition field to separate those, so the estimate may run slightly high; the refusal share of second-unit responses is expected to be small. It is the only modelled number in this report. By contrast a manager crews the rig for the entire call, so the 74.3-hour administrative figure is measured on the same interval the person is actually held. **The ORMICS ePCR record would replace the modelled figure with a measured one** and is the right source for any number used in a cost negotiation.
- **Roster and CAD do not fully agree, by design.** For 43.6 hours, CAD showed more ambulances committed than the crew report says were staffed. This is the half-crew and administrative-backfill activity described in Section 5, not a data error: the crew report records the rostered street complement, not every person who ended up on an ambulance.
- **August 31 staffing was supplied separately.** The ORMICS crew-level document covers June 1 to August 30. August 31 (2 ALS crews day, 1 ALS crew night) was provided directly by Wapello County EMA and is included in all figures.
- **Three months only.** ORMICS began reporting unit status to dispatch on June 1, 2026, so this analysis cannot be extended backward and cannot be aligned to the capacity study's 2024–2025 span. The two documents will always describe different periods.
- **Commitment intervals understate, on net.** A unit is counted as committed from call creation, which slightly overstates the dispatch-delay portion. That is far outweighed by the omission of transport and hospital turnaround, which the Section 6 sensitivity table quantifies for the transport leg. Hospital turnaround is not measurable from CAD at all.
- **Apparatus, not personnel.** The export records units. Crew size is not in the data.
- **Cause is not addressed.** Why a crew was short on a given shift — vacancy, illness, training, overtime refusal — is not in either source.

Sources

Ottumwa Regional Health Center, EMS Department. (2026). *ALS crew staffing levels, June 1–August 30, 2026* [Unpublished operational report].

Ottumwa Police Department, Communications Division. (2026a). *Computer-aided dispatch calls for service export, June 2026* [Data set: june_26_times.xls].

Ottumwa Police Department, Communications Division. (2026b). *Computer-aided dispatch calls for service export, July 2026* [Data set: July_2026.xls].

Ottumwa Police Department, Communications Division. (2026c). *Computer-aided dispatch calls for service export, August 2026* [Data set: Aug_2026.xls].

Wapello County Emergency Management Agency. (2026). *ALS crew composition, half-crew driver requirement, and administrative backfill practice* [Operational definitions and August 31 staffing provided to the analyst, September 3, 2026]. Cited in Sections 2 and 5.

Wapello County EMS Advisory Council. (2026d). *Medical call hourly capacity study: 2024–2025 comprehensive analysis, with a 2026 year-to-date addendum*. Wapello County Emergency Management Agency.

Comparison figures attributed to the Medical Call Hourly Capacity Study (67.2% of overload in 09:00–18:59; 55.9% in 09:00–16:59; Monday, Wednesday and Friday as recurring overload days) are quoted from that study as previously summarized for EMSAC and were not recomputed here. All other figures in this report were computed from the source data sets listed above.



Wapello County EMS Advisory Council

EMSAC · SYSTEM PLANNING DOCUMENT — BLS FIRST-RESPONSE HOLD TIME

BLS First-Response Hold Time Awaiting Transport

In-Town and Rural Responses · June–August 2026

Prepared for EMSAC discussion, system planning, and third ambulance / back-up crew development

Scope and period. This report covers June 1 through August 31, 2026 — the full period for which this measure can be computed. ORMICS began reporting unit status to dispatch on June 1, 2026, so the interval cannot be calculated for any earlier date, including the 2024–2025 years in the Medical Call Hourly Capacity Study. The two documents necessarily describe different spans and do not share a baseline.

June definition note. June’s export contains 314 agency-level “ORMICS” rows carrying a dispatch stamp but no on-scene time in any case, because reporting to dispatch was new that month and calls were logged under the agency name before the practice was refined to individual unit numbers. These are paging records, not responding units, and are excluded. July and August contain no such rows.

What this report measures

Ottumwa Fire Department reported to EMSAC that its crews spend substantial time on scene waiting for the ambulance. None of EMSAC’s existing documents measures that. This report computes it directly, and extends it to every responding service in the county.

The measure is the **BLS first-response hold interval**: the time a non-transport unit is on scene before a transport-capable unit arrives at the same call. It is reported in two sections — **In-Town** (calls dispatched by Ottumwa Police Department, served by Ottumwa Fire Department) and **Rural** (calls dispatched by the Wapello County Sheriff’s Office, served by the small-town and rural departments).

Terminology used here. BLS covers EMR and EMT. ALS means Paramedic; per current Medical Director direction, Advanced EMT is not counted as ALS. **Hub** transport means ORMICS units, which are ALS. **Back-up** transport means units 90-76 and 90-77, which provide BLS transport and are covered fire departments’ own resources. Back-up units are counted in the transport equation when they actually transport, but are reported separately and never blended into hub figures.

Which unit transports. Per operational practice, when a back-up unit and an ORMICS unit are both on scene, **ORMICS transports.** The hold interval therefore ends at the arrival of the unit that actually transported: the ORMICS hub unit wherever one reached the scene, and the back-up unit only where no hub unit did.

One caveat on the BLS label. The CAD export records apparatus identity, not the certification of who was aboard. A given engine may turn out with an EMR, an EMT, or a paramedic depending on who responds. “BLS first response” describes the unit’s role in the response, not a verified certification level on each call.

Method and definitions

- **Source.** Wapello County CFS exports, June_2026.xls, July_2026.xls and Aug_2026.xls — the same raw files behind the monthly Ambulance Response Time Reports. One row per unit per call. CAD data originates with the Ottumwa Police Department Communications Division.
- **Hold interval.** Earliest BLS first-response arrival to earliest transport-unit arrival on the same CFS number, both measured from that call’s creation stamp. A subtraction of two figures already in the export; nothing is modeled, estimated, or inferred.
- **Universe.** Calls on which a transport-capable unit arrived on scene.
- **Jurisdiction.** Dispatch agency, confirmed operationally: the Sheriff’s Office dispatches rural calls and Ottumwa PD dispatches City of Ottumwa calls. The responding-department field agrees almost exactly — all 804 In-Town calls drew Ottumwa PD, and 124 of 125 Rural calls drew the Sheriff’s Office.
- **Exclusions.** Agency-level paging rows carrying no unit identity. Calls missing an on-scene click.
- **Reporting.** Median plus 80th and 90th percentiles, never the mean alone.

Finding 1 — A third of rural calls have no BLS first response at all

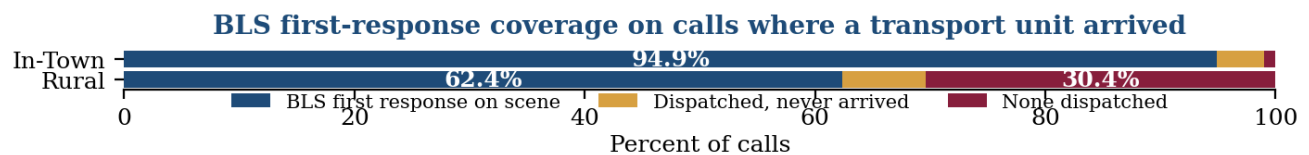


Figure 1. BLS first-response coverage on calls where a transport unit arrived, June–August 2026.

BLS first-response coverage	In-Town	Rural
Unit on scene	763 (94.9%)	78 (62.4%)
Dispatched but never arrived	33 (4.1%)	9 (7.2%)
None dispatched	8 (1.0%)	38 (30.4%)
No BLS presence, total	41 (5.1%)	47 (37.6%)
Total calls	804	125

Rural calls are roughly seven times as likely to have no BLS first responder on scene — 37.6% against 5.1%. The driver is not units failing to arrive; it is that nothing is dispatched. 30.4% of rural calls had no first-response unit dispatched at all, against 1.0% in town.

Month	In-Town — no BLS presence	Rural — no BLS presence
June	16 of 245 (6.5%)	16 of 34 (47.1%)
July	14 of 291 (4.8%)	11 of 44 (25.0%)
August	11 of 268 (4.1%)	20 of 47 (42.6%)

The rural rate swings substantially month to month, consistent with volunteer availability determining what responds. On 125 rural calls across three months those swings are small-sample movement and should not be read as a trend.

Finding 2 — The cost falls on the patient, not on the ambulance clock

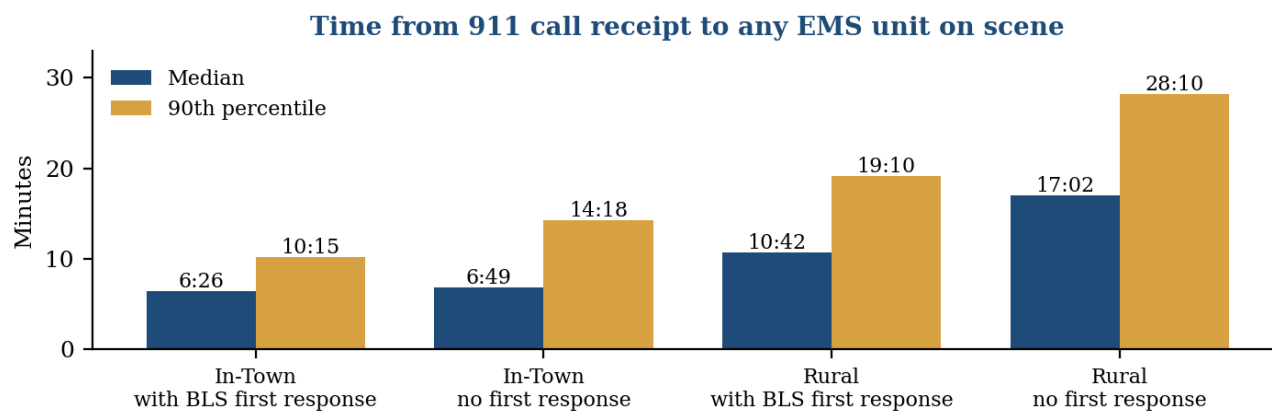


Figure 2. Time from 911 call receipt until any EMS unit — first response or transport — is on scene.

Group	Calls	Median	90th pct	Over 15 min
In-Town, with BLS first response	763	6:26	10:15	2.6%
In-Town, none	41	6:49	14:18	7.3%
Rural, with BLS first response	78	10:42	19:10	24.4%
Rural, none	47	17:02	28:10	61.7%

In town, losing BLS first response barely moves the clock, because the ambulance is close behind regardless. In rural Wapello County it nearly doubles the median, and **61.7% of those calls have no one on scene for more than fifteen minutes**. This is the central number for framing rural public expectation: it is not a statement about ambulance performance, but about how often a rural call has no responder at all until the ambulance arrives, from further away.

ALS availability

Measure	In-Town	Rural
Calls reached by an ALS hub unit	802 (99.8%)	107 (85.6%)
Calls with no ALS hub unit on scene	2 (0.2%)	18 (14.4%)
Median time to ALS on scene	9:16	15:21
90th percentile	19:49	26:56
Over 20 minutes to ALS	9.6%	26.2%

14.4% of rural calls were never reached by an ALS hub unit, against 0.2% in town. Where ALS did arrive rurally, the median was 15:21 and roughly one call in four exceeded twenty minutes. These figures should be read alongside whatever time-goal parameters Medical Control sets by jurisdiction.

Section I — In-Town Responses (Ottumwa Fire Department)

3:36 Median hold	14:48 90th percentile	85 Holds over 10 min (15.0%)	56.3 h Apparatus-hours held
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Of 763 In-Town calls where both a BLS first-response unit and a transport unit arrived, the fire unit was on scene first on 568 (74.4%). On 97.9% of those, the fire apparatus was still on scene when transport arrived — this is genuine held time, not units that came and went.

Statistic	Value	Statistic	Value
Median	3:36	Holds over 10 min	85 (15.0%)
80th percentile	7:28	Holds over 15 min	55 (9.7%)
90th percentile	14:48	Longest single hold	68:25

The median does not support the phrase “we wait a lot.” Half of In-Town holds resolve under 3:36, a normal tiered-response interval rather than a system failure. Any reader can compute that from the same export; EMSAC is better served stating it than having it raised in the meeting.

What the data does support. 15.0% of In-Town holds run past ten minutes and 55 ran past fifteen. Across three months that is **56.3 apparatus-hours** of Ottumwa Fire personnel and equipment committed to medical scenes solely awaiting transport — roughly 225 hours annually at this rate. That is a trajectory, not a forecast: June–August excludes the winter months the capacity study shows running high. Because the export records apparatus rather than crew size, the personnel-hour figure is several times larger.

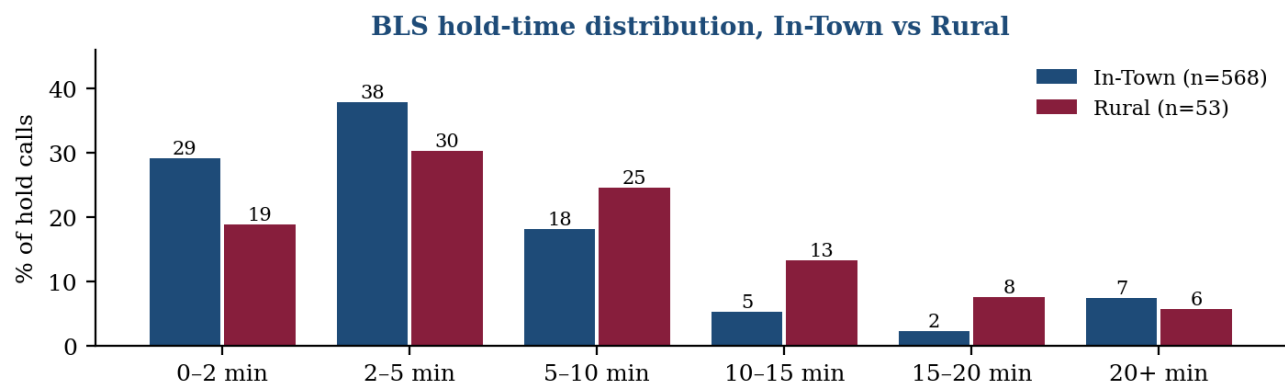


Figure 3. Hold-time distribution, both sections.

Section II — Rural Responses (all other departments)

Rural volumes are small. Across three months the rural departments produced 53 first-arrival hold calls against 568 in town. **No conclusion about any individual rural department should be drawn from the table below.**

5:12 Median hold	15:18 90th percentile	14 Holds over 10 min (26.4%)	6.2 h Apparatus-hours held
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Of 78 rural calls where both a BLS first-response unit and a transport unit arrived, the fire unit was first on 53 (67.9%), and stayed until transport arrived in every case.

Department	Hold calls	Median	90th pct	Over 10 min	Hold hrs	Longest
Wapello Co. Rural	28	3:24	15:15	5	2.6	22:05
Blakesburg	12	10:18	22:08	6	2.2	27:58
Agency	7	4:30	n/a	0	0.5	6:06
Eldon	4	7:11	n/a	1	0.5	12:01
Eddyville	2	12:41	n/a	2	0.4	15:10

90th percentile shown only where a department had at least eight hold calls. Below that a percentile is a single data point, not a statistic.

The rural median of 5:12 runs slightly longer than In-Town's 3:36, and 26.4% of rural holds exceed ten minutes against 15.0%. On 53 calls that difference is **suggestive and nothing more**. The far larger rural finding is coverage, not hold length — see Finding 1.

Back-up transport (90-76 / 90-77) — segregated from hub figures

Back-up units provide BLS transport and are covered fire departments' own resources. Because ORMICS transports whenever a hub unit is on scene, a back-up unit's presence does not by itself mean it carried the patient.

Measure	In-Town	Rural
Back-up unit on scene	2	23
Back-up on scene, ORMICS transported	0	5
Back-up actually transported	2 (0.2%)	18 (14.4%)

Back-up units carried the patient on 18 rural calls — 14.4% of rural volume — and on 2 In-Town calls. That rural figure matches the 18 rural calls never reached by an ALS hub unit exactly: on every rural call where no hub unit arrived, a back-up BLS ambulance transported. Clinically this is a different event from an ALS transport, and it is the reason the rural ALS coverage figures above diverge so sharply from In-Town.

On a further 5 rural calls a back-up unit reached the scene but an ORMICS unit also arrived and transported. Those calls are counted as hub transports here, and the hold interval on them runs to the ORMICS arrival rather than the back-up's — which is why the rural median in this version is longer than an “any transport unit” endpoint would produce.

What this analysis does and does not establish

Supported by the data	Not supported
Roughly 37.6% of rural calls have no BLS first responder on scene, against 5.1% in town.	That BLS units “wait a lot” on a typical call. Median holds are 3:36 In-Town and 5:12 rural.
Rural calls without first response take a median 17:02 to any EMS presence, with 61.7% over fifteen minutes.	Any conclusion about an individual rural department. Sample sizes range from 2 to 28 calls.
56.3 apparatus-hours of Ottumwa Fire time over three months absorbed awaiting transport.	Why a unit was not dispatched. The export shows that it was not, never the reason.
Back-up BLS units transported on 18 rural calls (14.4% of rural volume).	Any causal claim about ambulance delay. This measures the gap, not its cause.

Identified Planning Assumptions

The figures in this report rest on the assumptions below. Each is stated with its basis and with what would change if it proved wrong, so that a reader can weigh the findings without reconstructing the analysis.

#	Assumption	Basis	Effect if incorrect
1	When a back-up unit (90-76 / 90-77) and an ORMICS hub unit are both on scene, ORMICS transports. The hold interval therefore ends at the hub unit’s arrival on those calls.	Operational practice reported by Wapello County EMA. Not verifiable in the CAD export , which contains no transport or destination field — “Completed” records when a unit goes off scene, not whether it carried a patient.	Affects 5 rural calls and no In-Town calls. If the back-up unit transported on those instead, the rural median falls from 5:12 to 3:52, holds over ten minutes from 26.4% to 22.6%, and rural hold hours from 6.2 to 5.6. In-Town figures are unchanged either way.
2	Fire and rural department first-response units are BLS-capable (EMR or EMT) for the purpose of labeling this measure.	Wapello County fire units are cross-trained first responders. The export records apparatus identity only, not the certification of who was aboard on a given call.	The label would misstate capability on individual calls in both directions — a paramedic riding an engine, or an apparatus turning out below BLS. No timing figure changes; only the description of what arrived.
3	Dispatch agency identifies jurisdiction: Sheriff’s Office = rural, Ottumwa PD = City of Ottumwa.	Confirmed operationally by Wapello County EMA and corroborated independently in the data — all 804 In-Town calls drew Ottumwa PD and 124 of 125 Rural calls drew the Sheriff’s Office.	Calls would be attributed to the wrong section. The corroboration is strong, but the source data still contains no city or township field, so this remains a proxy rather than a location.
4	Calls missing an on-scene click are excluded and are not systematically different from the calls analyzed.	Documented CAD behavior: on-scene status is recorded only if clicked, and is sometimes typed into a comments field absent from this export.	If excluded calls skew toward longer holds, every figure here understates the problem. Nothing in the export allows this to be tested.
5	June’s agency-level “ORMICS” rows are paging records, not responding units.	They carry a dispatch stamp but no enroute time in 312 of 314 cases and no on-scene time in any case;	If any represented a real unit response, June would be missing arrivals. The rows carry no on-scene time regardless,

	reporting to dispatch was new that month.	so no hold interval could be computed from them either way.
6	Apparatus-hours are reported, not personnel-hours.	The export records units, not crew size or riding strength. The staffing cost is understated by a multiple equal to average riding strength. Direction is known; magnitude is not, pending riding-strength figures by apparatus.

Assumption 1 is the one to watch. It is the only assumption here that is operational rather than documentary, it cannot be checked against the source data, and it moves a reported figure. It is applied consistently and its full effect is quantified above.

Limitations

- **Three months, summer only.** The period excludes winter, when the capacity study shows elevated call volume.
- **No period before June 1, 2026.** ORMICS unit status was not reported to dispatch, so this measure cannot be extended backward or aligned to the capacity study’s 2024–2025 span.
- **Rural samples are small.** 125 rural calls in total; individual departments range from 2 to 28 hold calls.
- **Certification is not in the data.** “BLS first response” describes unit role. The export does not record who was aboard or at what level.
- **Calls missing an on-scene click are excluded** and cannot be tested for whether they differ systematically.
- **Apparatus-hours, not personnel-hours.** Multiply by actual riding strength for the staffing figure.
- **June queue and turnout times are not comparable across months.** Where June has both a paging row and a unit row, unit assignment lags the initial page by a median of 1.3 minutes. This does not affect any figure in this report, which uses on-scene times only, but any future queue-time or turnout analysis spanning June must account for it.
- **Cause is not addressed.** A hold may reflect unit unavailability, simultaneous calls, distance, hospital turnaround, or interfacility commitment.

Recommended next steps

- Continue monthly through at least one winter before treating annualized figures as settled.
- Build rural reporting as rolling twelve-month figures rather than monthly — a rural department accumulates roughly 100 first-arrival calls a year, and monthly noise would swamp the signal.
- Establish why first-response units are not dispatched on 30.4% of rural calls. That is the single largest finding here and the CAD export cannot answer it.
- Pair these figures with jurisdiction time-goal parameters once Medical Control sets them, reported separately for In-Town and Rural rather than as one countywide number.
- Obtain riding strength by apparatus to convert apparatus-hours into personnel-hours.

Source data. Wapello County. (2026a). *Calls for service export, June 2026* [Data set: June_2026.xls]. Wapello County. (2026b). *Calls for service export, July 2026* [Data set: July_2026.xls]. Wapello County. (2026c). *Calls for service export, August 2026* [Data set: Aug_2026.xls]. Wapello County EMS Advisory Council. (2026d). *Ambulance response time reports, July and August 2026*. Wapello County EMS Advisory Council. (2026e). *Medical call hourly capacity study: 2024–2025, with 2026 year-to-date addendum*. CAD data originates with the Ottumwa Police Department Communications Division.

Prepared by Wapello County Emergency Management Agency for EMSAC. Version 2.2 — September 4, 2026. Supersedes the OFD-only hold time analysis of September 3–4.



Combined Summer Analysis & Annualized Projection — June-August 2026

Ambulance unit assigned to unit on scene · Hub units only (90-70-90-74) · 92-day combined window · generated Sep 4, 2026

What this document is

This is a one-time, requested rollup of the three June, July, and August 2026 monthly ambulance response-time reports into a single 92-day view, followed by a mathematical extrapolation of what a full year could look like **if this summer period is representative**. It is not a standing monthly deliverable and uses the identical methodology (Hub-unit scope, Scene time = turnout + travel, Tukey IQR outlier fences) as the three monthly reports already delivered, so the figures below are directly comparable to them.

Part 1 — Combined 92-day results (June 1 - August 31, 2026)

Actual, measured figures — not an estimate. Same basis as the monthly reports.

All agencies combined

913

arrived on scene, of 992
dispatched

Median response time

6:19

unit assigned → on scene

90th percentile

11:42

1 in 10 calls slower than this

Mean response time

6:50

skewed up by longer outlier
calls

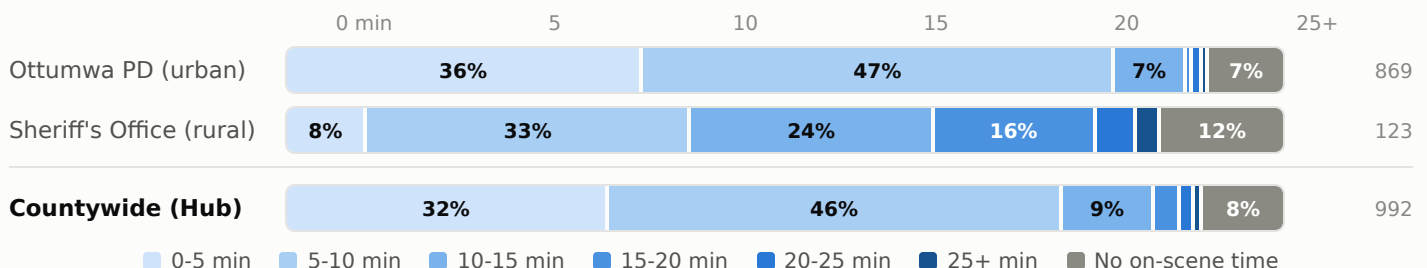
Monthly trend

Each month's dispatch/arrival counts and Scene-time statistics, computed the same way as the standing monthly reports, shown side by side.

Month	Dispatched	Arrived	Median	Mean	P90
June 2026	292	274	6:05	6:41	11:57
July 2026	368	331	6:31	7:05	11:16
August 2026	332	308	6:01	6:40	11:44
Combined (92 days)	992	913	6:19	6:50	11:42

Response-time bands (Scene basis)

Share of arrived calls in each response-time band, by agency and countywide, over the full 92-day window.



Outlier summary (combined 92-day fences)

28 calls (17 extreme, 11 mild) were flagged using Tukey IQR fences recomputed fresh from the full combined 92-day distribution per call type — a larger, more stable sample than any single month's fences. Recomputing fences this way is expected to give a slightly different count than simply adding the three monthly reports' own counts together (10 + 9 + 8 = 27 using each month's own fences, vs. 28 here using combined fences); both are correct under their own basis, and this is noted so the numbers aren't mistaken for a discrepancy. Of the 28 flagged calls, 2 were turnout-dominant and 26 were travel-dominant (drive time was the larger factor in the large majority of flagged calls, consistent with each individual month).

Fire/other-unit response alongside ambulance

Of 913 arrived Hub-ambulance calls, 836 (92%) had another (non-ambulance) unit also dispatched to the same call. Of those, a companion unit arrived first 617 times (74%) — consistent with the pattern seen in each of the three individual months.

Data limitation — June 2026 unit numbering

In June 2026 the ambulance-to-dispatch reporting process was new, and calls were logged under the agency identifier ("ORMICS") rather than a unit number; the process was refined afterward. June contains 314 such rows; July and August contain 0 and 0. Of June's 314, 268 are duplicate paging rows for calls that also have a numbered-unit row (already counted here), but **46 are calls with no numbered ambulance row at all** and are therefore absent from every June figure in this report and in the June monthly report.

This does not affect any response time. All 314 of June's agency-identifier rows carry zero travel time and zero on-scene time (0 and 0 respectively), so none of them can enter a median, mean, 90th-percentile, or outlier calculation under any treatment. Every response-time figure in this report is unaffected.

It does understate June's call volume and distort its call-type mix. Two categories were lost from June almost entirely: **Fire Lifeline** (June shows 0 numbered dispatches against 14 in July and 11 in August, but has 15 unit-numberless pages) and **Accident Unknown** (June shows 0 numbered dispatches against 2 in July and 1 in August, but has 7 unit-numberless pages). June runs 9.73 dispatches per day against July's 11.87 and August's 10.71; including all 46 would put June at 11.27 per day, in line with the other two months. The gap is spread across the month rather than concentrated at the start (84.3%, 91.5%, 83.3%, and 86.1% of calls received a unit number in the four successive weeks of June), so pooling the three months remains sound.

Because the unit-numberless calls have no on-scene time, it cannot be verified from the data that an ambulance actually responded to each one, and some (structure fire, brush fire, death investigation) may be notification pages rather than responses. The figures in this report therefore keep the consistent basis used by all three monthly reports — numbered ambulance units only — and the sensitivity range is stated below rather than the counts being silently adjusted.

Figure	As reported (numbered units)	Upper bound (incl. all 46)
June dispatched	292	338
June arrived on scene	274	274 (unchanged)
Combined dispatched (92 days)	992	1,038
Combined arrived on scene	913	913 (unchanged)
Combined no-on-scene-time rate	8.0%	12.0%
Projected annual dispatches	~3,936	~4,118
All response-time statistics	identical under both treatments	

Calls by type (countywide, combined)

Call type	Dispatched	Arrived	Median	Mean	P90
Fire Medical	735	693	5:52	6:08	10:02
Medical	104	94	10:21	11:36	18:38
Fall/Lift Assist	75	59	7:32	7:54	12:33
Fire Lifeline	25	20	5:32	7:03	13:12
Accident PI	10	9	6:07	7:33	10:06
Welfare Check	9	9	4:20	4:28	6:04
Assault	4	4	5:07	5:46	7:51
Disturbance	4	3	1:42	2:11	4:14
PD Accident	4	2	7:22	7:22	7:34
Suspicious Person	4	4	6:46	6:04	7:18
Accident Unknown	3	3	4:37	4:29	5:08
Mental	3	2	7:42	7:42	9:36
Burglary	2	2	8:03	8:03	12:07
Fight	2	2	4:28	4:28	5:18
Shooting/Stabbing	2	1	17:03	17:03	17:03
911 Hang Up	1	1	5:21	5:21	5:21
Intoxicated Person	1	1	8:41	8:41	8:41
Missing Person	1	1	6:47	6:47	6:47
Other	1	1	0:00	0:00	0:00
Serve Warrant	1	1	8:04	8:04	8:04
Suspicious Vehicle	1	1	4:34	4:34	4:34

Part 2 — Annualized projection

A mathematical extrapolation, not a forecast — read the caveats below before using these numbers.

⚠ This is an extrapolation, conditioned on an assumption — not a validated prediction

Per your request, the table below scales the 92 measured days (June–August 2026) up to a 365-day year by a single factor, $365 \div 92 \approx 3.97$, applied only to **volume** counts (how many calls, how many outliers, how many arrivals). **Rate** figures — medians, percentiles, means, and percentages — are carried forward unscaled, under the explicit assumption stated in your request: *"if this 90-day period is typical."* Scaling a rate by a day-count ratio would not be meaningful, so those numbers are presented as "if this rate holds," not as a projection in their own right.

This is a linear scaling exercise on a single summer sample, not a statistical forecasting model, and it has not been validated against any prior full year of Wapello County data (none was provided). Treat every figure below as conditional on the assumption you specified, not as a verified estimate.

Projected annual volumes (if summer 2026 is typical)

Actual 92-day count, and that count scaled to 365 days ($365 \div 92 \approx 3.97\times$). Projected figures are rounded to the nearest whole call and marked with “~”.

Metric	Actual (92 days)	Projected (365 days)
Total calls dispatched (Hub)	992	~3,936
Arrived on scene	913	~3,622
No on-scene time, total	79	~313
— data-entry gap	66	~262
— true cancellation	13	~52
Ottumwa PD dispatches	869	~3,448
Sheriff’s Office dispatches	123	~488
Statistical outliers, total	28	~111
— extreme	17	~67
— mild	11	~44
Calls with a companion (fire/other) unit	836	~3,317
— companion arrived first	617	~2,448

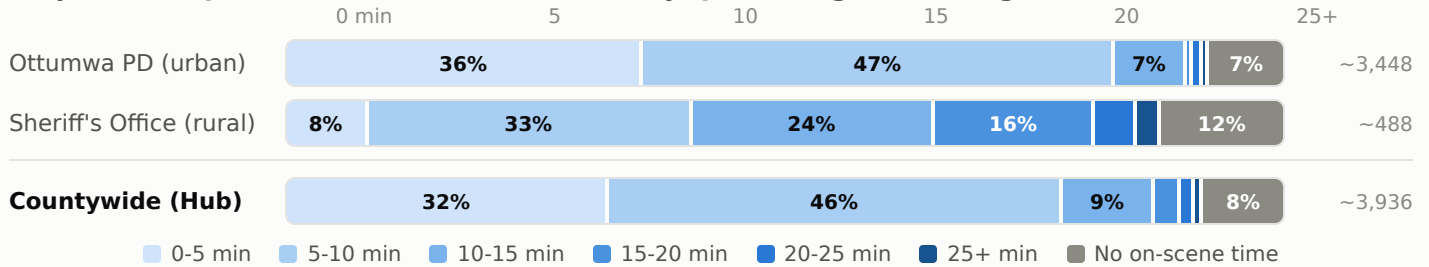
Rate figures carried forward unscaled

Note: the no-on-scene-time rate below (8.0%) is on the reported basis; including June’s 46 unit-numberless calls would put it at 12.0%. All other rates are unaffected.

These are not multiplied by any factor — they are the actual 92-day figures, repeated here under the assumption that the underlying rate holds for a full year. If call-time patterns differ by season (e.g., winter road conditions, holiday travel, school-year vs. summer schedules), these will not hold.

Metric	92-day actual	Annual assumption
Median response time (Scene)	6:19	assumed constant
Mean response time (Scene)	6:50	assumed constant
90th percentile (Scene)	11:42	assumed constant
Context: median 911-to-scene (Total)	9:40	assumed constant
Context: 90th pct. 911-to-scene (Total)	21:32	assumed constant
No-on-scene-time rate	8.0%	assumed constant
Outlier rate (of arrived calls)	3.1%	assumed constant
Calls with a companion unit	92%	assumed constant
Companion arrived first (of those)	74%	assumed constant

Projected response-time bands (volumes only; percentages unchanged)



Caveats — read before using these figures

- Single-season sample.** June–August is summer only. Iowa call volume and mix (e.g., weather-related medical calls, road conditions, holiday travel, school being out) can differ materially in fall, winter, and spring; a summer-only sample is not guaranteed to represent the rest of the year.
- Rates are held constant by assumption, not evidence.** The response-time figures above are not adjusted for season at all — they are simply restated as "if this rate holds." No winter or spring 2026 data was available to test that assumption.
- Small counts get noisier when scaled up.** The 92-day outlier count (28, 17 extreme) is based on a modest sample; a linear projection amplifies whatever random variation is already in that count, so the projected annual outlier figures should be read as rough, not precise.
- This is arithmetic, not a forecasting model.** No trend, seasonality, staffing change, population change, or other factor is modeled — it is a single ratio ($365 \div 92$) applied to volume counts. It should be treated as a scenario ("what if the rest of the year looks like this summer"), not a prediction of what will actually happen.
- June's volume figures are a known undercount.** 46 June calls were logged without a unit number (see the June data-limitation note above) and are excluded here, so every projected *volume* in this section is a lower bound. The upper-bound projection is ~4,118 annual dispatches against the ~3,936 shown. Projected response times are unaffected.
- No external benchmark was used to validate this projection** against a prior full year of Wapello County data, since none was provided for this analysis.

Methodology: Identical to the three June, July, and August 2026 monthly reports already delivered — Hub ambulance units only (90-70 through 90-74; backup units 90-76/90-77 excluded from countywide figures), paramount time metric is unit-assigned-to-unit-on-scene ("Scene" = turnout + travel), Tukey IQR outlier fences (mild = $Q3 + 1.5 \times IQR$, extreme = $Q3 + 3 \times IQR$) computed per call type with a minimum sample of 7 arrived dispatches, and Dispatch Agency (Ottumwa PD vs. Wapello County Sheriff's Office) used as an approximate urban/rural proxy. Combined-period fences in Part 1 are recomputed fresh from the full 92-day distribution, not derived from the three months' individual fences. See the individual June, July, and August 2026 monthly reports for full glossary and methodology detail, including the data-quality and confounding notes.



Ambulance Response Time Report — June 2026

Ambulance unit assigned to unit on scene · Ottumwa Police Department vs. Wapello County Sheriff's Office · Wapello County / Ottumwa EMS · June 2026

⚠️ Read this before comparing the two sections below

The source data has no city/township field, so at the requester's direction this report uses **Dispatch Agency** (Ottumwa Police Department vs. Wapello County Sheriff's Office) as an approximate proxy for urban vs. rural calls.

That proxy should be read with real caution: it is almost perfectly confounded with call type, not just geography. Every one of the June 2026 **"Medical"**-coded calls (27 of 27) was logged under the Sheriff's Office, while **"Fire Medical"** (225 of 227) and nearly every other call type ran through Ottumwa PD. Comparing the two sections below is very close to comparing the "Fire Medical" call type to the "Medical" call type — it is not a clean geographic comparison, and the gap between them should not be read as "rural is slower than urban" without further investigation into why these call types are logged under different agencies. See Methodology at the bottom for detail.

Median

The middle response time when every call is lined up fastest to slowest. Half of calls are quicker, half are slower. Describes a "typical" call and isn't skewed by a few extreme outliers.

Mean (average)

All response times added together, divided by the number of calls. Easily pulled upward by a small number of very long responses, so it can overstate the typical experience.

90th percentile

The value that 90% of calls beat — the threshold the slowest 1 in 10 calls exceed. Highlights how bad the worst-case tail of responses gets, which the median and mean can hide.

All agencies combined

274

arrived on scene, of 292 dispatched

Median response time

6:05

unit assigned → on scene

90th percentile

11:57

1 in 10 calls slower than this

Mean response time

6:41

skewed up by longer outlier calls

These figures measure **unit assigned to unit on scene** — the portion of the response the ambulance crew controls once tasked. For context only (not this report's flagged metric): countywide total time from **911 call receipt to on scene**, including dispatch/queue time, was a median of 9:28 and a 90th percentile of 19:55 this month. See Methodology for why the two are reported separately.

Data quality note: missing on-scene times

No recorded on-scene time

18 of 292

6.2% of June 2026 dispatches

Likely a data-entry gap

14

dispatched and en route, but no on-scene click recorded

Consistent with a true cancellation

4

missing earlier timestamps too, not just on-scene

Separate limitation for June 2026 — dispatch counts are understated. In June 2026 the ambulance-to-dispatch reporting process was new, and 314 calls were logged under the agency identifier ("ORMICS") rather than a unit number; the process was refined in later months. 268 of those are duplicate paging rows for calls that also have a numbered-unit row and are already counted here, but 46 are calls with no numbered ambulance row at all and are excluded from every figure in this report.

This does not affect any response time in this report. All 314 of those rows carry zero travel time and zero on-scene time (0 and 0 respectively), so none of them can enter a median, mean, 90th-percentile, or outlier calculation under any treatment — every response-time figure here stands as published. What it does affect is **dispatch volume and call-type mix**: the 46 excluded calls would raise June 2026's dispatch count from 292 to 338, and they remove June 2026 call types from this report entirely — Fire Lifeline (15), Accident Unknown (7) appear only as unit-numberless pages this month. Counts and per-call-type figures for June 2026 should therefore be read as a floor, and June 2026 dispatch volume should not be compared directly against a later month's without accounting for this.

Those calls are kept out rather than added in because they carry no on-scene time, so it cannot be verified from the data that an ambulance actually responded to each one, and because later months contain no equivalent rows — including them would make June 2026 inconsistent with the months it is compared against.

Wapello County's CAD system only records a unit's on-scene time if that status is clicked at the time; if it's missed, the time is sometimes typed into a comments field instead, which isn't part of this report's raw data export. This report has no way to recover that time, so these calls are excluded from every response-time statistic in this report, the same as a true cancellation would be. The breakdown above is a direct, verifiable split — not an estimate of the missing time itself — based on which other timestamps ARE present: a call with a valid Queue time and a valid Turnout time was confirmed dispatched and sent en route, so a missing on-scene time there looks like an uncaptured arrival, not a cancellation; a call missing those earlier timestamps too looks more like a genuine cancellation or diversion. See Methodology for the exact rule.

Ottumwa Police Department — approximate "urban" proxy

261 ambulance dispatches logged under Ottumwa PD in June 2026 — 89% of all calls in this dataset.

Ambulance responses

244

arrived on scene, of 261 dispatched

Median response time

5:48

unit assigned → on scene

90th percentile

10:02

1 in 10 calls slower than this

Mean response time

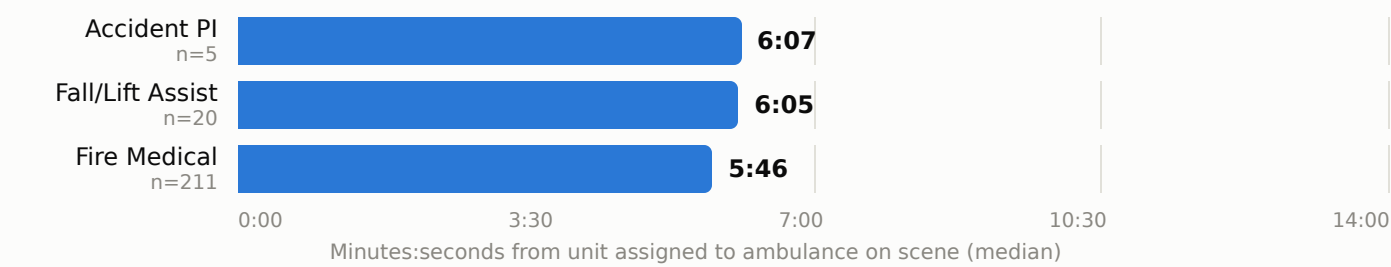
6:06

skewed up by longer outlier calls

For context: total time from 911 call receipt to on scene (median / 90th percentile) was 9:15 / 17:56.

Ottumwa PD — median response time by call type

Call types with 5+ Ottumwa PD dispatches in June 2026 only — see table view for all call types, including small-sample ones.

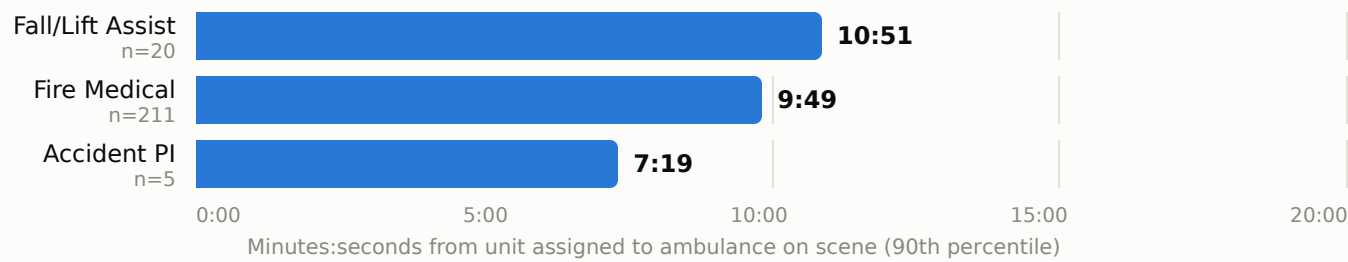


Call type	Dispatched	Arrived	Median	Mean	Min	Max	90th pctile
Fire Medical	225	211 (14 n/a)	5:46	6:05	0:00	37:28	9:49
Fall/Lift Assist	21	20 (1 n/a)	6:05	6:29	0:00	12:32	10:51
Accident PI	6	5 (1 n/a)	6:07	6:18	5:03	7:47	7:19
Disturbance	2	2	0:51	0:51	0:00	1:42	1:32
Shooting/Stabbing	2	1 (1 n/a)	17:03	17:03	17:03	17:03	17:03

Call type	Dispatched	Arrived	Median	Mean	Min	Max	90th pctile
Other	1	1	0:00	0:00	0:00	0:00	0:00
Serve Warrant	1	1	8:04	8:04	8:04	8:04	8:04
Suspicious Person	1	1	7:01	7:01	7:01	7:01	7:01
Suspicious Vehicle	1	1	4:34	4:34	4:34	4:34	4:34
Welfare Check	1	1	5:43	5:43	5:43	5:43	5:43
ALL CALL TYPES	261	244 (17 n/a)	5:49	6:06	0:00	37:28	10:02

Ottumwa PD — 90th percentile response time by call type

Call types with 5+ Ottumwa PD dispatches in June 2026 only. 1 in 10 calls of that type took longer than the value shown.



Wapello County Sheriff's Office — approximate "rural" proxy

Only 31 ambulance dispatches logged under the Sheriff's Office in June 2026 (11% of all calls). Treat this section as low-volume and read the callout above before drawing conclusions.

Ambulance responses
30
 arrived on scene, of 31 dispatched

Median response time
10:30
 unit assigned → on scene

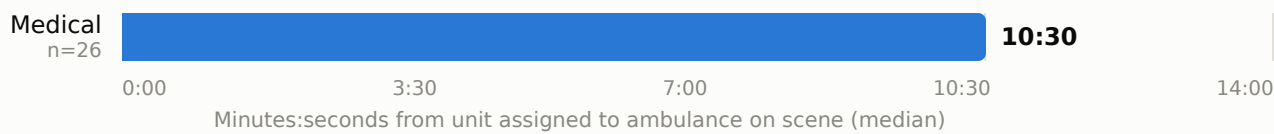
90th percentile
17:19
 1 in 10 calls slower than this

Mean response time
11:25
 skewed up by longer outlier calls

For context: total time from 911 call receipt to on scene (median / 90th percentile) was 13:44 / 21:50.

Wapello Co. Sheriff — median response time by call type

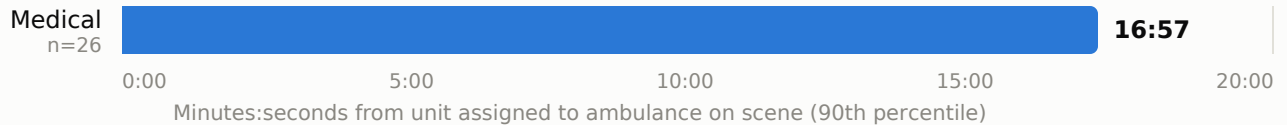
Call types with 5+ Sheriff's Office dispatches in June 2026 are charted — every other call type is a single data point or a small average. See table view for the full breakdown.



Call type	Dispatched	Arrived	Median	Mean	Min	Max	90th pctile
Medical	27	26 (1 n/a)	10:30	11:28	0:00	46:58	16:57
Accident PI	2	2	11:30	11:30	4:58	18:02	16:44
Fire Medical	2	2	10:41	10:41	9:08	12:13	11:55
ALL CALL TYPES	31	30 (1 n/a)	10:30	11:25	0:00	46:58	17:19

Wapello Co. Sheriff — 90th percentile response time by call type

Call types with 5+ Sheriff's Office dispatches are charted reliably — see the table view above for every call type's 90th percentile.



Median vs. 90th percentile: which is the better QA metric?

Median (all call types)

6:05

half of responses arrive faster than this

90th percentile (all call types)

11:57

1 in 10 responses in June 2026 took longer than this

Both numbers describe the same distribution of response times, but they answer different questions. The **median** describes the typical call: half of responses are faster, half are slower. It's a good "what does a normal call look like" figure, and it's resistant to being skewed by one or two extreme outliers.

The **90th percentile** describes the tail: the threshold the slowest 10% of calls exceed. Countywide, that's 11:57 — meaning roughly 1 in 10 ambulance responses in June 2026 took longer than that. That's a very different story than "typical response is 6:05," and it's the number that matters most when asking how bad it gets, and how often.

For quality assurance specifically, the 90th percentile is generally the more useful metric, and it's what most EMS performance standards actually use — response-time benchmarks are typically written as "X% of calls within Y minutes," not as an average or median target. Three reasons that matters here:

Patient risk lives in the tail, not the center. A service can have an excellent median and still be failing a meaningful share of patients if the tail is long. Outcomes for time-sensitive conditions are disproportionately affected by the slow calls, not the fast ones — a median doesn't surface that risk at all.

The median can hide inconsistency. In this dataset, Fire Medical has a median of 5:48 and a 90th percentile of 9:54 — roughly a 4:06 spread, so even its "bad" calls aren't dramatically worse than typical. Medical has a median of 10:30 and a 90th percentile of 16:56 — over a 6:27 spread. Two call types with broadly similar typical performance can have very different reliability, and only the percentile gap reveals that.

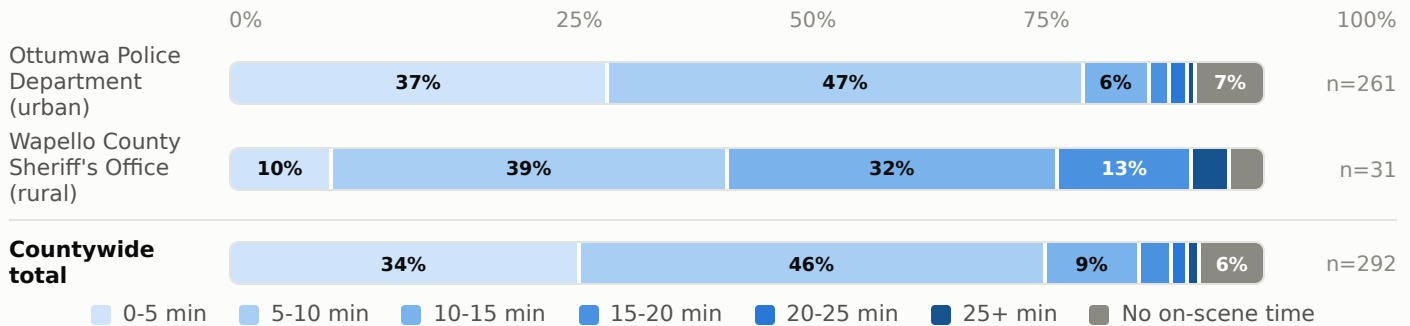
The median is slow to flag operational breakdowns. Problems like a unit tied up on another call, a geographic coverage gap, or a dispatch delay tend to show up first in the slow tail. A median won't move until those breakdowns become common enough to shift the center of the distribution — by which point they've likely been happening for a while.

In practice, the two are complements rather than competitors: the median is the right number for describing typical service level, while the 90th percentile (paired with reviewing the max and the specific slow-tail calls) is the more actionable benchmark for quality assurance, setting standards, and deciding where to investigate.

Applying this to the Ottumwa PD / Sheriff's Office split above: the 90th-percentile gap between the two sections (10:02 vs. 17:19) is the more informative number for a QA conversation than the median gap — but per the callout at the top of this report, resist reading that gap as "rural service is worse" without the caveats above.

Response times in plain terms

The median and 90th percentile above are the most precise way to track this, but they take some getting used to. Here's the same June 2026 calls sorted into how long each one actually took, from unit assignment to arrival on scene — by coverage area, with countywide underneath.



Fire response alongside the ambulance

Calls with a fire unit also on scene

246 of 274

90% of arrived calls

Fire unit arrived first

183 of 246

74% of those calls

Avg. lead when fire is first

5:59

fire on scene before the ambulance

Avg. lead when ambulance is first

2:32

ambulance on scene before the fire unit

For every ambulance call this month, this compares each responding unit's own time from 911 call receipt to on scene — a direct fact from the raw data, not an estimate. On most calls a fire unit also responds, and it's often the first unit physically on scene, ahead of the transport-capable ambulance. This is shown as its own figure, separate from outlier flagging above, because it answers a different question: not "was the ambulance response unusually slow," but "how long did it take for any EMS/fire capability to reach the patient."

Median — time to first EMS unit on scene

6:38

911 call receipt → first unit on scene

90th percentile

11:00

1 in 10 calls slower than this

Mean

7:25

skewed up by longer outlier calls

Time to first EMS unit on scene is the 911-call-receipt-to-on-scene time of whichever unit — the ambulance itself, or a responding fire unit — physically reached the scene first, for every call the ambulance arrived on this month. It's a different question from the paramount unit-assigned-to-on-scene metric used for outlier flagging above: that metric measures only the ambulance crew's own performance once tasked, while this one measures how long it actually took for any EMS-capable presence to reach the patient, counting from the moment the call came in. For this figure, **any fire unit on scene counts as an EMS unit** — Tim's explicit direction, since Wapello County's fire units are cross-trained first responders, not fire-suppression-only; this is the working definition for now and may be refined once EMSAC's current System Standards benchmark for "time to first unit on scene" is available for direct comparison.

Outlier Analysis — the extreme calls behind the tail

10 of 274 arrived calls (3.6%) are statistical outliers for their own call type, based on unit-assigned-to-scene time. Isolated below and studied separately, including whether each was a turnout or a travel issue.

Flagged as outliers

10

of 274 arrived calls (3.6%)

Severity split

7 / 3

extreme vs. mild outliers

Fire unit arrived first

8 of 8

100% of flagged calls where
a fire unit also reached the
scene

Mean, with vs. without

6:41 → 6:01

countywide mean if these 10
are excluded

What "unusually long" means

A call is flagged as unusually long when it takes much longer than other calls of the same type that month — judged against what's typical for that kind of call, not a fixed number of minutes. **Mild** means noticeably slower than usual for that call type; **Extreme** means far slower than usual. Because the comparison always stays within the same call type, a slow Medical call and a slow Fire Medical call are each measured against their own typical pace, not against each other — so a quiet call type and a busy one can both end up with flags.

See Methodology at the end of this report for the exact statistical method used.

Severity and what's driving the longer times

The 10 flagged calls this month, broken down by how severe the delay was and by which leg of the response once tasked — turnout or travel time — accounted for more of it.

Severity of the 10 flagged calls



What's driving the longer times



■ Turnout (0, 0%) ■ Travel time (10, 100%)

Flagging is based on **turnout** (unit assigned to enroute — the crew's own response once tasked) plus **travel time** (enroute to on scene) — together, unit-assigned-to-scene time. A flagged call is counted under whichever of the two legs was larger for it. **Queue time** (call creation to this unit being assigned) is not part of what makes a call flagged, since it often isn't within the crew's control — see Methodology — but it's still shown as context below.

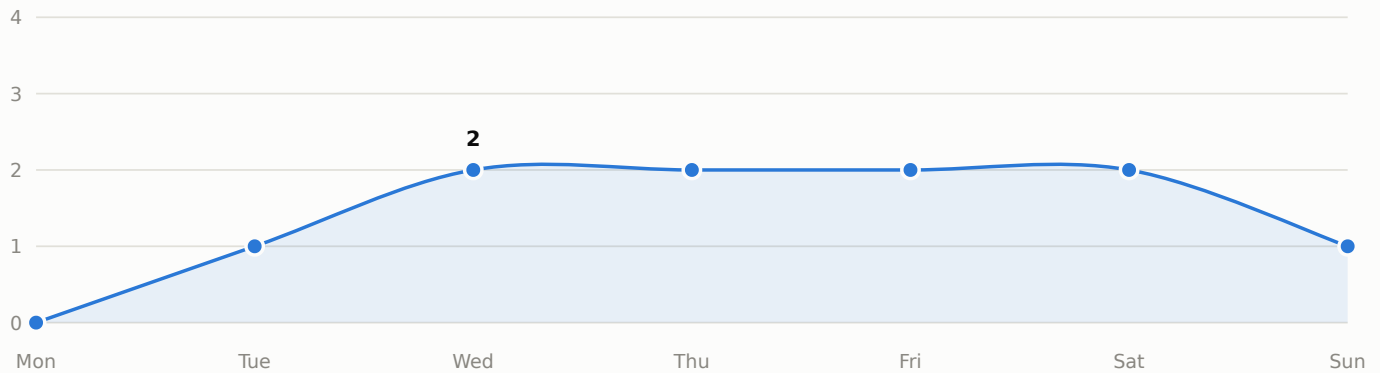
A fire unit also reached the scene on **8 of the 10 flagged calls (80%)**. Comparing each unit's own time from call receipt to on scene: the fire unit got there first on **8 of those 8 calls (100%)**, by an average of 24:11; the ambulance was still first on the other 0. This is a direct comparison of two real arrival times, not an inference.

This report shows the aggregate picture only. Call-by-call detail (date/time, unit, CFS #, which unit arrived first) is kept in a separate confidential report for the ambulance service and hospital to follow up on individual flagged calls.

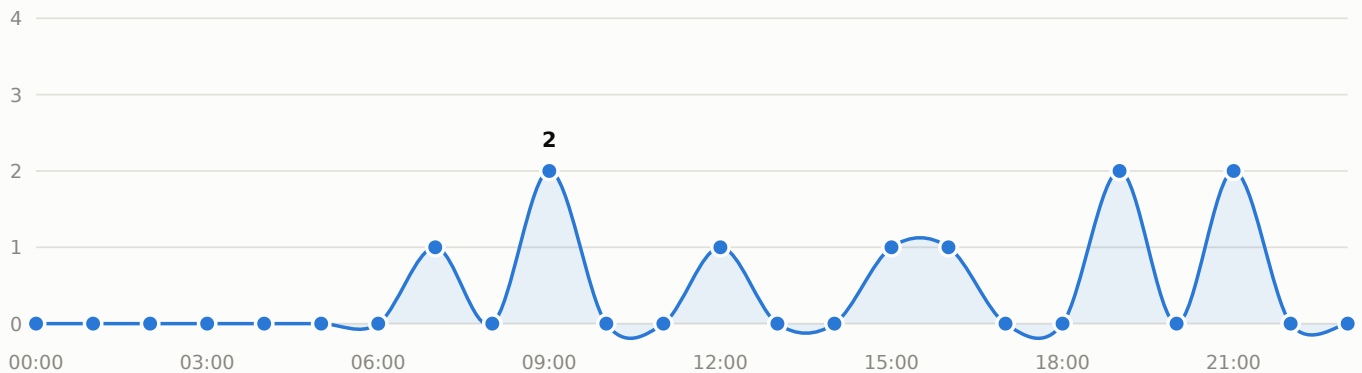
When do the outliers happen?

Count of the 10 flagged calls by day of week and by hour of the 911 call receipt time (1-hour blocks, to line up with shift-based analysis). With only 10 flagged calls, read the shape as illustrative of this month, not a statistically validated pattern.

By day of week



By hour of day (1-hour blocks, call receipt)



Impact of removing the 10 flagged outliers

"With" matches the summary sections above; "without" excludes the flagged rows. Call types outside the fence table (too few dispatches) are identical in both columns.

Slice	n		Mean		Median		90th pctl	
	with	without	with	without	with	without	with	without
ALL CALL TYPES	274	264	6:41	6:01	6:05	5:56	11:57	10:21
Accident PI	7	6	7:47	6:04	6:07	6:01	11:53	7:12
Fall/Lift Assist	20	20	6:29	6:29	6:05	6:05	10:51	10:51
Fire Medical	213	205	6:08	5:29	5:48	5:35	9:54	9:10
Medical	26	25	11:28	10:03	10:30	9:53	16:56	15:40

Root cause: turnout, or the drive?

Avg. queue time (flagged calls)

6:40

call creation to unit assigned

Avg. turnout (flagged calls)

0:01

assigned to unit enroute

Avg. travel time (flagged calls)

24:30

unit enroute to on scene

Each flagged call's unit-assigned-to-scene time splits into **turnout** (assigned to enroute) and **travel time** (enroute to on scene) — the two legs that determine whether a call is flagged in the first place. **0 of the 10 (0%)** were turnout-dominant (the crew was tasked and still took unusually long to roll); the other 10 (100%) were travel-dominant, consistent with a distant or hard-to-reach location.

Queue time (call creation to this unit assigned) is not one of the two legs above — it plays no role in whether a call gets flagged, since it's often not within the crew's control (call-taking/triage load, or a fire unit already on the same call; see Methodology). Turnout-dominant outliers are the clearest EMS-side signal to look at directly.

Methodology: Includes Hub ambulance units only (fire department log entries excluded). This report's paramount metric is **unit assigned to unit on scene** (turnout + travel) — the portion of a response the ambulance crew controls once tasked. Total time from CFS record creation (911 call receipt) to on-scene arrival, which also includes queue/dispatch time, is reported separately as context, never as the flagged metric (see below for why). 18 of 292 June 2026 ambulance dispatches (6.2%) have no recorded on-scene time and are excluded from the time statistics. Of those, 14 have a valid Queue time and a valid Turnout time (i.e. confirmed dispatched and sent en route) — consistent with a known CAD data-entry gap (the on-scene status wasn't clicked at the time, and Wapello County's CAD sometimes has that time typed into a comments field instead, which isn't part of this raw data export), not a true cancellation; this report has no way to recover that missing time. The other 4 are missing earlier timestamps too, more consistent with a genuine cancellation or diversion. See "Data quality note: missing on-scene times" above for the full breakdown. Call types with 1–2 dispatches in a given slice are single data points, not reliable averages. **June 2026 dispatch-count limitation:** 46 June 2026 calls were logged under the agency identifier "ORMICS" with no unit number and no on-scene time, and are excluded from every figure; they affect dispatch counts and call-type mix (true dispatch count is at least 292, at most 338), but cannot affect any response-time statistic. See the data quality note above.

County backup units excluded — 90-76, 90-77: calls logged under these unit codes are excluded from every figure above — KPIs, agency sections, response-time bands, and outlier analysis — whenever they appear (not every listed unit is necessarily active in a given month). They provide back-up BLS transport but aren't part of the Hub ambulance fleet this report otherwise covers. Their raw tally, for whichever of them ran calls this month, is kept standalone, never blended with Hub-unit figures, in the confidential companion report's per-unit table.

Urban/rural proxy — important caveat: the source data has no city/township/geographic field. At the requester's direction, "Dispatch Agency" (Ottumwa Police Department vs. Wapello County Sheriff's Office) is used above as an approximate stand-in for urban vs. rural. This proxy is almost perfectly confounded with call type: 27 of 27 June 2026 "Medical"-coded calls were logged under the Sheriff's Office, while "Fire Medical" (225 of 227) and nearly every other call type ran through Ottumwa PD. Treat the Ottumwa PD vs. Sheriff's Office comparison as suggestive at best, not as a validated geographic finding, until a true location field is available.

Small sample — Wapello County Sheriff's Office: only 31 ambulance dispatches in June 2026 were logged under the Sheriff's Office. Call types under 5 dispatches are single data points or small averages.

Outlier detection (Outlier Analysis section): outliers are identified per call type using Tukey's IQR fences, a standard statistical method for flagging values that are extreme relative to a data set's own typical spread, rather than against a fixed benchmark, applied to **unit-assigned-to-scene time** (not total time, not queue time — see above). For each call type with 7+ June 2026 arrived dispatches (Accident PI, Fall/Lift Assist, Fire Medical, Medical): a value beyond $Q3 + 1.5 \times IQR$ is a **mild** outlier, and beyond $Q3 + 3 \times IQR$ is an **extreme** outlier, where $Q3$ is that call type's 75th-percentile unit-assigned-to-scene time and IQR (interquartile range) is the spread between its 25th- and 75th-percentile values. Call types below that dispatch threshold aren't flagged — too little data for a meaningful quartile. 10 of 274 arrived calls (3.6%) are flagged this way — 7 extreme, 3 mild. Removing them drops the countywide mean from 6:41 to 6:01 and the 90th percentile from 11:57 to 10:21, while the median moves from 6:05 to 5:56 — consistent with the median-vs-90th-percentile discussion above. (For reference, the same before/after comparison on total 911-call-receipt-to-arrival time: mean 11:25 to 10:40, 90th percentile 19:55 to 16:12, median 9:28 to 9:20.)

Outlier timing patterns: Day and Hour Block reflect the 911 call receipt time (not arrival), parsed to the weekday and the hour of day (0–23, 1-hour blocks, to line up with shift-based analysis). With only 10 flagged calls, treat the shape of the day-of-week and time-of-day charts as illustrative of where this month's extreme cases happened to fall, not as a statistically validated pattern — a larger sample (multiple months) would be needed before concluding a given day or hour genuinely produces more outliers.

Why unit-assigned-to-scene, not total time: queue time (call creation to this unit assigned) is frequently not something the responding crew controls — normal call-taking/triage load, or a fire unit already on the same call ahead of the ambulance (see the companion-unit paragraph below). Total 911-call-receipt-to-arrival time is still reported throughout this document as context, since it's the full experience from the caller's perspective, but the crew is only held to account — outlier flagging, KPI tiles, per-call-type charts, response-time bands — on the portion of the response it actually controls: turnout (assigned to enroute) plus travel (enroute to on scene).

Companion-unit response (fire vs. ambulance, who got there first): for every ambulance call, this report checks whether any other unit was also dispatched to the same CFS #, and if so, compares that unit's own time from call receipt to on scene against the ambulance's own time from call receipt to on scene — two real, unmodified figures already in the raw export, not a threshold or a judgment call. In this month's raw export, every such companion unit is a fire-department unit (Ottumwa Fire Department engines/chief units or a rural volunteer department); no law-enforcement patrol-car unit codes appear in the underlying data's Unit field at all. Countywide this month: a companion unit reached the scene on 246 of 274 arrived calls (90%), and it arrived before the ambulance on 183 of those 246 (74%), by an average of 5:59 — see "Fire response alongside the ambulance" above. This comparison has no bearing on which calls are counted as outliers above (those are turnout+travel only); it's independent context about which unit physically reached the patient first.

Time to first EMS unit on scene: the smaller of the ambulance's own call-receipt-to-on-scene time and its companion fire unit's call-receipt-to-on-scene time (when one responded), for every call the ambulance arrived on this month — see "Fire response alongside the ambulance" above. Per Tim's direction, any fire unit on scene counts as an EMS unit for this figure, since Wapello County's fire units are cross-trained first responders; this is the working definition until EMSAC's current System Standards benchmark is available for direct comparison. This month: median 6:38, 90th percentile 11:00, mean 7:25.

How this report is built from the raw data, and what's fact vs. inference: every duration, unit code, call type, and timestamp shown in this report is copied directly from the county's raw CFS export — nothing is estimated, typed in by hand, or inferred. The export lists one row per unit dispatched to a call (ambulances alongside fire engines, chiefs, and rural department units); this report reads every row to identify each ambulance's own timing plus which other units, if any, were on the same call, and computes queue/turnout/travel/on-scene durations, and the companion-unit comparison, straight from the export's own time and time-difference columns. There is no modeled, estimated, or inferred value anywhere in this report — medians, percentiles, per-call times, unit codes, and the companion-unit comparison are all direct readouts of the source file.

Source: Wapello County CFS export, *June_2026_2.xls*. Period: June 2026.



Ambulance Response Time Report — July 2026

Ambulance unit assigned to unit on scene · Ottumwa Police Department vs. Wapello County Sheriff's Office · Wapello County / Ottumwa EMS · July 2026

⚠ Read this before comparing the two sections below

The source data has no city/township field, so at the requester's direction this report uses **Dispatch Agency** (Ottumwa Police Department vs. Wapello County Sheriff's Office) as an approximate proxy for urban vs. rural calls.

That proxy should be read with real caution: it is almost perfectly confounded with call type, not just geography. Every one of the July 2026 **"Medical"**-coded calls (39 of 39) was logged under the Sheriff's Office, while **"Fire Medical"** (267 of 267) and nearly every other call type ran through Ottumwa PD. Comparing the two sections below is very close to comparing the "Fire Medical" call type to the "Medical" call type — it is not a clean geographic comparison, and the gap between them should not be read as "rural is slower than urban" without further investigation into why these call types are logged under different agencies. See Methodology at the bottom for detail.

Median

The middle response time when every call is lined up fastest to slowest. Half of calls are quicker, half are slower. Describes a "typical" call and isn't skewed by a few extreme outliers.

Mean (average)

All response times added together, divided by the number of calls. Easily pulled upward by a small number of very long responses, so it can overstate the typical experience.

90th percentile

The value that 90% of calls beat — the threshold the slowest 1 in 10 calls exceed. Highlights how bad the worst-case tail of responses gets, which the median and mean can hide.

All agencies combined

331

arrived on scene, of 368 dispatched

Median response time

6:31

unit assigned → on scene

90th percentile

11:16

1 in 10 calls slower than this

Mean response time

7:05

skewed up by longer outlier calls

These figures measure **unit assigned to unit on scene** — the portion of the response the ambulance crew controls once tasked. For context only (not this report's flagged metric): countywide total time from **911 call receipt to on scene**, including dispatch/queue time, was a median of 9:42 and a 90th percentile of 21:09 this month. See Methodology for why the two are reported separately.

Data quality note: missing on-scene times

No recorded on-scene time

37 of 368

10.1% of July 2026 dispatches

Likely a data-entry gap

29

dispatched and en route, but no on-scene click recorded

Consistent with a true cancellation

8

missing earlier timestamps too, not just on-scene

Wapello County's CAD system only records a unit's on-scene time if that status is clicked at the time; if it's missed, the time is sometimes typed into a comments field instead, which isn't part of this report's raw data export. This report has no way to recover that time, so these calls are excluded from every response-time statistic in this report, the same as a true cancellation would be. The breakdown above is a direct, verifiable split — not an estimate of the missing time itself — based on which other timestamps ARE present: a call with a valid Queue time and a valid Turnout time was confirmed dispatched and sent en route, so a missing on-scene time there looks like an uncaptured arrival, not a cancellation; a call missing those earlier timestamps too looks more like a genuine cancellation or diversion. See Methodology for the exact rule.

Ottumwa Police Department — approximate "urban" proxy

321 ambulance dispatches logged under Ottumwa PD in July 2026 — 87% of all calls in this dataset.

Ambulance responses

291

arrived on scene, of 321 dispatched

Median response time

6:17

unit assigned → on scene

90th percentile

10:10

1 in 10 calls slower than this

Mean response time

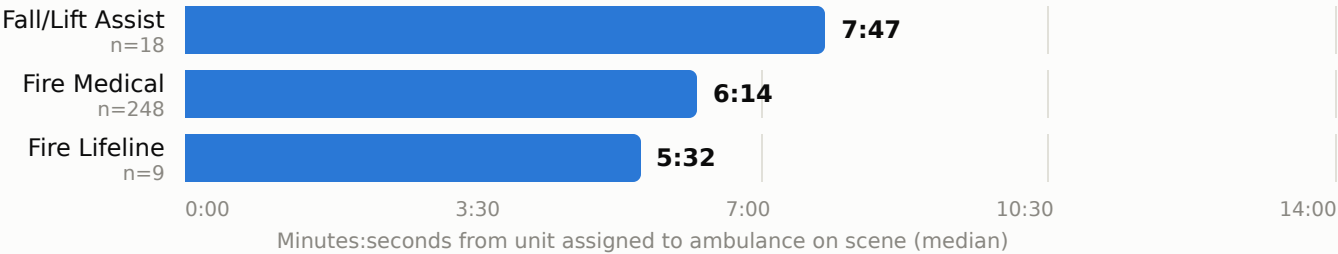
6:18

skewed up by longer outlier calls

For context: total time from 911 call receipt to on scene (median / 90th percentile) was 9:17 / 18:44.

Ottumwa PD — median response time by call type

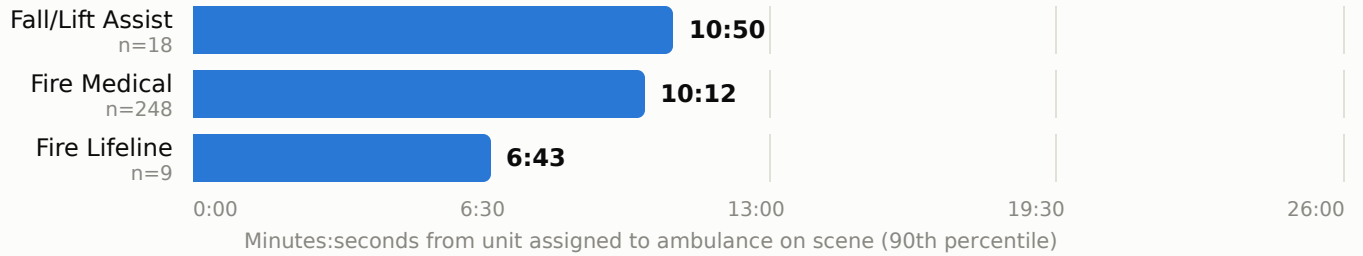
Call types with 5+ Ottumwa PD dispatches in July 2026 only — see table view for all call types, including small-sample ones.



Call type	Dispatched	Arrived	Median	Mean	Min	Max	90th pctile
Fire Medical	267	248 (19 n/a)	6:14	6:15	0:00	28:07	10:12
Fall/Lift Assist	23	18 (5 n/a)	7:47	8:09	2:24	14:40	10:50
Fire Lifeline	12	9 (3 n/a)	5:32	5:30	3:33	8:25	6:43
Welfare Check	3	3	3:35	3:41	0:00	7:28	6:41
Accident PI	2	2	6:43	6:43	5:19	8:07	7:50
Accident Unknown	2	2	4:06	4:06	3:34	4:37	4:31
Assault	2	2	6:26	6:26	4:10	8:41	8:14
Disturbance	2	1 (1 n/a)	4:52	4:52	4:52	4:52	4:52
PD Accident	2	1 (1 n/a)	7:37	7:37	7:37	7:37	7:37
Suspicious Person	2	2	6:59	6:59	6:32	7:25	7:20
911 Hang Up	1	1	5:21	5:21	5:21	5:21	5:21
Burglary	1	1	2:58	2:58	2:58	2:58	2:58
Fight	1	1	5:31	5:31	5:31	5:31	5:31
Mental	1	0 (1 n/a)	0:00	0:00	0:00	0:00	0:00
ALL CALL TYPES	321	291 (30 n/a)	6:17	6:18	0:00	28:07	10:10

Ottumwa PD — 90th percentile response time by call type

Call types with 5+ Ottumwa PD dispatches in July 2026 only. 1 in 10 calls of that type took longer than the value shown.



Wapello County Sheriff's Office — approximate "rural" proxy

Only 47 ambulance dispatches logged under the Sheriff's Office in July 2026 (13% of all calls). Treat this section as low-volume and read the callout above before drawing conclusions.

Ambulance responses

40

arrived on scene, of 47 dispatched

Median response time

10:52

unit assigned → on scene

90th percentile

22:50

1 in 10 calls slower than this

Mean response time

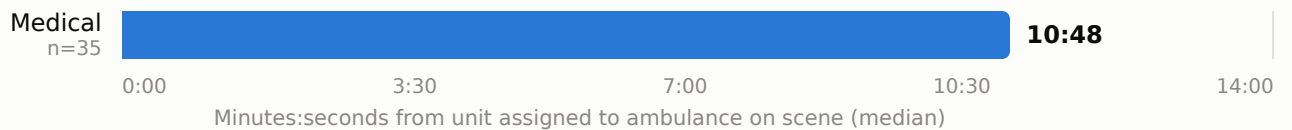
12:49

skewed up by longer outlier calls

For context: total time from 911 call receipt to on scene (median / 90th percentile) was 15:52 / 29:37.

Wapello Co. Sheriff — median response time by call type

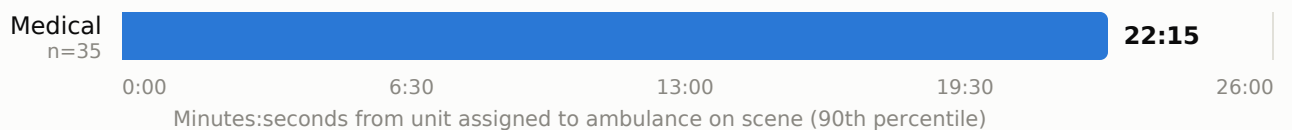
Call types with 5+ Sheriff's Office dispatches in July 2026 are charted — every other call type is a single data point or a small average. See table view for the full breakdown.



Call type	Dispatched	Arrived	Median	Mean	Min	Max	90th pctile
Medical	39	35 (4 n/a)	10:48	12:36	2:27	36:09	22:15
Fall/Lift Assist	5	2 (3 n/a)	19:17	19:17	18:00	20:33	20:18
Fire Lifeline	2	2	11:22	11:22	0:00	22:43	20:27
Mental	1	1	10:05	10:05	10:05	10:05	10:05
ALL CALL TYPES	47	40 (7 n/a)	10:52	12:49	0:00	36:09	22:50

Wapello Co. Sheriff — 90th percentile response time by call type

Call types with 5+ Sheriff's Office dispatches are charted reliably — see the table view above for every call type's 90th percentile.



Median vs. 90th percentile: which is the better QA metric?

Median (all call types)

6:31

90th percentile (all call types)

11:16

half of responses arrive faster than this

1 in 10 responses in July 2026 took longer than this

Both numbers describe the same distribution of response times, but they answer different questions. The **median** describes the typical call: half of responses are faster, half are slower. It's a good "what does a normal call look like" figure, and it's resistant to being skewed by one or two extreme outliers.

The **90th percentile** describes the tail: the threshold the slowest 10% of calls exceed. Countywide, that's 11:16 — meaning roughly 1 in 10 ambulance responses in July 2026 took longer than that. That's a very different story than "typical response is 6:31," and it's the number that matters most when asking how bad it gets, and how often.

For quality assurance specifically, the 90th percentile is generally the more useful metric, and it's what most EMS performance standards actually use — response-time benchmarks are typically written as "X% of calls within Y minutes," not as an average or median target. Three reasons that matters here:

Patient risk lives in the tail, not the center. A service can have an excellent median and still be failing a meaningful share of patients if the tail is long. Outcomes for time-sensitive conditions are disproportionately affected by the slow calls, not the fast ones — a median doesn't surface that risk at all.

The median can hide inconsistency. In this dataset, Fire Lifeline has a median of 5:32 and a 90th percentile of 8:25 — roughly a 2:53 spread, so even its "bad" calls aren't dramatically worse than typical. Medical has a median of 10:48 and a 90th percentile of 22:15 — over a 11:27 spread. Two call types with broadly similar typical performance can have very different reliability, and only the percentile gap reveals that.

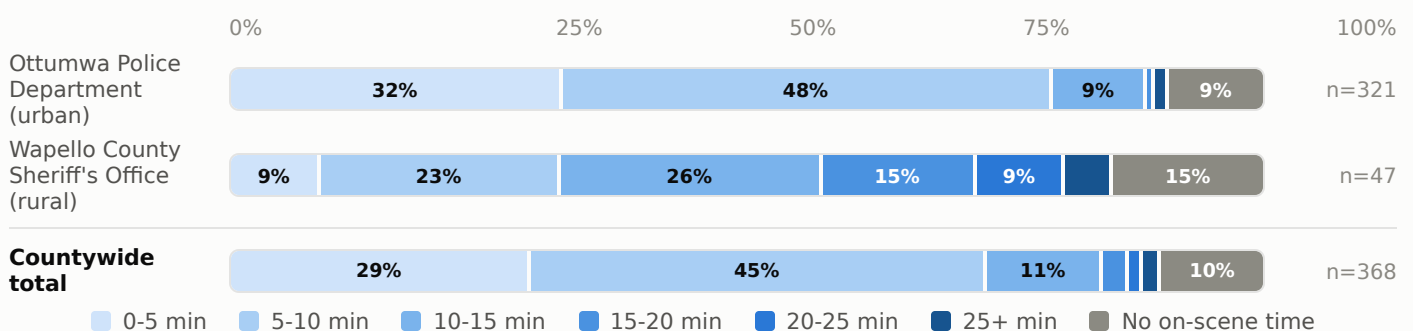
The median is slow to flag operational breakdowns. Problems like a unit tied up on another call, a geographic coverage gap, or a dispatch delay tend to show up first in the slow tail. A median won't move until those breakdowns become common enough to shift the center of the distribution — by which point they've likely been happening for a while.

In practice, the two are complements rather than competitors: the median is the right number for describing typical service level, while the 90th percentile (paired with reviewing the max and the specific slow-tail calls) is the more actionable benchmark for quality assurance, setting standards, and deciding where to investigate.

Applying this to the Ottumwa PD / Sheriff's Office split above: the 90th-percentile gap between the two sections (10:10 vs. 22:50) is the more informative number for a QA conversation than the median gap — but per the callout at the top of this report, resist reading that gap as "rural service is worse" without the caveats above.

Response times in plain terms

The median and 90th percentile above are the most precise way to track this, but they take some getting used to. Here's the same July 2026 calls sorted into how long each one actually took, from unit assignment to arrival on scene — by coverage area, with countywide underneath.



Fire response alongside the ambulance

Calls with a fire unit also on scene

308 of 331

93% of arrived calls

Fire unit arrived first

229 of 308

74% of those calls

Avg. lead when fire is first

5:50

fire on scene before the ambulance

Avg. lead when ambulance is first

2:05

ambulance on scene before the fire unit

For every ambulance call this month, this compares each responding unit's own time from 911 call receipt to on scene — a direct fact from the raw data, not an estimate. On most calls a fire unit also responds, and it's often the first unit physically on scene, ahead of the transport-capable ambulance. This is shown as its own figure, separate from outlier flagging above, because it answers a different question: not "was the ambulance response unusually slow," but "how long did it take for any EMS/fire capability to reach the patient."

Median — time to first EMS unit on scene

6:47

911 call receipt → first unit on scene

90th percentile

12:52

1 in 10 calls slower than this

Mean

8:05

skewed up by longer outlier calls

Time to first EMS unit on scene is the 911-call-receipt-to-on-scene time of whichever unit — the ambulance itself, or a responding fire unit — physically reached the scene first, for every call the ambulance arrived on this month. It's a different question from the paramount unit-assigned-to-on-scene metric used for outlier flagging above: that metric measures only the ambulance crew's own performance once tasked, while this one measures how long it actually took for any EMS-capable presence to reach the patient, counting from the moment the call came in. For this figure, **any fire unit on scene counts as an EMS unit** — Tim's explicit direction, since Wapello County's fire units are cross-trained first responders, not fire-suppression-only; this is the working definition for now and may be refined once EMSAC's current System Standards benchmark for "time to first unit on scene" is available for direct comparison.

Outlier Analysis — the extreme calls behind the tail

9 of 331 arrived calls (2.7%) are statistical outliers for their own call type, based on unit-assigned-to-scene time. Isolated below and studied separately, including whether each was a turnout or a travel issue.

Flagged as outliers

9

of 331 arrived calls (2.7%)

Severity split

5 / 4

extreme vs. mild outliers

Fire unit arrived first

6 of 7

86% of flagged calls where a fire unit also reached the scene

Mean, with vs. without

7:05 → 6:39

countywide mean if these 9 are excluded

What "unusually long" means

A call is flagged as unusually long when it takes much longer than other calls of the same type that month — judged against what's typical for that kind of call, not a fixed number of minutes. **Mild** means noticeably slower than usual for that call type; **Extreme** means far slower than usual. Because the comparison always stays within the same call type, a slow Medical call and a slow Fire Medical call are each measured against their own typical pace, not against each other — so a quiet call type and a busy one can both end up with flags.

See Methodology at the end of this report for the exact statistical method used.

Severity and what's driving the longer times

The 9 flagged calls this month, broken down by how severe the delay was and by which leg of the response once tasked — turnout or travel time — accounted for more of it.

Severity of the 9 flagged calls



What's driving the longer times



■ Turnout (1, 11%) ■ Travel time (8, 89%)

Flagging is based on **turnout** (unit assigned to enroute — the crew's own response once tasked) plus **travel time** (enroute to on scene) — together, unit-assigned-to-scene time. A flagged call is counted under whichever of the two legs was larger for it. **Queue time** (call creation to this unit being assigned) is not part of what makes a call flagged, since it often isn't within the crew's control — see Methodology — but it's still shown as context below.

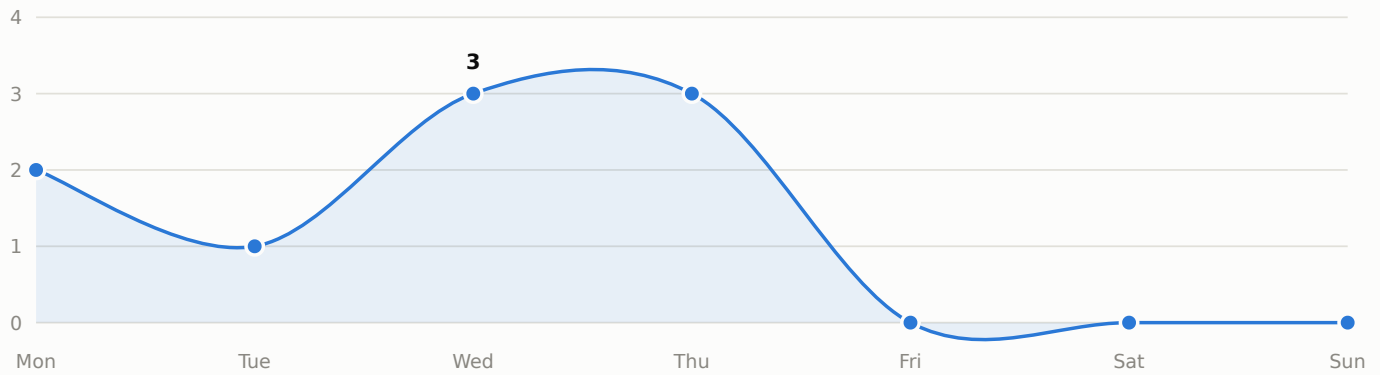
A fire unit also reached the scene on **7 of the 9 flagged calls (78%)**. Comparing each unit's own time from call receipt to on scene: the fire unit got there first on **6 of those 7 calls (86%)**, by an average of 17:08; the ambulance was still first on the other 1. This is a direct comparison of two real arrival times, not an inference.

This report shows the aggregate picture only. Call-by-call detail (date/time, unit, CFS #, which unit arrived first) is kept in a separate confidential report for the ambulance service and hospital to follow up on individual flagged calls.

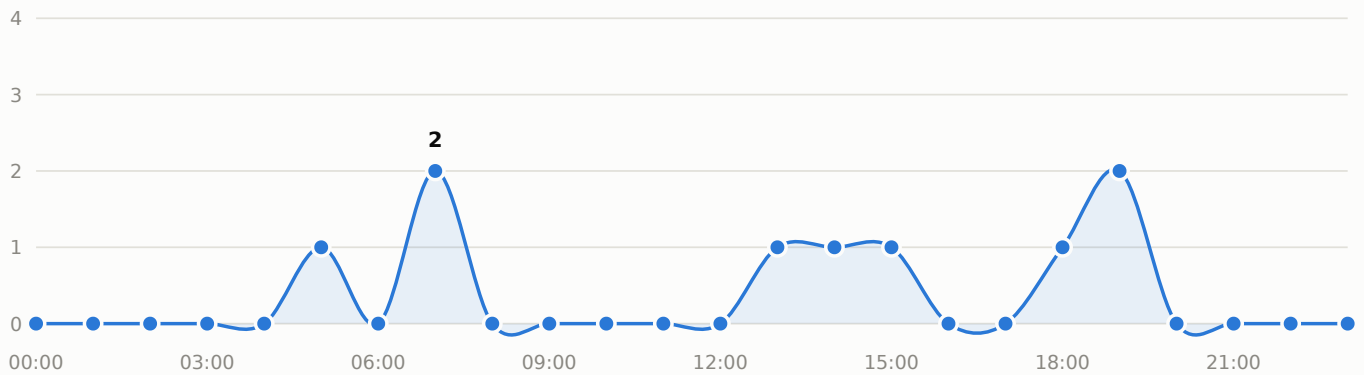
When do the outliers happen?

Count of the 9 flagged calls by day of week and by hour of the 911 call receipt time (1-hour blocks, to line up with shift-based analysis). With only 9 flagged calls, read the shape as illustrative of this month, not a statistically validated pattern.

By day of week



By hour of day (1-hour blocks, call receipt)



Impact of removing the 9 flagged outliers

"With" matches the summary sections above; "without" excludes the flagged rows. Call types outside the fence table (too few dispatches) are identical in both columns.

Slice	n		Mean		Median		90th pctile	
	with	without	with	without	with	without	with	without
ALL CALL TYPES	331	322	7:05	6:39	6:31	6:26	11:16	10:52
Fall/Lift Assist	20	18	9:16	8:09	8:28	7:47	15:00	10:50
Fire Lifeline	11	9	6:34	4:34	5:32	5:11	8:25	5:41
Fire Medical	248	244	6:15	5:57	6:14	6:11	10:12	10:01
Medical	35	34	12:36	11:55	10:48	10:44	22:15	19:29

Root cause: turnout, or the drive?

Avg. queue time (flagged calls)

3:19

call creation to unit assigned

Avg. turnout (flagged calls)

2:01

assigned to unit enroute

Avg. travel time (flagged calls)

20:34

unit enroute to on scene

Each flagged call's unit-assigned-to-scene time splits into **turnout** (assigned to enroute) and **travel time** (enroute to on scene) — the two legs that determine whether a call is flagged in the first place. **1 of the 9 (11%)** were turnout-dominant (the crew was tasked and still took unusually long to roll); the other 8 (89%) were travel-dominant, consistent with a distant or hard-to-reach location.

Queue time (call creation to this unit assigned) is not one of the two legs above — it plays no role in whether a call gets flagged, since it's often not within the crew's control (call-taking/triage load, or a fire unit already on the same call; see Methodology). Turnout-dominant outliers are the clearest EMS-side signal to look at directly.

Methodology: Includes Hub ambulance units only (fire department log entries excluded). This report's paramount metric is **unit assigned to unit on scene** (turnout + travel) — the portion of a response the ambulance crew controls once tasked. Total time from CFS record creation (911 call receipt) to on-scene arrival, which also includes queue/dispatch time, is reported separately as context, never as the flagged metric (see below for why). 37 of 368 July 2026 ambulance dispatches (10.1%) have no recorded on-scene time and are excluded from the time statistics. Of those, 29 have a valid Queue time and a valid Turnout time (i.e. confirmed dispatched and sent en route) — consistent with a known CAD data-entry gap (the on-scene status wasn't clicked at the time, and Wapello County's CAD sometimes has that time typed into a comments field instead, which isn't part of this raw data export), not a true cancellation; this report has no way to recover that missing time. The other 8 are missing earlier timestamps too, more consistent with a genuine cancellation or diversion. See "Data quality note: missing on-scene times" above for the full breakdown. Call types with 1–2 dispatches in a given slice are single data points, not reliable averages.

County backup units excluded — 90-76, 90-77: calls logged under these unit codes are excluded from every figure above — KPIs, agency sections, response-time bands, and outlier analysis — whenever they appear (not every listed unit is necessarily active in a given month). They provide back-up BLS transport but aren't part of the Hub ambulance fleet this report otherwise covers. Their raw tally, for whichever of them ran calls this month, is kept standalone, never blended with Hub-unit figures, in the confidential companion report's per-unit table.

Urban/rural proxy — important caveat: the source data has no city/township/geographic field. At the requester's direction, "Dispatch Agency" (Ottumwa Police Department vs. Wapello County Sheriff's Office) is used above as an approximate stand-in for urban vs. rural. This proxy is almost perfectly confounded with call type: 39 of 39 July 2026 "Medical"-coded calls were logged under the Sheriff's Office, while "Fire Medical" (267 of 267) and nearly every other call type ran through Ottumwa PD. Treat the Ottumwa PD vs. Sheriff's Office comparison as suggestive at best, not as a validated geographic finding, until a true location field is available.

Small sample — Wapello County Sheriff's Office: only 47 ambulance dispatches in July 2026 were logged under the Sheriff's Office. Call types under 5 dispatches are single data points or small averages.

Outlier detection (Outlier Analysis section): outliers are identified per call type using Tukey's IQR fences, a standard statistical method for flagging values that are extreme relative to a data set's own typical spread, rather than against a fixed benchmark, applied to **unit-assigned-to-scene time** (not total time, not queue time — see above). For each call type with 7+ July 2026 arrived dispatches (Fall/Lift Assist, Fire Lifeline, Fire Medical, Medical): a value beyond $Q3 + 1.5 \times IQR$ is a **mild** outlier, and beyond $Q3 + 3 \times IQR$ is an **extreme** outlier, where $Q3$ is that call type's 75th-percentile unit-assigned-to-scene time and IQR (interquartile range) is the spread between its 25th- and 75th-percentile values. Call types below that dispatch threshold aren't flagged — too little data for a meaningful quartile. 9 of 331 arrived calls (2.7%) are flagged this way — 5 extreme, 4 mild. Removing them drops the countywide mean from 7:05 to 6:39 and the 90th percentile from 11:16 to 10:52, while the median moves from 6:31 to 6:26 — consistent with the median-vs-90th-percentile discussion above. (For reference, the same before/after comparison on total 911-call-receipt-to-arrival time: mean 12:07 to 11:44, 90th percentile 21:09 to 19:42, median 9:42 to 9:40.)

Outlier timing patterns: Day and Hour Block reflect the 911 call receipt time (not arrival), parsed to the weekday and the hour of day (0–23, 1-hour blocks, to line up with shift-based analysis). With only 9 flagged calls, treat the shape of the day-of-week and time-of-day charts as illustrative of where this month's extreme cases happened to fall, not as a statistically validated pattern — a larger sample (multiple months) would be needed before concluding a given day or hour genuinely produces more outliers.

Why unit-assigned-to-scene, not total time: queue time (call creation to this unit assigned) is frequently not something the responding crew controls — normal call-taking/triage load, or a fire unit already on the same call ahead of the ambulance (see the companion-unit paragraph below). Total 911-call-receipt-to-arrival time is still reported throughout this document as context, since it's the full experience from the caller's perspective, but the crew is only held to account — outlier flagging, KPI tiles, per-call-type charts, response-time bands — on the portion of the response it actually controls: turnout (assigned to enroute) plus travel (enroute to on scene).

Companion-unit response (fire vs. ambulance, who got there first): for every ambulance call, this report checks whether any other unit was also dispatched to the same CFS #, and if so, compares that unit's own time from call receipt to on scene against the ambulance's own time from call receipt to on scene — two real, unmodified figures already in the raw export, not a threshold or a judgment call. In this month's raw export, every such companion unit is a fire-department unit (Ottumwa Fire Department engines/chief units or a rural volunteer department); no law-enforcement patrol-car unit codes appear in the underlying data's Unit field at all. Countywide this month: a companion unit reached the scene on 308 of 331 arrived calls (93%), and it arrived before the ambulance on 229 of those 308 (74%), by an average of 5:50 — see "Fire response alongside the ambulance" above. This comparison has no bearing on which calls are counted as outliers above (those are turnout+travel only); it's independent context about which unit physically reached the patient first.

Time to first EMS unit on scene: the smaller of the ambulance's own call-receipt-to-on-scene time and its companion fire unit's call-receipt-to-on-scene time (when one responded), for every call the ambulance arrived on this month — see "Fire response alongside the ambulance" above. Per Tim's direction, any fire unit on scene counts as an EMS unit for this figure, since Wapello County's fire units are cross-trained first responders; this is the working definition until EMSAC's current System Standards benchmark is available for direct comparison. This month: median 6:47, 90th percentile 12:52, mean 8:05.

How this report is built from the raw data, and what's fact vs. inference: every duration, unit code, call type, and timestamp shown in this report is copied directly from the county's raw CFS export — nothing is estimated, typed in by hand, or inferred. The export lists one row per unit dispatched to a call (ambulances alongside fire engines, chiefs, and rural department units); this report reads every row to identify each ambulance's own timing plus which other units, if any, were on the same call, and computes queue/turnout/travel/on-scene durations, and the companion-unit comparison, straight from the export's own time and time-difference columns. There is no modeled, estimated, or inferred value anywhere in this report — medians, percentiles, per-call times, unit codes, and the companion-unit comparison are all direct readouts of the source file.

Source: Wapello County CFS export, *July_2026.xls*. Period: July 2026.



Ambulance Response Time Report — August 2026

Ambulance unit assigned to unit on scene · Ottumwa Police Department vs. Wapello County Sheriff's Office · Wapello County / Ottumwa EMS · August 2026

⚠ Read this before comparing the two sections below

The source data has no city/township field, so at the requester's direction this report uses **Dispatch Agency** (Ottumwa Police Department vs. Wapello County Sheriff's Office) as an approximate proxy for urban vs. rural calls.

That proxy should be read with real caution: it is almost perfectly confounded with call type, not just geography. Every one of the August 2026 **"Medical"**-coded calls (38 of 38) was logged under the Sheriff's Office, while **"Fire Medical"** (241 of 241) and nearly every other call type ran through Ottumwa PD. Comparing the two sections below is very close to comparing the "Fire Medical" call type to the "Medical" call type — it is not a clean geographic comparison, and the gap between them should not be read as "rural is slower than urban" without further investigation into why these call types are logged under different agencies. See Methodology at the bottom for detail.

Median

The middle response time when every call is lined up fastest to slowest. Half of calls are quicker, half are slower. Describes a "typical" call and isn't skewed by a few extreme outliers.

Mean (average)

All response times added together, divided by the number of calls. Easily pulled upward by a small number of very long responses, so it can overstate the typical experience.

90th percentile

The value that 90% of calls beat — the threshold the slowest 1 in 10 calls exceed. Highlights how bad the worst-case tail of responses gets, which the median and mean can hide.

All agencies combined

308

arrived on scene, of 332 dispatched

Median response time

6:01

unit assigned → on scene

90th percentile

11:44

1 in 10 calls slower than this

Mean response time

6:40

skewed up by longer outlier calls

These figures measure **unit assigned to unit on scene** — the portion of the response the ambulance crew controls once tasked. For context only (not this report's flagged metric): countywide total time from **911 call receipt to on scene**, including dispatch/queue time, was a median of 9:43 and a 90th percentile of 23:35 this month. See Methodology for why the two are reported separately.

Data quality note: missing on-scene times

No recorded on-scene time

24 of 332

7.2% of August 2026 dispatches

Likely a data-entry gap

23

dispatched and en route, but no on-scene click recorded

Consistent with a true cancellation

1

missing earlier timestamps too, not just on-scene

Wapello County's CAD system only records a unit's on-scene time if that status is clicked at the time; if it's missed, the time is sometimes typed into a comments field instead, which isn't part of this report's raw data export. This report has no way to recover that time, so these calls are excluded from every response-time statistic in this report, the same as a true cancellation would be. The breakdown above is a direct, verifiable split — not an estimate of the missing time itself — based on which other timestamps ARE present: a call with a valid Queue time and a valid Turnout time was confirmed dispatched and sent en route, so a missing on-scene time there looks like an uncaptured arrival, not a cancellation; a call missing those earlier timestamps too looks more like a genuine cancellation or diversion. See Methodology for the exact rule.

Ottumwa Police Department — approximate "urban" proxy

287 ambulance dispatches logged under Ottumwa PD in August 2026 — 86% of all calls in this dataset.

Ambulance responses

270

arrived on scene, of 287 dispatched

Median response time

5:36

unit assigned → on scene

90th percentile

9:35

1 in 10 calls slower than this

Mean response time

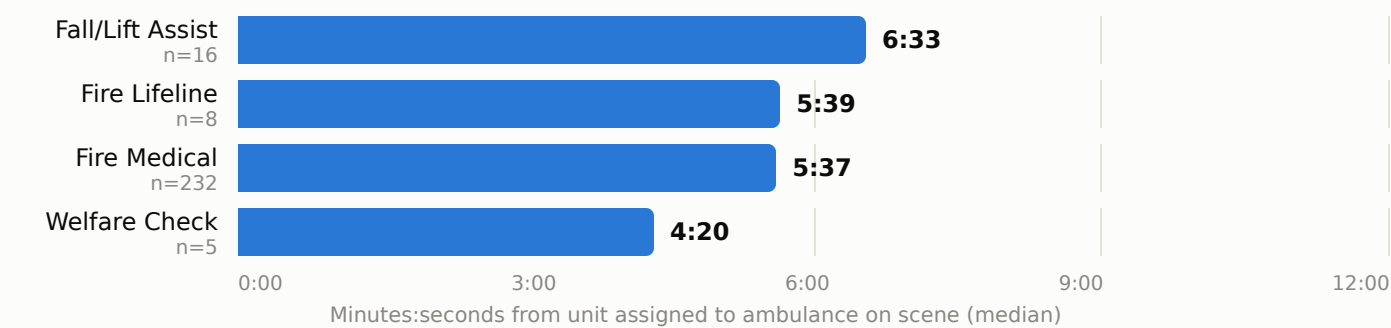
6:05

skewed up by longer outlier calls

For context: total time from 911 call receipt to on scene (median / 90th percentile) was 9:16 / 23:18.

Ottumwa PD — median response time by call type

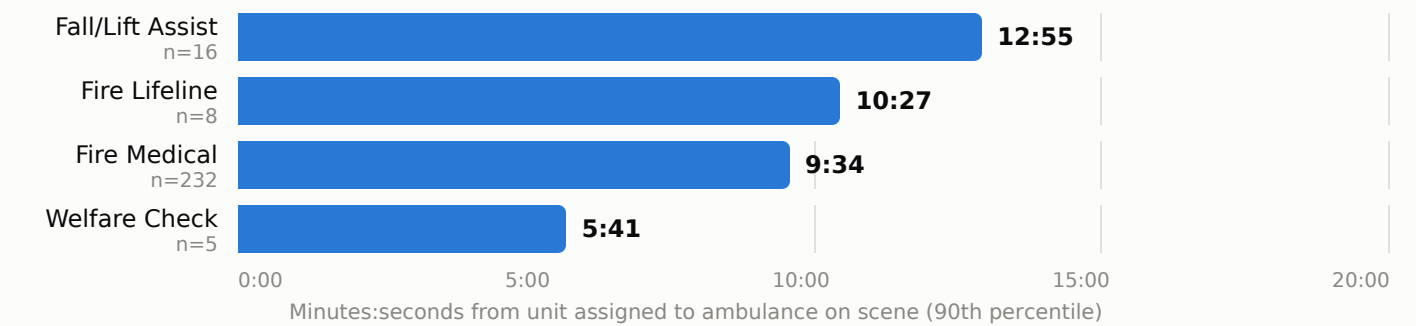
Call types with 5+ Ottumwa PD dispatches in August 2026 only — see table view for all call types, including small-sample ones.



Call type	Dispatched	Arrived	Median	Mean	Min	Max	90th pctile
Fire Medical	241	232 (9 n/a)	5:37	6:02	0:00	39:03	9:34
Fall/Lift Assist	21	16 (5 n/a)	6:33	7:29	0:00	20:55	12:55
Fire Lifeline	10	8 (2 n/a)	5:39	6:08	0:00	12:28	10:27
Welfare Check	5	5	4:20	4:40	3:23	5:43	5:41
Assault	2	2	5:07	5:07	4:20	5:54	5:45
PD Accident	2	1 (1 n/a)	7:06	7:06	7:06	7:06	7:06
Accident Unknown	1	1	5:16	5:16	5:16	5:16	5:16
Fight	1	1	3:24	3:24	3:24	3:24	3:24
Intoxicated Person	1	1	8:41	8:41	8:41	8:41	8:41
Mental	1	1	5:19	5:19	5:19	5:19	5:19
Missing Person	1	1	6:47	6:47	6:47	6:47	6:47
Suspicious Person	1	1	3:16	3:16	3:16	3:16	3:16
ALL CALL TYPES	287	270 (17 n/a)	5:37	6:05	0:00	39:03	9:35

Ottumwa PD — 90th percentile response time by call type

Call types with 5+ Ottumwa PD dispatches in August 2026 only. 1 in 10 calls of that type took longer than the value shown.



Wapello County Sheriff's Office — approximate "rural" proxy

Only 45 ambulance dispatches logged under the Sheriff's Office in August 2026 (14% of all calls). Treat this section as low-volume and read the callout above before drawing conclusions.

Ambulance responses

38

arrived on scene, of 45 dispatched

Median response time

9:51

unit assigned → on scene

90th percentile

17:09

1 in 10 calls slower than this

Mean response time

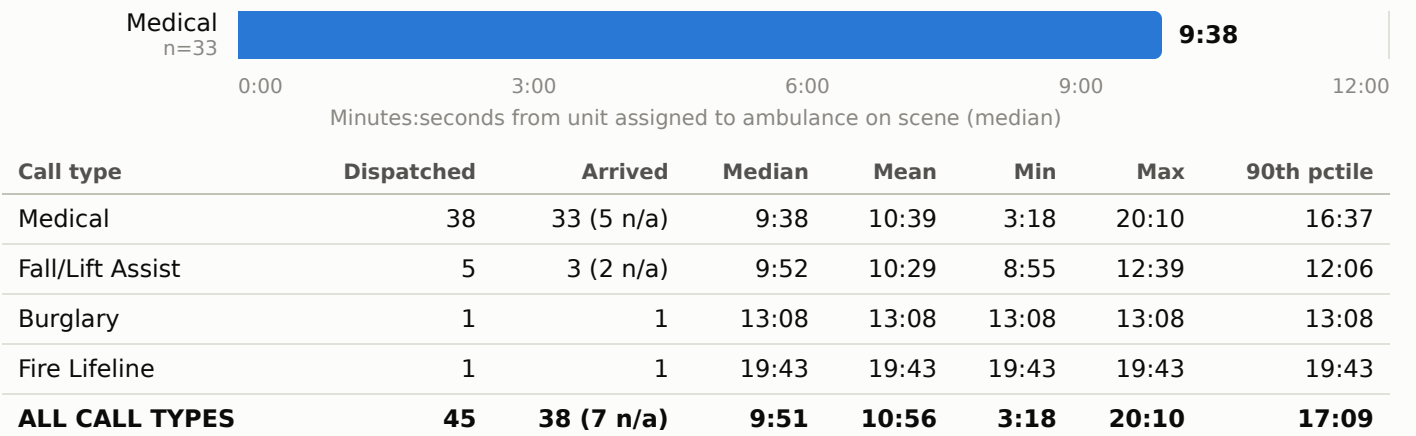
10:56

skewed up by longer outlier calls

For context: total time from 911 call receipt to on scene (median / 90th percentile) was 15:38 / 25:05.

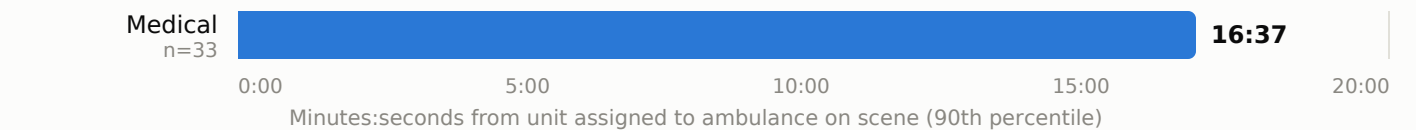
Wapello Co. Sheriff — median response time by call type

Call types with 5+ Sheriff's Office dispatches in August 2026 are charted — every other call type is a single data point or a small average. See table view for the full breakdown.



Wapello Co. Sheriff — 90th percentile response time by call type

Call types with 5+ Sheriff's Office dispatches are charted reliably — see the table view above for every call type's 90th percentile.



Median vs. 90th percentile: which is the better QA metric?

Median (all call types)

90th percentile (all call types)

6:01

half of responses arrive faster than this

11:44

1 in 10 responses in August 2026 took longer than this

Both numbers describe the same distribution of response times, but they answer different questions. The **median** describes the typical call: half of responses are faster, half are slower. It's a good "what does a normal call look like" figure, and it's resistant to being skewed by one or two extreme outliers.

The **90th percentile** describes the tail: the threshold the slowest 10% of calls exceed. Countywide, that's 11:44 — meaning roughly 1 in 10 ambulance responses in August 2026 took longer than that. That's a very different story than "typical response is 6:01," and it's the number that matters most when asking how bad it gets, and how often.

For quality assurance specifically, the 90th percentile is generally the more useful metric, and it's what most EMS performance standards actually use — response-time benchmarks are typically written as "X% of calls within Y minutes," not as an average or median target. Three reasons that matters here:

Patient risk lives in the tail, not the center. A service can have an excellent median and still be failing a meaningful share of patients if the tail is long. Outcomes for time-sensitive conditions are disproportionately affected by the slow calls, not the fast ones — a median doesn't surface that risk at all.

The median can hide inconsistency. In this dataset, Fire Medical has a median of 5:36 and a 90th percentile of 9:34 — roughly a 3:58 spread, so even its "bad" calls aren't dramatically worse than typical. Fire Lifeline has a median of 6:16 and a 90th percentile of 13:55 — over a 7:39 spread. Two call types with broadly similar typical performance can have very different reliability, and only the percentile gap reveals that.

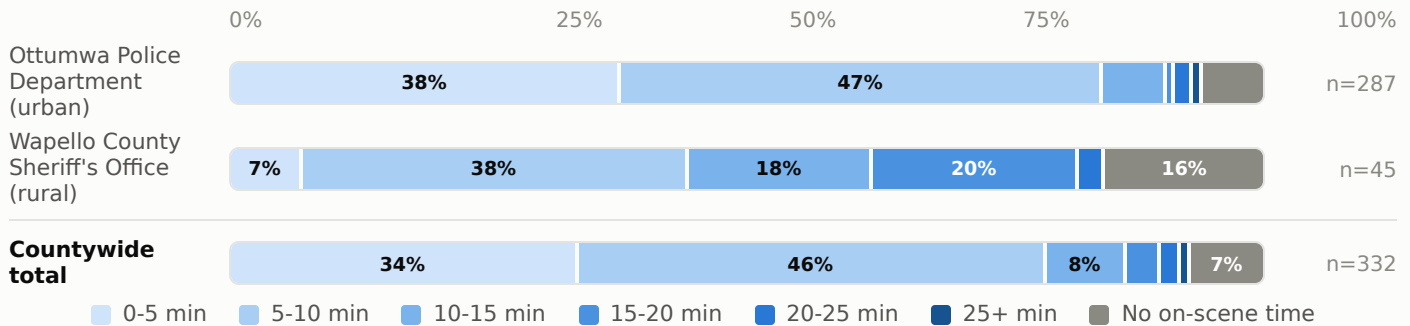
The median is slow to flag operational breakdowns. Problems like a unit tied up on another call, a geographic coverage gap, or a dispatch delay tend to show up first in the slow tail. A median won't move until those breakdowns become common enough to shift the center of the distribution — by which point they've likely been happening for a while.

In practice, the two are complements rather than competitors: the median is the right number for describing typical service level, while the 90th percentile (paired with reviewing the max and the specific slow-tail calls) is the more actionable benchmark for quality assurance, setting standards, and deciding where to investigate.

Applying this to the Ottumwa PD / Sheriff's Office split above: the 90th-percentile gap between the two sections (9:35 vs. 17:09) is the more informative number for a QA conversation than the median gap — but per the callout at the top of this report, resist reading that gap as "rural service is worse" without the caveats above.

Response times in plain terms

The median and 90th percentile above are the most precise way to track this, but they take some getting used to. Here's the same August 2026 calls sorted into how long each one actually took, from unit assignment to arrival on scene — by coverage area, with countywide underneath.



Fire response alongside the ambulance

Calls with a fire unit also on scene

282 of 308

92% of arrived calls

Fire unit arrived first

205 of 282

73% of those calls

Avg. lead when fire is first

6:29

fire on scene before the ambulance

Avg. lead when ambulance is first

3:04

ambulance on scene before the fire unit

For every ambulance call this month, this compares each responding unit's own time from 911 call receipt to on scene — a direct fact from the raw data, not an estimate. On most calls a fire unit also responds, and it's often the first unit physically on scene, ahead of the transport-capable ambulance. This is shown as its own figure, separate from outlier flagging above, because it answers a different question: not "was the ambulance response unusually slow," but "how long did it take for any EMS/fire capability to reach the patient."

Median — time to first EMS unit on scene

6:57

911 call receipt → first unit on scene

90th percentile

12:37

1 in 10 calls slower than this

Mean

8:05

skewed up by longer outlier calls

Time to first EMS unit on scene is the 911-call-receipt-to-on-scene time of whichever unit — the ambulance itself, or a responding fire unit — physically reached the scene first, for every call the ambulance arrived on this month. It's a different question from the paramount unit-assigned-to-on-scene metric used for outlier flagging above: that metric measures only the ambulance crew's own performance once tasked, while this one measures how long it actually took for any EMS-capable presence to reach the patient, counting from the moment the call came in. For this figure, **any fire unit on scene counts as an EMS unit** — Tim's explicit direction, since Wapello County's fire units are cross-trained first responders, not fire-suppression-only; this is the working definition for now and may be refined once EMSAC's current System Standards benchmark for "time to first unit on scene" is available for direct comparison.

Outlier Analysis — the extreme calls behind the tail

8 of 308 arrived calls (2.6%) are statistical outliers for their own call type, based on unit-assigned-to-scene time. Isolated below and studied separately, including whether each was a turnout or a travel issue.

Flagged as outliers

8

of 308 arrived calls (2.6%)

Severity split

6 / 2

extreme vs. mild outliers

Fire unit arrived first

7 of 8

88% of flagged calls where a fire unit also reached the scene

Mean, with vs. without

6:40 → 6:12

countywide mean if these 8 are excluded

What "unusually long" means

A call is flagged as unusually long when it takes much longer than other calls of the same type that month — judged against what's typical for that kind of call, not a fixed number of minutes. **Mild** means noticeably slower than usual for that call type; **Extreme** means far slower than usual. Because the comparison always stays within the same call type, a slow Medical call and a slow Fire Medical call are each measured against their own typical pace, not against each other — so a quiet call type and a busy one can both end up with flags.

See Methodology at the end of this report for the exact statistical method used.

Severity and what's driving the longer times

The 8 flagged calls this month, broken down by how severe the delay was and by which leg of the response once tasked — turnout or travel time — accounted for more of it.

Severity of the 8 flagged calls

6 Extreme (75%)

2 Mild (25%)

What's driving the longer times

1 Turnout (12%)

7 Travel time (88%)

■ Turnout (1, 12%) ■ Travel time (7, 88%)

Flagging is based on **turnout** (unit assigned to enroute — the crew's own response once tasked) plus **travel time** (enroute to on scene) — together, unit-assigned-to-scene time. A flagged call is counted under whichever of the two legs was larger for it. **Queue time** (call creation to this unit being assigned) is not part of what makes a call flagged, since it often isn't within the crew's control — see Methodology — but it's still shown as context below.

A fire unit also reached the scene on **8 of the 8 flagged calls (100%)**. Comparing each unit's own time from call receipt to on scene: the fire unit got there first on **7 of those 8 calls (88%)**, by an average of 21:07; the ambulance was still first on the other 1. This is a direct comparison of two real arrival times, not an inference.

This report shows the aggregate picture only. Call-by-call detail (date/time, unit, CFS #, which unit arrived first) is kept in a separate confidential report for the ambulance service and hospital to follow up on individual flagged calls.

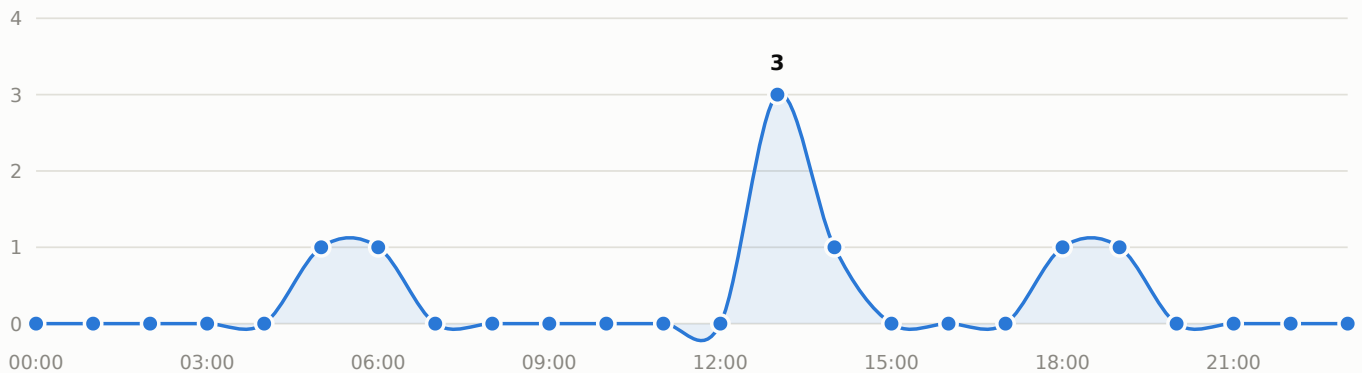
When do the outliers happen?

Count of the 8 flagged calls by day of week and by hour of the 911 call receipt time (1-hour blocks, to line up with shift-based analysis). With only 8 flagged calls, read the shape as illustrative of this month, not a statistically validated pattern.

By day of week



By hour of day (1-hour blocks, call receipt)



Impact of removing the 8 flagged outliers

"With" matches the summary sections above; "without" excludes the flagged rows. Call types outside the fence table (too few dispatches) are identical in both columns.

Slice	n		Mean		Median		90th pctile	
	with	without	with	without	with	without	with	without
ALL CALL TYPES	308	300	6:40	6:12	6:01	5:53	11:44	10:27
Fall/Lift Assist	19	18	7:57	7:14	7:08	6:52	12:47	12:32
Fire Lifeline	9	8	7:39	6:08	6:16	5:39	13:55	10:27
Fire Medical	232	226	6:02	5:30	5:36	5:34	9:34	9:00
Medical	33	33	10:39	10:39	9:38	9:38	16:37	16:37

Root cause: turnout, or the drive?

Avg. queue time (flagged calls)

3:39

call creation to unit assigned

Avg. turnout (flagged calls)

4:24

assigned to unit enroute

Avg. travel time (flagged calls)

20:18

unit enroute to on scene

Each flagged call's unit-assigned-to-scene time splits into **turnout** (assigned to enroute) and **travel time** (enroute to on scene) — the two legs that determine whether a call is flagged in the first place. **1 of the 8 (12%)** were turnout-dominant (the crew was tasked and still took unusually long to roll); the other 7 (88%) were travel-dominant, consistent with a distant or hard-to-reach location.

Queue time (call creation to this unit assigned) is not one of the two legs above — it plays no role in whether a call gets flagged, since it's often not within the crew's control (call-taking/triage load, or a fire unit already on the same call; see Methodology). Turnout-dominant outliers are the clearest EMS-side signal to look at directly.

Methodology: Includes Hub ambulance units only (fire department log entries excluded). This report's paramount metric is **unit assigned to unit on scene** (turnout + travel) — the portion of a response the ambulance crew controls once tasked. Total time from CFS record creation (911 call receipt) to on-scene arrival, which also includes queue/dispatch time, is reported separately as context, never as the flagged metric (see below for why). 24 of 332 August 2026 ambulance dispatches (7.2%) have no recorded on-scene time and are excluded from the time statistics. Of those, 23 have a valid Queue time and a valid Turnout time (i.e. confirmed dispatched and sent en route) — consistent with a known CAD data-entry gap (the on-scene status wasn't clicked at the time, and Wapello County's CAD sometimes has that time typed into a comments field instead, which isn't part of this raw data export), not a true cancellation; this report has no way to recover that missing time. The other 1 are missing earlier timestamps too, more consistent with a genuine cancellation or diversion. See "Data quality note: missing on-scene times" above for the full breakdown. Call types with 1–2 dispatches in a given slice are single data points, not reliable averages.

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Small sample — Wapello County Sheriff's Office: only 45 ambulance dispatches in August 2026 were logged under the Sheriff's Office. Call types under 5 dispatches are single data points or small averages.

Outlier detection (Outlier Analysis section): outliers are identified per call type using Tukey's IQR fences, a standard statistical method for flagging values that are extreme relative to a data set's own typical spread, rather than against a fixed benchmark, applied to **unit-assigned-to-scene time** (not total time, not queue time — see above). For each call type with 7+ August 2026 arrived dispatches (Fall/Lift Assist, Fire Lifeline, Fire Medical, Medical): a value beyond $Q3 + 1.5 \times IQR$ is a **mild** outlier, and beyond $Q3 + 3 \times IQR$ is an **extreme** outlier, where $Q3$ is that call type's 75th-percentile unit-assigned-to-scene time and IQR (interquartile range) is the spread between its 25th- and 75th-percentile values. Call types below that dispatch threshold aren't flagged — too little data for a meaningful quartile. 8 of 308 arrived calls (2.6%) are flagged this way — 6 extreme, 2 mild. Removing them drops the countywide mean from 6:40 to 6:12 and the 90th percentile from 11:44 to 10:27, while the median moves from 6:01 to 5:53 — consistent with the median-vs-90th-percentile discussion above. (For reference, the same before/after comparison on total 911-call-receipt-to-arrival time: mean 12:24 to 11:58, 90th percentile 23:35 to 21:18, median 9:43 to 9:29.)

Outlier timing patterns: Day and Hour Block reflect the 911 call receipt time (not arrival), parsed to the weekday and the hour of day (0–23, 1-hour blocks, to line up with shift-based analysis). With only 8 flagged calls, treat the shape of the day-of-week and time-of-day charts as illustrative of where this month's extreme cases happened to fall, not as a statistically validated pattern — a larger sample (multiple months) would be needed before concluding a given day or hour genuinely produces more outliers.

Why unit-assigned-to-scene, not total time: queue time (call creation to this unit assigned) is frequently not something the responding crew controls — normal call-taking/triage load, or a fire unit already on the same call ahead of the ambulance (see the companion-unit paragraph below). Total 911-call-receipt-to-arrival time is still reported throughout this document as context, since it's the full experience from the caller's perspective, but the crew is only held to account — outlier flagging, KPI tiles, per-call-type charts, response-time bands — on the portion of the response it actually controls: turnout (assigned to enroute) plus travel (enroute to on scene).

Companion-unit response (fire vs. ambulance, who got there first): for every ambulance call, this report checks whether any other unit was also dispatched to the same CFS #, and if so, compares that unit's own time from call receipt to on scene against the ambulance's own time from call receipt to on scene — two real, unmodified figures already in the raw export, not a threshold or a judgment call. In this month's raw export, every such companion unit is a fire-department unit (Ottumwa Fire Department engines/chief units or a rural volunteer department); no law-enforcement patrol-car unit codes appear in the underlying data's Unit field at all. Countywide this month: a companion unit reached the scene on 282 of 308 arrived calls (92%), and it arrived before the ambulance on 205 of those 282 (73%), by an average of 6:29 — see "Fire response alongside the ambulance" above. This comparison has no bearing on which calls are counted as outliers above (those are turnout+travel only); it's independent context about which unit physically reached the patient first.

Time to first EMS unit on scene: the smaller of the ambulance's own call-receipt-to-on-scene time and its companion fire unit's call-receipt-to-on-scene time (when one responded), for every call the ambulance arrived on this month — see "Fire response alongside the ambulance" above. Per Tim's direction, any fire unit on scene counts as an EMS unit for this figure, since Wapello County's fire units are cross-trained first responders; this is the working definition until EMSAC's current System Standards benchmark is available for direct comparison. This month: median 6:57, 90th percentile 12:37, mean 8:05.

How this report is built from the raw data, and what's fact vs. inference: every duration, unit code, call type, and timestamp shown in this report is copied directly from the county's raw CFS export — nothing is estimated, typed in by hand, or inferred. The export lists one row per unit dispatched to a call (ambulances alongside fire engines, chiefs, and rural department units); this report reads every row to identify each ambulance's own timing plus which other units, if any, were on the same call, and computes queue/turnout/travel/on-scene durations, and the companion-unit comparison, straight from the export's own time and time-difference columns. There is no modeled, estimated, or inferred value anywhere in this report — medians, percentiles, per-call times, unit codes, and the companion-unit comparison are all direct readouts of the source file.

Source: Wapello County CFS export, *Aug_2026.xls*. Period: August 2026.