

EXECUTIVE SUMMARY

STRENGTH IN NUMBERS

Exploring Service Sharing Opportunities for Middleton EMS and Waunakee Area EMS



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Over the past 12 years, the Wisconsin Policy Forum has published nearly 20 studies for municipal and county governments in all parts of Wisconsin on fire and emergency medical services (EMS) challenges and possible solutions. In this report, we consider Waunakee Area Emergency Medical Services (WAEMS) and Middleton EMS – two agencies that have seen sharp rises in new development and population within their contiguous service areas, which have caused call volumes to surge.

Both agencies are considering the need for new stations in relatively close proximity to one another, and officials have discussed whether a collaborative approach should be considered to address their common EMS needs. Such an approach could involve sharing additional personnel, vehicles, and a new station or even merging the two departments into a single consolidated EMS agency.

This report analyzes a range of EMS service sharing or consolidation options for the two agencies and their stakeholders to consider. The analysis is designed not to point local officials to specific conclusions, but rather to provide sufficient insights to allow them to conduct informed deliberation and reach consensus on a course of action that will ensure high-quality and efficient EMS service levels for the foreseeable future.

Characteristics of the EMS Agencies and Service Areas

WAEMS is an independent public agency that serves an EMS district comprised of the village of Waunakee, the village and town of Dane, the town of Westport, the town of Vienna, and the town of Springfield. However, the agency only serves portions of the towns of Springfield, Dane, and Vienna. Its total service population as of 2023 was 23,340.

Over the past decade, the WAEMS service area experienced an increase in population of 3,144 residents (15.6%), as shown in **Table 1**. This has been accompanied by a large increase in property values; in fact, equalized property values more than doubled over this period.

Table 1: Change in population, WAEMS Service Area, 2014-2023

	2014	2023	10 Yr % Change
WAEMS	20,196	23,340	15.6%
Village of Waunakee	12,336	15,426	25.0%
Town of Vienna	393	470	19.6%
Village of Dane	1,024	1,116	9.0%
Town of Westport	3,975	4,302	8.2%
Town of Springfield	1,478	1,556	5.3%
Town of Dane	990	470	-52.3%

Middleton EMS is housed in the city of Middleton’s government and provides EMS for the city, the town of Middleton, and a portion of the town of Springfield (about 17% of the town’s population). The total population of the three jurisdictions served by the agency was 33,427 in 2023. Both the city and town of Middleton have seen sizable population growth over the past decade, with the city’s



population increasing by a particularly notable 28%, as shown in **Table 2** on the next page. Meanwhile, equalized values also have shot up by more than 80%.

Table 2: Change in population, jurisdictions served by Middleton EMS, 2014-2023

	2014	2023	10 Yr % Change
Total Middleton EMS	27,238	33,427	23%
City of Middleton	18,323	23,476	28%
Town of Middleton	6,143	7,032	14%
Town of Springfield	2,772	2,919	5%

Source: Wisconsin DOA

The significant growth in population, development, and call volumes has led both agencies to shift over the past decade to staffing models that rely mostly on full-time paramedics as opposed to part-time, volunteer staff. This evolution has taken place at significant cost, but it has allowed both agencies to staff and operate two ambulances on a 24/7 basis, thus providing better response times and a consistently high level of service. Both operate their two ambulances out of single stations.

A primary challenge for both agencies, however, is a continued increase in call volumes (see **Tables 3 and 4**), coupled with higher-than-desired travel times to certain high-volume parts of their service areas. These factors are pressuring them to add third ambulances and new station locations. Specifically, WAEMS is experiencing escalating response time challenges in the south while Middleton has seen a spike in calls in the northeast, where the two service areas meet. The contiguous nature of those areas leads to significant potential for collaboration.

Table 3: Growth in WAEMS calls for service, 2017 to 2024

	2017	2024	2017-2024 % Change
WAEMS	1,335	1,918	44%
Village of Waunakee	686	1,268	85%
Town of Westport	398	381	-4%
Town of Springfield	99	63	-36%
Village of Dane	58	52	-10%
Town of Dane	13	35	169%
Town of Vienna	54	25	-54%
Mutual Aid	27	94	248%

Source: WAEMS

Table 4: Growth in Middleton EMS calls for service, 2017 to 2024

	2017	2024	2017-2024 % Change
Middleton EMS	1,638	2,769	69%
City of Middleton	1,324	2,331	76%
Town of Middleton	184	227	23%
Town of Springfield	71	48	-32%
Mutual Aid	59	163	176%

Source: Middleton EMS



Both agencies have seen major staff transformations in recent years (see **Table 5** for 2024 staffing levels). WAEMS added six paramedics in 2023 to allow for 24-hour staffing of its second ambulance and to

Table 5: Agency staffing, 2024 budget¹

	Chief	Deputy Chief	FT Paramedic	Total FT Positions	PT Paramedic
Middleton EMS	1	0	15	16	10
WAEMS	1	1	12	14	8
Total	2	1	27	30	18

Source: Middleton EMS and WAEMS

reduce reliance on mutual aid, while Middleton EMS added a 15th paramedic to reduce overtime usage in 2022. Middleton EMS actually began its conversion from volunteer to full-time staffing for its second ambulance in 2009 and continued to ramp up its full-time staffing in the 2010 to 2013 timeframe to enhance 24/7 staffing for its two ambulances.

In light of the increase in staff, it is not surprising that both agencies' budgets have grown substantially. WAEMS saw budgeted expenditures more than double from \$933,000 in 2019 to \$2.1 million in 2024 as the agency accomplished its conversion from a part-time to a full-time staffing model. Middleton experienced that conversion prior to 2019 but still saw a \$591,000 (30.0%) increase over the next five budgets due to a continued increase in staff and the impacts of inflation.

Options for Service Sharing and Consolidation

We developed five hypothetical approaches that Middleton EMS and WAEMS officials and municipal leaders might consider to address their common challenges. It is important to note that **our models are based mainly on assumptions and estimates that will change with deeper analysis.**

Option 1: Each Agency Builds Its Own New Station

The first option assumes the two agencies conduct their own planning, assess their own needs, and act as they see fit regardless of the plans of the other agency. While we would consider this to be the least desirable of all the options we present here, it is important to consider it to allow for appropriate comparison with collaborative options.

For this scenario, we assume that given Middleton EMS' continued rapid growth in call volumes, it will need to soon staff a third ambulance and house that ambulance in a new station in the northern part of its service area. We assume further that while WAEMS may need a third ambulance within the next five years or so, its more pressing need is to house an ambulance in the southeast part of its service area as a means of improving response times in that area. That could be accomplished by developing a new station and moving one of its two existing ambulances to that location.

Consequently, for this scenario we assume that both agencies construct new stations, but only Middleton EMS purchases and staffs a third 24/7 ambulance. The estimated annual personnel cost for a third ambulance – as well as a new deputy chief position to add administrative capacity to the enlarged agency – is a little under \$1.2 million.

¹ WAEMS plans to add a 13th full-time paramedic in 2025 and a 14th in 2026.



We also estimate that the annualized cost for purchasing and equipping of a new ambulance would come out to \$47,125 over 10 years. Our estimated annualized cost for a new \$6 million single-ambulance station is \$578,000, and we add \$87,000 annually for station maintenance, supplies, utilities, etc.

For WAEMS, we assume the cost of the new station will be identical to the estimate used for Middleton. The total estimated annual cost of this option for both Middleton EMS and WAEMS is more than \$2.5 million, as shown in **Table 6**. Middleton EMS' annual cost would approach \$1.9 million, including about \$1.2 million for operations. The rise in operating expenditures would amount to about a 46% increase above Middleton EMS' 2024 operating budget of \$2.6 million.

Table 6: Option 1 total estimated annual cost of new ambulance crew and stations (2024 dollars)

	Personnel	Station Operating	Station Construction	Ambulance	Total
Middleton EMS	\$1,178,096	\$87,000	\$578,000	\$47,125	\$1,890,221
WAEMS	\$0	\$87,000	\$578,000	\$0	\$665,000
Total	\$1,178,096	\$174,000	\$1,156,000	\$47,125	\$2,555,221

The benefit of this approach is that each agency would be able to pursue a solution that would meet its own immediate needs. The obvious downside is that two new stations would be built in relatively close proximity when it is possible that a single, shared station could just as effectively accommodate the needs of both at a much lower cost.

Option 2: Build and Share One New Station with Independent Ambulance Crews

Our second option assumes that Middleton EMS and WAEMS decide to build a single new station in a jointly selected location in or near Westport that could serve the southeast portion of the WAEMS service area and the northeast section of the Middleton EMS service area. **Map 1** on the next page shows the approximate area in which such a hypothetical station might be located. They would decide, further, to each house their own 24/7 two-person ambulance crew in that station and to each purchase and equip their own new ambulance. Middleton EMS' crew at the new station would be a third crew, while WAEMS' would be a transferred crew from its existing station.

We see in **Table 7** that this option would reduce Middleton EMS' annual expenditures by \$188,000 (9.9%) and WAEMS' by \$188,000 (28.3%) when compared to Option 1. There should be little difference in terms of service levels from Option 1 given that both agencies still would benefit from a new station location in the geographic area that demands such action to respond to rising call volumes and lengthy response times.

Table 7: Option 2 total estimated cost of new ambulance crew and station (2024 dollars)

	Personnel	Station Operating	Station Construction	Ambulance	Total
Middleton EMS	\$1,178,096	\$43,500	\$433,500	\$47,125	\$1,702,221
WAEMS	\$0	\$43,500	\$433,500	\$0	\$477,000
Total	\$1,178,096	\$87,000	\$867,000	\$47,125	\$2,179,221



Also, while our estimate of annual cost savings is relatively modest, additional efficiencies could be gained when compared to Option 1 if the two agencies agreed to collaborate at the shared station in areas like supply purchasing, vehicle maintenance, and even the temporary sharing of staff on occasions when unexpected staffing shortages arise. There also could be agreement to back up one another when one of the ambulances is out on a call instead of having to rely on an additional ambulance from a different station location to do so.

Option 3: Build and Share One New Station with Single Shared Ambulance Crew

Our next option is identical to Option 2 except we assume the two agencies will share a single ambulance and ambulance crew at the new station shown in **Map 1**. The new ambulance would be dispatched without regard for municipal boundaries when it is the closest unit available to respond to a call in either jurisdiction. In other words, the ambulance would serve both the Middleton EMS and WAEMS service areas, providing extra capacity and improved response times to both.

Because Middleton EMS currently has a higher call volume and is most immediately in need of a third ambulance, we assume hypothetically that it would own the station and ambulance and employ the staff at the new station. WAEMS would presumably enter into a contractual agreement with Middleton EMS to share station and ambulance costs (both capital and operating) and to pay for its share of the net cost of staffing and equipping the new ambulance.

To estimate respective payments for this option, we apportion the costs based on each agency's prior year share of total combined calls for service. The total estimated cost breakdown for this option for both annual operations and capital expenditures is shown in **Table 8** on the next page.

Map 1: Hypothetical New Shared Station Location

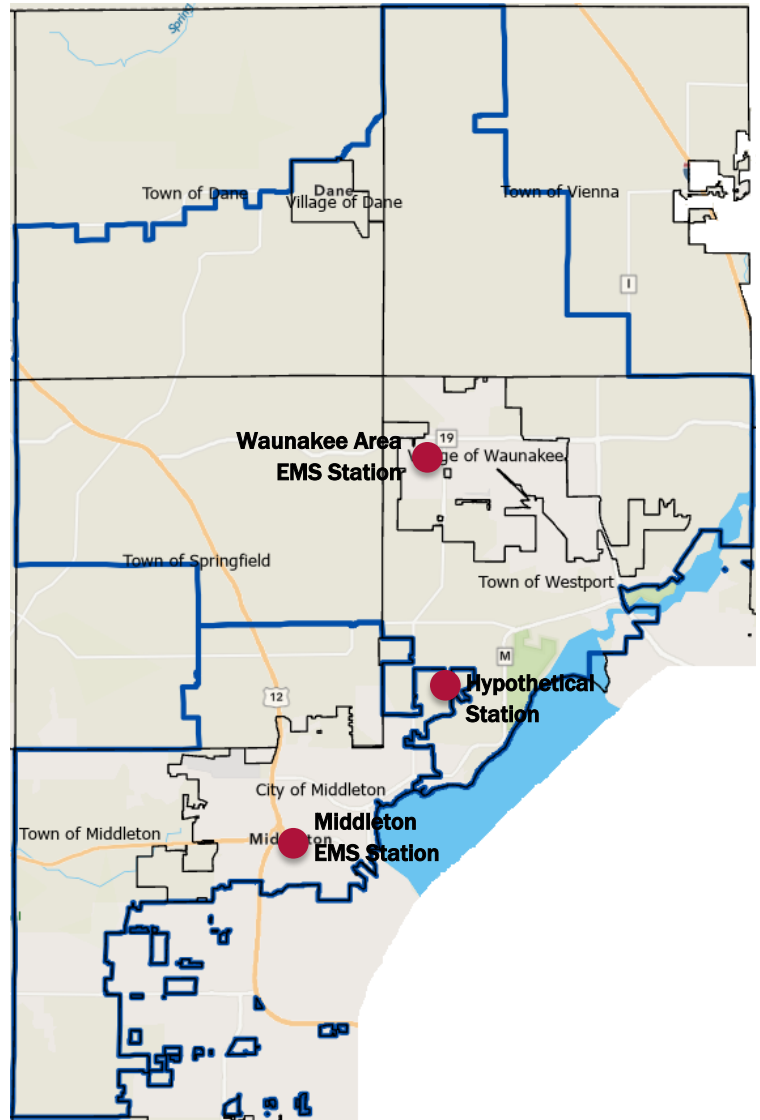


Table 8: Option 3 total estimated cost of new ambulance crew and station (2024 dollars)

	Personnel	Station Operating	Station Construction	Ambulance	Total
Middleton EMS	\$624,391	\$46,110	\$306,340	\$24,976	\$1,001,817
WAEMS	\$553,705	\$40,890	\$271,660	\$22,149	\$888,404
Total	\$1,178,096	\$87,000	\$578,000	\$47,125	\$1,890,221

Because there would be only one ambulance and one ambulance crew operating out of the station and the cost would be shared by the two agencies, Middleton EMS would see a cost savings from Option 2 of more than \$700,000, and a savings from Option 1 of nearly \$900,000. Conversely, WAEMS would see an increased cost of more than \$300,000 from Option 2 and \$100,000 from Option 1 as it would be paying for part of the cost of a third ambulance to serve its current service area. Of course, it also would benefit from increased service capacity from that shared ambulance and possible avoidance of the need to pay for its own third ambulance in the not-too-distant future.

Indeed, **whether this option makes sense for both Middleton EMS and WAEMS would depend on how each agency defines its capacity needs.** Middleton EMS officials would need to determine whether a third ambulance shared with WAEMS – as opposed to one that just serves the Middleton EMS service area – would provide sufficient additional capacity to meet its increasing call volumes. WAEMS, on the other hand, would need to determine whether it makes sense to pay for the extra capacity of a shared third ambulance at this time, or whether its service-level challenges could be appropriately met for the foreseeable future by creating a new station location to house one of its two existing ambulance crews.

Option 4: Consolidate and Build Two New Stations with Four Total Ambulance Crews

Option 4 takes a different approach (as well as Option 5 to follow) by modeling a single consolidated EMS agency to serve the combined service areas of Middleton EMS and WAEMS. Based on discussions with the two chiefs, for this option we model an approach that assumes four 24/7 ambulances and crews could effectively serve the combined region and even improve response times if municipal boundaries were not a factor in determining their location and coverage areas. We assume the two existing stations would be used, and one would be added in Westport while a fourth would be added in Springfield, as shown in **Map 2** on the next page. **Table 9** summarizes the staffing for the new agency, while **Table 10** summarizes costs.

Table 9: Option 4 staffing for consolidated department

	Chief	Deputy Chief	Admin Staff	FT Paramedic	Total FT Staff	PT Paramedic
New Agency	1	1	2	29	33	18

Table 10: Option 4 costs compared to combined current WAEMS and Middleton EMS costs

	Personnel	Station Operating	Station Construction	Ambulance	Total
New Agency	\$35,200	\$174,000	\$1,156,000	0	\$1,365,200

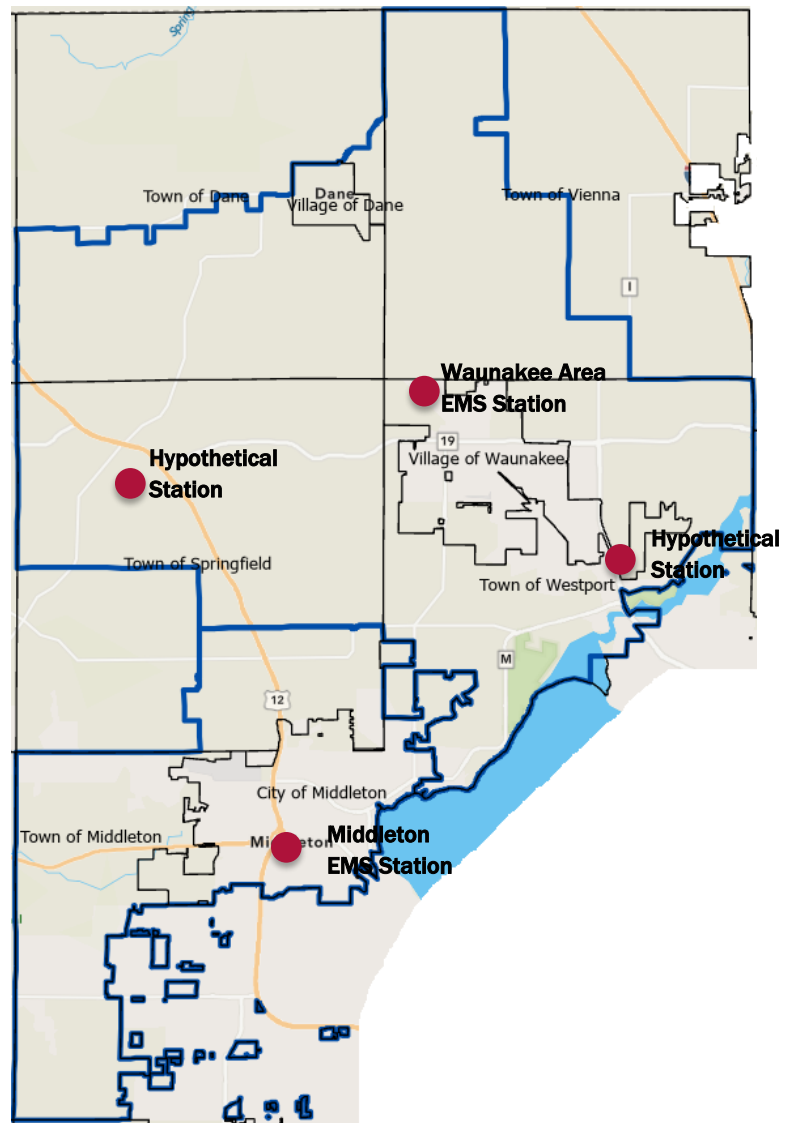


With regard to service-level impacts, the addition of two strategically located stations would almost certainly improve response times in the region as a whole. In addition, the consolidated agency could produce better coverage when multiple calls within the new region must be fielded at once, as a second ambulance might be geographically closer and would come from the same agency, as opposed to necessitating a mutual aid call. The fact that paramedics from the new, larger agency also would be trained on identical policies and protocols and use the same equipment also could improve the quality of responses involving multiple crews from those stations.

While there would be a substantial cost related to development of the two new stations, this option produces only minimal increased operating costs that arguably would be justified by the improved level of service.

Perhaps the key question surrounding this option is whether the larger region could indeed be effectively served by the same four ambulance crews that currently exist as call volumes continue to grow. The geographical separation of ambulance crews, elimination of municipal boundaries, and regional deployment of resources may make this possible, but additional analysis would be necessary to determine if the call volume in the larger region still would require at least a fifth ambulance.

Map 2: Hypothetical combined agency station locations



Option 5: Consolidate and Build One New Station With Five Total Ambulance Crews

Our final option envisions a consolidated department that keeps the two existing stations but adds a third station and a fifth ambulance crew at the location envisioned for Options 2 and 3. We add eight new paramedics – seven for the new crew and one extra so there would be two extra paramedics above the 35 specifically assigned to the five ambulances who could fill in as needed for vacation and other time off coverage. We estimate that this additional unassigned paramedic – combined with the flexibility afforded by a larger roster of full-time and part-time staff – would produce a 25% reduction in current combined overtime costs for an annual estimated savings of \$72,500.



Otherwise, the org chart for Option 5 would be identical to that envisioned for Option 4. With one new station instead of two, upfront capital costs for station construction and ongoing costs for station maintenance would be reduced when compared to Option 4, but an additional ambulance would need to be purchased. **Table 11** shows fiscal impacts of this option when compared to the current state – the added annual cost would be about \$1.7 million.

Table 11: Option 5 costs compared to combined current WAEMS and Middleton EMS costs

	Personnel	Station Operating	Station Construction	Ambulance	Total
New Agency	\$987,196	\$87,000	\$578,000	\$47,125	\$1,699,321

The largest service-level benefit would be the addition of a third strategically located station and a fifth ambulance to serve the combined service area. Under this option, as with Option 4, the new consolidated agency would be able to deploy resources without regard for municipal boundaries, it would be less reliant on mutual aid from neighboring departments, it would have needed additional administrative capacity, and it would enjoy efficiency benefits from consolidation of command and areas like training and supply purchases, etc. Paramedic recruitment and retention also might improve under the consolidation options given the enhanced opportunities in a larger agency for promotion and specialization.

Conclusion

Our high-level modeling of collaborative options to address the capacity challenges of WAEMS and Middleton EMS provides important food for thought for leaders in the region.

First, those leaders should not be surprised that an effective response to current challenges will be expensive. Indeed, they have seen that first-hand as they have already shifted to full-time staffing models. Further growth in expenses appears largely unavoidable for both agencies in light of the growth in development and the challenges implicit in over-reliance on part-time staff.

This exercise also demonstrates, however, that collaboration can reduce those added costs. As shown in **Table 12**, the most expensive option (combined) for the two agencies would be to largely go it alone and each build a new station (Option 1). Sharing a new station and possibly an ambulance crew (Options 2 and 3) would reduce the combined cost, while fully consolidating would reduce it further.

Table 12: Added estimated annualized costs of each option

	Option 1	Option 2	Option 3	Option 4	Option 5
Middleton EMS	\$1,890,221	\$1,702,221	\$1,001,817	\$723,556	\$900,640
WAEMS	\$665,000	\$477,000	\$888,404	\$641,644	\$798,681
Total	\$2,555,221	\$2,179,221	\$1,890,221	\$1,365,200	\$1,699,321
Stations	4	3	3	4	3
Ambulance Crews	5	5	5	4	5
Ambulances	5	5	5	4	5
FT Staff	40	40	40	33	41



Whether a full merger is the best approach will be determined, at least in part, by whether local elected officials conclude that the efficiency gains that would be produced by consolidating into a single agency would outweigh any perceived disadvantages related to relinquishing some degree of local control over EMS staffing and budgeting.

If leaders are reluctant to pursue one of the consolidation options in the near term, then a phased approach could be considered. The two agencies could begin by sharing a new station and ambulance crew, which would provide both service areas with at least some of the extra capacity and response time improvement they need at a lower cost than adding a new ambulance crew or station individually. After that plan is negotiated and implemented, stakeholders could further assess whether or how soon additional capacity will be required and whether a full-fledged merger of the two agencies would be the best option to secure it.

Overall, while this analysis leaves many questions unanswered, it does point to a collaborative path forward that could provide enhanced services to the jurisdictions currently served by Middleton EMS and WAEMS at a reduced cost. We hope policymakers use it as a springboard for further discussion and action to address the pressing challenges faced by their EMS responders.

