TOWN OF WINDSOR, CONNECTICUT

Special Meeting Notice

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AGENCY: **Town Council**

DATE: **October 18, 2023**

PLACE: **Hybrid Meeting – in person in Council Chambers and via Zoom**

TIME: **6:30 PM**

AGENDA

1. Public Comment
2. *Review and Discussion of Emergency Medical Services Study
3. Adjournment

Public Act 75-312 requires notice of special meetings to be posted in the Town Clerk's Office no less than 24 hours prior to the time of such meetings. No other business shall be considered at this meeting than that listed on this Agenda.

Agenda Item Summary

Date: October 18, 2023

To: Honorable Mayor and Members of the Town Council

Reviewed By: Peter Souza, Town Manager

Subject: EMS System Review Study

Background

The Windsor Volunteer Ambulance Association (Windsor EMS) is a private not-for-profit entity that provides emergency medical response and transportation to the Windsor community. There are over 4,000 calls for emergency medical service (EMS) per year in the town. The ambulance association, along with the Police Department, responds to these calls. If the association does not have personnel available, an outside EMS agency is requested to respond.

This spring the town engaged The Holdsworth Group, an emergency medical services consulting firm, to complete a review of the emergency medical services delivery system. The system review was prompted by questions raised by the public and Town Councilmembers related to Windsor EMS' staffing levels, response times, financial stability and greater reliance on mutual aid from surrounding EMS agencies.

The Council's Health & Safety Committee reviewed in detail the EMS System Study on August 14th. The Committee requested that the report be placed on the Town Council's September 5th meeting agenda for a high level overview. On September the Town Council decided to hold a separate workshop to review the report and recommendations.

Attached is the study report which includes information regarding topics such as current system overview, community demographics, EMS economics, system utilization, response times, capital investment needs, recruitment and retention, service delivery options, and budget forecasts.

Discussion/Analysis

The consultant's report (page 24) includes a number of key findings such as:

- Windsor EMS is doing a good job despite labor and financial challenges
- Response times to calls are good, improvement is possible
- Mutual aid is being requested 2-3 times per day resulting in longer response times and lost revenue
- There is a need during peak hours (9 AM – 9 PM) for another ambulance
- Dispatch data needs slight modifications to allow for better segmentation and tracking of high and low priority call response times
- There is a need for replacement of capital equipment investment
- There is a significant paramedic and EMT shortage in the state and Windsor has had a hard time recruiting and retaining due to shifts in the regional labor market and agency consolidations
- The Town Council's commitment in the FY 23 budget helped Windsor EMS to stabilize the EMS system and the subsidy in the FY 24 budget has allowed for the implementation of a competitive wage scale package

- The continued subsidization of EMS by the Town is a reality regardless of the provider serving the Town
- Windsor EMS needs to expand its leadership team and work towards having 24/7 operations supervisors rather than administrators on call.

Primary recommendations on page 25 of the report include:

- Begin aggressively recruiting EMT and paramedic staff through word of mouth, social media, direct mail and developing in-house training programs to 'grow your own' *(Underway).*
- Make capital reinvestments in medical equipment by taking advantage of capital leasing programs before 9/30/23 to lock in existing pricing and rates. Payments are deferred until the FY 25 budget.
- Create specifications and order five new identical ambulances on a staggered schedule as soon as possible. It is recommended to place the order within 60 days. The acquisition will reduce down time and maintenance costs. Delivery time will be at least 18 months.
- Add a dispatch priority field to each call for both EMS and police units so that response times too high and low priority calls can be better tracked *(this recommendation has been implemented).*
- Analyze call volumes, mutual aid use and completed transports monthly*(underway).* Adjust staffing times of the peak unit to capture the most calls – potentially on a quarterly basis or as needed *(will be implemented as staff is hired & trained).*
- Work together to create an Operating Agreement between Windsor EMS and the Town memorializing both the transparency of EMS operations and finances as well as the commitment from the Town in the form of planned subsidies to stabilize the system going forward. This has a by-product of assisting in recruiting since staff can see there is career stability in joining the Windsor EMS.
- Utilizing the FY 24 approved budget resources, add ambulance coverage during the 9 AM – 9 PM peak period as soon as personnel can be hired.

Financial Impact

On page 31 and 32 of the report are EMS budget forecasts for FY 25 and FY 26. The FY 25 forecast is based on continuing the town's FY 24 General Fund contribution level of $594,830 (rounded to $600,000). Both forecasts assume capital reinvestment through multi-year lease arrangements.

In FY 26 the forecast assumes estimated billing revenues are flat with FY 25 levels and includes an assumption that the town's contribution would increase a minimum of $100,000 to help meet part of the capital payments. Using these notable assumptions, the FY 26 budget forecast reflects an operating shortfall of approximately $105,000.

Other Board Action

The Health & Safety Committee reviewed the EMS System Study on August 14th. The full Town Council received an overview on September 5th.

Recommendations

The Town Council is respectively asked to review the report findings and recommendations and provide direction to the Town Manager.

Attachments

Overview of *EMS System Review* report
EMS System Review Report

THE HOLDSWORTH GROUP
EMS & Healthcare Consultants

High Level Overview of the August 2023 *EMS System Review* report

Windsor EMS is doing a good job with response times that are within industry guidelines. There is room for improvement in three areas: shortening times, keeping better statistics, and adding resources into the system.

Growing Need/Utilization.
The number of requests for an ambulance is growing each year, currently over 4,100 requests per year. The Town averages 11.5 EMS requests per day.

State of the EMS system statewide.
More than 7,000 people have left the CT EMS industry. There is a recruitment and retention crisis in CT and nationally. Additionally, as hospitals continue to buy up EMS services and pay higher wages, competition for staffing increases. The Greater Hartford region is particularly sensitive to this issue because of the large number of fire based, hospital based and commercial EMS providers.

Funding.
Of the 4,100 requests for an ambulance in Town each year, only about 2,800 can be billed to bring revenue into the system. Of the 2,800, more than 68% of the total are paid at a significantly reduced rate due to the Medicare/Medicaid fee schedule.

Revenue projections have been included on **pages 28 and 29** showing the revenue from the 2,800 transport as well as the potential revenue from handling one additional call per day that is currently being handled by mutual aid ambulance services. This will be accomplished with the revised staffing plan which includes a third 'peak time' ambulance (9a-9p)

A subsidy of the EMS system is a reality going forward regardless of the provider.

Staffing/Recruitment
Windsor is currently recruiting for EMTS and Paramedics and this month will also be advertising for shift supervisors who will be able to provide agency/system oversight as well as provide paramedic staffing. This process will take several months to fully implement. The commitment by the Town Council in FY23 and FY24 plus any additional commitment for capital improvement will show potential candidates that Windsor EMS is a stable organization and a solid career step for them.

Capital investment.

Capital replacement has been pushed off for several years. The equipment is safe to use but it needs to be updated or replaced. As the chart on **page 17** of the report shows, the ambulances are all at or over their useful life and the mileage continues to increase at a rate of approximately 30,000 miles per year.

Due to supply chain issues maintenance is getting more costly and time consuming and ordering new ambulances is currently a 12–18-month process. It is recommended the Town Council commitment resources now even though the financial impact will start in FY 25 and FY 26. **(pages 31 & 32 of report)**

The cardiac monitors, stretchers and power loading systems are in the same situation although those will arrive faster, and delivery can begin in FY 24.

Summary

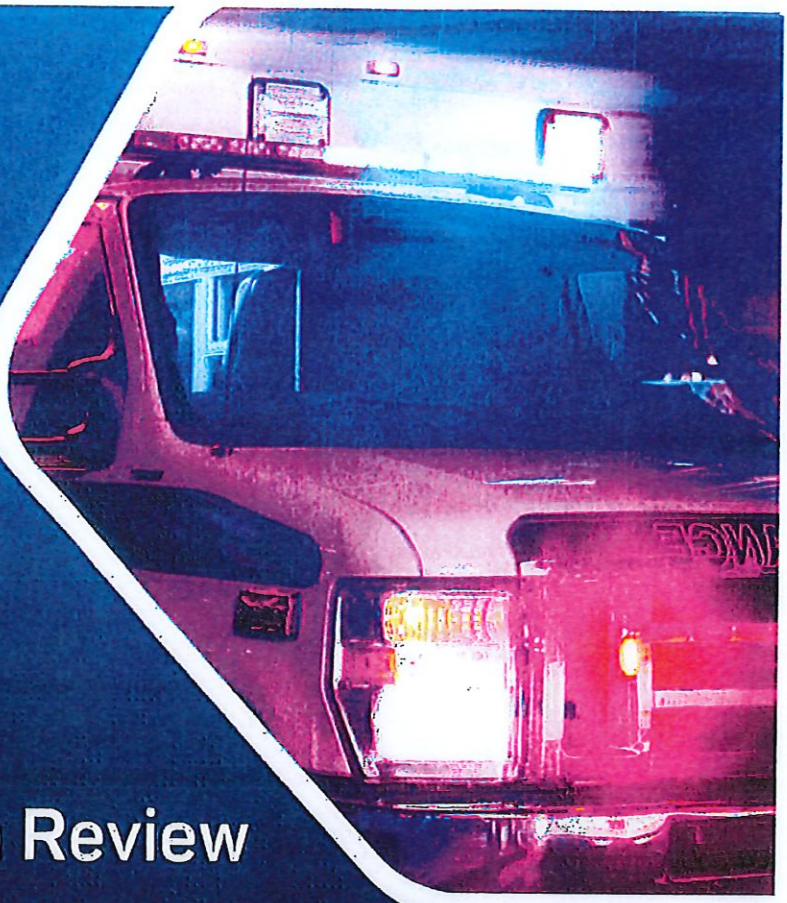
The above issues are all intertwined and must be looked at in their entirety as they impact the Town's EMS system. People, equipment, vehicles, and funding are all equally important pillars of success. Neglect any one of them and the system begins to destabilize. Response times and service to those depending on timely life saving care will be impacted.

Primary recommendations on **page 25** of the report include:

- Begin aggressively recruiting EMT and paramedic staff through word of mouth, social media, direct mail and developing in-house training programs to 'grow your own'
- Make capital reinvestments in medical equipment by taking advantage of capital leasing programs to lock in existing pricing and rates. Payments are deferred until the FY 25 budget.
- Create specifications and order five new identical ambulances on a staggered schedule as soon as possible. It is recommended to place the order within 60 days. The acquisition will reduce down time and maintenance costs. Delivery time will be at least 18 months.
- Add a dispatch priority field to each call for both EMS and police units so that response times to high and low priority calls can be better tracked.
- Analyze call volumes, mutual aid use and completed transports monthly. Adjust staffing times of the peak unit to capture the most calls – potentially on a quarterly basis or as needed
- Work together to create an Operating Agreement between Windsor EMS and the Town memorializing both the transparency of EMS operations and finances as well as the commitment from the Town in the form of planned subsidies to stabilize the system going forward. This has a by-product of assisting in recruiting since staff can see there is career stability in joining the Windsor EMS
- Utilizing the FY 24 approved budget resources, add ambulance coverage during the 9 AM – 9 PM peak period as soon as personnel can be hired.

Below is a link to recent article outlining the state of EMS in Pennsylvania which is one of a number of other states facing the same situation as CT is:

Unsustainable funding model, shrinking workforce leave ambulance services in critical condition | TribLIVE.com



EMS System Review

prepared for the

Town of Windsor

Prepared by

THE HOLDSWORTH GROUP
EMS & Healthcare Consultants

www.Holdsworth.com

August 2023

Town of Windsor - EMS System Review

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Appendix A **page 27-29**

- Revenue projection 2800 transports
- Revenue projection 365 transports – Peak truck

Appendix B **page 30-32**

- Pro-forma budget FY 24-25
- Pro-forma budget FY 25-26

Appendix C **Page 33-47**

- Dispatch data analysis information

Project Overview

The Holdsworth Group was retained to conduct a review of the Windsor Volunteer Ambulance (WEMS) and a high-level look at the EMS system in the Town of Windsor. We reviewed the current system components, looking back approximately 30 months for trends as well as looking ahead to help plan for immediate and long-term future needs.

This study was prompted by the realization that WEMS's current staffing and response capabilities are not keeping up with the growing demand and that mutual aid is being used routinely. It is also clear that enhancements to the current system will require additional investment and staffing.

For this review, we evaluated call and revenue data for the period January 2021 through May 2023.

The deliverable is this report which outlines options for the WEMS and considerations for modification and enhancements to the service.

The findings and recommendations are outlined on pages 24-25. These should set the stage for both short and mid-range actions to be developed with the overall goal of maintaining a strong, reliable, and resilient EMS response capability in Town.

Community Demographics / System Impact

Windsor is a community encompassing thirty square miles with a population of approximately 28,859.

An industry predictive formula identifies that for every 10,000 residents there should be approximately 1-3 EMS system requests per day. Where there are special circumstances such as a high senior population, significant poverty levels, an influx in daytime population or high tourist populations these numbers rise to 3-6 activations or more per day.

Using this formula, we would expect to see an average of approximately nine activations per day.

The 30-month average is currently at **11.15** activations per day.

This formula is derived from the conclusions of multiple studies of different EMS systems around the country in the early 1990's.

The following chart shows the percentage of the population that is already of Medicare age or is close to it. This demographic group is typically the highest user of EMS services and all transports for this age group are provided at contracted pricing, typically deeply discounted. This is vital information from a budgeting standpoint.

Town	50-59	60-69	70-79	80 +	Total	Over 65
Windsor	16%	14%	7%	4%	41%	~ 18%
State of CT	15%	12%	7%	5%	39%	16%

The age 65 and older component is approximately 18% right now and is growing each year. As this trend continues, the impact on the EMS system will be an increase of about one (1) call per day over the next several years.

The reasons for this impact are obviously the higher use by aging individuals but also the larger number of seniors and others released home for recuperation and follow-up care by VNA and others. EMS is accessed more by this population group when their care providers are not readily available.

This is important for system planning and formulating budgets and subsidy requests to the Town. As the population ages, the volume will remain high, and grow, but the revenue will not match the operational needs of the organization.

Each time a citizen transitions from private/commercial insurance to Medicare, the organization loses over $450 per transport because the payment rates are so different.

Another important thing to remember when evaluating the resources needed and structuring budgets is to remember the industry term: *Cost of Readiness.*

This concept requires that you build the EMS system to ensure that the number of staffed ambulances is sufficient to answer the number of historical and **anticipated** 9-1-1 **REQUESTS** for service.

The anticipated requests for service should be evaluated by day of week and hour of day and staffing adjusted accordingly. The two currently staffed ambulances are not enough for the call volume, and over the 30-month period mutual aid was called more than 1,900 times. Our analysis reveals that additional 'peak demand' staffing is needed to improve the level of service in Windsor.

While all REQUESTS for service demand a timely response, the revenue to support the system is currently derived only from actual patient transports.

By utilizing mutual aid so heavily, not only is potential revenue lost to outside agencies but, more importantly, your citizens are waiting longer periods of time for ambulances and paramedics during the busiest hours.

In Windsor, the three-year average shows that 15% of all EMS requests do not result in a transport but these calls must be accounted for in amended staffing plans.

Current System Overview

When citizens dial 9-1-1, the call rings at the Public Safety Answering Point (PSAP) at the Windsor Police Department.

If the call is for a medical event, pre-arrival medical instructions are provided to the caller. The closest police officer is dispatched as a first responder.

The WEMS ambulances are staffed both at the Basic Life Support (BLS) level which has two (EMTs) as the crew and also at the Advanced Life Support (ALS) level which has one EMT and one licensed paramedic as the crew.

An EMS industry best practice, as well as the American Heart Association's Chain of Survival, sets forth the guidelines for responding to a Heart Attack/Cardiac Arrest as follows:

- Citizen or other CPR-trained responder with an AED within four minutes
- Basic Life Support (BLS) ambulance on scene within eight minutes
- Advanced Life Support (ALS/paramedic) on scene within twelve minutes

As we look forward to whichever system design is eventually adopted, it is important that monitoring systems and reporting standards be put in place to evaluate the performance of the system, keeping these standards in mind as benchmarks for all critical responses.

Windsor was awarded the HEARTSafe Community designation and as we understand it, the recertification process is currently underway. Automated External Defibrillators (AEDs) are present in all municipal buildings, school buildings, on-duty police units as well as all ambulances. This is a program that should be maintained and enhanced with *Stop the Bleed* programming as well. WEMS can and should be the lead agency for this training.

EMS Economics

The current EMS system in Connecticut, as in almost all parts of the country, is funded through a combination of tax revenue and billing Medicare, Medicaid, Commercial insurance plans and patients for completed transports.

The retail billing rates are set annually by the State of Connecticut Department of Public Health as well as third party insurers. The actual reimbursement rates vary widely from payer to payer. Additionally, all reimbursement is based upon the level of medically necessary care provided to the patient. It is NOT based on the level of personnel that respond to the call.

There are significant changes proposed for the EMS systems of the future which are expected to include an expansion of payment for non-transports, as well as something called Community Paramedicine which utilizes specially trained EMS staff to evaluate patients in their homes. Right now, few insurers pay for either of these programs, but funding is proposed. WEMS does bill for treat, no transport calls under the few insurance plans that do cover that service, such as CT Medicaid.

The eventual goal of these proposed changes is to provide better healthcare, with fewer transports, all at a lower cost. There is value added to these initiatives when local responders are intimately familiar with the patients, their homes, and the services in the community.

As the EMS system is being re-designed, being prepared to participate in Community Paramedicine/EMS initiatives should be included in the operations planning as these programs become available.

Because WEMS does provide paramedic service, there may well be options for participating in these programs as they evolve. Seniors, who are the highest users of EMS services and who can also benefit most from in-home, coordinated health care and wellness checks will be the primary targets of these programs.

As you review the information contained in the charts that follow, please understand that we are explaining the state of EMS reimbursement as it currently exists. As you look at the payer mix, it is critically important to understand a couple of things about the charges and the insurance revenue stream:

- Regardless of the actual number of requests for service (911 calls), only **completed** calls result in a billable event. Cancellations, refusals, and stand-bys do not result in any revenue, yet the organization must expend resources / expenses to have an ambulance staffed and able to respond.

- The amount listed as the Medicare Allowable Rate is the amount that, by participating in the Medicare program, you agree is the maximum compensation you're allowed.

- Medicare then pays 80% of the Allowable Rate and the patient or their supplemental insurance is responsible for the remaining 20% co-pay.

- The amount listed as the Medicaid Allowable Rate is the amount that, by participating in the Medicaid program, you agree is the maximum compensation you're allowed.

- Medicaid then pays 100% of the Allowable Rate. The difference between the Retail Rate and the Medicaid Allowable Rate is money that can neither be billed nor collected, it is a contractual allowance.

The bulk of the transports and the reimbursement come from government funded, heavily discounted payers.

WEMS shows a consistent trend that about 70% of reimbursable services are provided to Medicare or Medicaid eligible patients and those are the most heavily discounted payers in the EMS industry.

Refer to the chart below to see how heavily discounted each trip is.

This chart shows the State and Federal authorized rates for EMS in 2024.

Charge Item	2024 State Authorized Rate BLS	2024 State Authorized Rate ALS-1	2024 State Authorized Rate ALS-2	Medicare Rate BLS	Medicare Rate ALS-1	Medicare Rate ALS-2	Medicaid Rate ALL
BLS Base	$960.00	$1,517.00	$1,606.00	$455.20	$540.55	$782.37	$293.92
Actual payment	Varies by plan	Varies by plan	Varies by plan	$364.16 80% Care, 20% patient co-pay	$432.44 80% Care, 20% patient co-pay	$625.89 80% Care, 20% patient co-pay	$293.92
Mileage	$23.32	Same	Same	$7.92	Same	Same	$5.88
Percentage of volume	24.0% Insurance 6.0% Private pay			49%	NA	NA	21%

Rates are reset every January and the proposed increase for 2024 is 4.3%

There was a one-time special rate increase of 10% that took effect on July 1, 2023. The only payers that it applies to are the insurance and self-pay patients.

The other factor that drives reimbursement is the payer mix, which is the breakdown of insurance providers that pay for the transport.

WEMS's payer mix has been relatively stable with some fluctuations as populations shift. The two green shaded boxes in the next chart reflect the two years that WEMS did their own billing in-house. The percentages seem off due to the way the Medicare HMOs were reported.

They were reported as private insurance rather than Medicare related which is why there appears to be a disparity when there actually isn't.

The chart below shows the payer mix for the previous seven fiscal years.

Windsor EMS
Collections History

	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	
Billable calls	2,246	2,455	2,557	2,962	2,535	2,858	2,800*	*estimate
ALS usage	63.0%	64.0%	59.0%	65.0%	66.0%	55.0%	57.0%	
Payer Mix								**7 yr avg.**
Medicare	57.0%	58.9%	58.0%	50.0%	27.0%	23.0%	46%	46%
Medicaid	17.4%	15.6%	23.0%	23.0%	23.0%	27.0%	25%	22%
Insurances	13.7%	15.7%	11.0%	23.0%	45.0%	46.0%	24%	25%
Self-pay	11.9%	9.8%	8.0%	4.0%	5.0%	4.0%	5%	7%

System Utilization

After reviewing the dispatch data, and the corresponding data from the billing service, it is very clear that the busiest hours are 09:00-21:00 (9am-9pm).

The industry uses a metric called Unit Hour Utilization (UHU) to determine if the staffing patterns are sufficient to meet the demands, or potential demands, based upon a historical retrospective review.

The industry typically aims for a UHU between .4 -.5 meaning that the units staffed are on an assignment 40-50% of the time. The closer to 1.0, the higher the chance that an ambulance will not be available.

In looking at the data, WEMS is getting busier and while they typically staff two ambulances, mutual aid is still being utilized 2-3 times per day. The concern that we have is that your mutual aid departments also seem to be struggling so relying on this system design model is not wise in the long run for patient care and there is a significant revenue loss to the Windsor system some of which can be reclaimed.

WEMS	Overall	Peak	Problem Hours
2021	.25	1.88	09:00-21:00
2022	.27	2.16	09:00-21:00
2023	.34	2.28	09:00-21:00

The data clearly shows that the two staffed ambulances, during the peak/problem hours, are not sufficient to meet demand. Therefore, regardless of the system design chosen, mutual aid agreements in place should be continued with agencies who are also staffed during the peak hours and/or WEMS should plan to staff a third unit for all or part of the hours.

The data shows that the 'peak unit,' if staffed for the entire 12-hour period, would help to capture up to 70% of the missed calls that currently are passed to your mutual aid partners. See the detailed data analysis in Appendix C Leadership should be watching the UHU monthly to determine busiest hours and adjust the staffing accordingly, typically on a quarterly basis.

Mutual Aid Dispatched by Windsor EMS

	2021	2022	2023 (to 5/15)	Total
12:00:00 AM	19	25	13	57
1:00:00 AM	19	29	9	57
2:00:00 AM	15	17	6	38
3:00:00 AM	7	6	10	23
4:00:00 AM	10	14	2	26
5:00:00 AM	19	13	4	36
6:00:00 AM	24	25	3	52
7:00:00 AM	10	17	4	31
8:00:00 AM	9	30	7	46
9:00:00 AM	18	24	15	57
10:00:00 AM	25	36	22	83
11:00:00 AM	32	39	29	120
12:00:00 PM	36	56	24	116
1:00:00 PM	32	44	23	99
2:00:00 PM	21	43	12	76
3:00:00 PM	16	43	12	71
4:00:00 PM	35	42	15	92
5:00:00 PM	29	42	8	79
6:00:00 PM	31	49	11	91
7:00:00 PM	63	72	30	165
8:00:00 PM	72	69	18	159
9:00:00 PM	49	77	20	146
10:00:00 PM	33	50	21	104
11:00:00 PM	32	41	15	88
Total	656	923	333	1,912

1pm-9pm	384 / 60%	481 / 50%	149 / 45%
9am-9pm	459 / 70%	636 / 70%	239 / 72%

Activation & Response Times.

The following times are important to know, and regularly review, as a way to evaluate the system's effectiveness in getting care to a patient once 911 is called.

Activation (chute) Time is defined as: 'the elapsed time from EMS agency notification to having a staffed unit on the air and responding.'

- 2021 average chute time 1 min 20 seconds
- 2022 average chute time 1 min 24 seconds
- 2023 average chute time 1 min 07 seconds

These are the average of all time periods and all priorities.

Response Time is defined as: 'the elapsed time from EMS agency notification to a unit arrived on scene." (sometimes this is further defined to read as 'personnel at the patient's side').

- 2021 response time 11 min 25 seconds - 90th percentile all *
  7 min 11 seconds - average
- 2022 response time 11 min 53 seconds - 90th percentile all*
  7 min 31 seconds - average
- 2023 response time 12 min 17 seconds - 90th percentile all *
  7 min 47 seconds - average

Police First Responder Times

- 30-month average 8 min 35 seconds*

*** These are average of all response times, including Priority 3 (non-light & siren responses).**

Given the size of your community and the overall volume of calls, these times are reasonable. All agencies should be looking to continuously improve, and we believe that the response times to Priority One calls are significantly better, especially the response times of the police first responder units, however we did not have the hours in this project to dissect the PD data further as the PD was not the primary focus of this project.

As the data is collected going forward, Priority One and Priority Three calls should be separated, this will provide better reporting and show a truer picture of response times. ESO (WEMS's electronic charting software) should be able to build a custom report for you that breaks out these times by response criteria.

Additionally, the police dispatch software could add a field that would identify the priority of the dispatched EMS and police units. Doing that would allow easy creation of data reports from the NexGen system.

Additionally, there is no good metric available to know how much time has elapsed from answering the phone, gathering information from the caller to the activation of WEMS which starts the Activation Time clock.

NOTE: If an individual call is challenged in a legal proceeding, all of the times can be gathered for that incident. However, there is currently no effective way to determine if the system as a whole is managing calls in a time-efficient manner. This should be corrected.

In high performance EMS systems, Activation Time targets are typically expected to be under 90 seconds and Response Time goals target the <8min mark at 90% or better of all Priority One calls.

In EMS, every second counts and it is important to be able to dissect the data in a more meaningful systemwide format on a weekly, monthly, and annual basis.

System Model Options

As a community you are at a crossroads. What you are currently doing is working, but can benefit from improvement. Ambulances are getting on the road, activation times (chute times) are good and response times are acceptable but can always be better.

We have identified four options for consideration:

- Option #1 Maintain the current system.
- Option #2 Invest in the WEMS operated system long term (see pages 16-17)
- Option #3 Create a municipal EMS organization.
- Option #4 Outsource EMS to another provider.

We'll outline each of the options in greater detail for clarity.

Option #1
Maintain the current system.

While we do not recommend this option, we are obligated to present it. Improving the system will require long-term investment, especially in the upgrading of capital equipment.

This study is the result of dissatisfaction with the significant use of mutual aid and a recognition that WEMS had some financial issues. The Council's investment in the 2023 budget year helped resolve the immediate financial issues and allowed for a wage increase to make WEMS competitive in the Greater Hartford region. This will need to be maintained as an ongoing subsidy.

This option however realizes that adding additional crews and upgrading capital equipment might not be something the Council wishes to commit to in the long term and therefore choosing to limit additional financial resources is an option.

We do not believe that it is the best option for the Town and therefore we are not providing much detail on it. If the Council wishes to explore the ramifications further, we can certainly do that.

Option #2
Invest in the WEMS operated system long term.

WEMS is facing the same problems that many EMS agencies in this country are facing, namely a decreasing number of people coming into or staying in EMS as a career, increasing call volumes and insufficient funding.

In Connecticut there is an EMT and paramedic shortage, more than 7,000 EMTs have left the ranks over the past 10-15 years with no effective plan to replace them. In addition, acquisition of several EMS agencies by various hospitals has created a 'wage war' for staff.

This led to the financial issues that WEMS experienced and has additionally resulted in a deferral of capital investment.

The WEMS vehicles are safe and have been getting basic maintenance, but none have been scheduled for replacement. Much of the patient care and patient movement equipment has reached or surpassed the manufacturers recommended service life and also needs to be replaced.

WEMS has provided service to the Town for the last 43 years. A lot has changed since the organization's inception in 1980. The organization was founded as a direct result of the Town wanting better service for its residents. Prior to WEMS's creation, ambulances responded from neighboring communities, most notably Hartford.

Population growth, call volume increases, moving to WEMS-based paramedics all have improved service but now there is a need for ongoing municipal support since billing revenue alone cannot sustain a service of the size required to ensure high quality and timely service.

We believe that of all the options presented, this is the one that accomplishes the goal of delivering high quality EMS services, fosters effective communication between the parties and overall is the most cost effective for the Town.

That said, the next few years will be expensive as the Town and WEMS partner to bring all the capital equipment back to state-of-the-art technology and bring the EMS personnel up to regional standards for wages and benefits allowing WEMS to attract and retain top talent. (see pages 17-19)

We have included pro-forma budgets in Appendix B which include the following:

- lease payments on five ambulances by FY25-26
- lease payments for upgrading clinical and patient movement equipment,
- wage increases already approved,
- our recommended changes to the operational deployment patterns,
- the addition of an administrative support part-time person,
- addition of shift supervisors to build the leadership team,
- the addition of a peak time ambulance which will reduce mutual aid.

Option#3
Create a municipal EMS organization.

As the Town evaluates the subsidy amount required to make the necessary improvements to the system the discussion of transparency and input always surfaces. While we advocate for a strong and transparent relationship with an EMS vendor outlined in an operating Agreement between the parties, another option would be for the Town to absorb the organization and create a Town EMS Department. That would of course require the approval of the WEMS Board of Directors.

There would be some savings on the operations side with health benefits, insurances, legal expenses, HR functions and other costs being absorbed into existing Town services and policies which would result in potentially lower costs or at least the elimination of redundant costs. The downside would be the potential for higher labor and retirement costs.

We are not recommending this option at this time because the labor and retirement costs could surpass the operational savings. A more detailed review of this option may be needed in the future if there are any substantive changes to the reimbursement process or costs unpredictably skyrocket in the future.

Option #4
Outsource to another provider.

If at any time the Town were to become dissatisfied with the WEMS responses, or if a future Board or Administration became uncooperative, the Town does have the recourse to petition the State for a change in Primary Service Area Responder (PSAR).

This would require issuing an RFP, accepting a response from a qualified provider that can offer equal or better service at the same or cheaper cost.

We are including this option in the report to be thorough, but we see no reason to pursue this course of action. There is a good relationship between WEMS and the Town, this report has revealed the current situation and the data will allow all parties to work together to make the system better in a fiscally responsible way.

Under the current budget the Town has allocated approximately $600,000 to improve the system. Based on RFPs received recently in other communities that number would more than double to pay a subsidy for another provider and the ability to had direct input, other than contract language, would be lost.

Additionally, the downside of eliminating WEMS and outsourcing is that if the new provider did not live up to the contract terms, the Town would have limited options as the numbers of capable providers is shrinking through acquisition and the cost to reconstitute a Town provider would be cost prohibitive.

We strongly recommend continuing the current path.

Capital Investment

There is a definite need to upgrade several capital items. These have been under consideration for a couple of years; however, funding has not allowed WEMS to move forward with the expenditures.

In partnership with the Town these items now must be planned for, and the expenditures made.

Vehicles

Regardless of the system design that is chosen, other than outsourcing, all the ambulances should be scheduled for replacement over the next 4-5 years.

Medic 1 - 2013 Chevy/GM, Type 3	Mileage	210,445	(10 yrs. old-new engine)
Medic 2 - 2009 Ford, Type 2	Mileage	162,661	(14 yrs. old)
Medic 3 - 2013 Chevy/GM, Type 3	Mileage	221,702	(10 yrs. old-new engine)
Medic 4 - 2017 Chevy/GM, Type 3	Mileage	132,259	(6 yrs. old)
Medic 5 - 2011 Ford, Type 1	Mileage	89,127	(12 yrs. old-new engine)
Car 5 - 2016 Chevy Tahoe	Mileage	92,919	
Car 6 - 2004 Crown Vic	Mileage	95,675	
Car 7 - 2009 Crown Vic	Mileage	46,541	
Car 8 - 2022 Chevy Tahoe	Mileage	8,981	
Car 9 - 2022 Chevy Tahoe	Mileage	16,065	

Ordering all vehicles to the same specifications, same chassis and same manufacturer will allow for standardization of maintenance, stocking of parts and make it easier for the crews to move between vehicles with a standard equipment and cabinet layout.

Life expectation of an ambulance in a busy service is about 5-7 years and about 175,000 miles. If they are well maintained, the age expectation stays about the same but higher mileages may be tolerated since a lot of the mileage is highway rather than inner city stop & go. WEMS has high mileage on several of their units and they are over the life expectancy. The vehicles are safe, but WEMS does need an aggressive capital replacement plan from this point forward.

We recommend ordering five ambulances now. Three to be delivered as soon as possible, two to be delivered a year after the first two.

The vehicles should then be replaced on a 5-to-6-year cycle which is easily accomplished through a fleet leasing program. Currently, the average lease cost on these types of units is approximately $3,500-$4,300/month per truck based on a 60 or 72-month leasing plan. The proforma budget assumes a 60-month lease plan.

Currently new ambulance orders are taking an average of 18 months to arrive. If funds allow, a more aggressive delivery schedule would be advised since the existing fleet has maintenance issues, but that may not be achievable.

The expected retail cost of each ambulance today should be assumed to be about $250,000 per unit ($1,250,000 fleet total). Most manufacturers are taking the orders with minimal to no down payments because they know that the trucks can be sold to another EMS provider if you were to cancel your order. There is little to no risk to your ordering all the units now.

Another option would be to bond all five units for a one-time capital replacement acquisition and then lease replacements beginning five years out.

As the vehicles are added into the fleet, aggressive rotation of the units will allow for staffing of multiple calls, preventative maintenance, and overall longevity of the fleet by keeping mileage about even across the fleet.

WEMS currently has two ambulances in service, and the other three have a variety of maintenance issues which limit their consistent availability. By increasing the number of staffed ambulances, as outlined in Option 2, they will have three in service during peak times which means the preventative maintenance will be even more critical.

Ideally WEMS should maintain the five-ambulance fleet to ensure adequate reserve units during times when the 'peak truck' is in service.

As ambulances and other response vehicles are added or replaced in the future, we also HIGHLY recommend leasing them rather than buying.

The benefits of leasing include:

- Relatively low cost of acquisition
- Keeping the fleet younger due to lease expirations every 5-6 years
- Decreased maintenance costs over the life of the fleet

Clinical and patient movement equipment

Stretchers, power load systems, stair chairs, cardiac monitors, AEDs, video laryngoscopes.

The primary manufacturer and the current supplier, Stryker, offers a multi-year payment plan and did provide three options to choose from.

After review, the best option is outlined below and features no payment until next year's budget, a fresh start on all equipment and a $1 buyout at the end.

- 60-month payment plan which will allow WEMS to keep using the equipment for another 3-5 years following the last payment.
- There is no penalty for advance payment.
- If the order paperwork is signed by September before the pending October 1 price increase, the equipment can be ordered now and shipped in December. They have offered a six-month payment deferral so that the first of five annual payments would start in July 2024.
- Stryker has agreed to lock in interest rates 2.9% to allow time for a decision to be made. But the order must be executed before Sept 30th before the already announced price increases.
- Items included have trade-in credits applied:
  - Lifepack 15 cardiac monitors (4), $35,000 each
  - PowerLOAD stretcher systems (4), $30,000 each
  - PowerProXT ambulance stretchers (4), $28,000 each
  - Stair Pro (4), $ 4,300 each
  - LP 1,000 AEDs (6), $ 2,600 each
  - McGrath video laryngoscopes (4) $ 3,000 each
- Preventative onsite maintenance with annual inspections, unlimited repairs, and battery replacement is also included. (There is no additional warranty coverage for the AEDs or McGraths, but the LP 1,000s have a 5-year warranty and the McGraths have 3-year warranty)

If the Town chooses to make a 20% down payment at signing, the interest will be reduced to 1.9% and the annual payments will still begin July 2024. We don't think the savings of 1% per year is worth the $96,000 down payment and recommend the no down payment option at 2.9%.

Mission, Board of Directors, By-laws, and SOPs"

> *"The purposes of the Corporation are to take all actions necessary and desirable to provide emergency medical transportation and treatment to the citizens of, residents of, and visitors to the Town of Windsor, Connecticut; to promote public awareness and education concerning first aid procedures; and to raise, plan for, manage and expend funds necessary for the carrying out of said purpose."*

This is a strong mission statement encompassing the ideals of a community-centric, non-profit agency dedicated to patient care and training. There are key words in this statement that need to be highlighted and then used as the basis for policy modifications going forward.

- *"promote public awareness"*
- *"to plan for, manage … for the carrying out of said purpose"*

The SOPs are very thorough although they are a bit outdated and need several areas of review for consistency and clarification. Once a decision about the staffing and leadership positions has been made, we can assist with the revisions.

If everything is driven to fulfill the mission statement, then there are changes that should be made in the best interests of the residents including improved public awareness and the potential for a training and education division that can become both a revenue stream as well as a potential source of new team members. More on this later.

Board of Directors

Within the organization there is a clear line of demarcation between the Board and the Operations Team that we feel strongly needs to be eradicated for the good of the organization.

It will be important for the future of WEMS to attract and retain Board members who will be proactive. Board members, new and current, should be given a thorough orientation about the organization, the industry and how it works. No corporate Board member in the business world serves without a reasonable understanding of the company's products, services, and operational methods.

A formal information packet should be provided to any newly elected Board member, and all should spend some time with an on-duty crew to see how the operations team works. Ride-alongs should be encouraged, but understandably some may not wish to go that far. As a standard expectation, and a show of solidarity to the mission, every member of the Board should be minimally certified in CPR.

The Chief of Service should be the primary spokesperson for all things operational to both the public and Town Council. The Board members should understand the information to be presented and the current standardized reporting should be further expanded.

There are less than 50 people on the roster of WEMS, email, texts, phone calls and face to face meetings are easy to accomplish. Members should be encouraged to attend Board meetings and Board members should attend Operations Team meetings.

The only purpose of the WEMS is to provide timely ambulance service and effective training. Whatever the Board can do to make that goal easier and keep true to the stated mission statement are the only responsibilities of each member.

By-laws

The by-laws were last revised in 2015 and several updates are needed and advised.

We have provided a draft set of changes to the WEMS Board for their discussion and review.

Recruiting & Retention

There has been no formal recruiting done on a consistent basis other than word of mouth and advertising when positions open. Until recently recruiting staff has been difficult because the WEMS wage scale was significantly below the regional average. Incremental raises have been made since April and a new pay scale adopted fully on July 1st. This should allow WEMS to compete for qualified individuals although with the hospitals and commercial services all actively hiring, the 'wage wars' are far from over.

We can expect that wages will continue to increase over the next few years until the 'new normal' regional base starting wages are established. Normal COLA raises will then simply be part of doing business. Building a training division, as several others have done, will help you train and retain your own feeder system of EMTs and EMRs. The cost of training your own paramedics is prohibitive and there are several local and competing programs.

There is still the potential that a small group of volunteers could be attracted to WEMS because of the quality of the headquarters, equipment, and call volume. Given the workforce climate this is not a solution to the staffing crisis, simply a possible outcome that could help ease payroll periodically.

By using the State's list and mailing recruiting information to all in Windsor, South Windsor, Bloomfield, East Windsor, and others, you will touch some who've chosen not to work with their local departments, fire and police officers from other communities who may welcome riding elsewhere in a higher volume service. Never count anyone out when recruiting.

And the obvious benefit is that should volunteers be recruited, staffing shifts for little or no cost is a budget friendly option. This is simply an adjunct to the paid positions, there will not be a flood of volunteers knocking on WEMS's door, but enough may to make the process worth doing.

Training Division

We recommend that WEMS continue to develop an in-house EMT and community education training division. This is the best way to 'grow your own' and create a feeder system for new staff members and should yield a few new members each year.

Additionally, CPR, Stop the Bleed, Safe Sitter, Narcan/Opioid training, and others could become a source of revenue for WEMS. A training division would take a full year to develop, market and begin to see a reasonable profit.

The Training Officer position would also be able to conduct in-house refresher training including the development of a group of FTO's and preceptors.

The number of police, fire, EMS, municipal, Board of Ed, corporate and community members that need training can easily support the annual salary of a Training Officer position and a cadre of part time instructors.

We did not specifically inventory all of the training equipment but have been assured that there is sufficient capacity to begin this project and develop it over the upcoming year.

Recap of Findings

- Windsor EMS is doing a good job despite labor and financial challenges.
- Response times to calls are good, improvement is possible.
- Paramedics are getting to the patients who require them.
- Mutual aid is being requested 2-3 times per day resulting in longer response times and lost revenue.
- There is a need during peak hours (9am-9pm) for another ambulance.
- Dispatch data needs slight modifications to allow for better segmentation and tracking of high and low priority call response times.
- There is a need for capital equipment investment which has been deferred for several years. Total investment needed is approximately $1.8 million to be spread over five years.
- There is a significant paramedic and EMT shortage in the state and Windsor has had a hard time recruiting and retaining due to shifts in the regional labor market and agency consolidations.
- The Town Council's commitment in the 2023 budget helped WEMS to stabilize the EMS system and the subsidy in the 2024 budget has allowed for the implementation of a competitive wage scale package. It is still too new to know the impact on recruitment & retention.
- The continued subsidization of EMS in Windsor is a reality regardless of the provider serving the Town.
- WEMS needs to expand its leadership team and work towards having 24/7 operations supervisors rather than administrators on call.

Recommendations:

- Begin aggressively recruiting EMT and paramedic staff through word of mouth, social media, direct mail and developing in-house training programs to 'grow your own'.

- Take advantage of the clinical and patient movement capital leasing program before 9/30/23 to lock in existing pricing and rates. Payments are deferred until the 2024-25 budget.

- Create specifications and order five new identical ambulances on a staggered schedule as soon as possible. We recommend having the order in to the manufacturer within 60 days. The acquisition will reduce down time and maintenance costs. Delivery time will be at least 18 months.

- Add a dispatch priority field to each call for both EMS and police units so that response times to high and low priority calls can be better tracked.

- Analyze call volumes, mutual aid use and completed transports monthly. Adjust staffing times of the peak unit to capture the most calls possible quarterly if needed.

- Work together to create an Operating Agreement memorializing both the transparency of WEMS' operations and finances but also the commitment from the Town in the form of planned subsidies to stabilize the system going forward. This has a by-product of assisting in recruiting since staff can see there is career stability in joining WEMS.

- Utilizing the FY 23-24 approved budget resources, add ambulance coverage during the 9am-9pm peak period as soon as personnel can be hired.

Conclusion

We hope that you have found this report informative and useful in making some informed decisions about providing EMS service in your community.

WEMS is a good service, doing a good job. Increased staffing, competitive wages and benefits, long-term fiscal stability and aggressive capital improvement will make a good system a great system.

We want to offer our opinion about the options presented. We believe that given the state of the EMS labor market, the reimbursement situation, the payer mixes, and the timeliness of developing a lasting solution, Option#2 is the best choice.

A collaborative approach will serve both WEMS and the Town well in the years ahead and will also keep the costs relatively stable. Every community is beginning to come to grips with the reality that EMS is an essential service that cannot sustain the ever-increasing costs solely through the current antiquated model of fee-for-service.

Subsidization, strategic partnerships, consolidation, and regionalization are all a very real part of the landscape for the EMS system not just in Windsor or Connecticut, but nationally.

We stand ready to discuss each of the options with you, answer any questions and then once you have made the high-level decision about direction, we can take steps to move forward and discuss the implementation issues specific to that option.

It has been a pleasure to craft this analysis and we look forward to the next steps.

Respectfully submitted,

Bob Holdsworth, President
The Holdsworth Group, Inc.

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Appendix A

Revenue projection 2800 transports

Revenue projection 365 transports – Peak truck

Projected Billing Revenue

Windsor EMS

For Illustration Only
2024

		Item:	Rate	# of Calls	Total	
Number of Transports:	2800					
Percentages:						
Medicare 49% of volume:	0.49	Pvt. BLS Base	$960.00	420	$403,200.00	
Medicaid 21% of volume	0.21	Pvt. Mileage	$23.32	7728	$180,216.96	
Private 30% of volume:	0.3					
		Medicare BLS Base	$0.00		$0.00	
		Medicare BLS Emergency Rate	$455.20	686	$312,267.20	
Billable Miles Per Trip:	9.2	Medicare Mileage	$8.54	12622	$107,795.30	
		Medicaid Base	$293.92	294	$86,412.48	
		Medicaid Mileage	$5.88	5409.6	$31,808.45	
Number of Trips:						
Medicare:	1372	ALS Charges Medicare - 1	$540.55	679	$367,109.13	$361,309.27
		ALS Charges Medicare - 2	$782.37	7	$5,367.06	$5,308.47
Medicaid:	588	ALS Charges Medicaid	$349.03	294	$102,614.82	$102,614.82
Private:	840	ALS Charges ALS-1 Pvt	$1,517.00	416	$630,768.60	$231,600.60
		ALS Charges ALS-2 Pvt	$1,606.00	4	$6,745.20	$2,713.20
					$1,112,604.81	$703,546.37 ALS Only
		Total Gross Revenue:			$2,227,559.99	
Bad Debt %:	0.1	**Bad Debt Allowance:**			$222,756.00	
		Potential Net Revenue:			$2,004,803.99	
		Monthly Deposit Average - ALL			$167,067.00	
		Assumes 50% ALS usage		2800		

Projected Billing Revenue

Windsor EMS

For Illustration Only

2024

		Item:	Rate	# of Calls	Total		
Number of Transports:	365						
Percentages:							
Medicare 49% of volume:	0.49	Pvt. BLS Base	$960.00	55	$52,560.00		
Medicaid 21% of volume	0.21	Pvt. Mileage	$23.32	1007	$23,492.57		
Private 30% of volume:	0.3						
		Medicare BLS Base	$0.00		$0.00		
		Medicare BLS Emergency Rate	$455.20	89	$40,706.26		
Billable Miles Per Trip:	9.2	Medicare Mileage	$8.54	1645	$14,051.89		
		Medicaid Base	$293.92	38	$11,264.48		
		Medicaid Mileage	$5.88	705.18	$4,146.46		
Number of Trips:							
Medicare:	178.85	ALS Charges Medicare - 1	$540.55	89	$47,855.30	$47,099.24	
		ALS Charges Medicare - 2	$782.37	1	$699.63	$692.00	
Medicaid:	76.65	ALS Charges Medicaid	$349.03	38	$13,376.57	$13,376.57	
Private:	109.5	ALS Charges ALS-1 Pvt	$1,517.00	54	$82,225.19	$30,190.79	
		ALS Charges ALS-2 Pvt	$1,606.00	1	$879.29	$353.69	
					$145,035.98	$91,712.29	ALS Only
		Total Gross Revenue:			$290,378.36		
Bad Debt %:	0.1	**Bad Debt Allowance:**			$29,037.84		
		Potential Net Revenue:			$261,340.52		
		Monthly Deposit Average - ALL			$21,778.38		
		Assumes 50% ALS usage		365			

Appendix B

Option #2

Pro-forma budget FY 24-25

Pro-forma budget FY 25-26

Stryker annual payments are already included in both budgets beginning with the first due in July 2024.

FY 2024-25 Budget with Peak Hour staffing

	Hours	# staff	# days	Rate	Weekly	Annual	
Direct Labor							
Ambulance 1 – Medic	24	1	7	$35.00	$ 5,880.00	$ 305,760.00	
Ambulance 1 – EMT	24	1	7	$25.00	$ 4,200.00	$ 218,400.00	
Ambulance 2 – EMT	24	1	7	$25.00	$ 4,200.00	$ 218,400.00	
Ambulance 2 – EMT	24	1	7	$23.00	$ 3,864.00	$ 200,928.00	
Peak crew – EMT	12	1	7	$23.00	$ 1,932.00	$ 100,464.00	
Peak crew – EMT	12	1	7	$23.00	$ 1,932.00	$ 100,464.00	
Fly car – Medic Lt.	24	1	7	$37.00	$ 6,216.00	$ 323,232.00	4 staff
Management team						$ 196,000.00	
Administrative Assistant	8	1	4	$21.00	$ 672.00	$ 34,944.00	
Overtime/call backs @ 5%	0	0	0	$ -	$ -	$ 73,382.40	
Total direct labor					$ 28,896.00	$ 1,771,974.40	
Non-labor costs							
Marketing and recruitment						$ 6,000.00	
CMED Fees						$ 36,000.00	
COVID loan						$ 7,700.00	
Dues & Subscriptions						$ 2,500.00	
Vehicle Maintenance						$ 62,200.00	
Insurance Employee Medical						$ 144,000.00	
Medical supplies & equipment						$ 145,000.00	
Information technology – software						$ 36,000.00	
Office and facility						$ 10,200.00	
Payroll taxes						$ 177,197.44	
Postage						$ 2,000.00	
Printing						$ 2,000.00	
ProfessionalFees (AC/Leg/Billing)						$ 91,290.00	
Service contracts – payroll						$ 4,800.00	
Radio & communications						$ 30,000.00	
Training and personnel						$ 42,000.00	
Stryker equipment lease – annual						$ 103,000.00	starting in 2024 – 5 years
Vehicle Lease Cost						$ 77,450.00	starting mid-year 3@$4300/mo
Total Non-Labor						$ 979,337.44	
Total operations expense						$ 2,751,311.84	
Town Contribution		$ 600,000					
Estimated billing revenue		$ 2,200,000			Profit/loss	$ 48,688	Including subsidy
Cost per billable call				3165		$ 869.29	Cost per call
Cost per response				5800		$ 474.36	Cost per response
Population – Primary	28,859						
Population – Secondary	0						
Price per capita	$ 95.34						

FY 2025-26 Budget with Peak Hour staffing

	Hours	# staff	# days	Rate	Weekly	Annual	
Direct Labor							
Ambulance 1 – Medic	24	1	7	$36.00	$ 6,048.00	$ 314,496.00	
Ambulance 1 – EMT	24	1	7	$26.00	$ 4,368.00	$ 227,136.00	
Ambulance 2 – EMT	24	1	7	$26.00	$ 4,368.00	$ 227,136.00	
Ambulance 2 – EMT	24	1	7	$24.00	$ 4,032.00	$ 209,664.00	
Peak crew – EMT	12	1	7	$24.00	$ 2,016.00	$ 104,832.00	
Peak crew – EMT	12	1	7	$24.00	$ 2,016.00	$ 104,832.00	
Fly car – Medic Lt.	24	1	7	$38.00	$ 6,384.00	$ 331,968.00	4 staff
Management team						$ 201,880.00	
Administrative Assistant	8	1	4	$22.00	$ 704.00	$ 36,608.00	
Overtime/call backs @ 5%	0	0	0	$ -	$ -	$ 76,003.20	
Total direct labor					$ 29,936.00	$ 1,834,555.20	
Non-labor costs							
Marketing and recruitment						$ 4,000.00	
CMED Fees						$ 38,000.00	
COVID loan						$ 7,700.00	
Dues & Subscriptions						$ 2,500.00	
Vehicle Maintenance						$ 50,000.00	
Insurance Employee Medical						$ 155,520.00	8% increase
Medical supplies & equipment						$ 150,000.00	
Information technology – software						$ 36,000.00	
Office and facility						$ 10,200.00	
Payroll taxes						$ 183,455.52	
Postage						$ 2,000.00	
Printing						$ 2,000.00	
ProfessionalFees (AC/Leg/Billing)						$ 91,290.00	
Service contracts – payroll						$ 4,800.00	
Radio & communications						$ 30,000.00	
Training and personnel						$ 42,000.00	
Stryker equipment lease – annual						$ 103,000.00	starting in 2024 – 5 years
Vehicle Lease Cost						$ 258,000.00	5 @ $4300/mo
Total Non-Labor						$ 1,170,465.52	
Total operations expense						$ 3,005,020.72	
Town Contribution		$ 700,000					
Estimated billing revenue		$ 2,200,000			Profit/loss	$ (105,021)	Including subsidy
Cost per billable call				3165		$ 949.45	Cost per call
Cost per response				5800		$ 518.11	Cost per response
Population – Primary	28,859						
Population – Secondary	0						
Price per capita	$ 104.13						

Appendix C

Dispatch data analysis information

Overview of EMS Activations, 2021 - 2023

Data Process Notes

From the data provided, a process was developed to filter out redundant or erroneous dispatch records that didn't contain actual data.

Post-filtering, redundancies remained where multiple units were attached to the same incident. Without going row by row and attempting to classify each through context (which would be extremely time consuming), the most useful approach results in two different sums.

The first number is essentially "responses", so records containing response data for an EMS unit. It's the number of times an EMS unit responded somewhere for something. From that total, a second number of unique incidents requiring EMS was derived. Those numbers are highlighted in the data table on the next page) The two numbers are in the same ballpark, but depending on the specific question one is asking about EMS operations in Windsor, one number or the other will be more useful. I've listed several recommendations this issue can be eliminated going forward.

A few factors identified that obscured the accuracy of the Windsor dispatch data:

Self-dispatching of the Windsor units to assist primary units.

CAD system's auto-assignment of Windsor units to call.

Lack of notation for calls where a BLS unit called for an ALS unit, or where an ALS unit downgraded to a BLS unit, etc.

The retention of records with fragmented response data or no data at all without notation.

Recommendations

Even with an ideal level of access and cooperation from the dispatch personnal (which was greatly appreciated), there are some basic questions about EMS operations in town that can't be answered because the information isn't being recorded as it happens. By making a few small changes to the process and recording a few pieces of information that are already being collected, Windsor could have accurate, real-time data about EMS operations in town.

Most importantly, the addition of a final disposition field from a few options (cancelled en route, refusal obtained, transported BLS / ALS) could make a lot of the data processing required here obsolete. It may have been assumed that CMED would be the best source of the number of actual ambulance transports, but that is not the case.

The data table on the next page shows the wide range of numbers found in external EMS data on Windsor EMS. This is probably the best reason there is for Windsor to tighten its EMS data collection processes. At the moment, it would be difficult for Windsor to contest any external data published.

Beyond final disposition, each EMS activation should be classified at a few steps in the process. EMD-style classification of the reason for the call would create a new way of understanding the EMS needs of the town. When calls are passed to mutual aid, recording the reason (from a few basic options) would be extremely useful in evaluating the functioning of the EMS piece of Windsor's public safety system

Validating CMED Transport Data

We initially planned to use the NC CMED data to zoom in on the number of EMS activations resulting in a transport, but the numbers seemed far too low to account for all of the actual transports.

CMED Mutual Aid Transport Data Quality

	2021	2022	2023
Transport to Destination Time Recorded	113	103	53
Arrival at Destination Time Recorded	116	99	47
Destination Hospital Recorded	142	125	58

In order to evaluate the CMED data for use, we ran a day-by-day comparison of units dispatched by Windsor to those that appear in the CMED dispatch records. The comparison was run for 4 random weeks during the study period.

The results (next two pages) showed a significant difference between the units dispatched by Windsor and the ones that signed on with CMED; and this was particularly true of the mutual aid units.

There are many possible reasons for this discrepancy, both on the operational side (like units forgetting to sign on with CMED) and the data side (filtering of CMED CAD records sent to us), but it was clear the CMED data was not in a state that could be used as intended.

Source: NC CMED Data

Mutual Aid Transports

Hour of Day	2021	2022	2023		Total
12:00:00 AM	3	3	1		7
1:00:00 AM	2	4	1		7
2:00:00 AM	4	2	0		6
3:00:00 AM	2	1	0		3
4:00:00 AM	0	0	0		0
5:00:00 AM	1	0	1		2
6:00:00 AM	5	3	1		9
7:00:00 AM	2	3	2		7
8:00:00 AM	1	3	0		4
9:00:00 AM	4	7	1		12
10:00:00 AM	8	2	3		13
11:00:00 AM	7	11	2		20
12:00:00 PM	10	5	8		23
1:00:00 PM	11	6	3		20
2:00:00 PM	6	11	4		21
3:00:00 PM	6	5	3		14
4:00:00 PM	11	10	5		26
5:00:00 PM	5	8	4		17
6:00:00 PM	6	3	2		11
7:00:00 PM	9	2	3		14
8:00:00 PM	17	9	2		28
9:00:00 PM	6	7	4		17
10:00:00 PM	9	11	2		22
11:00:00 PM	7	13	2		22
Total	142	129	54		325

Mutual Aid Data

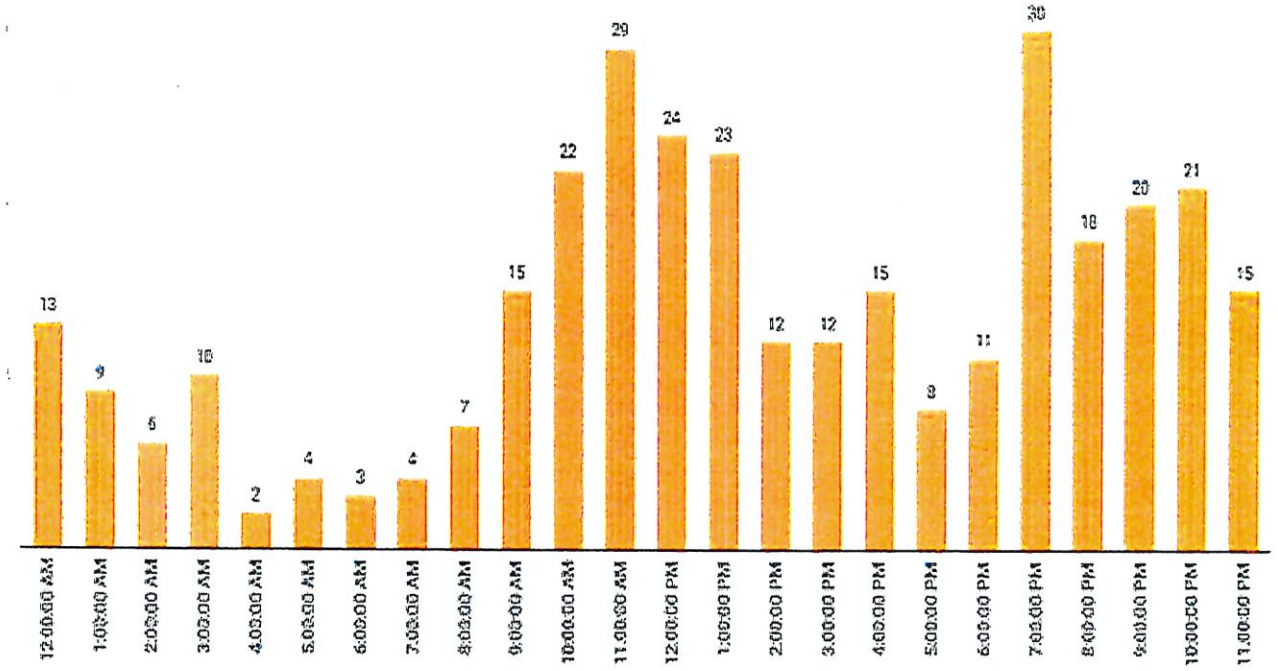
Source: Windsor Dispatch Data

EMS Activations Requiring Mutual Aid Response into Windsor - 2022 by Hour of Day

Client: Blair Zurn • Source: Windsor Dispatch • Created with Datawrapper

Source: Windsor Dispatch Data

EMS Activations Requiring Mutual Aid Response into Windsor - 2023 (to 5/15) by Hour of Day



Recovering Lost EMS Calls

Total EMS Activations for Study Period by Day of Week

Source: Windsor Dispatch Data