FIRST RESPONSE

Addressing fire and emergency medical service challenges in Ozaukee County

WISCONSIN POLICY FORUM

ABOUT THE WISCONSIN POLICY FORUM

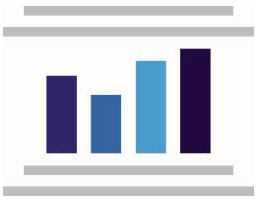
The Wisconsin Policy Forum was created on January 1, 2018, by the merger of the Milwaukee-based Public Policy Forum and the Madison-based Wisconsin Taxpayers Alliance. Throughout their lengthy histories, both organizations engaged in nonpartisan, independent research and civic education on fiscal and policy issues affecting state and local governments and school districts in Wisconsin. WPF is committed to those same activities and that spirit of nonpartisanship.

PREFACE AND ACKNOWLEDGMENTS

This report was undertaken to provide citizens and policymakers in Ozaukee County with information on the state of fire and EMS service provision across the county and options for collaboratively addressing emerging and future challenges. The intent was to lay out programmatic data, illustrate key challenges, and discuss options for improvement, but not to make recommendations on the future of fire and EMS services for individual communities.

Report authors would like to thank the fire chiefs, medical directors, and municipal administrators in Ozaukee County for their assistance in providing information, and for patiently answering our questions.

In addition, we wish to acknowledge and thank the municipalities served by the nine fire departments for jointly commissioning and underwriting much of the cost of this research.



FIRST RESPONSE

Addressing fire and emergency medical service challenges in Ozaukee County

March 2021

Report Authors:
Davida Amenta, Researcher
Betsy Mueller, Researcher
Rob Henken, President

TABLE OF CONTENTS

INTRODUCTION

As part of the metro Milwaukee region and home to several burgeoning suburbs, many might assume that Ozaukee County is served by robust fire and emergency medical service operations that rival those of its neighbors in Milwaukee County to the south or Waukesha County to the west. A closer look, however, reveals that is not the case. Relying largely on part-time paid and unpaid volunteers, the fire and rescue departments that serve Ozaukee County all take a comparatively bare-boned and inexpensive approach.

That approach has generally served these communities well over time. Indeed, the dedication of part-time and volunteer staff and the ability of several departments to sustain their operations through fundraising and other creative means have been justifiable sources of community pride. Yet, it is also evident that the traditional approach is now showing severe signs of distress.

These signs began to emerge several years ago but have now intensified in light of the ongoing COVID-19 pandemic. Not only has the coronavirus amplified the importance of having sufficient numbers of well-trained personnel and adequate equipment and capital resources to respond to medical emergencies, but it has also exposed the weaknesses of a staffing model that relies on part-time and volunteer staff who cannot be counted on as heavily to respond to calls given the spread of the virus and the risk it entails.

In this report, at the behest of Ozaukee County's municipal leaders, the Wisconsin Policy Forum explores options that Ozaukee County's municipal governments may wish to consider to collaboratively respond to their growing fire and EMS service delivery challenges. In asking the Forum to analyze such options, Ozaukee County leaders are not alone. Even before the pandemic, efforts to explore enhanced service sharing and cooperation among regional fire and EMS providers were becoming more common in Wisconsin and across the nation.

In the southeast Wisconsin region, the North Shore Fire Department in Milwaukee County has received national recognition as an example of a highly successful consolidated fire department that has seen improved service at a lower cost since its creation in 1995. The South Shore Fire Department in Racine County and Western Lakes Fire District in Waukesha County also have demonstrated the benefits that can accrue from fire and rescue consolidation. Other communities have stopped short of consolidation but have developed detailed mutual and automatic aid agreements among neighboring jurisdictions.

While fire and EMS service sharing may provide opportunities for fiscal savings from economies of scale, the Wisconsin Policy Forum has found that a more compelling rationale is the potential for municipalities to *enhance* service levels and keep up with capital needs on a collaborative basis at a cost that would be far lower than if they attempted to do so individually.

For smaller communities in particular, service sharing or consolidation may offer an opportunity to secure full-time fire and EMS service capacity for a price tag that would not be affordable if pursued independently. Meanwhile, for larger communities facing service expansion demands, such strategies may offer the opportunity to spread the cost of such expansion while providing a higher level of service across a broader geographic area.

Nine fire departments serving Ozaukee County chose to participate in the analysis and are listed as follows:

- Belgium Fire Department (serves both the village and town of Belgium; ambulance service in the village and town of Belgium provided by Fredonia and Port Washington)
- Cedarburg Fire Department (serves both the city and town of Cedarburg)
- Fredonia Fire Department (serves the village of Fredonia, a portion of the town of Fredonia, and a portion of the town of Saukville)
- Grafton Fire Department (serves both the town and village of Grafton)
- Mequon Fire Department
- Port Washington Fire Department (serves both the city and town of Port Washington)
- Saukville Fire Department (serves both the village of Saukville and a portion of the town of Saukville)
- Thiensville Fire Department
- Waubeka Fire Department (serves Waubeka (unincorporated), a portion of the town of Fredonia, and a portion of the town of Saukville)

The analysis was conducted with the input and cooperation of administrators and fire chiefs from each of the participating departments. Elected officials from each of the communities also were briefed at the beginning and midway points of the project. While not endorsing any specific approach, the chiefs from the nine participating departments met or spoke several times with Forum researchers throughout the study process to share information and discuss operational details of various service sharing options.

In the pages that follow, we lay out the results of our analysis. It is important to note that its purpose was not to recommend a specific consolidation approach and implementation plan. Instead, the intent was to develop a range of potential options and provide sufficient fiscal and programmatic analysis to allow decision-makers to determine which (if any) of those options should be considered for more detailed analysis, refinement, and possible implementation.

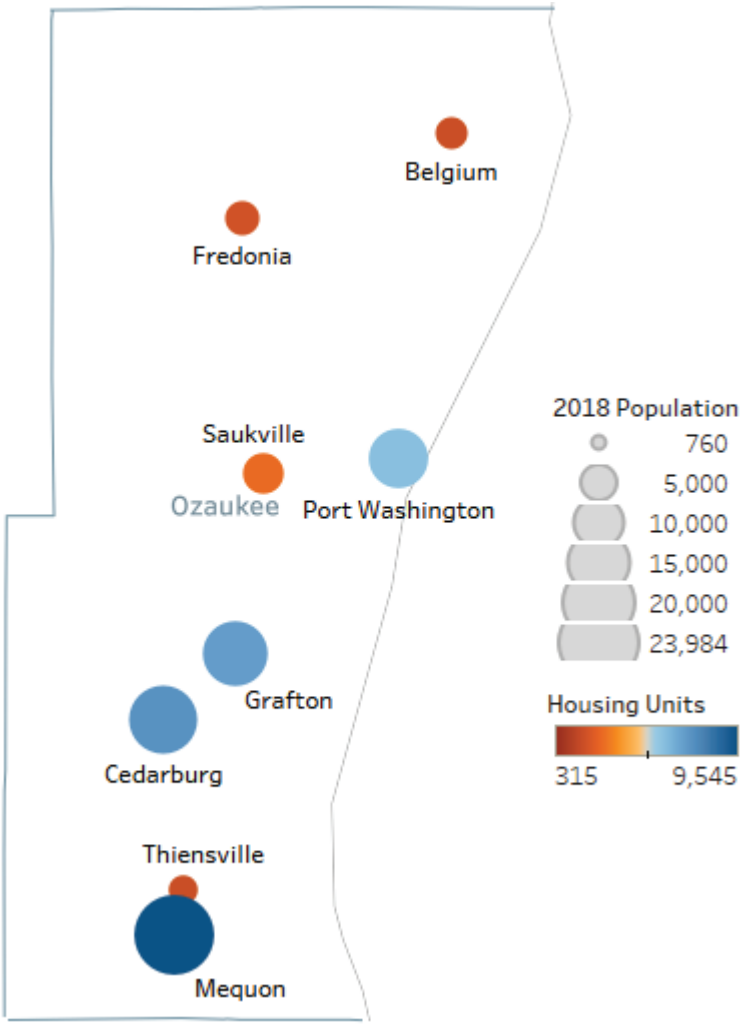
CHARACTERISTICS OF THE PARTICIPATING MUNICIPALITIES

This section gives a brief overview of demographic characteristics of the study participants that are relevant to fire and EMS services.

General Demographic Characteristics

Map 1 gives a flavor of fire protection and EMS needs in Ozaukee County by showing the populations and housing units in the cities, villages, and towns served by the nine departments.[1] Ozaukee County also contains several unincorporated communities as well as a "census defined place" (Waubeka). In this section, we combine the populations of logical groupings of cities and towns (e.g. city and town of Cedarburg) or towns and villages (e.g. village and town of Grafton) where appropriate.

Map 1: Population and housing units



The three largest population centers – Mequon, Cedarburg, and Grafton – are located in the southern half of Ozaukee County, while the fourth (Port Washington) abuts Lake Michigan in the middle of the county. The northern third of the county is characterized mainly by small towns surrounded by largely agricultural land uses.

[1] The villages of Bayside (Milwaukee County) and Newburg (Washington County) also extend into Ozaukee County but because most of their population resides in the other counties they are not included in our analysis. Waubeka is a census recognized place within the town of Fredonia. Where data are available, we show Waubeka separately in this report.

Table 1 shows population trends between 2010 and 2020. Most Ozaukee municipalities had relatively stable populations during this time, with an overall population increase of just under 5%. The majority of the population growth since 2010 has been concentrated in the southern half of Ozaukee County.

Table 1: Population, 2010 versus 2020

Municipality	2010	2020	% Change
Belgium T&V	3,660	3,882	6.1%
Cedarburg T&C	17,172	18,153	5.7%
Fredonia T&V	4,332	4,385	1.2%
Grafton T&V	15,512	16,216	4.5%
Mequon C	23,132	24,806	7.2%
Port Washington T&C	12,893	13,601	5.5%
Saukville T&V	6,273	6,239	-0.5%
Thiensville V	3,235	3,164	-2.2%
Total	**86,209**	**90,446**	**4.9%**

Sources: 2010 US Census data, 2020 Final Population Estimates, State of Wisconsin Department of Administration

As shown in **Table 2**, the Wisconsin Department of Administration projects slower growth overall in Ozaukee County between 2020 and 2040 at 4.2%, although It's important to note that these projections were prepared in 2013. New projections that incorporate the 2020 census numbers may suggest a different growth trend. Interestingly, the southern cities referenced above account for only 51% of projected growth to 2040. In other words, population growth is projected to extend into exurban areas in northern Ozaukee County.

Table 2: Population projections, 2020 to 2040

Municipality	2020	2040 Projection	% Change
Belgium T&V	3,882	4,150	6.9%
Cedarburg T&C	18,153	18,405	1.4%
Fredonia T&V	4,385	4,745	8.2%
Grafton T&V	16,216	17,275	6.5%
Mequon C	24,806	25,510	2.8%
Port Washington T&C	13,601	14,090	3.6%
Saukville T&V	6,239	6,945	11.3%
Thiensville V	3,164	3,080	-2.7%
Total	**90,446**	**94,200**	**4.2%**

Source: State of Wisconsin Department of Administration, 2020 Final Population Estimates and Future Population Projections

Because the highest users of EMS services often are people over the age of 65, **Table 3** shows the senior populations for each community. Mequon and Thiensville have relatively high senior citizen populations, at 23% and 22% respectively. In general, communities with higher shares of seniors are clustered in the southern half of the county, while communities in the northern half have lower shares. Waubeka is the exception, with senior citizens comprising 18% of its population.

Table 3: Median age and population age 65+

Municipality served	2018 Total Population	Population 65+	% 65+
Belgium	3,863	574	15%
Cedarburg	17,427	3,043	17%
Fredonia	4,423	644	15%
Grafton	15,769	2,829	18%
Mequon	23,984	5,619	23%
Port Washington	13,250	2,100	16%
Saukville	6,227	909	15%
Thiensville	3,182	690	22%
Waubeka	760	139	18%

Source: US Census American Community Survey Age and Sex, 2018 5 YR Estimate

Table 4 shows population projections for persons 65 years old and older for all of Ozaukee County. The senior population is projected to increase by nearly 34% between 2020 and 2040 countywide.

Table 4: County age 65+ projections

Year	Population
2020	18,395
2025	21,675
2030	24,075
2035	25,020
2040	24,630
% Change 2020-2040	**33.9%**

Source: WI DOA County Age-Sex Population Projections 2010-2040 (2013)

Fire departments report that senior housing facilities can account for a large proportion of EMS calls. Also, high numbers of senior facilities may contribute to the higher senior populations seen in some Ozaukee County municipalities. **Table 5** details the number of senior housing facilities, including residential care facilities and apartment complexes, in each of the municipalities. Cedarburg (city and town combined) has the highest number of nursing homes and associated beds, but Mequon and Port Washington (city and town combined) have the largest number of other senior residences.

Table 5: Senior facilities by municipality served

Municipality served	Nursing Homes	Other Senior Residences+	Total Beds*
Belgium	0	2	N/A
Cedarburg	2	8	208
Fredonia	0	5	N/A
Grafton	0	12	N/A
Mequon	1	22	47
Port Washington	1	20	74
Saukville	0	4	N/A
Thiensville	0	3	N/A

+Includes Adult Family Homes, Community Based Residential Facilities, and Residential Care Apartment Complexes
*Beds available for nursing homes only
Source: WI DHS, MDH

Relevant Housing and Other Characteristics

The prevalence of higher-density housing, such as apartment buildings, also impacts how fire protection services are organized and may dictate the types of apparatus that may be required in each department. **Table 6** shows the number of residential buildings in each community that exceed both three and 20 units. Thiensville has a considerable number of buildings with three or more units, making up 42% of its total housing stock. Grafton (town and village combined) has the next highest share at 24.7%.

Table 6: Housing units by municipality served

Municipality served	Estimated Total Units	3 to 19 units	20+ units	Total 3+	3+ Units as a % of Total
Belgium	1,608	79	0	79	4.9%
Cedarburg	7,262	802	579	1,381	19.0%
Fredonia	1,804	213	7	220	12.2%
Grafton	6,877	1,220	482	1,702	24.7%
Mequon	9,545	548	512	1,060	11.1%
Port Washington	5,807	920	400	1,320	22.7%
Saukville	2,634	426	91	517	19.6%
Thiensville	1,593	586	83	669	42.0%
Waubeka	315	5	0	5	1.6%

Source: US Census: American Community Survey, House Characteristics - Units in Structure 5 - Year Estimates 2018

Larger commercial buildings also can present unique challenges in terms of fire protection. Moreover, the number of commercial establishments may impact fire department staffing if they significantly increase the number of non-residents who frequent different communities for work,

shopping, or entertainment. **Table 7** shows commercial property value as a percentage of each community's total assessed value to give a sense of the relative presence of commercial properties in each municipality. Mequon has the highest amount of commercial assessed value at $688 million, followed by Grafton ($422 million for town and village combined), and Cedarburg ($227 million for city and town combined). In terms of the proportion of all assessed value, Thiensville and Grafton lead with both having commercial values comprising 20% or more of their total assessed value.

Table 7: Commercial value by municipality served

Municipality served	Total Equalized Value	Commercial %	Per Capita EV
Belgium	$473,902,900	6.7%	$122,677
Cedarburg	$2,260,676,400	10.1%	$129,723
Fredonia	$404,292,500	8.6%	$91,407
Grafton	$2,035,153,800	20.8%	$129,060
Mequon	$4,797,857,000	14.3%	$200,044
Port Washington	$1,271,581,800	15.0%	$95,968
Saukville	$668,926,800	18.4%	$107,424
Thiensville	$354,595,400	24.1%	$111,438

Source: Wisconsin DOR Equalized Value 2018, US Census Population Estimates 2018

The table also shows per capita equalized value, which can be an indicator of ability to pay for public services such as fire and EMS protection. Mequon is the only municipality with a per capita value over $200,000, while the others range from $91,407 (town and village of Fredonia) to $129,723 (city and town of Cedarburg). While the relative percentage of commercial property value can contribute to a higher per capita equalized value, both Grafton and Thiensville have higher percentages of commercial value than Mequon. It can be concluded, therefore, that the markedly higher overall per capita value in Mequon is attributed to higher housing values.

The value of commercial properties in all municipalities has increased over the last decade. Mequon leads the pack with a 46% increase, followed by Grafton (44% for town and village combined) and Cedarburg (39% for city and town combined). This may be an indicator not only of rising property values, but also of a greater number of commercial properties, which can produce greater call volumes (particularly during the day) and a need for enhanced fire and EMS preparedness.

Table 8: Change in commercial equalized value, 2010 to 2020

Municipality served	Commercial EV 2010	Commercial EV 2020	% Change
Belgium	$32,725,000	$35,924,700	10%
Cedarburg	$215,031,800	$298,552,200	39%
Fredonia	$33,583,200	$40,088,400	19%
Grafton	$332,817,000	$478,641,800	44%
Mequon	$549,393,500	$801,490,300	46%
Port Washington	$183,525,700	$216,955,300	18%
Saukville	$127,176,700	$144,129,900	13%
Thiensville	$75,882,900	$88,838,300	17%

Source: Wisconsin DOR, https://www.revenue.wi.gov/Pages/SLF/EqualizedValue.aspx

Summary

This brief review of demographic and other indicators shows that unlike some metro regions that possess a dominant central city complemented by surrounding suburbs and outlying rural areas, Ozaukee County has four relatively small cities complemented by smaller villages, towns, and unincorporated areas. If any of the individual municipalities could be characterized as the population and commercial center of Ozaukee County it would be Mequon, which has the largest population and which possesses equalized property values that are more than double the next highest (Cedarburg). Mequon also is home to Concordia University (with an annual enrollment of close to 8,000 students).

Since 2010, the southern half of the county has experienced the bulk of population growth and commercial development. This may change in the near future however, as the population projections seem to indicate higher growth rates in the northern half of the county.

While Ozaukee County's population is growing, the manageable projected pace of population growth is not likely to be a major consideration in terms of future fire and EMS services. However, growing commercialization in Mequon and Grafton, the substantial number of senior living and care facilities in some municipalities, and the overall projected growth of the senior population may be important factors as municipal leaders consider future service demands.

Finally, the mix of suburban communities in the southern part of the study area and smaller rural communities in the north is an indicator of varied fire protection and EMS needs. As we will discuss in later sections of this report, this variation may create both opportunities and challenges for future collaboration with regard to fire and EMS operations.

OVERVIEW OF FIRE DEPARTMENTS

Ozaukee County is served by nine fire departments that are dispersed geographically throughout the county. As shown in **Table 9**,[2] there are differences among the nine in terms of governance, staffing models, and EMS licenses. For example, seven of the nine are traditional municipal departments that are part of larger city or village governments, while two that serve the small communities of Belgium and Waubeka operate as independent districts.

Table 9: Summary of Ozaukee County fire department characteristics

Name	Type	Staffing Model	ALS License
Mequon Fire Department	Municipal	Paid-on-call	Paramedic
Grafton Fire Department	Municipal	Combination	Paramedic
Port Washington Fire Department	Municipal	Paid-on-call	Paramedic
Cedarburg Fire Department*	Municipal	Volunteer/POC	AEMT
Thiensville Fire Department	Municipal	Paid-on-call	Paramedic
Saukville Fire Department	Municipal	Paid-on-call	AEMT
Fredonia Fire Department	Municipal	Paid-on-call	AEMT
Belgium Fire Department	Independent District	Volunteer	EMR
Waubeka Fire Department	Independent District	Volunteer	AEMT

* Cedarburg only pays part-time responders for ambulance transports but not for other calls.

There are very few full-time fire/EMS employees in Ozaukee County, with each of the departments instead making extensive use of part-time or volunteer staff. Only one department, the Grafton FD, could be considered a combination department, meaning that it staffs its station with both full-time firefighter/emergency medical technicians (EMTs) and paid-on-call (POC) or hourly employees.[3] The Mequon FD also is moving to that model in 2021 with the addition of three full-time

EMS LICENSE LEVELS

Emergency Medical Responder - EMRs are trained to provide non-invasive first aid. This includes clearing airways manually, CPR, controlling bleeding, and taking vital signs. EMRs are trained in the use of portable defibrillator devices.

Emergency Medical Technician-Basic - in addition to all of the skills of an EMR, EMT-Bs are trained to perform more invasive medical skills such as tracheotomies, and in the use of tourniquets and cervical collars. They are also able to administer oxygen and can provide more types of medications, including Narcan for opioid overdoses.

Advanced EMT - all of the skills of EMT-B, and in addition they can start an IV and can administer a wider range of medications.

Paramedic - all of the skills of Advanced EMT with the addition of invasive procedures such as using a needle for chest decompression and intubation. Paramedics are also able to administer the widest variety of medications.

[2] For this table and subsequent tables in this section, we order the communities based on annual fire department expenditures from highest to lowest.

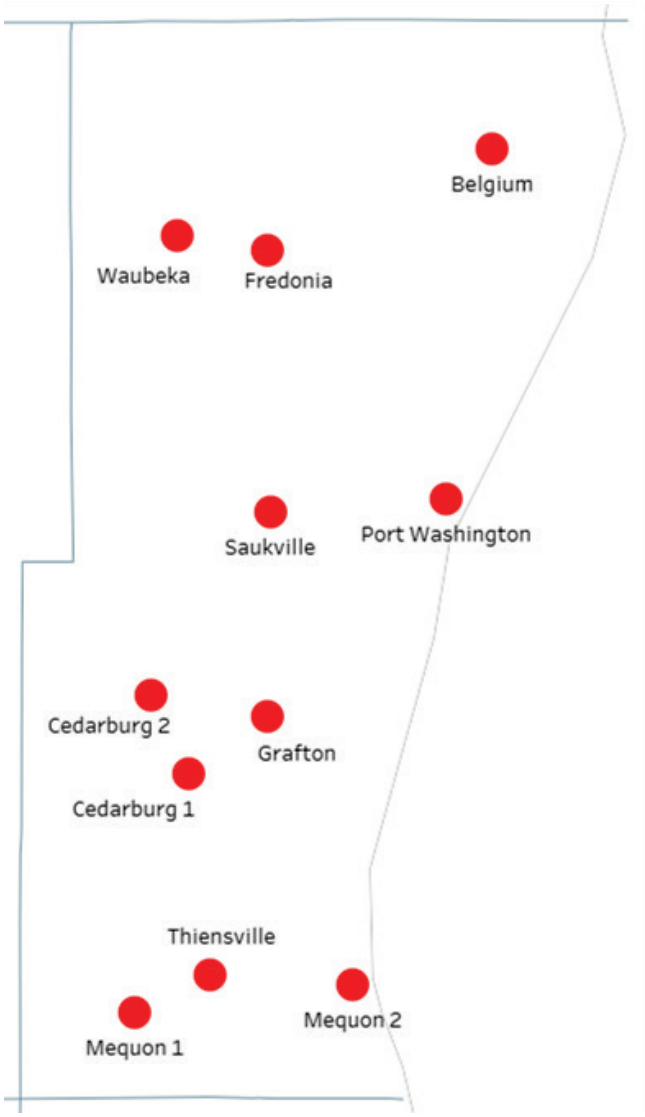
[3] Hourly employees can either serve as paid-on-call (POC), which means they are called in from their home or workplace when needed for a response or other duties and are paid on an hourly basis; paid-on-premise (POP), which means they are part-time, hourly employees but work out of a station as part of a regular shift; or on an "on call" basis, which means they are paid based on the time they are available to respond even when they are at home or at work.

positions in its adopted budget. While most of the departments rely on a POC staffing model, three of the departments are true volunteer departments in which the chief is generally the only paid employee.

All of the Ozaukee County departments provide both fire and EMS and offer ambulance transport, with the exception of Belgium, which contracts with Fredonia and Port Washington for transport. In terms of EMS license levels (see box on previous page), almost all of the departments provide Advanced Life Support (ALS) services, which may include either an advanced EMT (AEMT) or paramedic level of service. Acquiring an AEMT or paramedic license requires a significant investment in training and licensing for individual employees that has increased over time. Given that most Ozaukee County responders are contract or hourly employees, the number of them with ALS certification is impressive.

Paramedic intercept services are another important aspect of EMS service in Ozaukee County. Such services involve the use of paramedics to "intercept" an ambulance on its way to the hospital to provide life-saving services to the patient prior to arrival. Paramedic intercept is provided by Thiensville and Port Washington to several of the departments that are not licensed at the paramedic level.

Map 2: Ozaukee County fire stations



Map 2 shows the location of the 11 fire stations used by the nine departments. Mequon and Cedarburg have two stations apiece,[4] while each of the other departments operates one. Stations are generally well separated from each other, allowing for efficient geographic coverage. An exception is the Thiensville and Mequon 1 stations, which are in close proximity. While Ozaukee County is bisected by the I-43 freeway and the Milwaukee River, chiefs did not report any concerns with geographical barriers in terms of response time other than during busy summer seasons and festivals.

Table 10 compares the nine departments in terms of staffing, showing large variations in both total staffing, which we show as total full-time equivalent (FTE) employees; and in the number of active members on POC or volunteer rosters. FTEs are calculated based on paid hours (both for salaried and hourly employees); the calculation does not account for volunteer hours and thus should not be viewed as an indicator of departmental activity or commitment. It is not surprising that the Mequon,

[4] Cedarburg operates out of one station. Its second station is a satellite that is generally only used during peak times.

Grafton, and Port Washington departments have considerably higher FTE levels than the other departments in light of the larger size of the populations they serve. Mequon's high FTE calculation may also reflect its more extensive use and payment of POC staff for non-response tasks like vehicle inspections. Cedarburg's low number of FTEs – despite having the second largest population of people served – can be explained by its heavy use of unpaid volunteers.

Table 10: Department staffing*

	Total FTEs	POC Roster
Mequon Fire Department	28.8	60
Grafton Fire Department	15.0	65
Port Washington Fire Department	11.2	47
Cedarburg Fire Department	4.9	54
Thiensville Fire Department**	5.4	18
Saukville Fire Department	6.0	27
Fredonia Fire Department	2.4	45
Belgium Fire Department	NA	28
Waubeka Fire Department	NA	38

*FTEs are based on 2019 actual budgets and payroll unless significant changes were made to staffing levels or budgets since that time, in which case we did update FTE calculations. Grafton and Thiensville calculations reflect 2020 budgets and Mequon and Cedarburg numbers are updated to reflect 2021 budgets.
** Thiensville's FTE total does not include over 27,000 hours of unpaid on-call time. Thiensville's POC employees are required to be on call for 72 hours/month.

The size of the POC/volunteer roster is important because if a department's roster is too small, then the workload is divided among fewer people, which can lead to burnout and turnover. Also, a large roster can be important for response to a structure fire or other large incident, as there are more individuals available to staff the response (national standards call for a force of 16 firefighters to safely address a structure fire). However, **just as important as the size of the roster is the number of participants who regularly respond to calls and who are available during daytime hours**, when call volumes tend to be highest. Several chiefs described escalating challenges with regard to both of those issues, which have also intensified during the COVID-19 pandemic because the full-time employers of some POC staff do not want them to take the risk of becoming infected through their part-time fire department duties.

There is no "right" or "wrong" staffing model, and each of the staffing models employed in Ozaukee County may be perfectly suited to a particular community based on the needs and expectations of its residents. Whether staffed with full-time or part-time employees or volunteers, each of these agencies provides first response to emergency medical calls under medical direction. Each of the fire departments also uses modern equipment to suppress all types of fires and provides regular training in both fire and EMS protocols.

Service Characteristics, Equipment, and Budgets

In this section, we provide a more detailed look at the services provided by Ozaukee County fire departments by reviewing call volumes, response times, operating frameworks, apparatus, and departmental expenditures. These details provide important insights into the similarities and differences between various departments that may suggest opportunities or barriers to enhanced service sharing. They also reveal weaknesses or strengths that may impact future decision-making on the need for capacity-building and collaboration.

Service Demand

Table 11 shows total 2019 calls for service. EMS calls account for 80% of total calls in Ozaukee County, which is somewhat high in comparison with other regions we have studied recently.[5] However, it should be noted that improvements in fire safety and technology have reduced the incidence of fires over the past few decades and EMS has become a larger focus for fire and rescue departments throughout the country.

The Mequon, Port Washington, and Grafton departments have the highest activity levels. That is consistent with their larger populations and numbers of FTEs, as shown previously.

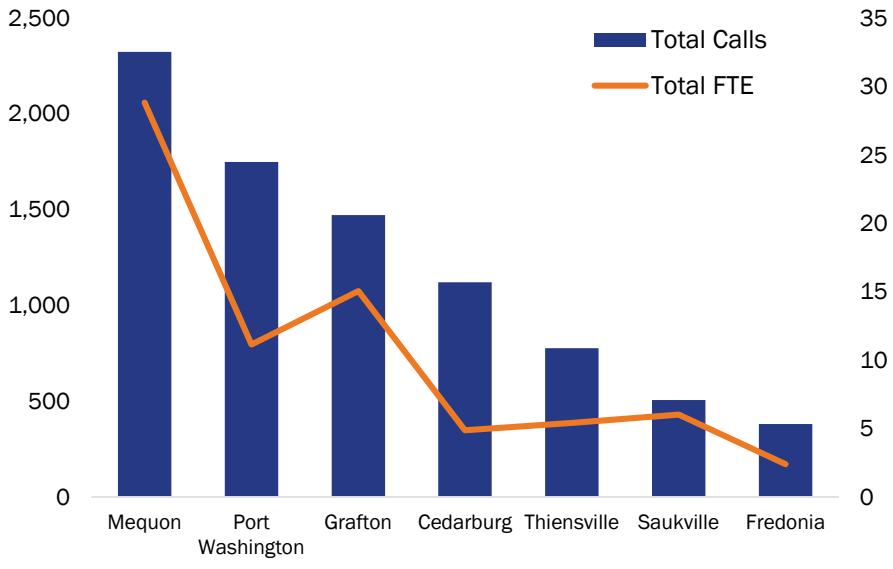
Table 11: 2019 calls for service[6]

	Total Calls	EMS	EMS Calls/ Day
Mequon Fire Department	2,323	1,834	5.0
Grafton Fire Department	1,471	1,179	3.2
Port Washington Fire Department	1,748	1,460	4.0
Cedarburg Fire Department	1,162	906	2.5
Thiensville Fire Department	777	626	1.7
Saukville Fire Department	506	447	1.2
Fredonia Fire Department	381	325	0.9
Belgium Fire Department	229	196	0.5
Waubeka Fire Department	98	64	0.2

The number of calls per day helps explain the range of different staffing models across jurisdictions. In areas with fewer than two calls per day, there may not be a financial justification for staffing a shift of two EMTs or an entire fire crew 24 hours per day; consequently, a POC model may be reasonable and appropriate. Similarly, while suburban residents may expect an ambulance to arrive within five or six minutes, residents of rural areas may recognize that calls are infrequent and may find lengthier response times from a POC framework more acceptable.

As call volumes increase, however, a POC staffing framework may become problematic, particularly as rosters shrink and simultaneous calls become more frequent. In response, some departments may consider staffing regular shifts using either full-time personnel or hourly paid-on-premise (POP) employees to avoid lengthy "turnout" times and ensure a "ready response."

Chart 1: Calls for service vs. FTEs



[5] For example, La Crosse County fire department data show that EMS calls comprise 73% of total calls, while the North Shore Fire Department in Milwaukee County reports that 74% of its total calls in 2019 were for EMS.
[6] Calls for service may include duplications when more than one department responds to a call. Also, at the time that we were compiling data for this report, 2019 was the last full year for which call data were available. We have heard from one chief that his department's call volume increased significantly in 2020 and that may be the case for others.

Chart 1 on the previous page provides a more granular perspective on staffing levels in Ozaukee County by comparing 2019 calls for service with FTEs. In rough terms, this gives an indication of how demand for service compares with personnel available to meet demand. Although they have different staffing models, Mequon, Saukville, and Grafton (to a lesser extent) have similar ratios of FTEs to call volumes. Port Washington, in contrast, had the second highest number of calls but a relatively low number of FTEs. Again, as in the earlier table, Cedarburg's substantial divergence between call volume and FTEs reflects its operation as a largely volunteer department.

Table 12 shows the change in calls for service over the past five years and indicates that call volumes in Ozaukee County are growing, with increases exceeding 30% in Fredonia, Port Washington, Saukville, and Grafton. **The growth in calls for service is an important development that merits consideration by policymakers.**

Table 12: Calls for service trends, 2015 to 2019

	2015	2019	% Change
Mequon Fire Department	1,917	2,323	21.2%
Grafton Fire Department	1,131	1,471	30.1%
Port Washington Fire Department	1,334	1,748	31.0%
Cedarburg Fire Department	1,045	1,162	13.1%
Thiensville Fire Department	677	777	14.8%
Saukville Fire Department	378	506	33.9%
Fredonia Fire Department	284	381	34.2%
Belgium Fire Department	190	229	20.5%
Waubeka Fire Department	103	98	-4.9%
Total	7,059	8,695	23.5%

Population growth may account for some of the increase in call volumes, but other factors like employment growth and an aging population may also be contributing factors. As described in the previous section, the addition of a single nursing home or senior housing complex can substantially increase calls for service. In fact, the Mequon FD reports that from 2017-2020, more than half of its EMS calls came from citizens above the age of 70. Also, fire chiefs across the state have noted that there is a greater tendency among all population groups to call 911 for minor injuries and to use ambulance transport to hospital emergency rooms for basic health care.

How Departments Respond

While several of the Ozaukee County departments have similar staffing models and FTEs at first glance, our interviews with chiefs revealed that each department has a unique way of managing its response to calls.

For example, one of the more important aspects of response is whether and to what extent departments maintain staff who are stationed physically at the fire house and are ready to immediately respond to a call. These ready-to-respond staff, who we refer to as working "shifts" in this report, can be made up of full-time, salaried employees. Alternatively, they could be part-time staff who are paid at an hourly rate to be on premise (i.e. POP employees) during a specified shift. This form of shift staffing can be in place only for daytime hours, when call volumes are higher.

Departments with lower call volumes may rely on a general page to call in POC staff when a call for service arrives. Some use applications such as "I Am Responding" to gauge the level of available response and possible need for mutual aid.

Obviously, the decision on whether to maintain staff on shifts at station locations or rely instead on a POC model impacts both response times and cost. There are also several options that bridge these two response models and that are used by Ozaukee County departments, including:

Scheduled on-call staff. Under this model, POC staff are scheduled for specific time periods when they are to be ready to respond to calls but they maintain that schedule at their jobs or homes, and not at the station. This approach has the benefit of better ensuring a sufficient response from POC staff, but it still requires POC responders to travel to the station, which lengthens response times.

On-call staff that respond directly from home. These responders take home a department vehicle with EMS supplies. This allows for a paramedic intercept or immediate response, but it may require a backup ambulance response as well, both to provide adequate personnel at the scene and for ambulance transport. In the case of a fire, a chief may respond from home to assess the situation and the potential need for mutual aid.

Use of other municipal employees. Some departments rely on other municipal employees, such as from their public works department, who are trained as drivers or firefighter/EMS responders. This approach provides daytime coverage and quicker response times (assuming that the employee's municipal workplace is near the fire station).

Chief or deputy chief response. In most Ozaukee County fire departments, the chief or deputy/assistant chief work 8-hour day shifts but respond to calls if needed on a 24-hour basis. The Cedarburg FD also utilizes its inspector in this manner.

Table 13 breaks down each department's paid staffing and shows the important variations in use of shift staffing versus POC staff.[7] Four of the departments have regularly scheduled shifts at their stations, although only Grafton and Mequon have true 24/7 shifts. Port Washington seeks to staff a full-time paramedic and supplements that with a POP shift from 6 am to 6 pm. Fredonia has one full-time EMT at its station.

Table 13: Paid staffing breakdown by department

	Chief/Admin FTE	Shift FTE	POC FTE	Total FTE
Mequon Fire Department	3.00	7.29	18.52	28.82
Grafton Fire Department	2.50	4.41	8.14	15.04
Port Washington Fire Department	1.31	6.44	3.40	11.15
Cedarburg Fire Department	1.90	1.50	1.47	4.87
Thiensville Fire Department	2.01	0.00	3.40	5.42
Saukville Fire Department	0.50	0.00	5.52	6.02
Fredonia Fire Department	0.00	1.00	1.39	2.39
Belgium Fire Department	0.00	0.00	0.00	NA
Waubeka Fire Department	0.00	0.00	0.00	NA
Total	**11.23**	**20.64**	**41.83**	**73.70**

Notes: The Cedarburg total for Chief/Admin also includes one FTE Inspector. The chief is paid as a part-time employee and he volunteers many additional hours. Also, volunteer hours worked in Waubeka, Belgium, Thiensville, and Cedarburg are not reflected in the table as these are not "paid" FTE hours.

[7] As in **Table 10** earlier in this section, staffing numbers for each department reflect 2019 actual staffing and budgets unless significant changes occurred since that time. In those cases, we updated FTE numbers to reflect actions taken in 2020 and 2021 budgets. Grafton and Thiensville calculations reflect 2020 budgets and Mequon and Cedarburg numbers are updated to reflect 2021 budgets.

Below, we provide an additional brief overview of the response frameworks for each of the Ozaukee County departments.

Mequon

Mequon's 2021 budget created three battalion chief positions who are certified paramedics to ensure that one paramedic is on duty at all times at Station 1. This supplements an existing 24/7 paramedic at Station 2 who is a POP employee. The deputy chief fills in for any vacancies.

In addition to these 24/7 staffed shifts, the chief schedules five additional POC employees. Two of the five are first responders stationed on opposite sides of the city who respond directly to the scene in a department vehicle for an EMS call; two respond to station 1 to staff an ambulance when needed; and the remaining POC employee responds to station 2 to staff an ambulance with the POP paramedic.

Port Washington

Port Washington has a goal of having one paramedic on duty at its station on a 24/7 basis although staffing challenges recently have prevented the department from doing so. This paramedic also acts as a paramedic intercept when needed. To supplement the paramedic shift, Port Washington tries to staff its station from 6 am to 6 pm with a POP employee. In addition, two POC responders are on call and they can either report to the station or respond from home, depending on circumstances.

In general, the Port Washington FD can staff a paramedic ambulance with at least one paramedic and one EMT, although preferred staffing is three on an ambulance. When a second call is received, the chief reports that he is only able to staff a second ambulance about 50% of the time. This not only impacts the department's ability to serve its own jurisdiction, but it also detracts from its ability to provide paramedic service or back-up to neighboring jurisdictions (such as Belgium, with whom it maintains a contract for ambulance transport).

Grafton

Grafton employs three full-time paramedics, in addition to a full-time chief and division chief. With five full-time people, there is at least one individual staffing a shift at the station at all times, and as many as three at certain times. The chief and division chief both respond to calls and can fill in for vacation and other holes in the schedule.

In addition, Grafton has three POP employees scheduled on weekdays, on staggered shifts, until 6 p.m. After 6 p.m., two EMTs and one paramedic are scheduled on call to assist the stationed paramedic from home. On weekends, there are no additional POP shifts at the station. The paramedic on shift is assisted by two EMTs on call from their homes.

Finally, Grafton and Saukville recently reached an agreement under which the Grafton chief is temporarily handling limited managerial and administrative duties for the Saukville FD because of a chief vacancy in Saukville. Whether this will be a lasting agreement or whether it may lead to additional forms of sharing between the two departments is unknown at this time.

Cedarburg

Cedarburg has one salaried full-time inspector who also acts as a fire/EMS lieutenant. The chief is part-time but frequently responds to EMS calls. The chief and inspector handle 98% of EMS calls

during daytime hours. The department also has a volunteer assistant chief who works for the public works department and there are two other DPW employees who can assist on fire calls during the day. Between the inspector and the chief, one or the other is generally in the service area and ready to respond at all times.

The department's 2021 budget includes two additional firefighter/AEMT positions (one is budgeted for one half of the year but is expected to be fully funded in 2022 and beyond). These two positions would be full-time and would be scheduled in combination with existing coverage to provide staff at the station ready to respond to incoming calls for service.

When calls require additional responders, Cedarburg relies on volunteer firefighters/EMTs who generally respond from home. The exception is volunteers who live outside of Cedarburg; these individuals may stay at the station during scheduled on-call hours. Volunteers are on call at night and are organized into duty groups.

The Cedarburg FD relies on Thiensville for paramedic intercept. The chief also notifies the Grafton FD if he is short on staffing for any reason or has simultaneous calls.

Thiensville

The Thiensville deputy chief is the department's only full-time employee. He responds to many paramedic calls and manages the paramedic program. The department also has a part-time paramedic who handles daytime coverage and responds from home. The chief position also is part-time. If either the paramedic or the deputy chief are unavailable, then the department's ability to staff a paramedic response can be challenging. The chief and deputy chief split weekend coverage.

On weekdays, there are two DPW workers who are available to respond to calls. One is a paramedic and the other is a pump operator. Between the deputy chief, paramedic, and the two DPW workers, the department can quickly staff a fire engine.

The chief schedules POC employees to be on call with a minimum staffing of one EMT and one paramedic. He prefers to also schedule a heavy equipment operator driver to be available in case of a fire. POC employees are required to be on call for 72 hours per month. While they are not paid for time that they are scheduled on call, they do receive a bonus when meeting their 72-hour monthly minimum and can earn additional smaller bonuses for additional time.

As described above, Thiensville's paramedic intercept responds frequently to Cedarburg. The department noted that without that relationship, it would not have enough calls for the paramedics to maintain their skills.

Saukville

In Saukville, POC employees are scheduled to provide capacity to staff one ambulance 24/7. The minimum staffing is two people and a third is scheduled if sufficient POC staff are available. Staffing can be a significant problem, especially during days and on weekends. In fact, the interim chief notes that during weekdays, it is not uncommon for the department to be unable to provide any EMS response (thus requiring it to rely on a neighboring department). Saukville also relies on paramedic intercepts from Port Washington, Thiensville, and Grafton. The chief position is part-time and all remaining staff are POC. With regard to fire calls, Saukville issues a general page and averages a response of four to 10 POC firefighters.

Fredonia

The Fredonia Fire Department has one full-time EMT who covers weekdays. All other ambulance staff (drivers and EMTs) are scheduled on a volunteer basis and respond from home for all calls. Fredonia also runs a rescue unit on EMS calls that is staffed by employees who respond to a page. All fire calls receive response on a general page basis.

During the daytime, the department reports that only eight to 10 people are available to respond to a fire call, which is a persistent challenge. At night, the pool of POC employees available to respond to fire calls increases to 18-25 people.

The Fredonia department also has an automatic aid agreement with the Waubeka department, which ensures that both departments respond to fire calls in either jurisdiction.

Belgium

Belgium staffs its EMS response with a general page to its POC employees. The department uses an app ("I Am Responding") that lets it know who is coming and it waits until enough staff are assembled at the station before sending out the rescue vehicle. A minimum of two people may go out on a call but the department prefers to send three. The Belgium FD does not operate an ambulance but instead contracts with Fredonia and Port Washington for transport.

While the department operates as an independent fire district, it uses four public works employees from the village of Belgium who are available to respond to calls. Two of those employees are EMTs and three are fire-certified.

Waubeka

Like Belgium, the Waubeka FD puts out a general page for EMS and fire response. During the day the department generally can send a three-person response because of the availability of some staff whose regular employment is third shift. A few other volunteers also can leave their jobs if necessary to respond. Nighttime responses are easier because there can be double the number of volunteers who are available during the day. As noted above, Waubeka has an automatic aid agreement with Fredonia that supplements fire response.

Response Times

Response times are an important measure of service levels and are influenced significantly by staffing models. They are particularly important in the minority of cases where an ALS response is required. When a patient has suffered a stroke or cardiac event, receiving ALS services in a timely manner may truly be the difference between life and death. In terms of fires, a quicker response time means an enhanced ability to protect life and property.

While response times can be divided into a number of different time segments, for the purposes of this study we consider them in two components:

- Turnout time, or the time between the receipt of a call and when a response is on the road.
- Travel time, or the time to get from the station to the incident.

Tables 14 and 15 show response times by department for EMS and fire calls as provided by the nine departments. It is important to note that there can be differences in how departments measure and report response times, which may make comparisons across agencies somewhat challenging. Data on response times is included here to give a general sense of the level of service, rather than to provide a way to compare one department to another.

When considering EMS response, it is important to take into account both first response and transport of the patient to a hospital if such action is necessary. Some Ozaukee County departments rely on neighboring departments for transport while others rely on neighbors for paramedic intercept. These response times reflect only first response.

Table 14: EMS average response times

	EMS - Average Response Time in Minutes		
	Turnout time	Travel time	Total Response Time
Mequon Fire Department	4.00	5.50	9.50
Grafton Fire Department	3.00	4.00	7.00
Port Washington Fire Department	5.75	3.75	9.50
Cedarburg Fire Department	7.90	3.60	11.50
Thiensville Fire Department	5.19	3.51	8.70
Saukville Fire Department	7.95	4.80	12.75
Fredonia Fire Department*	6.1/6.3	2.3/5.8	8.4/12.1
Belgium Fire Department	5.87	3.03	8.90
Waubeka Fire Department	10.50	3.90	14.40

* For Fredonia, we show response times both for calls within the village and town of Fredonia (the first number) and for ambulance calls to which the department responds in Belgium.

Table 15: Fire average response times

Department	Fire - Average Response Time in Minutes		
	Turnout time	Travel Time	Total Response Time
Mequon Fire Department	4.00	11.00	15.00
Grafton Fire Department	5.00	4.00	9.00
Port Washington Fire Department	5.65	4.15	9.80
Cedarburg Fire Department	5.33	6.42	11.75
Thiensville Fire Department	5.88	5.00	10.88
Saukville Fire Department	7.95	4.80	12.75
Fredonia Fire Department*	5.70	2.50	8.20
Belgium Fire Department	6.20	3.78	9.98
Waubeka Fire Department	9.40	8.40	17.80

* Does not include mutual aid

Given that Grafton and Mequon have 24/7 shift staffing, it is not surprising that those two departments have the lowest turnout times for EMS and fire calls. More rural departments, which rely on a general page and which serve larger geographic areas, have longer turnout times. Travel time, meanwhile, is a reflection of station location and geographic service area.

Turnout times for fire calls generally are longer since they require more people to respond and firefighters need to put on protective clothing and gather more equipment. We assume these times reflect the arrival of the first truck on the scene. That is different from the assembly of an effective response force, which may require 16 firefighters or more for large structure fires and which take increased time to assemble. It is also critical to note that **because none of the departments typically**

have more than two individuals ready to respond from stations at any given point of time, any incident requiring the response or operation of fire apparatus is always challenging.

While readers will wish to gauge whether the response times for the Ozaukee County departments are satisfactory, it is difficult to opine on that question. In terms of EMS, the National Fire Protection Association (NFPA) identifies a first response standard of five minutes or less (from dispatch to arrival on the scene) for 90% of responses for departments that use full-time, career staff. Of course, none of the departments in Ozaukee County exclusively utilize that model, and departments relying on POC staffing would expect to see lengthier average response times.

For further context, the Wisconsin Department of Health Services produced a report showing total and average response times for EMS agencies across the state in 2015. That report indicates that the average EMS response time across all agencies for 2015 (measured as the time from dispatch to arrival on the scene) was 8 minutes and 6 seconds. Also, in 2017, the American Medical Association compiled EMS response times for 485 agencies across the U.S. (totaling 1.8 million 911 transport calls). It found that suburban areas with populations of 2,500 to 50,000 average 7.7 minutes from dispatch to arrival on scene. Rural areas with populations of less than 2,500 average 14.5 minutes.

Finally, as another point of comparison, the North Shore Fire Department – which uses a full-time staffing model – strives to maintain an average total response time of 6:30 or less. According to the department's website, its average through the first three quarters of 2020 was 5:32.

Again, we would emphasize that different staffing models, geographic service areas, and service expectations among different fire departments makes it difficult to use comparisons of their response times or comparisons with statewide or national standards to measure their service quality. Nevertheless, **it is certainly worth noting that with the exception of Grafton, EMS response times for the Ozaukee County departments generally do not measure up well with statewide and national averages and/or standards**.

ISO Ratings

ISO ratings are a widely referenced indicator of fire department service capacity and quality. ISO is the Insurance Services Office, an organization that provides information about property/casualty insurance risk to the insurance industry. The rating system used by the ISO includes items like staffing, equipment/apparatus, geographic distribution of resources, training, and water supply.

Table 16: ISO ratings

	City/Village	Town
Mequon Fire Department	4	
Grafton Fire Department	3	5
Port Washington Fire Department	3	
Cedarburg Fire Department	3	5
Thiensville Fire Department	4	
Saukville Fire Department	3	5
Fredonia Fire Department	3	
Belgium Fire Department	3	6
Waubeka Fire Department	5	

ISO ratings are based on a scale of 1 to 10, with a rating of one indicating superior service capacity, and a rating of 10 indicating failure to meet ISO's minimum criteria. **Table 16** shows that the Ozaukee County departments generally have ISO ratings of 3 or 4. Because a large portion of ISO ratings are based

on water availability, areas that have hydrants (mostly cities and villages) tend to be rated more highly than areas that do not (typically towns). Mequon's rating seems unusually low, but that is because parts of Mequon's service area do not have hydrants. For purposes of comparison, we recently found that only 21% of fire departments in the state have been awarded an ISO rating of four or better. By comparison, NSFD has an ISO rating of 2.

Mutual Aid

While each department typically is able to handle the workload of an average day, multiple calls at one time or a single major incident may require more resources than a single department can muster, which requires them to rely on neighboring departments for "mutual aid" assistance. Mutual aid allows for efficient deployment of resources because departments can staff to their average workload instead of staffing for catastrophic incidents or peak workloads.

Mutual aid can take a few different forms. Wisconsin has a formalized system of mutual aid used by fire departments statewide called the Mutual Aid Box Alarm System (MABAS). Under this system, there are formal structures in place that govern the dispatch of neighboring departments depending on the type of incident.

While MABAS generally is used to respond to major incidents (such as the recent major structure fire at the Cheel restaurant in Thiensville), departments also make frequent use of less formal mutual aid, such as asking neighboring departments to stand by for assistance in case of a second call or to backfill a station when it is empty. As noted above, Waubeka and Fredonia also have an automatic aid agreement, under which both departments are dispatched simultaneously to fire calls in either jurisdiction. It is important to recognize that even the better-staffed Ozaukee County departments do not have sufficient resources to manage a structure fire and that any major incident, including either a multi-vehicle accident or structure fire, would generally require a call for mutual aid.

Ozaukee County's mutual aid protocols and practices were severely tested in 2020, as the COVID-19 pandemic exacerbated POC staffing challenges by further reducing the availability of POC staff. That left some departments unable to respond on some occasions, particularly during the final weeks of the year.

Table 17: Mutual aid provided and received in 2019

	Provided	Received
Mequon Fire Department	8	6
Grafton Fire Department	114	14
Port Washington Fire Department*	139	39
Cedarburg Fire Department	41	43
Thiensville Fire Department*	110	7
Saukville Fire Department	14	38
Fredonia Fire Department	15	7
Belgium Fire Department	11	2
Waubeka Fire Department	12	2
Total	464	158

*The Port Washington FD also provided 296 paramedic intercepts while the Thiensville FD provided 282 paramedic intercepts.

For example, staffing shortages caused Thiensville to be out of service for a few days in November 2020; also, during Christmas week, both Port Washington and Saukville did not have enough staff available at times to provide a response. Generally speaking, Mequon and Grafton were able to cover during these periods, but the need to do so stretched their resources and impacted response times. **Such gaps in service are relatively infrequent (but**

becoming more common) and they point to the fragility of the overall EMS and fire response system in Ozaukee County.

Fortunately, the Ozaukee County departments have strong cooperative working relationships and our discussions with the fire chiefs suggest that mutual aid generally works well in the county. Departments readily respond to mutual aid calls and mutual aid requests generally are balanced between departments. As shown in **Table 17** on the preceding page,[8] the departments collectively reported a total of 192 instances of mutual aid in 2019, though these are not necessarily distinct incidents since more than one department could respond on a mutual aid call to the same incident. Mutual aid responses represented only 2.3% of total calls that year.

Apparatus

Overall, the Ozaukee County fire departments are well supplied with apparatus, as shown in **Table 18**. Certainly, each department has more apparatus than can be staffed at any one time, and some have faced increasing difficulty assembling a crew to send out even one vehicle. For example, there are 21 total EMS response vehicles, including ambulances, medic first response cars, and rescue squads, and only 19 calls per day throughout the county. Several chiefs did confirm that the region may have excess apparatus, although some caution that when staffing is limited, having the right piece of apparatus can affect the success of the response.

Table 18: Fire department apparatus*

	Tender	Engine	Brush Rig	Ladder	Quint	Rescue Squad	Ambulance	Command	Medic 1st Response
Mequon Fire Department	2	3	1	1	1		3	1	2
Grafton Fire Department		4	1	1			2	1	1
Port Washington Fire Dept	1	4	1	1		1	2	1	1
Cedarburg Fire Department	1	3	2	1		1	2	1	
Thiensville Fire Department		2			1		2	1	
Fredonia Fire Department	1	2	1	1			1	1	
Belgium Fire Department	1	3	1			1		1	
Saukville Fire Department		5	1			1	2		
Waubeka Fire Department	1	2	1				1	1	
Total	7	28	9	5	2	4	15	8	4

* See **Appendix B** for a description of the various types of fire department apparatus.

Departmental Operating Budgets

Table 19 shows 2019 total operating expenditures, revenues (other than property tax), and net expenditures for the nine Ozaukee County departments. It is noteworthy that more than 75% of expenses in Port Washington and Cedarburg are supported by revenues, while the totals for several other departments exceed 40%. The Belgium FD has the lowest revenue offset percentage because it does not provide ambulance transport (its revenue comes from the state's "2% Fire Dues Payments Program," which is also a source of revenue for other departments).

Overall, we observe that the percentage of expenditures supported by outside revenues is higher for most Ozaukee County departments than for departments we have analyzed in our other studies. For

[8] We suspect there are differences in the ways departments compile and tabulate their mutual aid numbers; consequently, this table should be viewed as illustrative but not definitive.

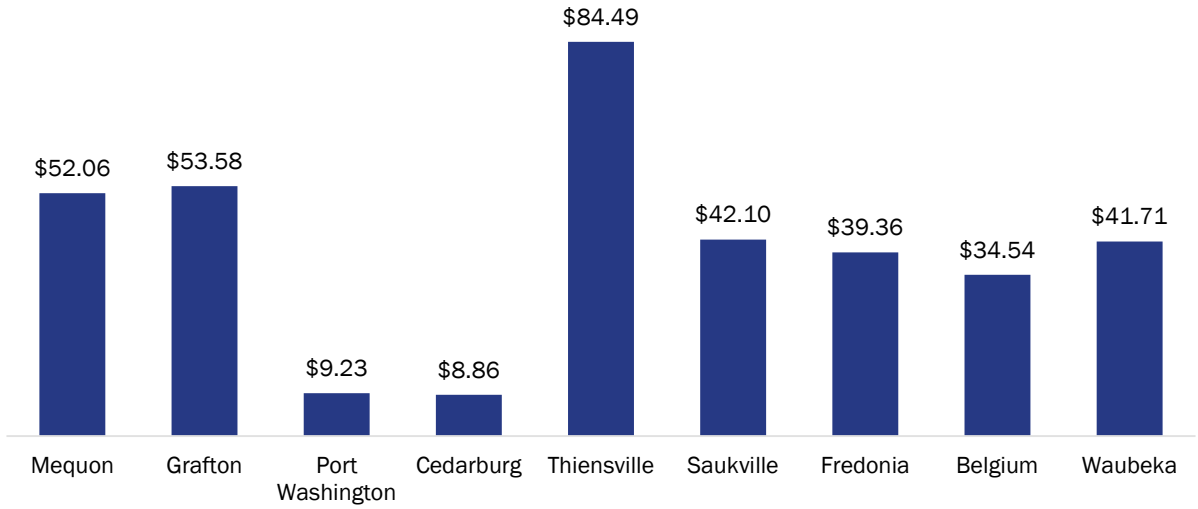
example, the NSFD had revenues in 2019 of $2.8 million, which represented only 18.3% of its expenditures. It is important to recognize that these higher percentages are not attributed necessarily to the ability of Ozaukee departments to generate unusually high levels of revenues, but instead are more likely attributed to our finding that Ozaukee County departments generally spend less per capita than peer communities (see **Chart 3** on the following page), which allows revenues to offset a higher percentage of expenditures.

Table 19: 2019 departmental operating expenditures, revenues, and net expenditures

	Expenditures	Revenues	Net Expenditures	Revenue Offset
Mequon Fire Department	$2,287,392	$995,900	$1,291,492	43.5%
Grafton Fire Department	$1,334,570	$465,671	$868,899	34.9%
Port Washington Fire Department	$763,115	$632,300	$130,815	82.9%
Cedarburg Fire Department	$637,084	$476,225	$160,859	74.8%
Thiensville Fire Department	$452,334	$185,000	$267,334	40.9%
Saukville Fire Department	$420,985	$185,051	$235,934	44.0%
Fredonia Fire Department	$364,811	$127,586	$237,225	35.0%
Belgium Fire Department	$150,701	$16,621	$134,080	11.0%
Waubeka Fire Department	$128,313	$42,270	$86,043	32.9%
Total	**$6,539,305**	**$3,126,624**	**$3,412,681**	**47.8%**

Chart 2 shows *net* operating expenditures by department on a per capita basis. This perspective indicates there is wide variation between the Ozaukee County departments in the costs borne by taxpayers. Some consistency does exist in the northern part of the county between the departments in Waubeka, Belgium, Saukville, and Fredonia, which is linked to their similar staffing and response models. Similarly, Mequon and Grafton, the two departments that make greatest use of full-time staff, have similar net per capita expenditure levels. Generally speaking, smaller communities will tend to have higher per capita costs because certain costs incurred by all departments, such as the cost of maintaining and replacing apparatus, are spread over a smaller population.

Chart 2: 2019 net department operating expenditures per capita

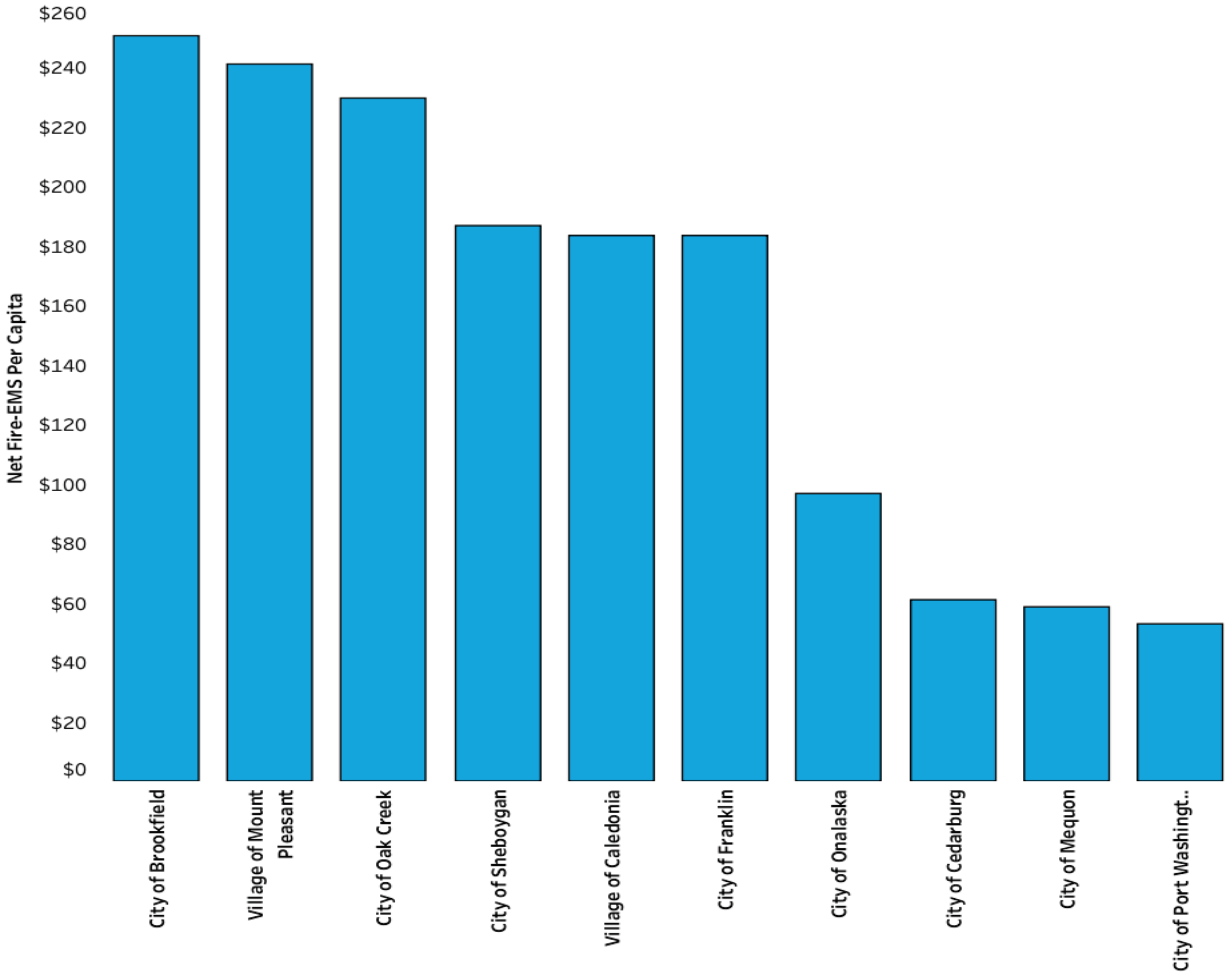


Note: Per capita expenses are based on each department's service population, which differs from municipal populations noted in the previous section. See **Appendix A** for details on how we calculated service populations.

Also, it should be noted that Thiensville's per capita expense is high because of its relatively small population (3,164 residents) and the fact that its service model includes paramedic intercept services to surrounding municipalities. The village's per capita EMS calls are also relatively high, which is similarly a reflection of paramedic intercept services.

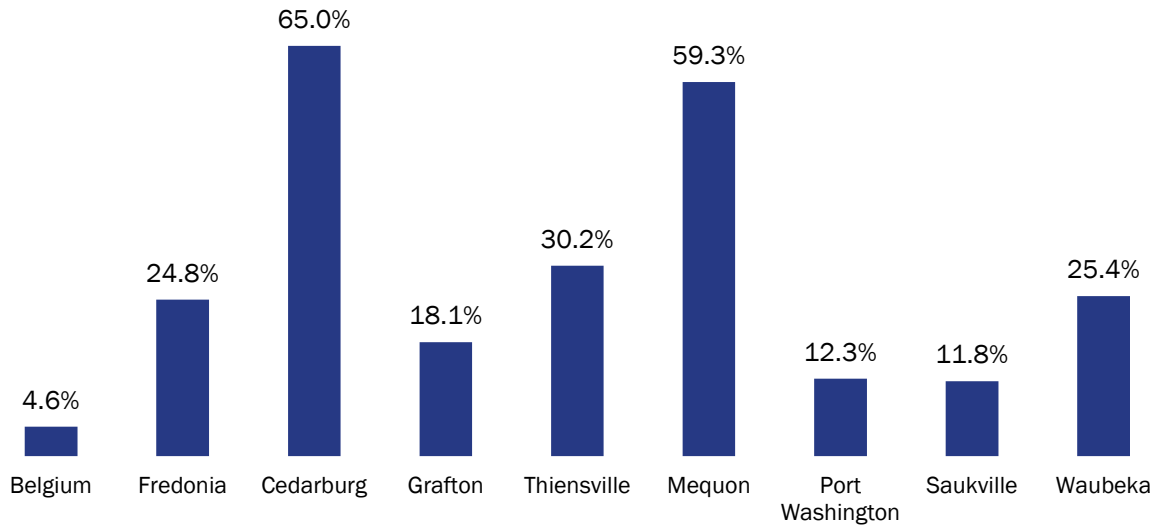
Overall, we observe that per capita fire and EMS spending levels in the Ozaukee County communities are considerably lower than those we have seen in other counties where we have conducted fire and EMS service sharing studies, including Milwaukee, Racine, and La Crosse counties. To highlight that observation, **Chart 3** compares 2018 per capita fire and EMS spending in the three Ozaukee County cities with similarly-sized cities and villages in those three counties.[9] We also added the cities of Brookfield and Sheboygan given their proximity and similar demographics to the Ozaukee County cities. As shown in the chart, spending levels in the Ozaukee County communities are lower than each of the others by a relatively wide margin, largely because the others use either a full-time staffing model or a relatively equal mix of full-time and part-time staff.

Chart 3: 2018 per capita fire and EMS spending for Ozaukee County cities vs. peer municipalities



[9] Our desire to provide a comparative perspective required us to use a set of expenditure data that is reported to the Wisconsin Department of Revenue, which is different from the expenditure data we use in our analysis and is not provided "net" of ambulance revenues. Also, the latest data available from DOR are from 2018.

Chart 4: Percentage change in operating expenditures since 2016



While Ozaukee County municipalities appear to be spending less than peers for fire/EMS services, their spending amounts are on the rise, as shown in **Chart 4**. In fact, spending across all nine departments has increased substantially in most departments since 2016.[10] The three additional full-time positions added by Mequon in 2021 are a primary reason why its spending has increased by $851,000 over 2016 spending levels. Grafton and Cedarburg have also substantially increased spending with increases of more than $200,000; and Thiensville and Fredonia, although adding lower dollar amounts, also have increased spending by 30% and 25% respectively. These increased investments in service exceed both inflation and the increase in call volumes.

Finally, **Table 20** breaks down departmental expenditure budgets into the categories of salaries, benefits, and "other." It is notable that the "other" category represents almost 34% of total expenses across the nine

Table 20: Breakdown of operating budgets by expenditure category[11]

	Salaries	Benefits	Other	Total
Mequon Fire Department	1,606,241	375,142	306,009	2,287,392
Grafton Fire Department	638,927	119,447	576,196	1,334,570
Port Washington Fire Department	489,375	94,356	179,384	763,115
Cedarburg Fire Department	231,094	131,522	274,468	637,084
Thiensville Fire Department	254,727	43,712	153,895	452,334
Saukville Fire Department	228,922	36,597	155,466	420,985
Fredonia Fire Department	91,094	14,092	259,625	364,811
Belgium Fire Department	NA	16,346	134,355	150,701
Waubeka Fire Department	NA	NA	128,313	128,313
Total	3,540,380	831,214	2,167,711	6,539,305

[10] In this chart and **Table 20** we generally use actual expenditure amounts for 2019 (the latest year available when we launched the study), but we did update to budgeted numbers for those communities that adopted substantial spending increases since that time. Consequently, expenditure amounts for Mequon and Cedarburg reflect 2021 budgets and for Grafton and Thiensville they reflect 2020 budgets.

[11] Benefit amounts cited for departments that do not employ any or many full-time staff may be attributed to their participation in the state's Service Award Program, which is a tax-deferred benefit program to assist municipalities in retaining volunteer fire fighters, first responders, and EMTs.

departments. This category includes costs such as repair and maintenance, utilities, fuel, medical supplies, hydrant rental fees, and insurance but it varies quite a bit between departments. For example, hydrant rental fees[12] are a high-cost item in the budgets of Fredonia and Grafton ($148,000 and $216,000 respectively), but this cost is not present in any of the other departmental budgets (though some may reimburse municipalities for water usage).

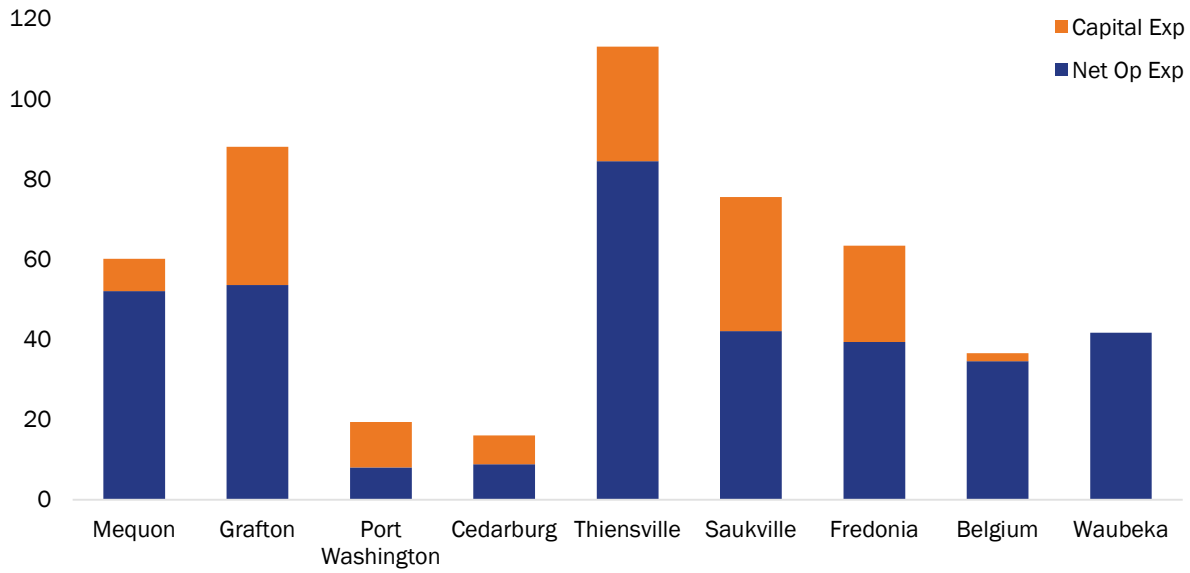
Departmental Capital Budgets

Capital expenditures are another important cost to consider when evaluating fire and EMS services. Fire response, in particular, requires expensive apparatus even for the smallest departments, much of which is specialized for particular types of incidents. Capital budgets also include station repairs or replacement (but not minor maintenance), and they often are financed with general obligation bonds or other forms of borrowing.

The departments vary with regard to their approach to capital finance. For example, Mequon leases some of its apparatus, which has the benefit of evening out its capital expenditures. Meanwhile, the Cedarburg FD funds all of its capital expenses through extensive fundraising and Thiensville has financed a good portion of its fleet the same way. The use of donations is impressive but also represents a significant time commitment from both the chief and volunteers that is unrelated to providing fire/EMS response.

Because capital expenditures vary considerably from year to year, capital budget impacts are best represented by looking at multi-year averages. **Chart 5** shows average capital expenditures for each department from 2016 to 2019 on a per capita basis (using service population), and compares those to operating expenditures for context. This analysis shows that capital expenses are a substantial added cost for most departments.

Chart 5: Average per capita operating and capital expenditures, 2016-2019[11]



[12] Hydrant rental fees are paid to water utilities to cover the additional capacity needed to handle fire suppression.
[13] It should be noted that Grafton's capital expenditures for the period are skewed by its purchase of a ladder truck for approximately $1 million. To our knowledge, no other department made such a purchase from 2016-19.

Summary and Observations

While there are significant differences between the nine Ozaukee County departments in terms of staffing models, levels of funding, and response, we also observe that they share mutual challenges and that the departments have developed a healthy level of cooperation.

For example, strong collaboration already occurs with regard to Thiensville's paramedic support to Cedarburg, the automatic aid agreement between Waubeka and Fredonia, and Belgium's contracts with neighboring communities for ambulance transport. More recently, Saukville and Grafton reached an agreement to temporarily share the Grafton chief. These existing examples of cooperation may indicate significant potential for even greater service sharing as a means of addressing common needs.

We also observe that when looked at collectively, the county is well-supplied with fire and EMS vehicles. Greater sharing of apparatus might allow for fleet reductions that could reduce future equipment replacement costs and potentially free up additional dollars for operations.

Nevertheless, shared **challenges are growing and significant and action to address them should immediately be considered by elected officials throughout the county**. In an environment of increasing demand for service, every department is struggling to enhance or at least maintain staffing levels and level of response. Moreover, the COVID-19 pandemic has chilled recruitment efforts and has resulted in a loss of personnel in some departments.

ISSUES AFFECTING POC RECRUITMENT/RETENTION

Each of WPF's recent fire/EMS service sharing studies has noted increasing recruitment and retention challenges for departments that rely on paid-on-call volunteers. Chiefs have commented that this widespread problem may be related to broad societal changes. Younger generations seem to have less interest in serving as volunteers, perhaps because they have greater economic or family pressures than past generations.

Volunteering for a fire department or EMS agency requires a large time commitment. POC staff not only respond to calls at all hours of the day and night, but they also are required to attend regular training sessions. And, in order to work in this role in the first place, a volunteer needs to spend at least a year in evening classes to receive both a firefighter certification and an EMT license. Receiving a paramedic's license is a two- to four-year commitment. In addition, maintaining a license requires continuing education each year.

Chiefs often note that the best recruits are people who live in the community. Nearby residents can respond quickly to the station and also have a vested interest in providing service to their home community. At the same time, it is easy for POC responders – and particularly those with young families – to burn out. Ozaukee County chiefs report that while being on call on a Saturday once meant responding to only one or two calls, in recent years that has changed so that POC responders must fill their entire day responding.

Specific key challenges facing Ozaukee County's fire and EMS framework include the following:

- **Calls for service are increasing** for all nine departments for a variety of reasons. Population growth accounts for some of this increase but other factors may also be involved, including an aging population (combined with longer life expectancies), increased commercial development, and perhaps a greater tendency by citizens to use EMS. Whatever the source, the increase in call volume has added to the pressure on all departments to enhance staffing and response levels.

- At the same time that call volumes are growing, each department is **struggling to recruit and retain part-time or volunteer staff** and has serious concerns about the sustainability of a model that relies upon such staff going forward. This challenge is perhaps even more acute for the Cedarburg FD, which responds to over 1,000 calls per year with a largely volunteer staffing model (though two full-time positions were added in the 2021 budget). The use of volunteers is commendable from many perspectives, but it is also hard to sustain. There are similar concerns about a primarily volunteer model in the northern part of the county.

- While there is no precise standard for EMS responses times to equally apply to each of the nine departments, it is clear to us that **EMS response times in Ozaukee County merit improvement.** Only Grafton maintains an average EMS response time that is below a recently reported state average of 8 minutes and 6 seconds, and it is notable that the average response times in larger communities like Mequon, Cedarburg, and Port Washington have substantially exceeded that average. Also, the use of paramedic intercept services is not always guided by any established protocols (such as "closest unit responds"), which can lead to unnecessary delays in those services.

- We observe that **paramedic and overall staffing levels in Port Washington are particularly stretched thin**, which has negative ramifications for other departments given Port Washington's central location and its role in providing either primary or back-up ALS to neighboring jurisdictions. Port Washington is second only to Mequon in the number of total calls for service, and the city has experienced a 30% increase in calls since 2016. Total FTEs are low relative to demand for service and, to make matters worse, the department has faced challenges filling authorized full-time and POC positions, which has negatively impacted its ability to provide EMS response.

- **Budgets have been increasing substantially in many fire departments** because of an awareness of the need for increasing service levels. While this is an appropriate response, it also raises the question of whether collaborative action might be a more cost efficient and effective next step in addressing mutual POC staffing challenges and growing service demands. A related question is whether the departments that have recently increased their investment in fire and EMS response may be required to carry an inequitable burden as they are called upon more frequently to provide mutual aid to neighboring departments.

Finally, **the departments' challenges during the final weeks of 2020 should serve as an urgent call to action for greater investment in full-time staff**. Paid-on-call staffing challenges were on full display as a surge in COVID-19 cases and the year-end holidays depleted rosters and rendered several departments unable to respond to service calls for extended periods of time.

When that occurs, other departments – which have invested sufficiently to ensure such service interruptions do not occur in their communities -- experience severe stress as they pick up the slack, with command and line staff often forced to work extended hours and juggle multiple calls from multiple jurisdictions. There are also situations in which communities must loan ambulances to neighboring communities so the neighboring department can handle their response, which is not a typical or ideal practice. Overall, **this is an unsustainable situation that merits immediate consideration and action.**

In the next section, we will discuss a series of options to enhance fire and EMS services in Ozaukee County on a collaborative basis. We see plenty of opportunity for a collaborative approach given the good deal of cooperation that already exists and the willing participation of each of the communities and chiefs in this study. The fact that several of the chiefs are at or nearing retirement age also could be an impetus for greater service sharing or even consolidation of departments.

Yet, on the other hand, we observe that each community takes pride in its service and financial model and that the smaller communities in the north have different needs and service expectations than the larger communities to the south. Furthermore, it is not clear that elected officials and citizens recognize the service gaps and challenges that exist, or if they are willing to spend considerably more to address them.

SERVICE ENHANCEMENT OPTIONS

As discussed in the preceding pages, the current fire and EMS service structure in Ozaukee County is challenged on several fronts. Most notable is a growing set of issues related to the use of staffing models that rely heavily on part-time and volunteer staff at a time when call volumes are growing.

This section considers a range of options to address these challenges. Most of our previous fire and EMS studies in other communities have similarly presented a range of options, which typically start with relatively simple approaches to increase service quality and efficiency, like merging training or vehicle repair operations or fortifying protocols for mutual aid. In this case, however, we focus solely on options that would directly address the **pressing staff capacity issues we observe**.

Each option is somewhat ambitious in terms of scope and cost. **While we do not address phasing, such an approach could be undertaken to achieve the associated objective over a period of years.** For example, our Paramedic Supplement option suggests having four paramedics stationed strategically across the county on a 24/7 basis to supplement the departments' current EMS response. However, it also would be possible to get started with just two or three paramedics or to only have the service in place during daytime hours.

Background

Each of the nine Ozaukee County departments has a unique staffing model and cost/revenue structure. Understanding both of these factors is essential to the consideration of future service enhancements or new service models, as policymakers will need to contemplate the ***additional*** cost associated with service or structural changes and how those relate to potential benefits.

In the previous section, we discussed the different types of staff employed by each department. These include command staff; full-time staff who are assigned to regular shifts at fire stations (we refer to these as "shift staff"); and part-time paid-on-call or volunteer staff who are called in when necessary for fire or EMS response. While we previously showed the number of full-time equivalent (FTE) staff in each of these categories for each department, **Table 21** shows annual expenditures for the different employee categories. These spending amounts will be critical to our analysis of fiscal impacts of various staff enhancement and consolidation models later in this section.

Table 21: Salary expenses by employee category[14]

	Chief FTE	Shift FTE	POC FTE	Total Salaries
Mequon Fire Department	$274,985	$521,209	$810,047	$1,606,241
Grafton Fire Department	$176,938	$211,267	$250,723	$638,927
Port Washington Fire Department	$74,117	$262,800	$152,461	$489,378
Cedarburg Fire Department	$129,605	$77,489	$24,000	$231,094
Thiensville Fire Department	$96,739	$0	$157,988	$254,727
Saukville Fire Department	$35,568	$0	$193,354	$228,922
Fredonia Fire Department	$4,420	$32,130	$54,544	$91,094
Belgium Fire Department	$0	$0	$0	$0
Waubeka Fire Department	$0	$0	$0	$0
Total	**$792,372**	**$1,104,894**	**$1,643,116**	**$3,540,383**

[14] The data reflect 2019 actual expenditure amounts (the latest year available when we conducted our research) unless significant changes occurred in 2020 or 2021 budgets, in which case budgeted figures are used. The amounts for Grafton and Thiensville are based on their 2020 budgets while amounts for Cedarburg and Mequon are updated to 2021 budgets.

As shown in the table, Grafton, Mequon, Port Washington, Cedarburg, and Fredonia currently budget funds for full-time staff who work regular shifts at stations. Grafton and Mequon both have three full-time positions, while Port Washington has budgeted for three positions but has not yet filled two of them. In its 2021 budget, Cedarburg added two full-time positions (one is budgeted for only half the year). The higher salary costs in Mequon reflect the fact that its three newly created full-time positions are battalion chief positions with an annual salary of $86,000. The annual positions in Grafton and Cedarburg, in contrast, are firefighter/medic and firefighter/AEMT positions that pay $57,000 and $49,000, respectively.

Discrepancies in pay for similar positions among the nine departments complicate our modeling of staff enhancements, which is why we are noting them here. There are also differences in pay for POC employees, which we summarize in **Table 22**. *The hourly wages shown simply reflect POC salary amounts from the previous table divided by POC FTEs and likely do not represent actual hourly pay rates.*

Table 22: Hourly wages for POC employees

	Hourly Wage
Mequon Fire Department	$21.44
Grafton Fire Department	$15.10
Port Washington Fire Department	$21.99
Cedarburg Fire Department*	$25.73
Thiensville Fire Department	$22.77
Saukville Fire Department	$17.19
Fredonia Fire Department	$19.27
Belgium Fire Department	$0.00
Waubeka Fire Department	$0.00

* Cedarburg pays its POC employees on a per-call basis and only for ambulance transports. The $25.73 reflects the per-call amount for a basic EMT involving transport.

NSFD Comparison

Before considering expanded service models for Ozaukee County, it is helpful to briefly compare the staffing and cost structure of the North Shore Fire Department (NSFD). The NSFD is familiar to many Ozaukee County residents and decision-makers given that it is geographically next door to Ozaukee County, serving seven municipalities in Milwaukee County's North Shore.

The NSFD makes exclusive use of full-time career staff and is seen as a national model for successful fire department consolidation. The department provides a high level of service (its ISO rating is 2) and previous Forum research has found that it has achieved considerable cost efficiencies when measured against what the seven

Table 23: Comparison of NSFD and Ozaukee County departments

	NSFD	Ozaukee County
Area (sq miles)	24.5	233.0
Population	64,830	90,446
Population Density	2.65	0.39
Total Stations	5	11
Total Calls for Service	8,949	8,695
FTE	108.0	73.7
Total Budget (in millions)	$15.7	$6.5
Total Personnel Budget (in millions)	$13.0	$4.4
Personnel as a % of total	82.8%	66.9%
Per Capita Personnel Costs	$200.7	$48.3
Total Expenditure/FTE	$145,570	$88,727

Note: Data for NSFD is from its 2019 CAFR and 2020 Actual/Estimated Budget. Data for Ozaukee County departments reflect the years used in previous tables (i.e. 2019 actual figures and 2020 or 2021 budgeted figures for departments that have experienced significant adjustments).

municipalities would have needed to spend to achieve a similar level of service had they each maintained independent departments.

That said, the North Shore may possess certain characteristics that lend themselves to this level and model of service that may not be present in Ozaukee County and that may not justify a similar approach there. **Table 23** on the preceding page provides some insight into such differences by comparing NSFD and its service area with the service area and collective characteristics of the Ozaukee County fire departments.

While the NSFD and Ozaukee County service areas are similar in terms of call volumes, their geographies are very different. The Ozaukee County departments cover 10 times the area of the NSFD and population density is much lower in Ozaukee County. As a result, there are 11 stations in Ozaukee County compared with five in the NSFD service area. Even with six additional stations, Ozaukee County stations are spread farther apart geographically.

NSFD employs 108 FTEs, or 46% more than the Ozaukee County departments collectively. Because all NSFD front line positions are full-time with benefits, total expenditures for the NSFD

MODELING CONSIDERATIONS

Based on our analysis of current salary and staffing in Ozaukee County and our quick review of NSFD, we determined several assumptions that we use to project costs for several service enhancement options.

Staff ratio: A decision to provide one firefighter/EMS responder at a station at all times entails not only the hiring of three actual FTEs to ensure 24-hour staffing, but also additional staff time to cover for vacation, sick leave, etc. This ratio generally ranges between 3.5 and 4.0 (NSFD's ratio is 3.92). For our Ozaukee County models, we assume that some use of part-time staff will continue; consequently, vacation, sick time, etc. instead would be filled with part-time staff assigned to stations (i.e. POP staff) rather than with additional full-time positions or overtime. For every 24/7 shift, we therefore assume three full-time career positions and one FTE of POP to supplement that shift.

Salary: All of the models considered below assume a salary of $60,000 for full-time firefighter/EMS responder positions based on the average salary in Grafton. That is slightly lower but in the range of the NFSD average salary of $65,000.

Benefits: We assume a benefits ratio for all salaried employees of 40% of salary costs for full-time positions. POC compensation also includes FICA at 7.65% of salaries.

POC Hourly Rate: While hourly rates now vary, given the concerns that each chief has expressed about maintaining POC rosters, each model projects hourly pay rates at the top end of the range, at $22/hour.

Scheduled On Call Rate: For POC staff who are assigned specific times during which they need to be prepared to respond to calls, we assume a rate of $10/hour.

Other Costs: While personnel costs typically reflect the bulk of fire department budgets, "other costs" are a significant portion of fire department budgets in Ozaukee County. Other expenses include basic supplies, equipment, uniforms, vehicle maintenance, fire hydrant fees, etc. This report does not dive deeply enough into budgetary detail to calculate how those costs in our various models would compare to current costs, so we do not provide estimates. Generally, larger departments can find savings in such "other costs" from economies of scale, but the addition of dozens of full-time staff would drive up some of these costs in our models.

Departmental Revenues: Fire department revenues consist of reimbursement from Medicaid, Medicare, and private insurance companies for ambulance transports as well as fees for other activities, including fire inspections. Each of the options presented in this section may have impacts on those revenues – either positive or negative. For example, some may produce small variations in the proportion of ALS to BLS services or increase the number of ambulance transports. However, we are unable to quantify such changes and the total number of responses should not change significantly as a result of our service enhancement options. Consequently, we do not consider revenues in our broad analysis.

personnel are nearly three times the Ozaukee County total. On a per capita basis, NSFD personnel expenses are four times the per capita cost in Ozaukee County.

NSFD's Operations Division has 94 FTEs and the department's five stations typically maintain 24 or 25 firefighters/first responders on station shifts at any given time of day. In other words, not only does NSFD have a higher number of FTEs, but it also has many more personnel at the ready to respond from stations than the Ozaukee County departments.

According to its most recent budget, starting salaries for firefighters/first responders at NSFD begin at $48,000/year and increase to $78,000 for those with lengthy service careers. The average wage is $65,000 and fringe benefits add about $28,000 to that total (the department maintains a ratio of benefits to salaries of 43.4%, which is consistent with other full-time departments in Wisconsin).

In summary, residents of Milwaukee County's North Shore spend considerably more than Ozaukee County residents on a per capita basis for fire and EMS but the use of full-time staff by NSFD ensures better response times and a general higher level of service. These distinctions and the reasons behind them will be helpful context for our discussion of service enhancement options for Ozaukee County in the remainder of this section.

Service Sharing Options

In the remainder of this section, we use these assumptions regarding staffing and pay to roughly determine fiscal impacts associated with three tiers of service enhancement options.

We begin with two options that could be implemented quickly and allow for increased service levels without major organizational changes. We then consider a range of increasingly comprehensive fire department consolidation options that would require much more extensive planning and analysis, as well as negotiation of cost allocation agreements and new governance structures between communities. Those options also would potentially provide greater service enhancements as they progress along our range.

We conduct our modeling with two overriding premises:

1. The primary weakness that must be immediately addressed in Ozaukee County pertains to EMS response, as opposed to fire response.

2. If policymakers wish to consider options to move toward full-time staffing models and achieve service levels approaching those of the North Shore, then they would be served best from both a financial and programmatic perspective by doing so collaboratively as opposed to individually.

Finally, we would emphasize that we provide only a broad overview of these options. Much more extensive analysis would need to be undertaken prior to decision-making on actual implementation.

Tier 1: Near-Term Options

Our first tier of options involves strategies the Ozaukee County departments and their elected leaders could undertake collaboratively **while maintaining the independence of each department**. A much higher level of cooperation as well as cost sharing would be required, however. While negotiation surrounding these options could therefore take some time, implementation from a programmatic perspective could occur relatively quickly.

Tier 1: Near-Term Options

Option	Description
Paramedic Supplement	Four 24/7 paramedics stationed strategically across Ozaukee County to provide 24/7 response as a supplement to EMS response capability of existing departments; paramedics could be employed by health systems, the county, or a private contractor with the cost allocated to municipalities.
Add FT staff countywide	Provide a minimum of two full-time firefighter/EMS responders at several stations throughout the county to improve EMS response times, enhance mutual aid capacity, and decrease reliance on POC staff. This option would rely on a far more extensive and formalized approach to mutual aid that could include additional automatic aid agreements or "closest unit response."

Option 1: Paramedic Supplement

Five of the Ozaukee County departments obtain medical direction for their EMS operations from a medical director employed by the Ascension health system, which maintains a hospital in Mequon; while the remaining four use a medical director employed by Advocate Aurora, which has a hospital in Grafton. Our discussions with the two medical directors yielded an idea for a collaborative concept to provide an immediate boost in EMS response while largely maintaining the independence of each department and its existing operational and staffing framework.

Model design and cost

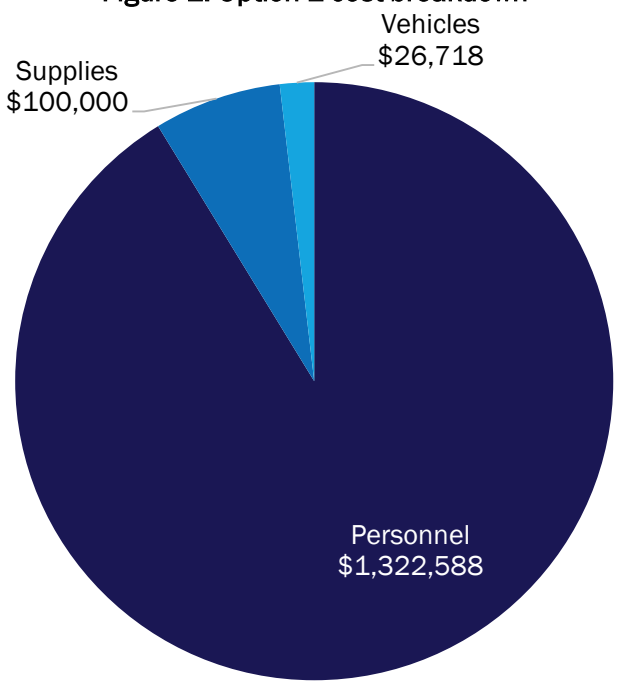
This concept would involve the addition of four 24-hour paramedics who would be stationed strategically throughout the county in first responder vehicles. They could be dispatched at any time of day to meet departmental first responders at the scene of incidents, thus providing a shared enhanced paramedic response capacity across the county that would be particularly beneficial when departments are fielding multiple calls or experiencing acute staffing shortages. This supplemental response could be provided and overseen by individuals hired and employed by one of the hospitals, it could be housed in Ozaukee County, or it could be provided by a private contractor.

As part of the strategic deployment of these flexible paramedic "intercepts," a dynamic mapping program could be utilized to redirect vehicles as needed. So, for example, if one unit is on a call, the three other units would adjust their locations so as to maximize coverage capacity.

We assume for modeling purposes that this option would entail four paramedics deployed 24 hours a day, though it is also possible that three would suffice. These employees would work 12-hour shifts and 40 hours/week; providing such coverage would require 17 FTEs. We assume a slightly lower salary than we do later for firefighter/paramedics of $55,000 and benefits are estimated at $22,000 per position. If this system were provided via a private contractor, the cost may be lower. As

shown in **Figure 1**, when supply and vehicle costs are added the estimated annual cost would be a little under $1.5 million.

Figure 1: Option 1 cost breakdown



Cost allocation

Table 24 shows a potential cost allocation methodology based on 2019 calls for service. Currently, there are about 24 EMS calls per day countywide, but about 10 of these are in Mequon and Grafton, which have sufficient staffing to handle their call volumes. We did reduce the allocation to Mequon and Grafton by 50% since they already pay for 24-hour paramedic ALS service and would not receive as much benefit from the new service. We would emphasize that this is just one hypothetical cost allocation methodology and that we provide it solely for illustrative purposes.

While the annual costs shown above may appear steep for some communities, **it is important to recognize that there will ultimately be some significant cost involved for every department to enhance its EMS response to address staffing and related challenges**. Important context is the action taken by the city of Mequon in its 2021 budget to respond to its perceived staffing and

Table 24: Potential cost allocation, Paramedic Supplement option[15]

	Weighted calls for service	% of Total	Allocated Cost
Mequon Fire Department	917	17%	$240,306
Grafton Fire Department	590	11%	$154,483
Port Washington Fire Department	1,460	26%	$382,603
Cedarburg Fire Department	906	16%	$237,424
Thiensville Fire Department	626	11%	$164,048
Saukville Fire Department	447	8%	$117,140
Fredonia Fire Department	325	6%	$85,169
Belgium Fire Department	196	4%	$51,363
Waubeka Fire Department	64	1%	$16,772
Total	5,531	100.0%	$1,449,307

[15] This table was developed simply for illustrative purposes and would need to be refined if an allocation methodology using calls for service is implemented. For example, there may be duplication in instances where two departments responded to a single call. Also, mutual aid calls likely would be removed from these totals so as not to penalize those departments that provide high levels of mutual aid.

capacity challenges, which included the addition of three full-time positions and increased pay rates for several employee classifications at a total cost of about $700,000.

Summary

The Paramedic Supplement option would bolster first response throughout the county and undoubtedly would improve service levels. However, this plan does have some drawbacks. One caution noted by some chiefs is while the paramedic intercept may get to a scene more quickly than a responding department and initiate vital life-saving procedures, ambulance transport still would be provided by departments so transport times would not improve.

Also, arguably, this plan enhances paramedic services in a county that is already well supplied with such services and that has a limited number of ALS calls. When there are too many paramedics, each one gets fewer chances to attend to advanced cases that test and maintain their skills.

Ultimately, municipalities and fire departments must decide if the enhanced level of service provided by a countywide paramedic intercept program would be worth the required investment; or whether that investment would be better directed toward hiring additional full-time responders at individual departments.

Conversely, **another possibility would be to concentrate exclusive ALS capability and responsibility in a countywide entity and moving toward a system in which the role of fire departments is limited to an EMR or BLS level of service.** For example, in La Crosse County, a private ambulance company associated with a major regional health system provides ALS service countywide while leaving BLS and first response to municipal fire departments and EMS agencies. In other Wisconsin counties, EMS is provided or administered by county government while fire response is the responsibility of municipal agencies. A potential financial benefit would be the possible opportunity to eliminate obstacles posed by state property tax levy limits because of an exclusion for counties for EMS.

Finally, regardless of whether the communities opt to pursue a new framework for EMS, **there would be benefit in considering collaborative action to proactively reduce EMS calls by engaging in case management of heavy utilizers of 911 for medical needs**. Also known as "community paramedicine," this approach involves using paramedics to perform a range of services outside of emergency care, such as providing or connecting patients to primary care services or conducting post-hospital follow-up care. One or more departments may wish to consider jointly funding one or more EMS case management positions to cover multiple jurisdictions on a regional or countywide level.

Option 2: Add Full-Time Staff Countywide

Another option that would enhance EMS capacity in Ozaukee County would be to add the minimum number of full-time staff required to ensure an appropriate EMS response and a manageable mutual aid framework in light of enhanced call volumes and POC staffing shortages. While defining this "minimum" number involves some subjectivity, our discussions with chiefs produced one such possible framework.

Model design

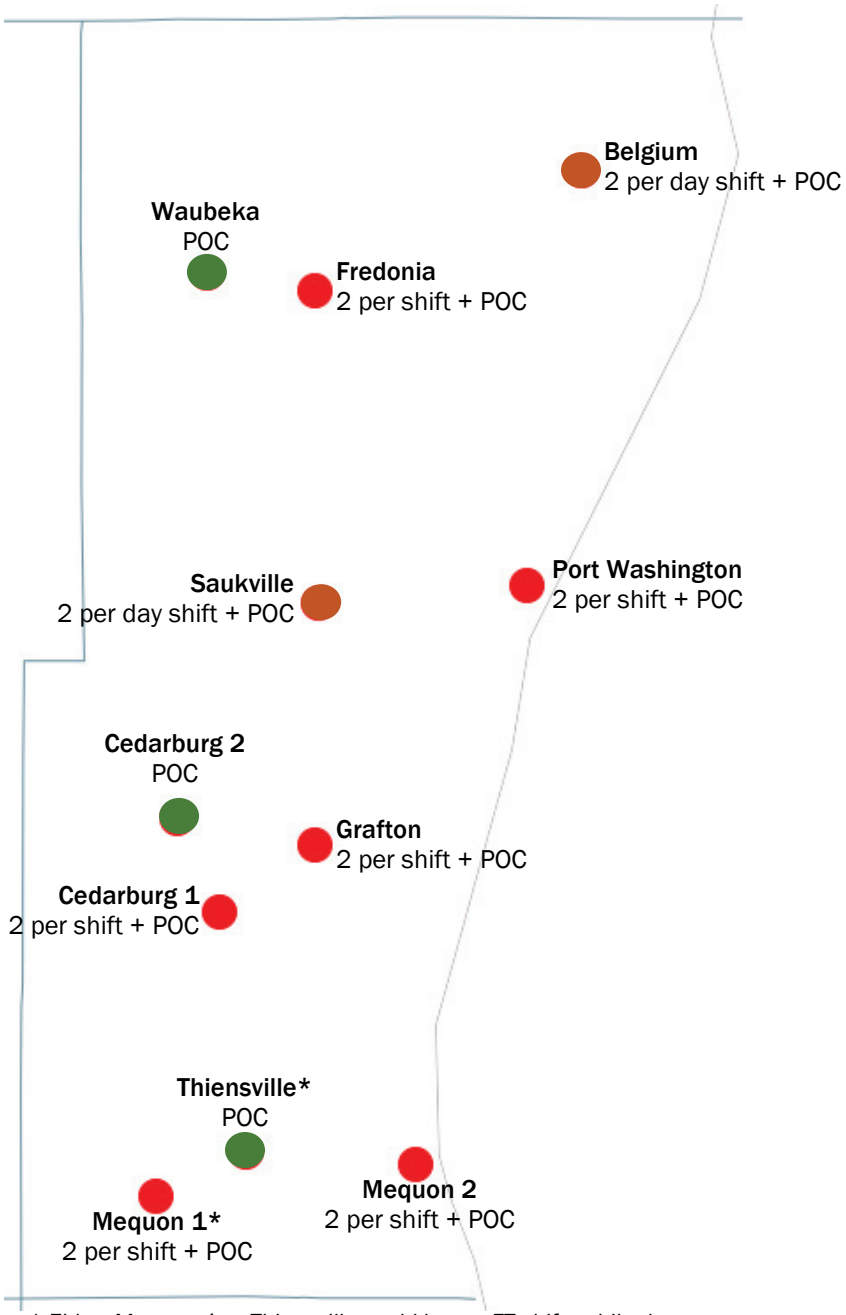
Under this approach, the objective would be to ensure a 24/7 onsite presence on shifts of at least two firefighter/paramedics or firefighter/EMTs at several stations throughout the county. This would ensure that a two-person crew would be available to immediately respond to an EMS call and provide

ambulance transport at multiple, geographically dispersed locations at any given time. At minimum, one of those two would be a full-time staff person while the second could be a part-time POP employee.

It is important to note that none of the current fire stations in Ozaukee County are adequate for sleeping quarters, which may impact implementation of this option and would have greater impacts for the full-time staffing scenarios envisioned in our next two tiers of options. We did not have the opportunity to determine logistics and costs involved with station improvements, but this is an issue that obviously would need to be considered if these options are pursued.

The stations where these minimum staffing levels would be implemented under our hypothetical model are both Mequon stations and the stations in Cedarburg, Fredonia, Grafton, and Port Washington. It should be noted that while we assume such minimum staffing would occur at Mequon 1, it could instead be maintained at Thiensville, with the station that is not included retaining a POC framework for fire response. In addition, we assume that the Belgium and Saukville stations would be staffed during the day (with paid-on-premises staff). This would require Belgium to add a licensed ambulance to its station and to initiate its own ambulance service. Finally, the Waubeka station would maintain its current POC framework.

Map 3: Option 2 hypothetical staffing plan



* Either Mequon 1 or Thiensville could house FT shifts while the other would use POC for fire response.

Map 3 summarizes this model. It is important to recognize that each department would continue to rely on POC staff to supplement the two individuals working on station shifts for fire response. POC supplemental staff may also be required for instances in which there are multiple EMS calls, though the enhanced capacity throughout the county may allow departments to instead rely on mutual aid for such situations.

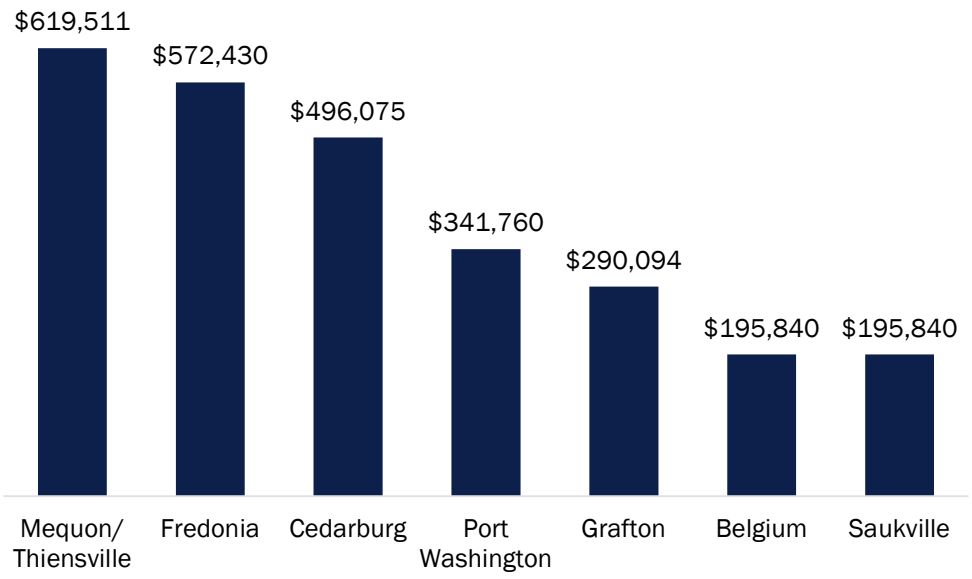
Indeed, the key to this model is the assumption that the fortified staffing at stations throughout the county would allow each department to lean on its neighbors even more than currently occurs. **The benefit would be improved response times and vastly enhanced ability for most departments to respond to multiple EMS calls.** Having two individuals "at the ready" to respond from each station would eliminate the scrambling that currently takes place to call in EMS responders and the current heavy reliance by some departments on Mequon and Grafton for back-up support.

Implementation of this approach also could lend itself to additional automatic aid agreements between neighboring departments or agreements formalizing other forms of automatic back-up; or even a "closest unit response" framework that would allow an EMS response to be dispatched from a neighboring jurisdiction if that jurisdiction is closer or more readily available to respond.[16]

Model cost and cost allocation

While the service enhancement associated with this option would be significant, the added cost would be substantial. We assume the plan would necessitate 36 full-time firefighter/EMS responder FTEs across the six "beefed up" stations plus the equivalent of an additional 12 part-time POP FTEs to fill in for vacation and other time off. Six POP FTEs also would be required to staff day shifts at Belgium and Saukville with additional staffing scheduled on call.

Chart 6: Option 2 additional personnel expenditures
Total additional expenditures countywide - $2,711,550



In total, this level of staffing is estimated to cost just over $4.0 million. However, Mequon, Cedarburg, Fredonia, and Grafton already budget for some shift staffing coverage, so we estimate the net additional cost to be $2.7 million. **Chart 6** shows how that additional cost breaks down by department. It should be noted that the substantial total for Mequon reflects the assumptions that two firefighter/EMS responders would be stationed 24/7 at both of its stations.

There also would be other added costs associated with additional supplies, equipment, etc. These other costs are not calculated here but can be estimated in more detail if there is interest in pursuing this option. On the positive side, there also would be reduced POC costs for most departments given the availability of significantly more full-time staff to immediately respond to calls (also not calculated here).

[16] Such a framework may require significant additional investment in dispatch technology and capability.

While the chart above shows the added cost that would be incurred by each department to achieve the enhanced full-time staffing levels, **we are not suggesting that these costs necessarily should be actually *borne* by each department**. Perhaps the most challenging element of this option – in addition to its total cost – would be deciding how that cost should be allocated across the county given that staff enhancements at stations in several jurisdictions would be made for the benefit of neighboring jurisdictions, as well.

Summary

This model would produce a substantial increase in full-time staffing that would hold promise to significantly improve response times and alleviate the severe staffing challenges that currently exist among the Ozaukee County departments. Nevertheless, the additional $2.7 million in annual personnel spending across the county would appear to pose a considerable challenge given the impact on taxpayers and possible conflict with state-imposed property tax levy limits. This extra $2.7 million would amount to an additional $30 per capita countywide above the $48 per capita currently being spent by Ozaukee County residents on fire and EMS personnel.

For additional context, when we add the $2.7 million to the $4.4 million currently spent by the Ozaukee County fire departments for personnel costs, the total expenditure of $7.4 million is still only about 54% of the $13.0 million spent by the NSFD (albeit at a still much lower level of service). On a per capita basis, Ozaukee County residents would spend $78 annually as compared to $201 by residents of the North Shore.

Tier 2: Partial Consolidation Options

Our next tier of options involves two approaches to partially consolidating the Ozaukee County fire departments as a means of moving further in the direction of a full-time staffing model, while allowing municipalities to share that cost with one or more neighboring communities. In addition to sharing costs, the potential benefits of fire department consolidation generally include the following:

Tier 2: Partial Consolidation Options

Option	Description
Two-Way Consolidation	Two departments consolidate their operations as a means of sharing the cost of enhanced full-time staffing while also seeking administrative and apparatus efficiencies; a Grafton-Saukville hypothetical consolidation plan is presented for illustrative purposes.
Two Ozaukee County Departments	The nine departments consolidate into Northern Ozaukee County and Southern Ozaukee County departments as a means of moving toward full-time staffing while also securing the service-level benefits and efficiencies associated with large departments.

- A larger workforce can reduce the need for overtime or use of POC staff to cover for injury, illness, and vacation by providing the ability to easily shift staff among multiple stations.
- A larger workforce may aid in recruitment and retention by providing greater opportunities for career ladders and possibly increased compensation.

- Consolidation of non-response tasks such as training, fire prevention/education, EMS case management, and inspections may produce greater cost efficiency. In the case of training, consolidation also may produce greater cohesion at the scene of incidents.
- Opportunity to reduce leadership positions while enhancing the effectiveness of command by allowing leaders to strategically manage and deploy staff and apparatus on a regional level.
- Potential cost savings through more efficient procurement and possible reduction of apparatus and backup apparatus.

There are also potential drawbacks, which generally include a partial loss of local control by each community over fire and EMS operational and financial decision-making; the possibility that some communities would benefit operationally and fiscally more than others; the possibility that some may need to pay more for fire and EMS than they are paying today or are willing to pay in the future; and the challenges involved in consolidating labor contracts, staffing frameworks, and other personnel issues.

In this section, we consider two potential partial consolidation options. The first looks at the prospect of pursuing mergers between pairs of departments in Ozaukee County. We use Grafton and Saukville as a model since those two departments are currently sharing a chief. Our second partial consolidation option examines a hypothetical scenario in which the existing Ozaukee County departments merge into two departments – one that would cover the northern part of the county and the other the southern portion.

Option 3: Two-Way Consolidation (Saukville/Grafton)

As noted earlier in this report, the departure of the Saukville fire chief has prompted Grafton and Saukville to enter into a temporary arrangement under which the Grafton chief also is serving as the interim chief in Saukville and is administratively overseeing both departments. Given this development, we perceived a Grafton-Saukville merger to be the most practical two-way combination to model – not only because it is possible the temporary arrangement may encourage the two jurisdictions to soon explore such a model on their own, but also because it allowed us to tap into the Grafton chief's intimate knowledge of both departments and their service areas.

It is important to note that there would be several alternative two-way consolidation models that would be logical to consider in light of geography and service demands, including Mequon-Thiensville, Cedarburg-Grafton, Port Washington-Saukville, and Fredonia-Waubeka. Given their many similarities, a three-way consolidation between Belgium, Fredonia, and Waubeka also would appear logical to consider. Again, our purpose here is to simply show one relatively uncomplicated option for illustrative purposes, as crunching the numbers on several two- or three-way consolidation options was not within the scope of this initial phase of research and analysis.

Model design and cost

Based on discussions with the chief, our hypothetical consolidated Grafton/Saukville department would maintain two full-time firefighter/EMS responders on shifts at the Grafton station on a 24/7 basis and one in in Saukville, who would be supplemented by a part-time POP firefighter at all times. This would be a considerable upgrade over the existing capacity at both stations, as Grafton currently employs one full-time firefighter/paramedic position at its station at all times while Saukville uses POC staff.

This structure would require a total of nine full-time firefighter/EMS FTEs and three POP FTEs. Because Grafton already employs three full-time firefighter/paramedics and one POP shift, the net addition is six full-time positions and 2 POP FTES. We also assume an increase in pay for POC staff – who would still be needed to respond to fires and on occasions when there are multiple EMS calls – to a rate of $22/hour.

With regard to command, the Grafton department already has a full-time chief and deputy chief, while Saukville employs a part-time chief. The part-time chief could be eliminated under a consolidated structure, but we assume that an additional deputy chief would be required to focus on EMS quality control and training. One or both of the deputy chiefs also could supplement paramedic coverage if needed.

A benefit of consolidating the two departments would be projected savings in apparatus replacement costs. The Grafton chief projects that two pumpers (valued at $850,000 each) could be removed from a combined fleet, which we estimate to produce annualized savings of $104,000. We arrive at a net additional cost of about $742,000, as shown in **Chart 7**.

Finally, similar to Option 2 above, it is also possible that existing POC costs incurred by the two departments would be reduced since this plan calls for additional shift staffing, although we do not cite those potential savings here. The increase in staff also would create some additional costs in supplies, equipment, station modifications, etc. that we do not calculate here.

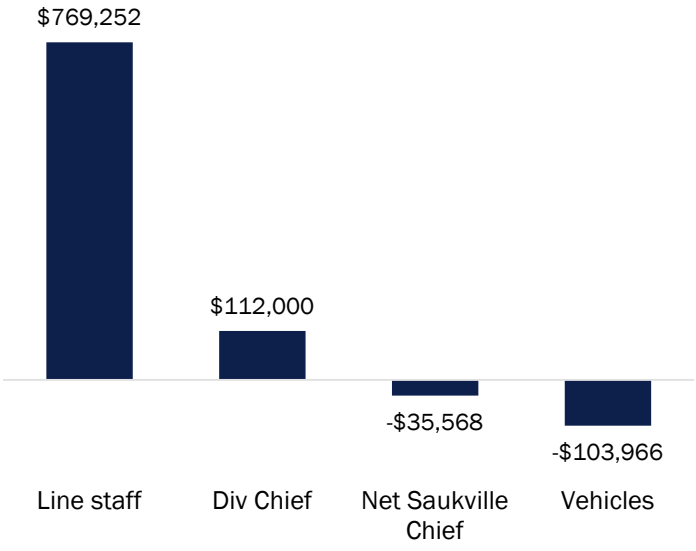
Governance and cost allocation

The actual added cost incurred by each community would depend not only on the specific elements of the final consolidation plan, but also on how elected officials in the impacted communities would decide to handle cost allocation and governance. Given that the Saukville station would benefit most from additional staffing, the estimated additional cost of $742,000 might reasonably be split evenly between the two departments (despite Saukville's smaller population and call volumes) at $371,000 each. Alternatively, a cost allocation formula based on factors like proportional calls for service could be used.

One of the participating municipalities (likely the village of Grafton) could serve as fiscal agent and employer for the consolidated department and charge the other for its agreed-upon portion of departmental costs. Under such a scenario, a separate fire commission consisting of representatives from both communities could be established to jointly oversee departmental policy.

This approach is essentially the one used by the South Shore Fire Department in Racine County, where Mount Pleasant houses departmental operations and charges Sturtevant for 18% of the cost of those operations. The village boards in both communities have a say in annual

Chart 7: Option 3 net additional costs
Total - $741,718



budgeting and in the department's fee structure (e.g. ambulance charges), while a separate fire commission comprised of representatives from both communities oversees personnel and policy-related matters.

Summary

This consolidation plan would produce a significant annual net increase in combined cost for the two communities but would also produce a substantial increase in service levels. Grafton would double the number of ready-to-respond firefighters/paramedics at its station and Saukville would see its response times reduced by introducing new 24-hour staff at its station. Also, a larger department could generate some of the benefits cited at the beginning of this section, including an increased capacity to recruit and retain quality full-time staff, administrative and purchasing efficiencies, and more effective deployment of resources between the two stations that would enhance the cohesiveness of the overall response. Perhaps most important, this plan could allow both communities to address the personnel issues they currently face because of their reliance on part-time staff.

It should be recognized that each department also would incur added costs for the paramedic intercept option above (we estimate about $155,000 for Grafton and $116,000 for Saukville under our hypothetical cost allocation model). The option of adding full-time staff countywide (Option 2) also would produce higher annual costs – potentially as much as $333,000 for Grafton and $196,000 for Saukville. Consequently, the potential added cost for this two-department consolidation model should be viewed in the context of both the added costs in those scenarios and the added benefits that would accrue from consolidation when compared to those options, as well.

While costs and governance options obviously would differ under other two-way consolidation scenarios (e.g. Mequon-Thiensville or Cedarburg-Grafton), the general financial calculus would remain the same. Savings from eliminating a chief position and some apparatus would offset a portion of the cost of enhancing full-time staffing at each station, although that cost would still be significant. **The key question is whether each department in a potential two-way consolidation sees the need to enhance full-time staffing. If so, then doing so under a consolidation scenario with a neighboring department may be less costly and provide a higher and more cohesive level of service than doing so independently.**

Finally, it should be noted that a two-department consolidation could be an important first step toward a larger consolidated department. For example, if the Grafton and Saukville departments make the effort to consolidate, then it would be easier to expand that department to include other adjacent communities (e.g. Cedarburg and Port Washington). Moreover, those communities may have greater interest once they can witness the impacts of consolidation and assess how cost allocation and governance issues have been reconciled by neighboring communities.

Option 4: Northern and Southern Ozaukee County Departments

A more comprehensive consolidation option would be to establish two fire/EMS departments in Ozaukee County, one in the north and one in the south. One of the benefits of this approach – as opposed to a single consolidated department – is that two distinct service models could be developed to take into account the lower population density, commercial development, and call volumes in the northern half of the county and the higher service demands and closer proximity of stations in the southern half. Meanwhile, the benefits of consolidation described above – e.g. greater economies of scale, more efficient deployment of resources, opportunities to reduce apparatus, reduced command staff – would be greater than in the two-department consolidation option.

Model design

In this hypothetical model, the Ozaukee County North Department would cover the service areas currently covered by the Port Washington, Belgium, Fredonia, and Waubeka departments. The Ozaukee County South Department would comprise the areas currently served by the Mequon, Thiensville, Cedarburg, Grafton, and Saukville departments. This is just one of several options for dividing the county into north and south regions; for example, some chiefs suggested that Saukville be grouped with the northern communities, while at least one other suggested that Port Washington be grouped with the southern department. Again, as with our two-way model, we present this model for illustrative purposes.

Table 25: Southern Ozaukee County and Northern Ozaukee County service area breakdown

	Southern Ozaukee	Northern Ozaukee
Population	68,578	21,868
Area	135.0	97.7
Pop Density (1,000 pop/sq mile)	508.1	223.9
Stations	7	4
Calls for Service	6,239	2,456
Calls/Day	17.1	6.7
EMS Calls per Capita	72.8	93.5

Table 25 compares the northern and southern service areas. The southern department would serve a larger but denser area, with three times the service population and a geographic area that is a third larger. The northern department would have its own challenges given that it would have only four stations to cover a geographic area that is still formidable.

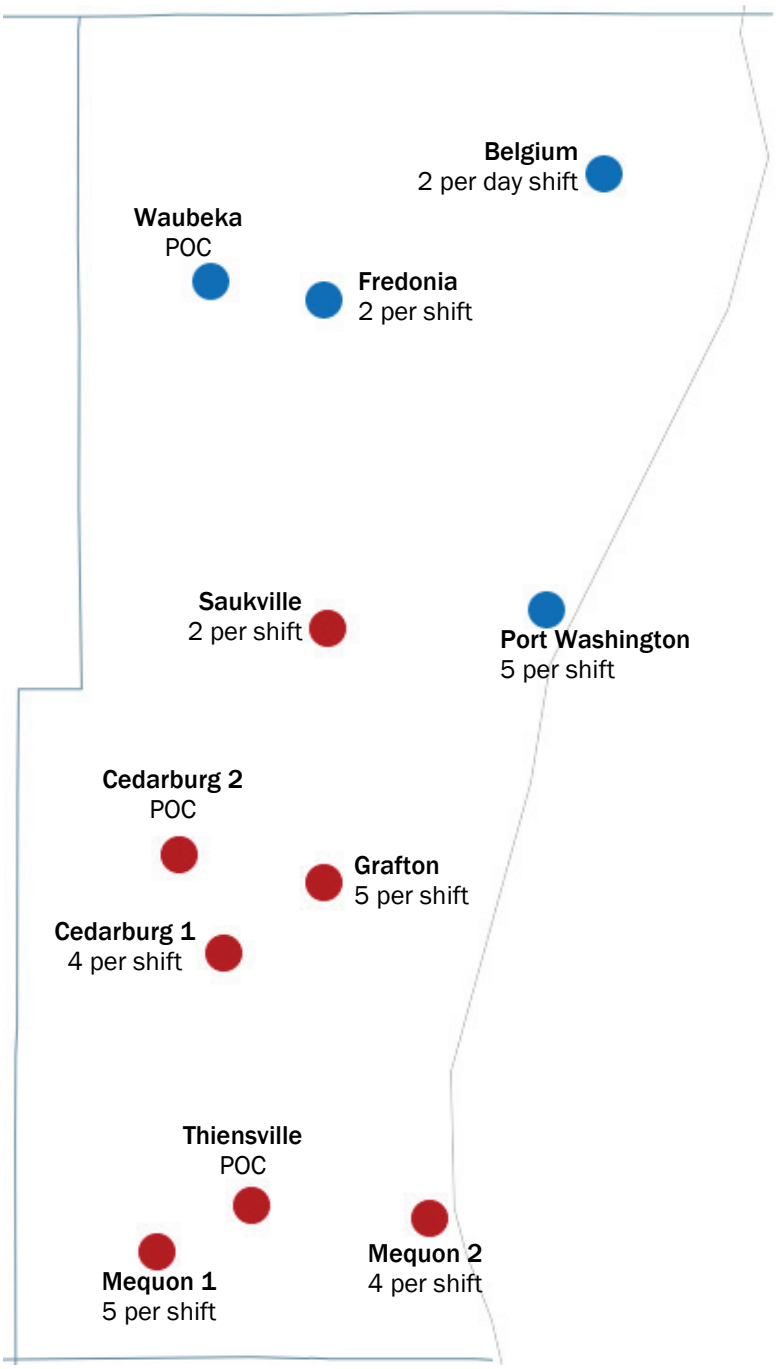
An important difference between the two regions is that in the north, 70% of calls originate in Port Washington and only 1.3 calls per day originate from surrounding communities. In the south, calls are more evenly distributed between communities.

Map 4 shows how 24/7 full-time staffing would be distributed among the existing stations for each department under our hypothetical model. Given that the vast majority of calls in the northern region

are generated in Port Washington, our staffing plan for the northern department calls for five firefighter/EMS responders to work shifts at the Port Washington station on a 24/7 basis and two in in Fredonia. The robust staffing level in Port Washington would allow both an ambulance and an engine to respond simultaneously when there are multiple calls in the region.[17] In addition, the Belgium station would have two firefighter/EMTs scheduled during the day while relying on POC staff at night. POC operations also would be maintained at the existing station in Waubeka as well as to supplement full-time staffing when needed at all other stations.

In the southern department, our hypothetical staffing plan calls for 20 full-time firefighter/EMS responders on shifts 24/7 across five of the existing seven stations. At the other two – Thiensville and Cedarburg 2 – POC operations would be maintained. POC staff also would continue to supplement full-time staff at the other stations, though the need to call upon them would be diminished because of the robust level of full-time staffing.

Map 4: Option 4 hypothetical shift staffing plan (North department stations in blue and South department stations in red)



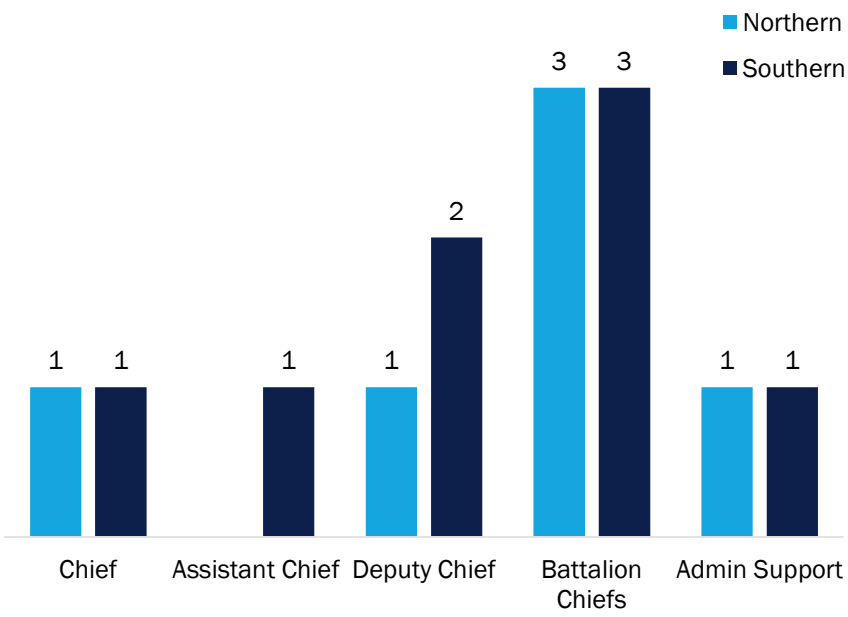
Overall, our hypothetical staffing framework would call for an estimated 24 full-time firefighter/EMS responder FTEs for the northern department and 60 for the southern department,[18] as well as a significant expansion of the use of POP to provide coverage at stations. This approach admittedly is ambitious and assumes that any effort to pursue comprehensive consolidation should include substantial service enhancements that would provide a level of service for all of Ozaukee County that approximates levels we have observed in our work in

[17] Port Washington officials have considered building a new fire station that is more centrally located; if that occurs, response times would be improved in the entire northern Ozaukee County area.
[18] These totals reflect the need to hire three FTE firefighter/EMS responders to ensure the presence of one at a station on a 24/7 basis.

communities like Greater Racine and La Crosse County. It is certainly possible that a model using fewer full-time staff and greater reliance on POC staff could be developed to reduce the cost (which we will detail below).

Chart 8 shows the breakdown of different types of command positions that we would envision for each department. Both would have a battalion chief on duty at a station on a 24/7 basis (thus requiring 3 FTEs). The southern department would have an additional deputy chief and an assistant chief in light of its larger staff and service needs. Our model also includes funds for an administrative support position for each department.

Chart 8: Option 4 hypothetical command and administrative structure



Model cost

Table 26 compares the collective cost of current firefighter/EMS responder staffing and current command staff in the nine departments to those respective position categories for our hypothetical southern and northern departments. The table also shows annualized savings from apparatus. Currently, the nine departments use a combined 82 pieces of apparatus. We estimate that total could be trimmed to 58 under our consolidation model (10 vehicles eliminated in the north and 14 in the south). See **Appendix B** for additional details on fleet savings under all consolidation scenarios.

Table 26: Option 4 estimated additional costs

	Consolidated North	Current North	Consolidated South	Current South
Firefighter/EMS staffing	$2,492,507	$592,091	$6,096,266	$2,518,700
Command/Admin Staffing	$721,000	$113,175	$973,000	$1,147,631
Apparatus Savings	($346,231)		($698,633)	
Total	$2,867,276	$705,266	$6,370,634	$3,666,331
Cost/Capita	$131.12	$32.25	$92.90	$53.46

As would be expected, our cost comparison shows the two departments as modeled above would require significant increases in funding for municipalities in both the northern and southern service areas. The fiscal challenge in the north would be much greater (an increase of over four times current spending), however, primarily because current personnel expenditures are so low. Per capita

costs in the north also would be higher because certain high-cost items like apparatus must be allocated across a smaller population.

It should be noted that the cost of the command structures for each consolidated department would be partially offset by savings associated with the ability to trim the number of collective chiefs from nine to two. However, because each of the command positions in our consolidation model is full-time while several of the abolished chief positions are part-time, there is not a substantial offset.

Finally, it is important to recognize that the costs shown above do not represent all cost categories that comprise fire department operations. As noted at the beginning of this section, other costs include basic supplies, equipment, uniforms, vehicle maintenance, fire hydrant fees, etc. It was not practical for us to attempt to calculate how those costs under our two-department model would compare to current costs. Generally speaking, larger departments can find savings in such "other costs" from economies of scale, but the addition of dozens of full-time staff would drive up some of these costs in our two-department model.

Cost allocation and governance

As with previous options, key considerations for each community would be how the cost of the two consolidated departments would be distributed among the participating communities and how the two new departments would be governed. We do not hypothesize cost allocation because there are several possible allocation methodologies that could be considered. The North Shore Fire Department uses a formula that equally weights each jurisdiction's proportional share of calls for service, population, and equalized property value, but several additional factors or different combinations could be used.

There are also several potential governance models for a consolidated fire department. A logical one when consolidation involves several different communities is for the consolidated department to function as an independent entity that reports to a new board of directors established by the participants. Board representation could be determined based on a "one member/one vote" basis or proportionally based on population or other factors.

Finally, considerations like ownership of current stations and apparatus (i.e. would they remain the property of each municipality or turned over to the new department) and establishment of a new fire commission would need to be determined.

Summary

The added cost for the two-department model would be a significant one for Ozaukee County taxpayers to bear. However, this plan would hold potential to effectively address the challenges associated with heavy reliance on part-time and volunteer staff and it would guarantee substantially improved response times by ensuring an average of 28 firefighter/EMS responders on shifts at stations throughout the county at any given time. In fact, the service models we have sketched out would put Ozaukee County residents more on par with counties like Racine, Waukesha, and La Crosse in terms of level of service as well as per capita cost.

By merging into two larger and mostly full-time departments, the Ozaukee County communities also would secure benefits that are more difficult to show on paper. For example, this approach would better ensure that their fire and EMS personnel are trained to common standards and protocols; that response and back-up are coming from the closest and most appropriate station irrespective of

municipal boundaries; and that the deployment of staff and apparatus among station locations occurs more efficiently and effectively.

This model does show that the increase in spending would be larger for the communities served by the northern department than for those in the south. This is because the full-time staffing model is a larger leap for the current departments in the north, which collectively make very little use of full-time staff. Consequently, if policymakers are interested in pursuing the two-department model, they may wish to consider whether our staffing assumptions for the north are too expensive and could be reduced via greater use of part-time staff.

Regardless, as we will see when considering single consolidated department options below, an advantage of the two-department approach is the opportunity to design a service model for each half of the county that is more appropriately suited – both financially and programmatically – to their respective call volumes, characteristics, and financial capacities.

Tier 3: One Consolidated Department

Our final tier of options presents two different models for a single consolidated fire department to serve all of Ozaukee County. The two models differ both in their ratio of full-time to part-time staff and the number of 24/7 shifts maintained at each station. The first model is designed to approximate the staffing model used by the North Shore Fire Department, while the second is a lower-priced approach that may more appropriately reflect Ozaukee County's call volumes and density.

Tier 3: Full Consolidation Options

Option	Description
Higher-Price Staffing Model	Ozaukee County is served by a single consolidated department that uses mostly full-time firefighter/EMS responders to staff a combined 38 shifts on a 24/7 basis across eight of the county's 11 stations. The remaining three stations would be staffed with POC personnel.
Lower-Price Staffing Model	Ozaukee County is served by a single consolidated department that uses a combination of full-time and part-time firefighter/EMS responders to staff a combined 25 shifts on a 24/7 basis across seven of the county's 11 stations. The remaining four stations would be staffed with POC personnel.

A single consolidated department would perhaps best position Ozaukee County citizens and taxpayers to maximize the general benefits of consolidation that are described above. For example, the department's larger size might make it even better able to recruit and retain high-quality staff because of the opportunity to establish higher pay scales and career ladders; create a more efficient command and operational structure; and house a leaner fleet of vehicles. Conversely, because of the differences in demographics and service demands that exist in different parts of Ozaukee County's large geography, a "one size fits all" approach may not be optimal.

Option 5: Single Consolidated Department – Higher-Price Staffing Model

For our first single department consolidation option, we model a department that makes extensive use of full-time staff and that is predicated on achieving a response capacity that is similar to that of the NSFD. The decision to prepare such an ambitious model stemmed from our discussions with the chiefs, who acknowledged that such an approach may be cost prohibitive but who also felt it was

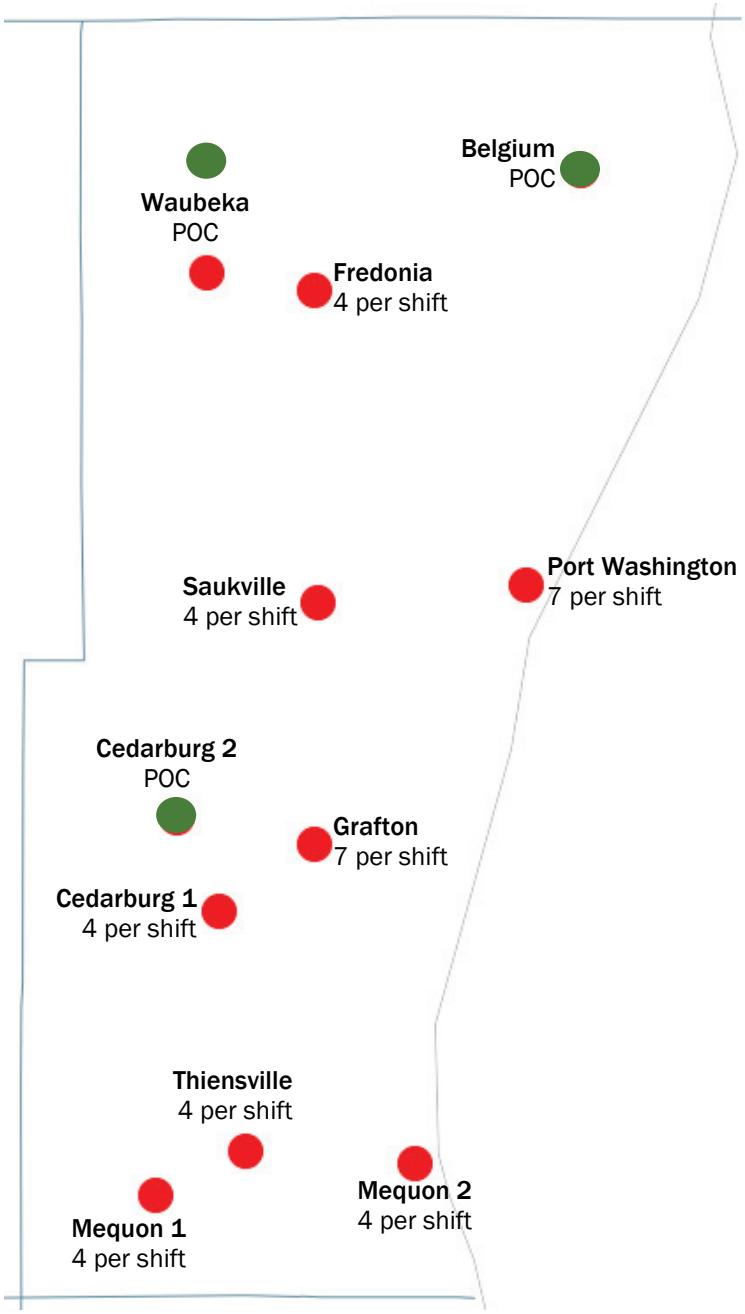
important for policymakers and citizens to see what such an optimal service framework would look like for comparison to other options.

Model design

This plan includes a minimum of four-person full-time firefighter/EMS responder crews on shifts at eight stations on a 24/7 basis, for a total of 38 shifts. While no stations would be eliminated, three would rely solely on a POC staffing model (while most others would continue to make some use of POC). The model is laid out on **Map 5**.

The number of full-time shifts at each station is linked to the apparatus that is envisioned to be housed at each. It takes into account the potential need for one station in the south and one in the north to be able to send out both an engine crew and an ambulance crew simultaneously. So, for example, the Port Washington and Grafton stations would have seven staff on shifts at all times. Also, the centrally located Thiensville station is envisioned to house a ladder truck, which accounts for its four-person full-time staffing level (as opposed to reliance on POC staff).

Map 5: Option 5 hypothetical shift staffing plan

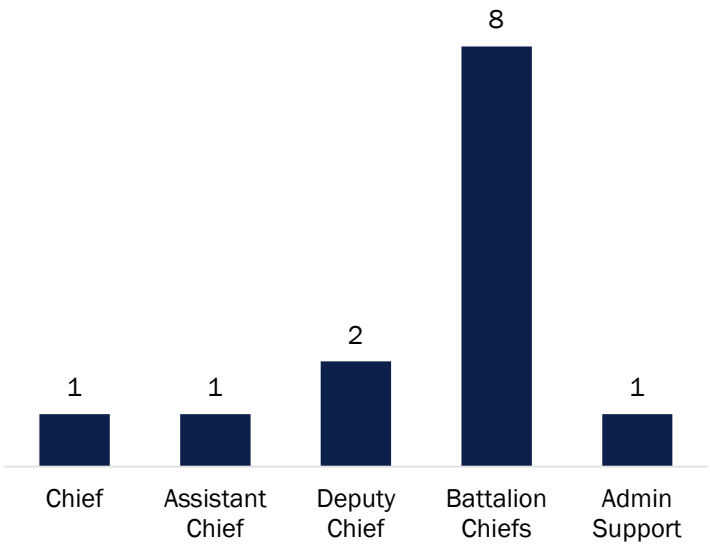


Our assumed command structure for the consolidated department is shown in **Chart 9**. In addition to a chief, an assistant chief, and two deputy chiefs, we assume a total of eight battalion chiefs. Six would ensure the presence of two battalion chiefs on a 24/7 basis – one stationed in the north and one in the south. The additional two are envisioned to work day shifts to assist with tasks such as EMS oversight and to help oversee training, prevention, and inspection (functions that also would be overseen by the deputy chiefs). We do not account for vacation and other time off when considering battalion chiefs because it is assumed that captains and lieutenants will fill in, giving those officers an opportunity to take on greater responsibility and professional growth. We also assume a full-time administrative assistant.

Model cost

Staffing 38 full-time shifts would require a total of 152 total firefighter/EMS responder FTEs. This includes 114 full-time staff and 38 part-time FTEs, who would fill in at stations when needed to cover for vacation, sick leave, etc., as well as to staff some shifts at night.

Chart 9: Option 5 hypothetical command and administrative structure



Using the salary and benefit amounts described at the beginning of this section, this produces a personnel expense of $11.4 million. It should be noted that this estimate does not include either an increase or reduction in overtime costs compared to collective current costs, as overtime can vary greatly among departments and we cannot reliably project this cost. NSFD officials have cited an ability to reduce overtime as a benefit of consolidation given the opportunity to move staff among multiple stations as need arises.

Estimating the cost of firefighter/EMS staff for the three stations that would use POC staffing models also is difficult. Examining the data provided by Fredonia and Saukville suggests that those departments logged between 10 and 13 person hours per call, which at $18/hour would work out to about $30,000 in POC compensation for 150 calls per year. We use this as our proxy and estimate that the total cost of POC staff at the three stations is $90,000.

To calculate the expense of our command and administrative structure, we use average salaries and benefits determined based on our examination of similar-sized departments. We estimate a total annual cost of $1.7 million.

While in most cases consolidation allows for considerable savings in command and administrative expenses, in Ozaukee County several departments use part-time chiefs. Total current spending on command and administrative functions is slightly less than $1.5 million, so the structure we model for the consolidated department is actually more expensive. It is important to note, however, that this structure would be managing more than 100 full-time staff and is much different from the current command. By centralizing some command functions, the same budget can fund more training, planning, prevention, and other activities that have a profound effect on an organization.

Finally, we assume the same vehicle reduction (from 82 to 58 apparatus) that we assumed for the two-department model in Option 4. That would produce an annualized savings of a little over $1.0 million.

Table 27 summarizes our estimate of personnel and apparatus cost impacts for the consolidated department, which total about $12.1 million, and compares that cost to current collective spending by the nine departments for those categories. **The difference is about $7.8 million, or $86 per capita**. For additional context, current total per capita personnel spending for the NSFD is about $200.

Table 27: Option 5 fiscal impacts versus current spending

	Current	Higher-Cost Consolidated
Total Personnel Cost	$4,371,594	$13,188,906
Apparatus Savings	0	($1,044,863)
Total	$4,371,594	$12,144,043
Per Capita Cost	$48.33	$134.27

Cost allocation and governance

As with other options discussed in this report – but even more so for this option given its substantial additional cost – the decision on how to allocate the cost of the consolidated department would be critical for each community in determining the plan's attractiveness and efficacy. Again, we do not hypothesize a cost allocation approach here, but given the significant difference in calls for service, commercial development, and population among the different Ozaukee County communities, we would certainly suggest a formula that employs some combination of those factors. With regard to governance, it would be logical to assume that a department of this size would most appropriately function as a freestanding entity under a newly formed board of directors established by the participants.

Summary

This single department consolidation option would provide a high level of staffing capacity that would significantly improve response times. In addition, the department would enhance service quality and consistency by establishing uniform training and protocols across the county as well as consistent fire prevention and inspection practices. The ability of the department's commanders to strategically deploy staff and apparatus across eight stations with full-time staffing also would provide for better back-up in parts of the county experiencing high call volumes at any given time as well as response from the closest and most appropriate unit.

The downside is that these improvements would come at considerable additional cost that may not be deemed affordable or necessary by decision-makers across the county. Consequently, we lay out a lower-cost alternative below.

Option 6: Single Consolidated Department – Lower-Price Staffing Model

The "lower-price" option is based on a service model that includes much greater use of hourly staff than the higher-price model. In addition, the number of firefighter/EMS responders assigned to shifts at most stations is reduced, and the Thiensville station would be served by POC staff in contrast to the four 24/7 shifts envisioned for the previous model.

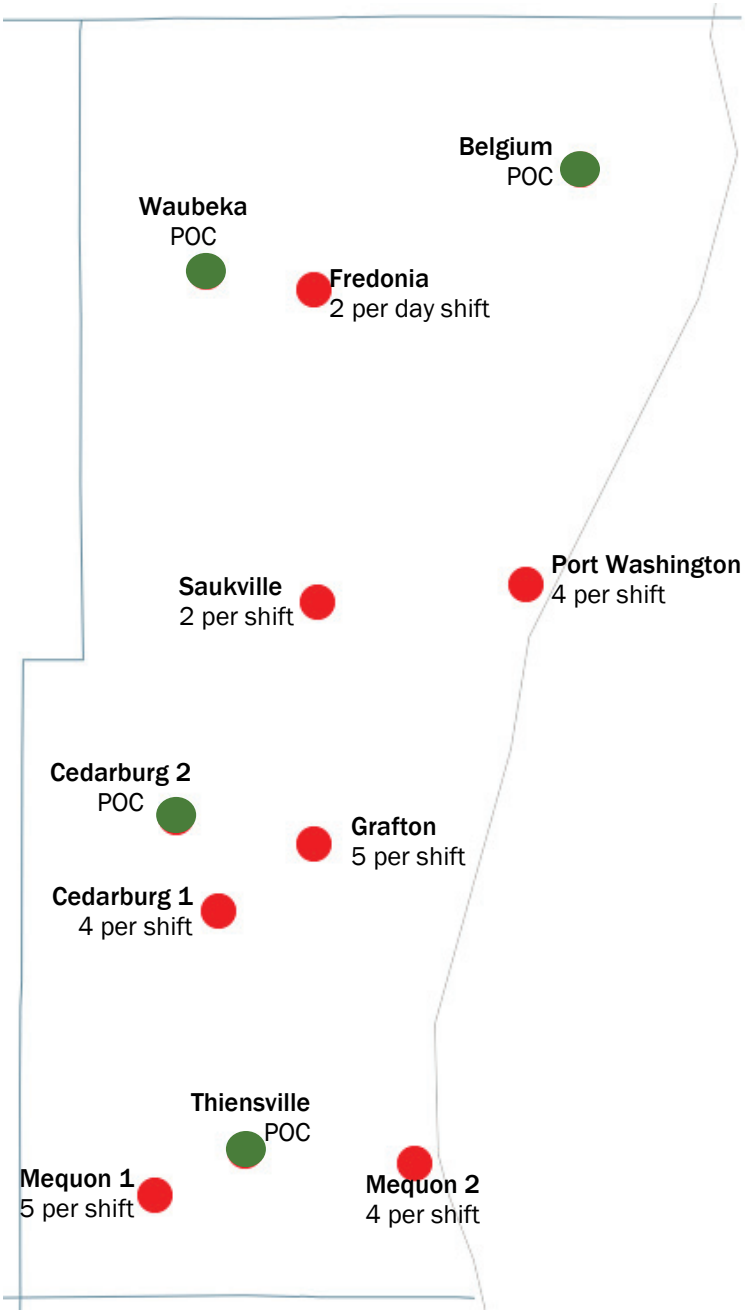
Model Design

Overall, this model features 25 full-time firefighter/EMS responders (13 fewer than the previous model) working shifts across seven stations on a 24/7 basis. Filling those 25 shifts requires 75 full-time firefighter/EMS positions supplemented by the equivalent of 25 POP FTEs. POC employees would supplement full-time staff by providing appropriate capacity for fire response, backfilling stations when needed, and also potentially supplementing shift staffing on a POP basis. Two examples of departments that use similar "combined staffing" models are the Western Lakes Fire Department in western Waukesha County and the Onalaska Fire Department in La Crosse County.

Map 6 shows the number of full-time firefighter/EMS responders assigned to shifts at each station while also showing which stations would function solely with POC staff.

We envision a command structure for the lower-price consolidated department that would be identical to the higher-price model. That is because the size of the department would still justify a chief, assistant chief, and two deputy chiefs, while two "day shift" battalion chiefs still would be appropriate to help coordinate training, inspections, fire prevention, and other non-response activities while also filling in for regular battalion chiefs during time off.

Map 6: Option 6 hypothetical shift staffing plan



The number of apparatus required to implement this model would be slightly reduced, however, because of the lower number of full-time staff at stations. We project a fleet of 56 vehicles, a reduction of 26 vehicles from the current state and two vehicles from the higher-cost model.

Model cost

Our fiscal impact estimate for the lower-price consolidation option includes the following:

- We calculate a salary and benefits cost of $7.5 million for the 75 additional full-time and 25 POP firefighter/EMS FTEs.
- The cost for the command/administration structure is assumed to be the same as under the higher-price model, at about $1.7 million.
- We assume twice the expenditure for POC staff than we did for the higher-cost plan because of the lower number of full-time shifts.
- We estimate annualized apparatus savings from the smaller fleet of vehicles of about $1.2 million, or about $100,000 more than the higher-price option.

Table 28: Option 6 fiscal impacts versus current spending and Option 5 estimate

	Current	Higher-Cost Consolidated	Lower-Cost Consolidated
Total Personnel Cost	$4,371,594	$13,188,906	$9,374,833
Apparatus Savings	$0	($1,044,863)	($1,155,816)
Total	$4,371,594	$12,144,043	$8,219,017
Per Capita Cost	$48.33	$134.27	$90.87

Table 28 summarizes cost impacts we are able to estimate for the lower-price consolidated department, which total about $8.2 million, and compares that cost to current collective spending by the nine departments for those categories and our higher-price option. We see that **the difference from current spending is about $3.8 million, or $42 per capita, but the cost would be about $4 million lower annually than the higher-price option**.

Cost allocation and governance

The same options and considerations would exist for the lower-price option as for the higher-cost option, which we discuss above.

Summary

The lower-price consolidation option may represent a reasonable middle ground for policymakers who wish to explore the benefits of a single department consolidation option but also wish to maintain a more balanced combination of full-time and part-time staff than the higher-price option. The desire to pursue such a balanced approach could be predicated both on concerns about cost and a belief that Ozaukee County's call volumes do not justify the robust level of service envisioned under the higher-price option. However, the existing departments' severe challenges with regard to recruitment and retention of part-time staff may also be a barrier to considering and implementing this type of approach.

CONCLUSION

Our analysis of fire and EMS service sharing and consolidation opportunities in Ozaukee County finds that while the nine fire departments are somewhat unique in their service delivery framework and funding, they have a strong foundation of cooperation and mutual aid. Departments provide mutual assistance readily and frequently, and several departments already have formal service sharing agreements that allow them to collaborate on paramedic response and ambulance transports.

Yet, while the departments maintain strong working relationships that help plug some service gaps, they also face severe challenges that promise to intensify over time. In fact, **those challenges are now sufficiently acute to justify immediate investment in service and staffing enhancements**, which would be most effective and efficient if made as part of broad-based, systemic collaboration.

The crux of the problem is as follows:

- At a time when EMS calls for service are increasing, **most departments have limited rosters of paid-on-call and volunteer responders and are having great difficulty recruiting new part-time firefighters and EMTs**. In addition, while Ozaukee County departments have a high ratio of paramedics to other licensed EMS responders, the available capacity of paramedics is limited. These staffing challenges pose a particular problem during daytime hours, at times when there are multiple EMS calls within the same or neighboring jurisdictions, and in the case of a multi-alarm fires or other major incidents.

- **EMS response times are below the standards one might expect in a largely suburban service area, which similarly stems from the departments' heavy reliance on POC responders**. Perhaps most alarming – given the impact on response times – is the frequency with which some departments must rely on mutual aid for EMS response because staffing challenges preclude them from assembling sufficient staff to respond on their own. This challenge became particularly acute in the final weeks of 2020, when a surge of COVID-19 cases combined with typical holiday shortages to put several departments out of service for extended periods.

To address these challenges, we present three tiers of increasingly comprehensive options that policymakers could pursue to improve service levels and response times. The less advanced options would maintain the independence of the nine existing departments as well as existing response patterns, which may be preferable to some given the different needs and service expectations of smaller and larger communities within the county and the pride they take in their existing departments. However, while maintaining local control, these options ***would not*** provide the same level of service improvement and would fail to take advantage of some of the natural efficiencies that flow from consolidation.

As shown in the summary table (**Table 29**) on the following page, each option would necessitate substantial additional taxpayer investment, which is not surprising given the relatively low level of investment that is currently occurring. However, while the price tags may be difficult for policymakers and citizens to swallow, they cannot be considered in a vacuum.

Table 29: Fiscal impacts of six options (estimated annual expenditures)

Consolidation Option	Total Expenditures	Addl. Net Expenditures	Per Capita Addl. Net Expenditures
Option 1 – Paramedic Supplement	$5,820,903	$1,449,307	$16.02
Option 2 – Enhanced FT Staffing	$7,083,146	$2,711,550	$29.98
Option 3 – Grafton-Saukville	$1,765,611	$741,718	$33.99
Option 4 – Northern & Southern Depts.	$9,321,404	$4,949,808	$54.73
Option 5 - Higher-Cost Consolidated	$12,227,538	$7,855,941	$86.86
Option 6 - Lower-Cost Consolidated	$8,192,202	$3,820,605	$42.24

The options presented in this analysis span a range of service levels, but it is clear that *some* sizable increased investment is warranted to move toward full-time fire department staffing (as both Mequon and Cedarburg acknowledged in their 2021 budgets). This will be important not only to ensure that the service-level issues cited above are addressed, but also as a means of ensuring equity. Indeed, the current situation – in which certain departments that have invested more heavily are being asked to pick up slack for others – would appear to be unsustainable.

The collaborative options we suggest would require carefully negotiated cost sharing agreements. To be equitable, those agreements not only would need to consider factors like the proportional call volumes of each community and their commercial development, but also the extent to which some communities already are investing more than others for the benefit of the region. The more advanced options also would require participants to create new governance structures, and the cost of those advanced options may exceed what they are currently able and willing to spend.

Nevertheless, our analysis does suggest that collaborative action could be more effective and more equitable than independent action. Moreover, if advanced options are deemed too expensive for now, then the less advanced options – perhaps phased in over several budgets – would allow the communities to start slowly and build toward more comprehensive collaborative approaches. A slower approach may also be necessary given the possible restrictions to enhanced fire and EMS spending posed by state-imposed property tax levy limits and expenditure restraints, which may require legislative action to address.

Overall, we hope this analysis sheds light on Ozaukee County's fire and EMS challenges and the need to respond both swiftly and thoughtfully. Going forward, we would be pleased to support any efforts to implement the policy options cited in this report or otherwise assist the region in pursuing greater intergovernmental cooperation.

APPENDIX A: SERVICE POPULATION

In these tables we show our estimates of populations served by each department. Where towns are served by more than one department, we estimated the number of citizens served by each based on our understanding of proportional service areas as provided by chiefs.

Table A: Fire-Only Service Population

Municipality	Fire Department									
	Cedarburg FD	Thiensville FD	Mequon FD	Grafton FD	Waubeka FD	Fredonia FD	Belgium FD	Saukville FD	Port Washington FD	Total
City of Mequon			24,806							24,806
City of Port Washington									11,954	11,954
Village of Grafton				11,989						11,989
City of Cedarburg	12,147									12,147
Town of Cedarburg	6,006									6,006
Village of Saukville								4,396		4,396
Town of Grafton				4,227						4,227
Village of Thiensville		3,164								3,164
Village of Fredonia						2,199				2,199
Village of Belgium							2,448			2,448
Town of Fredonia					1,208	218				1,426
Town of Saukville					95	300	-	1,208		1,603
Town of Belgium							1,434			1,434
Town of Port Washington									1,647	1,647
Waubeka					760					760
Total	**18,153**	**3,164**	**24,806**	**16,216**	**2,063**	**2,717**	**3,882**	**5,604**	**13,601**	**90,206**

Table B: EMS-Only Service Population

Municipality	Fire Department									
	Cedarburg FD	Thiensville FD	Mequon FD	Grafton FD	Waubeka FD	Fredonia FD	Belgium FD	Saukville FD	Port Washington FD	Total
City of Mequon			24,806							24,806
City of Port Washington									11,954	11,954
Village of Grafton				11,989						11,989
City of Cedarburg	12,147									12,147
Town of Cedarburg	6,006									6,006
Village of Saukville								4,396		4,396
Town of Grafton				4,227						4,227
Village of Thiensville		3,164								3,164
Village of Fredonia						2,199				2,199
Village of Belgium						2,448	2,448			4,896
Town of Fredonia					1,208	218				1,426
Town of Saukville					95	300	-	1,208		1,603
Town of Belgium						862	1,434		572	2,868
Town of Port Washington									1,647	1,647
Waubeka					760					760
Total	**18,153**	**3,164**	**24,806**	**16,216**	**2,063**	**6,027**	**3,882**	**5,604**	**13,601**	**94,088**

APPENDIX B: APPARATUS SAVINGS

The tables in this appendix provide details on our assumptions regarding possible apparatus savings under our two-department and single-department consolidation scenarios. The following provides brief descriptions of the various types of fire department apparatus:

- **Tender** - a truck that transports water to the scene of a fire. Tenders are necessary in areas without hydrants.
- **Engine** - a vehicle that pumps water onto a fire and transports firefighters and equipment to the scene of a fire.
- **Brush rig** – an apparatus specifically designed to combat brush fires or wildfires
- **Ladder truck** - an engine that also has some type of ladder for accessing upper floors of a building.
- **Quint** - a combination engine that has a pump, hose, water tank, and a ladder.
- **Rescue squad** - an engine with specialized equipment to handle EMS incidents. It is not used to transport patients.
- **Ambulance** - a vehicle used to transport paramedics/EMTs to the scene and then to transport a patient to the hospital.
- **Command** - an SUV driven by the chief or incident commander and equipped with needed communication equipment.
- **Medic first response** - A pickup or SUV that transports a paramedic and equipment to an incident but is not used for patient transport.

Table C: Current Apparatus

	Tender	Engine	Brush Rig	Ladder	Quint	Rescue Squad	Ambulance	Command	Medic 1st Response	Total
Mequon FD	2	3	1	1	1	0	3	1	2	14
Grafton FD	0	4	1	1	0	0	2	1	1	10
Port Washington FD	1	4	1	1	0	1	2	1	1	12
Cedarburg FD	1	3	2	1	0	1	2	1	0	11
Thiensville FD	0	2	0	0	1	0	2	1	0	6
Saukville FD	0	5	1	0	0	1	2	0	0	9
Fredonia FD	1	2	1	1	0	0	1	1	0	7
Belgium FD	1	3	1	0	0	1	0	1	0	7
Waubeka FD	1	2	1	0	0	0	1	1	0	6
Totals	**7**	**28**	**9**	**5**	**2**	**4**	**15**	**8**	**4**	**82**

Table D: Moderate Reduction in Fleet (Options 4 and 5)

Station	Tender	Engine	Brush Rig	Ladder	Quint	Rescue Squad	Ambulance	Command	Medic 1st Response	Total
Mequon 1	1	0	0	0	1	0	2	0	1	5
Mequon 2	0	2	1	1	0	0	1	2	1	8
Grafton	0	2	1	0	0	1	2	2	0	8
Port Washington	1	2	1	1	0	0	2	0	0	7
Cedarburg	1	0	1	0	1	0	2	0	0	5
Thiensville	0	0	0	0	1	0	1	0	1	3
Saukville	1	2	1	0	0	1	1	0	1	7
Fredonia	1	2	1	0	0	1	0	0	0	5
Belgium	1	2	1	0	0	0	1	0	0	5
Waubeka	1	2	1	0	0	0	1	0	0	5
Total	**7**	**14**	**8**	**2**	**3**	**3**	**13**	**4**	**4**	**58**
Change	**0**	**-14**	**-1**	**-3**	**1**	**-1**	**-2**	**-4**	**0**	**-24**

Table E: Larger Reduction in Fleet (Option 6)

Station	Tender	Engine	Brush Rig	Ladder	Quint	Rescue Squad	Ambulance	Command	Medic 1st Response	Total
Mequon 1	1	1	1	0	0	0	3	1	0	7
Mequon 2	1	1	0	1	0	0	2	0	0	5
Grafton	1	2	1	0	0	1	2	1	0	8
Port Washington	1	1	1	0	1	0	2	0	0	6
Cedarburg	1	1	1	1	0	0	3	0	0	7
Thiensville	0	0	0	0	0	0	0	0	0	0
Saukville	1	2	1	0	0	1	1	0	0	6
Fredonia	1	1	1	0	0	1	1	1	1	7
Belgium	1	2	1	0	0	0	0	0	1	5
Waubeka	1	2	1	0	0	0	0	0	1	5
Total	**9**	**13**	**8**	**2**	**1**	**3**	**14**	**3**	**3**	**56**
Change	**2**	**-15**	**-1**	**-3**	**-1**	**-1**	**-1**	**-5**	**-1**	**-26**

Table F: Cost Per Vehicle

Vehicle	Cost
Tender	$350,000
Engine	$850,000
Brush Rig	$100,000
Ladder Truck	$1,200,000
Quint	$1,200,000
Rescue Squad	$675,000
Ambulance	$250,000
Command	$75,000
Medic 1st Response	$75,000