CENTER FOR PUBLIC SAFETY MANAGEMENT, LLC

Fire and EMS Services Assessment and Alternatives

Saline Area Fire District

Huron Valley Ambulance

City of Saline, MI

Lodi Township

Saline Township

York Township

CPSM®

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ICMA

Exclusive Provider of Public Safety Technical Services for
International City/County Management Association

International City/County Management Association (ICMA)

The International City/County Management Association (ICMA) is a 110-year-old, non-profit professional association of local government administrators and managers, with approximately 13,000 members located in 32 countries.

Since its inception in 1914, ICMA has been dedicated to assisting local governments and their managers in providing services to their citizens in an efficient and effective manner. ICMA advances the knowledge of local government best practices with its website, www.icma.org, publications, research, professional development, and membership.

Center for Public Safety Management

The ICMA Center for Public Safety Management (ICMA/CPSM) was launched by ICMA to provide support to local governments in the areas of law enforcement, fire, Emergency Medical Services (EMS), emergency management, and 911-Communication Centers. CPSM also represents local governments at the federal level and has been involved in numerous projects with the Department of Justice and the Department of Homeland Security. Further, CPSM provides training and research for ICMA members and represents ICMA in its dealings with public safety professional associations such as CALEA, PERF, IACP, IAFC, PSHRA, DOJ, BJA, COPS, and NFPA.

In 2014 as part of a restructuring at ICMA, CPSM spun out of ICMA as a separate company and is now the exclusive provider of public safety technical assistance for ICMA. The *Center for Public Safety Management, LLC,* maintains the same team of individuals performing the same level of service that it had as an ICMA internal program.

As an organization, CPSM has more than 15 years of experience performing fire, EMS, law enforcement, and 911 Communication Center agencies nationwide using our unique methodology of aligning our comprehensive workload and response analysis with industry standards and best practices, and our client's issues and challenges. Our overall experience includes more than 500 such public safety studies in 46 states and provinces and 450+ communities ranging in population size from 269 (Bald Head, NC) to 4.4 million (Maricopa County, AZ).

The CPSM project teams offer years of practitioner, first line supervisory, middle management, and senior leadership experience in the fire, rescue, EMS, emergency management, law enforcement, and 911-Center disciplines; and a record of research, academic, teaching and training. Our team comprises true industry subject matter experts, not research assistants, interns, or generic management consultants.

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SECTION 1. INTRODUCTION

The Center for Public Safety Management (CPSM) was retained by the City of Saline, MI to complete a Fire and EMS services assessment and provide the city with alternatives regarding Fire and EMS services to include the city creating a city fire department.

The Saline Area Fire Department (SAFD) provides fire protection and related services to the city. The SAFD is a primarily first-out career staffed fire department that includes paid-call volunteer members who provided surge capacity when available. SAFD provides fire suppression, emergency medical services first responder, rescue, and fire prevention activities to the City of Saline and the surrounding townships of Saline, Lodi, and portions of York Township, all within the fire district response area and located in south-central Washtenaw County, Michigan. The SAFD operates as an independent fire agency governed by an interlocal agreement among these communities.

The SAFD fire district is approximately 86 square miles and serves a population of approximately 20,000, with just over 9,000 residents living in the city, which represents the largest population center in the fire district.[1] The SAFD response district includes agricultural lands, residential neighborhoods, light industrial zones, municipal infrastructure, heavy manufacturing, retail centers, service establishments, schools, parks, and trails.

EMS ground transport is provided to the city and SAFD fire district by Huron Valley Ambulance (HVA). HVA is a member of Emergent Health Partners (EMP), the parent company which owns and operates five additional ambulance services in southern Michigan, which are available to the HVA response area when needed.[2]

The SAFD service area receives ground transport service through HVA's system status management model (SSM), which is a planned approach to resource allocation based on historical call demand in a designated area. This SSM deployment model allows HVA to efficiently manage resources based on real-time demand. In the context of the SAFD service area, this means that the posted ambulance in or near the district can be bolstered with additional assets during periods of increased demand. Conversely, if the HVA system is in a high demand period outside of the SASFD service area region, the HVA assets can be pulled and redeployed to other areas in the HVA service area.

This assessment provides the City with a thorough and unbiased review of the Fire and EMS services in terms of staffing and deployment, governance, call demand and response times, fire district community development and growth, and those elements of an emergency services agency that are primary drivers of the deployment of resources. This report documents this assessment and includes our findings and observations, a comprehensive response and workload analysis, and recommendations structured to enhance programs and services, and improve internal and external service deliverables each agency provides.

During our study, we analyzed operational, administrative, and performance data provided by the SAFD and HVA. We also examined first-hand each agency's operations. Officials and members of each agency with whom the project team interacted were passionate about Fire and EMS services in their community, and delivering high quality services to the SAFD district.

The project team conducted an on-site visit in late January 2025, for the purpose of observing SAFD and agency-connected supportive operations; interviewing key fire department and City

1. U.S Census Bureau Quick Facts: City of Saline, July 1, 2023, estimated.
2. About - Huron Valley Ambulance - Emergent Health Partners.

staff; examining community risk; and reviewing department operations. Virtual and phone meetings were held throughout the study with senior fire staff, the Saline City Manager, the City of Saline Mayor and two council members, HVA Vice President and Director of Communications, and with all SAFD Fire Board members. In each discussion, CPSM project staff affirmed project information and elicited further discussion regarding the SAFD and HVA operations.

The CPSM project team, while reviewing information and discussing operations with agency members, always seeks first to understand existing operations, then to identify ways an emergency services agency can improve efficiency, effectiveness, and safety for both its members as well as the community it serves.

Section 6 of this report provides discussion and information regarding City of Saline Fire and EMS service alternatives. In this section CPSM offers pertinent information for the City to consider, advantages and disadvantages for each alternative, and cost estimates for the City to create a Saline Fire Department.

Key report findings are presented next. This report also contains a series of observations, considerations, and recommendations intended to help the SAFD deliver services more efficiently and effectively. CPSM recognizes there may be recommendations and considerations that may need to be budgeted for, or for which processes must be developed prior to implementation.

Key Assessment Findings

- Overall demand density in the SAFD response area (includes HVA) is highest in the City of Saline, the developed-eastern area of Lodi Township, and the core developed area of York Township.
- Regarding response times:
  - Fire call processing times for the SAFD are I excess of four minutes, which is four times that of the NFPA 1710 standard of ≤ 64 seconds 90 percent of the time.
  - EMS call processing times for both the SAFD and HVA are in excess of three minutes. Dispatch times for EMS calls are typically higher when using an Emergency Medical Dispatch system such as HVA utilizes. When possible, this should be minimized.
  - The SAFD turnout time at the 90th percentile of 2.4 minutes (144 seconds) overall, is in excess of the NFPA standard of ≤ 60 seconds for EMS calls and 80 seconds for fire calls.
  - HVA turnout times are excellent. This is due to the type of dynamic deployment system HVA utilizes, which reduces turnout (chute) times, and which reduces overall response times.
  - The SAFD travel time at the 90th percentile of 8.8 minutes (528 seconds) overall, is in excess of the NFPA standard of ≤ 240 seconds for EMS calls and structure fire calls.
  - The city of Saline, due to the location of the SAFD station in the city, is the closest to NFPA travel times (276 seconds) for EMS calls and structure fires.
  - Lodi Township has the longest travel time of 12 minutes (720 seconds) due to its rurality and distance from the SAFD station.

Technology and/or call taking platforms will at times increase call processing time. Inefficient station ergonomics will have an effect turnout times. In some agencies, culture extends call processing and turnout times. It is recommended that a reduction in any response time category should be examined and become an SAFD and HVA priority.

- Saline and York Townships have elevated travel time of 9.2 and 9.5 minutes (552 seconds and 570 seconds respectively) due to their rurality and distance from the SAFD station.
- HVA current travel times are on average 13.1 minutes.

  CPSM assesses travel times will likely remain high due to the high demand in the total HVA Washtenaw County system, and the potential for overlapping calls in the SAFD response area. The Echo Unit assigned to the SAFD station is designed to reduce overall response times to higher acuity calls. An additional factor is overlapping calls. Overlapping calls bring in an HVA transport unit from a more distant response point, thus increasing response travel times.
- The mutual/automatic aid system within the SAFD service area is satisfactory in that it provides for contiguous and regional assets. This is, overall, the best use of nearby resources. However, given the geographical complexes of this response area, most mutual aid and automatic aid resources have lengthy response times in terms of the proximity of aid stations.
- The SAFD is not able to meet the Effective Response Force benchmark for single-family building fires of sixteen firefighters on the initial alarm and may not be able to meet the Effective Response Force with paid call and off duty career staff. The SAFD is reliant on mutual/automatic aid from other agencies and the availability of SAFD paid call and off duty career staff for these type of incidents. Further and when benchmarked against the NFPA 1720 model for a suburban demand zone, the SAFD cannot assemble an effective response force without mutual and automatic aid (ten firefighters).
- The SAFD Effective Response Force for building fires and major events is lean and dependent on aid from other agencies, particularly in the area of incident command, incident safety officer, and ladder company operations such as elevated master stream, vertical ventilation, search and rescue, and ground ladder access for interior crews and occupants to name a few of the priority critical tasks that need to be completed.
- The SAFD has sufficient capabilities to respond to EMS calls in its current non-transport capacity.
- There is a need for facility renovations of the SAFD station as well as the potential for a new fire facility to meet the current and potential future needs of the western SAFD district that includes Lodi and Saline Townships.
- Overall, CPSM finds the current facility to be in fair condition. The overall cleanliness and organization of fire facility equipment, furniture, and supply inventory demonstrated the positive pride of SAFD personnel; however, the facility needs renovation. While touring the facility, CPSM also looked at the SAFD fleet and found the apparatus to be clean and organized as well.
- Regardless of the fire service delivery model the City chooses, EMS ground transport service will remain available to the City through the contract between HVA and Washtenaw County.
- The City should engage Huron Valey Ambulance on a quarterly basis regarding ambulance availability, call demand, and response times in the city, and general Huron Valley Ambulance news regarding staffing, deployment, and Emergency Medical Services trends in the city.

Organizational

1. CPSM recommends the SAFD Board consider:
   - Adjusting the meeting schedule from bi-monthly to monthly. Included in the agenda there can be a formal report from the Fire Chief that includes: calls and runs from the previous month that includes alignment of resources to risks; monthly fiscal report; planning goals and objectives updates; opportunities and challenges reporting and so forth. ***At the April 2, 2025 Board meeting, the SAFD Borad moved to adjust the meeting schedule to monthly subject to actionable items.***
   - Development of a multi-year fiscal plan that includes operating and capital cost forecasting, facility needs, a staffing needs plan with associated forecasted costs, and a sustainable funding formula model that is acceptable to each participating locality. ***At the April 2, 2025 Board meeting, the SAFD Borad moved to charge the Steering Committee with reviewing the funding formula in the Restated Agreement for the Saline Area Fire Department, to set a time for public comment on the funding formula change at the next Board meeting, and to forward any changes to the formula that are approved by the Board to each unit of government participating in the Agreement for their consideration.***
   - Development of a long-term (5-10 year) Strategic Plan that includes strategic initiatives with accompanying goals and objectives that aligns with the long-term fiscal plan. ***At the April 2, 2025 Board meeting, the SAFD Borad referred to the Sterring Committee the review of Fire Board By-Laws with topics to be considered - clearly defining the roles and responsibilities of the Fire Board and formalizing the Steering and Budget Committees.***
   - Inclusion in the current By-Laws more specific language regarding responsibility and accountability of the Board regarding fiscal oversight, the setting of goals and objectives, planning and plan outcomes, and the evaluation of the Fire Chief and SAFD operations. ***At the April 2, 2025 Board meeting, the SAFD Borad discussed***
2. CPSM recommends the Fire Board consider including in any strategic/fire master planning, goals and objectives that are aimed at closing communication gaps in the organization, improving consistent messaging and actions across the organization, improving communication between the Fire Chief and participating municipalities, and establishing a shared vision for communication all members of the organization can work towards.
3. CPSM recommends the Fire Board annually outlines for the Fire Chief clear and concise expectations and planning activities that includes, and from which an annualized Fire Chief performance discussion/evaluation can be structured from: five year fiscal forecasting to include operational and capital expenses; strategic plan and/or Fire Board approved goal accomplishments; community engagement; community risk reduction; SAFD operational performance; resource allocation versus risks in district; SAFD mission accomplishments; decision making; organizational communication; and navigation of the SAFD through obstacles at the department level, community level, chief administrative officer level, and the Board level.
4. CPSM recommends the SAFD adopt the concepts of the ***Time Allocation Model*** to include educating the workforce on these concepts and including same in any By-Laws updates.

5. CPSM strongly recommends Fire Board consider the recommendations CPSM previously stated which include:
    - A multi-year fiscal plan that includes an operating and capital cost 5-year forecast, facility needs, and a staffing needs plan with associated cost forecasting.
    - Review of the funding formula. As the SAFD grows and will continue to grow with current and planned community development, there may be a more contemporary funding model available and amenable to the citizenry.
    - Develop and implement a formal Strategic Plan that aligns resource allocation to the risks in the service area.
6. CPSM recommends the SAFD Fire Board continue with the current fiscal plan to add one additional firefighter position to increase maximum staffing of five per operational shift. Additionally, the minimum number of staffing should, when the new staff is hired, be four (1 officer and 3 firefighters) at all times to align deployable resources with community risk and incident type.
7. CPSM recommends SAFD work with the Fire Board and other human resources specialists as needed to develop a succession plan that is diverse, includes the entire organization, and has a focus on preparing current and future members to take on additional roles and responsibilities, and as well as prepares members for advancement and promotion into key roles in the organization.
8. CPSM recommends the Fire Chief work with the Fire Board and develop specific planning initiatives and expectations of the Fire Marshal position and Community Risk Reduction work to be completed. Initial position responsibilities should include fire code enforcement in accordance with NFPA 1730; building plans review specifically focused on fire protection and life safety systems, site plans (proper fire department access and water supply availability), and as directed by the Fire Chief and Fire Board; public life safety education; and Emergency Planning and Community Right to Know Act (EPCRA) reporting.
9. CPSM recommends the SAFD continue to work with the three district townships to update their local ordinances to include the adoption of the 2024 International Fire Code. This effort will align the townships with the City of Saline and create a uniform fire code across the SAFD district jurisdictions.
10. CPSM recommends the SAFD continue any current health, safety, and wellness program efforts, and develop a comprehensive health, safety, and wellness initiative program, to include updating current policies and guidelines, and to the extent the department is capable and with available funding, ensure the program aligns with:

    NFPA 1550, *Standard for Emergency Responder Health and Safety, 2024 edition.*

    - This document consolidates:
        - NFPA 1500, *Standard on Fire Department Occupational Safety, Health, and Wellness Program.*
        - NFPA 1521, *Standard for Fire Department Safety Officer Professional Qualifications.*
        - NFPA 1561, *Standard on Emergency Services Incident Management System and Command Safety.*

    NFPA 1580 (to be released, 2025), *Standard for Emergency Responder Occupational Health and Wellness.*

- This document consolidates:
  - NFPA 1581, *Standard on Fire Department Infection Control, 2022 edition*.
  - NFPA 1582, *Standard on Occupational Medical Program for Fire Departments.*
  - NFPA 1583, *Standard on Health Related Fitness Programs for Fire Department Members.*
  - NFPA 1584, *Standard on the Rehabilitation Process for Members During Emergency Operations and Training Exercises.*

  NFPA 1585, Standard for Exposure and Contamination Control, 2025 edition.
- CPSM further recommends the oversight of all Health, Safety, and Wellness programs be maintained by the Fire Chief who should chair each of the health, safety, and wellness committees, and actively participate in program development, implementation, and success. Additionally, the Health and Safety Officer program should be expanded to include a designated Health and Safety Officer for each shift (Captain level) to ensure program continuity, communication, and effectiveness.

Operational

11. CPSM recommends the SAFD should maintain all automatic and mutual aid agreements as they play a role in providing staffing to moderate and high-risk fire and fire related response in the SAFD district. A strategic goal should include the enhancement of automatic aid from participating departments, of one engine on all structure fires with an objective of reaching 8-10 staff on the initial alarm.
12. CPSM recommends the SAFD consider the implementation of a policy outlining minimum staffing of two qualified personnel on initial alarm units. The current practice of two staff on the initial engine and one staff on an additional unit for building fire responses (when staffing is at three) creates the potential for operations in an environment that does not meet NFPA and MIOSHA safety benchmarks of establishing incident command, operating in teams of two, personnel accountability, the establishment of an initial rapid intervention team, two-in-two-out, and freelancing.
13. CPSM recommends over the longer term, and once a fiscal and strategic plan have been developed, the SAFD Fire Board may have to consider additional operational staffing at the main SAFD station so that two apparatus can respond on the initial alarm with a minimum staffing of six personnel. The Board may also have to consider, as growth continues in the west SAFD district, the design and construction of a second station in the western SAFD district to serve Lodi and Saline Townships with improved response travel times. This station will require staffing with a minimum of two-three staff per shift (one officer and 1-2 firefighters) and deployment of a single engine company with a minimum water tank of 1000 gallons.

Response Times

14. CPSM recommends the SAFD Fire Chief should work with HVA to monitor and reduce call processing (dispatch) times with a goal of moving closer to NFPA standard call processing times of 64-seconds at the 90th percentile for identified higher acuity fire and fire related calls (structure fires and high acuity technical fire related calls) and higher acuity medical fire response calls.
15. CPSM recommends the SAFD develop performance benchmarks for the initial response vehicle of ≤ 80 seconds for fire and special operations and ≤ 60 seconds for EMS responses at the 90th percentile.

16. CPSM recommends that as a part of any strategic planning, and as travel time is affected by station location, demand and workload, road network, and traffic congestion, the SAFD adopt a 5-minute (300 second) travel time benchmark measured at the 90th percentile as a performance benchmark for the City of Saline and the urban development area of Saline Township's southeast area; a 7-minute (420 seconds) travel time benchmark measured at the 90th percentile as a performance benchmark for the current high demand areas of York Township and the southwest area of Lodi Township, and a 14-minute travel time benchmark measured at the 90th percentile as a performance benchmark for all rural area responses. These are more realistic performance benchmarks for the current demand areas.
17. CPSM recommends the SAFD meet regularly with HVA to discuss response time challenges and methods HVA is considering or have implemented to reduce overall response travel times.

Training and Education

18. CPSM recommends the SAFD develop a plan to provide all personnel with mandatory high-intensity training on subjects such as periodic live fire training on at least a semi-annual basis; live fire facility training to include fireground basics such as hose and ladder evolutions, forcible entry, ventilation, search and rescue, and vehicle extrication. This should include practical skills competency and proficiency evaluations (non-punitive) as part of the department's comprehensive fire training program.
19. CPSM recommends the SAFD develop a plan that strives to achieve improved credit for all ISO-PPC grading schedule training categories to include the implementation of a pre-fire plan program that has a focus of exposing fire suppression crews to all commercial, industrial, business, public assembly, multi-family, and other target hazards identified in the district so that crews become familiar with these occupancies.
20. CPSM recommends the SAFD work with the SAFD municipalities to locate available public land, such as a public works facility, where a training area can be located. This would enable the SAFD to procure or build training props for live fire and rescue training such as vertical ventilation, forcible entry, vehicle extrication, fire streams, SCBA maze training and other fundamental fire department skill reinforcement.

Infrastructure

21. CPSM recommends the SAFD develop, over a one-year period, a fire apparatus replacement plan that follows apparatus age recommendations in accordance with NFPA 1900 standard, *Standard for Aircraft Rescue and Firefighting Vehicles, Automotive Fire Apparatus, Wildland Fire Apparatus, and Automotive Ambulances,* 2024 edition.

Planning objectives should include to the extent possible and based on funding:

- First-line apparatus should not exceed 15-18 years of service on the front line. Once an apparatus reaches this age, it should undergo a Level 1 refurbishing in accordance with NFPA 1910, *Standard for Inspection, Maintenance, Refurbishment, Testing, Retirement of In-Service Emergency Vehicles, and Requirements for Marine Firefighting Vessels*, (current edition) as a first alternative to extend service life.
- Reserve apparatus (apparatus in the 19-25 age range that have not received a refurbishment) should be replaced in a timeframe where service life does not exceed 25-years.

- Apparatuses greater than 25 years old should be removed from service. If that is not possible in the near term, their use should be limited to reserve status and scheduled for replacement as soon as funding can be allocated.

- Combining apparatus types (2 types into1) such as one Engine and the Rescue into a Rescue Engine (consideration for the next Engine replacement). This would avail a multi-purpose apparatus capable of firefighting and technical rescue (a common practice across the country, particularly where staffing is limited).

- Apparatus components which are either fixed or portable and which require annual testing—fire pumps, aerial ladder and aerial ladder assemblies, ground ladders, self-contained breathing apparatus to include personnel fit-testing, and fire hose—should be tested in accordance with manufacturer and industry specifications and standards, and proper records maintained at the department, the city and with the maintenance vendor.

22. CPSM recommends the SAFD Fire Board include in any strategic and fiscal planning the renovation of the SAFD fire facility. Renovation should include living and office space, improved storage space, and ensuring at a minimum attention is given to the health and safety of all staff and visitors to include security; carcinogen exposure; decontamination areas for staff, gear, station wear, PPE, and equipment; efficient HVAC systems that provide maximum ventilation and air movement; porous free surfaces throughout; living spaces free of contaminants; contemporary physical training space and equipment located away from the apparatus bays and well ventilated; and gender separate bathroom, shower, and bunking areas

23. CPSM recommends the SAFD Fire Board include in any strategic and fiscal planning a midterm strategic initiative that further studies a fire facility in the west district area to reduce response travel times to Lodi and Saline Townships. CPSM further recommends this station house a staffed engine with a minimum tank capacity of 1000 gallons and at the District's discretion, an existing water tanker apparatus.

End of Section

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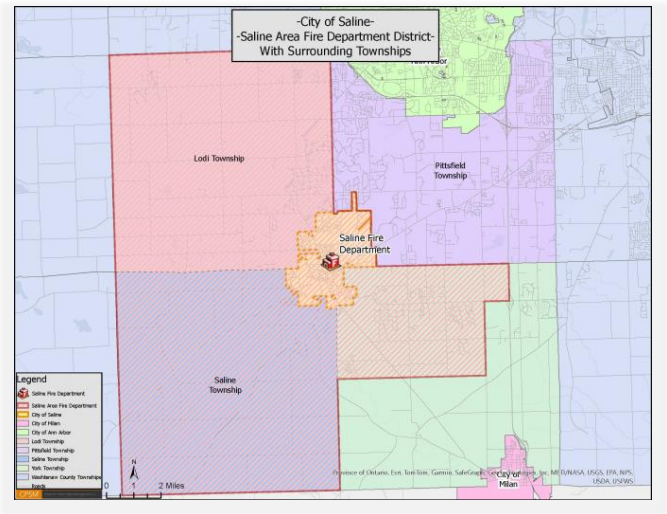
SECTION 2. FIRE DISTRICT SERVICE AREA OVERVIEW

Service Area Overview

The Saline Area Fire Department (SAFD) serves a fire district of approximately 86 square miles, encompassing the City of Saline, Saline Township, Lodi Township, and a portion (square miles) of Lodi Township. The total population within the service area is approximately 20,000, with just over 9,000 residents living in the city, which represents the largest population center in the fire district.[3] The fire facility is located in the City of Saline.

The SAFD response district includes agricultural lands, residential neighborhoods, light industrial zones, municipal infrastructure, heavy manufacturing, retail centers, service establishments, schools, parks, and trails. There are approximately 269 lane miles of road located in the district, which is a component of the SAFD participating locality funding model.



The largest industries in the SAFD district include agriculture, health care and social assistance, manufacturing, and educational services.[4] The district includes several industrial and manufacturing entities, government facilities, and municipal infrastructure to include water and wastewater treatment facilities. The City of Saline has a downtown area that includes restaurants, businesses, storefronts, and other mixed-use buildings.

Notable industries in the district include Condat Lubricants (industrial lubricant oils and greases), Faurecia (automotive interior components), JAC Products (automotive trim and vehicle rack parts), Liebherr Aerospace (aircraft parts), R & B Plastics Machinery (plastic materials), American Soy (broth) located in the city, and Toyota Motor North America Research and Development located in York Township. ***The greatest building risk overall in the fire district (by count) is single-family residential dwellings.***

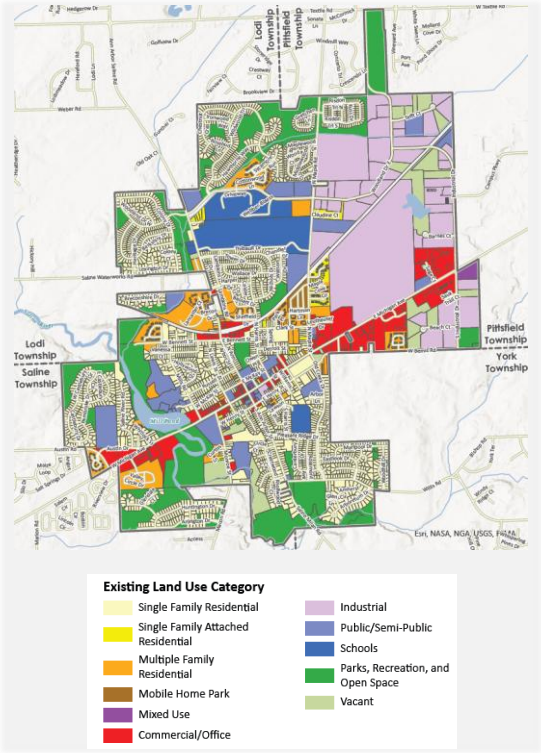
City of Saline

The City of Saline is a city in Washtenaw County and located in the southeast region of the State of Michigan. Geographically, Saline is contiguous with Pittsfield Township to the east and northeast, York Township to the east and southeast, Saline Township to the west and southwest, and Lodi Township to the west and northwest.

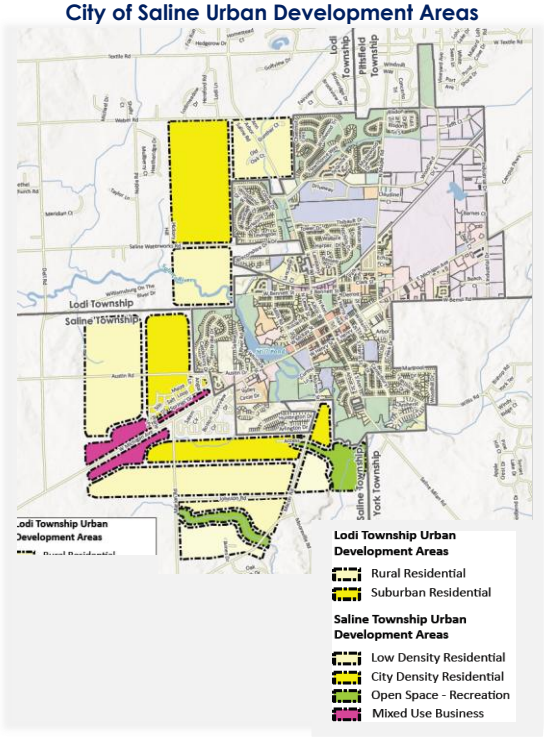
The city operates under a council-manager form of government and offers traditional municipal services to include a police department, public utilities, parks and recreation, community development services, municipal treasurer services, and public works.

3. U.S Census Bureau Quick Facts: City of Saline, July 1, 2023, estimated.
4. https://datausa.io/profile/geo/saline-mi.

City of Saline Existing Land Use Map



City of Saline Urban Development Areas



As noted, the population in the city is just over 9,000 (as of the July 1, 2023, U.S. Census estimated count-9,006). This is up from the 2020 decennial census of 8,948, which is an increase over the 2010 decennial census of 8,810, a 1.6% increase over the ten-year period. Total city area is 4.34 square miles.

The existing land use map to the left indicates that generally, the greatest percentage of single-family residential buildings are located west of N. Maple Rd. and southeast of U.S. Hwy. 12.[5]

The industrial land use, where the manufacturing and industrial sites and businesses are located is in the northeast portion of the city and generally segregated from residential land use.

The commercial/office corridor follows U.S. Hwy. 12 primarily. Multifamily residential, an increased fire and life safety risk, are located centrally in the city with some land use allowance north central and southwest.

The current City of Saline Master Plan includes Urban Development Areas (UDA's) in both Lodi and Saline Township as identified in the map to the left.[6] According to the plan, UDA's are mutually agreed upon geographic areas between a city and a contiguous township.

Within a UDA boundary municipal services such as water and sewer may be extended/available. Outside of the boundaries these services are not available. The availability of these services is meant to control and guide future development and growth.

UDA's designated in Lodi Township include rural and suburban residential (a higher density).

UDA's in Saline Township are designated as low density and city density residential (a higher density), mixed use business, and some open space.

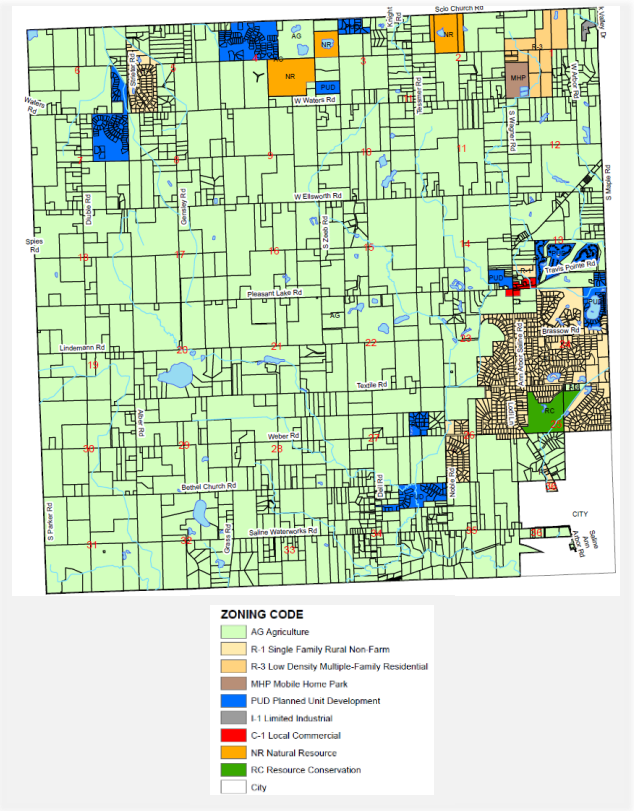
5. City of Saline, MI Master Plan.
6. ibid.

Lodi Township

Lodi Township is a civil or general law township in Washtenaw County and located in the southeast region of the State of Michigan. Geographically, Lodi is contiguous with the City of Saline and Pittsfield Township to the east, Saline Township to the south, Freedom Township to the west, and Scio Township to the north.

The township operates as a statutory unit of government and is governed by a Board of Trustees, which includes a Township Supervisor, Township Clerk, Township Treasurer, and four Township Trustees. As an administrative division of Washtenaw County, most services such as law enforcement, roads, building permitting, health and human services, and environment and recreation are provided at the county level.

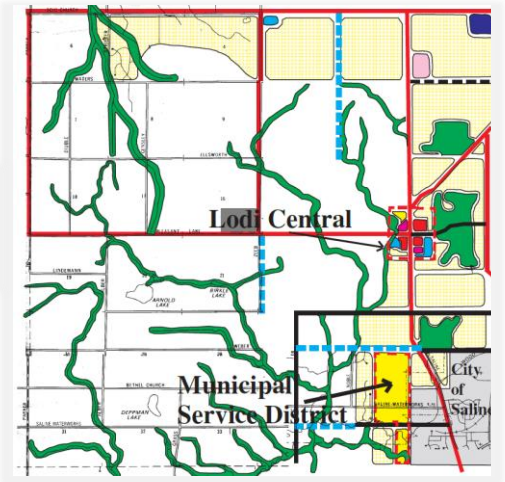
Lodi Township Zoning Map



The 2020 decennial census population in the township is 6,417. This is an almost six percent increase from the 2010 decennial census population of 6,058. Total township area is 34.27 square miles.

The existing zoning map to the left indicates the greatest percentage of land is zoned for agriculture use.[7] There are concentrations of single-family, mobile home, and planned unit development residential buildings in the north, east, and southeast areas of the township. Local commercial is concentrated in the central east area of the township.

Future Land Use, as outlined in the bottom right map, indicates the same general theme as the current zoning map and includes rural residential land use in the north, east, and southeast areas of the township. The remaining land area remains agricultural.[8] The future land use map also identifies the UDA (municipal service area) contiguous to the City of Saline.



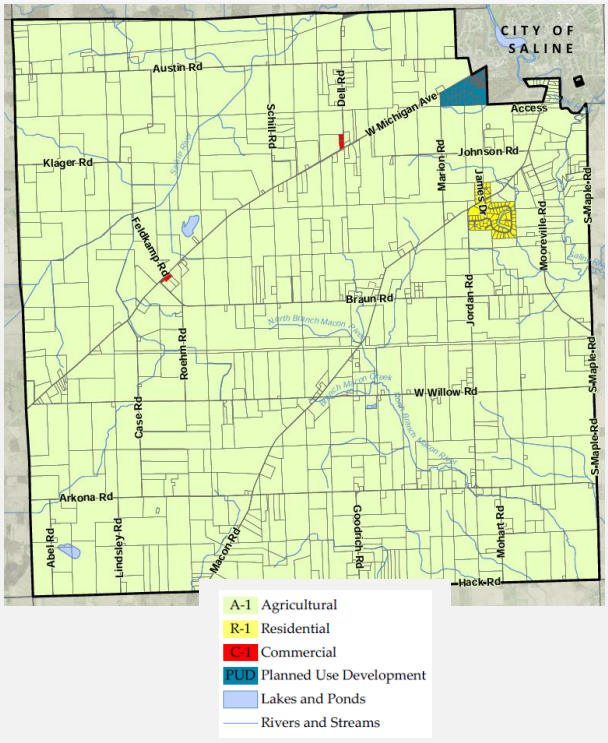
7. Zoning | Lodi Township.
8. ibid.

Saline Township

Saline Township is a civil or general law township in Washtenaw County and located in the southeast region of the State of Michigan. Geographically, Saline Township is contiguous with the City of Saline to the northeast, York Township to the east, Bridgewater Township to the west, Lodi Township to the north, and Macon Township (Lenawee County) to the south.

Saline Township operates as a statutory unit of government and is governed by a Board of Trustees, which includes a Township Supervisor, Township Clerk, Township Treasurer, and two Township Trustees. As an administrative division of Washtenaw County, most services such as law enforcement, roads, building permitting, health and human services, and environment and recreation are provided at the county level. Township services include a zoning administrator.

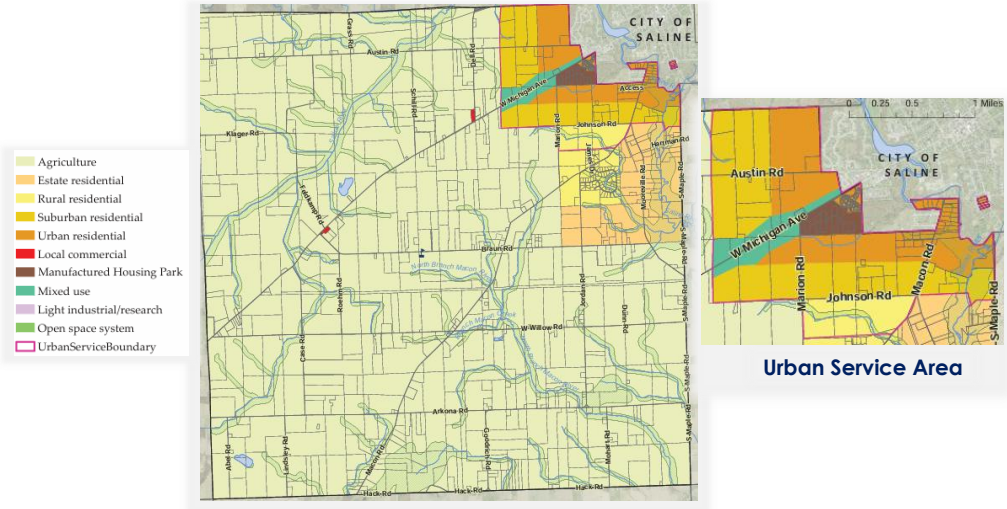
Saline Township Zoning Map



The 2020 decennial census population in the township is 2,277. This is an almost twenty percent increase from the 2010 decennial census population of 1,896. Total township area is 34.79 square miles.

The existing zoning map to the left indicates the greatest percentage of land is zoned for agriculture use.[9] There are two concentrations of residential and planned unit development in the northeast areas of the township. Local commercial zoning is identified in two places along U.S. Hwy. 12.

Future Land Use, as outlined in the bottom right map, indicates the same general theme as the current zoning map and includes future development in the northeast area of the township. The remaining land area remains agricultural with the same light commercial along U.S. Hwy. 12.[10] The future land use map also identifies the UDA (urban service area) contiguous to the City of Saline.



Urban Service Area

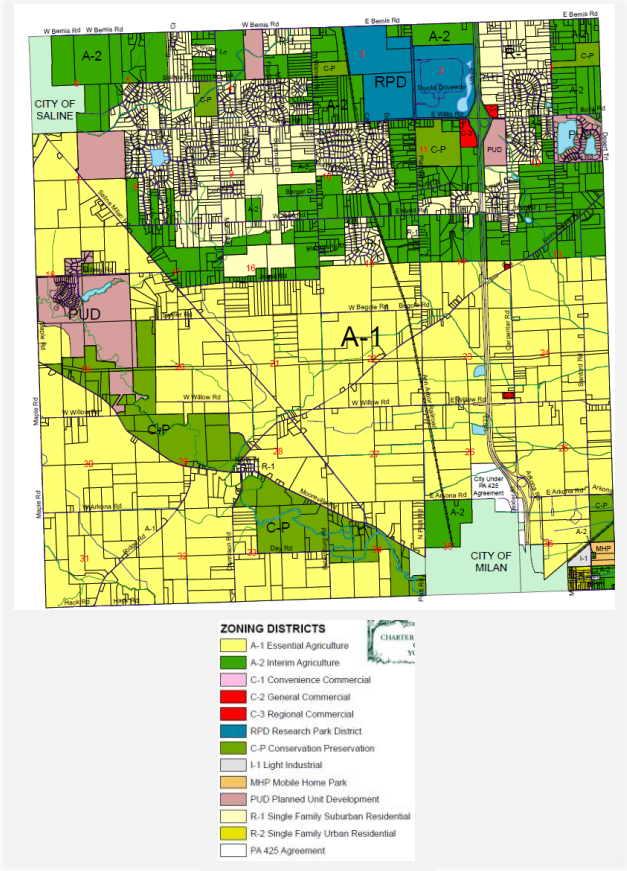
9. Salinetownship.org/forms.
10. ibid.

York Township

York Township is a charter township in Washtenaw County and located in the southeast region of the State of Michigan. Geographically, York Township is contiguous with the City of Saline to the northwest, Saline Township to the west, Pittsfield Township to the north, and Monroe County (Milan Township) to the south. The SAFD services approximately 12.5 miles of York Township's 34.71-mile land mass and a population of approximately 2,000.[11]

The township operates as a statutory unit of government and is governed by a Board of Trustees, which includes a Township Supervisor, Township Clerk, Township Treasurer, and four Township Trustees. As a charter township in Michigan, York township has certain rights and responsibilities of home rule. As an administrative division of Washtenaw County, most services such as law enforcement, roads, health and human services, and environment and recreation are provided at the county level. Township services include a building department and a zoning department.

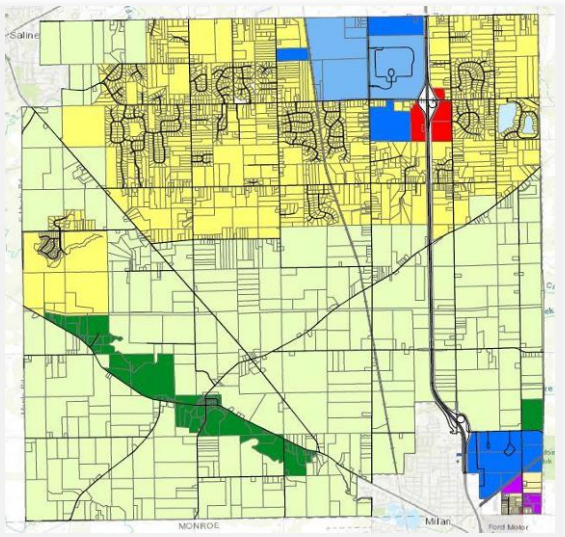
York Township Zoning Map



The 2020 decennial census population in the township is 9,108. This is an almost six percent increase from the 2010 decennial census population of 8,708. Total township area is 34.71 square miles.

The existing zoning map to the left indicates the greatest percentage of land is zoned for agriculture use.[12] There highest concentration of residential development in the northern half of the township. Local commercial zoning is limited in this area as well as a large area of land designated as a research park district.

Future Land Use, as outlined in the bottom right map, indicates the same general theme as the current zoning map and includes some expansion of commercial area. The remaining land area remains agricultural.[13]



11. ArcGIS ~2023 ACS data.
12. York Twp MI
13. York Township, MI Master Plan.

ISO-PPC Service Area Analysis

The Insurance Services Office (ISO) is a national organization that collects and evaluates information from communities across the United States regarding their capabilities to combat building fires. ISO conducts field evaluations to rate communities and their relative ability to provide fire protection and mitigate fire risk.

This evaluation allows ISO to determine and publish the community's Public Protection Classification (PPC). The data collected from a community is analyzed and applied to ISO's Fire Suppression Rating Schedule (FSRS) from which a Public Protection Classification (PPC) grade is assigned to a community (1 to 10). This is an analysis of the structural fire suppression preparedness and delivery system in a community.[14]

Class 1 (highest classification/lowest numerical score) represents an exemplary community fire suppression program that includes all the components outlined below. In contrast, Class 10 indicates that the community's fire suppression program does not meet ISO's minimum criteria. It is important to understand that the PPC is not just a fire department classification, but a compilation of community services that include the fire department, the emergency communications center, and the community's potable water supply system operator.

The FSRS considers three principal areas of a community's fire suppression system: emergency communications, fire department (including operational considerations), and water supply. In addition, it includes a Community Risk Reduction section that recognizes community efforts to reduce losses through fire prevention, public fire safety education, and fire investigation.

Emergency Communications (10 points)

This criterion is based on how well the fire department receives and dispatches fire alarms. Field representatives evaluate:

- The emergency reporting system.
- The communications center, including the number of telecommunicators.
- The computer-aided dispatch (CAD) facility or facilities if there are more than one (typically this includes more than one Public Safety answering Point or PSAP).
- The dispatch circuits and how the center notifies firefighters about the emergency location.

Fire Department (50 points)

This criterion is based on the distribution of fire companies throughout the area and determines if the fire department tests its pumps regularly and the inventories of each engine and ladder company's equipment according to NFPA 1901. Verisk reps also review the fire company records to determine factors such as:

- Type and extent of training provided to fire company personnel.
- Number of people who participate in training.
- Firefighter response to emergencies.
- Maintenance and testing of the fire department's equipment.

14. https://www.isomitigation.com.

Water Supply (40 points)

This criterion is based on the community's overall water supply also known as "Fire Flow." This component of the survey focuses on whether the community has sufficient water supply for fire suppression beyond daily maximum consumption. Verisk reps survey all components of the water supply system and review fire hydrant inspections and frequency of flow testing. Additionally, Verisk reps verify the number of fire hydrants that are no more than 1,000 feet from building locations.

Community Risk Reduction (5.5 points)

This criterion is based on the community's risk reduction programs. The inclusion of this section for additional credits allows recognition for those communities that employ effective fire prevention practices, without disproportionately affecting those who have not yet adopted such measures. The addition of Community Risk Reduction provides incentive credits to those communities who have programs directed at proactively reducing fire severity through a structured program of fire prevention activities. The areas of community risk reduction evaluated in this section include:

- Fire prevention and investigation programs.
- Fire safety education.

ISO Divergence Factors

It should be noted; even the best fire department will be less than fully effective if it has an inadequate water supply. Similarly, even a superior water supply will be less than fully effective if the fire department lacks the equipment or personnel to use the water. An ISO rating is often subject to modification by applying a divergence factor, which recognizes any disparity in the effectiveness of the agency and/or its water supply.

An ISO-PPC rating with the letter "Y" indicates a split classification, which is typical across the county. The first number is the class applicable to properties that are within five road miles of a fire station and within 1,000 feet of a credible water source. The second number indicates those properties within five road miles of a fire station but outside of 1,000 feet of a credible water source (built upon areas that do not have fire hydrants).

The Saline Fire Protection Service Area (FPSA) 2024 ISO report included the following credit points by major category:

- Emergency Communications: 7.97 earned credit points/10.00 credit points available.
- Fire Department: 22.37 earned credit points/50.00 credit points available.
- Water Supply: 36.65 earned credit points/40.00 credit points available.
- Community Risk Reduction (Fire Prevention/Inspection, Public Education, and Fire Investigation activities): 3.99 earned credit points/5.50 credit points available.

Overall, the community ISO-PPC rating yielded 61.60 earned credit points/105.50 credit points available. There was a -9.38-point divergence reduction assessed as well, which is automatically calculated based on the relative difference between the fire department and water supply scores. Overall, 60.00 earned credits or more qualify a community for a rating of 04/4Y. The basic fire flow for the SAFD FPSA has been determined to be 3,500 gallons per minute.

For perspective, CPSM reviewed a sampling of local ISO-PPC data (Scio Township, Pittsfield Township, and Ypsilanti Township.

- Scio Township 05/5Y
- Pittsfield Township 04/4Y
- Ypsilanti Township 04/4Y

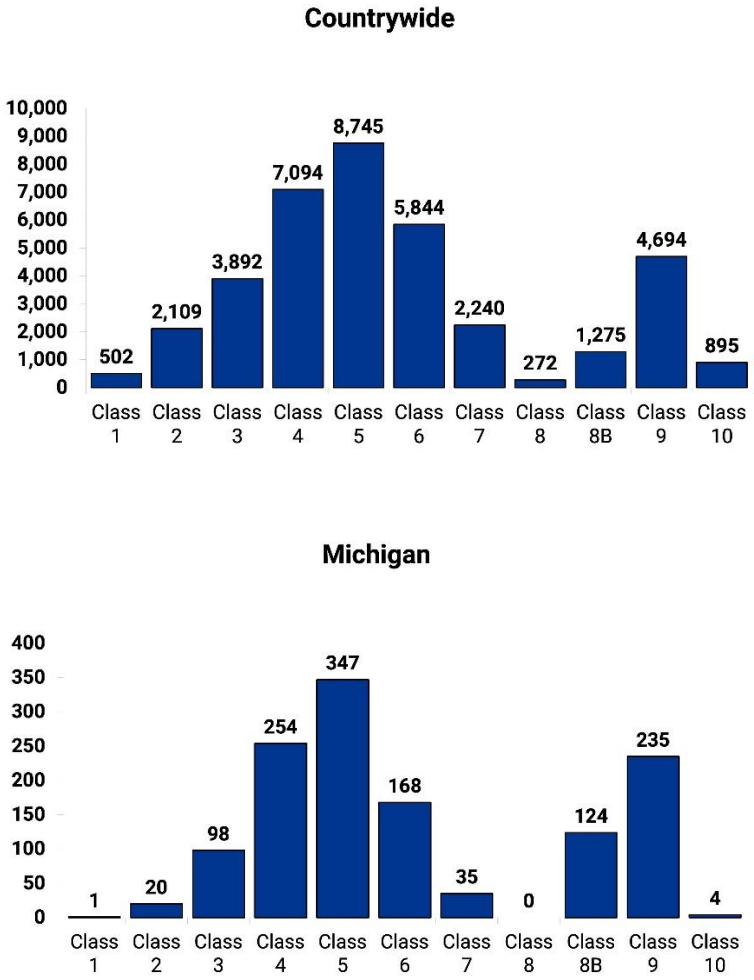
The next table presents the current ISO-PPC report outcomes for the Saline FPSA effective November 1, 2024.

Table 1: Saline FPSA ISO-PPC Earned Credit Overview

FSRS Component	Earned Credit	Credit Available
414. Credit for Emergency Reporting	3.00	3
422. Credit for Telecommunicators	4.00	4
432. Credit for Dispatch Circuits	0.97	3
440. Credit for Emergency Communications	**7.97**	**10**
513. Credit for Engine Companies	5.80	6
523. Credit for Reserve Pumpers	0.00	0.50
532. Credit for Pump Capacity	3.00	3
549. Credit for Ladder Service	0.72	4
553. Credit for Reserve Ladder and Service Trucks	0.00	0.50
561. Credit for Deployment Analysis	5.36	10
571. Credit for Company Personnel	3.60	15
581. Credit for Training	1.89	9
730. Credit for Operational Considerations	2.00	2
590. Credit for Fire Department	**22.37**	**50**
616. Credit for Supply System	28.05	30
621. Credit for Fire Hydrants	3.0	3
631. Credit for Inspection and Flow Testing	5.60	7
640. Credit for Water Supply	**36.65**	**40**
Divergence	**-9.38**	-
1050. Community Risk Reduction	3.99	5.50
Total Credit	**61.60**	**105.50**

In perspective, the Saline FPSA Class 04/4Y rating lies within the 19th percentile of fire departments countrywide and 20th percentile of fire departments within the State of Michigan. The following figure shows ISO-PPC ratings within the United States and within the State of Michigan.

Figure 1: PPC Ratings Country Wide and the Within the State of Michigan[15]



In summary, a favorable PPC numerical rating potentially may translate into lower insurance premiums for business owners and to some degree homeowners. This more favorable classification makes the community more attractive from an insurance risk perspective. How the PPC for each community affects business and homeowners can be complicated because each insurance underwriter is free to utilize the information, as they deem appropriate. Overall, many factors feed into the compilation of an insurance premium, not just the PPC.

15. https://www.isomitigation.com/ppc/program-works/facts-and-figures-about-ppc-codes-around-the-country/.

Areas of earned credit that should be reviewed further by the SAFD and the SAFD Board for improvement and to sustain/improve the current rating include:

- Credit for Dispatch Circuits Analysis (0.97/3 credits).
  - This category is out of the direct control of the SAFD and the SAFD Board as Huron Valley Ambulance, through a contractual agreement with the county dispatches the SAFD. However, efforts should be made to continually engage Huron Valley Ambulance regarding their ability to effectively dispatch calls through current dispatch circuits.

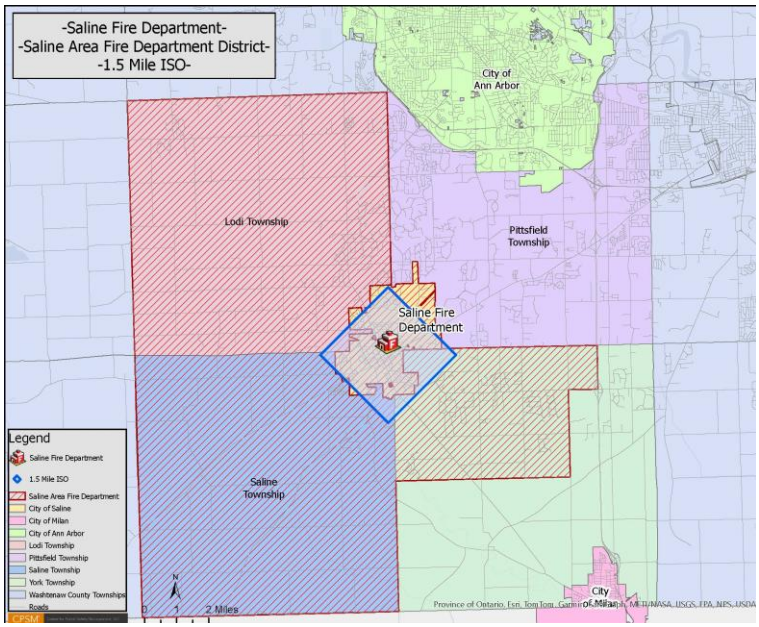
    Overall, this category reviews the dispatch circuit facilities used to transmit alarms to fire department members (the alarm notification system). Dispatch circuit facilities should be in accordance with the general criteria of NFPA 1221 and the ability to monitor for integrity of the primary dispatch circuit is a critical analysis component.

- Credit for Deployment Analysis #561 (5.36/10 credits).
  - This category contemplates the number and adequacy of engine and ladder companies to cover the built-upon areas of the city and fire protection service area. Credits for engine companies (#513 – 5.80/6.00) and ladder companies (#549 – 0.72/4.00) are considered in this rating section. The ISO benchmark is one engine company sighted for every 1.5 miles of built upon land, and one ladder company sighted for every 2.5 miles of built upon land. The determination for the Saline FPSA is made based on the percentage of built upon area that is covered by existing engine companies (1.5 miles) and existing ladder companies (2.5 miles).

    As a note here, the SAFD does not have a ladder truck that it deploys. Ladder truck service is provided primarily by Pittsfield Township Fire Department (PTFD) Stations 2 and 3 through mutual aid. All of the SAFD FPSA is out of the PTFD ladder 2.5 mile benchmark.

The next figures illustrates the coverage from Pittsfield Township stations 2 and 3 for the ladder company category and the SAFD station for the engine company category.

Figure 2: SAFD FPSA Engine Company Coverage-ISO Benchmark

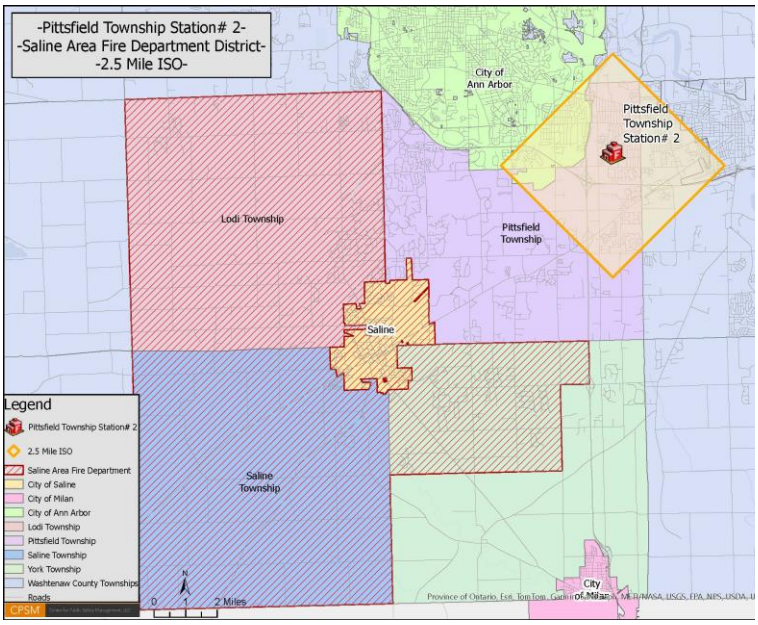


Analysis of the ISO-PPC benchmark of one engine company sighted for every 1.5 miles of built upon land:

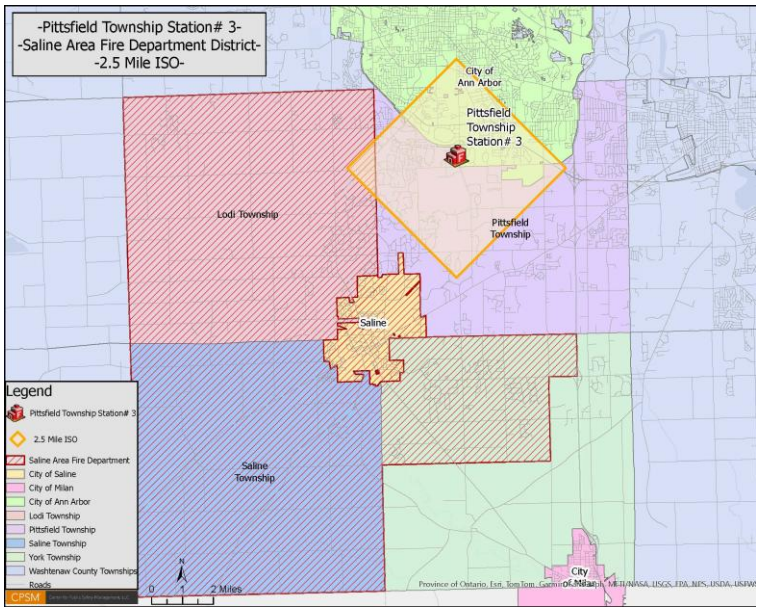
- The current station serves the City of Saline almost entirely minus the industrial zoned area in the northeast portion of the city.
- There is limited coverage Saline Township (northeast area). This area is currently lightly built upon.
- There is limited coverage to the northwest area of York Township the SAFD covers, which is currently zoned agricultural, but built upon.
- There is limited coverage to the southeast area of Lodi Township. This area is currently lightly built upon.

Figure 3: SAFD FPSA Ladder Company Coverage-ISO Benchmark

PTSFD Station 2 Ladder Coverage in SAFD FPSA



PTSFD Station 2 Ladder Coverage in SAFD FPSA



Analysis of the ISO-PPC benchmark of one engine company sighted for every 2.5 miles of built upon land:

- Ladder apparatus from PTFD Station 2 provides no direct coverage to the SAFD FSPA within a 2.5-mile triangulation.
- Ladder apparatus from PTFD Station 3 provides no direct coverage to the SAFD FSPA within a 2.5-mile triangulation.

Areas of earned credit that should be reviewed further by the SAFD and the SAFD Board for improvement and to sustain/improve the current rating are continued on the next page.

- Credit for Company Personnel #571 (3.60/15.00 credits).
  - This category reviews the average number of existing firefighters and company officers available to respond to first alarm structure fires. Overall, on-duty strength is determined by an annualized review of total firefighters and officers on duty considering the various types of leave and vacancies associated with department operations.

    On-call or paid-call members are credited based on the average number of this member type responding to first alarms. On-call or paid-call personnel not normally at the fire station are provided credit through a calculation that divides the number of responding firefighters and company officers by 3 to reflect the time needed to assemble at the fire scene and the reduced ability to act as a team due to the various arrival times at the fire location as compared to the on-duty staffing at the fire station that is ready to turn-out when alerted to the alarm. The SAFD utilizes paid-call personnel. ***Overall, the SAFD received credit for 4.25 on duty staff responding to first alarm structure fires.***

- Credit for Training #581 (A) Facilities and Use (0.00/35 credits).
  - For maximum credit each firefighter should receive 18 hours per year in structure fire-related subjects as outlined in the NFPA 1001 standard at a training facility where props and fire simulation buildings can be used. ***The SAFD is not meeting this section to their fullest potential.***

- Credit for Training #581 (B) Company Training (3.52/25 credits).
  - For maximum credit, each firefighter should receive 16 hours per month in structure fire-related subjects as outlined in the NFPA 1001 standard. ***The SAFD is not meeting this section to their fullest potential.***

- Credit for Training #581 (E) Existing Driver and Operator Training (0.83/5 credits).
  - For maximum credit, each existing driver and operator should receive 12 hours of driver/operator training per year in accordance with NFPA 1002 and NFPA 1451. ***The SAFD is not meeting this section to their fullest potential.***

- Credit for Training #581 (F) Training on Hazardous Materials (0.17/1 credits).
  - For maximum credit, each firefighter should receive 6 hours of training for incidents involving hazardous materials in accordance with NFPA 472. ***The SAFD is not meeting this section to their fullest potential.***

- Credit for Training #581 (H) Pre-Fire Planning Inspections (1.99/12 credits).
  - For maximum credit, pre-fire planning inspections of each commercial, industrial, institutional, and other similar type building (all buildings except 1-4 family dwellings) should be made annually by company members. Records of inspections should include up-to-date notes and sketches. ***The SAFD is not meeting this section to their fullest potential.***

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Section Summary

The Saline Area Fire District (SAFD) serves an area of approximately 86 square miles, encompassing the City of Saline, Saline Township, Lodi Township, and a portion (square miles) of Lodi Township. The total population within the service area is approximately 20,000. The largest population center is the City of Saline.

Population increases have been moderate between the last two decennial census periods in each municipality. By locality:

- City of Saline: +138
- Saline Township: +381
- Lodie Township: +359
- York Township: +400

The diverse fire district includes a blend of rural, suburban, and urban environments. Included in the landscape are single family dwellings (the largest overall building risk in terms of quantity), multi-family residential, mixed use (residential over commercial), several industrial businesses that have large footprint buildings, municipal infrastructure, several corporate business buildings, and a large automotive research and development site.

Land use in the townships is primarily rural. York Township has the largest land use dedicated to development, which is included in the DSAFD fire district response area. Lodi Township has current and planned development along its north and east boundary; Saline Township has area in the northeast area of the township designated for development; York Township has current and planned development on the north area of the township, which the SAFD services.

The current City of Saline Master Plan includes Urban Development Areas (UDA's) in both Lodi and Saline Township (the city's western boundary).

Any growth overall in the SAFD district will potentially increase call demand.

The SAFD had an ISO-PPC review (July 2024) earning a 4/4Y scoring (61.60 earned credits). This analysis is for the SAFD Fire Protection Service Area, which includes the City of Saline, Saline Township, Lodi Township, and a portion of York Township. In perspective, the Saline FPSA Class 4 rating lies within the 19th percentile of fire departments countrywide and 20th percentile of fire departments within the State of Michigan.

Areas of earned credit that should be reviewed further by the SAFD and the SAFD Board for improvement and to sustain/improve the current rating include:

- Credit for Dispatch Circuits Analysis (0.97/3 credits).
- Credit for Deployment Analysis #561 (5.36/10 credits).
- Credit for Company Personnel #571 (3.60/15.00 credits).
- Credit for Training #581 (A) Facilities and Use (0.00/35 credits).
- Credit for Training #581 (B) Company Training (3.52/25 credits).
- Credit for Training #581 (E) Existing Driver and Operator Training (0.83/5 credits).
- Credit for Training #581 (F) Training on Hazardous Materials (0.17/1 credits).
- Credit for Training #581 (H) Pre-Fire Planning Inspections (1.99/12 credits).

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SECTION 3. FIRE & EMS DEMAND AND RESPONSE TIME ANALYSIS

Fire & EMS Demand Analysis

Workload and demand include the types of calls to which Fire and EMS units are responding to, the frequency, and the location of the calls. Demand drives workload, staffing and station distribution considerations. Higher population centers with increased demand require greater resources. High demand affects the resiliency of fire and EMS departments, which can translate into longer response times.

EMS demand presents additional considerations, such as: the demand for available EMS units and crews, which is typically higher than fire units and crews; demand on non- EMS units responding to calls for service (fire/police units); and availability of EMS crews in departments that utilize cross-trained EMS staff to perform fire suppression critical tasks. For the SAFD, this department responds to both fire and EMS first tier calls for service. EMS ground transport is provided by Huron Valley Ambulance (HVA).

An indication of the community's fire risk is the type and number of fire related, non-fire related, EMS, technical rescue, and hazard incidents the fire department responds to. The entire SAFD service area is subject to these types of calls for service.

Statistically, fires are more likely to occur in residential structures and are more likely due to human causes. Historical CPSM statistics tell us that EMS calls for service typically involve one patient whose symptoms are such that the capabilities of the initial arriving unit(s) can manage the call. Mass casualty incidents may occur in the SAFD response district, and the impact on the department may be overwhelming, possibly triggering the need for mutual aid.

To complete the workload and response time analysis, CPSM received records for 2,020 calls that occurred between January 1, 2024, and December 31, 2024. We removed 40 canceled calls, four alarm calls, and four mutual aid calls with no enroute or arriving SAFD units (incomplete time stamp). As a result, 1,927 calls were included in this analysis.

Throughout the workload and response time discussion, a call is an emergency service request or incident. A run is a dispatch of a unit (i.e., a unit responding to a call). Thus, a call may include multiple runs (units).

To set the stage, we will first present the workload by SAFD locality in the first table.

Table 2: All Calls and Workload by City/Township in SAFD's Response Area

City/Township	Calls	Calls Per Day	% Workload
Lodi Twp	392	1.07	20.3
Saline City	1,133	3.1	58.8
Saline Twp	192	0.53	10.0
York Twp	210	0.58	10.9
SAFD Area Total	**1,927**	**5.28**	**100.0**

Percent of SAFD call workload by locality

59% in the City of Saline.

20% in Lodi Township.

10% in Saline Township.

11% in York Township.

SAFD Fire Workload and Demand

The next set of tables and figures illustrate each call type by category of **Fire** calls the SAFD responded to in the SAFD response area from January 1, 2024, to December 31, 2024, and where these calls occurred (demand analysis.

Table 3: SAFD Fire Calls by Type

Call Type	Total Calls	Calls per Day	Runs Per Day
False Alarm	**97**	**0.3**	0.3
Good Intent	35	0.1	0.1
Hazard	73	0.2	0.2
Outside Fire	22	0.1	0.1
Public Service	297	0.8	0.8
Structure Fire	18	0.0	0.1
Fire subtotal	**542**	**1.5**	**1.8**

Analysis

Overall SAFD responded to 542 Fire and/or Fire related calls.

SAFD averaged 1.5 Fire calls per day.

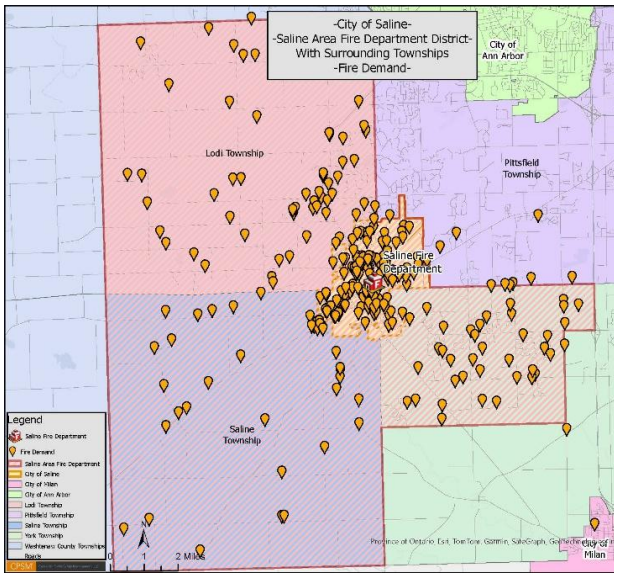
Public Service and Good Intent calls accounted for 61 % of all fire calls.

False alarms (typically fire alarm malfunction) accounted for 18% of all fire calls.

Hazard, outside and structure fire calls account for 21% of all fire calls.

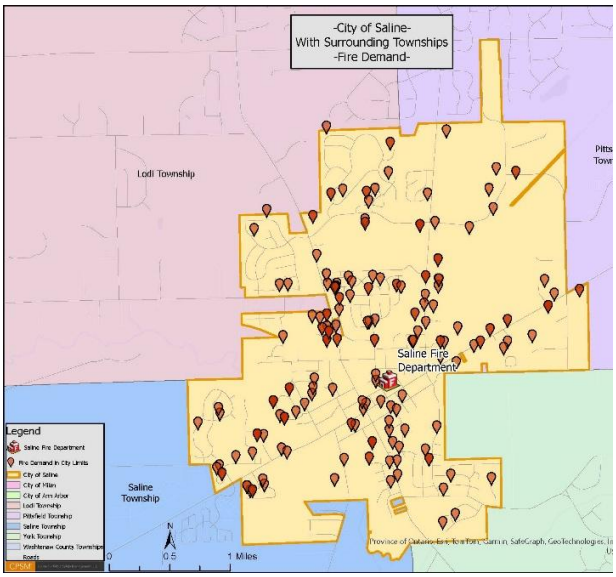
Figure 4: SAFD Fire Demand Analysis

SAFD Fire Demand-District Wide



Orange pins represent a SAFD Fire call location.

SAFD Fire Demand-City of Saline



There could be more than one call in the analysis year at the same location.

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SAFD EMS Workload and Demand

The next set of tables and figures illustrate each call type by category of **EMS** calls the SAFD responded to in the SAFD response area from January 1, 2024, to December 31, 2024, and where these calls occurred (demand analysis.

Table 4: SAFD EMS Calls by Type

Call Type	Total Calls	Calls per Day	Runs per Day
Breathing Difficulty	112	0.3	0.3
Cardiac and Stroke	190	0.5	0.6
Fall and Injury	361	1.0	1.0
Illness and Other	203	0.6	0.6
MVA	86	0.2	0.3
Overdose and Psychiatric	23	0.1	0.1
Seizure and Unconsciousness	136	0.4	0.4
EMS subtotal	**1,111**	**3.0**	**3.3**

Analysis

Overall SAFD responded to 1,111 EMS and Motor Vehicle Accidents.

SAFD averaged 3.0 EMS calls per day.

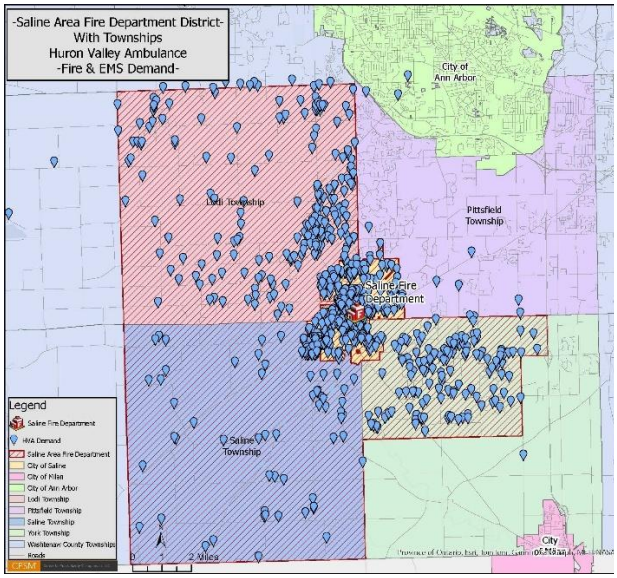
Fall and Injury, Illness and Other, and Overdose & Psychiatric (typically low-mid acuity) calls accounted for 53% of all fire calls.

Breathing Difficulty, Cardiac & Stroke, and Seizure & Unconsciousness (typically mid to higher acuity) calls accounted for 39%.

Motor Vehicle Accident calls account for 8% of all fire calls.

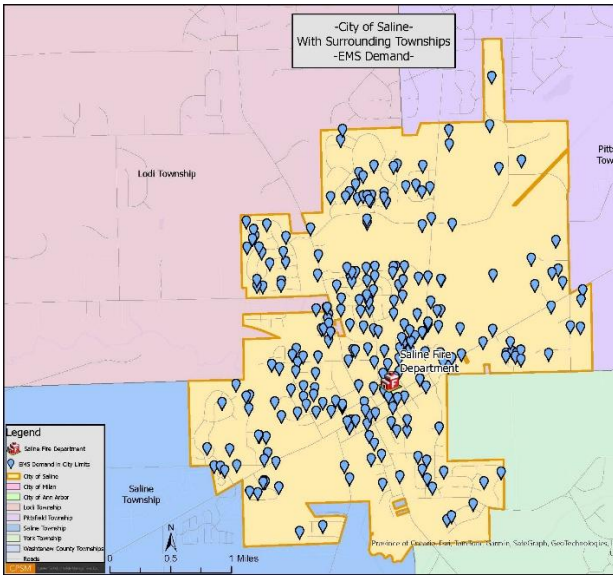
Figure 5: SAFD Fire Demand Analysis

SAFD Fire Demand-District Wide



Blue pins represent a SAFD EMS call location.

SAFD Fire Demand-City of Saline



There could be more than one call in the analysis year at the same location.

CPSM assesses that overall demand density is highest in the City of Saline, the developed-eastern area of Lodi Township, and the core developed area of York Township in the SAFD response area.

HVA EMS Workload and Demand

The SAFD provides first response EMS primarily within the SAFD service area boundaries (but can provide this service through mutual aid as needed).

Between January 1, 2024, and December 31, 2024, Huron Valley Ambulance (HVA) responded to 2,066 - ***911 calls*** inside the SAFD's response area (including Lodi Township, Saline City, Saline Township, and York Township. These include 2,027 EMS calls and 39 non-EMS calls. 255 non-emergency transfer calls also occurred in the district. The total calls in the district then was 2,321 for the one year analysis period.

To set the stage, we will first present the workload by SAFD locality in the first table.

Table 5: HVA Annual Workload by Location

Location	Calls	Calls Per Day	% Workload
Lodi Twp	392	1.07	17%
Saline City	1,482	4.06	64%
Saline Twp	182	.50	8%
York Twp	265	.73	11%
HVA Area Total	**2,321**	**6.36**	**100%**

Percent of SAFD call workload by locality

64% in the City of Saline.

17% in Lodi Township.

8% in Saline Township.

11% in York Township.

HVA demand in the SAFD response area is depicted in the next analysis.

Table 6: HVA Ambulance Response by Call Type

Call type	Total Calls	Calls per Day
Breathing difficulty	135	0.4
Cardiac and stroke	257	0.7
Fall and injury	628	1.7
Illness and other	591	1.6
MVA	125	0.3
Overdose and psychiatric	105	0.3
Seizure and unconsciousness	186	0.5
EMS Subtotal	**2,027**	**5.6**
Non-EMS	39	0.1
Total	**2,066**	**5.67**

Non-EMS calls include HVA response to fire related calls in the SAFD response area and account for 2% of all HVA calls.

Analysis

Higher acuity calls (Breathing Difficulty, Cardiac and Stroke, and Seizure and Unconsciousness) account for 29% of HVA calls.

Illness & Other, Fall & Injury, and Overdose & Psychiatric calls make up 65% of HVA calls.

Motor Vehicle Accidents make up 6% of HVA calls.

Similar to localities across the united states, EMS demand make up for the majority of calls for service within the SAFD response area.

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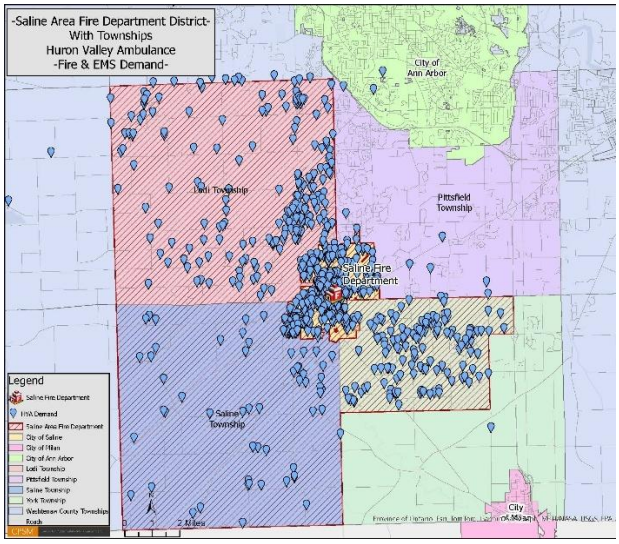
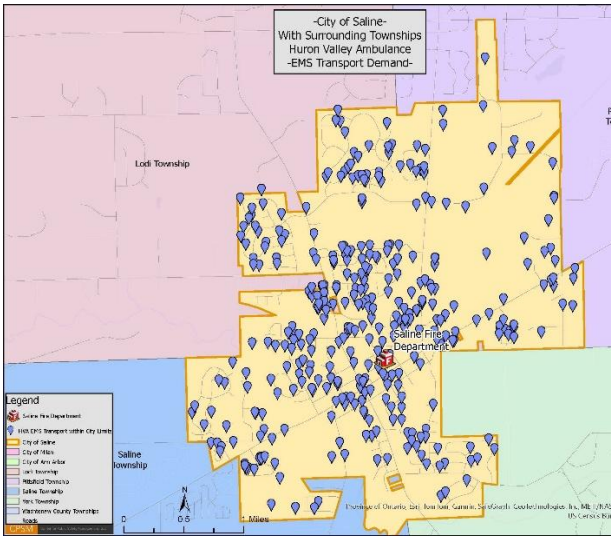
Figure 6: HVA EMS Demand

HVA Demand-District Wide



Blue pins represent a call location.

HVA Demand-City of Saline



There could be more than one call in the analysis year at the same location.

The highest concentration of EMS demand is in the more densified population center of the City of Saline and those areas in the townships that have some densification. Other demand is sporadic due to the rurality of the twonships.as illustrated in the demand map above.

Temporal Demand Variation

A temporal variation examines how emergency calls vary over time and focuses on identifying patterns and trends.

Temporal patterns influence the demand for resources and the effectiveness of emergency response strategies. This section aims to analyze the temporal variation of Fire and EMS calls for the SAFD response area by identifying peak periods and patterns of call activity. By recognizing these patterns, the SAFD and HVA can better allocate personnel and equipment, optimize response times, and ultimately improve public safety.

The following figures show the temporal variations of calls managed by SAFD between January 1, 2024, and December 31, 2024. These include calls by month, calls by hour of the day, and calls by day of the week and includes analysis of both SAFD and HVA

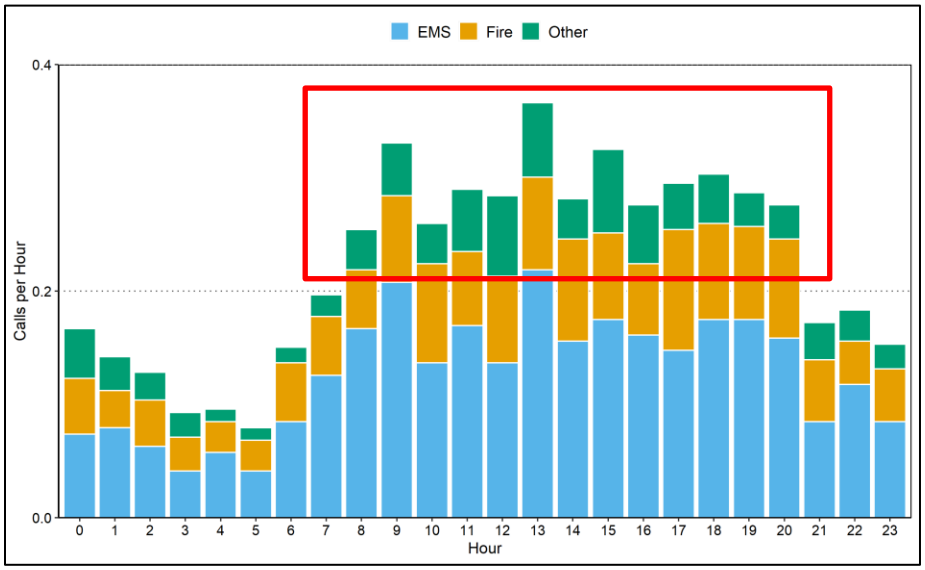
The first figure shows calls by hour of day. ***CPSM assesses*** these figures tell us:

- For the SAFD, peak response hours are between 8:00 am and 8:00 pm.
  - Calls are at their lowest demand between 1:00 am and 5:00 pm.
- For HVA, peak response hours are between 8:00 am and 8:00 pm.
  - Calls are at their lowest demand between 1:00 am and 5:00 pm.

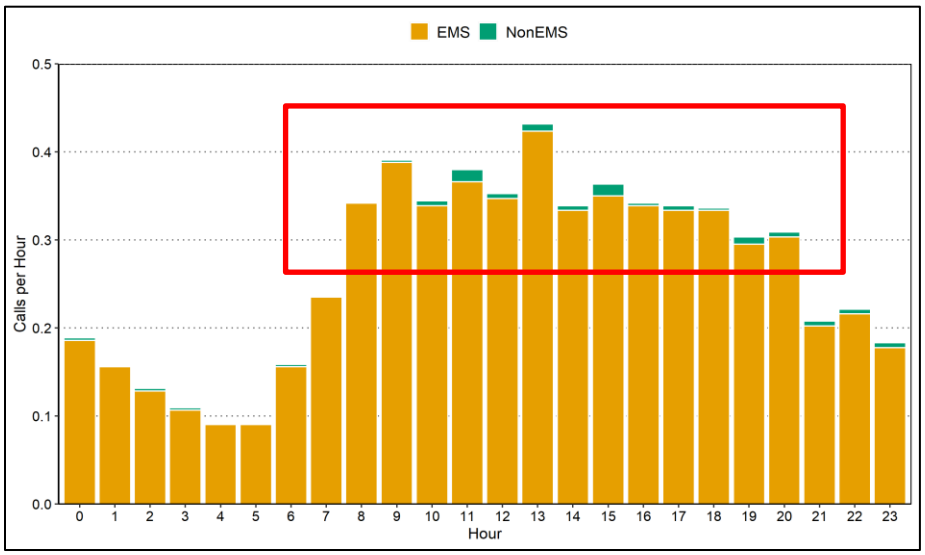
The SAFD response area data is similar to historical CPSM data.

Figure 7: Calls Demand by Hour of Day

Saline Area Fire District



Huron Valley Ambulance

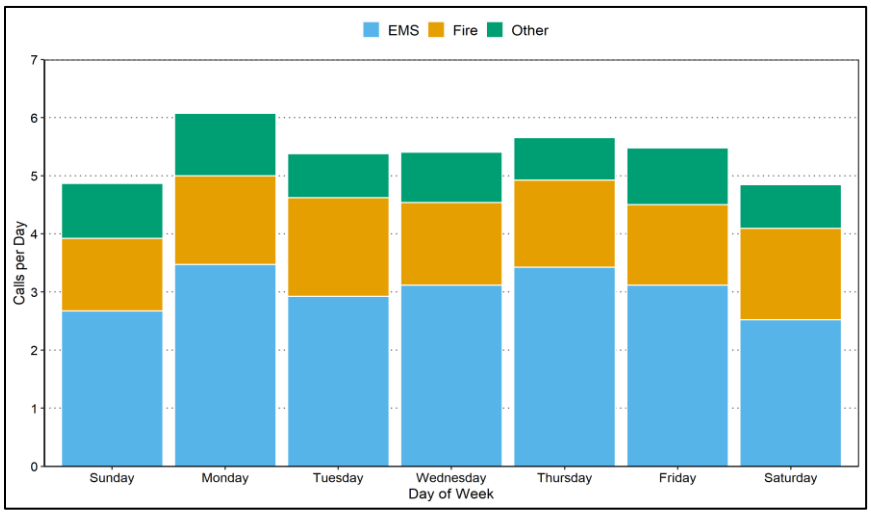


Next, CPSM looks at responses by day of the week. ***CPSM assesses*** these figures tell us:

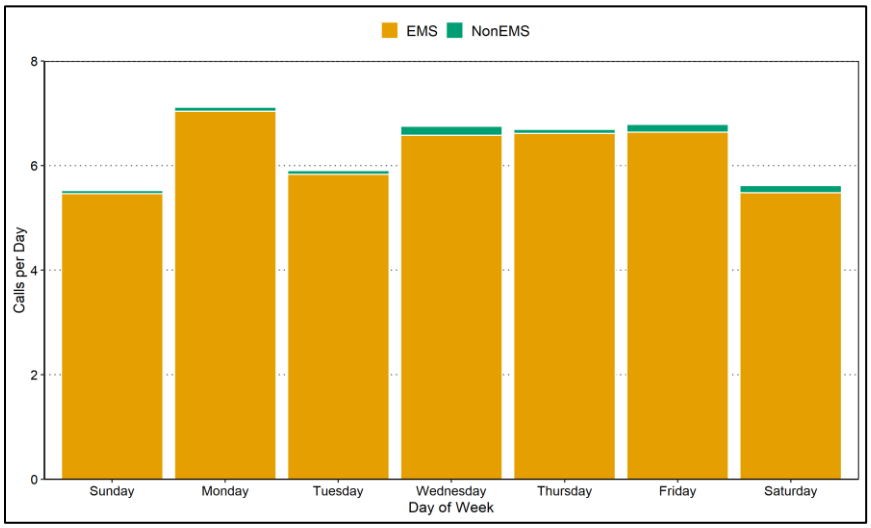
- For the SAFD, calls peak on Monday, and then again Thursday and Friday.
  - Calls also peak Wednesday, Thursday, Friday, but not as high as Monday.
  - Sunday and Saturday are the two slowest demand days of the week.
- For HVA, calls peak on Monday.
  - Calls also peak Wednesday, Thursday, Friday, but not as high as Monday.
  - Sunday, Tuesday, and Saturday are the two slowest demand days of the week.

Figure 8: Calls Demand Day by Week

Saline Area Fire District



Huron Valley Ambulance

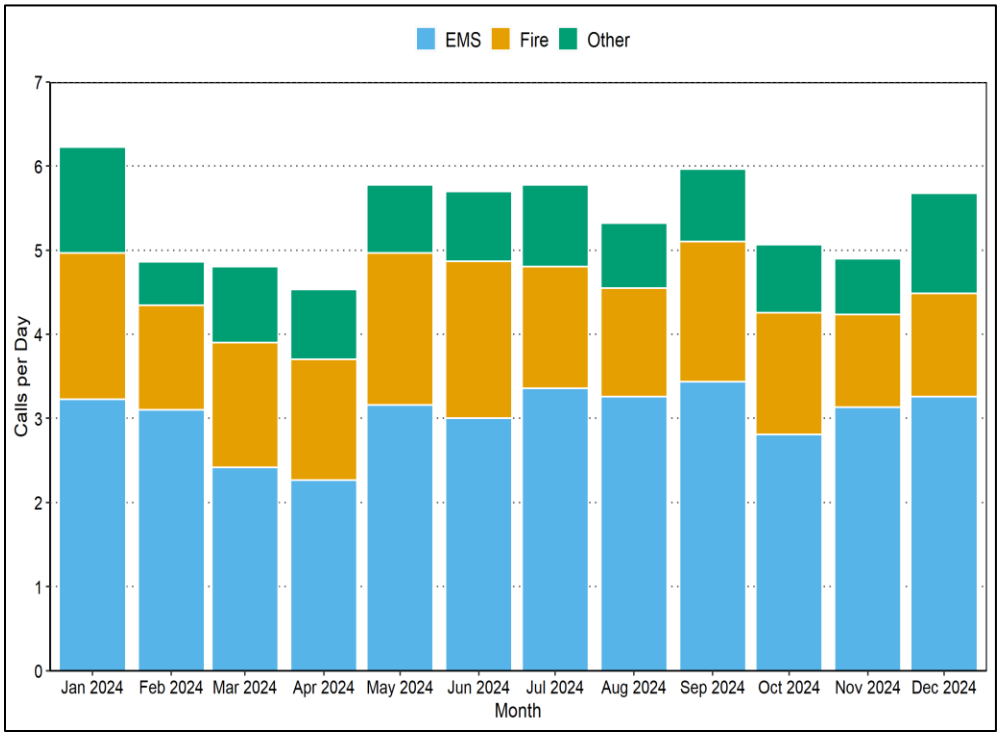


Next, CPSM analyzed the fire and EMS demand by month of the year (calls per day). ***CPSM assesses*** these figures tell us:

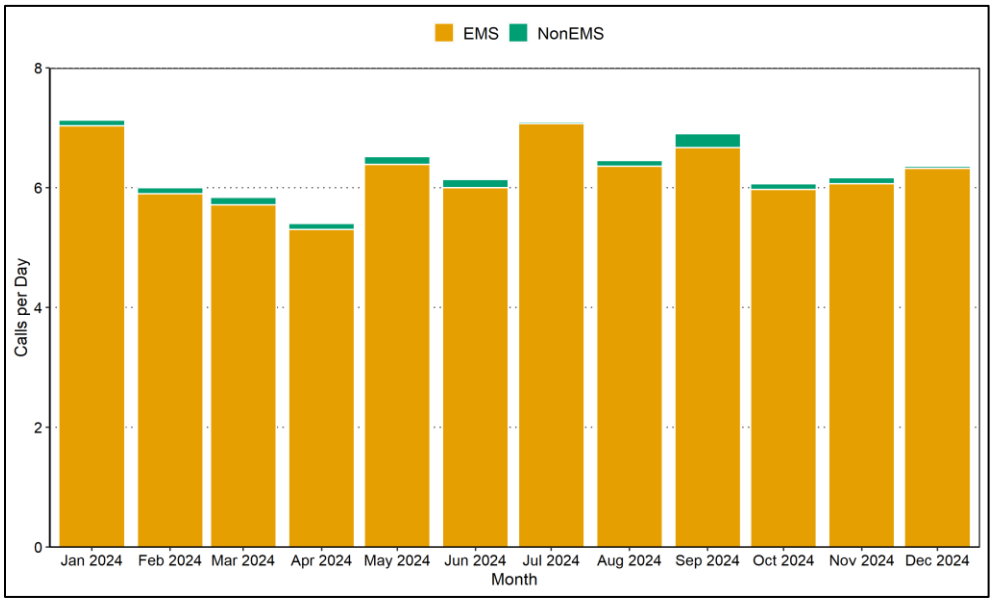
- For the SAFD, calls peak January and September.
  - Calls also increase in May, June, July, and December.
  - February, March, April, August, October, and November are the slowest six demand months of the year.
- For HVA, calls peak during the months of January, May, July, and September.
  - Calls also increase during the months of June, August, and December.
  - February, March, April, October, and November are the five slowest demand months of the year.

Figure 9: Call Demand by Month

Saline Area Fire District



Huron Valley Ambulance



Response Time Primer

For the purpose of the CPSM response time analysis the SAFD is benchmarked against NFPA 1710 *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Career Fire Departments, 2020 edition.* The SAFD is a primarily first-out career staffed fire department that includes paid-call volunteer members who provided surge capacity when available.

Overall, ***response time*** is a product of three components: ***dispatch time***, ***turnout time***, and ***travel time***.

Dispatch time (alarm processing time) is the difference between the time a call is received and the time a unit is dispatched. Dispatch time includes call processing time, which is the time required to determine the nature of the emergency and types of resources to dispatch. ***The NFPA 1710 standard for these components of response times is as follows:***

The event is processed and dispatched in:

- ≤ 64 seconds 90 percent of the time.
- ≤ 106 seconds 95 percent of the time.

Special call types:

- ≤ 90 seconds 90 percent of the time.
- ≤ 120 seconds 99 percent of the time.

The next component of response time is **turnout time**, an aspect of response which is controlled by the responding Fire and EMS department. ***NFPA 1710 states that turnout time shall be:***

- ≤ 80 seconds for fire and special operations 90 percent of the time.
- ≤ 60 seconds for EMS responses.

The last component of response time is **travel time,** an aspect of response time that is affected by factors such as station location, road conditions, weather, and traffic control systems. ***NFPA 1710 states that travel time for the first arriving fire suppression unit to a fire incident shall be:***

- ≤ 240 seconds for the first arriving engine company to a fire suppression incident 90 percent of the time.
- ≤ 360 seconds for the second company 90 percent of the time.
- ≤ 480 seconds to assemble the initial first alarm assignment on scene 90 percent of the time for low/medium hazards, and 610 seconds for high-rise fire incidents 90 percent of the time.

For EMS incidents the standard NFPA 1710 standard establishes a travel time of:

- ≤ 240 seconds for the first arriving engine company with automated external defibrillator (AED) or higher-level capability.
- ≤ 480 seconds or less travel time of an Advanced Life Support (ALS) unit at an EMS incident where the service is provided by the fire department provided a first responder with an AED or basic life support unit arrived in 240 seconds or less travel time.

The next table examines SAFD fire and EMS response times by locality.

Table 7: SAFD Response Times: 90th Percentile-NFPA 1710

Location	Average Response Time				90th Percentile Response Time				Call Count
	Dispatch	Turnout	Travel	Total	Dispatch	Turnout	Travel	Total	
Lodi Twp	2.1	1.3	7.6	11.0	3.6	2.4	12.0	16.3	161
Saline City	2.4	1.2	3.1	6.6	3.9	2.3	4.6	9.0	455
Saline Twp	2.2	1.4	5.7	9.4	3.7	2.6	9.2	14.5	101
York Twp	2.3	1.5	6.6	10.4	3.6	2.9	9.5	14.2	104
Total	**2.3**	**1.3**	**4.7**	**8.3**	**3.8**	**2.4**	**8.8**	**13.0**	**821**

From this table, ***CPSM assesses***:

- The dispatch time at the 90th percentile of 3.6 minutes (216 seconds) overall, is in excess of the NFPA standard of ≤ 64 seconds.
- The turnout time at the 90th percentile of 2.4 minutes (144 seconds) overall, is in excess of the NFPA standard of ≤ 60 seconds for EMS calls and 80 seconds for fire calls.
- The travel time at the 90th percentile of 8.8 minutes (528 seconds) overall, is in excess of the NFPA standard of ≤ 240 seconds for EMS calls and structure fire calls.
    - The city of Saline, due to the location of the SAFD station in the city, is the closest to NFPA travel times (276 seconds) for EMS calls and structure fires.
    - Lodi Township has the longest travel time of 12 minutes (720 seconds) due to its rurality and distance from the SAFD station.
    - Saline and York Townships have elevated travel time of 9.2 and 9.5 minutes (552 seconds and 570 seconds respectively) due to their rurality and distance from the SAFD station.

Response times for fire incidents are based on the concept of "flashover." A flashover is the near-simultaneous ignition of directly exposed combustible material in an enclosed area. When certain organic materials are heated, they undergo thermal decomposition and release of flammable gases. Flashover occurs when the majority of the exposed surfaces in a space are heated to their auto ignition temperature and ignite.

Flashover occurs more quickly and more frequently today and is caused at least in part by the introduction of significant quantities of plastic and foam-based products into homes and businesses (e.g., furnishings, mattresses, bedding, plumbing and electrical components, home and business electronics, decorative materials, insulation, and structural components). These materials ignite and burn quickly and produce extreme heat and toxic smoke.

When the fire does reach this extremely hazardous state, initial firefighting forces are often overwhelmed, and a larger and more destructive fire occurs. In these circumstances the fire escapes the room and even the building of origin, and significantly more resources are required to affect fire control and extinguishment. This links directly to the discussion in this report regarding the assembling of an Effective Response Force for building fires. The next figure illustrates this phenomenon in terms of fire department response and fire protection systems.

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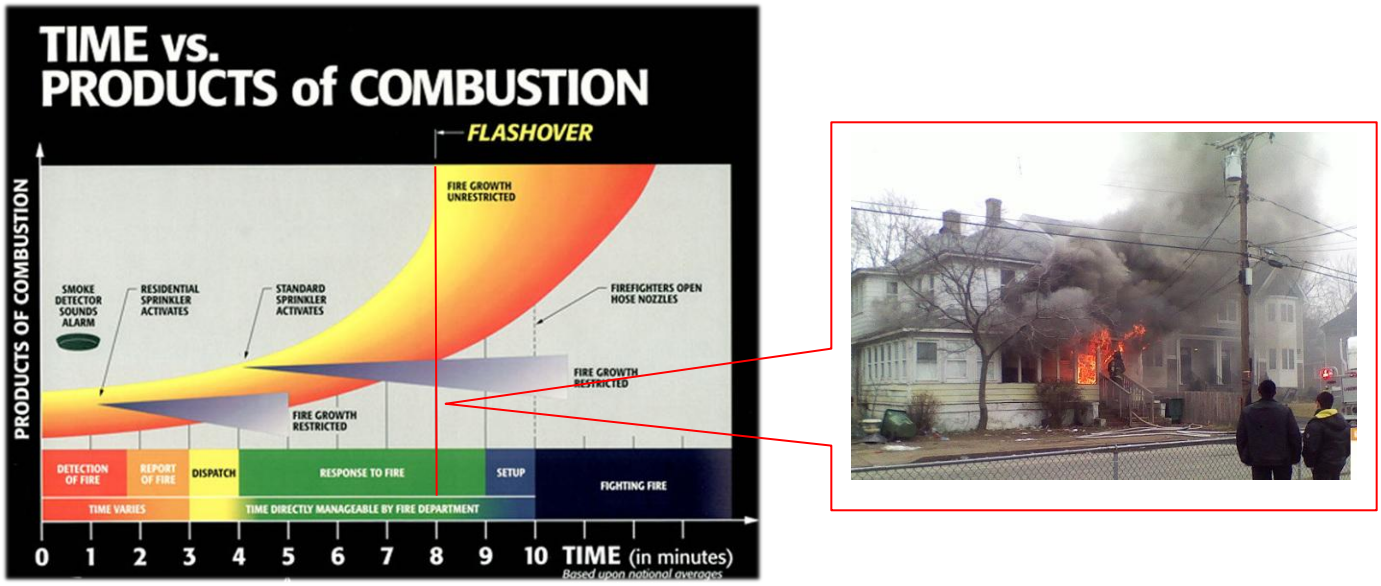
Figure 10: Fire Growth and Flashover[16]



The illustration above shows how a fire grows over a brief period of time from inception (event initiation) through flashover. The time-versus-products of combustion curve shows activation times and effectiveness of residential sprinklers (approximately one minute), commercial sprinklers (four minutes), flashover (eight to ten minutes), and firefighters applying water first to the fire after notification, dispatch, response, and set-up (ten minutes). ***This illustrates the demand on the fire department to have a quick response to a building fire with the goal of containing the fire to the room of origin to reduce property loss and more quickly address a life-safety scenario.***

The next table reviews response times for the SAFD for the period January 1, 2024, to December 31, 2024 (calls with complete time stamps). Response times are measured at the 90th percentile. These are the response time metrics for benchmarking against the NFPA 1710 standard.

As reviewed above, the SAFD has some paid call members. This may point to use of the NFPA 1720 standard (predominately volunteer standard), however the SAFD is primarily a career fire department by the nature of their staffing model, which is first out with career staffing and then surge support from a limited number of paid-call personnel when they are available. Utilizing the NFPA 1710 standard was confirmed by the SAFD Fire Chief as the standard the SAFD follows.

Before the response time discussion, it is important to understand the cascade of events in a Fire event, which begins with the event initiation, cascades with the turnout of staff and apparatus, response of fire apparatus and staff to the scene, to the safe commencement of the initial fire attack and other initial fireground critical tasks.

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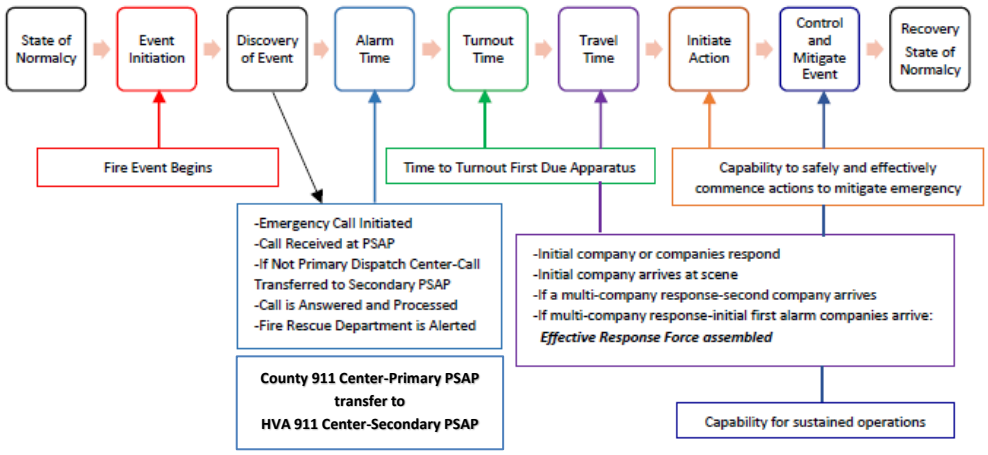
16. Fire Protection System Designs, Grant, 2018.

Figure 11: Incident Cascade of Events: Fire Response-NFPA 1710



CPSM further assesses response times by call type as depicted in the next table.

Table 8: Average Response Time, by Call Type (Minutes)

Call Type	Dispatch	Turnout	Travel	Total
False alarm	2.8	0.8	5.4	8.9
Good intent	2.5	1.4	5.0	8.9
Hazard	3.2	0.9	5.8	9.9
Outside fire	4.0	1.0	5.7	10.7
Public service	2.4	1.4	5.4	9.2
Structure fire	2.1	2.0	5.6	9.6
Fire subtotal	**2.8**	**1.1**	**5.5**	**9.3**

Table 9: 90th Percentile Response Time, by Call Type (Minutes)

Call Type	Dispatch	Turnout	Travel	Total
False alarm	4.6	2.0	10.2	13.6
Good intent	4.3	3.3	7.9	11.7
Hazard	4.9	2.5	13.6	17.8
Outside fire	6.3	2.5	9.6	14.4
Public service	5.6	2.8	14.9	17.9
Structure fire	4.6	3.2	9.7	14.3
Fire subtotal	**4.6**	**2.5**	**10.1**	**14.4**

Assessment

Both the average and 90th percentile dispatch (call processing) times do not meet NFPA 1710 standards (≤ 64 seconds for dispatch time). Dispatch time for fire calls is more than 4x the NFPA standard at the 90th percentile.

Recommendation: The SAFD Fire Chief should work with HVA to monitor and reduce call processing (dispatch) times with a goal of moving closer to NFPA standard call processing times.

The 90th percentile turnout times do not meet NFPA 1710 standards (≤ 80 seconds for Fire calls).

Recommendation: This is a cultural issue within the SAFD and should be addressed and monitored by the Fire Chief with a goal of meeting NFPA 1710 standards.

Travel times are and will remain high as the SAFD response area is served by a single station in the central-east portion of the response district. This will remain constant until another facility is considered in the western portion of the district.

The next set of figures illustrates response travel time bleeds from the SAFD station. CPSM utilizes ArcGIS software to complete this analysis. The software utilizes the district's road network, traffic control systems such as stop signs, traffic signals, round-abouts, U-turns, and speed limits.

Figure 12: SAFD Response Travel Time Bleeds-District

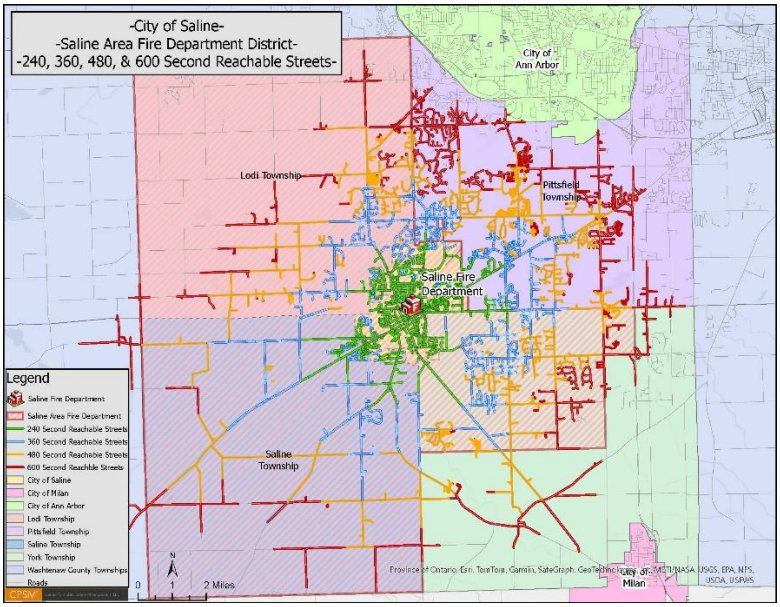
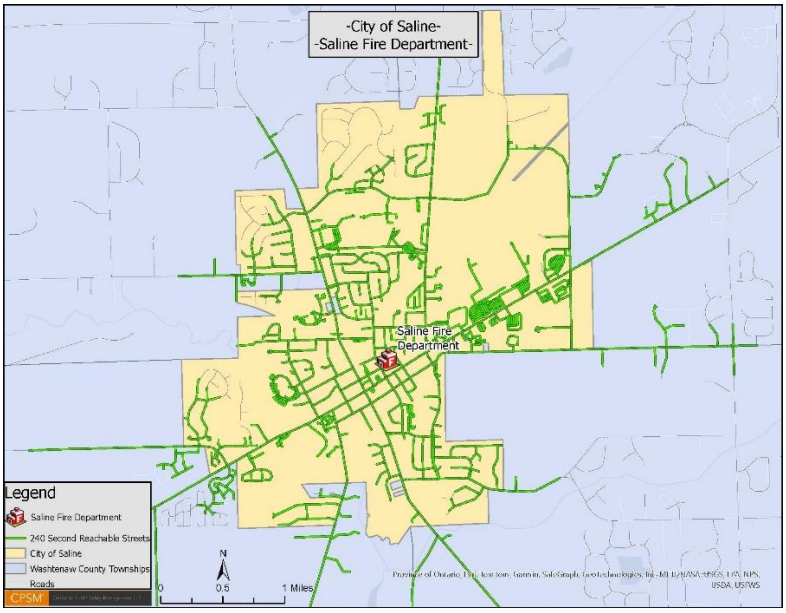


Figure 13: SAFD Response Travel Time Bleeds City of Saline



Assessment

The City of Saline is almost 100% covered at the 240 second NFPA 1710 travel time bleed standard for building fires and EMS first fire resource on the scene.

The core development area of the area in **York Township** covered by the SAFD is covered between 240, 360, and 480 second travel times. Areas to the far west and southwest of the SAFD response area is covered with a 600 second travel time bleed.

Southeast development in **Lodi Township** is covered between 360 and 480 second travel time bleeds. Areas to the Mideast and northeast are covered by 480 and 600 second travel time bleeds. North, northwest, central, west, and southwest Lodi are beyond 600 second travel time bleeds.

Northeast **Saline Township** where there is some increased development is covered between 240 and 360 second travel time bleeds. The remainder of the township is covered between 360 and 600 seconds with areas in the southwest area of the township beyond the 600 seconds travel time bleed.

CPSM assesses technology and/or call taking platforms will at times increase call processing time. Inefficient station ergonomics will have an effect turnout times. In some agencies, culture extends call processing and turnout times. It is recommended that a reduction in any response time category should be examined and become an SAFD and HVA priority.

Travel time bleeds reach most, but not all, of the densified areas of the city and townships between 240 and 360 seconds. A reduction in travel times in Lodi and Saline Townships will only be realized through the centralized construction of a second station in or near the Saline-Lodi Township boundary line. It is recommended that a reduction in any response time category should be a SAFD priority.

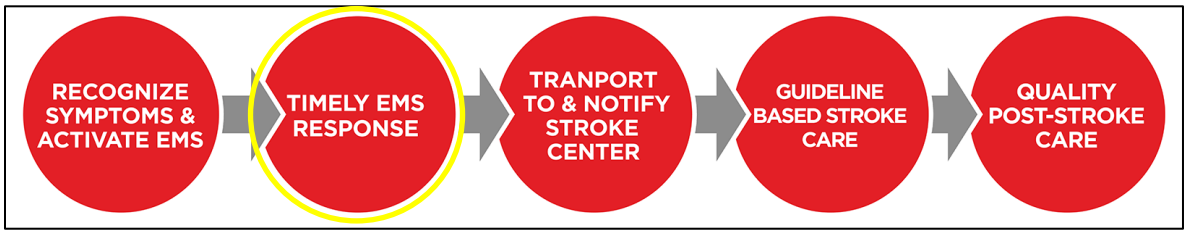
The focus of EMS response times should be directed to the evidence-based research relationship between clinical outcomes and response times. Much of the current research suggests response times have little impact on clinical outcomes of low acuity calls.

Higher acuity calls such as cerebrovascular accidents (stroke), injury or illness compromising the respiratory system, injury or illness compromising the cardiovascular system to include S-T segment elevation emergencies, certain obstetrical emergencies, and certain other medical emergencies that affect cardiovascular, neurological, and respiratory systems require rapid response times, rapid basic and advanced life support on-scene treatment and packaging for transport, and rapid transport to the hospital.

There are also other EMS incidents that are truly life-threatening, and the time of response can clearly impact the outcome. These involve emergencies such as full drowning, allergic reactions, electrocutions, and severe trauma (often caused by gunshot wounds, stabbings, and severe motor vehicle accidents, etc.).

The next figure illustrates the out-of-hospital chain of survival for a stroke emergency, which is a series of actions that, when put in motion, reduce the mortality of a stroke emergency. ***A key component is timely EMS response.***

Figure 14: Cerebrovascular Emergency (Stroke) Chain of Survival



Source: https://nhcps.com/lesson/acls-acute-stroke-care/

The next figure illustrates the out of hospital chain of survival, which is a series of actions that, when put in motion, reduce the mortality of sudden cardiac arrest. Adequate EMS response times coupled with community and public access defibrillator programs can positively impact the survival rate of sudden cardiac arrest victims. ***Again, timely basic and advanced EMS response is a key component of the overall patient care system.***

Figure 15: Sudden Cardiac Arrest Out of Hospital Chain of Survival

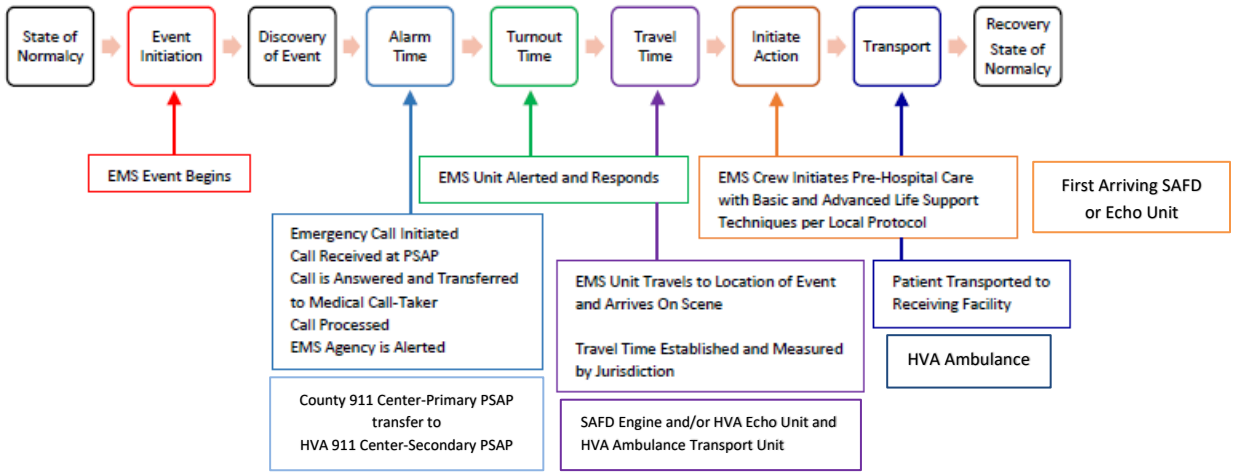
Adult OHCA Chain of Survival

From: 2020 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care.

Typically, a low percentage of 911 patients have time-sensitive and advanced life support (ALS) needs. But, for those patients that do, time can be a critical issue of morbidity and mortality. For the remainder of those calling 911 for a medical emergency, though they may not have a medical necessity, they still expect rapid customer service. Response times for patients and their families are often the most important measurement of the EMS department. ***Regardless of the service delivery model, appropriate response times are more than a clinical issue; they are also a customer service issue and should not be ignored.***

It is important to understand the cascade of events in an EMS event, which begins with the event initiation, cascades with the response of fire and EMS units to the initiation of patient then with the transport of the patient if needed.

Figure 16: Incident Cascade of Events: EMS Response



As discussed previously, EMS in the SAFD service area is delivered through a tiered system-SAFD responds with an engine company and HVA responds with a quick response Echo Unit (on high priority calls) to begin patient care and HVA provides ground transport to the hospital.

The next table reviews response times of SAFD units and HVA transport units for the period January 1, 2024, to December 31, 2024 (calls with complete time stamps). Both are measured at the average and the 90th percentile for statistical consistency. The 90th percentile is the standard for the SAFD and the general standard for contractual EMS nationally unless identified separately through an agreement.

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Table 10: SAFD and HVA Response Times

SAFD EMS Response Times: 90th Percentile

	Average Response Time				90th Percentile Response Time			
Call Type	**Dispatch**	**Turnout**	**Travel**	**Total**	**Dispatch**	**Turnout**	**Travel**	**Total**
Breathing difficulty	1.7	1.4	4.5	7.6	2.7	2.4	8.5	11.8
Cardiac and stroke	2.1	1.4	4.7	8.2	3.1	2.4	8.6	12.0
Fall and injury	2.1	1.4	5.2	8.6	3.0	2.3	9.1	12.2
Illness and other	2.6	1.3	4.3	8.2	4.1	2.2	7.9	12.6
MVA	2.1	1.1	4.3	7.5	4.8	2.5	9.8	12.7
OD and psychiatric	4.2	1.2	3.3	8.7	11.8	2.1	5.6	14.6
Seizure and UNC	2.1	1.2	4.7	8.1	3.6	2.2	9.1	12.5
EMS subtotal	**2.2**	**1.3**	**4.6**	**8.1**	**3.4**	**2.4**	**8.5**	**12.5**

HVA EMS Transport Response Times: 90th Percentile

	Average Response Time				90th Percentile Response Time			
Call Type	**Dispatch**	**Turnout**	**Travel**	**Total**	**Dispatch**	**Turnout**	**Travel**	**Total**
Breathing difficulty	1.7	0.5	7.2	9.4	2.5	0.9	13.6	15.9
Cardiac and stroke	2.1	0.5	7.2	9.7	3.2	0.8	13.1	16.4
Fall and injury	2.3	0.6	7.1	10.0	3.2	1.2	13.1	16.0
Illness and other	2.3	0.5	6.6	9.4	3.1	1.0	11.8	14.9
MVA	1.0	0.4	7.0	8.4	3.1	0.9	14.0	15.3
OD	3.9	0.4	7.3	11.5	11.8	0.8	17.2	20.3
Seizure and UNC	2.0	0.4	7.4	9.8	2.9	0.9	13.3	16.5
Total	**2.1**	**0.5**	**7.1**	**9.7**	**3.1**	**0.9**	**13.1**	**16.1**

Response Time Assessment

Dispatch-Call Processing Times

SAFD: Both the average and 90th percentile dispatch times do not meet NFPA 1710 standards (≤ 64 seconds for dispatch time). Dispatch times though for EMS calls are typically higher when using an Emergency Medical Dispatch system such as HVA utilizes.

Recommendation:

- The SAFD Fire Chief should work with HVA to monitor and reduce call processing (dispatch) times with a goal of moving closer to NFPA standard call processing times of 64-seconds at the 90th percentile for identified higher acuity fire and fire related calls (structure fires and high acuity technical fire related calls) and higher acuity medical fire response calls.
- HVA: Both the average and 90th percentile dispatch times are high. Dispatch times though for EMS calls are typically higher when using an Emergency Medical Dispatch system such as HVA utilizes.

Turnout Times

SAFD: The 90th percentile turnout times do not meet NFPA 1710 standards (≤ 60 seconds for EMS calls).

HVA: Turnout times are excellent. This is due to the type of dynamic deployment system HVA utilizes, which reduces turnout (chute) times, and which reduces overall response times.

Recommendation:

- **SAFD:** CPSM recommends the SAFD develop performance benchmarks for the initial response vehicle of ≤ 80 seconds for fire and special operations and ≤ 60 seconds for EMS responses at the 90th percentile.

Travel Times

- **SAFD:** CPSM recommends that as a part of any strategic planning, and as travel time is affected by station location, demand and workload, road network, and traffic congestion, the SAFD adopt a 5-minute (300 second) travel time benchmark measured at the 90th percentile as a performance benchmark for the City of Saline and the urban development area of Saline Township's southeast area; a 7-minute (420 seconds) travel time benchmark measured at the 90th percentile as a performance benchmark for the current high demand areas of York Township and the southwest area of Lodi Township, and a 14-minute travel time benchmark measured at the 90th percentile as a performance benchmark for all rural area responses. These are more realistic performance benchmarks for the current demand areas.

  Travel times are and will remain high as the SAFD response area is served by a single station in the central-east portion of the response district. This will remain constant until another facility is considered in the western portion of the district.

- **HVA:** HVA current travel times are on average 13.1 minutes. ***CPSM assesses*** travel times will likely remain high due to the high demand in the total HVA Washtenaw County system, and the potential for overlapping calls in the SAFD response area. The Echo Unit assigned to the SAFD station is designed to reduce overall response times to higher acuity calls. An additional factor is overlapping calls. Overlapping calls bring in an HVA transport unit from a more distant response point, thus increasing response travel times.

  For the period January 1, 2024, to December 31, 2024, HVA overlapping calls in the SAFD response area included:

  - No overlapping calls: 71% of all calls.
  - One overlapping call: 24% of all calls.
  - Two or more 5% of all calls.

  CPSM recommends the SAFD meet regularly with HVA to discuss response time challenges and methods HVA is considering or have implemented to reduce overall response travel times.

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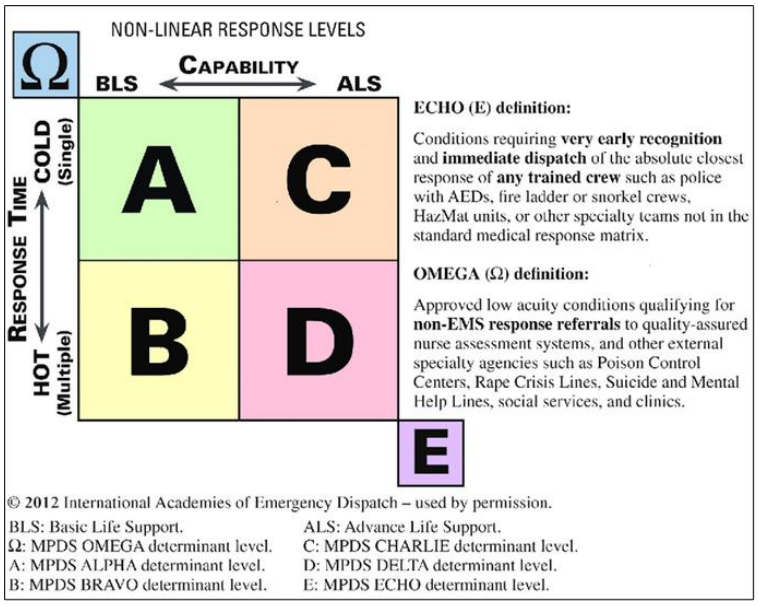
Emergency Medical Dispatch

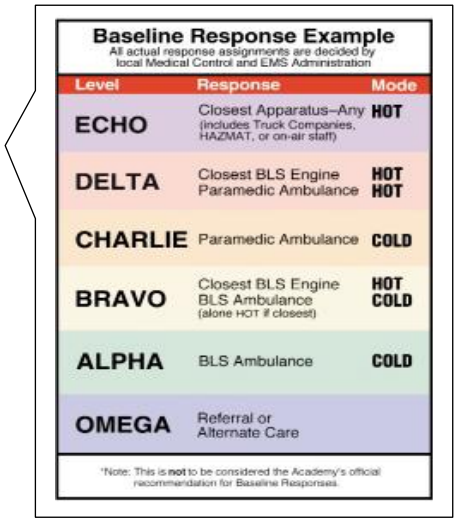
Regarding the dispatch of EMS services, as noted herein, HVA provides this service for the SAFD and HVA simultaneously. To facilitate the dispatch of the most appropriate resource, HVA utilizes Medical Priority Dispatch System (MPDS). MPDS is an evidence-based system that uses clinical protocols and call taking processes to assign a response determinant to the EMS request. These response determinants are alpha-numeric codes that can be used in EMS systems to determine the priority of a response, and the appropriate level of care that is likely necessary to meet the patient's clinical needs.

The response determinants also aid in informing the responding units specifically what type of medical call to which they are responding. If approved by local protocol, the MPDS system can also be used to assign *response priorities* and *modes of response (hot or cold)*, as well as make determinations regarding the response configuration for the EMS response.

An example of a response matrix based on MPDS EMD response determinants is outlined in the next figure.

Figure 17: Priority Solutions® Medical Priority Dispatch System® Response Matrix





SAFD response assumes the role of BLS Engine in the above MPDS response algorithm.

The key features of MPDS include:

- Medical Director oversight.
- Structured Protocols: MPDS provides dispatchers with a structured set of questions and instructions, enabling them to gather critical information quickly and accurately.
- Consistency: The use of standardized protocols ensures that all calls are assessed and prioritized consistently, regardless of the dispatcher managing the call.
- Prioritization: MPDS helps in determining the urgency of each call, allowing dispatchers to prioritize responses based on the severity of the situation.

- Pre-Arrival Instructions: The system includes pre-arrival instructions, which dispatchers can provide to callers, offering potentially life-saving guidance before EMS units arrive on the scene.
- Quality Improvement: MPDS includes a quality improvement component, allowing for continuous evaluation and refinement of dispatch practices to ensure the highest standards of service.

Also, the MPDS system enables the use of an evidence-based process for dispatchers to provide pre-arrival medical instructions during the time EMS units are responding to the call, which is a beat practice.

The implementation of MPDS has been shown to improve response resiliency of EMS ground transport units to higher acuity calls, enhance the accuracy of call assessments, and ultimately, improve patient outcomes.

The MPDS structured approach to emergency medical dispatching ensures that the right resources are deployed to the right incidents at the right time. This is occurring now in Altoona as the AFD only responds to lift assist calls, and skilled nursing home calls are managed by both the ECFD and AFD only for those calls determined to need pre-hospital care and transport (these facilities have skilled care medical staff on duty for routine patient care).

HVA responded to the following call determinants in the SAFD response area:

Determinant Code	Calls	
Alpha	684	Lower Acuity: BLS Response
Bravo	492	
Charlie	392	Mid Acuity: ALS Response
Delta	403	High Acuity: ALS Response
Echo	68	
Omega	28	Lowest Acuity
Total	**2,066**	

As discussed, HVA positions an Echo Unit in the SAFD station. An HVA Echo Unit is a non-transport unit and is equipped to provide advanced life support (ALS) care at emergency scenes. Because Echo Units are strategically based, a more rapid pre-hospital care model is achieved ahead of the arrival of ground transport ambulances on higher acuity calls as determined by the HVA dispatch center. Additionally, the SAFD responds as a first-tier EMS response agency.

The next table outlines the breakdown of responses by unit type in run totals (one transport unit and one SAFD Unit or HVA Echo unit).

Unit Type	Total Dispatch	Total Arrive
HVA Transport Units	3,789	3,411
HVA Echo Units	79	68
SAFD Fire Units	1,673	1,579

Section Summary

Overall workload of the SAFD and HVA in the City of Saline:

SAFD Workload

City/Township	Calls	Calls Per Day	% Workload
Lodi Twp	392	1.07	20.3
Saline City	1,133	3.1	58.8
Saline Twp	192	0.53	10.0
York Twp	210	0.58	10.9
SAFD Area Total	1,927	5.28	100.0

HVA Workload

Location	Calls	Calls Per Day	% Workload
Lodi Twp	392	1.07	17%
Saline City	1,482	4.06	64%
Saline Twp	182	.50	8%
York Twp	265	.73	11%
HVA Area Total	2,321	6.36	100%

Specific peak time calls for the SAFD and HVA are as follows:

- For the SAFD, peak response hours are between 8:00 am and 8:00 pm.
- For HVA, peak response hours are between 8:00 am and 8:00 pm.
- For the SAFD, calls peak January and September.
- For HVA, calls peak during the months of January, May, July, and September.
- For the SAFD, calls peak on Monday, and then again Thursday and Friday.
- For HVA, calls peak on Monday.
    - Sunday, Tuesday, and Saturday are the two slowest demand days of the week.

Regarding response times:

- Fire call processing times for the SAFD are I excess of four minutes, which is four times that of the NFPA 1710 standard of ≤ 64 seconds 90 percent of the time.
- EMS call processing times for both the SAFD and HVA are in excess of three minutes. Dispatch times for EMS calls are typically higher when using an Emergency Medical Dispatch system such as HVA utilizes. When possible, this should be minimized.
- The SAFD turnout time at the 90th percentile of 2.4 minutes (144 seconds) overall, is in excess of the NFPA standard of ≤ 60 seconds for EMS calls and 80 seconds for fire calls.
- HVA turnout times are excellent. This is due to the type of dynamic deployment system HVA utilizes, which reduces turnout (chute) times, and which reduces overall response times.
- The SAFD travel time at the 90th percentile of 8.8 minutes (528 seconds) overall, is in excess of the NFPA standard of ≤ 240 seconds for EMS calls and structure fire calls.
- The city of Saline, due to the location of the SAFD station in the city, is the closest to NFPA travel times (276 seconds) for EMS calls and structure fires.

- Lodi Township has the longest travel time of 12 minutes (720 seconds) due to its rurality and distance from the SAFD station.

  CPSM assesses Technology and/or call taking platforms will at times increase call processing time. Inefficient station ergonomics will have an effect turnout times. In some agencies, culture extends call processing and turnout times. It is recommended that a reduction in any response time category should be examined and become an SAFD and HVA priority. Travel time bleeds reach most, but not all, of the densified areas of the city and townships between 240 and 360 seconds. A reduction in travel times in Lodi and Saline Townships will only be realized through the centralized construction of a second station in or near the Saline-Lodi Township boundary line.

- Saline and York Townships have elevated travel time of 9.2 and 9.5 minutes (552 seconds and 570 seconds respectively) due to their rurality and distance from the SAFD station.

- HVA current travel times are on average 13.1 minutes.

  CPSM assesses travel times will likely remain high due to the high demand in the total HVA Washtenaw County system, and the potential for overlapping calls in the SAFD response area. The Echo Unit assigned to the SAFD station is designed to reduce overall response times to higher acuity calls. An additional factor is overlapping calls. Overlapping calls bring in an HVA transport unit from a more distant response point, thus increasing response travel times.

End of Section

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SECTION 4. SALINE AREA FIRE DEPARTMENT ASSESSMENT

SAFD Overview

Established in 1976, the Saline Area Fire Department (SAFD) is a primarily career staffed fire department that includes paid-call volunteer members. SAFD provides fire suppression, emergency medical services responder, rescue, and fire prevention to the City of Saline and the surrounding townships of Saline, Lodi, and portions of York Township, all within the fire district response area and located in south-central Washtenaw County, Michigan.

The SAFD operates as an independent fire agency governed by an interlocal agreement among these communities. In Michigan, independent fire agencies are typically formed through intergovernmental agreements between municipalities, townships, or counties which allow local governments to collaborate.[17]

The SAFD operates with both full-time operational shift staff (nine currently) and paid-call members (nine members at the time of this report) who respond to calls for service. The SAFD is commanded by a Fire Chief. There are also three full-time career Captains who supervise each of the three shifts.[18]

The SAFD follows a staffing model with a maximum of four personnel per shift (one Captain and three Firefighters/EMTs) and a minimum of three (one Captain and two Firefighters/EMTs) when a member is on vacation, sick leave, or other paid time off. CPSM did not receive any data or roster on how often SAFD has four vs. three on duty but was told it was "rare" to have four on duty.[19] ***The FY 2026 budget includes the addition of one additional firefighter per shit, which is designed to raise the minimum per shift staffing to four.***

On-duty crews staff an engine (also known as an *engine company*) every day (24/7/365). They also operate a rapid response vehicle (Utility 1), primarily used for medical emergencies, with a split crew. Two of the three crew responds to medical aid, one stays behind for the possibility of additional calls.

The Fire Chief (and Office Manager) work a traditional weekday schedule (Monday–Friday, 8:00 AM – 5:00 PM). The Fire Chief also has recall responsibilities during off hours and responds to major incidents as available.

The next three figures outline SAFD maximum vs. minimum staffing criteria and organizational chart, respectively.

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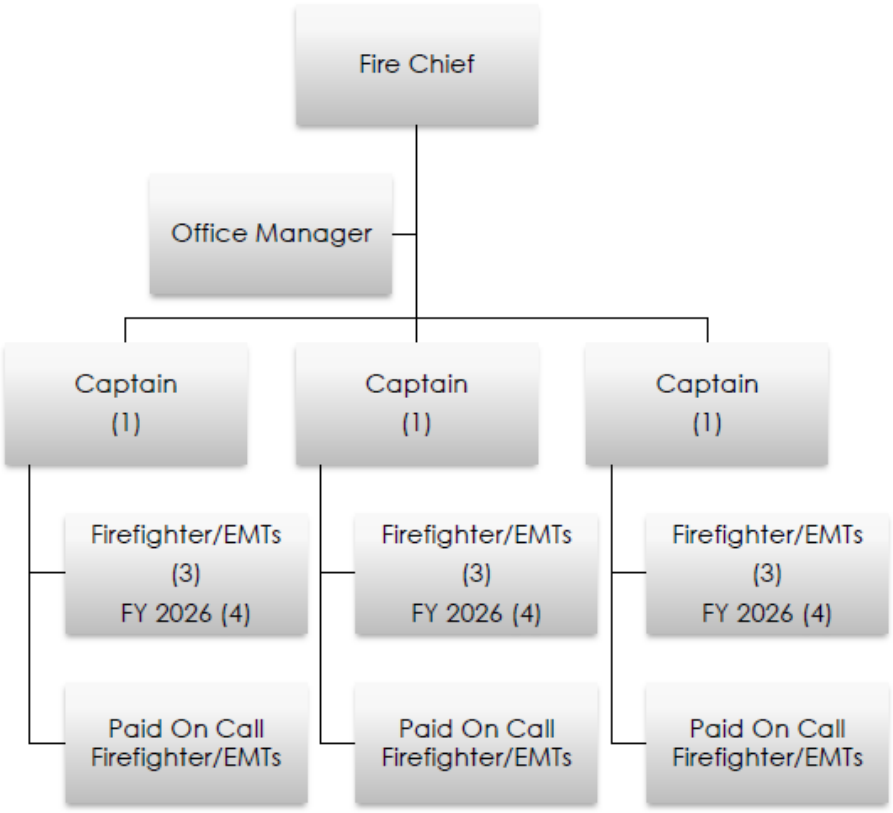
17. Public Act 57 of 1988 (Emergency Services to Municipalities Act).
18. https://salinefire.com.
19. Fire Chief / SAFD IAFF.

Figure 18: SAFD Shift Staffing Maximum vs. Minimum

Max. Staffing **FY 2025**		Captain, three career Firefighters/EMTs augmented with paid-on-call FFs.
Min. Staffing **FY 2025**		Captain, two Firefighters/EMTs augmented with paid-on-call FFs.
Max. Staffing **FY 2026**		Captain, four career Firefighters/EMTs augmented with paid-on-call FFs.
Min. Staffing **FY 2026**		Captain, three career Firefighters/EMTs augmented with paid-on-call FFs.

Career Firefighter Paid-On-Call Firefighter

Figure 19: SAFD Organizational Chart



Career shift staff (captains and FFs) are scheduled on a 24-on 24-off traditional shift scheduled with a four-day break after the 3rd workday. SAFD has three shift platoon schedules: A-Shift, B-Shift and C-Shift. Paid-on-call firefighters are alerted to calls and respond to the station to respond additional apparatus or respond to the scene for additional support. The following figure shows the SAFD career shift schedule.

Figure 20: SAFD 30-Day Shift Schedule

A	C	A	B	A	B	C
B	C	A	C	A	B	A
B	C	B	C	A	C	A
B	A	B	C	B	C	A
C	A					

Off-duty crews and paid-on-call volunteers supplement the staff during major incidents, such as structure fires or complex vehicle extrications. Full-time staff receive overtime pay, while paid-on-call firefighters are compensated at a rate of $18.00 per hour. The level of augmentation from off-duty padi staff and paid-on-call staff varies from none to full deployment, depending on the situation. Supplemental staffing is generally reliable, according to the Fire Chief. During CPSM's on-site visit, we observed a major incident (all-call event)—a brush fire—that had strong supplemental staffing from paid-on-call and off-duty career staff.

The SAFD runs lean; aside from the Fire Chief, the SAFD does not have additional executive staff such as assistant or deputy chiefs, nor mid-level managers such as battalion chiefs. The SAFD also lacks a dedicated fire marshal, fire inspector, fire investigator, or public outreach officer (fire prevention bureau). Instead, fire prevention responsibilities, including plan reviews and inspections of high-risk occupancies, are primarily managed by the Fire Chief, with occasional delegation to staff members, two of whom are qualified fire inspectors. Additionally, SAFD does not have a dedicated training officer, or a specific member assigned to oversee and manage training. ***Fire Training and Community Risk Reduction (Fire Code Enforcement and Public Life Safety Education) are both noted discrepancies in the current ISO-PPC analysis.***

The SAFD Mission Statement is outlined below.

The Saline Area Fire Department Mission Statement

"…to provide fire suppression, rescue, and fire prevention to the citizens of Saline, Saline Township, York Township, and Lodi Township.
To achieve this mission, the department's responsibility is to preserve and protect life and property from fire and other catastrophes, and to provide education and training to the public in the area of fire prevention…"

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SAFD Fire Board

The SAFD is governed by a nine-member Fire Board. Each participating community appoints two representatives, along with an at-large member representing the district. Local government leaders select their respective board members.

Per the most recent By-Laws (2025), the objectives of the Fire Board *are those set forth in the Restated Agreement for the Saline Area Fire Department originally signed December 13, 1976, and amended on May 6, 1987, August 6, 2003, December 5, 2007, November 13, 2013, and April 3, 2024 (hereafter "Agreement")*. The By-Laws further state the Fire Board *shall be responsible for the safe, economical, efficient operation of the Saline Area Fire Department and shall make any and all efforts necessary to achieve or maintain this stated objective*.

The Fire Board meets bi-monthly or as needed to address the SAFD matters. Recent initiatives have included updating goals, objectives, and the mission statement, revising bylaws, and restructuring a risk mitigation subcommittee into a steering committee.[20] [21] The Fire Chief serves at the Fire Board's discretion.

CPSM met with each current member of the SAFD Fire Board as well as former City of Saline Fire Board members. Each session discussion centered on the functionality of the board, the vision of each member as it relates to the SAFD, the future of the SAFD, the Board's relationship with the Fire Chief and staff, and the role and responsibilities of the Fire Board.

The following represents a combined assessment of meeting notes and does not represent one specific Board member's view. Generally:

- The Board has some dysfunction but that may be due to bi-monthly meetings. Monthly meetings may bring focus on issues more regularly and may generate more preparation, discussion, engagement, and SAFD issues familiarity to the Board.
- A multi-year fiscal plan is needed that includes an operating and capital cost forecasting, facility needs, and a staffing needs plan with associated cost forecasting. Current funding model is reactive versus proactive.
- The funding formula should be reviewed. There may be a better alternative.
- The SAFD needs a formal Strategic Plan that aligns resource allocation to the risks in the service area.
- The by-laws have a limited outline of Board responsibilities and are not specific to planning, fiscal oversight, setting goals and objectives, accountability, and evaluation of SAFD services and the Fire Chief.
- The Fire Chief needs to improve communication with the Board and learn how to better work with a Board. This would build greater trust and stabilize relationship with the Board.
- Due to response travel times, there is a potential need for a fire station on the west side of the City of Saline to reduce travel times to Saline and Lodi Townships.

20. https://salinefire.com/meetings-minutes.
21. Generally speaking, risk mitigation focuses specifically on identifying, assessing, and addressing risks while a steering committee is a broader, higher-level group that provides strategic direction and oversight.

- Lodi Township may consider contracting with Scio Township for better response times (north half of the Township) when Scio Township completes construction on their new fire facility located in the southern half of this township.
- The is a recognized need to renovate the current facility and updating equipment. Need a funding plan.
- Operational staff does a great job.

Recommendations:

CPSM recommends the SAFD Board consider:

- Adjusting the meeting schedule from bi-monthly to monthly. Included in the agenda there can be a formal report from the Fire Chief that includes: calls and runs from the previous month that includes alignment of resources to risks; monthly fiscal report; planning goals and objectives updates; opportunities and challenges reporting and so forth. ***At the April 2, 2025 Board meeting, the SAFD Borad moved to adjust the meeting schedule to monthly subject to actionable items.***
- Development of a multi-year fiscal plan that includes operating and capital cost forecasting, facility needs, a staffing needs plan with associated forecasted costs, and a sustainable funding formula model that is acceptable to each participating locality. ***At the April 2, 2025 Board meeting, the SAFD Borad moved to charge the Steering Committee with reviewing the funding formula in the Restated Agreement for the Saline Area Fire Department, to set a time for public comment on the funding formula change at the next Board meeting, and to forward any changes to the formula that are approved by the Board to each unit of government participating in the Agreement for their consideration.***
- Development of a long-term (5-10 year) Strategic Plan that includes strategic initiatives with accompanying goals and objectives that aligns with the long-term fiscal plan. ***At the April 2, 2025 Board meeting, the SAFD Borad referred to the Sterring Committee the review of Fire Board By-Laws with topics to be considered - clearly defining the roles and responsibilities of the Fire Board and formalizing the Steering and Budget Committees.***
- Inclusion in the current By-Laws more specific language regarding responsibility and accountability of the Board regarding fiscal oversight, the setting of goals and objectives, planning and plan outcomes, and the evaluation of the Fire Chief and SAFD operations. ***At the April 2, 2025 Board meeting, the SAFD Borad discussed***

SAFD Fire Chief

Operationally, the SAFD is managed by a Fire Chief, who is responsible for the day-to-day operations of the department. The Fire Chief reports to the Fire Board.

During interviews with the Fire Chief, it is apparent to CPSM that he understands the district risk, the district deployable assets and limitations, the EMS model and the SAFD's role in this model, as well as what is needed for improvement. The Fire Chief is also supported by SAFD staff and the collective bargaining unit.

During discussions with Fire Board members and City staff, both strengths and weaknesses were discussed. These included (common threads):

Strengths	Weaknesses
■ Doing a good job communicating issues to Board. ■ Presented initial issues well as the new Fire Chief. ■ Cares about staff and the district. ■ FFs have confidence in Fire Chief. ■ Understands issues and challenges of the SAFD regarding apparatus, equipment, funding.	■ Need more/better communication from the Fire Chief. ■ Does not respond to challenges. ■ Learning relationship with Fire Board. ■ Lack of understanding that the Fire Chief of a district fire department reports to a Board much the same as a CEO of a private organization reports to a Board. ■ Has challenges working with Board.

The role of a contemporary Fire Chief is complex and multifaceted. It is no longer simply about organizing and commanding a reactionary force to suppress fires and respond to EMS and other emergencies. The modern role now includes the following facets, which should be an expectation of any Fire Chief:

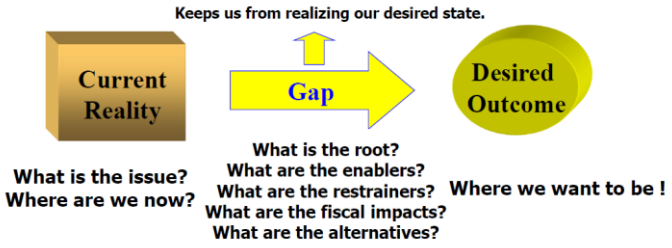
- **Community Ambassador**. Community ambassadors represent fire and emergency services to the community, serve as spokespersons, share information, and are the symbolic leader to represent the department in the community.
- **Mentor**. The Fire Chief as a mentor shares his/her knowledge while assisting others as they struggle to work their way through issues (personal or professional), always providing praise and encouragement.
- **Strategist.** The Fire Chief as a strategists seeks input from internal stakeholders and works with appointed and elected officials, and community leaders. They move the department to a strategic deployment and operation level rather than a reactionary service. Strategists can articulate the needs of the department based on facts and not emotion.
- **Delegator.** The Chief, as a delegator, works with department members through input and sharing of ideas and delegates responsibilities that are intended to grow staff and keep them motivated.
- **Navigator.** Navigators first help others focus on the end results and desired outcomes and then guide the organization through obstacles at the department level, community level, chief administrative officer level, and the elected body level. Navigators get ahead of issues and develop plans in advance rather than at the last minute.
- **Champion**. Champions are boosters of the fire and emergency services. They look at ways to get others to believe in the department and inspire others to act in support of its mission. They make the department desirable for new membership and retaining current members.

Organizational Communication

The common thread of weaknesses centers on communication challenges and the Fire Chief-Fire Board relationship. A primary overall weakness may lie in the *SAFD Fire Board By-Laws*. As stated earlier, the by-laws have a limited outline of Board responsibilities and are not specific to planning, fiscal oversight, setting goals and objectives, accountability, and evaluation of SAFD services and the Fire Chief. Additionally, prior to the April 2025 meeting, the Board convened every other month. This schedule may have contributed to any past and/or current communication gaps, which often leads to a lack of continuity, inclusion, and trust.

Effective communication is the key to overcoming conflict. Sharing organizational information, seeking continuous input and improvement from all staff and the governing body, and establishing open and continuous dialogue between the Fire Chief and the Board will help to facilitate greater communication and create strong organizational foundations. It is important to bring the Fire Chief and the Board together to seek constructive input so as organizational leaders, one can see situations from diverse perspectives, which creates a strong, transparent, and trusted relationships.

Trust is built through open communication, disclosure, and sharing of information. Being truthful and recognizing others who show the same level of transparency develops an open organizational culture. Leaders play a key role in this and should actively reach out to stakeholders to set a positive example. Different people share information and are convinced in different manners, making it vital across the organization for staff to understand and embrace emotional intelligence.



Despite the tremendous advances in communication and information technology, communication among people in organizations leaves much to be desired. The importance of effective communication, established communication processes, and ongoing follow-up cannot be overstated. The development of a communication model that provides a consistent means for communication within and among various levels of the organization and encourages feedback that can be integrated into continuous improvement and accountability supports a healthy organizational culture. [22]

Developing a basic communication model that, when followed, enhances communication across any organization, particularly those experiencing communication challenges regardless of where the root cause lies. Having a "channel" by which information flows is key to ensuring effective ongoing communication - written and oral. The lateral flow of information between the fire chief, fire senior staff, and mid-level managers affects the vertical flow of information to the frontline staff. A lack of effective communication and direction, or disconnect at the channeling stage, particularly between senior staff and the elected or appointed governing body, creates communication gap challenges, and promotes trust issues.

Before the SAFD will be able to improve the efficiency or effectiveness of its organizational communications, it must first improve the delivery and frequency of messages between the Fire Chief and the Fire Board. Both must also seek to understand the Fire Chief-Fire Board relationship, provide and encourage feedback, and follow up on the communication that takes place to ensure accountability.

Time Allocation

High performing organizations communicate effectively both laterally and vertically with fact and not perception regarding organizational planning; issues and challenges and the resolutions to the issues and challenges; and decision-making. Consideration is given to the current reality of the issue and where the organization is in the present, and where the organization wants to

22. See James L. Gibson, John M. Ivancevich, James H. Donnelly, and Robert Konopaske, *Organizations: Behavior, Structure, Processes,* Eighth Edition (New York: Irwin/McGraw-Hill, 2002).

be. Lastly, communication generally occurs when ideas, thoughts, opinions, knowledge, and data are exchanged (received and understood).

To effectively operate in an organization, an employee must understand his or her role and, as importantly, where he/she should allocate his/her time during the workday or shift to be most effective. Understanding this concept is essential in an organization such as the SAFD. The Fire Board and the Fire Chief, as well as Captains and firefighters have a responsibility to understand their organizational roles and responsibilities, and to effectively perform the tasks related to these roles and responsibilities. One would not expect the Fire Board and Fire Chief to spend as much time operating the system as a frontline service provider does. Conversely, one would not expect a first-line service provider to spend as much time as a Board member or the Fire Chief planning for the future of the organization. In this way, each level of the organization has a different set of priorities and staff at each level should allocate their time accordingly.

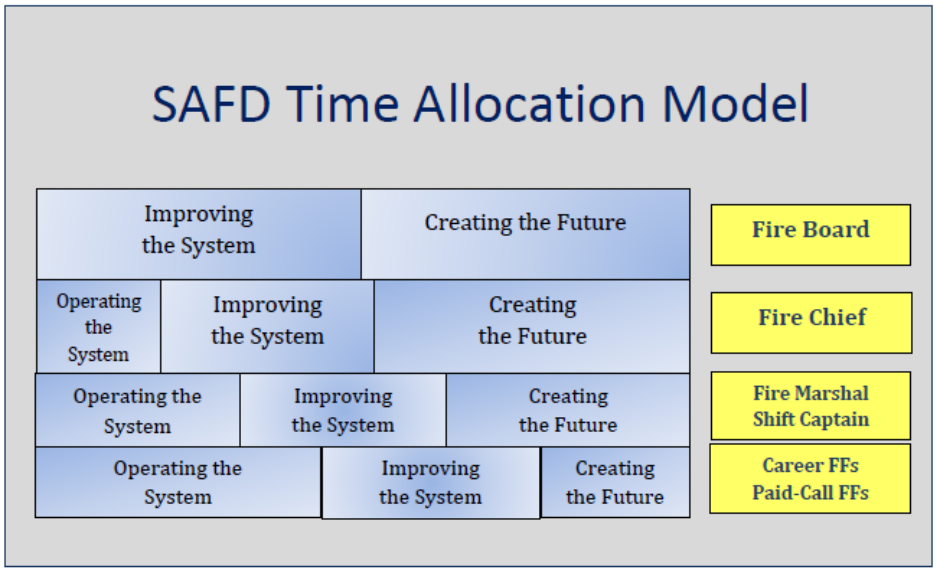
Three segments of organizational time allocation are central to achieving the goals and objectives of any organization and, more importantly, to enable the organization to fulfill its mission and realize its vision. These segments are (1) operating the system; (2) improving the system; and (3) creating the future.

Operating the system is that time during the workday that an organizational member is implementing service deliverables, touching those components of the organization that make it go.

Improving the system is the time during the workday that an organizational member spends seeking ways to make service deliverables and organizational components more efficient, or, more simply put, improved and better.

Creating the future is that critical piece of time allocation when an organizational member develops goals and objectives that link to strategic planning and considers the vision of the organization in a way that focuses on successful, effective outcomes.

In the time allocation model, each level in the organization spends a percentage of their day either *Operating the System*, *Improving the System*, or *Creating the Future*. Where a staff member may allocate their time is directly tied to the position in the organization they fill.



Ideally, even in a small organization such as the SAFD, it is critical that the appropriate time be spent at the appropriate level in the organization to continuously operate the system, make improvements, and create the future. Given this, it is recommended that the SAFD organize the department so as to optimize the concepts of the ***Time Allocation Model*** to ensure a more efficient alignment of organizational resources, and the effective use of all members of the organization in order to achieve the organization's mission and core values.

Recommendations:

CPSM recommends the Board consider:

- CPSM recommends the SAFD Fire Board include in any strategic/fire master planning, goals and objectives that are aimed at closing communication gaps in the organization, improving consistent messaging and actions across the organization, improving communication between the Fire Chief and participating municipalities, and establishing a shared vision for communication all members of the organization can work towards.
- CPSM recommends the Fire Board annually outlines for the Fire Chief clear and concise expectations and planning activities that includes, and from which an annualized Fire Chief performance discussion/evaluation can be structured from: five year fiscal forecasting to include operational and capital expenses; strategic plan and/or Fire Board approved goal accomplishments; community engagement; community risk reduction; SAFD operational performance; resource allocation versus risks in district; SAFD mission accomplishments; decision making; organizational communication; and navigation of the SAFD through obstacles at the department level, community level, chief administrative officer level, and the Board level.
- CPSM recommends the SAFD adopt the concepts of the ***Time Allocation Model*** to include educating the workforce on these concepts and including same in any By-Laws updates.

Financial Resources/Budget

The SAFD Fire Board approved the FY 2025-2026 budget on April 2, 2025. The upcoming fiscal year budget in the amount of $2,896,111. This is a 34 percent increase from the FY 2024-2025 approved budget of $2,166,664. As with any fire department budget, the greatest percent of the budget (83-percent) is dedicated to salary, benefits, overtime, and associated personnel costs. There is moderate discretionary funding for equipment, fuel, maintenance, training, and supplies. ***The FY 25-26 budget includes three additional firefighters (1 per shift) and a Fire Marshal.***

The adopted budget is funded through a combination of taxes levied by the City of Saline and the surrounding townships of Lodi, York, and Saline. These municipalities contribute to the department's budget via an interlocal agreement, allocating a portion of their tax revenue to support the SAFD. The current funding formula each locality is assessed against includes five categories and include Real and Personal property; service area in acres; population (2020 census); road miles; and number of dwelling units.

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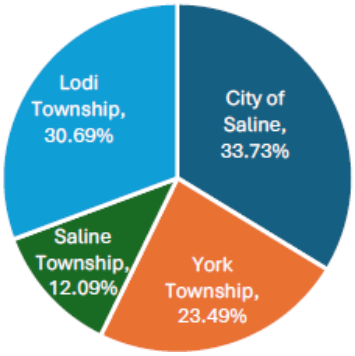


For FY 25-26, the City of Saline and Lodi Township will contribute 64.42 percent of the SAFD budget.

Contribution percentages for the FY 24-25 budget (current budget) were similar as follows:

City of Saline: 33.83%
Lodi Township: 30.67%
York Township: 23.91%
Saline Township: 11.59%

The City of Saline and Lodi Township contribute 64.50% of the SAFD budget.

The interlocal agreement ensures a predictable funding model. Having the city and multiple townships involved helps distribute costs. However, the SAFD does not have a capital improvement plan (a multi-year plan for public infrastructure projects, vehicle additions/replacements, or other items costing more than $10,000 to $25,000, depending on the specifics of the plan).[23] [24] A capital improvement plan will help outline, plan, forecast expenditures, and prioritize funding for these initiatives.

The SAFD has been activity seeking grants including Federal Emergency Management Association (FEMA) Staffing for Adequate Fire and Emergency Response (SAFER), Leary foundation, Firehouse Subs, Washtenaw 100, among others.[25]

Recommendation:

CPSM strongly recommends Fire Board consider the recommendations CPSM previously stated which include:

- A multi-year fiscal plan that includes an operating and capital cost 5-year forecast, facility needs, and a staffing needs plan with associated cost forecasting.
- Review of the funding formula. As the SAFD grows and will continue to grow with current and planned community development, there may be a more contemporary funding model available and amenable to the citizenry.
- Develop and implement a formal Strategic Plan that aligns resource allocation to the risks in the service area.

Fire Response Methodologies

When assessing fire department staffing and deployment, it is crucial to establish an operational strategy that reflects the community's unique conditions and specific fire and risk challenges. A thorough community risk analysis, as outlined in this report, is essential for identifying and addressing the strategic and tactical requirements associated with different hazards.

Effective fire department management requires understanding and demonstrating how resource changes impact community outcomes. Fire department leaders and policymakers must assess how local resource deployment influences three critical areas: firefighter injury and death, civilian injury and death, and property loss. Research indicates that aligning fire

23. https://opengov.com/article/capital-improvement-plans-101/#elementor-toc__heading-anchor-1.
24. https://www.miplace.org/4a734f/globalassets/documents/rrc/rrc-guide-cip.pdf.
25. Fire Chief Jason Sperle.

department resources—both personnel and mobile units—with the community's risk levels significantly reduces negative outcomes in all three areas.

Staffing and deployment of fire services is not an exact science. While communities and fire department management rely on various benchmarks to justify staffing levels, some key considerations are data-driven and reached through national consensus. These include NFPA Standards, fire accreditation through the Commission on Fire Accreditation International, and ISO-PPC benchmarking, all of which help establish effective staffing and deployment strategies. In addition to these considerations, staffing is also linked to station location, demand for service, and what type of apparatus is responding such as an engine, ladder, ambulance, or specialty apparatus. CPSM takes a wholistic approach when evaluating staffing and deployable resources, and when making staffing and deployment recommendations. These include:

Fire Risk and Vulnerability of the Community: The community risk and vulnerability assessment are used to evaluate potential risks, hazards, and community vulnerabilities, to include those evaluated in a community's Hazard Mitigation Planning. Regarding individual or groups of buildings, the assessment is used to measure the risk associated with the building(s) and then segregate the building(s) as either a high, medium, or low hazard depending on factors such as the life and building content hazard, the potential fire flow required to mitigate a fire, and the staffing and apparatus types required to mitigate an emergency at the specific property.

Included in the community risk assessment should be both a structural and nonstructural (weather, wildland-urban interface, transportation routes, and community infrastructure) analysis that again segregates risk into a high, medium, or low risk category.

Population and Demographics of a Community: Population, demographics, and population density drive calls for local government service, particularly public safety. The risk from fire is not the same for everyone, with studies telling us age, gender, race, economic factors, and what region in the country one might live, all contribute to the risk of death from fire. Studies also tell us these same factors affect demand for EMS, particularly population increase and access to care challenges for vulnerable population. Many uninsured or underinsured patients rely on emergency departments for their primary and emergent care, utilizing pre-hospital EMS transport systems as their entry point.

Call Demand: Demand includes the types of calls to which fire and EMS units are responding to, the frequency, and the location of the calls. Demand drives workload and station staffing and location considerations. Higher population centers with increased demand require greater resources. High demand affects the resiliency of fire and EMS departments, which can translate into longer response times.

Workload of Units: The types of calls to which units are responding and the workload of each unit in the deployment model. This tells us what resources are needed and where; it links to demand and station location, or in a dynamically deployed system, the area(s) in which to post units. The higher the workload, the more effect it has on the resiliency of the department.

Travel Times from Fire Station(s): The ability to cover the response area/district in a reasonable and acceptable travel time when measured against national benchmarks. Links to demand, risk assessment, resiliency.

NFPA Standards, ISO-PPC, OSHA requirements (and other national benchmarking): CPSM considers national benchmarks, standards, and applicable laws when making recommendations or alternatives regarding the staffing and deployment of fire and EMS resources.

EMS Demand: Community demand; demand on available units and crews; demand on non-EMS units responding to calls for service (fire/police units), availability of crews in departments that utilize cross-trained EMS staff to perform fire suppression.

Critical Tasking: The ability of a fire and EMS department to collect an Effective Response Force as benchmarked against national standards when confronted with the need to perform required critical tasks on a fire or EMS incident scene defines its capability to provide adequate resources to mitigate each event. Department-developed and measured against national benchmarks. Links to risk and vulnerability analysis.

Community Expectations: Measuring, understanding, and meeting community expectations.

Ability to Fund: The community's ability and willingness to fund all local government services and understanding how the revenues are divided up to meet the community's expectations.

While each component presents its own metrics of data, consensus opinion, and/or discussion points, aggregately they form the foundation for informed decision making geared toward the implementation of sustainable, data- and theory-supported, effective fire and EMS staffing and deployment models that fit the community's profile, risk, and expectations.

SAFD's team includes a Fire Chief, three Captains, nine Firefighters/EMTs – split between three shifts -- and nine paid-on-call firefighters (at the time of this report). Daily, the SAFD has a maximum staffing of four (one Captain and three Firefighters/EMTs) and a minimum of three (one Captain and two Firefighters/EMTs) augmented by paid-on-call volunteers and full-time staff recall on greater alarms. The FY 25-26 budget increases this staffing to a minimum of four per shift (five maximum assigned to include one Captain and four firefighters).

The SAFD operates with staffing that is typically assigned to a single resource, which brings both benefits and challenges. A lean team fosters a close-knit work environment, promotes cross-training, and encourages operational efficiency, with firefighters often taking on multiple roles that enhance their skills and adaptability. However, limited personnel can also strain resources, increase response times for additional units, and add to the workload, particularly in fire prevention, fire investigations, and inspections. Without dedicated roles such as a Fire Marshal (added to the FY 25-26 budget) or training officer, critical responsibilities often fall on the Fire Chief and a small group of staff, making it difficult to keep pace with the community's growing needs.

Critical Tasking, NFPA Benchmarking and Effective Response Force Analysis

The efficiency and effectiveness of a fire department's operations are directly influenced by how well its staffing and deployment model aligns with community risk and needs. Emergency events occur at all hours, on all days, and under all conditions. The Fire and EMS service's response to these unpredictable conditions has been to develop a methodology for being prepared to respond and deploy adequate resources in a timely fashion when they occur.

The rapid and effective performance of highly coordinated assigned tasks is the hallmark of a successful emergency response force whether it be Fire or EMS or combined. Time and on-scene performance expectations are the target indicators established for measuring the operational elements (individuals, crews, and work units) that comprise response-ready resources.

Critical tasks are those activities that must be conducted on time and preferably simultaneously by responders at emergency incidents to control the situation and minimize/stop loss (property and life-safety). Both CPSE and the NFPA have defined *critical tasking*. CPSE defines critical

tasking as the application of tasks assigned to the human and physical resources that are minimally required to effectively mitigate pain, suffering, and loss of life and/or property. Critical tasking is relevant to risk classifications and risk categories.[26]

Critical tasking for fire operations is the minimum number of personnel needed to perform the tasks needed to effectively control and mitigate a fire or other emergency. Critical tasking for EMS operations is those activities (clinical and operational) that must be conducted, some in succession, and some simultaneously to rapidly assesses the patient, determine the level of intervention needed, if any, and connect the patient with the appropriate level of pre-hospital clinical care. The following table breaks down the two core tasks: Fire Operations and EMS Operations.

Table 11: Description of Fire and EMS Critical Tasking

Fire Operations	EMS Operations
In fire operations, critical tasking refers to the minimum number of personnel required to effectively perform all the necessary tasks to control and mitigate fires or other emergencies.	In EMS operations, critical tasking includes both clinical and operational activities that must be conducted—some in succession and others simultaneously—to rapidly assess the patient, determine the required level of intervention, and provide the appropriate pre-hospital clinical care.

To be effective, critical tasking must assign enough personnel so that all identified functions can be performed as described above. However, it is important to note that initial response personnel may manage secondary support functions once they have completed their primary assignment. Thus, while an incident may end up requiring a greater commitment of resources or a specialized response, a properly executed critical tasking assignment will provide adequate resources to immediately begin bringing the incident under control.

The specific number of people required to perform all the critical tasks associated with an identified risk or incident type (Fire, EMS, and Fire/EMS) is referred to as an ***Effective Response Force*** (ERF). The goal is to deliver an ERF within a prescribed period as outlined in national standards and the ISO-PPC benchmarking.

Fire Critical Tasking

Fire departments are typically staffed in one of three ways: full-time (career), combination (a mix of full-time and volunteer), or fully volunteer. Full-time (career) fire departments consist entirely of career firefighters working in shifts. These departments follow NFPA 1710, which sets standards for staffing, deployment, and response times in career fire departments.

Volunteers and most combination fire departments are staffed either entirely by volunteers or by a mix of volunteers and paid firefighters. They typically serve smaller communities, towns, and rural areas with lower call volumes. These departments follow NFPA 1720, which provides guidelines for staffing and response in volunteer-based fire departments. The next figure highlights their key differences.

In the most technical sense, the SAFD is an NFPA 1720 department as they have a paid call component. However, because the career staff is on duty 24/7/365, and responds first-out to all calls with on-duty career staffing the greatest majority of the time, and that the paid call staff

26. Center for Public Safety Excellence, Quality Improvement for the Fire and Emergency Services, 2020.

might respond an additional unit such as a Water Tanker or Brush Unit if in the station or after the initial response unit(s) have responded, there is a case the SAFD can be benchmarked against NFPA 1710. CPSM approaches the remainder of the operational assessment as such.

Figure 21: Key Differences Between NFPA 1710 and NFPA 1720 (at a glance)[27]

NFPA Standard	1710	1720
Scope	This standard contains minimum requirements relating to the organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public *by career fire departments.*	This standard specifies the minimum criteria addressing the effectiveness and efficiency of *the volunteer and combination* public fire suppression operations, emergency medical service, and special operations delivery in protecting the citizens of the jurisdiction.
Response Times and assembling the Effective Response Force	First arriving engine company in four minutes and assembling of the full first alarm assignment in eight minutes (both at the 90th percentile) in all areas (rural, suburban, urban). First arriving unit with a first responder to an EMS incident with an automatic external defibrillator or higher-level capability.	Because an engine is required to begin suppression of a building fire, the first arriving engine should correspond with arrival of the initial minimum staff to respond in each zone as outlined below.
Critical Tasking (staffing) for Single Family Dwelling ***SAFD largest community building risk.***	Initial full alarm assignment to a structure fire in a typical 2000 ft2. two-story single-family dwelling without basement and with no exposures-16 staff. If aerial ladder used 17 staff. Includes the use of staffing from established automatic and mutual aid agreements.	Based on a low-hazard occupancy such as a 2000 ft2 two-story, single-family home without basement and exposures and the percentage accomplishment of those objectives. Urban Zone > 1000 people/mi2: 15 staff in 9 Minutes 90th percentile. Suburban Zone 500-1000 people/mi2: 10 staff in 10 Minutes 80th percentile. Rural: < 500 people/mi2: 6 staff in 14 Minutes 80th percentile. Includes the use of staffing from established automatic and mutual aid agreements.

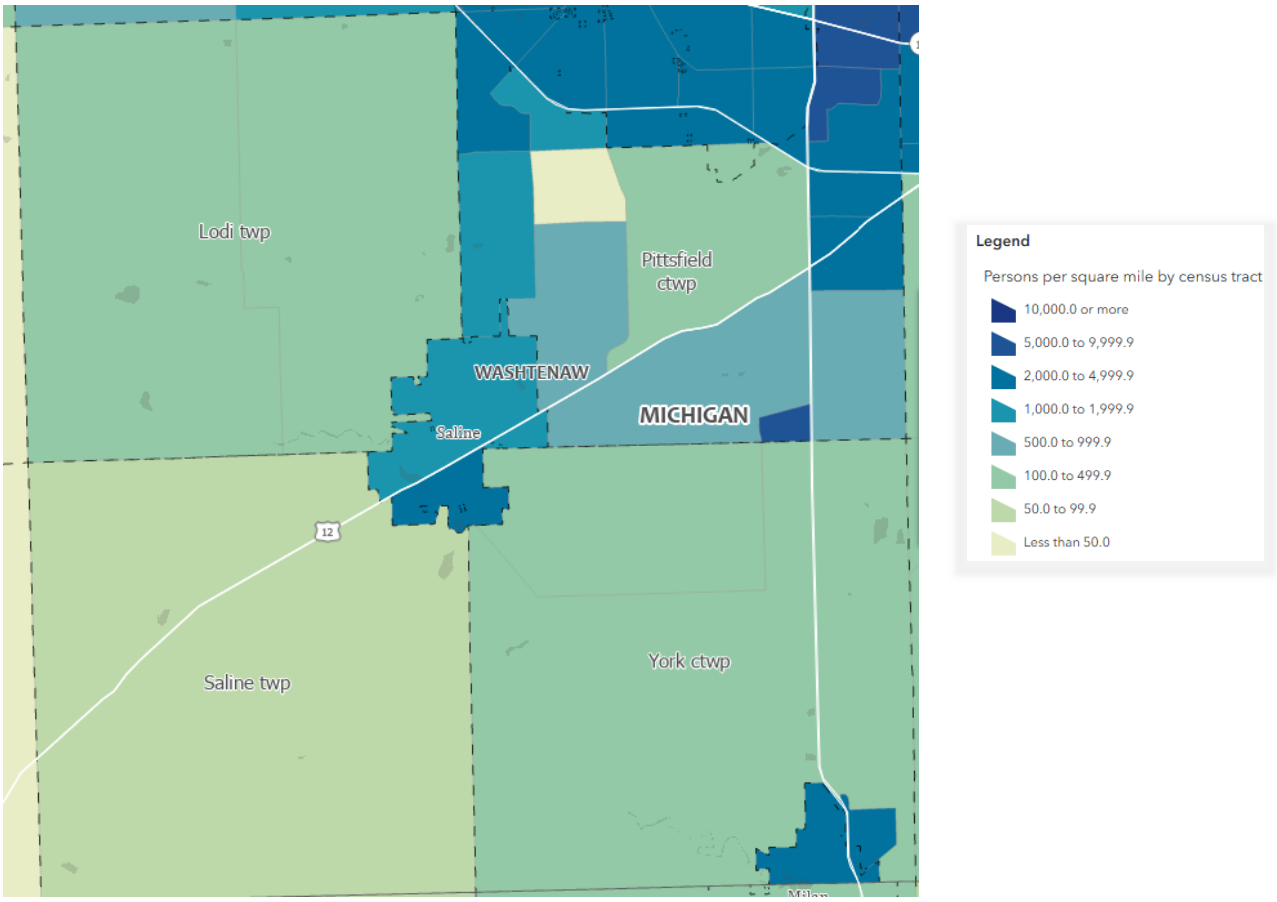
As the Authority Having Jurisdiction, the Fire Board can determine which standard is more applicable. In any case, the district has the need for up to fifteen firefighters (urban zone under NPFA 1720) in areas of the district as well as suburban zones in other areas of the district, which requires up to ten firefighters. In comparison, NFPA 1710 benchmarks up to seventeen firefighters (if an aerial ladder is in use) for a single-family residential fire.

It should be noted that NFPA 1710 or 1720 are a nationally recognized consensus standard and serve as a valuable guideline for establishing and assessing performance objectives for the SAFD, though it should not be the sole factor in decision-making.

27. National Fire Protection Association.

The next figure illustrates population density in the district (2020 census).

Figure 22: SAFD Population Density[28]



Fire and rescue operations are task-oriented and labor-intensive, requiring personnel to wear heavy and bulky personal protective equipment (PPE). Many critical fireground tasks involve the skilled operation and maneuvering of heavy equipment.

The speed, efficiency, and safety of fireground operations depend on the number of firefighters available to perform these tasks. When fewer firefighters are available, critical tasks take longer to complete, which increases the overall response time. This delay can elevate the risk to both firefighters and civilians, potentially compromising the success of the operation.

To ensure civilian and firefighter safety, fireground tasks must be coordinated and performed in rapid sequence. Assembling an Effective Response Force (ERF) is essential to accomplish on-scene goals and objectives safely and efficiently. Without adequate resources to control a building fire, the building and its contents continue to burn. This increases the likelihood of a sudden change in fire conditions, and thus the potential for failure of structural components leading to collapse. An inadequate ERF limits firefighters' ability to successfully perform a search and potential rescue of any occupants.

As a fire grows and spreads beyond the room and floor of origin—or extends beyond the building of origin—it is highly likely that additional personnel and equipment will be required, as

28. U.S. Census Demographic Data Map Viewer.

the resources of the initial response team may become overwhelmed. Given this, it is critical for SAFD units to respond swiftly and initiate extinguishment efforts as soon as possible after being notified of an incident. However, accurately assessing the effectiveness of the initial response in containing fire spread and minimizing damage can be challenging. Various factors can influence these outcomes, including[29]:

- The time of detection, notification, and response of fire units.
- The age and type of construction of the structure.
- The presence of any built-in protection (automatic fire sprinklers) or fire detection systems.
- The contents stored in the structure and its flammability.
- The presence of any flammable liquids, explosives, or compressed gas canisters.
- Weather conditions and the availability of water for extinguishment.

Subsequently, in situations where there are extended delays in extinguishment efforts, or when the fire has significantly progressed before fire units arrive, there may be little that can be done to prevent extensive damage to the entire structure and its contents. In such cases, suppression efforts may need to shift toward protecting nearby or adjacent structures—known as exterior exposures—with the primary objective of preventing the fire from spreading beyond the building of origin and, in some cases, to exposed structures. This strategy is commonly referred to as protecting exposures. When fire damage is extensive, and the building becomes unstable, firefighting tactics typically transition to a defensive attack. In this approach, hose lines—and more importantly, personnel—remain outside the structure, focusing on discharging large volumes of water until the fire is brought under control. In such scenarios, the ability to enter the building is extremely limited, and if victims are trapped inside, there are very few safe options for conducting rescue operations.

Today's fire service is actively debating the options of interior firefighting vs. exterior firefighting. These terms are self-descriptive in that an ***interior fire attack*** is one in which firefighters enter a burning building to find the seat of the fire and from this interior position extinguish the fire with limited amounts of water. An ***exterior fire attack***, also sometimes referred to as a ***transitional attack***, is a tactic in which firefighters initially discharge water from the exterior of the building, either through a window or door and knock down the fire before entry in the building is made. The concept is to introduce larger volumes of water initially from the outside of the building, cool the interior temperatures, and reduce the intensity of the fire before firefighters enter the building.

A transitional attack is most applicable in smaller structures, typically single-family, one-story detached units that are smaller than 2,500 square feet in total floor area. For fires in larger structures, the defensive-type, exterior attacks involve the use of master streams, typically from an elevated aerial device, and capable of delivering large volumes of water for an extended period.

The exterior attack limits the firefighter from making entry into those super-heated structures that may be susceptible to collapse. From CPSM's perspective, there is the probability, depending on the time of day, an SAFD response crew of a limited number of personnel on the initial response will encounter a significant and rapidly developing fire situation.

29. National Fire Protection Association.

The variables of how and where personnel and companies are located, and how quickly they can arrive on scene, play major roles in controlling and mitigating emergencies. ***The reality is that SAFD relies on automatic and mutual aid for multi-unit responses such as building fires, and the paid-call members response from home or work to make up the teams and crews of the Effective Response Force.*** SAFD's paid call availability at any time of the day may have an impact on assembling enough personnel and resources on the scene. This factor must be always considered by those responding to the scene, those responding to the station to pick up apparatus, and command officers responding who must manage and coordinate available responding and on-scene resources.

SAFD Staffing Model

As mentioned in this report, the SAFD has both full-time staff and paid-call members. Maximum daily staffing consists of the Fire Chief, three Captains, and four full-time Firefighters/EMTs. SAFD staffing can drop to as few as three full-time Firefighters/EMTs if a member is on vacation, sick leave, or other similar paid time off and after hours when the fire chief is not available. The Fire Chief typically works during the week and is often available for recall, responding to greater alarms or other urgent needs after hours. Nine paid-on-call staff augment the team during larger incidents and when multiple calls occur simultaneously (provide surge capacity). Off-duty staff also respond during greater alarms if available.

Automatic and Mutual Aid

Automatic Aid is a system in which fire, rescue, and EMS units automatically respond to incidents in a neighboring community based on a pre-established agreement, typically determined by proximity to the incident. In contrast, Mutual Aid is a system where surrounding communities provide fire, rescue, and EMS resources to another jurisdiction only upon request, rather than automatically.

Unlike Automatic Aid, which is integrated into a jurisdiction's *run cards* to ensure an immediate response, Mutual Aid is deployed on a case-by-case basis at the discretion of the requesting jurisdiction. Both systems are designed to supplement and strengthen the Effective Response Force (ERF), enhancing response times and coordination during emergencies.

*A **Run Card** is a dispatch reference that details what units should respond to specific types of incidents at specific location. It is more detailed and customized compared to a box alarm.*

Mutual Aid and Automatic Aid are widely used by Fire/EMS agencies across the United States to ensure effective emergency scene staffing. Ideally, these agreements should be as reciprocal as possible, maintaining a balance between aid given and received. However, neither Mutual Aid nor Automatic Aid is intended as a long-term solution for staffing shortages, equipment deficiencies, or compensating for less-than-optimal fire station locations.

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SAFD has predetermined Mutual Aid resources for its service area. Like many agencies in Michigan, SAFD utilizes the box alarm system (which also divides response areas into emergency service zones to account for varying needs). For example, the City of Saline has fire hydrants, so a water tanker is not included in its box alarm assignments. In contrast, much of Lodi Township lacks fire hydrants, necessitating the inclusion of a tanker in that area's box alarm.

*A **Box Alarm** is a predefined response plan for incidents based on their severity and location. It typically assigns a set number and type of resources (engines, trucks, rescues, etc.) to an emergency.*

SAFD has 13 box alarms for its entire service area, ranging from structure fires to heavy rescues. The following figures illustrate two examples of two types of box alarms within SAFD: The City of Saline, which has larger density, larger buildings, and is equipped with fire hydrants and Lodi Township, a rural, predominantly agricultural area without hydrants.[30]

Table 12: Example 1: City of Saline Box Alarms Matrix – Structure Fire

City of Saline: Box Alarm 81-04-3

Level	Engines	Tankers	Aerials	Rescue	Chief
Initial (still)	SAFD Pittsfield				SAFD
2nd alarm	Milan Milan		Pittsfield		
3rd alarm	City of Ann Arbor		Pittsfield Ypsilanti Dundee	Milan	Everbridge[31]
4th alarm	Augusta Clinton Scio		Chelsea City of Ann Arbor Ann Arbor Township		
5th alarm	Manchester Dexter		Tecumseh		

Table 13: Example 2: Lodi Township Box Alarms Matrix – Structure Fire

Lodi Township: Box Alarm 81-04-2

Level	Engines	Tankers	Aerials	Rescue	Chief
Initial	SAFD	SAFD Pittsfield		SAFD	SAFD
2nd alarm		Milan Scio	Pittsfield		
3rd alarm	City of Ann Arbor	Manchester Clinton Dexter			Everbridge
4th alarm	City of Ann Arbor	Chelsea	Ann Arbor Township		

30. Washtenaw Central Dispatch.
31. Mass notification used in Michigan to communicate\and provide updates for large events.

The SAFD box alarms system is largely organized and supported through the Michigan Mutual Aid Box Alarm System (MIMABAS).[32] MIMABAS is a statewide mutual aid system where signatory jurisdictions formally agree to participate in providing and accepting mutual aid locally and from statewide resources. CPSM recognizes this as best practices.

Mutual Aid or Automatic Aid systems are a very effective way to provide an Effective Response Force (ERF). However, these systems are also fluid as at any given time, Mutual aid and automatic aid resources may already be in use, out of service for repairs, unstaffed or understaffed. Also, due to geographical challenges, these resources may take longer to arrive.

CPSM assesses the mutual/automatic aid system within the SAFD service area as satisfactory in that it provides for contiguous and regional assets. This is, overall, the best use of nearby resources. However, given the geographical complexes of this response area, most mutual aid and automatic aid resources have lengthy response times in terms of the proximity of aid stations.

SAFD Response Matrix

Depending on the call type, initial crews staff a quick response vehicle (primarily for medical emergencies) or the primary engine (for motor vehicle accidents, fire, and rescue responses). Paid call and off duty recall staff report to the station and respond with the most appropriate apparatus—such as a brush truck for a wildland fire or a water tanker for a structure fire in a non-hydranted area. The next table outlines the SAFD response matrix, using on-duty crews and call back procedures.

Table 14: SAFD Response Matrix[33]

	Duty Crew	Duty Crew		Additional units as needed			
Incident Type	2	Remaining	Call back	Call back	Call back	Call back	Call back
Structure Fire	Engine 1	Tanker 1	Tanker 2	Engine 2	Rescue 1	Utility 1	Brush 1
Vehicle Fire	Engine 1	Tanker 1	Tanker 2	Engine 2	Rescue 1	Utility 1	Brush 1
Fire Alarm	Engine 1	Tanker 1 If needed	Tanker 2	Engine 2	Rescue 1	Utility 1	Brush1
Outside Fire	Engine 1	Brush 1	Tanker 1	Tanker 2	Engine 2	Rescue 1	Utility 1
Crash	Engine 1	Rescue 1	Engine 2	Utility 1	Brush 1	Tanker 1	Tanker 2
Ice rescue	Rescue 1	Engine 1	Utility 1	Brush 1	Engine 2	Tanker 1	Tanker 2
RTF	Rescue 1	Engine1	Utility 1	Brush 1	Engine 2	Tanker 1	Tanker 2
Haz-Mat	Rescue 1	Engine 1	U-1 W/ B2	Brush 1	Engine 2	Tanker 1	Tanker 2
Brush fire	Brush 1	Tanker 1	U-1 W/ B2	Engine 1	Tanker 2	Rescue 1	Engine 2
Carbon Monoxide	Engine 1	U-1 if needed					
Medical	Utility 1	E-1 if needed					
2nd Medical	Engine 1						
3rd Medical	Mutual Aid						
Mutual Aid Calls							
Full Assist or Manpower	Engine 1	Tanker 1	Tanker 2	Engine 2	Rescue 1	Utility 1	Brush 1
Station Coverage	Engine 1	Stays at SAFD	Unless otherwise specified (R-1 goes to AAFD)				
Engine	Engine 1	All duty crew E-1	Request a full call back				
Tanker	Tanker 1	All Duty crew T-1	Tanker 2	Request a full call back			
Brush Truck	Brush 1	U-1 W/ Brush 2	Request a full call back				
Station Coverage Note	Fill to 2 at SAFD then send additional to M.A. Station until 4 is achieved						
Mutual Aid for ?	Take what was requested.						

32. https://mabasmi.org.
33. Provided by SAFD.

In analysis of the above table, the response matrix outlines a splitting of the on-duty crew. This is illustrated in the above table as Duty Crew-2, Remaining -1. While this response model is able to respond two units, it minimizes the implementation of Critical Task in most cases until additional response units and personnel arrive. As an example, on a non-hydranted area building fire incident, an engine responds with two and a tanker responds with one. The engine driver has to pump the engine, the tanker driver has to supply water to the engine, which leaves only the officer to conduct a size-up and commit to a defensive (outside) attack of the fire.

Regardless of the NFPA standard (1710, 1720), each promulgates that crews on the fireground shall operate in teams of two.

OSHA Two In-Two Out

Another consideration, and one that links to critical tasking and assembling an Effective Response Force, is that of two-in/two-out regulations. Essentially, prior to starting any fire attack in an immediately dangerous to life and health (IDLH) environment [with no confirmed rescue in progress], the initial two-person entry team shall ensure that there are sufficient resources on-scene to establish a two-person initial rapid intervention team (IRIT) located outside of the building.

This critical tasking model outlined above has its genesis with the Occupational Safety and Health Administration, specifically 29 CFR 1910.134(g)(4). This standard applies to the MPFD as Federal OSHA covers issues not covered in the state plan.

CFR 1910.134(g)(4): Procedures for interior structural firefighting. In addition to the requirements as set forth under paragraph (g)(3), interior structural fires, the employer shall ensure that:

- 1910.134(g)(4)(i)
  - At least two employees enter the IDLH atmosphere and remain in visual or voice contact with one another at all times;

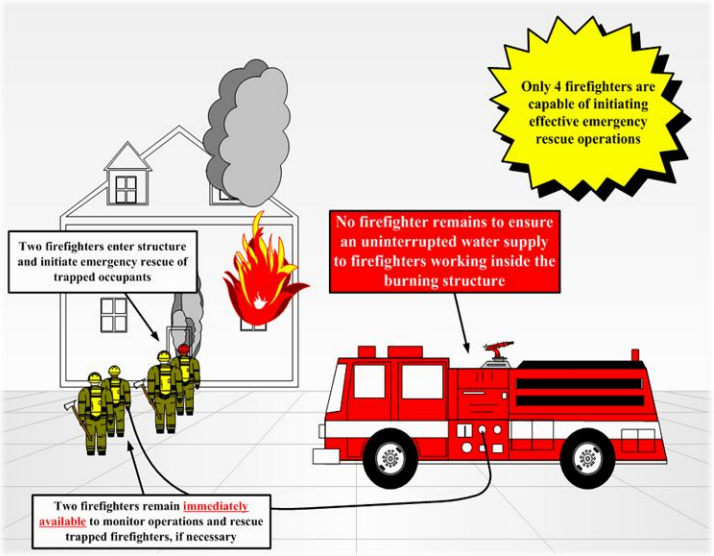
- 1910.134(g)(4)(ii)
  - At least two employees are located outside the IDLH atmosphere; and

- 1910.134(g)(4)(iii)
  - All employees engaged in interior structural firefighting use SCBAs.

Note 1 to paragraph (g): One of the two individuals located outside the IDLH atmosphere may be assigned to an additional role, such as incident commander in charge of the emergency or safety officer, so long as this individual is able to perform assistance or rescue activities without jeopardizing the safety or health of any firefighter working at the incident.

Note 2 to paragraph (g): Nothing in this section is meant to preclude firefighters from performing emergency rescue activities before an entire team has assembled.

NFPA 1500, Standard on Fire Department Occupational Health, Safety, and Wellness, 2021 Edition, has similar language as CFR 1910.134(g)(4) to address the issue of two-in/two-out, stating the initial stages of the incident where only one crew is operating in the hazardous area of a working structural fire, a minimum of four individuals shall be required consisting of two members working as a crew in the hazardous area and two standby members present outside this hazard area available for assistance or rescue at emergency operations where entry into the danger area is required.



NFPA 1500 also speaks to the utilization of the two-out personnel in the context of the health and safety of the firefighters working at the incident. The assignment of any personnel including the incident commander, the safety officer, or operations of fire apparatus, shall not be permitted as standby personnel if by abandoning their critical task(s) to assist, or if necessary, perform rescue, this clearly jeopardizes the safety and health of any firefighter working at the incident.[34]

As is common with many career/paid call departments, the SAFD does not respond to structural fires with a pre-determined staffing regimen or a guaranteed command officer on the initial alarm dispatch. Under this response model, SAFD may or may not have the minimum number of firefighters on the initial response in order to comply with CFR 1910.134(g)(4), regarding two-in/two-out rules and initial rapid intervention team (IRIT). Responding members must be mindful of who and what apparatus is on scene and the Two-In/Two-Out concept.

Additionally, MIOSHA-STD-1208 (4/21) outlines the two-in-two out for firefighting as follows (the same as the Federal OSHA requirement):

- 1910.134(g)(4) Procedures for interior structural firefighting.

In addition to the requirements set forth under paragraph (g)(3)-Procedures for IDLH atmospheres, in interior structural fires, the employer shall ensure that:

- 1910.134(g)(4)(i) At least two employees enter the IDLH atmosphere and remain in visual or voice contact with one another at all times.
- 1910.134(g)(4)(ii) At least two employees are located outside the IDLH atmosphere.
- 1910.134(g)(4)(iii) All employees engaged in interior structural firefighting use SCBAs.

  Note 1 to paragraph (g): One of the two individuals located outside the IDLH atmosphere may be assigned to an additional role, such as incident commander in charge of the emergency or safety officer, so long as this individual is able to perform assistance or rescue activities without jeopardizing the safety or health of any firefighter working at the incident.

  Note 2 to paragraph (g): Nothing in this section is meant to preclude firefighters from performing emergency rescue activities before an entire team has assembled.

In order to meet CFR 1910.134(g)(4), NFPA 1500, and Michigan MIOSHA, the SAFD must utilize two personnel to commit to interior fire attack while two firefighters remain out of the hazardous area or immediately dangerous to life and health (IDLH) area to form the Initial Rapid

34. NFPA 1500, 8.8.2.5, 2021 Edition.

Intervention Team (IRIT), while attack lines are charged, and a continuous water supply is established.

In the end, the ability to assemble adequate personnel, along with appropriate apparatus to the scene of a structure fire, is critical to operational success and firefighter safety. NFPA 1710 and 1720 address this through the staffing matrix for the various buildings or demand zones.

Staffing, Response and Operating on Scene

Fire departments that rely on automatic and mutual aid and paid call members to meet initial staffing requirements must carefully consider several factors when developing response policies. These policies should ensure the effective use of resources while prioritizing the safety of both the public and firefighters. Key considerations include:

- Accountability of responding and on-scene resources, and in the case of firefighters responding in personal vehicles, their ability to arrive safely and function safely prior to the initial arriving fire apparatus.
- Ensuring personnel responding to fires and other emergencies are organized into company units or response teams consisting of a team of at least two.
- The avoidance of freelancing on the fireground, particularly early arriving firefighters to an incident.
- Organizing initial firefighting operations, ensuring that at least four members are assembled before interior fire suppression operations are initiated in a hazardous area.
- It is of the highest importance that firefighters and command officers are trained and disciplined not to freelance or enter a hazardous area or building on fire without the proper equipment beyond their issued personal protective clothing if they arrive at an emergency scene prior to responding fire apparatus.
- Ensuring assembled personnel always have radio communication with Incident Command so that they may transmit urgent messages, critical task progress, incident updates, and their team's location, accountability of their actions, and receive from Incident Command and/or other teams operating at the scene the communication of urgent messages, updates, critical task progress, other team locations, and receive new assignments.

The 2021 edition of NFPA 1500 standard on *Fire Department Occupational Safety, Health, and Wellness Program* is equally clear on the critical emergency scene function of personnel accountability. Additionally, the 2020 edition of NFPA 1561 *Emergency Services Incident Management System and Command Safety* more specifically addresses emergency scene accountability.

Accountability systems include tracking systems where responding apparatus crews or individuals deliver accountability tags to Incident Command for use when command assigns members and companies, and forms crews and groups (interior, roof, hazard control etc.). The Incident Commander places the accountability tags on a board or other tracking instrument that he/she can constantly visualize, move when crews are reassigned, and maintain accountability awareness. These standards include language as outlined in the following table.

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Table 15: Emergency Scene Accountability–NFPA 1500 and NFPA 1561

NFPA 1500	NFPA 1561
8.5.1: The fire department shall establish written standard operating procedures for a personnel accountability system; this is in accordance with NFPA 1561.	**4.6.1:** The ESO shall develop and routinely use a system to maintain accountability for all resources assigned to the incident with special emphasis on the accountability of personnel.
8.5.3: It shall be the responsibility of all members operating at the emergency incident to actively participate in the personnel accountability system.	**4.6.2:** The system shall maintain accountability for the location and status condition of each organizational element at the scene of the incident.
8.5.4: The incident commander shall maintain an awareness of the location and function of all companies or crews at the scene of the incident.	**4.6.3:** The system shall include a specific means to identify and keep track of responders entering and leaving hazardous areas, especially were special protective equipment is required.
8.5.8: Members shall be responsible for following personnel accountability system procedures.	**4.6.5:** Responder accountability shall be maintained and communicated within the incident management system when responders in any configuration are relocated at an incident.
8.5.9: The personnel accountability systems hall be used at all incidents.	**4.6.6:** Supervisors shall maintain accountability of resources assigned within the supervisor's geographical or functional area of responsibility.
8.5.10: The fire department shall develop, implement, and utilize the system components required to make the personnel accountability system effective.	**4.6.10:** Responders who arrive at an incident in or on marked apparatus shall be identified by a system that provides an accurate accounting of the responders on each apparatus.
	4.6.11: Responders who arrive at the scene of an incident by other means other than emergency response vehicles shall be identified by a system that accounts for their presence and their assignment at the incident scene.
	4.6.14: The system shall also provide a process for the rapid accounting of all responders at the emergency scene.

The SAFD utilizes a hybrid accountability of the "tag" and "ring" system. According to the Fire Chief this system works well for the department. Regardless of the system implemented, it is essential the system is utilized on all calls to ensure incident scene accountability.

Between January 1, 2024, and December 31, 2024, the SAFD responded to 537 fire related calls in the district. Of these, 22 were outside fire calls and 18 were structure fire calls. Overall, 89 percent of fire calls had one unit arrive on scene.

Structure fires included the following:

- One SAFD Unit: 22%
- Two SAFD Units: 22%
- Three SAFD Units: 17%
- Four or More SAFD Units: 39%

While the SAFD can assemble three or more units for structure fires, the staffing may not be full complement (two or more) on each unit.

Table 16: SAFD Fire Related Calls – In District

Call Type	Number of Units				Total Calls
	One	Two	Three	Four or More	
False alarm	84	11	1	0	96
Good intent	21	9	2	0	32
Hazard	68	5	0	0	73
Outside fire	9	10	2	1	22
Public service	290	6	0	0	296
Structure fire	4	4	3	7	18
Fire Subtotal	**476**	**45**	**8**	**8**	**537**

Mutual Aid responses include Ann Arbor City FD, Ann Arbor Township FD, Milan Area FD, Northfield Township FD, Pittsfield Township FD, and Scio Township FD.

Fire Department	Unit	Type	Runs
Ann Arbor City Fire	E1-4	Engine	**1**
Ann Arbor Township Fire	E12-2	Engine	1
	E12-1	Engine	1
	R12-1	Rescue	1
	Total		**3**
Milan Area Fire	E28-3	Engine	2
	T28-1	Truck	2
	Total		**4**
Northfield Township Fire	U8-1	Utility	**1**
Pittsfield Township Fire	E10-3	Engine	4
	E10-1	Engine	14
	L10-3	Ladder	1
	T10-1	Truck	2
	Total		**21**
Scio Township Fire	B16-1	Brush truck	2
	E16-1	Engine	4
	T16-1	Truck	1
	Total		**7**
Total			**37**

Pittsfield Township FD had the most Mutual Aid responses with 21.

Scio Township had the second most Mutual Aid responses with 7.

The next table matches critical tasking assignments to low, moderate and high-risk fire and EMS categories. Low, moderate, and high-risk fire events align with NFPA 1710. EMS critical tasks are not as well-defined as those in the fire discipline. *Critical Tasking* in EMS is typical of that in the fire service in that there are certain critical tasks that need to be completed either in succession or simultaneously. EMS critical tasking is typically developed (in fire-based EMS Standards of Cover documents) in accord with the U.S. Department of Health & Human Services, Centers for Medicare & Medicaid Services (CMS), as:

- Basic Life Support (BLS)-***low risk***, which is an emergency response by a ground transport unit (and crew) and the provision of medically necessary supplies and services.
- Advanced Life Support, Level 1 (ALS1)-***moderate risk***, which is the transportation by ground ambulance vehicle and the provision of medically necessary supplies and services including the provision of an ALS assessment or at least one ALS intervention.
- Advanced Life Support, Level 2 (ALS2)-***high risk***, which is the transportation by ground ambulance vehicle and the provision of medically necessary supplies and advanced services.

Table 17: Critical Tasking Categories and Effective Response Force

Task	Low Risk Fire	Low Risk EMS	Moderate Risk Fire (SFD)	Moderate Risk EMS	High Risk Fire (Apt/Condo)	High Risk EMS
Incident Command	1	-	1	1	2	1
Primary Patient Care	-	1	-	1	-	1
Secondary Patient Care	-	1	-	2	-	1
Tertiary Patient Care	-	-	-	-	-	2
Apparatus Operator	1	1*	1	1	2	1
Handlines ***2 staff each***	2		4		6	
Fireground Support Staff			2		3	
Primary Search & Rescue			2		4	
Ventilation-Ground Ladders			2		4	
Initial Rapid Intervention Team			4		4	
Aerial Operator (if aerial used)			(1)		(1)	
Initial Medical Care					2	
Total Staff	**4**	**2**	**16 (17)**	**5**	**27 (28)**	**6**

EMS Critical Tasking includes the HVA Echo Unit and Ground Transport Unit.

*Low Risk EMS responses require two personnel. One staff member acts as secondary patient care and apparatus operator as well.

Moderate Risk Fire-Single Family Dwelling (SFD).

High Risk Fire-Apartment, Condo, Mixed Use, Commercial, Industrial.

Risks and risk categorization differ from community to community and each should be identified and categorized by the fire department.

CPSM created the following table, which includes the number of personnel who responded to the eighteen structure fires in the one-year data period. These numbers include SAFD fire suppression staff and does not include HVA or other personnel count (the data does not define other). The information was retrieved from SAFD National Incident Reporting System (NFIRS) call data provided to CPSM by the SAFD. Additionally, the NFIRS information does not include mutual aid personnel count.

Table 18: Number of SAFD Suppression Personnel Responding to Structure Fires

Inc. #	NFIRS Code Type	Incident Type Description	SAFD Suppression Staff
3923402	111	building fire	6
3927642	111	building fire	2
3930338	112	fire in structure, other than in a building	4
3950955	114	chimney or flue fire	8
3962414	111	building fire	9
3975340	118	trash or rubbish fire in a structure	5
3994168	121	fire in mobile home	3
4002141	111	building fire	3
4017502	111	building fire	5
4019204	111	building fire	7
4020916	111	building fire	4
4025886	111	building fire	4
4041864	111	building fire	6
4046855	111	building fire	20
4047629	118	trash or rubbish fire in a structure	2
4049330	111	building fire	8
4056713	111	building fire	3
4058583	111	building fire	3

This table tells us that

- On average, the SAFD assembles six SAFD suppression staff for a structure fire (excludes Incident #4046855, which assembled twenty suppression staff).
- Incident numbers 3950955, 3962414, 4019204, and 4049330 averaged eight SAFD suppression staff.

CPSM assesses the SAFD is not able to meet the Effective Response Force benchmark for single-family building fires of sixteen firefighters on the initial alarm and may not be able to meet the Effective Response Force with paid call and off duty career staff. The SAFD is reliant on mutual/automatic aid from other agencies and the availability of SAFD paid call and off duty career staff for these type of incidents. Further and when benchmarked against the NFPA 1720

model for a suburban demand zone, the SAFD cannot assemble an effective response force without mutual and automatic aid (ten firefighters).

CPSM further assesses the SAFD Effective Response Force for building fires and major events is lean and dependent on aid from other agencies, particularly in the area of incident command, incident safety officer, and ladder company operations such as elevated master stream, vertical ventilation, search and rescue, and ground ladder access for interior crews and occupants to name a few of the priority critical.

CPSM also assesses the SAFD has sufficient capabilities to respond to EMS calls in its current non-transport capacity.

Recommendations:

- The SAFD Fire Board should continue with the current fiscal plan to add one additional firefighter position to increase maximum staffing of five per operational shift. Additionally, the minimum number of staffing should, when the new staff is hired, be four (1 officer and 3 firefighters) at all times to align deployable resources with community risk and incident type.
- The SAFD should maintain all automatic and mutual aid agreements as they play a role in providing staffing to moderate and high-risk fire and fire related response in the SAFD district. A strategic goal should include the enhancement of automatic aid from participating departments, of one engine on all structure fires with an objective of reaching 8-10 staff on the initial alarm.
- The SAFD should consider the implementation of a policy outlining minimum staffing of two qualified personnel on initial alarm units. The current practice of two staff on the initial engine and one staff on an additional unit for building fire responses (when staffing is at three) creates the potential for operations in an environment that does not meet NFPA and MIOSHA safety benchmarks of establishing incident command, operating in teams of two, personnel accountability, the establishment of an initial rapid intervention team, two-in-two-out, and freelancing.
- Over the longer term, and once a fiscal and strategic plan have been developed, the SAFD Board may have to consider additional operational staffing at the main SAFD station so that two apparatus can respond on the initial alarm with a minimum staffing of six personnel. The Board may also have to consider, as growth continues in the west SAFD district, the design and construction of a second station in the western SAFD district to serve Lodi and Saline Townships with improved response travel times. This station will require staffing with a minimum of two-three staff per shift (one officer and 1-2 firefighters) and deployment of a single engine company with a minimum water tank of 1000 gallons.

Training and Education

Training and educating the Fire and EMS workforce is one of the most vital responsibilities of a fire department. A well-structured training program not only enhances skills but also shapes the character and culture of the organization.

An effective program should be comprehensive and diverse, covering all aspects of the department's mission and responsibilities. Annual training must ensure compliance with state and local certification requirements, as well as NFPA and ISO benchmarks. It should incorporate a balanced mix of classroom instruction and hands-on practical exercises, designed in alignment with the department's operating procedures and widely accepted industry standards.

Practical training should also reflect protocols followed by mutual aid departments, fostering seamless collaboration during emergencies. The National Fire Protection Association (NFPA) emphasizes the importance of ongoing training to keep firefighters up to date with evolving fire behavior, new firefighting techniques, EMS procedures, and other safety protocols, as outlined in NFPA 1500 – *Standard on Fire Department Occupational Safety, Health, and Wellness Program.*

Training Management and Oversight

Training in the SAFD is overseen by the Fire Chief, with support from a Captain who has a strong interest in training. Together, they develop and deliver Fire and EMS training for the department.

In Michigan, firefighters must complete 36 hours of continuing education every three years, with a minimum of six hours per year. This requirement applies to all levels within the organization, from firefighter to Fire Chief/Public Safety Director. Additionally, the Fire Chief assigns monthly in-service training, typically totaling about eight hours. These sessions include a mix of virtual instruction, hands-on exercises, and policy reviews.

Training records are maintained through FireRescue1 Academy™, an online learning management system designed specifically for operational personnel. This platform provides access to a vast library of courses, tracks training progress, and manages certifications within a centralized online environment.

Certification and Continuing Education

Certification and continuing education are crucial in the fire service as they ensure firefighters maintain the necessary skills and knowledge to respond effectively to evolving fire and life safety situations, promoting safety for both the public and themselves, while also enabling career advancement by staying updated with new techniques and technologies, and demonstrating a commitment to professional development.

Fire training requirements are governed by the Michigan Department of Licensing and Regulatory Affairs, Firefighters Training Council through Michigan Administrative Code for initial and maintenance of required position certifications. EMS training certification/licensure is governed by the Michigan Department of Health and Human Services, Division of EMS.

Upon appointment and throughout employment, firefighters shall have and maintain:

- Firefighter I and II certification (including State Driver's certification)
- Emergency Medical Technician (EMT) certification
- Current CPR certification
- Hazardous Materials Operations certification
- Annual continuing education credits

In addition to the above, Captains shall have and maintain State of Michigan:

- Fire Officer III certification
- Compliance with continuing education standards set by the state.

Specialty Teams such as Hazardous Materials Team members must obtain (as applicable):

- Hazardous Materials Technician certification
- Water Rescue and Technical Rescue team Certification

There is no certification or continue education listed for the Fire Chief or his assistant.

Certain Occupational Safety and Health Administration (OSHA) regulations dictate that minimum training must be completed on an annual basis. The state of Michigan operates under an approved state OSHA program for public employees at the state or local government level.

OSHA Regulations and Standards regulated employers located in the state of Michigan are governed by the Michigan State Plan. Federal OSHA covers issues not covered in the state plan. This includes Federal OSHA health and safety standards found in the 29 Code of Federal Regulations (CFR). As such, the SAFD should ensure the following are included in the training matrix and program requirements for all uniform personnel:

- Annual review of the respiratory protection standard, self-contained breathing apparatus (SCBA) refresher and user competency training, SCBA fit testing (29 CFR 1910.134).
- Annual Blood Borne Pathogens Training (29 CFR 1910.1030).

Other training requirements the SAFD must manage include:

- The ISO-PPC has certain training requirements for which fire departments receive credit during the ISO-PPC review. In the most recent ISO-PPC analysis, the SAFD received 1.89/9.00 credits for the training segment.
- Overall, the SAFD is deficient in ISO-PPC training credits, which are focused on structural fire response and the department's ability to combat structural fires as follows:
  - Credit for Training #581 (A) Facilities and Use (0.00/35 credits).
    - For maximum credit each firefighter should receive 18 hours per year in structure fire-related subjects as outlined in the NFPA 1001 standard at a training facility where props and fire simulation buildings can be used. ***The SAFD is not meeting this section to their fullest potential.***
  - Credit for Training #581 (B) Company Training (3.52/25 credits).
    - For maximum credit, each firefighter should receive 16 hours per month in structure fire-related subjects as outlined in the NFPA 1001 standard. ***The SAFD is not meeting this section to their fullest potential.***
  - Credit for Training #581 (E) Existing Driver and Operator Training (0.83/5 credits).
    - For maximum credit, each existing driver and operator should receive 12 hours of driver/operator training per year in accordance with NFPA 1002 and NFPA 1451. ***The SAFD is not meeting this section to their fullest potential.***
  - Credit for Training #581 (F) Training on Hazardous Materials (0.17/1 credits).
    - For maximum credit, each firefighter should receive 6 hours of training for incidents involving hazardous materials in accordance with NFPA 472. ***The SAFD is not meeting this section to their fullest potential.***
  - Credit for Training #581 (H) Pre-Fire Planning Inspections (1.99/12 credits).
    - For maximum credit, pre-fire planning inspections of each commercial, industrial, institutional, and other similar type building (all buildings except 1-4 family dwellings) should be made annually by company members. Records of inspections should include up-to-date notes and sketches. ***The SAFD is not meeting this section to their fullest potential.***

Paid Call Firefighter Training

Paid call firefighters participate in training approximately twice a month, with a focus on manipulative (hands-on) exercises. Between these sessions, they complete online training, including required EMS continuing education units (CEUs). The SAFD strives to integrate all training—both for paid-on-call and full-time employees (FTEs)—with policy and procedure reviews to ensure consistency across the department. Additionally, multiple on-duty staff members now train alongside paid call firefighters, which, according to the Fire Chief, has improved overall training effectiveness.[35]

Training Opportunities

SAFD personnel have access to formal training opportunities, including conferences and joint exercises with public safety partners such as neighboring fire agencies and the Saline Police Department. Additionally, paid call staff are typically hired and provided with department-specific training, fully funded by the department.

Training Facilities and Resources

Training facilities provide firefighters with a safe and controlled environment to develop and refine their skills. These facilities allow them to practice real-life emergency scenarios, improve response times, and ensure they are well-prepared to handle various challenges they may encounter in the field. By offering hands-on experience and specialized training, these facilities help enhance firefighter safety, efficiency, and overall effectiveness in protecting lives and property.

The SAFD does not have a dedicated training facility or classroom. Training space within the fire station is limited to areas such as the day room and apparatus bay, which can accommodate some hands-on training sessions. During our site visit, CPSM did not observe any training props, such as a simulated roof ventilation prop, forcible entry props, or fire sprinkler training props. However, many of these training aids are available through other agencies. Collaborating with other agencies for training resources is beneficial and should be encouraged.

Live fire training is crucial for firefighters because it provides them with a realistic experience of battling a fire in a controlled environment, allowing them to develop critical skills like navigating smoke-filled rooms, managing hose lines, and making quick decisions under intense pressure, which are essential for safely and effectively performing their duties in real fire situations; essentially, it prepares them to react appropriately to the disorienting conditions of a burning building, ultimately enhancing their ability to protect themselves and the public.

Occasionally, residential homes within the district are scheduled for demolition and made available for live fire training, though this occurs rarely and requires a certified life training officer.[36] While it can be logistical challenging, there are training facilities such as University of Michigan Fire Station (Ann Arbor) – 22 miles away (~15 minutes), Schoolcraft College (Livonia) – 33 miles away (~38 minutes). These facilities provide firefighters with realistic training environments for forcible entry, ventilation techniques, search and rescue operation, live fire scenarios, hazardous materials handling and other similar potential opportunities.

According to NFPA standards and the ISO-PPC grading schedule, firefighters should engage in live fire training at least annually; however, the frequency can vary depending on factors like the department's risk profile, access to training facilities, and individual firefighter proficiency

35. Fire Chief Jason Sperle.
36. NFPA 1403.

levels, but it should be conducted regularly to maintain competency in high-risk situations. Additionally, the ISO-PPC grading schedule provides training credits for live training conducted at a training facility or other live training location. For maximum credit, each firefighter should receive eighteen hours per year in structure fire related subjects.

Career Development and Succession Planning[37]

Career succession is vital in the fire service as it ensures that critical leadership roles are always filled with qualified individuals, maintaining operational effectiveness and public safety in the event of retirements, transfers, or unexpected vacancies, allowing for a smooth transition of knowledge and experience without compromising response capabilities during critical situations. The SAFD does not have a career succession plan or career development program, an acting Captain or acting Fire Chief program, or a structured system that prepares personnel to temporarily assume higher-ranking positions and perform their associated duties in an acting capacity.

Pre-Fire Planning

Pre-fire training, particularly pre-incident planning—also known as "area familiarization"—is a proactive approach to identifying, assessing, and mitigating potential fire risks within a service area. It enables firefighters to familiarize themselves with building layouts, fire protection systems, and potential hazards before an emergency occurs.

Fire departments that engage in pre-incident planning can reduce response times, improve coordination during emergencies, and enhance both firefighter and public safety.[38] Research highlights that departments engaged in pre-incident planning reduce response times and improve coordination during emergencies, ultimately enhancing firefighter and public safety.[39] The Insurance Services Office (ISO) Public Protection Classification (PPC) program evaluates fire departments based on key factors such as training, water supply, emergency communications, and pre-incident planning. Departments with higher ratings (closer to Class 1) can contribute to lower property insurance premiums for residents and businesses. Currently, the SAFD does not engage in pre-incident planning.

Recommendations:

- The SAFD should develop a plan to provide all personnel with mandatory high-intensity training on subjects such as periodic live fire training on at least a semi-annual basis; live fire facility training to include fireground basics such as hose and ladder evolutions, forcible entry, ventilation, search and rescue, and vehicle extrication. This should include practical skills competency and proficiency evaluations (non-punitive) as part of the department's comprehensive fire training program.
- CPSM recommends the SAFD develop a plan that strives to achieve improved credit for all ISO-PPC grading schedule training categories to include the implementation of a pre-fire plan program that has a focus of exposing fire suppression crews to all commercial, industrial, business, public assembly, multi-family, and other target hazards identified in the district so that crews become familiar with these occupancies.
- The SAFD should work with the SAFD municipalities to locate available public land, such as a public works facility, where a training area can be located. This would enable the SAFD to

37. A process that develops and prepares crews to fill upwardly or specialty positions within the agency.
38. NFPA 1620.
39. U.S. Fire Administration.

procure or build training props for live fire and rescue training such as vertical ventilation, forcible entry, vehicle extrication, fire streams, SCBA maze training and other fundamental fire department skill reinforcement.

- CPSM recommends SAFD work with the Fire Board and other human resources specialists as needed to develop a succession plan that is diverse, includes the entire organization, and has a focus on preparing current and future members to take on additional roles and responsibilities, and as well as prepares members for advancement and promotion into key roles in the organization.

Community Risk Reduction

Risk reduction programs play a critical role in enhancing the safety, health, and quality of life for residents of a community. Community Risk Reduction activities are important undertakings of a modern-day fire department. A comprehensive fire protection system in every jurisdiction should include, at a minimum, the key functions of fire prevention, code enforcement, inspections, and public education. Preventing fires before they occur, and limiting the impact of those that do, should be priority objectives of every fire department.

Fire suppression and response, although necessary to protect property, have negligible impact on preventing fire. Rather, it is public fire education, fire prevention, and built-in fire protection systems that are essential elements in protecting citizens from death and injury due to fire, smoke inhalation, and carbon monoxide poisoning. The fire prevention mission is of utmost importance, as it is the only area of service delivery that dedicates 100 percent of its effort to the reduction of the incidence of fire.

SAFD does not have a dedicated Fire Marshal or fire prevention staff. Fire prevention duties and risk reduction tasks are performed on a part-time basis by the Fire Chief and periodically by the on-duty crews.[40] Occasionally, the fire chief will recall off-duty firefighters trained in fire prevention as well. In all, about 30 inspections and plan reviews are done each year. There are 433 businesses that should be inspected in SAFD. 400 of those are located within the City of Saline. There are also 718 apartments that could be inspected (rental inspections) with 710 of those in the City of Saline.[41]

The NFPA has guidance for community risk reduction through the NFPA 1730 standard -*Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations, 2019 Edition*. This standard provides guidelines for fire prevention activities in a community. One of the key aspects addressed in NFPA 1730 is the minimum inspection frequency for several types of occupancies. NFPA 1730 outlines fire inspection frequency as such:

- High Hazards: **Annually**
- Moderate Hazards: **Biennially**
- Low Hazards: **Triennially**
- Critical Infrastructure: As assigned by the Authority Having Jurisdiction (AHJ)

40. Fire Chief Jason Sperle (and discussion with on duty crews during site visit).
41. Fire Chief Jason Sperle.

NFPA 1730 defines these hazards as:

- High-Risk Occupancy. An occupancy that has a history of high frequency of fires, high potential for loss of life or economic loss, or that has a low or moderate history of fires or loss of life, but the occupants have a high dependency on the built-in fire protection features or staff to assist in evacuation during a fire or other emergency.
    - Examples of high-risk occupancies could include multiple-family dwellings, high-rise buildings, hotels, dormitories, lodging and rooming, assembly, childcare, detention, educational, health care, and industrial.
- Moderate-Risk Occupancy. An occupancy that has a history of moderate frequency of fires or a moderate potential for loss of life or economic loss.
    - Examples of moderate-risk occupancies could include ambulatory health care and industrial occupancies that do not maintain, store, use, or handle hazardous materials in excess of exempt amounts.
- Low-Risk Occupancy. An occupancy that has a history of low frequency of fires and minimal potential for loss of life or economic loss.
    - Examples of low-risk occupancies could include storage, mercantile, and business.
- Critical Infrastructure. The assets, systems, and networks, whether physical or virtual, that are so vital to the community that their damage or destruction would have a debilitating effect.
    - Examples of critical infrastructures could include water treatment plants, special structures, public safety buildings, and power plants.

The Fire Board approved a Fire Marshal position in the FY 25-26 budget. In addition to community risk reduction and other typical fire marshal duties, an SAFD Fire Marshal can also be responsible for department-wide safety, life safety public education coordination and delivery along with SAFD operational crews, coordinating hazardous materials reporting, and attending planning and zoning meetings to maintain contact with SAFD district municipality development. CPSM sees the potential for the Fire Marshal position to assist with chief officer incident coverage, thereby increasing incident command presence and scene safety at emergency incidents.

Fire Code Adoption and Enforcement

The International Fire Code (IFC) is developed and maintained by the International Code Council (ICC) as a model code for fire prevention and safety regulations in buildings and properties. The ICC updates the IFC every three years to incorporate advancements in technology, research, and best safety practices. When adopted by ordinance, local departments gain the authority to enforce these fire codes.

CPSM found that the SAFD operates under three different versions of the fire code: Saline follows the 2024 edition, York Township follows the 2015 edition, the City of Saline adheres to the 2009 edition, and Lodi Township has no fire code in place. To address this inconsistency, the SAFD is actively working on establishing a uniform fire code by exploring the best legal wording and adoption process. This should be top priority: Keeping fire codes updated and consistent is crucial for protecting lives, property, and overall community well-being. A standardized fire code across all SAFD areas will ensure uniform enforcement, reduce confusion, and improve compliance. Additionally, it will provide the SAFD with a consistent set of regulations, ultimately lowering fire risks and enhancing safety across its region.

MI Prevention

MI Prevention is a statewide initiative in Michigan aimed at reducing fire-related deaths, injuries, and property damage through education, prevention programs, and community outreach. It is led by the Michigan Bureau of Fire Services in collaboration with local fire departments, public safety agencies, and community organizations. The SAFD is a member of this taskforce. MI Prevention provides a data driven Community Risk Reduction statewide outreach to identify, prioritize, and address all hazard risks. MI Prevention is meant to inspire and stimulate conversation between a diverse coalition of state partners, and to assist communities towards their own community risk reduction. This statewide collaboration and engagement framework creates a mutually beneficial goal to create safe, healthy, and resilient communities.[42]

Recommendations:

- CPSM recommends the Fire Chief work with the Fire Board and develop specific planning initiatives and expectations of the Fire Marshal position and Community Risk Reduction work to be completed. Initial position responsibilities should include fire code enforcement in accordance with NFPA 1730; building plans review specifically focused on fire protection and life safety systems, site plans (proper fire department access and water supply availability), and as directed by the Fire Chief and Fire Board; public life safety education; and Emergency Planning and Community Right to Know Act (EPCRA) reporting.
- CPSM recommends the SAFD continue to work with the three district townships to update their local ordinances to include the adoption of the 2024 International Fire Code. This effort will align the townships with the City of Saline and create a uniform fire code across the SAFD district jurisdictions.

Policy and Procedures

Fire department policies and procedures provide a clear framework for consistency, safety, and effective emergency response. Standardized guidelines ensure uniform operations, reducing confusion and improving coordination, while clear protocols mitigate risks, enhance teamwork, and protect both firefighters and the public. In high-pressure situations, these policies guide decision-making, improving response times and preventing errors. Defined roles and responsibilities promote discipline, accountability, and ethical conduct, ultimately safeguarding both the department and the community by minimizing risks and legal issues. Well-developed procedures are essential for maintaining order, ensuring safety, and optimizing emergency response.

To ensure these policies remain effective, a fire department policy and procedures analysis should be conducted to identify recency and any areas in need of improvement. This helps ensures compliance with regulations and provides fire department staff with clear guidelines for safe and efficient operations during both emergency responses and daily activities. The goal is to enhance safety and protect the community.

CPSM did not have direct access to SAFD policies and procedures and therefore can make no comment on content.

42. https://www.michigan.gov/lara/bureau-list/bfs/miprevention.

Health, Safety and Wellness

Firefighters face significant risks on the job, including exposure to smoke, hazardous materials, and intense physical exertion. These dangers can lead to serious injuries, long-term illnesses such as cancer, and even fatalities. As a result, it is essential for fire departments to have robust health, safety, and wellness programs in place.

The prevention and reduction of accidents, injuries, and occupational illnesses should be a fundamental goal of any fire-rescue department. This priority must be reflected in both emergency and non-emergency activities. A commitment to safety and health should apply to all members of the fire-rescue department, as well as others involved in fire department operations.

By implementing comprehensive health, safety, and wellness programs, fire departments not only protect their personnel but also enhance their overall effectiveness. Ensuring that firefighters remain physically and mentally capable of performing their duties safely helps sustain public trust and strengthens emergency response efforts.

In 2021, the NFPA produced The Fifth Needs Assessment of the U.S. Fire Service and revealed the following:

- 72 percent of departments lack a program to maintain basic firefighting fitness and health.
- 61 percent of departments don't provide medical and physical evaluations for all firefighters that comply with NFPA 1582: Standard on Comprehensive Occupational Medical Program for Fire Departments.
- 73 percent of departments lack a behavioral health program (larger departments are much more likely to have such a program).
- 56 percent of fire stations are not equipped for exhaust emissions control; this number rises to 82 percent in the smallest communities.
- Many departments do not engage in cancer prevention best practices.[43]
- The leading causes of death for firefighters are cancer, sudden cardiac events, and overexertion and stress.[44]

A successful health, safety, and wellness program requires:

- Senior Management buy-in.
- The establishment of a Health Safety, & Wellness Committee.
- A department needs assessment.
- The establishment of obtainable goals and objectives.
- The establishment of a budget for health, safety, and wellness.
- Implementation.
- Regular evaluation

43. Creating a Health & Wellness Program for Your Department, Firehouse Magazine, October 2022.
44. https://www.nfpa.org/education-and-research/research/nfpa-research/fire-statistical-reports/fatal-firefighter-injuries.

Primary goals of a comprehensive health, safety, and wellness should include:

- Reducing injury leave and light duty due to on-the-job injuries
- Potentially lowering workers' compensation and employee health care costs.
- Reduction of injuries.

Firefighter injuries and deaths are devastating to families, fellow responders, local governments, and the community. The National Institute for Occupational Safety and Health (NIOSH) has studied firefighter fatality root causes, and found five key factors, which are commonly referred to as the NIOSH 5:

- Lack of fireground firefighter accountability.
- Lack of fireground communication methods.
- Lack of standard operating procedures related to response and fireground operations.
- Lack of incident management/command.
- Lack of appropriate risk assessment of the incident as whole, the building, the emergency scene, and basic fireground knowledge to understand the risk.

These five fireground factors should be ingrained in every firefighter's mind. A fire department's training, equipment, guidelines, and culture should center around these principles. A lack of understanding leads to sloppy, ineffective, and unsafe fireground operations. These factors must be taken seriously.

Currently, SAFD does not have a Health, Safety, and Wellness Committee or peer support and fitness committees. Establishing these programs is considered a best practice. Managing the health, safety, and wellness aspects of a fire-rescue department is just as important as applying these principles to both emergency and non-emergency operations. This responsibility requires dedicated staff hours and oversight at both the command and station levels. The Health, Safety, and Wellness Officer for the SAFD is the Fire Chief.

CPSM did not have direct access to the SAFD Health, Safety, and Wellness policies, guidelines, or programs. We have provided a potential structure and content for such a program based on our extensive experience working with fire departments nationwide. Some of these may already be included in SAFD policies and guidelines. Our suggestions include:

- Health and Safety and Wellness Mission Statement.
- Comprehensive Injury and Illness Prevention Program (IIPP).
- Occupational Health & Wellness Program / Fire Department Physicals.
- Health and Safety Committee / Peer Support Committee.
- Personal Protective Equipment (PPE).
- Driving With Lights and Siren.
- Use of Seatbelts.
- Exposure Control & Decontamination.
- Critical Incident Stress Management.
- "Hot Wash" and After-Action Reviews.

- Rapid Intervention Teams / May Day.
- On-Scene Rehab.
- Safety Issue Reporting.
- Behavioral Health.
- Drug Testing / Alcohol Testing /Smoking.
- Fitness / Wellness Programs.
- Use of Fire Station Fitness Facility.

Recommendations:

CPSM recommends the SAFD continue any current health, safety, and wellness program efforts, and develop a comprehensive health, safety, and wellness initiative program, to include updating current policies and guidelines, and to the extent the department is capable and with available funding, ensure the program aligns with:

- NFPA 1550, *Standard for Emergency Responder Health and Safety, 2024 edition.*
    - This document consolidates:
        - NFPA 1500, *Standard on Fire Department Occupational Safety, Health, and Wellness Program.*
        - NFPA 1521, *Standard for Fire Department Safety Officer Professional Qualifications.*
        - NFPA 1561, *Standard on Emergency Services Incident Management System and Command Safety.*
- NFPA 1580 (to be released, 2025), *Standard for Emergency Responder Occupational Health and Wellness.*
    - This document consolidates:
        - NFPA 1581, *Standard on Fire Department Infection Control, 2022 edition*.
        - NFPA 1582, *Standard on Occupational Medical Program for Fire Departments.*
        - NFPA 1583, *Standard on Health Related Fitness Programs for Fire Department Members.*
        - NFPA 1584, *Standard on the Rehabilitation Process for Members During Emergency Operations and Training Exercises.*
- NFPA 1585, Standard for Exposure and Contamination Control, 2025 edition.

CPSM further recommends the oversight of all Health, Safety, and Wellness programs be maintained by the Fire Chief who should chair each of the health, safety, and wellness committees, and actively participate in program development, implementation, and success. Additionally, the Health and Safety Officer program should be expanded to include a designated Health and Safety Officer for each shift (Captain level) to ensure program continuity, communication, and effectiveness.

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Fleet

The provision of an operationally ready and strategically located fleet of mission-essential fire-rescue vehicles is fundamental to the ability of a fire-rescue department to deliver reliable and efficient public safety within a community.

The procurement, maintenance, and eventual replacement of response vehicles is one of the largest expenses incurred in sustaining a community's fire-rescue department. While it is the personnel of the AFD who provide emergency services within the community, the department's fleet of response vehicles is essential to operational success. Reliable vehicles are needed to deliver responders and the equipment/materials they employ to the scene of dispatched emergencies within the city.

Replacement of fire-rescue response vehicles is a necessary, albeit expensive, element of fire department budgeting that should reflect careful planning. A well-planned and documented emergency vehicle replacement plan ensures ongoing preservation of a safe, dependable, and operationally capable response fleet. A plan must also include a schedule for future capital outlay in a manner that is affordable to the community.

NFPA 1901, *Standard for Automotive Fire Apparatus*, 2016 edition (consolidated with other standards into NFPA 1900, *Standard for Aircraft Rescue and Firefighting Vehicles, Automotive Fire Apparatus, Wildland Fire Apparatus, and Automotive Ambulances,* 2024 edition) serves as a guide to the manufacturers that build fire apparatus and the fire departments that purchase them.

Annex F.1 of NFPA 1900 contains guidelines for front-line and reserve fire apparatus (NFPA 1901 standard) regarding service life. With respect to the recommended vehicle service life, the following excerpt is noteworthy:

> *To maximize firefighter capabilities and minimize risk of injuries, it is important that fire apparatus be equipped with the latest safety features and operating capabilities. In the last 10 to 15 years, much progress has been made in upgrading functional capabilities and improving the safety features of fire apparatus. Apparatus more than 15 years old might include only a few of the safety upgrades required by the recent editions of the NFPA fire department apparatus standards or the equivalent Underwriters Laboratories of Canada (ULC) standards. Because the changes, upgrades, and fine tuning to NFPA 1901 (now 1900) have been truly significant, especially in the area of safety, fire departments should seriously consider the value (or risk) to firefighters of keeping fire apparatus more than 15 years old in first-line service.*
>
> ***Apparatus that were not manufactured to the applicable NFPA fire apparatus standards or that are over 25 years old should be replaced.***

The impetus for these service life threshold guidelines is continual advances in occupant safety and construction enhancements. Despite good stewardship and maintenance of emergency vehicles in sound operating condition, there are many advances in occupant safety, such as fully enclosed cabs, enhanced rollover protection and air bags, three-point restraints, antilock brakes, higher visibility, cab noise abatement/hearing protection, carcinogen exposure reduction, and a host of other improvements as reflected in each revision of NFPA 1901 (and now NFPA 1900). These improvements provide safer response vehicles for those providing emergency services within the community, as well those "sharing the road" with these responders.

The SAFD currently operates a fleet of front-line and reserve heavy fire apparatus as outlined in the following table. Maintenance on heavy fire fleet occurs through a third-party vendor.

Table 19: SAFD Heavy Fire Apparatus Fleet

Apparatus Type-Fire	Year In Service	Current Age	Projected Replacement Year*
Type 1 Engine 4-1	2021	4 years	2041-2046
Type 1 Engine 4-2	2003	22 years	2028
Water Tanker 4-1	2010	15 years	2030-2035
Water Tanker 4-2	1997	28 years	Now
Rescue 4-1	2001	24 years	Now

*As a note, the projected year of replacement is based on the NFPA 1900 standard language that heavy fire apparatus should be replaced no later than the 25-year benchmark.

Currently the SAFD does not have a defined heavy fleet replacement plan. Although some departments use the 15-year frontline - 5–8-year reserve guideline, this model should consider overall use, wear and tear, recurrent motor, drivetrain, and other apparatus issues that may drive earlier replacement, or extend the life cycle. That said, CPSM does not recommend heavy fire apparatus use beyond the 25-year mark for the reasons stated in the NFPA 1900 standard, which has a focus on the safety of firelighters driving and riding on the vehicles and for the safety of the public who share the road with these apparatus. Additionally, NFPA 1910 *Standard for the Inspection, Maintenance, Refurbishment, Testing, and Retirement of In-Service Emergency vehicles and Marine Firefighting Vessels, 2024 edition* maintains consistent language and states *The fire department shall consider safety as the primary concern in the retirement of emergency vehicles.*

Regardless of the replacement plan for heavy fire fleet, the reality is that it may be best to establish a life cycle for fire apparatus that would match the development of replacement funding, while applying the methodology of determining the replacement date in real life, in an effort to achieve greater planning and cost efficiency where possible. In the case of SAFD heavy fire fleet, a 20-year front-line service for engines; and 20-25 years of frontline for the water tender seem prudent and efficient based on current use. Of course, as the department's response demand increases, this model may be shifted back dependent on the apparatus (15- 20-year frontline for engines as an example with remaining years to 25 years in reserve status).

Furthering the efficiency of vehicle grading and to some extent the real-life replacement time of fire apparatus, one could consider the Economic Theory of Vehicle Replacement.

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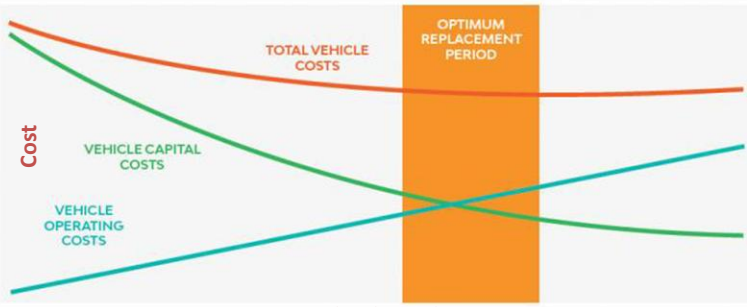
Economic Theory of Vehicle Replacement



The Economic Theory of Vehicle Replacement states that, as a vehicle ages, the cost of capital diminishes and its operating cost increases. The resultant combination of these two costs produces a total cost curve and suggests the optimal time to replace any piece of apparatus is when the operating cost begins to exceed the capital costs. This optimal time may not be a fixed point, but rather a range over time, such as a 5–10-year period heavy fire apparatus is in reserve status (such as NFPA 1900 provides guidelines on).

Deferring replacement purchases may be a good strategy at the time for balancing the budget, however this typically leads to the following:

- Costs are transferred from the capital budget to the operating budget to pay for maintenance and repair of the ageing vehicle.
- Deferral of capital costs may increase overall fleet costs in future years as more than one apparatus or ambulance may have to be replaced in a given budget year rather than spread out over several budget years.

One additional note here. Since the pandemic, heavy fire apparatus (engines, ladders, rescues) typically takes 36-42 months to deliver after an order is placed, depending on the manufacture. There are some circumstances that can shorten this time frame; however, these are stock units that may not fit the department's needs and response profile. ***These lead times have to be considered in any fleet replacement program methodology and will require considerable forecasting.***

An additional avenue the SAFD may consider is apparatus refurbishment. NFPA 1910 (*Standard for Inspection, Maintenance, Refurbishment, Testing, Retirement of In-Service Emergency Vehicles, and Requirements for Marine Firefighting Vessels*, 2024 edition) outlines two levels of refurbishment, which are:

- Level I Refurbishment, which is the most comprehensive is intended to upgrade major components and systems focused on improving safety, performance, and significantly extending the service life of the vehicle. This is the most comprehensive refurbishment, and all upgrades are performed in accordance with the most recent edition of the NFPA automotive fire apparatus standard (NFPA 1900).
- Level II Refurbishment is intended to address specific issues or components, is more limited in scope (and cost), and is performed in accordance with the NFPA automotive fire apparatus standard in place at the time of its construction (NFPA 1901). The outcome typically extends the apparatus's usability but does not necessarily ensure compliance with the latest NFPA standards.

A final consideration regarding apparatus replacement is the combining of two apparatus into one. Both small and large fire departments often find efficiency in this concept as the concept reduces fleet size and also the staffing it takes to respond two apparatus as opposed to one. Combined apparatus typically include:

- Combining engine and ladder apparatus into one, which creates the Quint concept. A Quint serves multiple functions and includes a fire pump, water tank, hose, hand tools and

equipment, and a hydraulic aerial device. Quint apparatus responds primarily as an engine company but can serve as a ladder (truck) company as needed. The ISO-PPC analysis gives full credit as an engine apparatus and partial credit as a ladder apparatus.

- Combining engine and squad/heavy rescue apparatus into one, which creates the Rescue Engine concept. Rescue Engines carry the same engine apparatus compliment of water, a fire pump, hose, and equipment as a regular engine, and have enhanced compartment space designed to carry vehicle stabilization and extrication equipment, technical rescue equipment (rope and rigging gear as an example), and other technical equipment as determined by the locality. These are versatile response apparatus and add an enhanced layer of capabilities to an initial response.
- Combining engine and water tender apparatus into one, which creates a unit with capabilities of both a pumper and water tender. These units can be deployed as first out engines, particularly in non-hydrant areas. These units carry the same engine apparatus complement of water, a fire pump, hose, and equipment, and have a larger water tank, which can be up to 1800 gallons depending on the chassis and axle weights (single rear axle), with some reaching 2000+ gallons on a tandem rear axle (increased axle weight carrying capacity).

Recommendations:

- CPSM recommends the SAFD develop, over a one-year period, a fire apparatus replacement plan that follows apparatus age recommendations in accordance with NFPA 1900 standard, *Standard for Aircraft Rescue and Firefighting Vehicles, Automotive Fire Apparatus, Wildland Fire Apparatus, and Automotive Ambulances,* 2024 edition.

Planning objectives should include to the extent possible and based on funding:

- First-line apparatus should not exceed 15-18 years of service on the front line. Once an apparatus reaches this age, it should undergo a Level 1 refurbishing in accordance with NFPA 1910, *Standard for Inspection, Maintenance, Refurbishment, Testing, Retirement of In-Service Emergency Vehicles, and Requirements for Marine Firefighting Vessels*, (current edition) as a first alternative to extend service life.
- Reserve apparatus (apparatus in the 19-25 age range that have not received a refurbishment) should be replaced in a timeframe where service life does not exceed 25-years.
- Apparatuses greater than 25 years old should be removed from service. If that is not possible in the near term, their use should be limited to reserve status and scheduled for replacement as soon as funding can be allocated.
- Combining apparatus types (2 types into1) such as one Engine and the Rescue into a Rescue Engine (consideration for the next Engine replacement). This would avail a multi-purpose apparatus capable of firefighting and technical rescue (a common practice across the country, particularly where staffing is limited).
- Apparatus components which are either fixed or portable and which require annual testing—fire pumps, aerial ladder and aerial ladder assemblies, ground ladders, self-contained breathing apparatus to include personnel fit-testing, and fire hose—should be tested in accordance with manufacturer and industry specifications and standards, and proper records maintained at the department, the city and with the maintenance vendor.

Facility

Fire facilities must be designed and constructed to accommodate both current and forecast trends in fire service vehicle type and manufactured dimensions. A facility must have sufficiently sized bay doors, circulation space between garaged vehicles, departure and return aprons of adequate length and turn geometry to ensure safe response, and floor drains and oil separators to satisfy environmental concerns. Station vehicle bay areas should also consider future tactical vehicles that may need to be added to the fleet to address forecast response challenges, even if this consideration merely incorporates civil design that ensures adequate parcel space for additional bays to be constructed in the future.

Personnel-oriented needs in fire facilities must enable performance of daily duties in support of response operations. For personnel, fire facilities must have provisions for vehicle maintenance and repair; storage areas for essential equipment and supplies; space and amenities for administrative work, training, physical fitness, laundering, meal preparation, and personal hygiene/comfort; and—where a fire department is committed to minimize "turnout time"—bunking facilities.

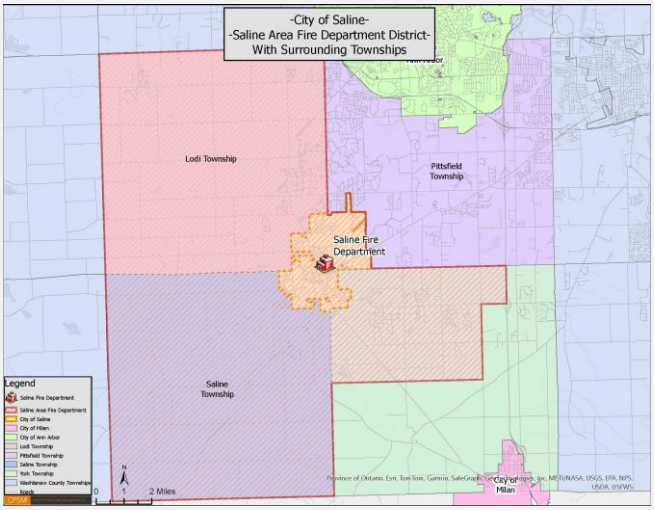
A fire department facility may serve as a de facto "safe haven" during local community emergencies and also serve as a likely command center for large-scale, protracted, campaign emergency incidents. Therefore, design details and construction materials and methods should embrace a goal of having a facility that can perform in an uninterrupted manner despite prevailing climatic conditions and/or disruption of utilities. Programmatic details, such as the provision of an emergency generator connected to automatic transfer switching—even going as far as to provide tertiary redundancy of power supply via a "piggyback" roll-up generator with manual transfer (should the primary generator fail)—provide effective safeguards that permit the fire department to function fully during local emergencies when response activity predictably peaks.

Personnel/occupant safety is a key element of effective station design. This begins with small details such as the quality of finish on bay floors and nonslip treads on stairwell steps to decrease tripping/fall hazards, or use of hands-free plumbing fixtures and easily disinfected surfaces/countertops to promote infection control. It continues with the installation of specialized equipment such as an exhaust recovery system to capture and remove cancer-causing by-products of diesel fuel exhaust emissions. A design should thoughtfully incorporate best practices for achieving a safe and hygienic work environment.

An ergonomic layout and corresponding space adjacencies in a fire station should seek to limit the travel distances between occupied crew areas to the apparatus bays. Likewise, facility design should carefully consider complementary adjacencies, such as lavatories/showers in proximity of bunk rooms, desired segregations, and break rooms or fitness areas that are remote from sleeping quarters. Furnishings, fixtures, and equipment selections should provide thoughtful consideration of the around-the-clock occupancy inherent to fire facilities. Durability is essential, given the accelerated wear and life cycle of systems and goods in facilities that are constantly occupied and operational.

Sound community fire-rescue protection requires the strategic distribution of fire station facilities to ensure that effective service area coverage is achieved, that predicted response travel times satisfy prevailing community goals and national best practices, and that the facilities are capable of supporting mission-critical personnel and vehicle-oriented requirements and needs. Additionally, depending on the fire-rescue department's scope of services, size, and complexity, other facilities may be necessary to support emergency communications, personnel training, fleet and essential equipment maintenance and repair, and supply storage and distribution.

National standards such as NFPA 1500, *Standard on Fire Department Occupational Safety, Health, and Wellness Program*, outlines standards that transfer to facilities such as infection control, personnel and equipment decontamination, cancer prevention, storage of protective clothing, and employee fitness. NFPA 1851, *Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Firefighting and Proximity Fire Fighting*, further delineates laundering standards for protective clothing and station wear. Laundry areas in fire facilities continue to evolve and are being separated from living areas to reduce contamination. Factors such as wastewater removal and air flow need to be considered in a facility design.



The SAFD operates out of one operational facility located in the central-eastern area of the response area as indicated in the image to the left.

The facility can and does accommodate around the clock staffing.

The facility houses all of the heavy and light response fleet.

The facility also houses an around-the-clock HVA Echo Unit.

Figure 23: SAFD Station Platform

Saline Area Fire Department Station 205 E. Michigan Ave. Saline, MI.

- Year Built: 1969
- 20,800 square feet (approximate)
- Serves as the primary response and crew location.
- Serves as primary location for Fire Administration and Staff.
- SAFD Primary Response Units: 2 Engines, 1 Rescue Unit, 1 Brush Truck Unit, 2 Water Tankers.
- HVA Primary Response Unit: 1 Echo Unit.

Facility Comments

Facility maintenance is coordinated and managed, to the extent possible, by the department utilizing external vendors. This includes construction and renovation projects. The City of Saline, through its permitting process, ensures all renovation and improvement meets applicable codes.

CPSM toured the facility during our site visit in January 2025. The facility visit included a walk-around and walk-through with a focus on living space, safety features such as CO capture systems, decontamination areas, separation from living areas and the apparatus bays, and any visible issues. ***This was not an engineering assessment of mechanical systems or building construction.***

Overall, CPSM finds the current facility to be in fair condition. The overall cleanliness and organization of fire facility equipment, furniture, and supply inventory demonstrated the positive pride of SAFD personnel; however, the facility needs renovation. While touring the facility, CPSM also looked at the SAFD fleet and found the apparatus to be clean and organized as well.

The facility accommodates the basic needs of assigned personnel, assigned first out apparatus, security (such as door locks and entry), parking, bathrooms, dayrooms, and kitchen facilities.

Specific remarks regarding the station includes:

- Primary response station.
- Houses main fire administrative offices.
- One bathroom with showers. The door can be locked for privacy.
- Large day room with workstations for completing reports and digital training. This room serves as a conference room and meeting room for the SAFD Fire Board. Three shift refrigerators located in day room/kitchen area. Conference table also serves as a kitchen table.
- Small kitchen area with residential fixtures and porous surfaces.
- Lockers are available in the bathroom/locker room. Lockers are also located in the main bunkroom and serve as separation.
- One main bunkroom for firefighters. Other than lockers separating beds, there is no gender separation. This area is at capacity.
- One bunkroom in what appears to have been a storage closet. This bunkroom is for the officer and has no secondary means of egress and does not have proper ventilation (a fan at the door in a chair is used for ventilation).
- PPE storage is in the apparatus bay and exposed to the elements.
- There is no dedicated decontamination area.
- There is a generator to supply power to the station in the event of power loss.
- There is a washer/dryer for uniforms in the apparatus bay area.
- Storage is limited.
- The ice machine is located in the apparatus bays and exposed to the elements.
- The administrative offices are contiguous to the apparatus bays and exposed to the elements.
- PPE extractor for cleaning PPE is located in apparatus bay.

Long Range Facility Planning

CPSM assesses there is a need for facility renovations of the SAFD station as well as the potential need for a new fire facility to meet the current and potential future needs of the western SAFD district that includes Lodi and Saline Townships.

SAFD Renovation

The SAFD station was built in 1969. The facility was built to accommodate a smaller operation that included less fire apparatus and response by a mostly volunteer/paid call organization. As career staff and operations have increased, the station living area has not kept up to accommodate increased staffing and administrative office needs.

What needs to be achieved with a renovation include living area upgrades (proper ventilation, bunkroom, offices, kitchen, locker/bathroom that includes gender separate facilities if possible), apparatus bay upgrades that include a dedicated decontamination area for personnel and equipment, turnout gear storage that has adequate airflow and that is separated from the elements, movement of the ice machine to a cleaner area that diminishes any chance of contamination, adequate storage for equipment and supplies, and separation from the apparatus bays and the living area to ensure the living area remains as clean as possible and free from carbon products from vehicle exhaust.

Regarding fire facilities, there are national best practices when considering the renovation and design and construction of new Fire and EMS facilities and include the following:

- Maximization of access time from the living space to the apparatus bay space to reduce turnout times.
- Attention to the health and safety of all staff and visitors to include security; carcinogen exposure; decontamination areas for staff, gear, station wear, PPE, and equipment; efficient HVAC systems that provide maximum ventilation and air movement; porous free surfaces throughout; living spaces free of contaminants; contemporary physical training space and equipment located away from the apparatus bays and well ventilated; and gender separate bathroom, shower, and bunking areas.
- Auxiliary power that will power the entire facility.
- Separate and ventilated room for structural protective clothing.
- Decontamination room for staff that has an exterior entry point to reduce contamination and gross decontamination shower.
- The ice machine is placed in a room separate from the apparatus bays and industrial/shop areas to avoid contamination.
- Apparatus bay space that accommodates the current and future department Fire and EMS mission, and that are drive through to reduce backing apparatus.
- Living space that will accommodate current and future Fire and EMS staffing.
- An adequate size day room that can also accommodate training.
- EMS supply storage that is separated from apparatus bays to avoid contamination.
- Incorporated engineering for the proper disposal of medical waste generated during EMS operations.

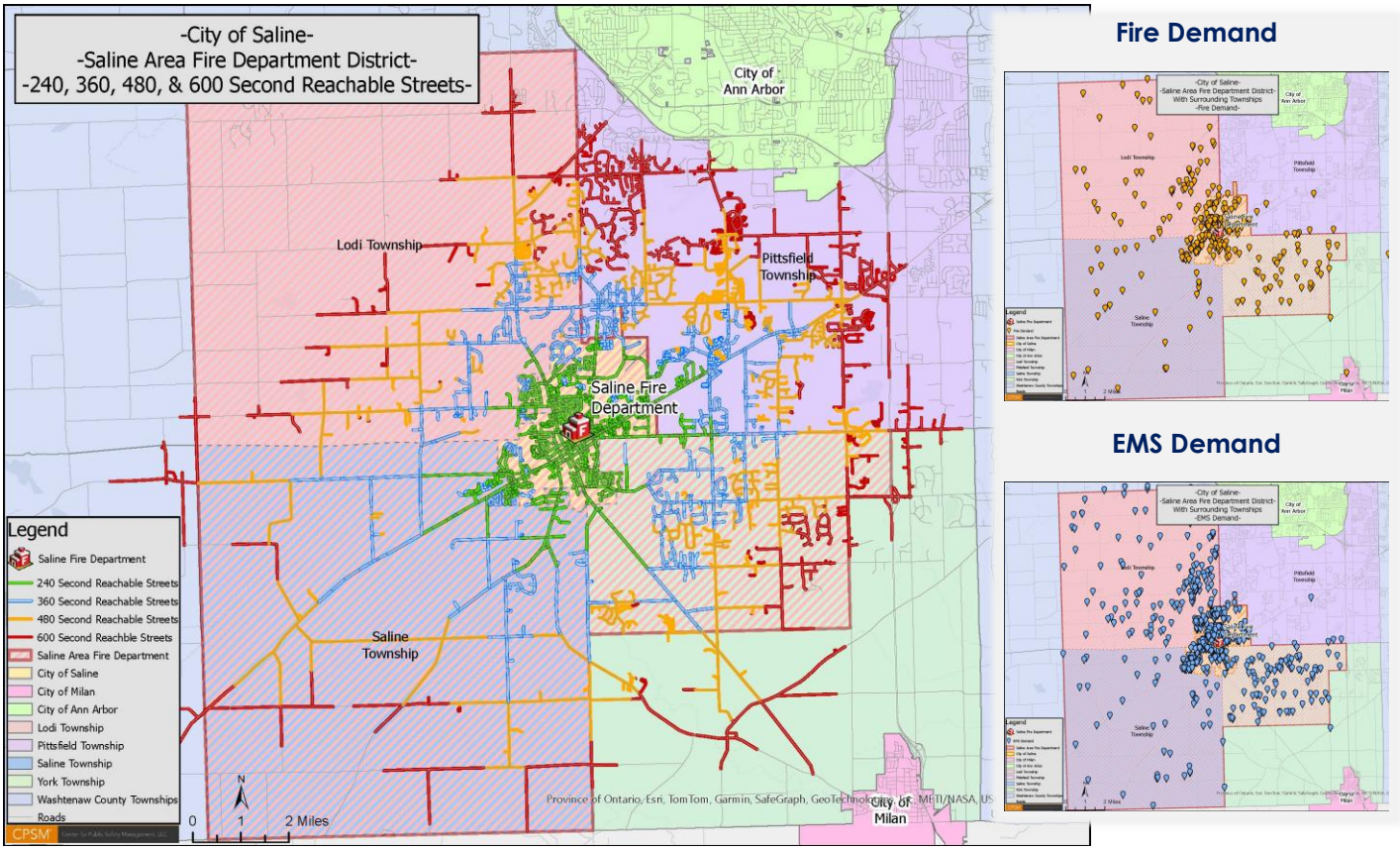
- Air-lock entry from the apparatus floor to living space to reduce CO contamination in living areas.
- Controlled entry onto public roads from the apparatus bay ramp.
- Site security such as keypad entry into the building; security cameras; site fencing, and other safeguards for building occupants either department or public.
- Low maintenance construction and finish materials.

Any renovation project should include these items.

West District Fire Station

CPSM has assesses that over the mid-longer terms, there is a potential need for a west district fire facility, centrally located between Lodi and Saline Townships to house at a minimum one engine with a minimum tank capacity of 1000 gallons. The district may want to relocate an existing water tanker to this facility as well. CPSM's assessment is based on time and distance. There are extended travel times from the current SAFD fire station to Lodi Township and Saline Township. The next map illustrates travel times a 4, 6, 8, and 10-minutes based on the road network.

Figure 24: SAFD Travel Times-West District



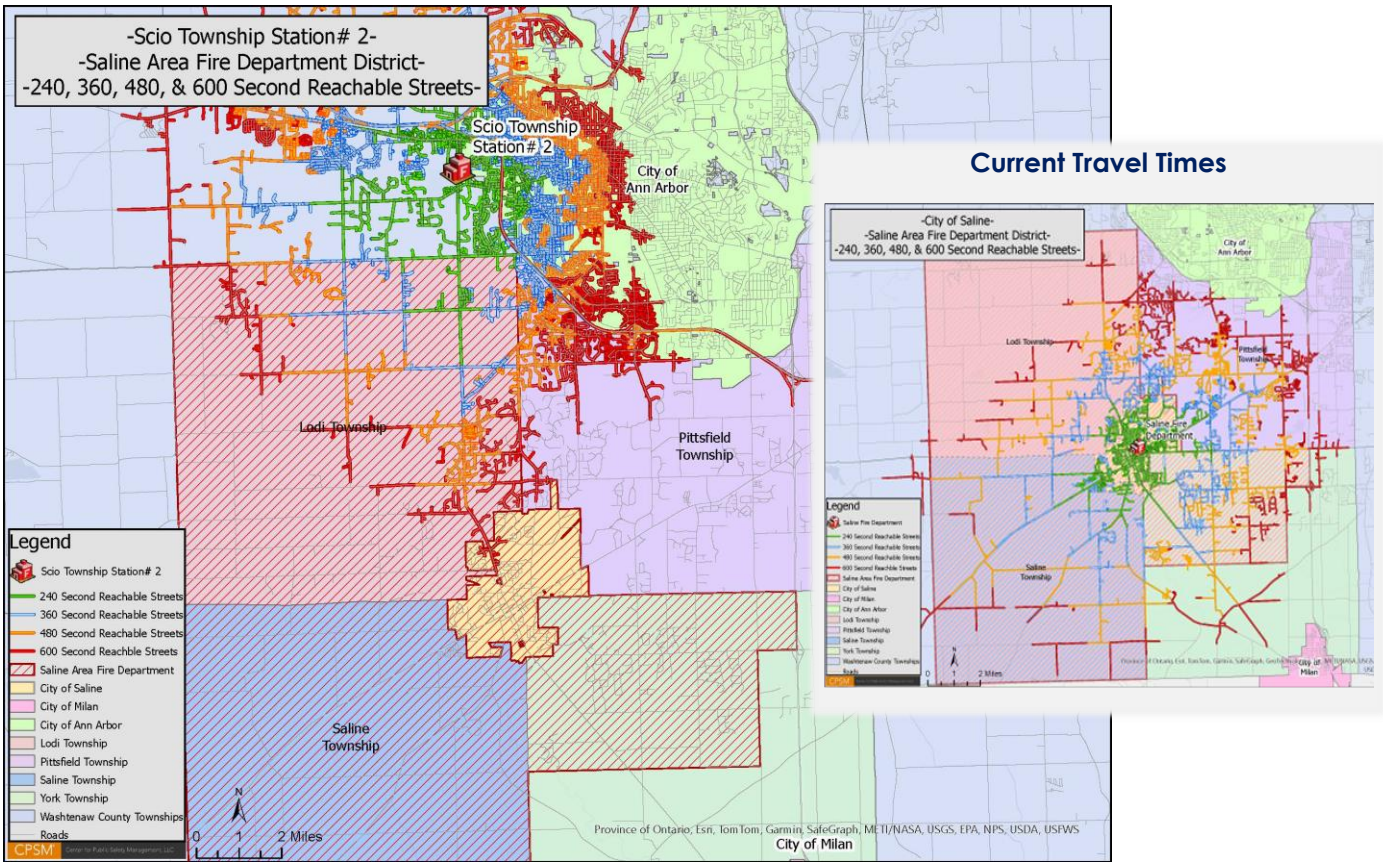
Analysis on next page.

Analysis of this map tells us that the west and northwest areas of Lodi Township are beyond a 10-minute travel time. The southwest area of Lodi Township is covered in 6-8 minutes (highest fire and EMS demand). Northeast Saline Township is covered mostly at 4-6-minutes (highest fire and EMS demand) with central, southeast, and west Saline Township covered at 8-10 minute travel times. Southwest Saline Township is beyond 10-minute travel times. Continued growth will potentially create additional demand and need for services.

Alternative for Lodi Township

As discussed earlier, during a stakeholder meeting with Fire Board members, it was suggested as Scio Township is constructing a fire station in proximity to the Lodi/Scio Townships boundary line, that Lodi Township may consider contracting with Scio Township to service the northern half of the township. CPSM mapped travel times from the new Scio Township fire station site, which is illustrated next.

Figure 25: Scio Township Station 2 Travel Times into Lodi Township



Analysis of this map tells us that the northeast area of Lodi Township has travel time between 4 and 6 minutes. Southeast Lodi Township has 8–10-minute travel times. The northwest area of Lodi Township has 6-, 8-, and 10-minute travel times. West and south have travel times beyond 10-minutes. In comparison with the SAFD current station, there is improvement in response travel times in the northern half of the Township.

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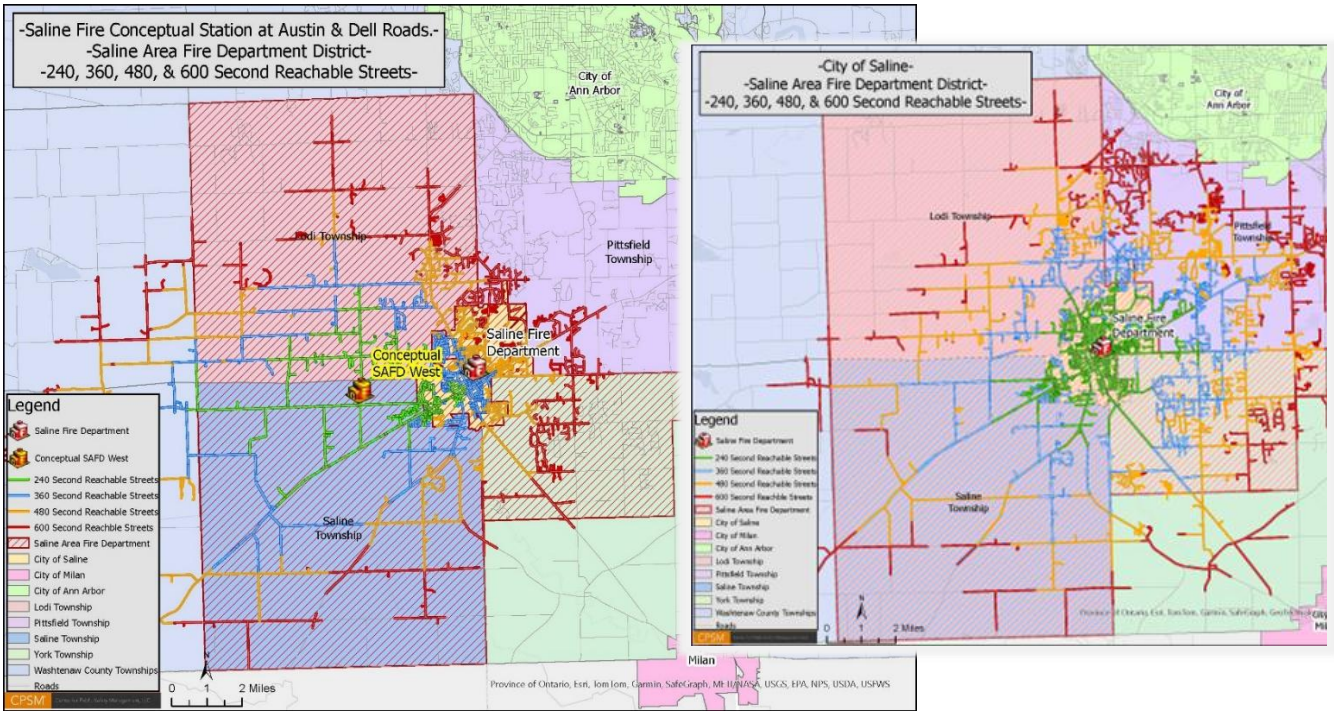
Recommendations:

- CPSM recommends the SAFD Fire Board include in any strategic and fiscal planning the renovation of the SAFD fire facility. Renovation should include living and office space, improved storage space, and ensuring at a minimum attention is given to the health and safety of all staff and visitors to include security; carcinogen exposure; decontamination areas for staff, gear, station wear, PPE, and equipment; efficient HVAC systems that provide maximum ventilation and air movement; porous free surfaces throughout; living spaces free of contaminants; contemporary physical training space and equipment located away from the apparatus bays and well ventilated; and gender separate bathroom, shower, and bunking areas
- CPSM recommends the SAFD Fire Board include in any strategic and fiscal planning a midterm strategic initiative that further studies a fire facility in the west district area to reduce response travel times to Lodi and Saline Townships. CPSM further recommends this station house a staffed engine with a minimum tank capacity of 1000 gallons and at the District's discretion, an existing water tanker apparatus.

Figure 26: Conceptual Future West District Fire Station Travel Time Bleeds



The conceptual station is located at Dell Road and Austin Road. Analysis shows travel time bleeds of 4-6 minutes in south Lodi Township and north-central Saline Township. Included in the 4–6-minute travel time bleeds is the urban district in northeast Saline Township. The heavier demand area of east and southeast Lodi Township has 8–10-minute bleeds. Central Lodi Township has improved over the current SAFD station travel times, however there is limited improvement in the north central and no improvement in the northwest Lodi Township district.

Overall, there is improvement in response travel times minus the northwest area of Lodi Township. Coupled with the current SAFD map, there is improved coverage in a two-station model. Adding the new Scio Township station to automatic aid alarms in north Lodi Township aggregately provides the most effective response scheme in west SAFD district.

Huron Valley Ambulance Overview

The SAFD localities are provided EMS ground transport and quick response advanced life support services through a contractual agreement between Huron Valley Ambulance (HVA) and Washtenaw County.

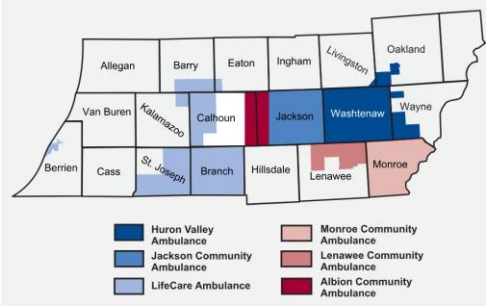
HVA was founded in 1981 and serves all of Washtenaw County and portions of Oakland and Wayne Counties with advanced and basic life support response and transport services. Services across the three counties are provided through sixty plus ambulances and over three hundred EMS personnel. Total population served is over 500,000 in forty municipalities. HVA was recently reaccredited through the Commission on Accreditation of Ambulance Services.

HVA is a member of Emergent Health Partners (EMP), the parent company which owns and operates five additional ambulance services in southern Michigan, which are available to the HVA response area when needed.[45]

Additional ambulance services include Jackson Community Ambulance, LifeCare Ambulance, Monroe Community, Lenawee Community Ambulance, and Albion Community Ambulance.

EMP services combined serve over 1 million people in 178 municipalities through one hundred plus ambulances and six hundred plus EMS personnel.

Emergent Health Partners Service Area



Washtenaw / Livingston MCA

HVA is a member organization of and operates under the Washtenaw/Livingston Medical Control Authority (MCA). Established in 1991 and designated as an MCA through the State of Michigan Department of Health and Human Services, the medical control authority is responsible for overseeing EMS in Washtenaw and Livingston Counties. Washtenaw/Livingston MCA operates under the medical direction of Dr. Graham Smith.[46]

Additionally, HVA must comply with all EMS standards in accordance with the Washtenaw County Emergency Medical Services Commission who works with the Washtenaw/Livingston Medical Control Authority to monitor and evaluate all facets of the County's EMS system.

45. About - Huron Valley Ambulance - Emergent Health Partners.
46 . Washtenaw/Livingston Medical Control Authority.

Service Deliverables in the SAFD Fire District

The SAFD service area receives ground transport service through HVA's system status management model, which is a planned approach to resource allocation based on historical call demand in a designated area. System Status Management (SSM) or dynamic deployment is the process and implementation of strategically positioning ambulances in geographic locations during various times of the day based on historical data that can aid in predicting operational demands. The goal of system status management is to optimize response times by deploying EMS resources strategically.

This SSM deployment model allows HVA to efficiently manage resources based on real-time demand. ***In the context of the SAFD service area, this means that the posted ambulance in or near the district can be bolstered with additional assets during periods of increased demand. Conversely, if the HVA system is in a high demand period outside of the SASFD service area region, the HVA assets can be pulled and redeployed to other areas in the HVA service area.***

Aligned with the SSM deployment model, HVA deploys ambulances in a peak deployment model meaning, ambulances are staffed based on the busiest hours of the day. In Washtenaw County, HVA staffs 12-15 ambulances based on the time of day. In this model, there would be fifteen ambulances staffed during peak hours to handle the heavier call volume, with less during non-peak hours.

HVA also staffs one ambulance 24-hours/day in Chelsea, which is not in the peak deployment system.

HVA has assigned an ***Echo Unit*** to the SAFD service delivery area at the SAFD station. This unit is staffed 24/7/365 and responds regularly to EMS in the SAFD service area. HVA designates its Echo Units as paramedic first response vehicles and are staffed by a single senior paramedic.

An HVA Echo Unit is a non-transport unit and is equipped to provide advanced life support (ALS) care at emergency scenes. Because Echo Units are strategically based, a more rapid pre-hospital care model is achieved ahead of the arrival of ground transport ambulances.

Echo Units are typically dispatched to higher priority/acuity emergencies to deliver a more immediate advanced medical care. The primary role is to stabilize patients and manage critical interventions until a ground transport ambulance arrives to continue care and facilitate hospital transport.

This response model is a best practice in large response areas that include a mix of urban, suburban, and rural response areas.

Current HVA Washtenaw County Agreement

As noted above, Washtenaw County contracts with HVA for EMS ground transport services within the county. CPSM was provided with a copy of the current contract between HVA and the county and reviewed same. Key points for the City and SAFD response area are outlined here:

- The original agreement was officially made on July 20, 1983.
- HVA shall provide emergency ambulance service within the boundaries of Washtenaw County without regard to race, creed, color, sex, sexual preference, age, physical

handicaps, marital status, national origin, ancestry, location in County, or financial ability to pay.

- The term of the agreement commenced January 1, 1983, and continued for an initial term of six years. The contract then continued thereafter until midnight of the 31st of December of each of the following years until the giving of a written notice by either party to terminate the agreement. Such notice shall be given two years in advance of the date either party desires to discontinue the contact. Any notice may be given after December 31, 1986 (to current date as this is an evergreen contract).
- HVA must comply with medical protocols as established by the EMS Medical Committee of Washtenaw County (and now the Washtenaw County Emergency Medical Services Commission and the Washtenaw/Livingston Medical Control Authority).
- HVA agrees, to the extent possible, to provide to the County Health Department or a representative of the County, information and statistics for each local unit of government in the county each month consisting of calls responded to, emergency calls, emergency responses, over 20 minutes, emergency responses over 10 minutes, number of emergency transports, calls cancelled or not used, calls turned over to other ambulance companies, and medical examiner transports, patient destination monthly summary, average emergency response time by local unit of government, and other reports mutually agreed upon by HVA and the County.
- HVA agrees to work closely with the Washtenaw County EMS Medical Services Commission, the Washtenaw County Health Department, and the Office of Emergency Management during the term of the contract. In the implementation and monitoring of the service provided.

Overall, the EMS contract between HVA and Washtenaw County is a ***Level of Effort*** contract, wherein HVA Ambulance has been engaged to provide emergency ambulance service within the boundaries of Washtenaw County and to comply with medical protocols as established and work closely with the Washtenaw County EMS Medical Services Commission, the Washtenaw County Health Department, and the Office of Emergency Management during the term of the contract. There is no specified number of ambulances or response time performance.

There are typically two types of contracts for EMS ground transport services. These are: "***Level of Effort***" or "***Level of Performance"*** contracts. A "***Level of Effort"*** contract consists of a written agreement (contract) that describes the scope of work in general terms and requires the contractor to provide a specified level of effort (number of hours, number of units, or percentage of effort) over a stated period of time.

It is common as well for ambulance providers and jurisdictions to operate under a ***"Performance-Based or Level of Performance"*** agreement (contract), which specifies desired performance levels for key clinical, experiential, and response time metrics. For example, when mutually agreed upon between both parties could include a specific number of ambulances and performance level indicators (i.e., response time metrics, level of care providers that links to quality improvement/quality insurance metrics involving patient care outcomes, community paramedicine etc.). Again, the HVA-Washtenaw County contract is a ***Level of Effort*** contract.

CPSM assesses that regardless of the fire service delivery model the City chooses, EMS ground transport service will remain available to the City through the contract between HVA and Washtenaw County.

CPSM recommends the City engage Huron Valey Ambulance on a quarterly basis regarding ambulance availability, call demand, and response times in the city, and general Huron Valley Ambulance news regarding staffing, deployment, and Emergency Medical Services trends in the city.

Alternative 1: The City would remain with the current Fire configuration, and to include any recommended modifications to the contract with the partnering communities.

CPSM has made several recommendations regarding the SAFD Fire Board and SAFD services. The focus of these recommendations is overall improvement in governance, accountability, SAFD operations, fiscal and strategic planning, and infrastructure. Some of these recommendations such as a change from bi-monthly to monthly Fire Board, creating a long range strategic and fiscal plan, and reviewing a funding model change are already taking shape according to the SAFD Fire Board meeting minutes of April 2, 2025. The remaining recommendations should be monitored by the city over the coming months.

Remaining with the SAFD has advantages and disadvantages.

Advantages

- Shared costs and resources.
  - By participating in a shared fire department, the city shares the cost burden of equipment, staffing, training, and facilities with neighboring municipalities. This is a more cost efficient solution to fire services.
  - Through the pooling of resources, the SAFD can implement higher-quality equipment and technology than a single municipality might be able to on its own.
- Because the SAFD is strategically located in the city, there are enhanced response times.
- There is no indication the SAFD has not served the city well historically. Residents may already have confidence in their services.
- A Saline Fire Department fosters local pride and strengthens civic identity.

Disadvantages

- There is less local control.
  - The city does not have full authority over SAFD operations, budgeting, or policies—it has to negotiate with other municipalities at the Fire Board level and follow the decisions of the joint board.
  - Differences in priorities or funding preferences, operational oversight between partner communities can lead to consternation.
  - The city has two of nine votes at the Fire Board level which can create budget vulnerability at the city level.
  - Saline may at times have limited ability to redirect funds or resources to other public safety initiatives if it's committed to SAFD funding.
  - Less Direct Oversight: Issues or complaints about service may be harder to address when authority is dispersed across multiple municipalities.

Regarding this alternative, CPSM encourages the city to work with the Fire Board to:

- Implement CPSM recommendations the city is comfortable with.
- Adjust the Fire Board voting system to a weighted voting system. As the city contributes the most, it should have more input on fiscal, administrative, governance, accountability, and operational matters. A weighted voting model based on financial contribution and/or population served is a fair and common governance model in regional agencies. The city should propose amending the current agreement and SAFD by-laws to reflect this model.
- CPSM also recommends the city should consider all alternatives as presented herein regarding fire protection and services to the city and select the alternative that best fits the city's current funding abilities and expected level of fire protection service (administratively and operationally).

Alternative 2: The City would establish its own fire department, including recommendations on staffing levels, equipment, and cost.

CPSM has prepared an analysis for the City of Saline to create a Saline Fire Department. Personnel costs are ***estimated*** using a blend of City of Saline salary and benefits cost for the Fire Chief and Administrative Assistant, and SAFD, Pittsfield Township, and Scio Township Captain and FF salaries and City of Saline benefit costs. Capital fleet and equipment costs are estimated using industry cooperative bid research. The facility cost is estimated based on the recent Scio Township new facility construction as a comparative to regional construction costs.

As a note, these are estimated costs as of this report (current time) and are meant to provide the city with an overview of start-up and on-going costs of a fire department. They likely will not be the actual costs. Depending on the year the city fire department may be created, there most likely will be increases in these estimates. Historically, fire apparatus cost increases 3%-6% per year. Personnel costs potentially will increase with each surrounding area fire department's new collective bargaining agreement. Equipment and maintenance costs will also increase over time. Construction costs fluctuate based on workforce availability and materials cost.

Estimated costing for the City of Saline Fire Department includes:

- Start Up Operational and Capital Costs
  - Fleet.
    - 2 fire suppression apparatus (**one frontline, one secondary/reserve**).
      - 2 Engines (Alternative 1).
      - 1 Engine and 1 Quint apparatus (75' aerial apparatus with pump, hose, water tank, hydraulic aerial ladder, equipment) (Alternative 2).
    - 2 Staff vehicles(Fire Chief and Training/Fire Prevention Captain).
  - 1 new fire facility.
- Department staffing to include:
  - 1 Fire Chief.
  - 1 Fire Prevention/Training Captain.
  - 1 Administrative Assistant.

- 3 Shift Captains (1 per shift).
    - 3 Firefighters (Min Staffing of 3 on a single City of Saline Engine).
    - Alternative for 4 Firefighters (Min Staffing of 4 on a single City of Saline Engine).

- Ongoing operational and maintenance costs.

To begin the cost discussion, the FY 25-26 SAFD budget will be $2,896,111. The City of Saline pays 33.73% through the current weighted funding model. This equates to $976,858.24. The city also contributes to the SAFD capital fund. The city's FY 25-26 share for this is $67,460. ***The city's total contribution towards the SAFD FY 25-26 budget is $1,044,318.24.***

Considerations:

Pursuant to the Restated Agreement for the Saline Area Fire Department (signed by the City of Saline on April 16, 2024):

If the agreement is terminated as to any party by notice of withdrawal after June 30, 1982, the capital interest of any party so withdrawing shall be returned to said party in five equal annual installments commencing one year after the date of withdrawal, plus interest at the rate of 6% annum on the unpaid balance. Any party so withdrawing shall be entitled to the return in kind of any equitable interest in real estate transferred to the Saline Area Fire Department that lies within its governmental boundaries as a part of the return of its capital interest.

Estimated Costing by Cost Center

Start Up Capital

2 Engine Apparatus; 2 SUVs (Fire Chief and Admin Captain)			
Category	**Start-up Costs 15 FTEs/18 FTEs**	**Yearly Replacement Costs 15 FTEs/18 FTEs**	**Quantity**
Operating Capital	$1,116,628/$1,205,581	$100,383/$111,589	N/A
Vehicles	$2,620,000	$176,740	4
Fire Station	$11,900,000	N/A	1

Estimated start-up capital costs-2 Engine concept with 15 FTEs: $15,636,628

Estimated start-up capital costs-2 Engine concept with 18 FTEs: $15,725,581

Quint/Engine Alternative; 2 SUVs (Fire Chief and Admin Captain)			
Category	**Start-up Costs 15 FTEs/18 FTEs**	**Yearly Replacement Costs (15 FTE/18FTE)**	**Quantity**
Operating Capital	$1,116,628/$1,205,581	$100,383/$111,589	N/A
Vehicles	$2,970,000	$199,176	4
Fire Station	$11,900,000	N/A	1

Estimated start-up capital costs-1 Quint/1 Engine concept with 15 FTEs: $15,986,628

Estimated start-up capital costs-1 Quint/1 Engine concept with 18 FTEs: $16,075,581

Operating capital includes such items as:

- Self-contained breathing apparatus and cylinders.
- Capital equipment for fire apparatus (fire, technical rescue, EMS).
- Training equipment.
- Facility air compressor.
- Portable and mobile radios.
- Station and admin computers.
- Mobile data terminals for apparatus.
- Records management system for incident reporting, staffing, inventory.
- Policy and guidelines system.
- Facility fitness equipment.
- Furniture, fixtures & equipment for the new facility.
- Ice machine for facility.
- Personal protective gear for operational staff (2 sets).
- New appliances.
- Drone.
- Thermal imaging cameras.

As a note, capital items selected are common amongst contemporary fire departments. This list is not inclusive, and likely will not be inclusive of specifics the new Fire Chief may have.

Facility cost is based on a 17,250 square foot station to house the fire operational crews and fire administration (Scio Township new Station 2 as a baseline). The square footage can be sized appropriately down at the city's digression.

Personnel costs begin on next page.

Staffing (3-Operational Shifts)

Personal Services						
	# of Total Staff	**Straight Time Cost**	**OT Cost**	**Total Salary Costs**	**Total Benefits Costs**	**Total Personnel Cost**
Alternative 1: 3 Staff/Shift Fire Chief, Admin Asst, Captain Training/Fire Prevention	15	$1,092,693	$165,958	$1,258,651	$669,173	**$1,927,824**
Alternative 2: 4 Staff/Shift Fire Chief, Admin Asst, Captain Training/Fire Prevention	18	$1,279,098	$197,323	$1,476,421	$786,239	**$2,262,660**
Difference in Options	**3**	**$186,405**	**$31,365**	**$217,770**	**$117,066**	**$334,836**

Personnel costs are based on the following:

Starting salary for Admin Assistant is based on the mid-range for City of Saline. Fire Chief salary is based on the annual salary for the Police Chief for the City of Saline. Training Captain salary based on shift Captain hourly rate with an hourly rate adjustment for working a forty-hour week (2,080 hours/year).

Uniform personnel hourly rate is based on the starting salaries of surrounding fire departments. Cost of benefits from the City of Saline. Operational staff FLSA is based on a 4-week pay cycle (no Kelly days). An average calculation was used for each 7k exempt staff (2,756 straight hours and 156 FLSA overtime hours). The calculation for holiday pay (operational staff) included 12 holidays at 12 hours straight time for all shift employees regardless of whether they worked or not. Personnel working on the holiday receive 1.5 for hours worked. Overtime of 4 hours was included for each shift employee to take a medical physical. Overtime calculation includes 7 shifts of backfill for each shift employee. This is equal to 168 hours of overtime each. There is an additional $25,000 for overtime. This additional overtime allows for training, vacancies and other overtime as needed.
Yearly uniform allowance is not included in the personal services. It is budgeted as a recurring operating expense instead. Each operational shift budgeted for one (1) additional FF position to cover scheduled/unscheduled leave and vacancies to minimize overtime and maintain min. staffing.

Recurring Operational & Maintenance Cost

$325,000/$350,000 annually (will increase each year as services, contracts, insurance, maintenance, increase).

Includes: equipment maintenance contract services; software licenses; infrastructure maintenance; fuel and lubricants; medical and firefighting supplies; uniform and protective clothing replacement and maintenance; non-capital tools and equipment; office supplies; and other day-to-day operating costs a fire department incurs.

Total Annualized Estimated Costs Using Spring 2025 Estimates

	15 FTE and 2 Engines	15 FTE and 1 Engine/1 Quint	18 FTE and 2 Engines	18 FTE and 1 Engine/1 Quint
Personal Services	$1,927,824	$1,927,824	$2,262,661	$2,262,661
Operating Expenses	$325,000	$325,000	$350,000	$350,000
Replacement Reserves -Capital	$100,383	$100,383	$111,589	$111,589
Replacement Reserves -Vehicles	$176,740	$199,176	$176,740	$199,176
Total Annualized Estimated Costs	**$2,529,947**	**$2,552,383**	**$2,900,990**	**$2,923,426**

15 FTEs: Fire Chief, Training/Fire Prevention Captain, Admin Asst, 3-Operational Captain; 9-Operational FFs.

18 FTEs: Fire Chief, Training/Fire Prevention Captain, Admin Asst, 3-Operational Captain; 12-Operational FFs.

Creating a city fire department has advantages and disadvantages.

Advantages

- Greater Control and Oversight.
- The city can directly manage hiring, training, budgeting, and operations.
- It is easier to align department priorities with the city's specific needs and long-term plans.
- The city can tailor services such as fire prevention and community risk reduction programs, and public education/special event participation specifically to the community.
- A city fire department establishes local accountability. Residents have a clear line of accountability to their own local government, not a regional board or shared service authority.
- A city fire department fosters local pride and strengthens civic identity.
- Residents have a clear line of accountability to their own local government, not a regional board.
- The city can directly manage hiring, training, budgeting, and operations.
- It is easier to align a fire department priorities with the city's specific needs and long-term plans.

Disadvantages

- There will be high startup costs for infrastructure (fleet and facility) and equipment.
- There is a potential for recruitment and staffing challenges. Hiring full-time firefighters and support staff may be difficult and will be competitive.
- There will be ongoing operational costs that are higher than current contract costs with the SAFD.
- When adding an additional department, the city will potentially need to expand departments to handle human resources, compliance, purchasing, risk management, etc.

Regarding this alternative, CPSM encourages the city to contemplate, prior to embarking on its own fire department, the estimated start-up and on-going expenses of a city fire department as compared against the city's contribution to SAFD current and future capital and operating expenses that will include heavy fire apparatus and a potential new facility with staffing in the western SAFD district.

As a note, in the current heavy fire apparatus market, it takes 28-36 months to write specifications, place the order, allow build time, and take delivery of heavy fire apparatus, depending on the manufacturer. Aerial ladders take up to 42-months. Fire facility construction can also take 24-36 months depending on the process (design-build or design-bid-build). This said, the city should allow up to 42-months from a formal decision to create a fire department and begin operations.

Alternative 3: The City would establish its own fire department and contract out firefighting services to surrounding communities.

If the city establishes their own fire department, they are well positioned to provide fire protection and related services to other municipalities to include Lodi Township, Saline Township, and York Township.

The cost of establishing and maintaining a City of Saline would remain the same as outlined in Alternative 2, with one addition in apparatus (Lodi, York, and Saline Townships have rural areas that do not have fire hydrants-therefore a water tanker apparatus is needed in this alternative at an estimated cost of $450,000-650,000 dependent on chassis and rear axle specification, size and style of water tank, and equipment compliment).

Creating a city fire department and contracting these services to another municipality has advantages and disadvantages.

Advantages

- There is the potential for lower overall costs. This alternative advocates shared costs with other municipalities, which will reduce the burden on the city's budget.
- Supports intergovernmental cooperation and can strengthen mutual aid and emergency response capabilities across communities.
- The city maintains control of the fire department. Contractual services are for agreed upon fees.

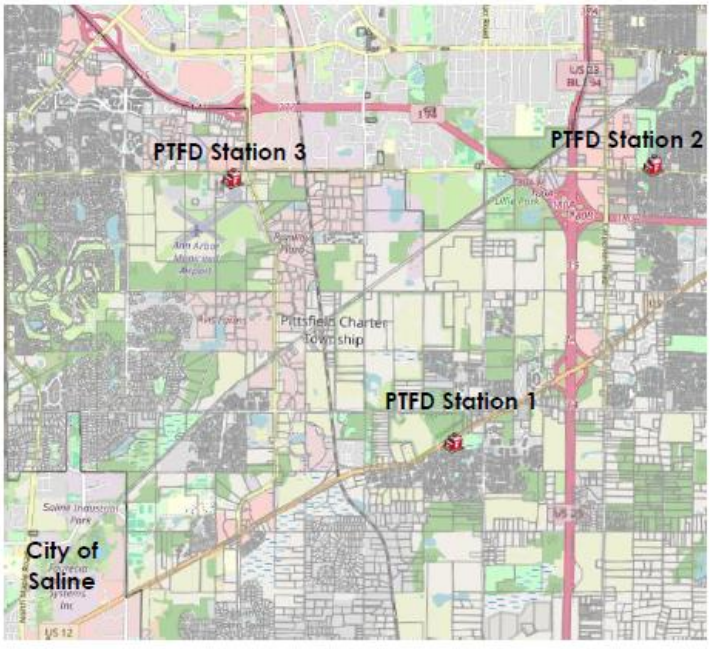
Disadvantages

- City resources will routinely be dispatched to other communities, impacting resiliency in the city should an overlapping call for service occur.
- When responding from outside of city from a contracted community, response times back to the city will be longer.
- The city will have to consider the other community's priorities and budget pressures each fiscal year when contemplating Saline Fire Department cost and service increases.
- As costs increase, the city will have to negotiate these increases with contracted municipalities to maintain relationships.

Regarding this alternative and as with Alternative 2, CPSM encourages the city to contemplate the estimated start-up on-going expenses of a city fire department as compared against the city's contribution to SAFD current and future capital and operating expenses that will include heavy fire apparatus and a potential new facility with staffing in the western SAFD district. Additionally, the city should discuss with municipalities in the current SAFD district if they would have an interest in such an endeavor as contracting with the City of Saline for fire protection and related services, acceptable fees and fee structure, and service levels and standards.

Alternative 4: The City would contract firefighting services and would not maintain its own fire department.

This alternative analyzes the possibility of the city terminating their participation in the SAFD agreement and contracting with another fire department for fire protection and related services. CPSM analyzed the location of area fire departments contiguous with the SAFD district, which included Pittsfield Township Fire Department and Scio Township Fire Department. The department that is contiguous to the city (northeast Saline) and would offer the best travel times is Pittsfield Township.



The Pittsfield Township Fire Department (PTFD) operates out of three stations as illustrated here.

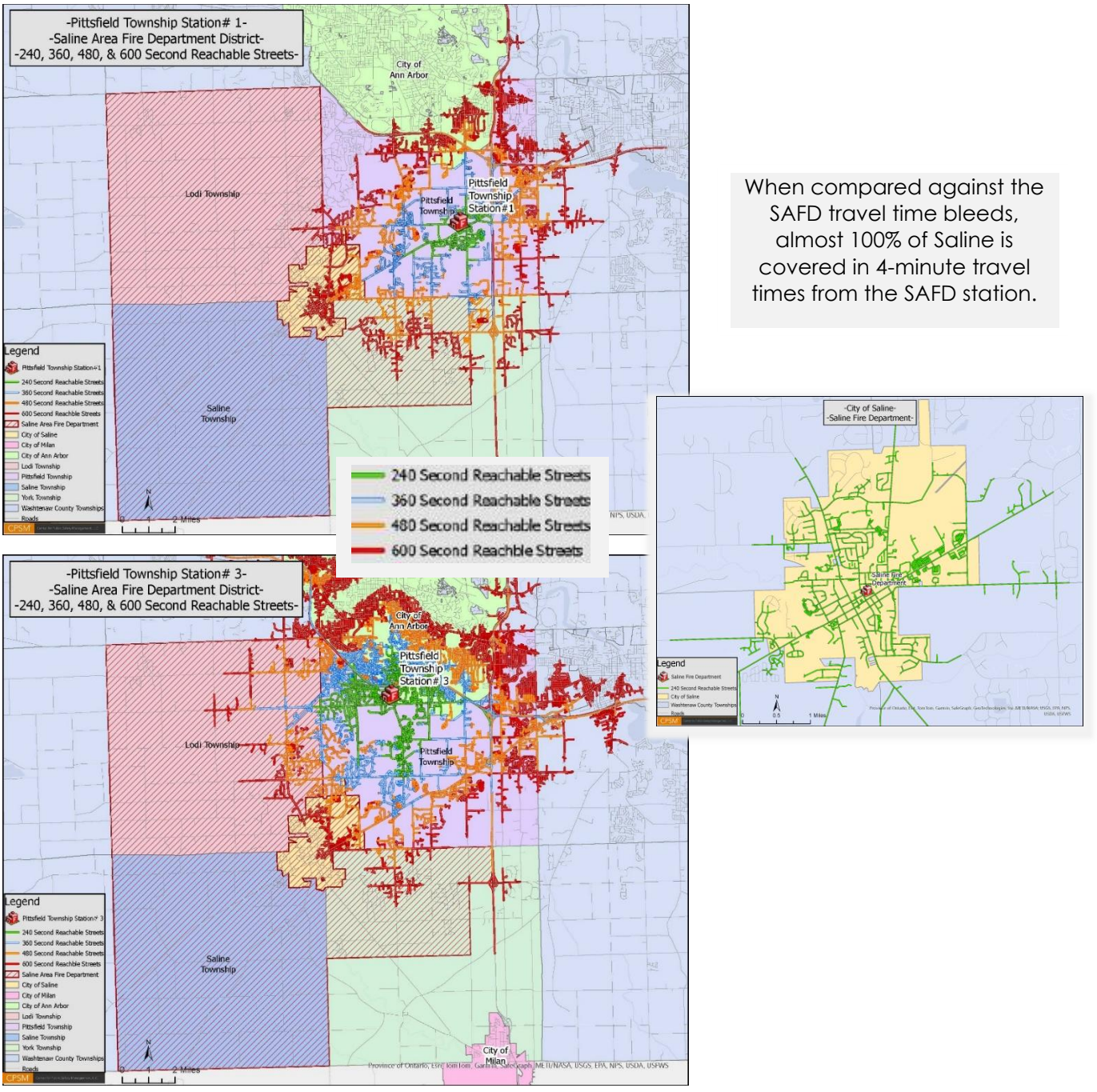
Station 1 is the closest by travel times into the city.

The next set of maps illustrate response travel times from PTFD Stations 1 and 3. Both of these stations have penetration into the city at the 8–10-minute mark. Further analysis shows:

Station 1 bleeds into east Saline in 8-minutes and central and north Saline in ten minutes. Response travel time is beyond ten minutes in all other areas of the city.

Station 3 bleeds into north and a small area in east Saline in 8-minutes and a small area in central Saline in ten minutes. Response travel time is beyond ten minutes in all other areas of the city.

Figure 27: Pittsfield Township Fire Stations 1 and 3 Travel Time Bleeds



When compared against the SAFD travel time bleeds, almost 100% of Saline is covered in 4-minute travel times from the SAFD station.

As with the other alternatives, there are advantages and disadvantages to contracting with another fire department.

Advantages

- There is a potential for lower costs and/or improved value. Pittsfield Township may offer a more competitive rate or more comprehensive services for a similar cost. The city gets the advantage of a larger department and the surge capacity of staffing and equipment that comes with this.
- This alternative provides the city a direct negotiating path for contract fees and levels of service with one entity (Pittsfield) versus participating in SAFD's multi-jurisdictional board.
- There is the potential of a shared fire facility and equipment in the city with the PTFD. In this scenario the city contributes funding to a fire facility in Saline as well as a fire apparatus. The city also would contract with the PTFD for personnel to staff the apparatus at a level commensurable to what the PTFD staffs at. This station and apparatus would then service both the city and the township.

Disadvantages

- CPSM has response time concerns with this alternative as illustrated in the maps. PTFD stations are farther from some Saline neighborhoods than SAFD's existing station. This will increase response times unless a new substation is established in or closer to Saline.
- ISO ratings for portions of the City may change due to increased distance from a fire station (> 5miles).
- Community perceptions.
- The SAFD also includes Lodi Township, York Township, and Saline Township—terminating the partnership could damage intergovernmental relationships.

Key questions that should be contemplated:

- What are the actual cost savings or service improvements from changing fire service providers?
- What effect will increase response times have on the community?
- Would Pittsfield consider a substation to serve the city and township and what cost is that to the city?

CPSM encourages the city to contemplate the increased response travel times, potential cost savings (real and perceived), and any estimated start-up and on-going expenses as compared against the city's contribution to SAFD current and future capital and operating expenses that will include heavy fire apparatus and a potential new facility with staffing in the western SAFD district. Additionally, the city should discuss with municipalities in the current SAFD district what the city's exit from the current contract might do to current intergovernmental relationships.

Alternative 5: The City would consider alternative EMS services.

CPSM assessed in the EMS assessment section of the report that regardless of the fire service delivery model the City chooses, EMS ground transport service will remain available to the City through the contract between Huron Valley Ambulance (HVA) and Washtenaw County.

Remaining with HVA has advantages and disadvantages.

Advantages

- HVA has an established reputation and experience serving southeast Michigan since 1981. It is a well-known product to the city and the county. Paired with the first responder service provided by the SAFD and having the Echo Unit available in the city for district response, there is a system in place for EMS service delivery.
- HVA is accredited by the Commission on Accreditation of Ambulance Services (CAAS), indicating adherence to high standards in EMS operations.
- The city does not provide funding for this service.
- As part of the bigger Emergent Health Partners EMS system, who provide services regionally, the city is afforded available units when surge is needed due to increased demand.

Disadvantages

- As a regional provider, HVA may prioritize areas outside of the city with higher call volumes, potentially affecting response times.
- Being part of a larger organization, HVA's policies, procedures, and fees are set at a regional level, which limit Saline's ability to influence specific service aspects.

As an alternative, the city may consider soliciting emergency ambulance ground transport services through a Request for Proposals (RFP) process. CPSM did not find any prohibitions by Washtenaw County that would prevent the city from issuing an RFP for EMS services. While the Washtenaw County Emergency Medical Services Commission serves as an advisory body on EMS matters and works in concert with the Washtenaw-Livingston Medical Control Authority Board to plan, monitor, and evaluate the EMS system, it does not impose restrictions on municipalities, that CPSM could identify, from selecting an emergency ground transport provider through an RFP process.

Considerations for selecting a new EMS ground transport provider for the City of Saline include:

- Ensure that any new EMS provider meets the medical oversight and operational standards required in the county and by the medical control authority.
- Engage with the Washtenaw County Emergency Medical Services Commission regarding this alternative. While the Commission does not have regulatory authority over municipal decisions, their insights can be valuable in shaping EMS policies and ensuring alignment with county-wide standards.
- Establish response time requirements, staffing qualifications, equipment standards, and other performance indicators in the RFP to ensure high-quality service delivery.
- Coordinate with the Michigan Department of Health and Human Services to ensure that the selected EMS ground transport provider complies with state licensing and operational requirements.
- Define clear performance metrics and expectations.
- As a sole provider (not part of a larger system in the region), the vendor may require a subsidy from the city to offset costs in order to provide a continuum of service at the agreed upon performance benchmarks.

Another alternative the city may consider is the creation of a city EMS ground transport agency. A city EMS ground transport includes:

- Infrastructure costs: ambulances, facility or facility space, equipment, and supplies (start-up and ongoing).
- Staffing: EMS personnel to staff up to two ambulances (one 24/7/365 and potentially one peak time 12-hours/day). Depending on model (24 hour or 12 hour shifts) staffing will include 6-12 FTEs minimum with overtime to cover all leave and vacant positions for 1.0 -1.5 units 24/7/365.
- On-going operations and maintenance costs to include additional insurance costs associated with EMS pre-hospital care and transport.
- EMS revenues derived from ground transport fees will offset some operational and capital costs. Costs that are not offset will have to be subsidized with municipal funds to sustain at a minimum, 1.0-1.5 ambulances per day.

CPSM encourages the city to remain with HVA as the EMS ground transport service. CPSM recommends the city engage HVA on a quarterly basis regarding ambulance availability, call demand, and response times in the city, as well as general Huron Valley Ambulance news regarding staffing, recruitment, retention, deployment, and Emergency Medical Services trends regionally and in the city. CPSM strongly encourages the city to have this open dialogue so that there is a better understanding of this service, its challenges, and successes. ***Additionally, the EMS landscape is evolving in Washtenaw County, as more fire departments are considering taking this emergency service on.***

End of Report

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