CHESTERFIELD
FIRE DEPARTMENT

2025

Community Risk Assessment and Standards of Cover

Chesterfield Fire Department
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Chesterfield Township, MI 48047
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www.chesterfieldfire.org

Introduction

The Chesterfield Township Fire Department is committed to providing the highest quality services to the community. In pursuit of this objective, the department has conducted a thorough internal examination of its service delivery methods to facilitate continuous improvements through self-evaluation. This document, titled "Community Risk Assessment and Standards of Cover (CRA/SOC)," not only defines the nature of the service, but also outlines specific goals and objectives for enhancement. The Commission on Fire Accreditation International (CFAI) plays a pivotal role by guiding and validating this process through accreditation.

The Community Risk Assessment and Standards of Cover necessitate an impartial and objective evaluation of all operations achieved through comprehensive research and analysis. This report delves into the community and organization's historical background and current conditions of service delivery. Examination of the risk assessment, service objectives, critical tasks, and historical trends will serve as the compass for the department's future development and the formulation of policies and procedures. To establish benchmarks and goals, the department will utilize baseline comparisons and benchmarking, incorporating national standards from reputable organizations such as the National Fire Protection Agency (NFPA). Specifically, NFPA 1710, addressing the organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by career fire departments, will be considered for measurement and goal setting throughout this evaluative process.

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Letter From the Chief

“The Chesterfield Township Fire Department strives to provide quality in the various services we deliver to all of our jurisdiction. We look forward to serving a growing community that has gone from a rural setting of cabins and farmhouses to one of the fastest growing townships in Southeastern Michigan.

Our strategic vision for the future is not just to maintain the current level of service, but rather to expand both in quantity and quality. We will do so by analyzing every aspect of our operation. We will stand as an outsider and look back at our department in comparison to the world of public emergency services. We pledge to be open with minds and hearts to the needs of others over ourselves and never forget that “we are here for our community”.

Science and data will be our fuel for future efforts. We will compare ourselves to others and seek the better option to bring about a fire service organization that is effective in all aspects of our operations as well as efficient with the public’s means.

We will embrace our history through the efforts of our members, knowing that nothing can be done without well-educated, motivated, and equipped staff. The future will bring robotics, technology, and artificial intelligence into our skillset, but nothing will replace the skilled hands of a Firefighter/EMT and their critical thinking in a time of crisis.”

Executive Summary

The Chesterfield Township Fire Department has a rich history, evolving from a community supported volunteer fire department established in 1954 to a combination department in 2003, and division of the Chesterfield Township Department of Public Safety in 2019. Over the past three decades, Chesterfield Township has witnessed significant growth in both commercial and residential sectors. This growth has heightened community expectations, necessitating an elevated level of performance. The community places a substantial amount of trust and responsibility on the fire department for the vital services it provides.

In 2020, organization leadership recognized the need to establish goals and evaluate needs using a self-evaluation process that is recognized by peers and promotes data-based decisions and maximum transparency. To complete this, the Commission on Fire Accreditation International (CFAI) model was ultimately selected as the process that would bring the most value to the department and the township's executive leadership.

The Community Risk Assessment and Standards of Cover are integral components of the CFAI accreditation model emphasizing quality improvement. This document formally defines the performance expectations of the Chesterfield Township Fire Department, establishing current system performance baselines and benchmarks for continuous improvement.

The department reviewed historical data and formalized its CRA/SOC by December of 2025. Through this process, the expected level of service to the community was identified. The commitment to assessing and evaluating current standards for continuous improvement ensures the highest level of emergency services is consistently delivered to the citizens and employers of the township.

Community Overview

The Charter Township of Chesterfield is located in southeast Michigan in the Metro Detroit area and is positioned on the shores of Lake St. Clair in the eastern half of Macomb County. It is bordered to the south with Harrison Township and Selfridge ANG base; to the west with Macomb Township; to the north with Lenox and Ray Townships and the Village of New Haven; and to the east with New Baltimore and Ira Township.

French settlers originally visited the northern shores of Lake St. Clair in 1611, discovering indigenous peoples populating the ecologically diverse area, which included salt springs located near what is now known as the Salt River. The first land surveys were recorded in 1818 by William Wampler, and subsequent road improvements and settlement spurred the founding of Chesterfield Township in 1842.

Gaining "Charter Township" status in 1947, Chesterfield Township has seen tremendous growth within the past 25 years. Now home to 45,376 people, Chesterfield Township has also seen a large increase in commercial and industrial property development. This trend is expected to accelerate in the next ten years.

According to the U.S. Census Bureau, Chesterfield Township has 18,461 households with a median income of $77,433. There is an 82.5% homeownership rate, with 40% of homes valued between $200,000 and $299,000. The community is predominantly white (85.3%) with 65.6% employment, and 26.2% of residents hold a bachelor's degree or higher. The median age is 40 years old, and 14.3% of the population is over the age of 65.

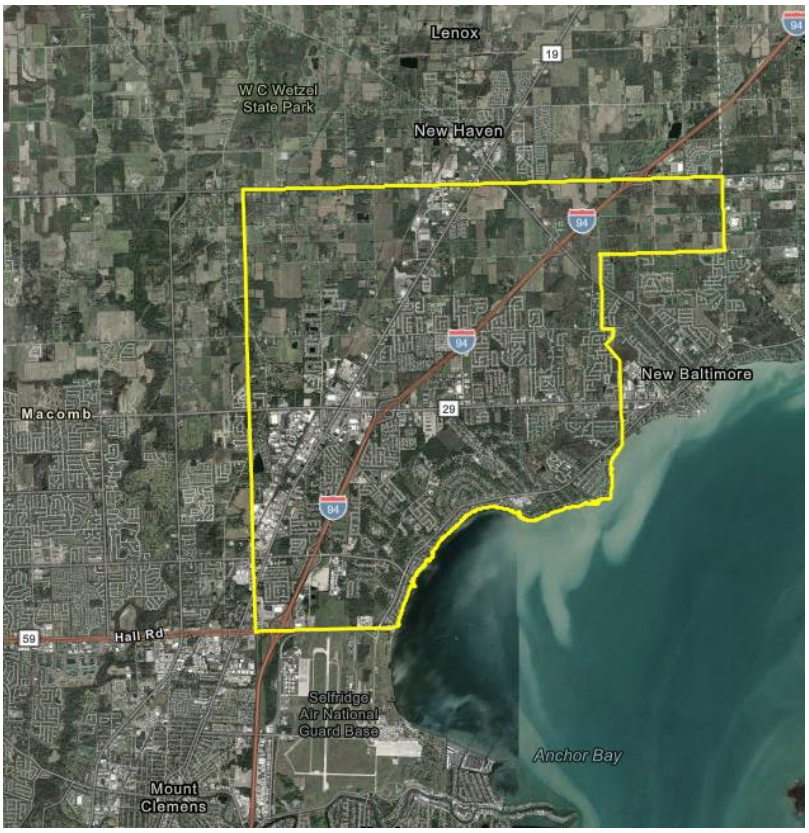
Chesterfield Township's catalog of commercial properties is very diverse and includes strip malls, multiple "big box" retail stores in excess of 200,000 ft2, multi-story hotels, concert and banquet halls, and a movie theater. Several healthcare facilities cater to both primary and urgent care. Nine schools provide education for Chesterfield Township's youngest and brightest across two school districts. Industrial occupancies include both light and heavy industry, packaging, food production, and metal recycling. Nine facilities contain hazardous materials in enough quantities to be required by SARA Title III to submit for local emergency planning.

A busy rail freight line, operated by Canadian National Railway, traverses the western half of the township. Chesterfield Township is also home to two state highways (M-3 and M-29) and one interstate highway (I-94), which convey both residents and interstate commerce. A high-volume natural gas transmission line runs sub-surface in the northern part of the community and intersects with a pumping and odorizing station within the township.

Residents enjoy access to Lake St. Clair, home to some of the best fishing and boating in the country. An active parks and recreation department also serves the community with five local parks, a senior center, and many activities for all residents. The Chesterfield Historical Society also operates a village containing several historical buildings.

Jurisdictional Area

The Chesterfield Township Fire Department's service area includes the 29.92 square miles legally identified within its boundaries. This area sees minimal elevation change and is dotted with small naturally occurring and man-made lakes. The Salt River runs north to south through the eastern half of the township, eventually emptying into Lake St. Clair.



The eastern border begins on Lake St. Clair at the terminus of William P. Rosso Highway, extending northward into Anchor Bay until it intersects with Altman Road, moving around the City of New Baltimore and ending at the intersection of County Line Road and 26 Mile Road, which spans from County Line Road west nearly to Omo Road, defining the northern border. The western edge of the township does not have any easily identifiable landmarks, but generally follows Fairchild Road due south until it ends at M-59. M-59 continues east turning into William P. Rosso Highway and defining the southern border.

The Chesterfield Township Fire Department does not provide services to any locations outside its legally defined boundaries, but does participate in an extensive Mutual Aid pact and Automatic Aid agreements with all neighboring agencies.

Surrounding Jurisdictions

Chesterfield Township is bordered to the east by Lake St. Clair (under the jurisdiction of Macomb County), the City of New Baltimore, and Ira Township; to the north by Lenox Township, the Village of New Haven, and Ray Township; to the west by Macomb Township; and to the south by Harrison Township and Selfridge Air National Guard Base.

Legal Basis and Township Governance

The Charter Township of Chesterfield, MI, was formally established by the Michigan Legislature in 1842. It is governed by a seven-member township board which includes a full-time township supervisor, clerk, and treasurer, and four part-time trustees. This board of elected officials meet bi-weekly in an open meeting format to vote on various contracts, projects, and to approve/deny recommendations from the planning and zoning department. Day-to-day operations are the responsibility of the township supervisor.

Township Board

Supervisor: Brad Kersten

Treasurer: Kathy Elliot

Clerk: Cindy Berry

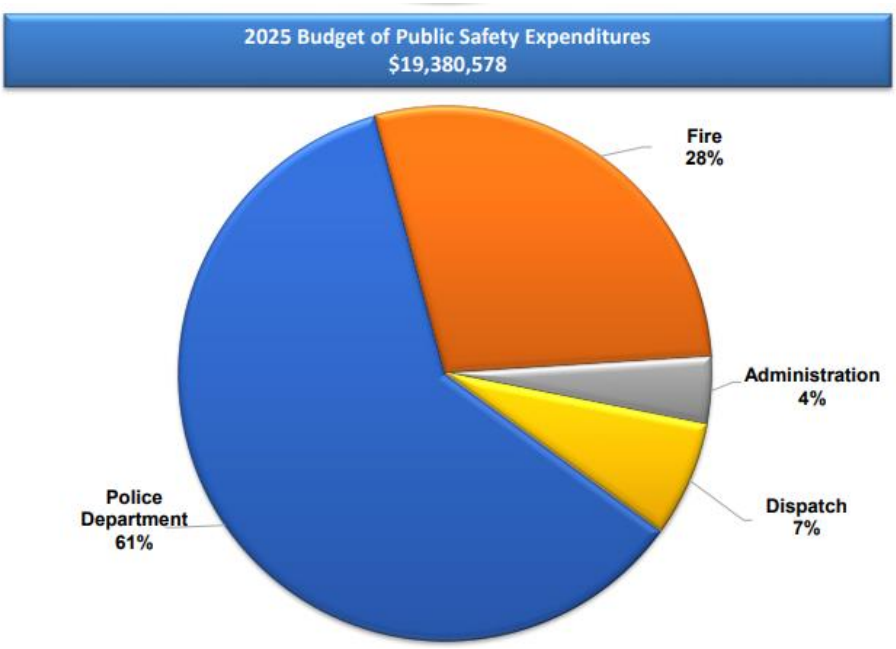
Trustee: David Joseph

Trustee: Hank Anderson

Trustee: Kathy Vosburg

Trustee: Pamela Hornberger

Township Finance and Budget Process



The Chesterfield Township Fire Department relies on budgetary appropriations from the Public Safety Special Assessment District (SAD), which generates the funds necessary to operate police, fire, and dispatch operations in Chesterfield Township. Fire Department leadership works with police, public safety, and township leaders annually to develop a comprehensive budget to fund all needs, including personnel and facilities costs, as well as capital improvement projects. This annual budget is ultimately approved by the township board.

The Public Safety administration, in concert with the Chesterfield Township Treasurer's office, monitors all fiscal actions with a goal of upholding industry standards and maintaining full transparency. As evidence of this, the Treasurer's office has been awarded the prestigious Government Finance Officers Association "Certificate of Achievement for Excellence in Financial Reporting" annually since 2019.

Department History

Previously served by neighboring New Haven, New Baltimore, and Mt. Clemens Fire Departments, the Chesterfield Township Fire Department answered its first call on April 3, 1955. Originally established as a volunteer department, operations grew from a small single fire station to two modernized stations located in the eastern and western halves of the township.

As growth continued, the department transitioned into a "combination" department in June of 2001, fueled by voter-established millages for operations and equipment. Staffed by 38 full-time and paid on-call personnel at the time, the economic downturn of 2008-2010 dealt a heavy blow to the trajectory of growth within the department. Fueled by the township board's concerns surrounding the viability of funding both police and fire operations, the Public Safety Special Assessment District was enacted, and the department was adopted under the umbrella of the "Chesterfield Township Department of Public Safety."

Programs and Services

Fire Suppression

The Chesterfield Township Fire Department responds to fire incidents 24 hours a day, 365 days a year. Fire suppression efforts are led by the Fire Chief who oversees the day-to-day operations with a designated "officer-in-charge" fulfilling command functions on emergency scenes. Currently holding a 4/4x ISO designation, crews respond from two stations and cross-man (2) fire engines, a ladder truck, and a command vehicle; included in first-due responses to fire incidents is New Baltimore Fire Department, who responds with one fire engine staffed with two personnel. Additional personnel, when required to meet deployment objectives, are summoned through the Macomb County Mutual Aid agreement; additional apparatus, especially for responses in areas without fire hydrants, are also requested either by special request or through the Macomb County Fire Chief's "Water Tender Strike Team."

EMS

The Chesterfield Township Fire Department provides a supplemental response to the township's contracted EMS provider, Medstar Ambulance. Current dispatch directives send responders to medical incidents where symptoms or conditions are the most life-threatening.

All Chesterfield Township Fire Department career firefighters and officers are licensed through the State of Michigan as either Emergency Medical Technician (EMT) or Paramedic. Part-time personnel, although not required to be medically licensed, supplement full-time crews if they hold one of the above licenses. These personnel respond out of the department's two stations, cross-manning any of the eight basic life support licensed apparatus used for EMS response.

The Chesterfield Township Fire Department also has trained medical personnel that can act as members of a Rescue Task Force, or "RTF." A Rescue Task Force is a team or teams made up of both law enforcement and EMS personnel who are assembled for the purpose of rapid patient treatment and packaging within a warm zone of an active shooter event. These teams may also be part of extraction after treatment/packaging is complete. "RTF" teams will be made up of medically trained firefighters along with a security escort of police officers.

HAZMAT

The Chesterfield Township Fire Department provides hazardous materials response at the operations level. The department has responders certified at the HAZMAT Technician and Operations levels. The Chesterfield Township Fire Department also partners with the Macomb County Hazardous Materials Team, a consortium of local departments who pool personnel and resources to provide technician and specialist level services for larger incidents.

The Chesterfield Township Fire Department handles most HAZMAT incidents with a single engine response, but has available a large assortment of supplies and PPE needed to mitigate higher acuity incidents. This equipment is largely housed on the department's Heavy Rescue, "Rescue 2," which resides at Station 3. Station 1 houses a small utility trailer that carries mass decontamination equipment that can be deployed at large scale incidents across the county.

Technical Rescue

The Chesterfield Township Fire Department has a team of highly trained individuals that have specialized training in trench rescue, confined space rescue, building collapse, high angle rescue, urban search and rescue, and heavy equipment and machine extrication. The team responds to mitigate both natural and man-made disasters on a local level. Our department as a whole is part of the Macomb County Special Response Team that responds to a multitude of specialized critical events within the county. Many of our firefighters are also a part of the esteemed "Michigan Task Force One" that is deployed to the most extreme events throughout the state and occasionally deployed across the country.

The equipment the Chesterfield Township Fire Department uses is top-of-the-line and is maintained in ready condition for rugged use. For rescue operations, the department utilizes a 26-foot special response trailer, housing equipment including a number of extrication and specialty response devices.

As with the HAZMAT program, most technical rescue responses are effectively mitigated by Chesterfield Township responders; however, for larger scale and more technically demanding emergencies, the department leverages its relationship with the county's Technical Rescue Team to fulfill deployment objectives.

Community Risk Reduction

Chesterfield Township's Fire Prevention Bureau is staffed with two full-time fire inspectors who are primarily responsible for inspection and code enforcement within Chesterfield Township's nearly 1,300 commercial buildings. Both inspectors complete plan reviews for every new construction project and major renovation done in concert with the Chesterfield Township Building Department inspectors and code enforcement personnel to simplify and ease the compliance process for business owners.

The Chesterfield Township Fire Department also employs multiple programs geared toward community risk reduction:

- The annual Chesterfield Township Fire Department Open House engages hundreds of stakeholders in a carnival-like atmosphere and aims to educate the public on a variety of fire safety and public health topics.
- Chesterfield Township's suppression crews make visits to classrooms within the township at the request of teachers, instructing Chesterfield Township's youngest residents on basic fire safety issues.
- The Fire Prevention Bureau administers a Youth Firesetting Program, staffed by two youth fire-setting intervention specialists, which aims to capture problematic behavior displayed by juveniles before a loss of life or property occurs.

Full-time Chesterfield Township Fire Department inspectors are also NFPA 1033 qualified fire investigators, holding certificates in training from the Michigan State Police, and have attended multiple advanced investigation classes with the Detroit Fire Department and others. Together with investigators from the Chesterfield Township Police Department, origin and cause determination investigations are completed on each significant structure or mobile property fire.

Emergency Management

The Chesterfield Township Fire Department provides emergency management operations under the direction of the fire chief for the township. Once an incident happens that would require all of the township leaders to assemble and make emergency decisions to mitigate damages, survey the area and check the infrastructure, the Emergency Operations Center for Chesterfield Township is then opened. The EOC is located at Fire Station 3 in the training room. This room can easily be converted into the EOC center as we have created EOC boxes that have phones, maps of the township and surrounding area, note pads and other related items needed for the EOC to operate.

Below is a list of what the Chesterfield Township Fire Department does for emergency management.

1. Runs and maintains the Emergency Operations Center.

2. The Fire Chief and his designees work with Macomb County Office of Emergency Management to maintain the highest level of awareness of incidences happening in Chesterfield Township, Macomb County, and the State of Michigan.

3. Provides Mutual Aid Box Alarm System (MABAS) support for the State of Michigan for large scale events within the state.

4. Attends meetings at the state, county, and local levels for emergency management updates.

5. The Chesterfield Township Fire Department Command Staff are all ICS and Blue Card trained and certified.

Water Rescue and Marine Operations

The Chesterfield Township Fire Department's Water Rescue and Marine Operations program provides vital services and responses on the waters of Chesterfield Township and surrounding communities. Equipped with resources to conduct operations such as ice rescue, surface water rescue, dive rescue, and cold water diving, the Chesterfield Township Fire Department collaborates with "Southeast Michigan Dive Group," providing emergency dive operations throughout the surrounding counties. Chesterfield Township units assist the Macomb County Sheriff's Department Marine Division and the United States Coast Guard with Marine 1. Marine 1 is staged at a local marina for quick deployment during emergency operations and is operated by trained firefighters with the abilities to rectify several water incidents and equipped with basic first aid to provide medical care on the water. Marine 1 is outfitted with state-of-the-art equipment including large LED spotlights, FLIR thermal imaging camera, sonar, radar, and equipped with an on-board fire suppression pump used to extinguish fires on land and water. Marine 1 also features a front drop gate to enable easy water access during rescue and dive operations. The Chesterfield Township Fire Department also operates two smaller inflatable boats allowing access to inland and shallow waterways.

Water Rescue and Marine Operations team members are trained and equipped to handle several operations such as:

- Water-based rescue
- Provide medical treatment on the waterways
- Search and rescue
- Fire suppression of docks, boats and shore-based fires
- Underwater diver deployments
- Assisting marine vessels

SUAS / “Drone” Operations

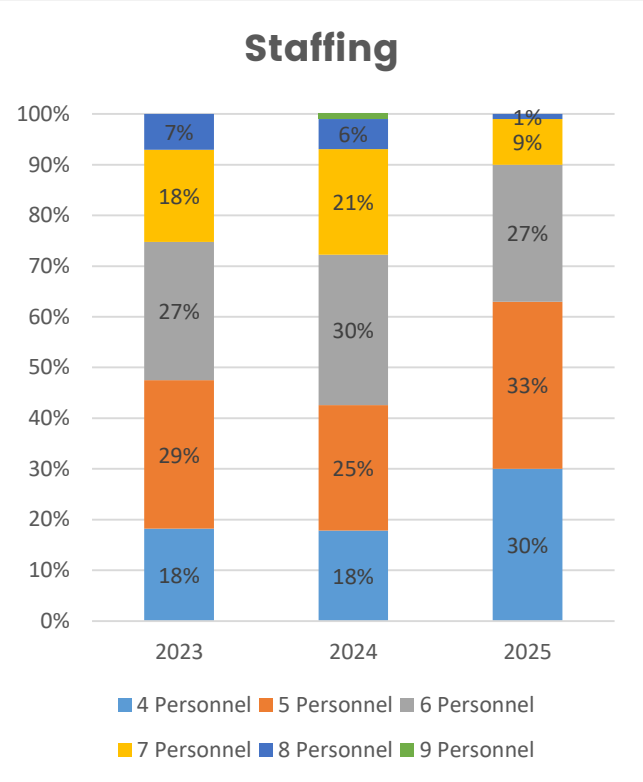
The Chesterfield Township Fire Department has established a small Unmanned Aircraft System (sUAS) to support and enhance operations. The sUAS program is intended to boost overall situational awareness, search, rescue, command and control needs by bringing faster, more reliable information to incident commanders and decision makers during emergencies and planned events. The sUAS program can be utilized for wildland fire operations, natural disaster damage assessment, hazardous materials incidents, search and rescue, training, fire investigation, fire prevention, and requests from mutual aid partners. With approximately 30 square miles protected by the department, sUAS operations will increase safety in emergency situations and operational proficiency.

Staffing

The Chesterfield Township Fire Department operates with a "combination" style staffing model; a core group of 20 personnel are supplemented with part-time personnel with a goal of maintaining adequate manpower capable of mitigating most emergencies without outside help.

Suppression personnel carry one of four ranks: firefighter, sergeant, lieutenant, and captain.

There are three "shifts" of full-time personnel that work 24-hour shifts to maintain around the clock staffing. Each shift is comprised of three firefighters and one sergeant, one lieutenant, and one captain. Additional part-time firefighters are allowed to work in 12- or 24-hour increments according to their availability and the needs of the department; ultimately, on any given day, there is a minimum of four and a maximum of nine suppression personnel on duty.



The chart included here represents the actual distribution of available personnel annually for all 12-hour increments. Average daily and nightly staffing continued to trend downward over the past three years, resulting in an increase in overtime hours worked and necessitating an increase in "all-calls," where off-duty personnel are notified of the need for temporary additional staffing through a paging system. This process typically yields between one and four responders who voluntarily fill the stations.

Administratively, the department operates under the direction of the fire chief who oversees day-to-day activities and provides the public safety director with information and support in the planning and budgetary processes. The chief also oversees two fire inspectors who comprise the prevention bureau and are responsible for the Community Risk Reduction program detailed below. These inspectors are also available to handle some other miscellaneous administrative activities, and routinely supplement suppression crews during responses to commercial occupancies and automatic alarms. On the scene of a structure fire or during a large-scale event, inspectors may also fulfill other roles at the discretion of the incident commander. Lastly, two part-time administrative assistants handle routine records management, scheduling, and office duties.

Fixed Facilities

The Chesterfield Township Fire Department is strategically positioned with operations based out of two fixed fire stations: Fire Station 1 and Fire Station 3, located on the east and west sides of the township, respectively.

The Chesterfield Township Public Safety and Fire Department administration are conducting a thorough analysis of the Community Risk Assessment and response data to identify the need for future fire stations located in the northwest and southeast portions of the township, as development continues northward and densification and socioeconomic changes impact already populated areas. This comprehensive approach involves examining historical incident data, community demographics, and response times to gain a nuanced understanding of the unique risks and demands faced by the residents and businesses in the area.

This process begins with an in-depth review of incident reports, utilizing data from the National Fire Incident Reporting System (NFIRS), the National Emergency Response Information System (NERIS), and other sources. This allows township leadership to identify patterns, trends, and high-risk areas within the areas identified above. Understanding the types and frequencies of incidents is crucial to tailoring emergency response capabilities to the specific needs of the community, both current day and projected into the future.

Fire Station 1

26001 22 Mile Road
Chesterfield Township, MI 48051

Fire Station 3

33991 23 Mile Road
Chesterfield Township, MI 48047

Demographic analysis also plays a key role in this assessment, considering population density, infrastructure, and potential growth in the northwestern area of the township. By integrating this demographic information with incident statistics, township and department leadership can develop a holistic view of the community's risk profile.

Response time analysis is another crucial component of the assessment. Examining how quickly emergency services can reach different areas within the northwestern and southeastern areas of the township helps identify potential gaps in coverage. This data-driven approach ensures that future fire station locations are strategically placed to optimize response times and enhance overall emergency preparedness.

Through this meticulous examination of community risk and response data, the Chesterfield Township Fire Department aims to advise its leadership when making informed decisions regarding the construction and staffing of additional stations within the northwestern and southeastern areas of the township. The ultimate goal is to proactively address the evolving needs of the community, enhance public safety, and ensure swift and effective emergency response to all types of incidents.

Resources

The Chesterfield Township Fire Department boasts a modern fleet capable of responding to emergencies of all types, both on land and water. This fleet is strategically deployed from two fixed fire stations and a privately-owned marina located on the Salt River.

The deployment of resources is as follows:

Fire Station 1 has a staffing level of two to four, cross-manning these apparatus:

Engine 1

Rescue 1

Utility 2

Utility 3

Special Response Trailer

Marine 1 (off-season)

Fire Station 3 has a staffing level of two to five personnel, cross-manning the following apparatus:

Engine 3

Truck 3

Rescue 3

Battalion 1

Rescue 2

When staffing levels permit (five or higher), Battalion 1 is staffed by the officer-in-charge and serves primarily as a command vehicle. Other staff are distributed between the two other stations at the officer-in-charge's discretion, and respond with the most appropriate vehicle for each emergency type as dictated by Computer-Aided Dispatch (CAD) response plans.

Marine 1, the Department of Public Safety's multi-use boat, is moored on the Salt River from March 1st until December 1st (weather permitting). This boat is utilized by both fire and police personnel and is intermittently staffed with both police officers and fire personnel when staffing permits; on instances where an emergency response is requested and the unit is not staffed, fire personnel respond from the fixed facilities to the boat, putting it in service and on the water in a manner of minutes.

Fire Station 3 also houses the department's administrative staff, who have three staff vehicles available for fire inspectors to augment emergency response. These vehicles are:

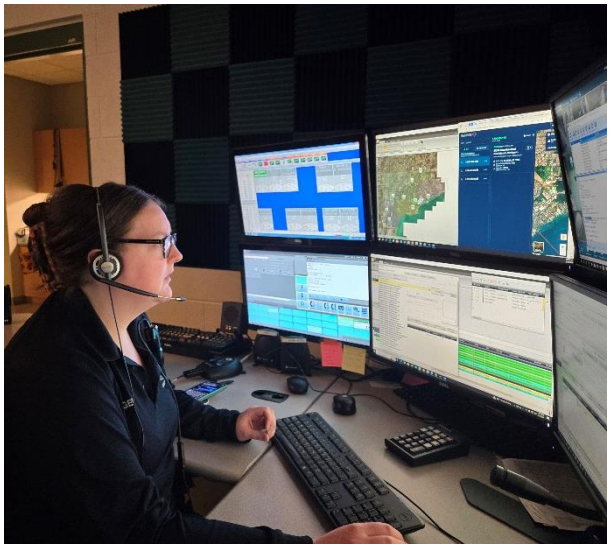
Inspector 1

Inspector 2

Chief 1

Dispatch Services / Emergency Communications

The Chesterfield Township Department of Public Safety operates a unified dispatch system, employing computer-aided dispatch (CAD) software to coordinate the response for the Chesterfield Township Fire Department, Chesterfield Township Police Department, New Baltimore Fire Department, and New Baltimore Police Department. This dispatch center serves as the primary public safety answering point (PSAP) for all calls within Chesterfield Township and the City of New Baltimore.

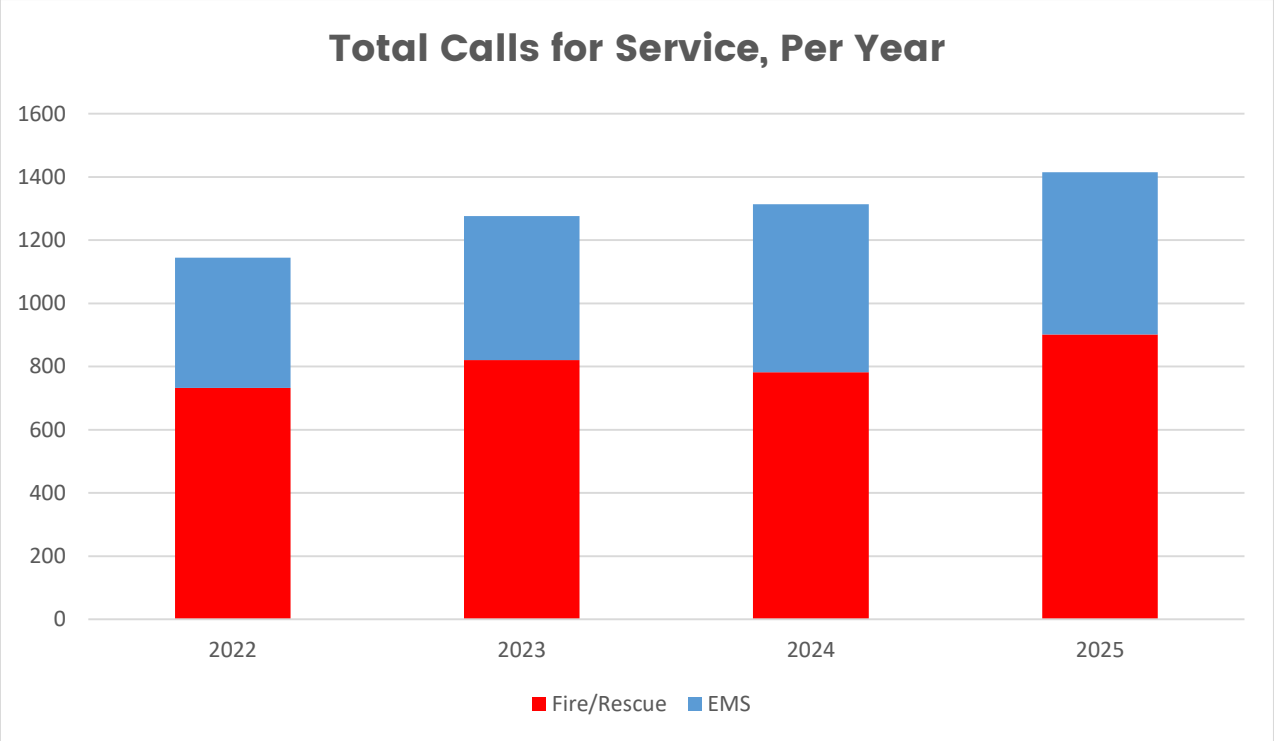


To further elevate service delivery, the Chesterfield Township Department of Public Safety recently constructed an entirely new, state-of-the-art dispatch center located within the Chesterfield Township Police Department building. Brand new software and equipment aims to improve operations and redundancy, as well as reduce dispatcher fatigue. The Department of Public Safety also operates a fail-over dispatch center with duplicate equipment located at Chesterfield Township Fire Department Station 3.

In 2025, the Chesterfield Township Fire Department kicked off another project aimed at increasing redundancy in radio communications. Dubbed “CNET” (Chesterfield – New Baltimore Emergency Transmitter), it is a stand-alone 800mHz transmitter that offers continued radio communications for all Chesterfield Township first responders in the event the Michigan Public Safety Communications System (MPSCS) suffers a complete outage.

While fire department leadership do not have direct control over dispatch activates, the fire chief and command staff regularly interface with public safety administration to guide practices and improvements.

Calls for Service Statistics



Mutual and Automatic Aid

The Chesterfield Township Fire Department actively participates in a county-wide mutual aid agreement, collaborating seamlessly with all neighboring departments through an organized system of “alarm cards.” This system, mutually agreed upon by all Macomb County Fire Departments and EMS providers, lays out in detail apparatus and personnel specific resource requests on an “alarm” level progression; for example, a first alarm in Chesterfield Township generates a response from five neighboring agencies with three engines, one truck, one water tender and 18 personnel. Alarm levels progress to the fifth alarm, after which another series of requests can be made based on the size and type of the event.

CHESTERFIELD TOWNSHIP
FDID# 5003
Fire Grd. CHFD-W-4
Fill-in CHFD2-Y-4
Emergency - 586-949-2322
NATIONAL STANDARD THREAD
LDH-5"

SHEET 1 OF 1
CHESTERFIELD TOWNSHIP

FIRE			Telephone #	Personnel
1st Alarm	Chesterfield Twp.		2 Engine, 1 Truck	6
	Macomb Twp.	RIT	1 Engine	4
	Lenox Twp.		1 Water Tender	2
	S.A.N.G. Base		1 Engine	4
	New Baltimore		1 Truck	4
	New Haven	*Fill Sta. 1*	*1 Engine*	*4*
2nd Alarm	Clinton Twp.		1 Engine	3
	Harrison Twp		1 Engine	4
	Mt Clemens		1 Engine	3
	S.A.N.G. Base		1 Air Trailer	2
	Ray Twp.		1 Water Tender	4
3rd Alarm	New Haven	(From Sta #1)	1 Engine	4
	St. Clair Shores		1 Engine	4
	Roseville		1 Quint	3
	Richmond		1 Water Tender	4
	Ira Twp.	*(Fill Sta #1)*	*1 Engine*	*4*
4th Alarm	Ira Twp	(From Sta 1)	1 Engine	4
	Shelby Twp.		1 Truck	4
	Armada Twp.		1 Engine	4
	Fraser	*(Fill Sta. 1)*	*1 Engine*	*3*
5th Alarm	Washington Twp.		1 Engine	4
	Eastpointe		1 Engine	3
	Sterling Hgts.		1 Truck	3
	Utica		1 Engine	3

In late 2025, the Chesterfield Township Fire Department and New Baltimore Fire Department upgraded their existing mutual aid agreement to an “automatic aid” agreement. Now, on

receipt of any human report of smoke or flames in either jurisdiction, both departments are dispatched simultaneously. This leverages the existing relationship and mutually improves each department's effectiveness, offering seamless cooperation through the shared dispatch center. Other opportunities for automatic aid agreements are being explored by department leadership, aiming to enhance responses to the southeastern and northwestern areas of the response area.

In 2025, the Mutual and Automatic Aid agreements generated the following responses for all call types:

Department	Aid Given	Aid Received
Selfridge ANG	0	18
New Baltimore	8	14 (mutual) 4 (automatic)
Macomb Township	5	4
Lenox Township	0	8
New Haven	0	7
Mt. Clemens	0	1
Harrison Township	2	1
Ira Township	0	1
Washington Township	2	0
SE Michigan Dive Group	2	
Total	**19**	**58**

Community Risk Assessment

Community Wide Risk

The product of this risk assessment is intended to be a useful tool for the Chesterfield Township Fire Department to rate risk, determine vulnerability, and predict the adverse impact of disasters and emergencies. A comprehensive risk assessment provides a guide to developing policy and action-based recommendations to manage incidents. This assessment is one element of the comprehensive emergency management program that incorporates mitigation, preparedness, response, and recovery. Emergency operations plans, as well as standard operating guidelines, round-out a comprehensive program to manage hazards.

To help compute and categorize risks, the Chesterfield Township Fire Department employed the talents of Darkhorse Analytics. To assist the department's limited staff, Darkhorse applied consistent methodology across years' worth of compiled response data and census statistics, resulting in an easily understood set of maps visually displaying various risks throughout the response area. While this provides a high-level overview to politicians and residents, the Darkhorse software excels in the ability it gives fire department staff to "drill down" into the population and property attributes in each planning zone, measuring impact to the community and identifying areas prime for community risk reduction efforts.

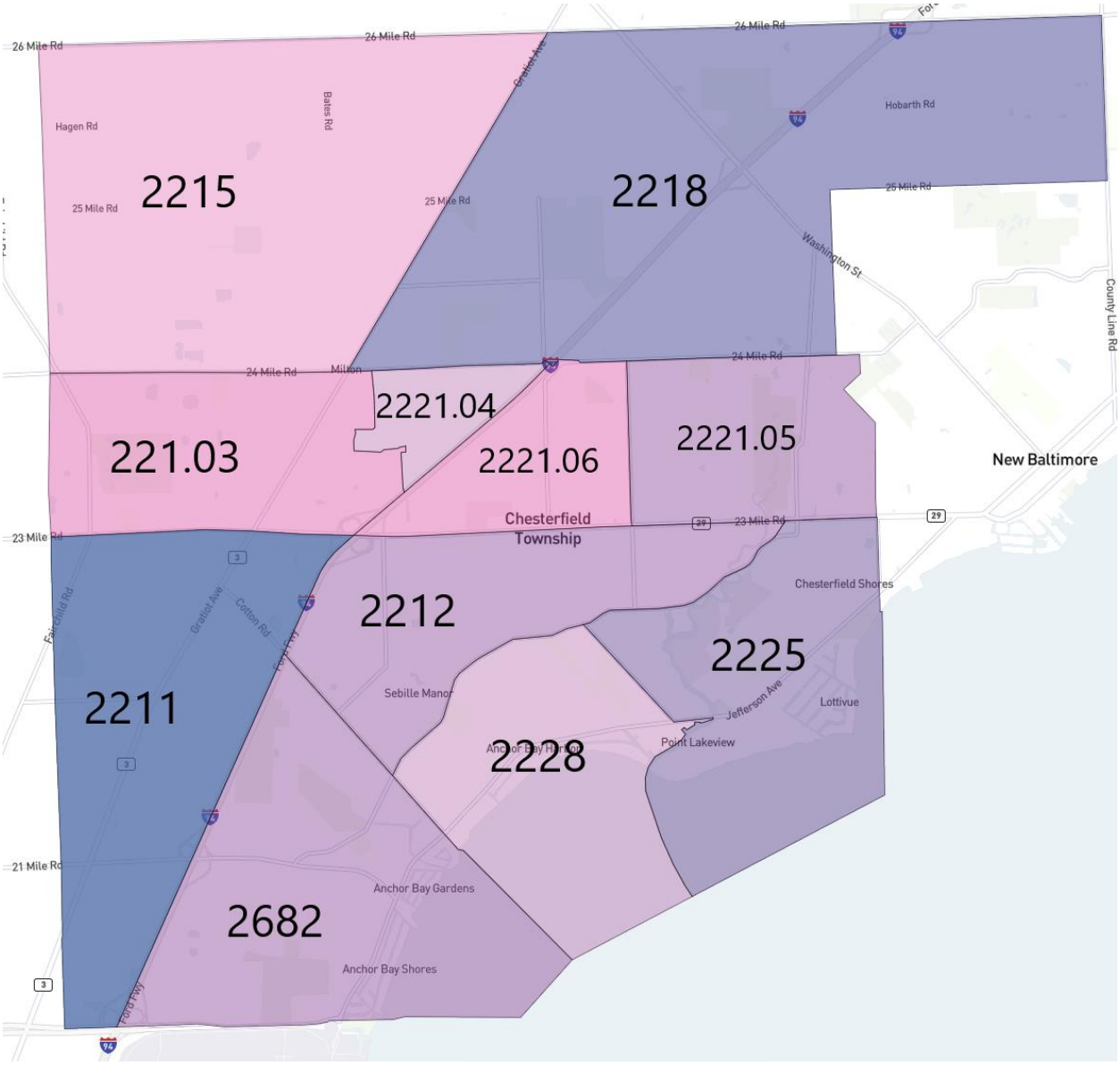
Overview of Hazards in Chesterfield Township

Severe Weather/Meteorological Events

The most damaging and impactful events in Chesterfield Township are severe weather events, such as tornadoes and severe storms. In the past, these events have led to loss of life and costly recovery. In 1964, an EF-4 tornado touched down in Chesterfield Township killing 13 and causing more than four million dollars in damages. In August of 2023, multiple large rainfall events over two days precipitated widespread flooding throughout the township, leading to a presidential disaster declaration. While these events happen infrequently, they have considerably higher impact than most other risks, and national discourse is centered around these events becoming more common.

Transportation accidents are also an inherent risk to Chesterfield Township, as a rail line and expressway serving to move goods across the Canadian border leads to a large variety of hazardous materials transiting through the community. Although these accidents happen rarely, the Chesterfield Township Fire Department includes the potential in its risk assessment.

Planning zones (Census Tract)



Fire

The Chesterfield Township Fire Department responds to all types of suppression incidents within the township borders and in neighboring jurisdictions through mutual and automatic aid requests. For the purposes of this risk assessment, all fire incidents are measured that have been assigned one of the NFIRS codes to the right:

FIRES
Structure Fires
111 Building fire
112 Fires in structures other than in a building
113 Cooking fire, confined to container
114 Chimney or flue fire, confined to chimney or fire
115 Incinerator overload/malfunction, fire confined
116 Fuel burner/boiler malfunction, fire confined
117 Commercial compactor fire, confined to rubbish
118 Trash/rubbish fire in a structure, contained
Fires in Mobile Property Used as a Fixed Structure
121 Fire in mobile home used as a fixed residence
122 Fire in motor home, camper, RV, fixed location
123 Fire in portable building, fixed location
Mobile Property (Vehicle) Fires
131 Passenger vehicle fire
132 Road freight or transport vehicle fire
133 Rail vehicle fire
134 Water vehicle fire
135 Aircraft vehicle fire
136 Self-propelled motor home or RV fire
137 Camper or trailer fire (not self-propelled)
138 Off-road vehicle or heavy equipment fire
Natural Vegetation Fires
141 Forest, woods, or wildland fire
142 Brush or brush-grass mixture fire
143 Grass fire, includes fire confined to area
Outside Rubbish Fires
151 Outside rubbish, trash, or waste fire
152 Garbage dump or sanitary landfill fire
153 Construction or demolition landfill fire
154 Dumpster or other outside trash receptacle fire
155 Outside fixed compactor/compacted trash fire
Special Outside Fires
160 Special outside fire, other (mulch, compost)
161 Outside storage fire on residential/ commercial/ industrial property
162 Outside equipment fire
163 Outside gas or vapor combustion explosion
164 Outside mailbox fire
Cultivated Vegetation, Crop Fire
171 Cultivated grain or crop fire
172 Cultivated orchard or vineyard fire
173 Cultivated trees or nursery stock fire

Rank	Boundary	Overall Risk ↓	Consequence	Probability
1	Census Tract 2211	Very High 100th pctl.	Very High 100th pctl.	Monthly 12.7/year
2	Census Tract 2212	Moderate 80th pctl.	Moderately Low 50th pctl.	Quarterly 5.3/year
3	Census Tract 2218	Moderate 80th pctl.	Moderately High 90th pctl.	Annually 1.8/year
4	Census Tract 2225	Moderate 70th pctl.	Medium 80th pctl.	Annually 2.4/year
5	Census Tract 2682	Moderate 60th pctl.	Moderately Low 60th pctl.	Quarterly 4.7/year
6	Census Tract 2221.04	Low 50th pctl.	Low 40th pctl.	Annually 2.5/year
7	Census Tract 2221.05	Low 40th pctl.	Moderately Low 70th pctl.	Annually 1.7/year
8	Census Tract 2221.03	Low 30th pctl.	Very Low 20th pctl.	Quarterly 5.0/year
9	Census Tract 2221.06	Low 20th pctl.	Very Low 10th pctl.	Quarterly 7.1/year
10	Census Tract 2228	Low 10th pctl.	Low 30th pctl.	Annually 2.2/year
11	Census Tract 2215	Low 0th pctl.	Very Low 0th pctl.	Quarterly 5.3/year

EMS

The Chesterfield Township Fire Department provides non-transporting basic life support service for high-acuity calls only*, with all medical emergencies receiving response from the township's contracted EMS provider, Medstar Ambulance.

RESCUE & EMS
Medical assist
311 Medical assist, assist EMS crew
Emergency medical service (EMS) incident
321 EMS call, excluding vehicle accident with injury
322 Vehicle accident with injuries
323 Motor vehicle/pedestrian accident
324 Motor vehicle accident with no injuries

Rank	Boundary	Overall Risk ↓	Consequence	Probability
1	Census Tract 2211	Very High 100th pctl.	Very High 100th pctl.	Monthly 13.1/year
2	Census Tract 2225	Moderate 90th pctl.	Medium 80th pctl.	Quarterly 6.3/year
3	Census Tract 2218	Moderate 80th pctl.	Moderately High 90th pctl.	Quarterly 5.0/year
4	Census Tract 2682	Moderate 70th pctl.	Moderately Low 60th pctl.	Quarterly 6.0/year
5	Census Tract 2212	Moderate 60th pctl.	Moderately Low 50th pctl.	Quarterly 9.2/year
6	Census Tract 2221.05	Low 50th pctl.	Moderately Low 70th pctl.	Annually 3.2/year
7	Census Tract 2221.04	Low 40th pctl.	Low 40th pctl.	Annually 3.9/year
8	Census Tract 2228	Low 30th pctl.	Low 30th pctl.	Quarterly 5.2/year
9	Census Tract 2221.06	Low 20th pctl.	Very Low 10th pctl.	Quarterly 6.0/year
10	Census Tract 2221.03	Low 10th pctl.	Very Low 20th pctl.	Annually 3.2/year
11	Census Tract 2215	Low 0th pctl.	Very Low 0th pctl.	Annually 1.8/year

*It should be noted that the data set used to compute the above risks includes only CHFD's responses; therefore, the map is representative only of the risk associated with severe incidents, not all EMS responses.

HAZMAT

All Chesterfield Township Fire Department responders are trained at the hazardous materials –operations level as part of their initial certification. Additionally, all sworn members, and are required to complete annual continuing education in hazardous materials. The department responds to roughly 60 hazardous materials ("HAZMAT") incidents annually, which range from elevated carbon monoxide levels within a structure to industrial incidents involving the transportation of HAZMAT through the township.

HAZARDOUS CONDITION -NO FIRE

Combustible/flammable spills & leaks
411 Gasoline or other flammable liquid spill, Class I
412 Gas leak (natural gas or LPG)
413 Oil or other combustible liquid spill, Class II or III
Chemical release, reaction or toxic condition
421 Chemical hazard (no spill or leak)
422 Chemical spill or leak
423 Refrigeration leak
424 Carbon monoxide incident
Radioactive condition
431 Radiation leak, radioactive material

Rank	Boundary	Overall Risk ↓	Consequence	Probability
1	Census Tract 2211	Very High 100th pctl.	Very High 100th pctl.	Annually 1.8/year
2	Census Tract 2225	Moderate 90th pctl.	Medium 80th pctl.	Rare 0.7/year
3	Census Tract 2221.05	Moderate 80th pctl.	Moderately Low 70th pctl.	Rare 0.5/year
4	Census Tract 2218	Moderate 70th pctl.	Moderately High 90th pctl.	Rare 0.3/year
5	Census Tract 2682	Moderate 60th pctl.	Moderately Low 60th pctl.	Rare 0.5/year
6	Census Tract 2221.04	Low 50th pctl.	Low 40th pctl.	Rare 0.4/year
7	Census Tract 2212	Low 40th pctl.	Moderately Low 50th pctl.	Rare 0.3/year
8	Census Tract 2221.03	Low 30th pctl.	Very Low 20th pctl.	Rare 0.5/year
9	Census Tract 2221.06	Low 20th pctl.	Very Low 10th pctl.	Annually 1.6/year
10	Census Tract 2228	Low 10th pctl.	Low 30th pctl.	Infrequently 0/year
11	Census Tract 2215	Low 0th pctl.	Very Low 0th pctl.	Infrequently 0/year

Technical Rescue

The term “technical rescue” encompasses vehicle extrication, confined space rescue, trench rescue, and building collapse. Chesterfield Township Fire Department personnel play a crucial role in technical rescue response with multiple members serving as members of the Macomb County Technical Rescue Team. These personnel, holding technician level or higher in multiple rescue disciplines, act to mitigate smaller emergencies and provide early initiation of county team responses. This collaborative approach ensures efficient and effective response to technical rescue incidents in Chesterfield Township.

Extrication, rescue
351 Extrication of victim(s) from building/structure
352 Extrication of victim(s) from vehicle
353 Removal of victim(s) from stalled elevator
354 Trench/below grade rescue
355 Confined space rescue
356 High angle rescue
357 Extrication of victim(s) from machinery

Rank	Boundary	Overall Risk ↓	Consequence	Probability
1	Census Tract 2211	Very High 100th pctl.	Very High 100th pctl.	Rare 0.1/year
2	Census Tract 2218	Moderate 90th pctl.	Moderately High 90th pctl.	Rare 0.3/year
3	Census Tract 2225	Moderate 80th pctl.	Medium 80th pctl.	Annually 1.2/year
4	Census Tract 2682	Moderate 70th pctl.	Moderately Low 60th pctl.	Rare 0.2/year
5	Census Tract 2221.05	Moderate 60th pctl.	Moderately Low 70th pctl.	Infrequently 0/year
6	Census Tract 2228	Low 50th pctl.	Low 30th pctl.	Rare 0.2/year
7	Census Tract 2212	Low 30th pctl.	Moderately Low 50th pctl.	Infrequently 0/year
8	Census Tract 2221.04	Low 30th pctl.	Low 40th pctl.	Infrequently 0/year
9	Census Tract 2221.03	Low 20th pctl.	Very Low 20th pctl.	Infrequently 0/year
10	Census Tract 2221.06	Low 10th pctl.	Very Low 10th pctl.	Infrequently 0/year
11	Census Tract 2215	Low 0th pctl.	Very Low 0th pctl.	Infrequently 0/year

Marine Rescue

Bordered by Lake St. Clair and with many inland lakes, rivers, and streams, Chesterfield Township residents, and the many visitors who engage in water-based recreational activities, face moderate risk of emergencies in and on the water.

Water or ice-related rescue
361 Swimming/recreational water areas rescue
362 Ice rescue
363 Swift water rescue
364 Surf rescue
365 Watercraft rescue

Assessment Methodology

The Chesterfield Township Fire Department employed a comprehensive two-axis methodology to conduct an all-hazards risk assessment, which involved simultaneously evaluating the probability and consequence outcomes of each potential threat. The assessment covered 11 zones, systematically analyzing risk factors and categorizing them based on their respective probabilities and potential impacts.

In this methodology, moving vertically up the y-axis indicates higher probability of occurrence for a particular risk. Simultaneously, moving horizontally along the x-axis reflects the severity of the risk and its potential impact on the community. This approach allows for nuanced understanding of the risks faced by the public, enabling strategic planning and resource allocation to address and mitigate the identified hazards effectively.

The initiation of the Community Risk Assessment began in 2023 with in-person area surveys completed by on-duty crews. These surveys looked to identify unique risks, characteristics, and barriers to service delivery in every corner of the township. Once this holistic review of the township was completed, the fire department's accreditation team looked to divide the township into planning zones, allowing program leaders to parse out specific risk and response data to help analyze impacts to specific groups of residents.

The Chesterfield Township Fire Department then contracted Darkhorse Analytics to provide the computational and visual products of the risk assessment. Because of the lack of available in-house statistical and GIS talent, this contractual service provided the best opportunity to provide the information needed to make informed decisions regarding resource deployment and planning for future improvements. Additionally, the dynamic display properties of the Darkhorse Risk Assessment tool allow administration to "drill down" through multiple layers of events, groups, and demographic statistics when evaluating trends.

Darkhorse Analytics, in developing the risk model for Chesterfield Township, worked closely with the fire department accreditation team to incorporate all available GIS data, response data from the past five years, and critical infrastructure information. This collaborative approach generated a series of vivid interactive maps compiling all pertinent information and using it to score risk using both the above two-axis methodology and a "risk percentile" option. While the maps display the risk information in a series of "hexes," the final scoring product below was developed using the department's chosen planning zone methodology.

Planning Zones

Because of the availability of demographic data, the Chesterfield Township Fire Department administration opted to mirror planning zones to existing census tract. Beginning in 2024, concerted efforts to categorize responses into these zones began, with participating members of the department codifying each response in the department's record management system.

To streamline tracking capabilities, department administration hopes to implement dedicated features in CAD to minimize error and ensure 100% compliance. Additionally, throughout the statistical analysis conducted during the development of this document, deficiencies were identified in the organization of the zones. This has prompted the administration to begin development of new planning zones that better align with response objectives and planning needs.

Zone Characteristics

Station 1 South

Zones 2211 and 2682 are the two southern zones served by Station 1 and encompasses the highest risk area in Chesterfield Township. Zone 2211 specifically ranks the highest in structure value, contents value, vehicle value, number of structures, and total population including those under 18 and with disabilities. Centrally located in Zone 2211 is Fire Station 1. Zone 2682 is home to the Chesterfield Township Police Department, which houses the dispatch center used by the Chesterfield Township Fire Department, New Baltimore Fire Department, and both Chesterfield Township and New Baltimore Police Departments. Also in Zone 2682 is the Chesterfield Township Municipal Offices, a hub for local government and community events. Some of the township's oldest housing stock resides near the shores of Lake St. Clair in Zone 2682, which is largely residential. In contrast, Zone 2211 has a large industrial and commercial corridor centered around Gratiot Avenue. This industrial corridor is home to Chesterfield Township's largest concentration of facilities storing and using hazardous materials. CN rail lines enter the township in the southern half of Zone 2211 as well.

Station 3 South

Zones 2228, 2212, and 2225 comprise the southern half of Station 3's first-due response area. Largely residential, Zones 2212 and 2225 have the highest concentration of 65 and older population and is home to multiple senior care facilities. Also bordering Lake St. Clair, Zones 2228 and 2225 are home to a large swath of densely populated canal front homes, increasing the risk of water-based emergencies. The Salt River traverses Zone 2228, the southern portion of which serves multiple marinas and boat repair yards.

Station 1 North

The northern half of Station 1's response area transitions from traditional suburban housing stock into sparsely populated housing and farmland. Zones 2201.3 and 2201.4 transition west-to-east from higher value large square footage homes to more densely populated manufactured and single family homes. The rail line that enters the township in Zone 2211 nearly bisects Zone 2215, which is also is very sparsely populated and has very little access to municipal water supply. The northeastern corner of Zone 2215 also houses a small industrial complex.

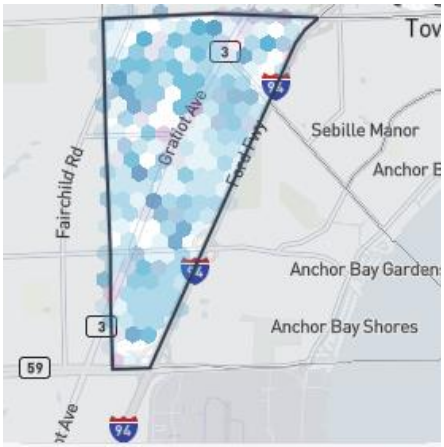
Station 3 North

Station 3's northern response area contains Zones 2201.5, 2201.6, and the eastern half of Zone 2218. Traditional suburban housing stock fills Zones 2201.5 and 2201.6, with Zone 2218 being largely farm land and minimal hydrants. Zone 2201.6 holds the facilities of the Chesterfield Township Department of Public Services, and 2201.5 is home to Fire Station 3. The northern edge of the response area is a burgeoning commercial corridor with many proposed uses and properties under development due to recent public fund investments in utility expansion. Lastly, Zone 2218 has the highest percentage of wildland-urban intermix.

Station 1 South

[2211]

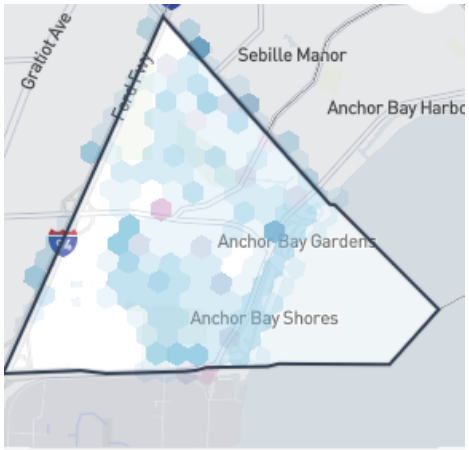
Population: 7,108
Structure Value: $1.8B
Land Area: 3 mi²
Structure Density: 0.9K/mi²
Population Density: 2,210/mi²



Overall Risk	Very High	100th pctl.
Consequence	Very High	100th pctl.
Life Safety	Moderately High	90th pctl.
Property Loss	Medium	80th pctl.
Economic Loss	Very High	100th pctl.
Environmental	Low	30th pctl.
Probability	Weekly	168.2/year

[2682]

Population: 3,702
Structure Value: $667M
Land Area: 3 mi²
Structure Density: 0.5k/mi²
Population Density: 1,081/mi²

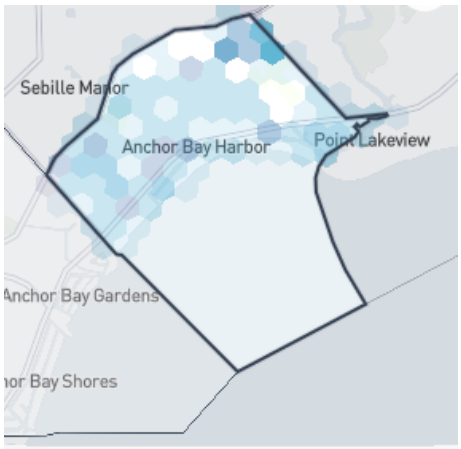


Overall Risk	Moderate	60th pctl.
Consequence	Moderately Low	60th pctl.
Life Safety	Low	30th pctl.
Property Loss	Low	30th pctl.
Economic Loss	Moderately High	90th pctl.
Environmental	Moderately High	90th pctl.
Probability	Weekly	74.3/year

Station 3 South

[2228]

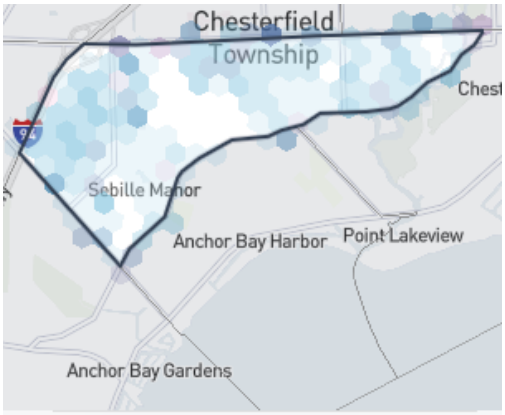
Population: 3,087
Structure Value: $472M
Land Area: 2 mi²
Structure Density: 0.6k/mi²
Population Density: 1,341/mi²



Overall Risk	Low	20th pctl.
Consequence	Low	30th pctl.
Life Safety	Very Low	10th pctl.
Property Loss	Moderately Low	60th pctl.
Economic Loss	Low	30th pctl.
Environmental	Very Low	20th pctl.
Probability	Monthly	31.1/year

[2212]

Population: 5,824
Structure Value: $652M
Land Area: 2 mi²
Structure Density: 1.1k/mi²
Population Density: 2,700/mi²

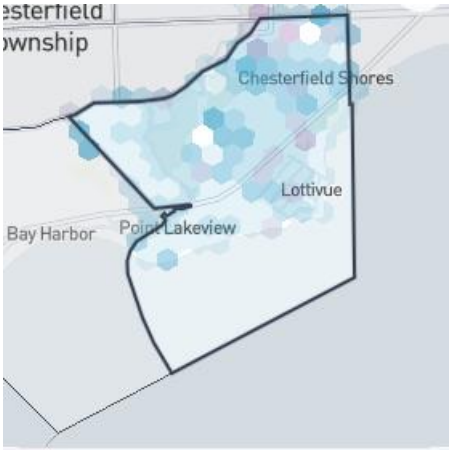


Overall Risk	Low	50th pctl.
Consequence	Moderately Low	50th pctl.
Life Safety	Very High	100th pctl.
Property Loss	Moderately Low	50th pctl.
Economic Loss	Low	40th pctl.
Environmental	Moderately Low	50th pctl.
Probability	Weekly	58.4/year

Station 3 South (continued)

[2225]

Population: 3,994
Structure Value: $495M
Land Area: 3/mi²
Structure Density: 0.6k/mi²
Population Density: 1,489/mi²

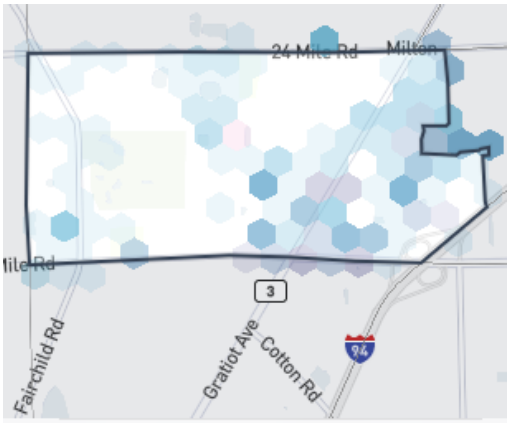


Overall Risk	Moderate	80th pctl.
Consequence	Medium	80th pctl.
Life Safety	Moderately Low	70th pctl.
Property Loss	Moderately Low	70th pctl.
Economic Loss	Very Low	10th pctl.
Environmental	Medium	80th pctl.
Probability	Weekly	58.7/year

Station 1 North

[2221.03]

Population: 2,847
Structure Value: $421M
Land Area: 2 mi²
Structure Density: 0.5k/mi²
Population Density: 1,402/mi²



Overall Risk	Low	30th pctl.
Consequence	Very Low	20th pctl.
Life Safety	Very Low	20th pctl.
Property Loss	Low	40th pctl.
Economic Loss	Moderately Low	60th pctl.
Environmental	Very Low	10th pctl.
Probability	Weekly	63.2/year

[2221.04]

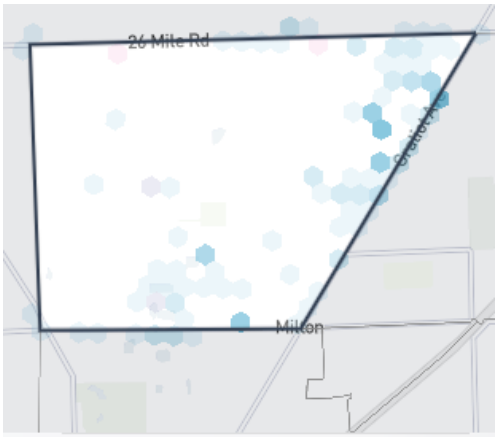
Population: 2,931
Structure Value: $308M
Land Area: 0.4 mi²
Structure Density: 2.0k/mi²
Population Density: 6247/mi²

Overall Risk	Low	40th pctl.
Consequence	Low	40th pctl.
Life Safety	Moderately Low	50th pctl.
Property Loss	Very Low	20th pctl.
Economic Loss	Very Low	0th pctl.
Environmental	Moderately Low	70th pctl.
Probability	Monthly	33.9/year

Station 1 North (continued)

[2215]

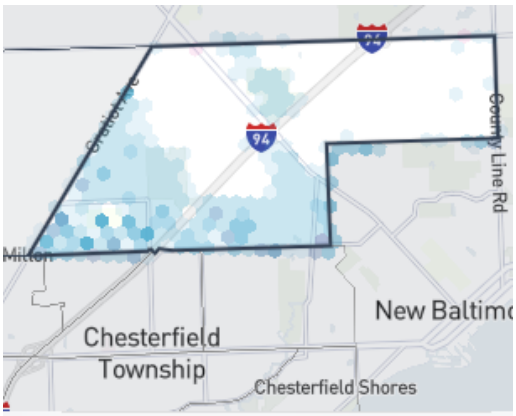
Population: 1,275
Structure Value: $385M
Land Area: 5 mi²
Structure Density: 0.1k/mi²
Population Density: 250/ mi²



Overall Risk	Low	0th pctl.
Consequence	Very Low	0th pctl.
Life Safety	Very Low	0th pctl.
Property Loss	Very Low	0th pctl.
Economic Loss	Moderately Low	70th pctl.
Environmental	Low	40th pctl.
Probability	Monthly	27.4/year

[2218]

Population: 5,005
Structure Value: $707M
Land Area: 7 mi²
Structure Density: 0.3k/mi²
Population Density: 760/mi²

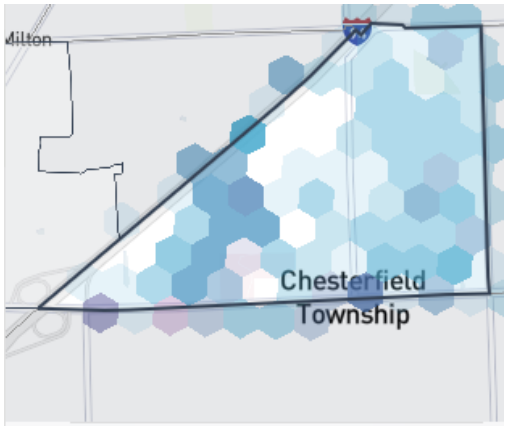


Overall Risk	Moderate	90th pctl.
Consequence	Moderately High	90th pctl.
Life Safety	Low	40th pctl.
Property Loss	Moderately High	90th pctl.
Economic Loss	Medium	80th pctl.
Environmental	Very High	100th pctl.
Probability	Weekly	58.2/year

Station 3 North

[2221.06]

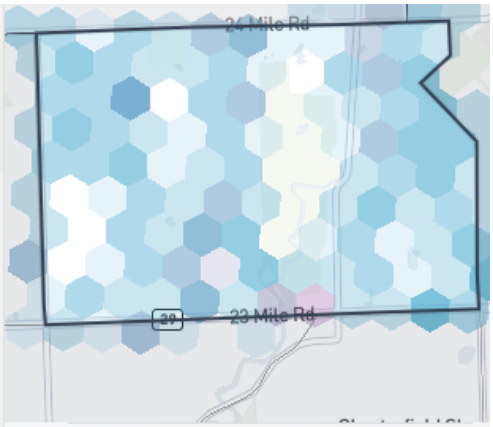
Population: 4,664
Structure Value: $462M
Land Area: 1 mi²
Structure Density: 1.0k/mi²
Population Density: 4,166/mi²



Overall Risk	Low	10th pctl.
Consequence	Very Low	10th pctl.
Life Safety	Medium	80th pctl.
Property Loss	Very Low	10th pctl.
Economic Loss	Very Low	20th pctl.
Environmental	Very Low	0th pctl.
Probability	Weekly	82.3/year

[2221.05]

Population: 5,046
Structure Value: $663M
Land Area: 2 mi²
Structure Density: 1.2k/mi²
Population Density: 3,353/mi²



Overall Risk	Moderate	60th pctl.
Consequence	Moderately Low	70th pctl.
Life Safety	Moderately Low	60th pctl.
Property Loss	Very High	100th pctl.
Economic Loss	Moderately Low	50th pctl.
Environmental	Moderately Low	60th pctl.
Probability	Weekly	53.2/year

Current Deployment and Performance

The Chesterfield Township Fire Department is strategically positioned with operations based out of two fixed fire stations: Fire Station 1 and Fire Station 3. These stations are located on the east and west sides of the Township, respectively.

These two stations play a crucial role in ensuring comprehensive coverage and rapid emergency response across Chesterfield Township. Each station is strategically positioned to serve its designated area and contribute to overall safety and well-being of the community.

Planning Zone	90th Percentile Travel Time (first unit)
2211	4:43
2682	5:41
2228	7:44
2212	5:56
2225	5:41
2221.03	5:11
2221.04	7:06
2215	7:31
2218	9:25
2221.06	5:38
2221.05	4:35

The Chesterfield Township Fire Department is conducting a thorough analysis of community risk assessment and response data to strategically identify the need for future station locations in the southeastern and northwestern quadrants of the township. Understanding types and frequencies of incidents is crucial in tailoring emergency response capabilities to the specific needs of the community.

Demographic analysis plays a key role in this assessment, considering population density, infrastructure, and potential growth in each quadrant. Projections for population increase or changes in land use are taken into account to anticipate future demands on emergency services. By integrating this demographic data with incident statistics, the fire department can develop a holistic view of the community's risk profile.

Response time analysis is another critical component of the assessment. Examining how quickly emergency services can reach different areas within the southeast and northwest quadrants of the township helps identify potential gaps in coverage. This data-driven approach ensures that future fire station(s) are strategically placed to optimize response times and enhance overall emergency preparedness.

Through this meticulous examination of community risk and response data, the fire department aims to make informed decisions regarding the establishment of new fire stations. The ultimate goal is to proactively address the evolving needs of the community, enhance public safety, and ensure a swift and effective emergency response.

Performance Objectives

The Community Risk Assessment and Standards of Cover document compiled by the department encompasses all the essential data required for validating the performance of each objective. The baseline and benchmark measurements included in this document align with the principles outlined in the 10th edition of the Fire and Emergency Services Self-Assessment Model (FESSAM), a publication by the Center for Public Safety Excellence.

The time and performance objectives related to the department's emergency response have undergone thorough review by fire department and public safety department administration. This review and subsequent endorsement ensures that the outlined objectives align with the organizational and community needs.

Cascade of Events

In any emergency, time is a critical issue. The longer it takes to get emergency personnel to the incident, the less likely it is that there will be a positive outcome. Each event begins at the point that there is a change in normalcy and ends when the state of normalcy is re-established. The time an incident occurs to the "on scene" time varies depending on the observer's perspective. The fire department considers that response time from when the 911 dispatch is received to when the first apparatus arrives on scene. The public, on the other hand, begins the countdown from the moment the incident is witnessed until trained professionals arrive. The incident itself has its own clock starting at the time of fire ignition or the medical emergency. The National Fire Protection Association refers to these time points as a Cascade of Events.

Call Processing Performance

Call processing time constitutes a component of the total response time metric and is monitored through the Computer Aided Dispatching (CAD) system. All time-related data is digitally recorded in the CAD system through human action overseen by the Chesterfield Township Department of Public Safety dispatchers. Public safety administration has not established a call processing performance benchmark; however, fire department personnel continue to actively work with dispatchers to reduce encumbrances and encourages the objective evaluation of call center performance.

Apparatus Turnout

The established apparatus turnout time benchmark for all fire/rescue related incidents is measured from receipt of alarm notification ("Dispatch") to apparatus response ("Enroute").

For 90% of all EMS related incidents, the established benchmark is a turnout time of 90 seconds.

For 90% of all other incidents, the established benchmark is 120 seconds.

Apparatus Travel Time

The established benchmark for apparatus travel time for all fire/rescue related incidents to all areas of the township is measured from apparatus response ("Enroute") to Arrival ("On Scene").

For 90% of all emergency incidents, the established benchmark for travel time is 7 minutes and 30 seconds.

Apparatus Response

The established benchmark for response of the first due apparatus for all fire/rescue related incidents to all areas of the township is measured from the time of call creation to arrival ("On Scene").

For 90% of all emergency incidents, the established benchmark for first due apparatus response is 10 minutes and 30 seconds.

Effective Response Force Arrival

The established benchmark for the arrival of all personnel and apparatus necessary to mitigate an emergency of any type is measured from the time of call creation to "ERF arrival."

For 90% of all emergencies, the established benchmark for ERF arrival is 11:00 minutes.

90th Percentile Times

90th Percentile times - Baseline Performance (all incident types)		Benchmark (Target)	2023-2025	GAP	2023	2024	2025
Call Handle	Call Creation to Dispatch	--	4:44		5:16	4:21	4:25
Turnout	Dispatch to En Route	2:00	2:28	0:28	2:30	2:31	2:22
Travel Time	En Route to On Scene	7:30	7:47	0:17	7:55	7:52	7:33
Total Response (first Unit)	Call Creation to On Scene	10:30	10:46	0:16	10:40	10:50	10:47
ERF	Call Creation to ERF	11:00	11:06	0:06	10:50	11:18	11:11

For 90 percent of all emergency medical service requests, the total response time for the arrival of the first due unit/ERF, staffed with a minimum of two (2) firefighters, one (1) being a licensed EMT-B, is 10 minutes and 30 seconds from the time of call creation.

90th Percentile times - Baseline Performance (all EMS calls)		Benchmark (Target)	2023-2025	2023	2024	2025
Call Handle	Call Creation to Dispatch	--	5:58	6:12	5:04	5:17
Turnout	Dispatch to En Route	1:30	2:14	2:20	2:18	2:09
Travel Time	En Route to On Scene	7:30	5:53	5:43	6:01	5:52
Total Response (first Unit)	Call Creation to On Scene	10:30	12:03	12:08	12:15	11:45
ERF	Call Creation to ERF	11:00	12:17	12:08	13:13	11:57

For 90 percent of all low-risk fire suppression incidents, the total response time for the arrival of the first due unit is 10 minutes and 30 seconds from time of call creation; this unit will be staffed with a minimum of three (3) firefighters and capable of providing 1500 gallons per minute capacity, initiating command, advancing an attack line, establishing water supply, and rescuing potential victims.

90th Percentile Times - Baseline Performance (Low Risk Fire)		Benchmark (Target)	2023-2025	2023	2024	2025
Call Handle	Call Creation to Dispatch	--	2:49	3:29	2:34	2:39
Turnout	Dispatch to En Route	2:00	2:36	2:37	2:37	2:32
Travel Time	En Route to On Scene	7:30	9:11	9:15	8:55	9:15
Total Response (first Unit)	Call Creation to On Scene	10:30	9:07	9:31	8:59	9:15
ERF	Call Creation to ERF	11:00	9:53	9:31	10:21	9:51

For 90 percent of all medium-risk fire suppression incidents, the total response time for the arrival of the first due unit is 10 minutes and 30 seconds from time of call creation; this unit will be staffed with a minimum of three (3) firefighters and capable of providing 1500 gallons per minute capacity, initiating command, advancing an attack line, establishing water supply, and rescuing potential victims. The total response time for the Effective Response Force is 20 minutes, consisting of 13 personnel, 3 engines, one aerial apparatus, and one water tender carrying a minimum of 1,200 gallons of water.

90th Percentile Times - Baseline Performance (Medium Risk Fire)*		Benchmark (Target)	2023-2025	2023	2024	2025
Call Handle	Call Creation to Dispatch	--	1:34	--	--	--
Turnout	Dispatch to En Route	2:00	2:53	--	--	--
Travel Time	En Route to On Scene	7:30	10:28	--	--	--
Total Response (first Unit)	Call Creation to On Scene	10:30	10:15	--	--	--
ERF	Call Creation to ERF	20:00	20:18	--	--	--

*The Chesterfield Township Fire Department responds to an average of 10-12 "medium risk" fire incidents per year; therefore, all responses from 2023-2025 are compiled here.

For 90 percent of all low-risk Hazmat incidents, the total response time for the arrival of the first due unit is 10 minutes and 30 seconds from time of call creation; this unit will be staffed with a minimum of three (3) firefighters and capable of providing 1500 gallons per minute pumping capacity, initiating command, and operating at the "HAZMAT Operations" level.

90th Percentile Times - Baseline Performance (all Hazmat calls)		Benchmark (Target)	2023-2025	2023	2024	2025
Call Handle	Call Creation to Dispatch		3:35	2:30	7:55	3:28
Turnout	Dispatch to En Route	2:00	2:24	2:12	2:29	2:20
Travel Time	En Route to On Scene	7:30	7:47	6:46	7:12	8:02
Total Response (first Unit)	Call Creation to On Scene	10:30	9:28	9:23	9:08	10:52
ERF	Call Creation to ERF	11:00	9:28	9:23	9:08	10:52

Critical Task Analysis

The critical task analysis serves as a comprehensive document outlining the essential tasks required to effectively manage and mitigate incidents, taking into account the appropriate level of risk. This analysis encompasses a detailed description of the critical tasks, along with the personnel necessary to carry out these tasks. The document also includes information about the current deployment locations of resources and outlines standard levels of human resource response typically deployed by the department to address and mitigate based on their assessed level of risk.

By providing a thorough overview of critical tasks and the corresponding personnel deployment, critical task analysis becomes a valuable resource for ensuring proactive and well-coordinated response to various incidents.

This systematic approach enables agencies to optimize their resource utilization, enhance preparedness, and mitigate incidents with efficiency and effectiveness, all while prioritizing the safety of both responders and the public.

Scene Operations

Successful mitigation of fire incidents involves a strategic understanding of the dynamics of fire growth, property and life risk variables, and the corresponding fire ground tasks. These tasks, crucial for loss mitigation, can be categorized into two main types: fire flow and life safety.

Fire flow tasks are centered around delivering water to the fire and ensuring life safety. They can be executed by using hand lines or master streams. A 1-¾ inch hose, requiring a minimum of two firefighters, can flow roughly 150 gallons per minute; alternatively, larger diameter hoses requiring three to four firefighters can flow 300 gallons per minute, and stationary master streams between 500 and 1,000 gallons per minute.

The choice between hand lines and master streams is influenced by factors such as the fire's growth stage, threats to life safety, the number of available responders, and the selected method of attack (offensive/defensive). In an offensive attack, firefighters use hand lines to enter structures, simultaneously addressing the fire and searching for victims. However, if the fire surpasses survivability or jeopardizes structural integrity, a defensive attack is employed. The decision to use a defensive approach prioritizes firefighter safety, acknowledging when the risk outweighs the potential reward. During a defensive attack, incident stabilization and property protection become primary objectives.

Life safety tasks are contingent on the number, condition, and location of the victims. The Chesterfield Township Fire Department prioritizes an offensive attack whenever possible, considering life safety/survivability, fire attack/property conservation, and incident stabilization.

The department adopts the following approach:

- **We will take significant risks to protect savable lives.**
- **We will take some risk to safeguard savable property.**
- **We will not risk firefighter safety to save what is already lost.**

The incident commander, before on-scene procedures commence, plays a crucial role in selecting the appropriate initial strategy of offensive or defensive, ensuring a coordinated an effective response to fire incidents.

Fire Suppression Critical Tasking

These "critical tasks" are assignments that are the expected minimum number of time-sensitive tasks that are required to safely and efficiently mitigate a fire emergency. For the purposes of this task analysis, these events are categorized into three ascending risk levels:

Low – this encompasses events like vehicle fires, trash fires, and other minor fires that present no immediate threat to life.

Medium – A standard house fire, including room-and-contents fires and grass/wildland fires with exposures.

High – Fires in multi-family dwellings, commercial buildings, and rapidly moving wildland fires.

	Low Risk	Medium Risk	High Risk
Incident Command	1	1	3
Water supply/Pump ops	1	1	2
Fire Attack	1-2	2	6
Water Supply/Utilities		1	2
Search/Ventilation		2	6
Forcible Entry/Ladders		2	4
"On-Deck"/RIC		4	4
Total or "ERF"	3-4	13	27

The Chesterfield Township Fire Department has constructed its critical tasking to reflect the availability of daily staffing and nearby mutual aid resources. Beginning with the industry standard NFPA and NIOSH guidelines, department leadership evaluated past frequency of task completions and consequence of "double assignment" of tasks, allowing for the reduction from the national standards and decreasing the demand on reciprocal partners.

EMS Critical Tasking

Low – Standard single or two-patient medical responses

Medium – Medical event involving 3-10 patients

High – Mass casualty incident or "active shooter" event

	Low Risk	Medium Risk	High Risk
Incident Command		1	3
Patient Care	2	5	
Rescue Task Force			8-10
Total or "ERF"	2	6	11-13

The Chesterfield Township Department of Public Safety Dispatch Center filters EMS service requests through an internal filter based on EMD and directives from public safety administration, dispatching fire department EMS units only to the most demanding and high-consequence incidents. The critical tasking conducted by EMS leaders is tailored to anticipate manpower levels demanded by these levels of incidents.

Technical Rescue Critical Tasking

Because of the multiple individual disciplines included within the Technical Rescue Program and their inherent differences, the individual tasks for each risk level are not displayed in the chart below. A more granular breakdown of the tasks required for each event is included as an annex.

	Low Risk ERF	Medium Risk ERF	High Risk ERF
Trench Collapse	7	26	43
Machine Rescue	6	8	14
Vehicle Extrication	4	8	12
Rope Rescue	7	12	17
Confined Space Rescue	7	12	16
Structural Collapse	7	24	38

Chesterfield Township Fire Department Technical Rescue team members are proficient in operational-level technical rescue responses across multiple disciplines, including rope rescue, trench collapse, structural collapse, and confined space emergencies. Additionally, all department members are proficient in vehicle extrication and stabilization. For all incidents beyond the “low risk” level, a mutual-aid response from the Macomb County Technical Rescue Team is requested by first responders, allowing the department to “scale-up” responses to any level needed.

HAZMAT Response Critical Tasking

Low – Small natural gas or propane leaks, carbon monoxide incidents

Medium – Hazardous materials releases that are contained, but are potentially lethal

High – IDLH or combustible atmospheres with structures, or large scale releases of hazardous materials

	Low Risk	Medium Risk	High Risk
Incident Command	1	1	2
Entry Team	2	2	4
Rapid Intervention Team		2	4
Decontamination			4
Safety Officer	1	1	1
Medical Team			2
	4	6	17

All Chesterfield Township Fire Department personnel are initially certified at the HAZMAT Operations level and routinely receive training to maintain proficiency at this level. This ensures that qualified personnel respond quickly to all incidents involving harmful substances.

Marine Rescue Critical Tasking

Low – One victim standing in water or on ice, on the surface and accessible by a rescue swimmer or ice rescue technician; multiple victims capable of self-rescue with some assistance

Medium – One victim in moving water, on the surface and accessible by shore support or rescue swimmer; one victim recently submersed in standing water and accessible by a rescue swimmer/diver

High – Multiple victims in the water or on ice, submerged or injured and inaccessible by shore support or ice rescue technicians; multiple victims submerged and entrapped, only accessible by rescue divers

	Low Risk	Medium Risk	High Risk
Incident Command	1	2	3
Boat Operator	1	1	1
Rescue Swimmer/Diver/Ice Rescue Tech.	1	1	2
Backup Diver	1	1	2
Boat Crew Member		1	1
Shore Support	1-3	3-5	5-8
	1	9-11	14-17

Correlation of CRA/SOC to CFAI Accreditation Model

Compliance Methodology

As referenced in the Center for Public Safety Excellence, Community Risk Assessment and Standards of Cover manual, a compliance methodology needs to be in place to guide the overall monitoring, assessing, and reporting of the ability of the existing system to meet expected outcomes. Remedial actions must also be identified for the items found in the most need of attention.

Establishing Performance Measures

Fire department leadership will continue to review the Standards of Cover on an annual basis and republish it every five years; performance measures will be evaluated quarterly, and formal program reviews every year.

Communicating Expectations to the Organization and Evaluating Performance

Bi-monthly meetings will be held with all command staff to communicate the measures, expectations, and performance found in the CRA-SOC.

Performance will also be reviewed weekly with formal reviews completed quarterly. Comparisons between current, baseline, and benchmark performance statistics will be evaluated and addressed as needed. Computer-aided systems will assist in tracking the performance measures. Areas in need of improvement will be addressed accordingly during the quarterly reviews.

Compliance Strategy

The department's command staff will assist the accreditation manager in the maintenance of the CRA-SOC document, with individual team leaders providing input during the formal annual appraisal process.

Continuous Improvement

An emphasis will be made on these efforts as a "process" rather than a "project." A project has a finite endpoint, while a process is continuous and adaptive. The Chesterfield Township Fire Department has a fully developed strategic planning process, which includes components of the Standards of Cover. These documents serve as a strategic road map for the organization.

Conclusion

The Chesterfield Township Fire Department recently concluded its first ever comprehensive assessment of community risk, resulting in the development and adoption of the Community Risk Assessment – Standards of Cover (CRA-SOC). Building upon our ongoing commitment to delivering exemplary services to the community, this document reflects our first endeavor in defining and communicating performance measures.

Continuing our dedication to regularly assessing and evaluating community risks, encompassing both fire and non-fire related hazards, we employ the measures established in the CRA-SOC. The insights gained from assessing response times are instrumental in refining our existing services and exploring the need for new ones. The data collected for this document aids in substantiating the case for improved and expanded services, including potential additions to the department's ranks and the construction of additional facilities.