2024

Community Risk Assessment: Standards of Cover

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Executive Summary

In public safety, effective planning and resource allocation are paramount to ensure the safety and well-being of communities. Two vital components that guide the operations of fire and emergency service agencies are the "Community Risk Assessment" (CRA) and the "Standards of Cover" (SOC). This executive summary provides an overview of these critical elements, emphasizing their significance in improving emergency service delivery and enhancing community safety.

A Community Risk Assessment (CRA) is a systematic process of identifying, analyzing, and prioritizing risks and hazards within a community. The CRA provides the foundation upon which a SOC is built and serves as a critical tool for proactive risk mitigation. Key points regarding the CRA include:

- **Risk Identification:** The CRA involves collecting data on a wide range of risk factors, such as fire hazards, natural disasters, demographic information, and historical incident data.
- **Risk Prioritization:** Once risks are identified, they are categorized and prioritized based on their severity and potential impact on the community.
- **Informed Decision-Making:** The CRA informs the district's strategic planning, ensuring that resources are allocated to address the most significant risks and vulnerabilities within the community.
- **Continuous Improvement:** The results of the CRA guide the development of specific goals and objectives for risk mitigation and community safety enhancement.

A Standards of Cover (SOC) is a dynamic and data-driven document that plays a pivotal role in shaping the strategies, priorities, and resource allocation decisions of fire and emergency service agencies. The SOC serves as a blueprint for how the district will provide services to its community. Key points regarding the SOC include:

- **Strategic Planning:** The SOC involves comprehensive strategic planning, drawing upon data and analysis to assess community risks and needs.
- **Resource Allocation:** It guides the allocation of resources, including personnel, equipment, and facilities, to ensure the district is adequately prepared to respond to emergencies effectively.
- **Performance Benchmarks:** The SOC includes performance benchmarks and response time goals, which serve as metrics to evaluate the district's effectiveness in serving the community.
- **Dynamic Document:** A SOC is not static but evolves with changing community needs and risk factors. It requires periodic reviews and updates to stay relevant.

The Community Risk Assessment and Standards of Cover are fundamental tools for fire and emergency service agencies. The SOC provides a structured framework for service delivery and resource allocation, while the CRA offers a data-driven approach to understanding community risks and vulnerabilities. Together, these documents enable the district to make informed decisions, enhance public safety, and adapt to changing circumstances. Regular updates and reviews of these documents are essential to keep them aligned with evolving community needs and risk factors. By diligently adhering to the principles outlined in the CRA and SOC, the district fulfills the mission to protect and serve the community with the highest level of professionalism and efficiency.

It is crucial for North Metro Fire Rescue District to continue its commitment to these essential practices to ensure the safety and well-being of the community it serves.

Section 1 – Documentation of Area Characteristics

Legal Basis

The North Metro Fire Rescue District (NMFRD, also referenced as the "district") was established on January 1, 2000, when the merged organization known as North Metro Fire Rescue Authority, consisting of Thornton Fire Department and West Adams County Fire Protection District dissolved. NMFRD is a special district that legally exists under Colorado Revised Statues Title 32 (Special Districts § 32-1-1002 Fire Protections Districts – Additional Power and Duties) (1) to provide fire and emergency medical services to areas north of the City of Denver. Specifically, the district covers 57.69 square miles that consist of the City of Northglenn, the City and County of Broomfield and unincorporated areas of Adams, Boulder, Jefferson and Weld counties. The district extends from Erie Parkway to the North, 92nd Avenue on the South, Indiana Street on the West and the South Platte River on the East.

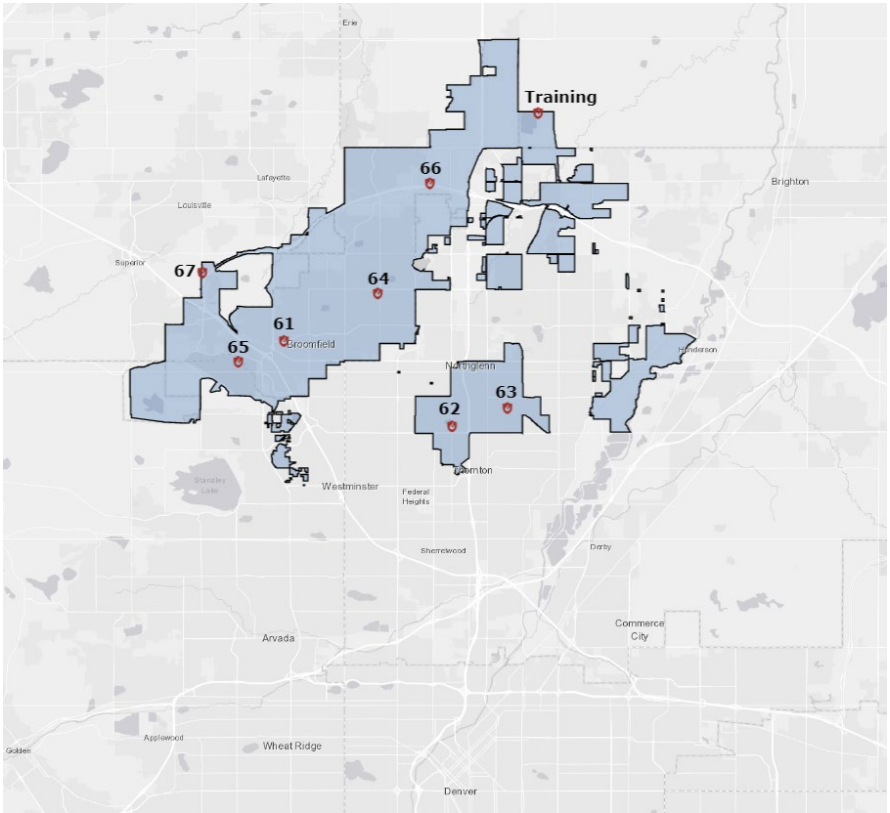


Figure 1 - North Metro Fire Rescue District Boundaries

The district is governed by a board comprised of five directors, eligible electors. The term of each director is determined by law through elections held in compliance with the applicable provisions of the Colorado Local Government Election Code, C.R.S. § 1-13.5-101, et seq., the Uniform Election Code of 1992, C.R.S. § 1-1-101, et seq. ("Election Codes") and the Special District Act. The five-member board establishes district policies and is responsible for ensuring that the fire chief implements those policies. The power and authority of the board, acts constituting a conflict of interest and communication processes between the board and the administrative structure of the district are explained in *North Metro Fire Rescue District*

Board Bylaws (effective 1/9/2021). The services, finances and programs of the district are reviewed by the board at regular, special or emergency meetings. At the end of each calendar year, the board designates the time and place for all regular board meetings for the following year. Under the Colorado Sunshine Law, C.R.S. 24-6-401, et seq. ("Sunshine Law") all meetings of a quorum of the board, or three or more board members, whichever is fewer, held for the purpose of discussing public business or taking a formal board action must be open to the public. The minutes of regular meetings, special meetings (including study sessions), and emergency board meetings are prepared by chief staff, reviewed by legal staff and approved by the board and attested by the recording secretary. The approved and signed official minutes are available for public inspection.

Services provided by the department include fire protection, hazardous materials response, specialized rescue services, wildland fire suppression, aircraft rescue and firefighting, fire prevention and investigation, life safety education and preparedness training, emergency medical response and transport.

Department History

The North Metro Fire Rescue District (formerly known as West Adams County Fire Protection District) was formed on November 8, 1946, by volunteers from Eastlake, Colorado.

In 1967, the fire department hired career firefighters to staff each of the district's fire stations. Generally, only one firefighter was on duty per station and these firefighters would be met by available volunteer firefighters on the scene. Over the years career firefighters were hired to increase the staffing at the district's stations. The district did not become 100% career until January 1, 2000. In January of 1973, district career firefighters organized and established a chapter of the International Association of Fire Fighters—Local 2203.

The district moved to providing full-time Advanced Life Support medical services in 1986. To accomplish this, a large group of employees became certified as Emergency Medical Technician-Intermediates (EMT-I). This change improved the level of care and types of medical procedures available to the community in the pre-hospital setting.

With a growing fire district and an expanding service level, the district sought and received approval for a bond issue in 1989. Bond funds were used to remodel existing fire stations, purchase new apparatus, and air packs for firefighters and build a new station at the Jefferson County Airport, which was completed in 1992. In that same year (1992), a mil levy proposal was introduced to the voters to help staff the new

station and address other initiatives. This mil levy proposal was not approved by the district's voters.

Without the ability to increase staffing, and to provide the best services to the community, West Adams County Fire Protection District and Thornton Fire Department merged fire departments to form the North Metro Fire Rescue Authority (NMFRA) on January 1, 1994. This merger provided emergency services to the north metro area for six years until its dissolution on December 31, 1999. Differing and sometimes conflicting service level demands required that the city and the district re-establish their separate fire departments to better focus on the service level priorities of each community. The two departments still enjoy a good working relationship and provide continuous assistance to one another through Automatic Aid agreements, closest unit dispatching and aligned firefighter training operations.

Actions taken during the time the two departments were merged as the NMFRA included the closing of two stations and the addition of one station, better located, to serve the area impacted by the closures. Administrative offices were also consolidated in a single location.

The year 2000 marked significant change for the district. With the merger dissolving on January 1, 2000, to more accurately reflect the numerous counties and municipalities the district serves, the official name changed to North Metro Fire Rescue District. NMFRD also became a 100% career firefighting organization and the previously closed fire station 62 was reopened. The district began preparations to hire 21 firefighters, still the largest recruit class in the district's history.

In September of 2001, two events drastically changed NMFRD and helped shape its future structure and operations. First, the district responded to a service level void in the community and established a medical transport capability for a portion of the district. This service has become highly valued by district citizens. In addition, thousands of miles away, the tragic events of September 11 influenced the district's day-to-day operations and future service demands. The terrorist attacks greatly changed the fire service and have shaped training needs; emergency call types; security of stations, personnel and fire trucks; and more. The effects of 9/11 continue today and will drive more change for the future.

For the decade beginning in 2000, the district grew through what were mostly rural areas. This expansion, coupled with property devaluations, caused NMFRD to seek a bond and mill levy increase in 2006. This ballot initiative was overwhelmingly supported by the community. The approved bond allowed the district to construct a training center fire station in 2008 and Station 67 in 2009. In addition to the two stations, the bond allowed the district to construct the current training center, training grounds and maintenance facility in 2008. The bond also supported the construction of the current administrative facility in 2010.

This new district headquarters allowed the consolidation of administrative staff that had previously been in three separate buildings, greatly enhancing administrative efficiency.

Around this same period, the intensifying housing recession devastated the district's financial stability. Property taxes dropped precipitously and negatively affected the district's budget. Budget cuts became necessary and wage increases, training programs and needed safety and emergency equipment purchases were postponed. Fortunately, in 2014, after a concerted, coordinated effort by the district board, administration, line personnel, labor leaders and community leaders, the district's citizens passed another mill levy increase, which allowed NMFRD to avoid personnel reductions or station brownouts.

The approval of the mill levy increase allowed the district to increase minimum staffing to four personnel on the fire engine at station 65. This specific staffing decision occurred because station 65 did not operate with a medic unit within the station and the risk related to their response district warranted additional staffing. In 2015, the district hired nine additional personnel to staff engine 67. Previously, station 67 was staffed with only a medic unit and that medic unit moved to station 66, which houses an engine and can better respond to the distribution of calls in the northern area of the district.

In 2018, the district completed an extensive remodel to station 63, which included the relocation of apparatus bays, an upper story above the bay for the firefighter's quarters, new kitchen, new fitness room and additional computer workstations. Additionally, station 62 received an exterior and interior remodel with all the similar modern fire station needs completed in 2021. The district recently rebuilt Station 61 and is conducting long-term planning to build an additional two fire stations.

Financial Basis

Most revenue for the district, 71%, is received from property taxes. Approximately 12% of the yearly revenue is from medical transportation fees. The district also receives revenues from specific ownership tax, permits, training center rentals, fleet maintenance contracts, grants and interest.

Property taxes in Colorado are impacted by the Gallagher amendment, passed in 1982 and the Taxpayer Bill of Rights (TABOR) amendment passed in 1992. These two separate amendments have had a dual, interrelated impact on property tax revenue for the district. Mechanically, Gallagher works by establishing target percentages for the portions of the property tax base comprising residential and nonresidential

property. The target percentage is achieved using different statewide assessment rates for different classes of property. Because the nonresidential assessment rate is fixed constitutionally at 29 percent and the actual value of residential property has increased more quickly than that of nonresidential property, the residential assessment rate (RAR) has declined over time. TABOR requires voter approval for certain tax increases which, in combination with the Gallagher Amendment has frozen the RAR and, in turn, the local government's tax base.

Community History and Topography

North Metro Fire Rescue District protects and serves 57.69 square miles and is about 10 miles north of Denver and 20 miles west of Denver International Airport. Most of the district is comprised of the City and County of Broomfield and the City of Northglenn. The remaining areas include unincorporated areas of Adams, Boulder, Jefferson and Weld counties.

Broomfield occupies approximately 34 square miles of district area, of which 33 square miles are land and 0.6 square miles are water. (2) Broomfield was founded in 1877 and was incorporated in 1961 with the Home Rule Charter established in 1974. Broomfield became a city and a county on November 15, 2001. (3) It is the smallest county by area in Colorado and the fifth smallest in the United States. (4) However, Broomfield is the second most densely populated county in Colorado behind Denver. (5) The city and county of Broomfield makes up the western portion of the NMFRD and has over 8,000 acres of private and public open lands with (6) elevation ranges from 5,096 to 5,856 feet. The open lands, both private and public, are short or scrubby vegetation and are mostly grasses or shrubs. The following map depicts the City and County of Broomfield within the North Metro Fire Rescue District border.

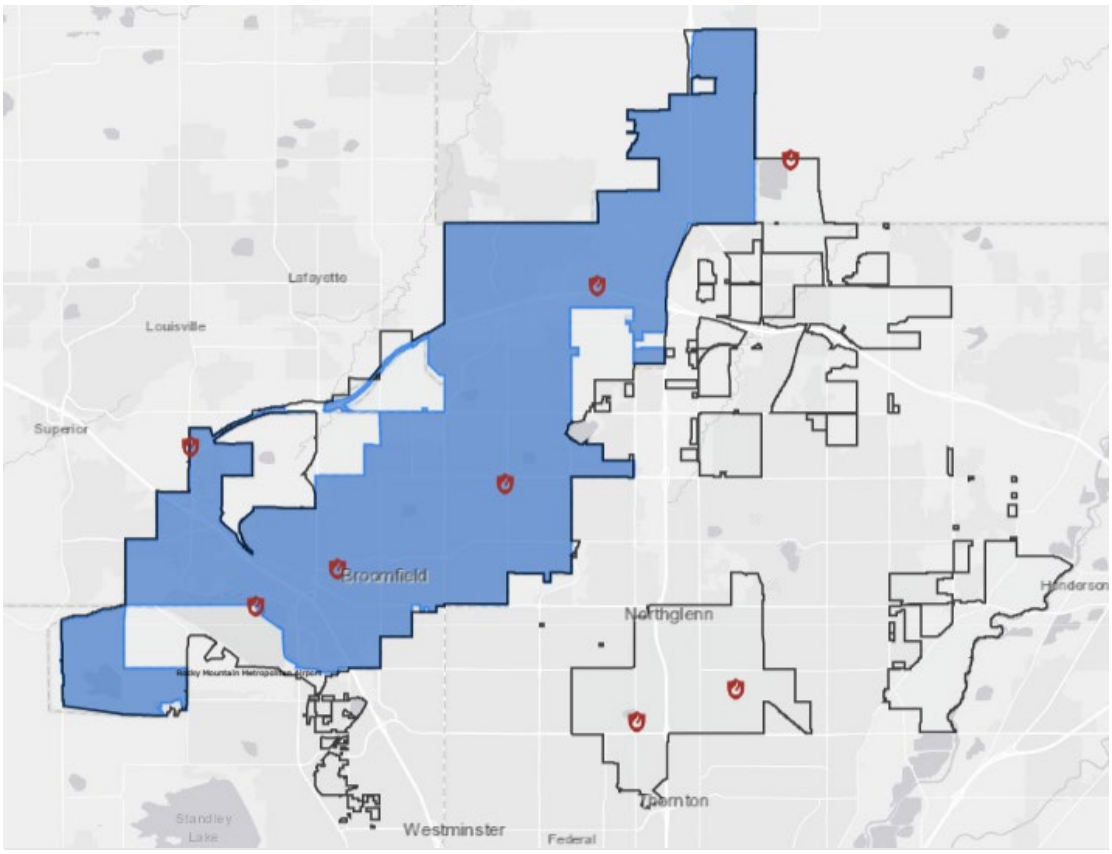


Figure 2 – City and County of Broomfield (blue) within the NMFRD border.

Northglenn, the other major city within the district, makes up the eastern portion of North Metro Fire Rescue District and has a total area of 7.5 square miles, of which 7.4 square miles is land and .077 square miles is water. (7) Northglenn is a Home Rule Municipality located in Adams and Weld counties, originally designed as a 280-acre subdivision north of Denver in unincorporated Adams County. By October of 1962, the new development grew to have 10,000 residents and 3,000 homes. The development received national recognition and was named "The most perfectly planned community in America" by Life Magazine and the National Association of Home Builders in 1961. In 1962, the residents of Northglenn voted to incorporate but faced opposition from the neighboring city of Thornton. Northglenn received a favorable ruling on January 31, 1969, after the Colorado Supreme Court determined that the vote was valid, and the city officially incorporated on April 19, 1969. (8) Northglenn has 27 parks and open spaces that cover more than 250 acres. (9) The city has an elevation of 5,377 feet and the open spaces are primarily dominated by short or scrubby vegetation and usually consist of natural grasses or shrubs.

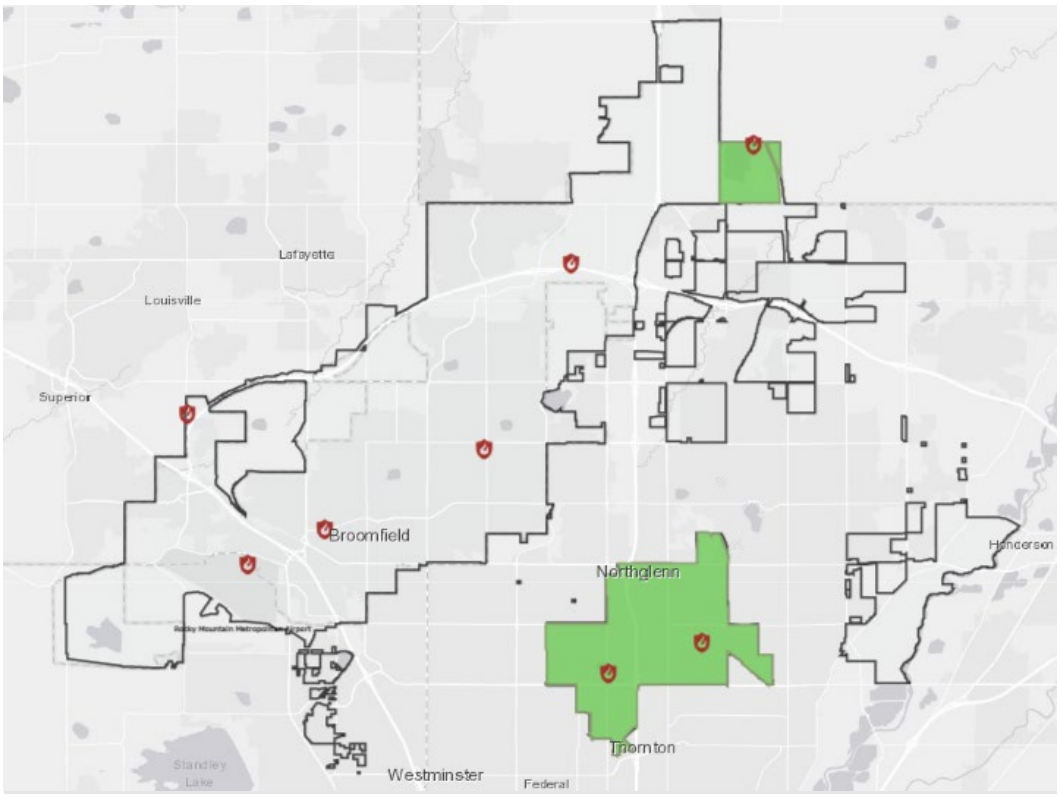


Figure 3 - City of Northglenn (green) within the NMFRD border.

Unincorporated areas of Adams, Boulder, Jefferson and Weld counties make up the remaining 16.83 square miles of the district. These areas tend to be more rural in nature with single-family homes on multiple acres of land. Homes are generally more dispersed; however, there are subdivisions of tract homes within these same areas. The mix of vegetation within these areas are made up of agricultural farmland or open plains and grasslands that consist of shortgrass, sand hill prairie and tallgrass prairie.

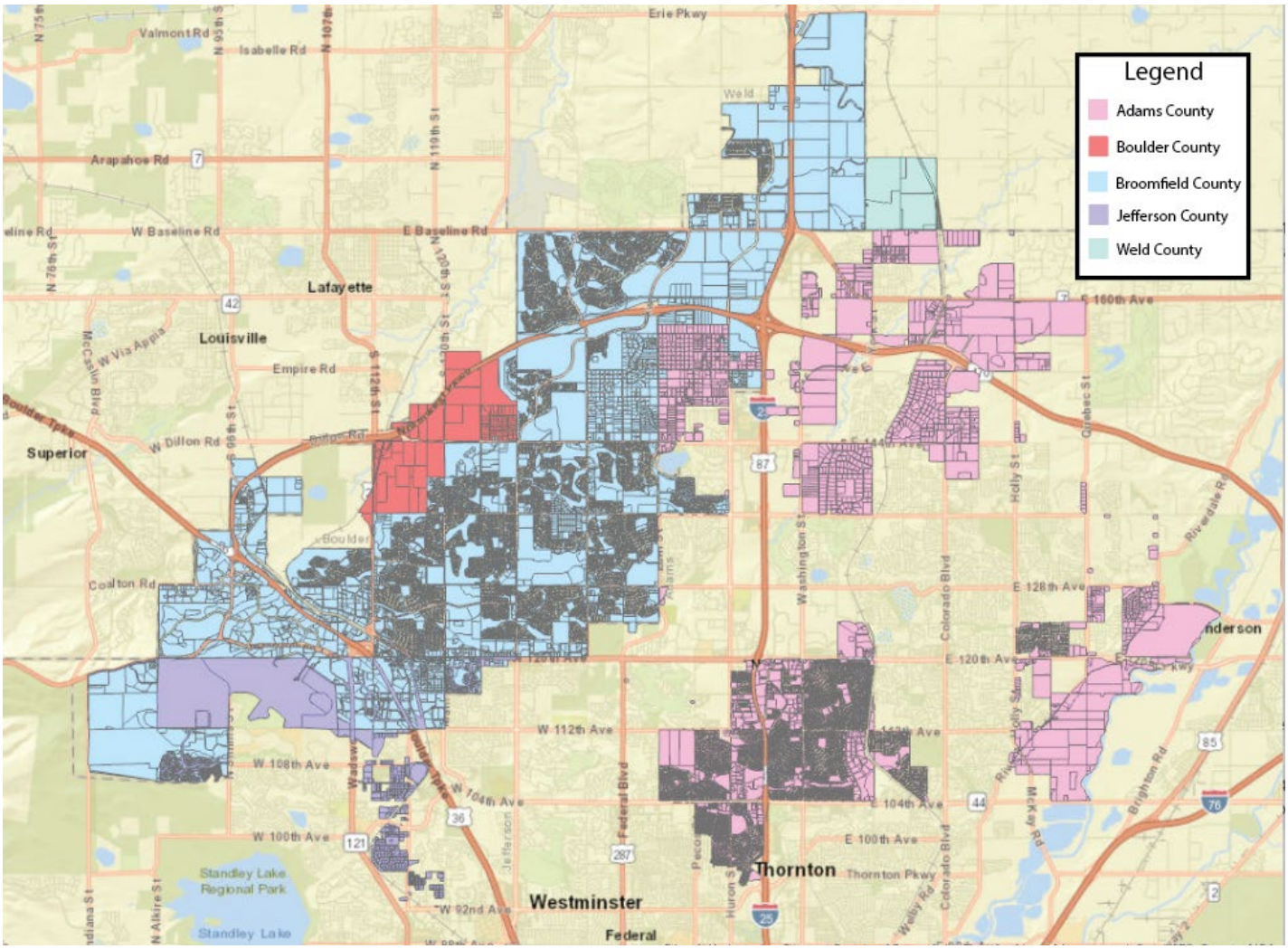


Figure 4 - Counties within NMFRD Boundary

Climate

The district has a semi-arid climate, which tends to support short or scrubby vegetation and usually consists of either grasses or shrubs. The area has a unique microclimate, which tends to have higher temperature days per year than the Denver metro area. Of the 54 days each year that the district's temperature reaches 90 °F (32 °C) or higher, approximately eight of those days are 100 °F (38 °C) or warmer. In comparison, Denver sees just 31 days of 90 °F (32 °C) temperatures. On average, there are 248 sunny days per year. The summer high in July is around 92 °F (33 °C) and the winter low in January is 19 °F (-7 °C). (11). The district also experiences eight fewer days of weather below 32 °F (0 °C) than Denver each year. (10) The

district gets 18 inches of rain, on average, annually. The US average is 39 inches of rain per year. The district also averages 42 inches of snow per year while the US average is 26 inches annually.

The major contributing factors related to the district's climate are periods of drought in the summer months and snowstorms in the winter months. When precipitation is low, the likelihood of wildfires occurring within the district increases, which can lead to lower resource availability at both a local and regional level.

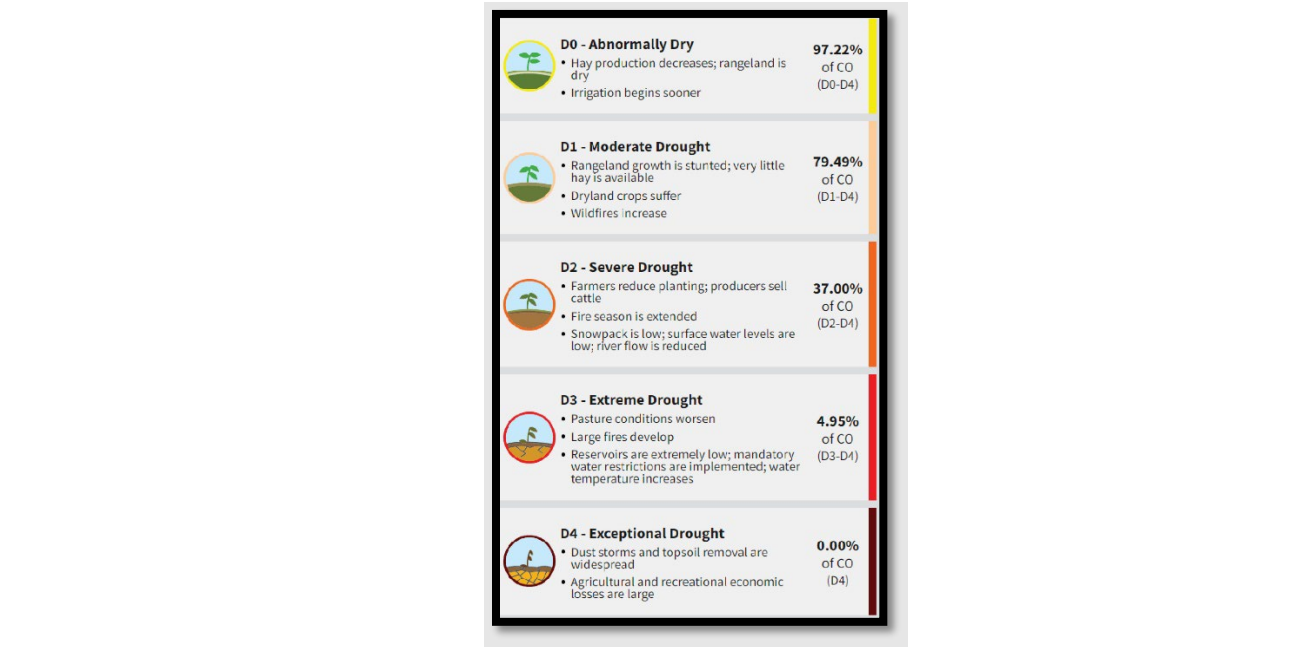


*Figure 5 - 2001 - 2024 Drought in Colorado (**12**)*

Population and Community Demographics

The 2023 population of the district was 125,968 with a daytime population of 117,318. The 2028 estimated population is 131,629. The median age of the district is 37.4 years old with a median annual household income of $100,078, which, according to Esri Community Analyst Colorado Geographical profile, is 15.5% higher than Colorado's median annual household income of $85,656. The district's median net worth is $213,987, which, according to the same previous reference, is 9.2% higher than Colorado's median net worth of $195,263. 48.5% of the population has a Bachelor's, Graduate or Professional Degree and 26.7% of the district population has some college. The following chart is the demographic profile for the entire North Metro Fire Rescue District.

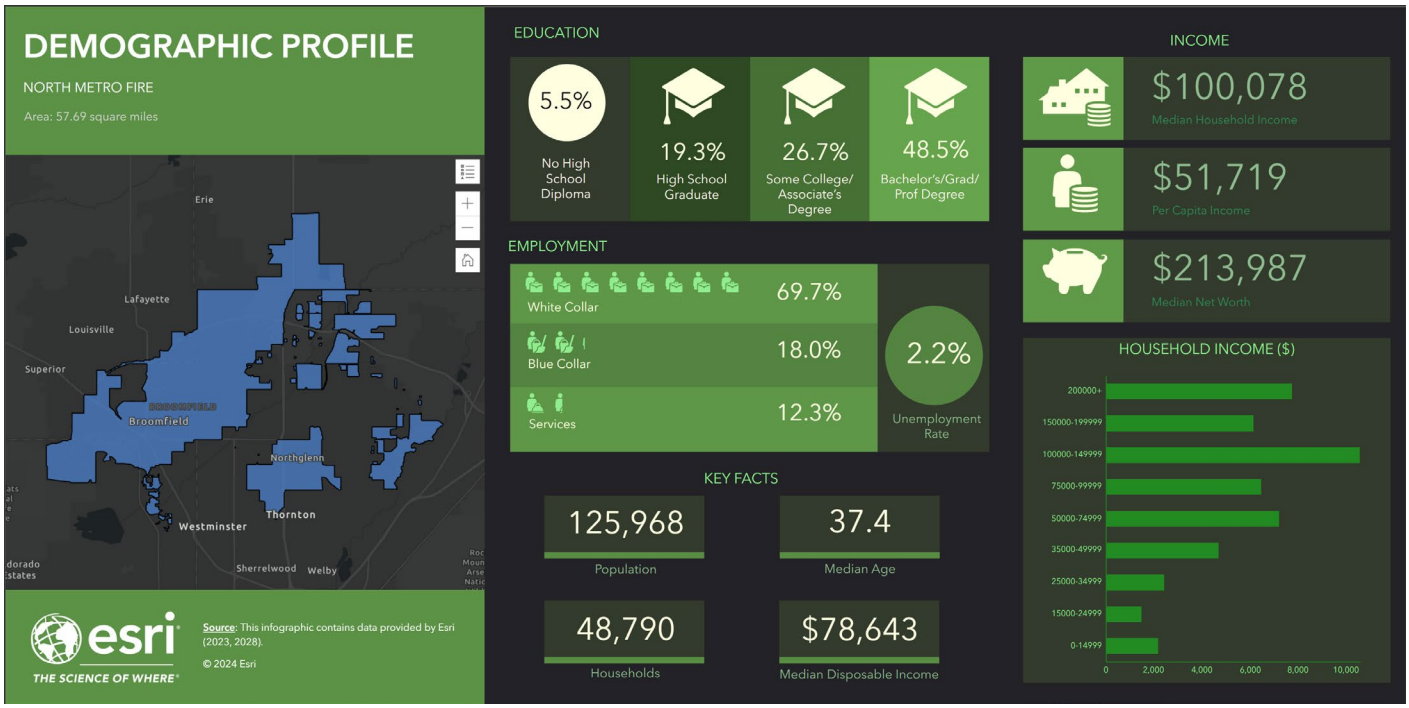


Figure 6 - ESRI Community Analyst NMFRD Demographic Profile, 2023

The following maps display the district's population, median age, household income, household size and diversity index by emergency response zone (ERZ). ERZ's are discussed in the All-Hazard Risk Assessment for the Community.

District 2023 Population by Emergency Response Zone

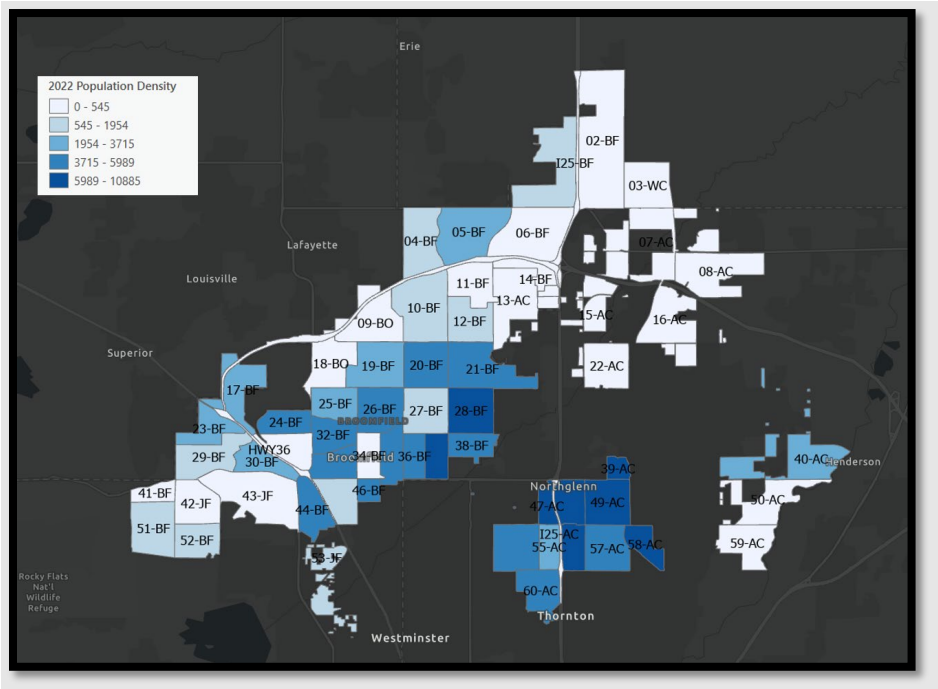


Figure 7 - Esri ArcGIS Pro Demographic Data – Population Density, 2023

District 2023 Median Age by Emergency Response Zone

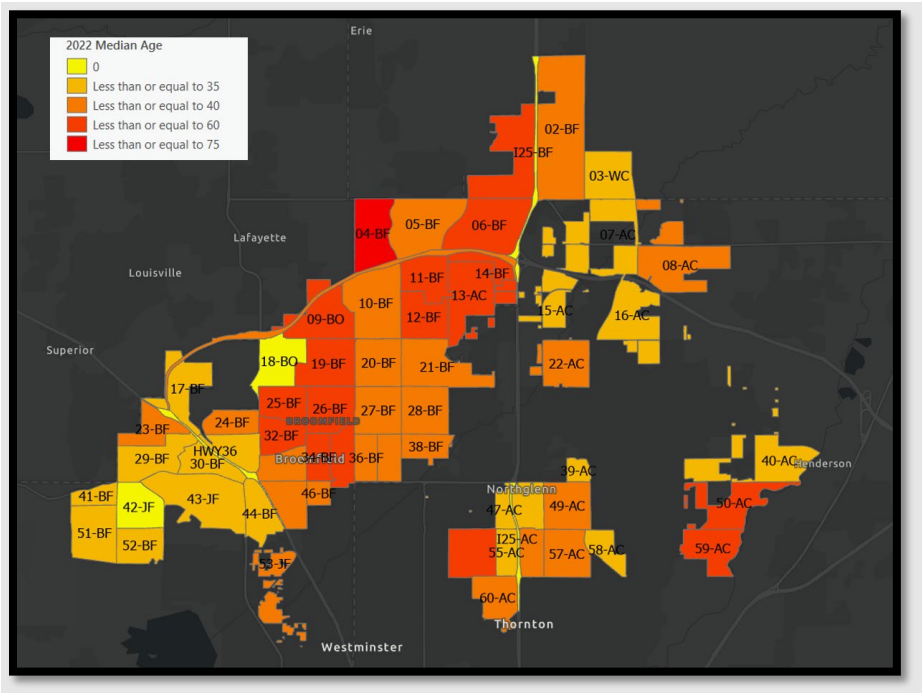


Figure 8 - Esri ArcGIS Pro Demographic Data - Median Age, 2023

District 2023 Median Household Income by Emergency Response Zone

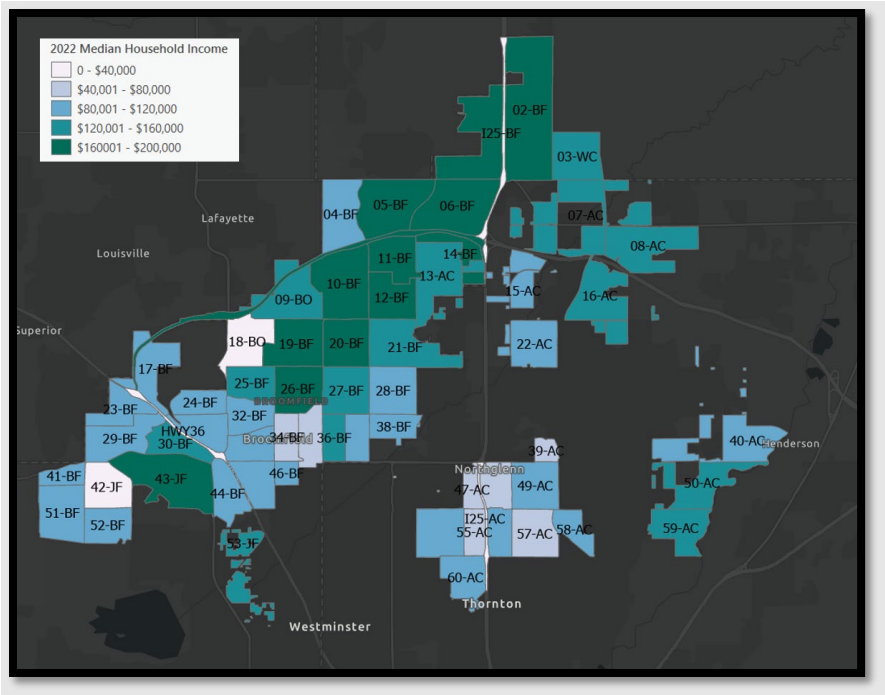


Figure 9 - Esri ArcGIS Pro Demographic Data - Median Household Income, 2023

District 2023 Average Household Size by Emergency Response Zone

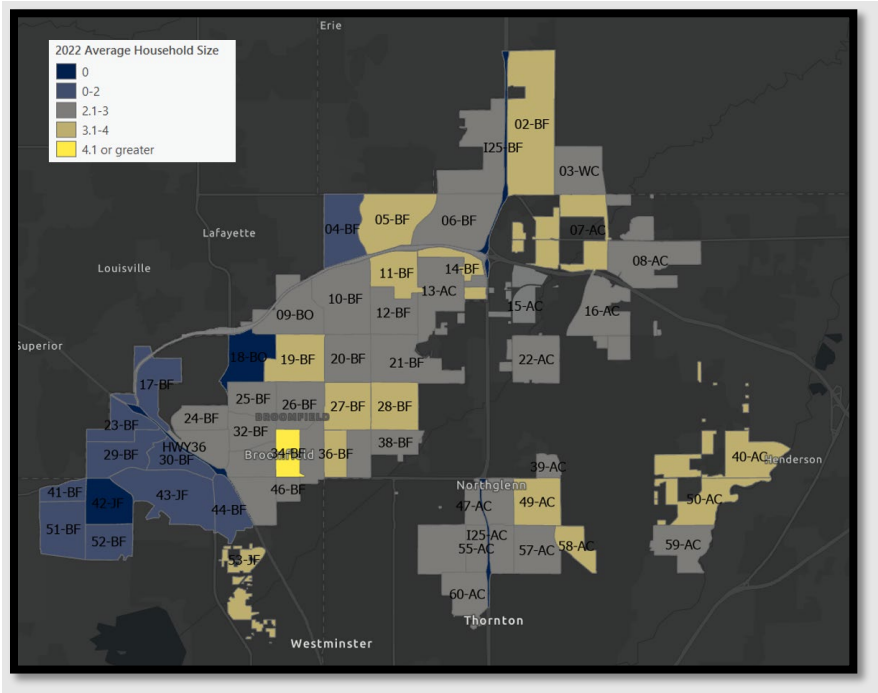


Figure 10 - Esri ArcGIS Pro Demographic Data - Average Household Size, 2023

District 2023 Diversity Index by Emergency Response Zone

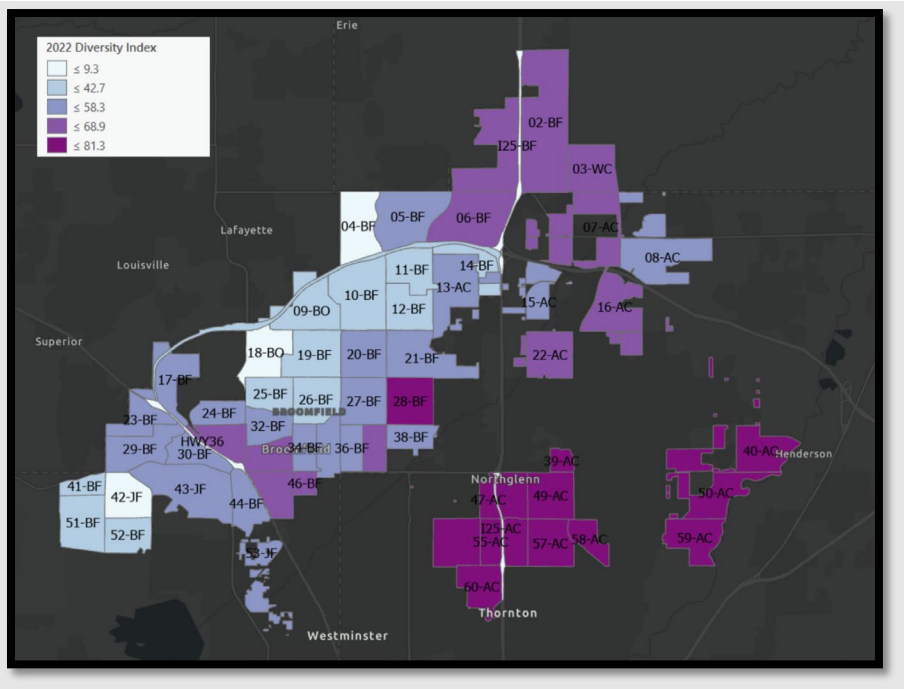
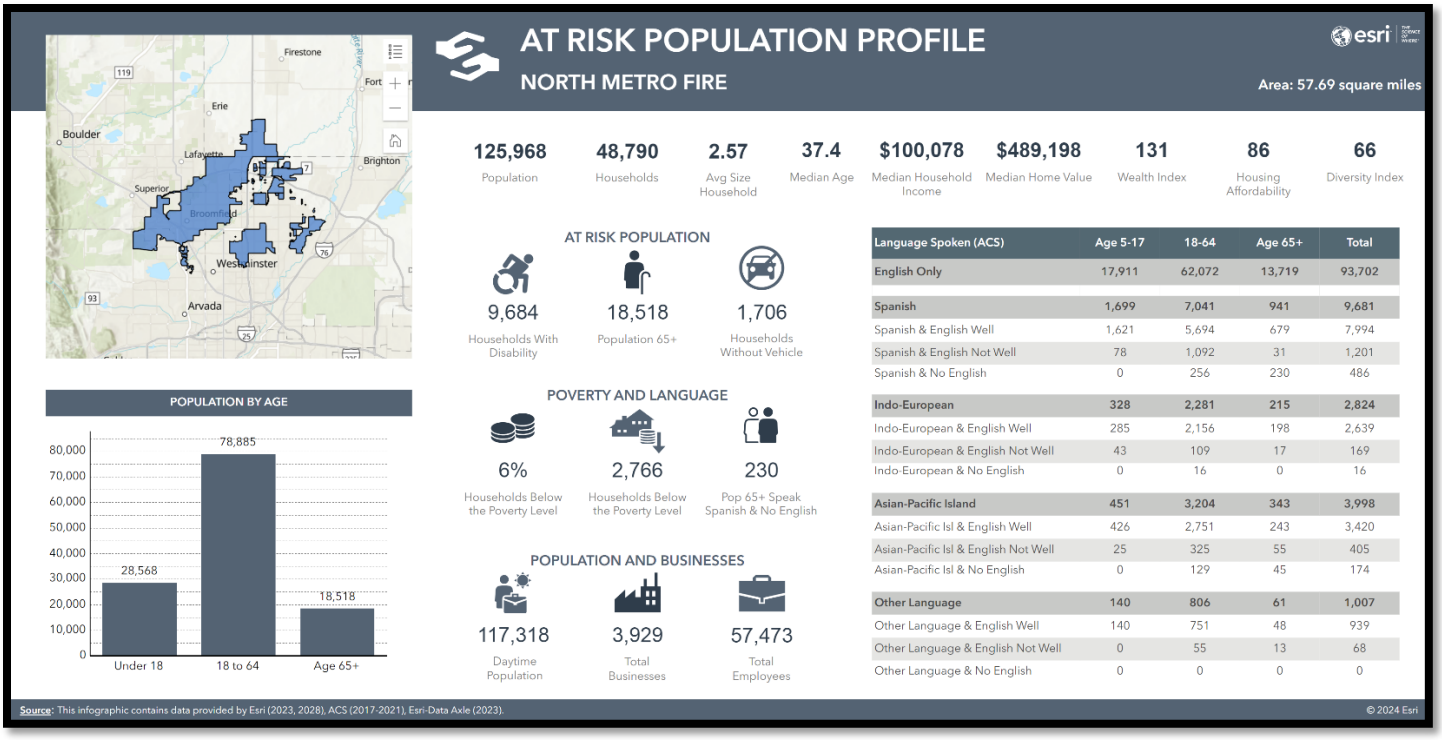


Figure 11 - Esri ArcGIS Pro Demographic Data – Diversity Index, 2023. The ESRI diversity index returns a value between 0-100 for each census tract in the U.S. A diversity index indicates the probability that two people selected at random within an area belong to a different race or ethnicity. Therefore, higher numbers indicate more diversity.

Population Risk Profile

The next chart is a risk population profile of the district, which identifies at risk populations within the community. The district has 6% of households below the poverty line which, according to Esri Community Analyst Colorado Geographical profile, is less than Colorado's 10% of households below the poverty line. Other important areas of reference include population aged 65 and over that speak Spanish and no English, the total number of households with disabilities and the total population over age 65.



Language Spoken (ACS)	Age 5-17	18-64	Age 65+	Total
English Only	17,911	62,072	13,719	93,702
Spanish	1,699	7,041	941	9,681
Spanish & English Well	1,621	5,694	679	7,994
Spanish & English Not Well	78	1,092	31	1,201
Spanish & No English	0	256	230	486
Indo-European	328	2,281	215	2,824
Indo-European & English Well	285	2,156	198	2,639
Indo-European & English Not Well	43	109	17	169
Indo-European & No English	0	16	0	16
Asian-Pacific Island	451	3,204	343	3,998
Asian-Pacific Isl & English Well	426	2,751	243	3,420
Asian-Pacific Isl & English Not Well	25	325	55	405
Asian-Pacific Isl & No English	0	129	45	174
Other Language	140	806	61	1,007
Other Language & English Well	140	751	48	939
Other Language & English Not Well	0	55	13	68
Other Language & No English	0	0	0	0

Figure 12 - ESRI Community Analyst NMFRD at Risk Population Profile, 2023

Population Health Care & Insurance

The district's population ranging in age from 19-64 is largely covered by health insurance provided by their employer. The district has a lower percentage of the population (6.7%) with no health insurance when compared to Colorado as a whole (7.9%), according to Esri Community Analyst Colorado Geographical profile. The population aged 65+ is split somewhat equally, between Medicare only, Direct-Purchase & Medicare and a combination of Employer Provided & Medicare. Of special note is the low percentage of the population with no health insurance. The greatest age demographic with no health insurance is 19-34, with 2.9%, followed by 2.7% of the population aged 35-64. Only .2% of the population aged 65+ has no health insurance. Further details are displayed in the Health Care & Insurance infographic.

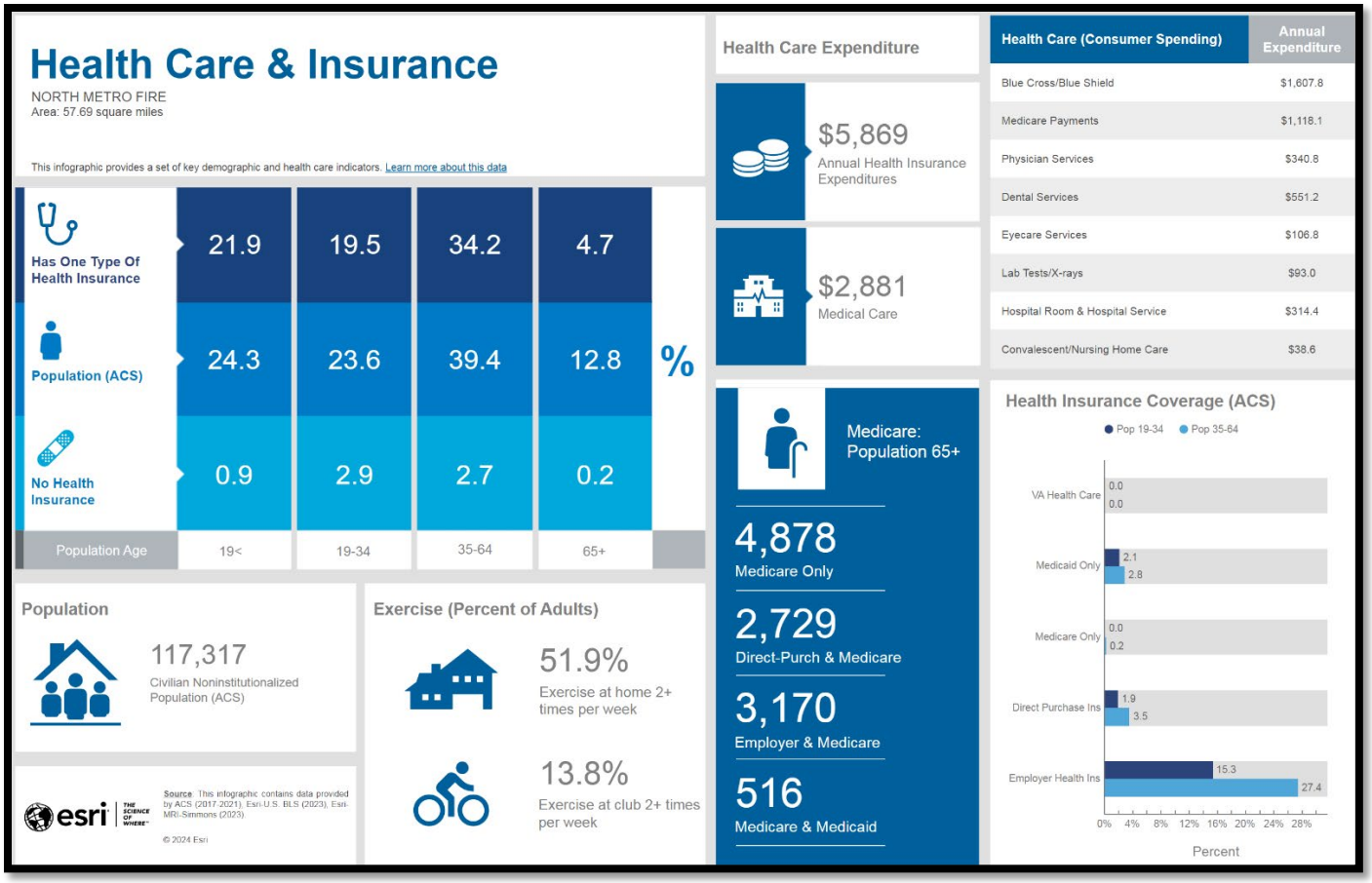


Figure 13 - ESRI Community Analyst NMFRD Health Care & Insurance, 2024

Geographical Size and Population	Station #61	Station #62	Station #63	Station #64	Station #65	Station #66	Station #67
2023 Area in Square Miles	6.32	3.13	6.95	9.02	8.27	21.52	3.77
2023 Total Population	18,643	14,811	28,272	33,414	9,605	16,505	5,460
2023 Population Density (Pop per Square Mile)	2,950.0	4,729.2	4,067.7	3,703.2	1,160.9	767.0	1,448.5
2020-2023 Population: Compound Annual Growth Rate	-0.03%	0.05%	0.32%	-0.16%	2.14%	7.97%	7.91%
2028 Total Population	19,891	14,767	28,505	34,396	10,461	18,238	6,320
2023-2028 Population: Compound Annual Growth Rate	1.30%	-0.06%	0.16%	0.58%	1.72%	2.02%	2.97%
2023 Total Daytime Population	22,358	13,480	17,643	24,663	21,577	11,406	7,074
2023 Daytime Population Increase	19.9%	-9.0%	-37.6%	-26.2%	124.6%	-30.9%	29.6%
2023 Daytime Population: Workers	14,326	6,810	4,637	9,128	18,399	2,890	4,974
2023 Daytime Population: Residents	8,032	6,670	13,006	15,535	3,178	8,516	2,100
2023 Daytime Population Density (Pop per Square Mile)	3,537.9	4,304.2	2,538.5	2,733.4	2,607.8	530.0	1,876.7

Table 1 - District Geographical Size and Population, ESRI Community Analyst, 2023

Population and Households	Station #61	Station #62	Station #63	Station #64	Station #65	Station #66	Station #67
2023 Total Population	18,643	14,811	28,272	33,414	9,605	16,505	5,460
2028 Total Population	19,891	14,767	28,505	34,396	10,461	18,238	6,320
2023-2028 Population: Compound Annual Growth Rate	1.30%	-0.06%	0.16%	0.58%	1.72%	2.02%	2.97%
2023 Total Households	7,781	5,437	10,037	11,654	5,298	5,905	3,086
2023 Average Household Size	2.38	2.72	2.79	2.86	1.79	2.80	1.69
2028 Total Households	8,394	5,444	10,281	12,107	5,875	6,569	3,613
2028 Average Household Size	2.36	2.71	2.75	2.83	1.76	2.78	1.69
2023-2028 Households: Compound Annual Growth Rate	1.53%	0.03%	0.48%	0.77%	2.09%	2.15%	3.20%

Table 2 - District Estimated 2027 Population, ESRI Community Analyst, 2023 – 2028

Household Income and Age	Station #61	Station #62	Station #63	Station #64	Station #65	Station #66	Station #67
2023 Average Household Size	2.38	2.72	2.79	2.86	1.79	2.80	1.69
2023 Median Household Income	$100,066	$75,190	$79,146	$126,762	$83,058	$163,454	$81,386
2023 Total Population Age 18+	14,885	11,425	21,638	24,543	8,264	12,341	4,847
2023 Senior Population (Age 65+)	3,365	2,311	3,908	3,982	999	3,303	726
2023 Senior Population (Age 65+) (%)	18.05%	15.60%	13.82%	11.92%	10.40%	20.01%	13.30%
2023-2028 Households: Compound Annual Growth Rate	1.53%	0.03%	0.48%	0.77%	2.09%	2.15%	3.20%

Table 3 - District Household Income and Age, ESRI Community Analyst, 2023

Education	Station #61	Station #62	Station #63	Station #64	Station #65	Station #66	Station #67
2023 Population Age 25+: 9-12th Grade/No Diploma	252	613	1,036	733	57	169	17
2023 Population Age 25+: High School Diploma	1,749	2,561	5,347	2,713	638	976	276
2023 Population Age 25+: Bachelor's Degree	4,802	1,718	3,219	7,553	2,949	4,675	1,891
2023 Population Age 25+: Graduate/Professional Degree	2,477	779	1,629	4,655	1,565	3,337	1,234
2023 Population Age 25+: 9-12th Grade/No Diploma (%)	1.89%	6.13%	5.43%	3.33%	0.77%	1.49%	0.38%
2023 Population Age 25+: High School Diploma (%)	13.10%	25.62%	28.05%	12.33%	8.62%	8.62%	6.24%
2023 Population Age 25+: Bachelor's Degree (%)	35.96%	17.18%	16.88%	34.33%	39.84%	41.27%	42.77%
2023 Population Age 25+: Graduate/Professional Degree (%)	18.55%	7.79%	8.54%	21.16%	21.14%	29.46%	27.91%

Table 4 - District Education, ESRI Community Analyst, 2023

Housing Occupancy, Home Values and Age of Structures	Station #61	Station #62	Station #63	Station #64	Station #65	Station #66	Station #67
2023 Total Housing Units	7,917	5,749	10,410	11,860	5,789	6,161	3,558
2023 Housing Affordability Index*	94	71	82	105	63	102	63
2023 Owner Occupied Housing Units	4,960	3,028	6,029	9,765	886	5,140	307
2023 Owner Occupied Housing Units (%)	63.75%	55.69%	60.07%	83.79%	16.72%	87.04%	9.95%
2023 Renter Occupied Housing Units	2,821	2,409	4,008	1,889	4,412	765	2,779
2023 Renter Occupied Housing Units (%)	36.25%	44.31%	39.93%	16.21%	83.28%	12.96%	90.05%
2023 Median Home Value	$456,335	$445,566	$405,766	$503,616	$559,827	$651,867	$545,561
2023 Percent of Income for Mortgage	27.4%	35.6%	30.8%	23.9%	40.5%	24.0%	40.3%
2021 Median Year Structure Built (Total Housing Units)	1979	1973	1981	1998	2012	2011	2008
*Esri 2023 Housing Affordability Index (HAI) measures the ability of a typical resident to purchase a home in the geographic area. The HAI has a base of 100, representing where the median income is sufficient to qualify for a loan on a median-valued home and not be cost-burdened (cost-burdened=greater than 30% of income spent on housing). HAI values > 100 indicate increasing affordability; HAI values < 100 indicate areas where homes are less affordable and median income might be insufficient to purchase a median-valued home.							

Table 5 - District Housing Occupancy, Home Values and Age of Structures, ESRI Community Analyst, 2023

Health Care Spending and Health Insurance	Station #61	Station #62	Station #63	Station #64	Station #65	Station #66	Station #67
2023 Health Care	$69,399,363	$35,426,951	$62,577,921	$124,830,634	$37,069,064	$82,594,955	$19,929,304
2023 Health Care (Avg)	$8,919.08	$6,515.90	$6,234.72	$10,711.40	$6,996.80	$13,987.29	$6,457.97
2023 Health Care (Index)	121	89	85	146	95	190	88
2021 Households with 1+ Persons with a Disability	1,800	1,529	3,001	1,813	500	673	443
2021 Population 19-34: Employer-Based Health Ins Only (%)	15.15%	16.12%	15.61%	10.77%	29.83%	9.41%	41.20%
2021 Population 19-34: Direct-Purchase Health Ins Only (%)	1.94%	2.14%	2.28%	0.94%	5.89%	0.25%	3.52%
2021 Population 19-34: Medicare Coverage Only (%)	0.00%	0.11%	0.00%	0.02%	0.00%	0.00%	0.59%
2021 Population 19-34: Medicaid Coverage Only (%)	1.44%	3.23%	4.29%	1.13%	1.58%	0.02%	1.74%
2021 Population 19-34: TRICARE/Military Health Only (%)	0.05%	0.00%	0.11%	0.03%	0.64%	0.11%	0.13%
2021 Population 19-34: VA Health Care Only (%)	0.05%	0.08%	0.00%	0.00%	0.15%	0.11%	0.03%
2021 Population 19-34: No Health Insurance Coverage (%)	3.77%	4.38%	3.05%	2.03%	5.61%	0.69%	1.05%
2021 Population 35-64: Employer-Based Health Ins Only (%)	28.57%	19.45%	23.48%	34.42%	22.45%	30.59%	19.51%
2021 Population 35-64: Direct-Purchase Health Ins Only (%)	3.77%	3.27%	2.70%	4.07%	2.58%	3.75%	5.26%
2021 Population 35-64: Medicare Coverage Only (%)	0.20%	0.31%	0.23%	0.16%	0.03%	0.18%	0.10%
2021 Population 35-64: Medicaid Coverage Only (%)	2.55%	5.83%	4.12%	2.07%	0.90%	0.76%	0.59%
2021 Population 35-64: TRICARE/Military Health Only (%)	0.17%	0.25%	0.00%	0.18%	0.00%	0.58%	0.54%
2021 Population 35-64: VA Health Care Only (%)	0.07%	0.05%	0.04%	0.03%	0.05%	0.01%	0.00%
2021 Population 35-64: No Health Insurance Coverage (%)	1.55%	2.90%	3.87%	2.48%	4.93%	1.40%	1.35%
2021 Population 65+: Employer-Based Health Ins Only (%)	0.86%	0.44%	0.17%	0.72%	0.19%	0.51%	0.18%
2021 Population 65+: Direct-Purchase Health Ins Only (%)	0.04%	0.07%	0.00%	0.04%	0.00%	0.08%	0.00%
2021 Population 65+: Medicare Coverage Only (%)	5.10%	3.01%	2.63%	3.98%	4.31%	6.77%	7.41%
2021 Population 65+: TRICARE/Military Health Only (%)	0.04%	0.00%	0.00%	0.04%	0.00%	0.00%	0.00%
2021 Population 65+: VA Health Care Only (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2021 Population 65+: No Health Insurance Coverage (%)	0.09%	0.01%	0.86%	0.11%	0.00%	0.00%	0.00%

*Esri 2023 estimates of the total (aggregate) amount spent, average amount spent per household, and Spending Potential Index (SPI) on Health Care in the geographic area. Includes expected spending on Health Insurance and Medical Care. Esri's Consumer Spending data provides information about the estimated spending by households for goods and services in an area. The aggregate value represents the total amount spent by all households. The average value represents the typical amount spent per household. The SPI compares average local expenditures to U.S. levels. The SPI value for the U.S. is 100. If, for example, the SPI value for a geographic area is 120 this implies that average spending by consumers in the geographic area is likely to be 20 percent more than the U.S. average. Sources: Esri and Bureau of Labor Statistics. See Consumer Spending data for more information.

Table 6 – District Health Care Spending and Health Insurance, ESRI Community Analyst, 2021 – 2023

Disaster Potential

According to an Article titled *The Great Colorado Flood of September 2013*:

> *"During the second week of September 2013, a seasonally uncharacteristic weather pattern stalled over the Rocky Mountain Front Range region of northern Colorado bringing with it copious amounts of moisture from the Gulf of Mexico, Caribbean Sea, and the tropical eastern Pacific Ocean. This feed of moisture was funneled toward the east-facing mountain slopes through a series of mesoscale circulation features, resulting in several days of unusually widespread heavy rainfall over steep mountainous terrain. Catastrophic flooding ensued within several Front Range river systems that washed away highways, destroyed towns, isolated communities, necessitated days of airborne evacuations, and resulted in eight fatalities. The impacts from heavy rainfall and flooding were felt over a broad region of northern Colorado leading to 18 counties being designated as federal*

disaster areas and resulting in damages exceeding $2 billion U.S. dollars." (Gochis et al., Pg. Abstract) (13)

When these historic floods swept across the region, North Metro Fire District helped locally and outside the district. Members of the district's Technical Rescue Team assisted with numerous rescues and recovery efforts in Boulder, Larimer and Weld Counties, beginning the night of Wednesday, September 11, 2013.

Figure 14 - 2013 Swift Water Rescue, NMFRD

The most noteworthy rescue came within the district, when a road washed out overnight and sent three drivers and their vehicles into a raging river. North Metro Fire Rescue personnel used a rapid deployment craft to safely rescue two victims from their vehicles. Other North Metro crews deployed regionally and were essential in evacuating residents and entire neighborhoods stranded due to flash flooding.

Area Development

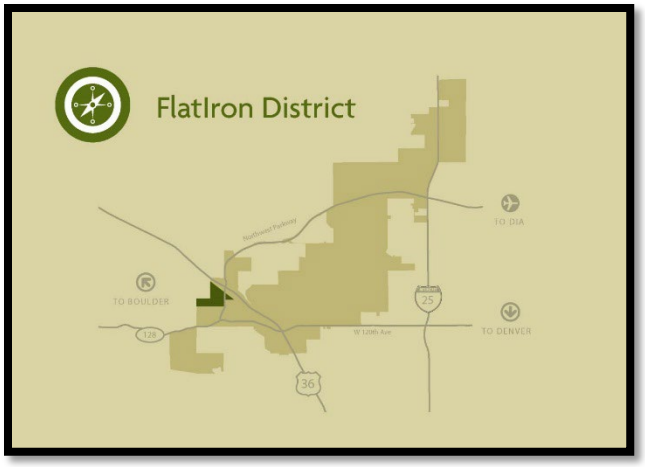
Private Companies	Employees	Industry	Type of Facility
CenturyLink (Formerly Level 3 Communications)	2360	Telecommunications	Office Operation
Oracle America	2000	Technology-Software	Division
SCL Health Care	1200	Healthcare	Corporate Headquarters
Hunter Douglas Window Fashions Division	950	Manufacturing	Division
Vail Resorts	740	International Ski Area Operation	Corporate Headquarters
TSYS	580	Transaction Processing Service	Office Operation
Danone North America	570	Food Products	Office Operation
Broadcom	500	Technology-Hardware	Office Operation
VMware	465	Technology-Software	Office Operation
Ball Corporation	420	Aerospace, Containers	Corporate Headquarters
Carefree of Colorado	350	Manufacturing	Corporate Headquarters
Webroot	330	Technology-Software	Corporate Headquarters
Avnet Technology Solutions	300	Technology-Software	Office Operation
Stantec	300	Engineering	Office Operation
SpotX	230	Technology	Corporate Headquarters
Zoll Data Systems	225	Technology-Software	Division

Table 7 - Broomfield's Largest Employers (14)

In the last several years, Broomfield has experienced a significant increase in high-tech and R&D firms and is home to more than 20 corporate, national and regional headquarters (see Table 7). The majority of employment in Broomfield is concentrated in the southwest quadrant of the city in and around the Interlocken Advanced Technology Environment and adjacent to the Rocky Mountain Metropolitan Airport. This area includes the U.S. 36 Boulder Turnpike, which provides multiple modes of transportation around the Denver Metro area.

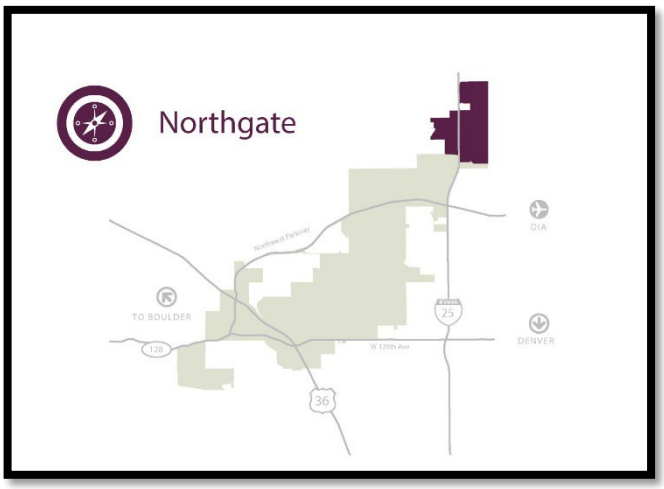
Broomfield is a collection of neighborhoods, mixed use areas, retail districts, and regional business centers. There are many areas of development within Broomfield, but the following areas are noted due to the recent and specific growth within North Metro Fire Rescue District's area of coverage. These areas contain major industries and economic sources as well as characteristics of some of the older or historical areas within the district.

Arista is a 200 plus acre, entertainment-anchored, mixed-use community located along U.S. Hwy 36 and positioned to be a transit-oriented development. The community provides local bus traffic routes and regional access to Denver and Boulder through the interchanges on U.S. Hwy 36. Public transportation is encouraged by providing a parking structure that includes 1,500 parking stalls with easy access to mass transit and mixed-use lifestyles. Arista Village offers street-level retail and commercial facilities situated beneath multi-family urban living dwellings and office space. Arista is home to the 1stBank Center, a mid-sized event venue that can hold up to 7,500 people and can accommodate live music, family shows, sporting events and community functions. (15)

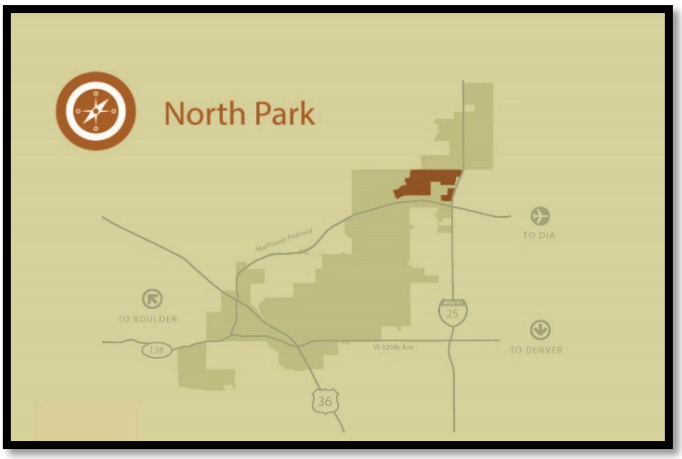


Flatiron District is another major economic source in Broomfield and is adjacent to the Interlocken Advanced Technology Environment. The Flatiron District has over 2.1 million square feet of retail serving local and regional shoppers. This area comprises Flatiron Crossing mall, Main Street at Flatiron and Flatiron Marketplace. Flatiron Crossing mall has 1.467 million square feet of retail space and is located just off Highway 36. The retail space includes a two-level enclosed mall and an adjoining outdoor entertainment village. (16) Main Street at Flatiron is a mixed-use area with shopping, office and restaurants. Flatiron Marketplace offers a concentration of stores, restaurants and hotels, which include the Omni Interlocken Resort and Renaissance Suites. There are also numerous large corporations and the Omni Interlocken Golf club within walking distance. (17)

Interlocken is a 963-acre business park with 4.337 million square feet of office space. The location is situated between Boulder and Denver with good highway access and routes to two airports (Denver International Airport and Rocky Mountain Metropolitan Airport) making it an ideal choice for businesses of all sizes. Interlocken also has access to nearby amenities like the Omni Interlocken Resort and conference center as well as fine dining options and retail choices within the Flatiron District. Interlocken is characterized by a concentration of high-tech corporations, institutions of higher education, research and development laboratories and some of Colorado's largest and most prestigious employers. (18)



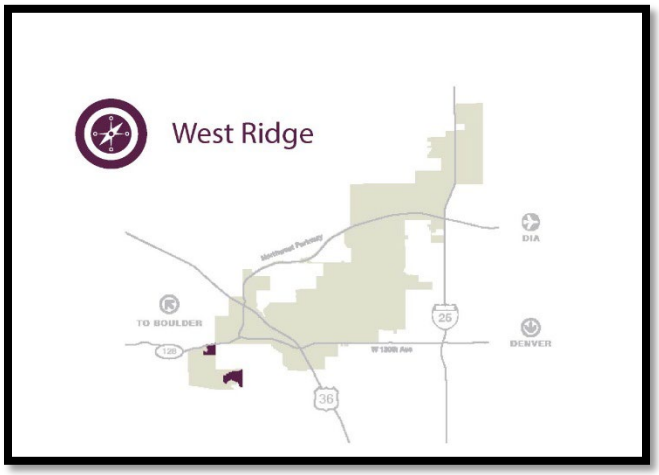
North Gate is north of the intersection of Interstate 25 and Colorado Highway 7. The area encompasses the northern portion of the City and County of Broomfield and is currently largely undeveloped. The area is 3.7 square miles and positions itself as the premier northern metro area gateway business and technology center along interstate 25. The development will contain office, flex space, research and development, light industrial and residential with additional space for a major transit-oriented zone. (19)



Baseline (formally known as North Park) is a new development in northern Broomfield just north of E-470 and west of Interstate 25. The development is a 1,100-acre, master planned community, which includes 170 acres of open land, a series of public plazas and squares. There are 17.2 million square feet of mixed-use commercial development, up to 9,000 residential units and 150 acres designated to Colorado's Applied Research and Science Park. Baseline includes the Prospect Ridge Academy and a rich array of land uses, sustainable improvements, community amenities, businesses and supportive infrastructure in a transit-oriented environment. (20)

120th Central District is a major corridor stretching over two miles through southern Broomfield with shopping and service choices from big box commercial facilities to unique independent retailers and restaurants. Due to recent roadway improvements on West 120th Avenue, the area continues to anticipate traffic counts to increase. In addition, this roadway improvement gave citizens and responders better access to U.S. Highway 36, the adjacent Interlocken Technology Business Park and the Rocky Mountain Metropolitan Airport. Urban Renewal Area, a blighted area planned for redevelopment to help sustainable development, covers most of the district, offering big box and small retail opportunities. Immediately adjacent to the 120th Central District are the City and County of Broomfield government campus featuring municipal and county offices, North Metro Fire Rescue District's Administration office and major recreation facilities including ball fields, a skate park and a combined recreational facility and senior center. (21)

Research and Industrial District is home to some of Broomfield's major employers. The district is one of the original research and development enclaves in the region dating from the 1950s and 1960s. Although industrial in nature, 84 percent of the jobs in this district are considered white collar. The workforce in the area is highly educated with over 36 percent holding a bachelor's degree or higher. This district is approximately 358 acres and is highly developed with office, research/development and warehouse structures. This district is part of the northern boundary of the U.S. Highway 36 Creative Corridor within Broomfield and is just east of Interlocken Technology Business Park. (22)



West Ridge is on the highest point between Denver and Boulder and at the district's western edge. This location is adjacent to the Interlocken Technology Business Park and nearby features include the Flatiron Crossing mall, restaurants, hotels and recreational amenities. This area is also directly west of the Rocky Mountain Metropolitan Airport. The plan for the area contains office, flex space, research and development, and light industrial with high-density housing. West Ridge also contains the Broomfield County Detention Center. (23)

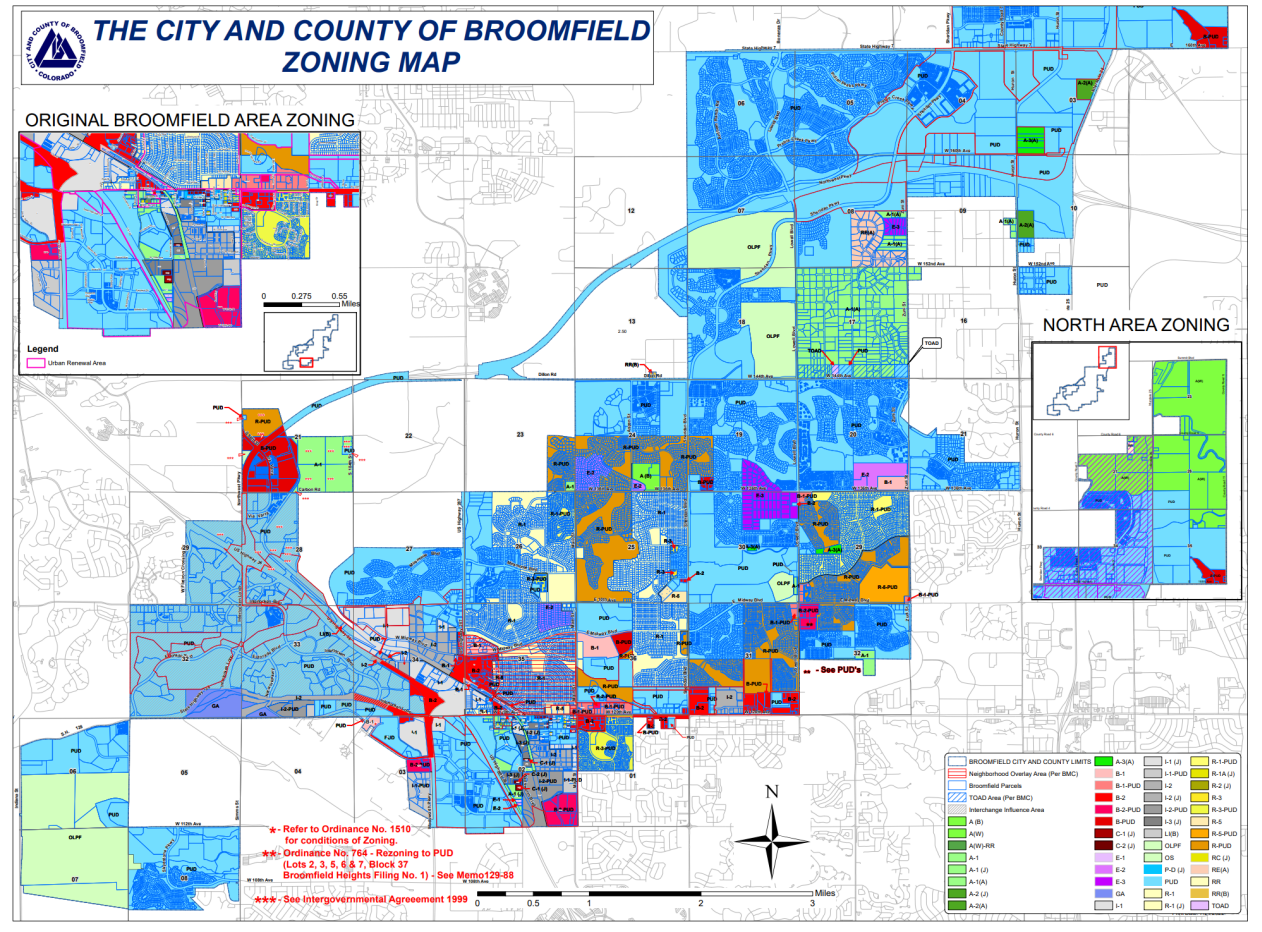


Figure 15 - City and County of Broomfield Zoning Map, 2022

Northglenn, the other major city within the district, is a pro-business community, which caters to small businesses and entrepreneurs and has over 1,000 businesses within its city limits. Northglenn has prime real estate opportunities to meet a broad range of business needs, including mixed-use and in-fill development options. Northglenn has targeted industries in advanced manufacturing, entertainment, health and wellness, hospitality and retail. The top employers include O'Meara Ford Center, Boondocks Fun Center, Texas Roadhouse, Longhorn Steakhouse and Lowe's Home Improvement.

Most of Northglenn is built out and is landlocked by the City of Thornton to the east and south with the City of Westminster to the west and north. Much of the development in Northglenn is redevelopment of existing areas or additional transit stations for light rail access to the Denver metro area. The following area descriptions are present and future projects that will increase growth as it relates to population density and will likely be major economic sources within the city.

The 112th Avenue Station master plan is a vision of future land use and transportation infrastructure near the Northglenn at 112th Station, which is part of the RTD Northern Line. The station area plan focuses on the ½-mile radius around the station, which encompass Thornton and Northglenn. Both cities will look for opportunities to incorporate the master plan in future projects with developers as they bring proposals to the land around the location. The ultimate goals are a vibrant, walkable, mixed-use community offering diversified housing and maximizing property development potential. (24)

The Northglenn Civic Campus site is at the heart of the Northglenn community, adjacent to the central and popular E.B. Rains Jr. Memorial Park. The 21-acre site contains two separate operable structures, four entry and exit points, several surface parking lots and serves as a location for community festivals.

Figure 16 – Future Northglenn Civic Campus

The Northglenn Civic Center Master Plan provides a vision and development framework for a re-imagined Civic Center. The plan capitalizes on existing opportunities, proposes new mixed-use development and suggests enhancements to existing site features and streetscape. Numerous evaluations formed the basis for the recommendations for an appropriate density and mix-of-uses including residential, hotel, office, retail and commercial; the design of a new corridor-wide strategy for Community Center Drive; and the integration of new facilities recently completed such as the Recreation and Senior Centers, D.L. Parsons Theatre and City Hall. (25)

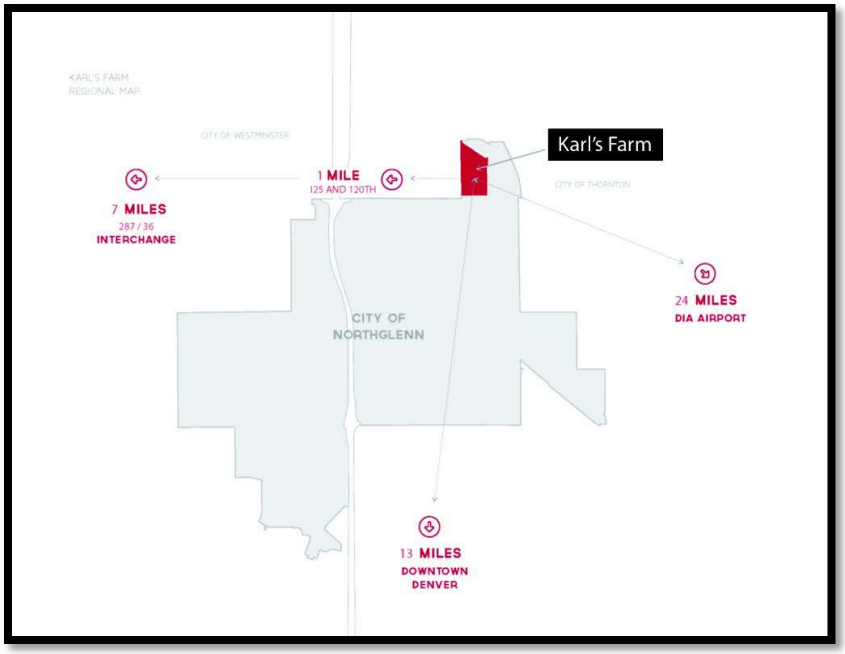


Figure 17 - Karl's Farm Location

Karl's Farm is a 60-acre site nestled in the far northeast corner of Northglenn, near the city's border with Thornton. The property is one of the last, and largest, development sites available in Northglenn, and is the last significant open-land site in the 120th Avenue corridor between interstate 25 to the west and Colorado Boulevard to the east. Northglenn's goals for the property include taking advantage of station proximity that would allow higher densities than typically seen in Northglenn residential neighborhoods and potentially add new housing types to the local market. Because the property is relatively large, there is the potential for adding significant place-making elements and attributes, so the property also functions as a "community center" for this area. The 120th Avenue frontage also allows the property to offer valuable commercial services to the future residents and surrounding community. (26)

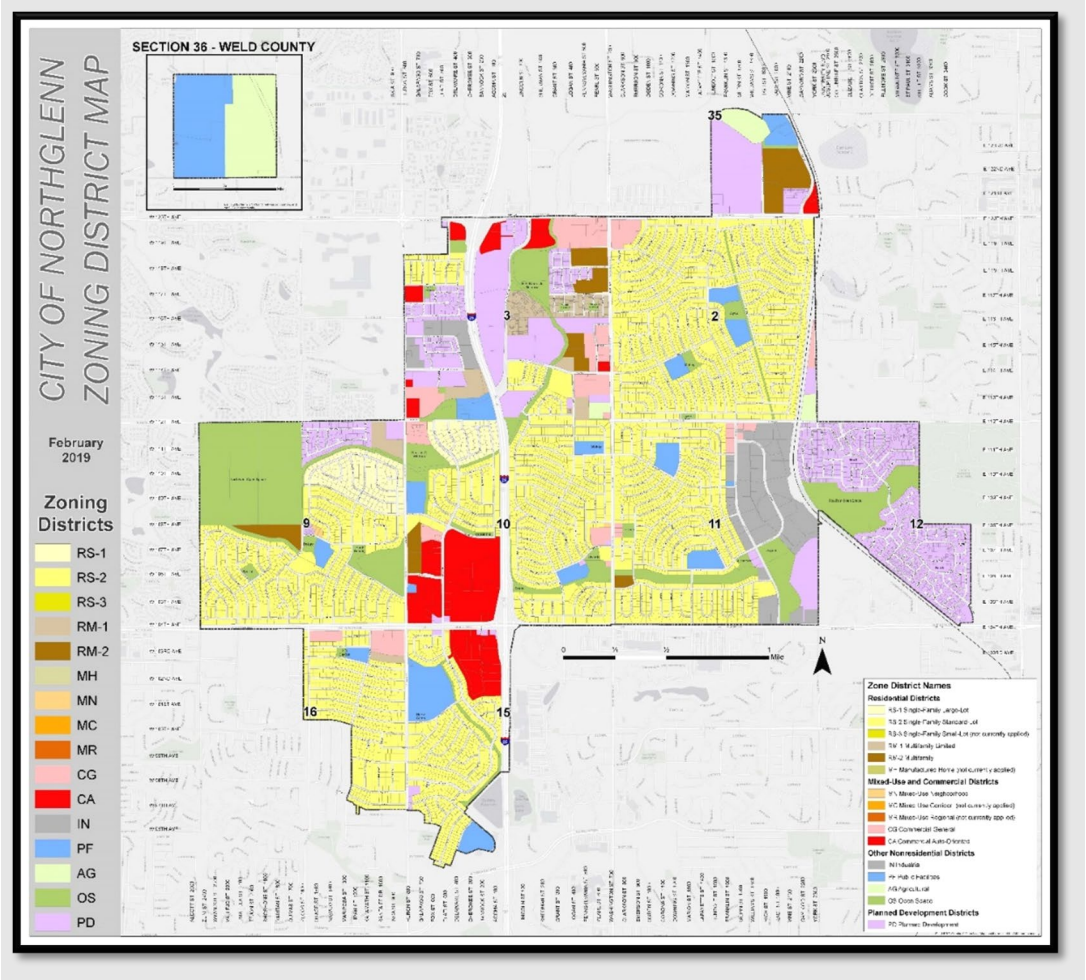


Figure 18 - City of Northglenn Zoning District Map, 2019 (most current)

Section 2 – Description of Agency Programs and Services

District Organizational Structure

North Metro Fire Rescue District utilizes a traditional, hierarchical fire service organizational structure. There is a five-member board of directors elected by the citizens of the district. The board of directors oversees the operations of the district and is responsible for hiring, supervising, and evaluating the fire chief. The district's senior chief staff includes the fire chief, deputy chief of operations, deputy chief of administration, division chief of fire prevention, human resources manager, public information officer and chief financial officer. The district has three divisions, which include Operations, Administration, and Fire Prevention.

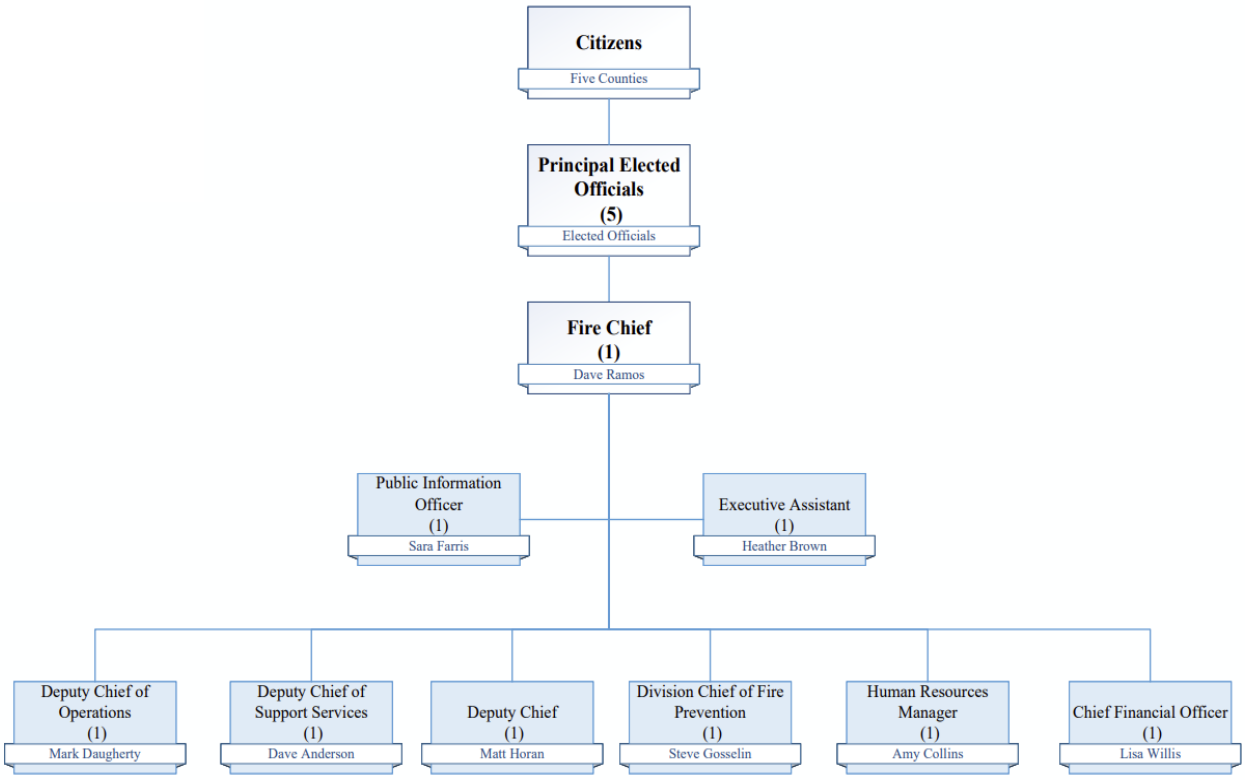


Figure 19 - District Organizational Chart, (X): Number of personnel in position.

Operations Division

Due to the diverse needs of the community, NMFRD has positioned itself as an all-hazards department that responds to a wide variety of incidents. Through extensive training and experience, NMFRD emergency responders have earned a strong reputation in the fire service and within the community for their response capabilities and professionalism. Stringent hiring standards and a safety-oriented organization with a dedication to continuing education and a state-of-the-art training center all contribute to a highly capable workforce, trained and equipped to deal with any emergency.

As of fall, 2024, there are 149 personnel within the Operations Division, which includes 149 sworn firefighters. The sworn personnel include the deputy chief of operations, six battalion chiefs, one EMS chief, one EMS captain, one EMS lieutenant, three safety and medical lieutenants, and all frontline personnel.

Training personnel include the training chief, a training captain, a training lieutenant, and a training center coordinator. Apart from the training center coordinator, all the training staff are required to maintain their operational readiness. The training chief is in a permanent promotional position while the training captain and lieutenant rotate every few years back to a line position. Personnel that receive a training assignment are not considered a part of minimum daily operational staffing.

NMFRD operates six engine companies, one truck company, five medic units, two battalion chief units, one safety and medical officer unit and numerous cross-staffed specialty vehicles operating out of seven stations. The Operations Division has three shifts, each managed by two battalion chiefs. Collectively the three shifts are minimally staffed by seven captains, 14 lieutenants, three safety and medical lieutenants (all of which are paramedic certified), 21 engineers, and as of fall, 2024, 54 firefighter/paramedics and 47 firefighter/EMTs. The deputy chief of operations, division chief of EMS, EMS captain, EMS lieutenant, and training personnel are not part of minimum staffing.

In addition to emergency response services, operations personnel assist with reducing community risk by conducting emergency preplans, child-passenger safety seat inspections/installations, blood pressure checks and many other community public education events.

Operations Division

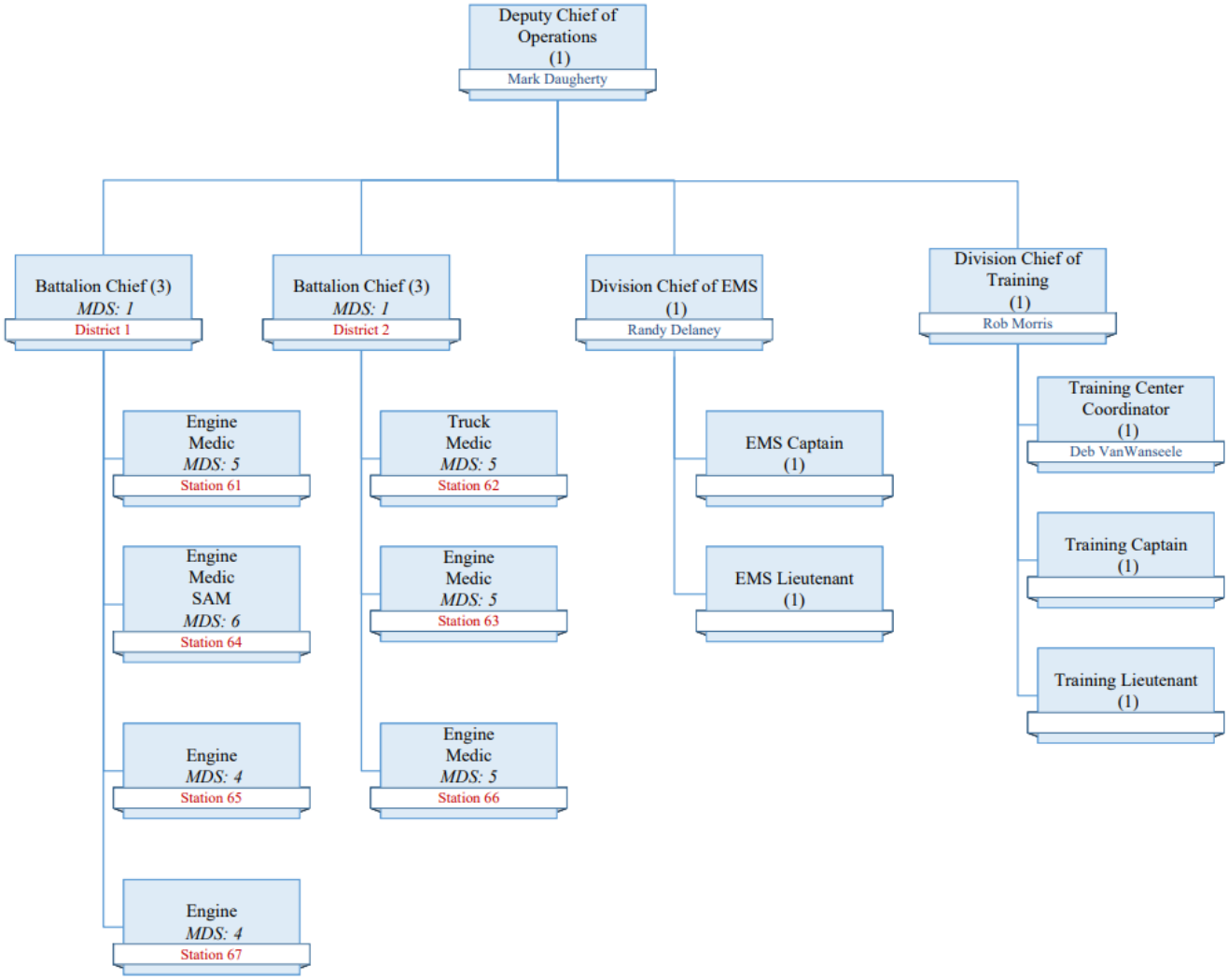


Figure 20 – Operations Division Organizational Chart, (X): Number of personnel in position, MDS: Minimum Daily Staffing

District 1

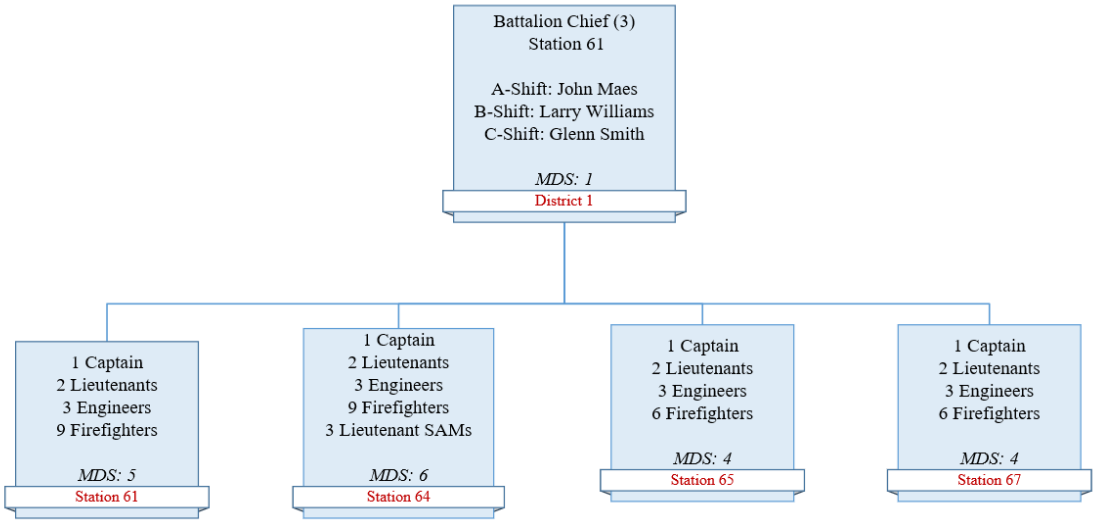


Figure 21 - Operations District 1 Organizational Chart, (X): Number of personnel in position, MDS: Minimum Daily Staffing

District 2

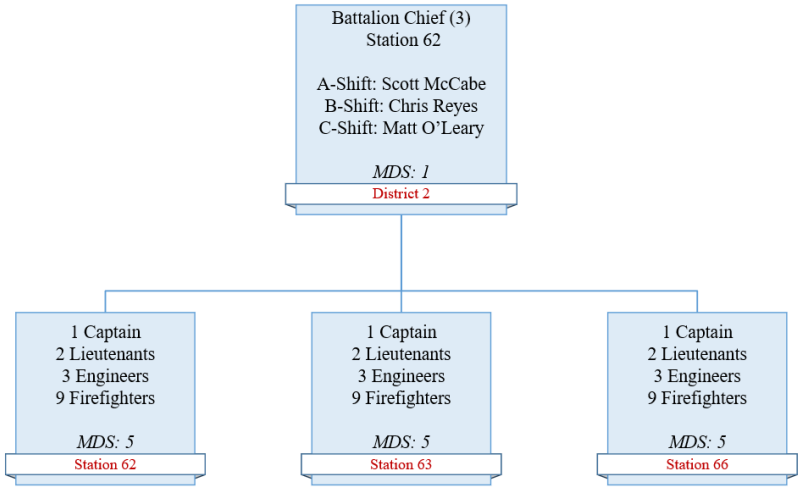


Figure 22 - Operations District 2 Organizational Chart, (X): Number of personnel in position, MDS: Minimum Daily Staffing

Administration Division

The Administration Division provides internal support toward the continued success of all district functions. A deputy chief manages administration, which includes the areas of information technology, emergency management, district facilities, fleet services, and accreditation.

It is vital to the all-hazards environment that facilities are well maintained and safe to work in. The district must also continually anticipate and plan for future support needs. The district maintains 14 facilities and the associated property which include seven fire stations and one training station, a fleet maintenance building, a training classroom/office building, three burn buildings, 14 acres of training grounds, and an administrative building. Planning is occurring for two additional fire stations. There are two people assigned to this area, the facilities maintenance manager, and the facilities maintenance technician.

The district maintains its own fleet apparatus and the department is overseen by the deputy chief of support services. The fleet services facility is located at the district's training center and is overseen by the fleet manager, which supervises the three-fleet emergency vehicle technician (EVTs).

Information Technology includes three personnel, the information technology manager, senior information technology technician and the information technology technician. Maintaining the electronic network that NMFRD has is necessary to the efforts of all divisions and personnel. The district is moving from an all-on-premises software system to a hybrid and cloud system.

Emergency management is responsible for the district's interaction with regional and state partner agencies. The district assigned an administrative captain as emergency manager, looking to improve and reinforce positive working relationships. The emergency manager is also responsible for the grant request process, which provides much assistance in getting financial help with equipment and other needs.

The assistant chief of planning is assigned as the accreditation manager and manages the business intelligence analyst. In addition to accreditation responsibilities, the assistant chief of planning oversees district emergency response preplans, mapping and community risk reduction efforts conducted jointly with other district supervisors.

Administration

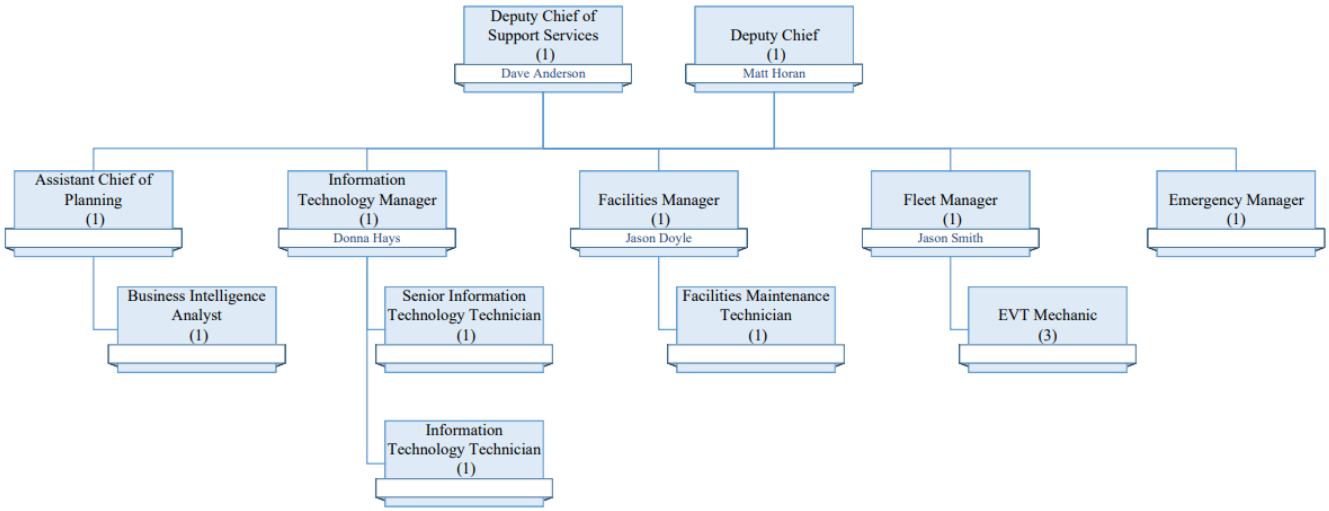


Figure 23 – Administration Organizational Chart, (X): Number of personnel in position.

Finance, Community Outreach & Human Resources

Finance, community outreach and human resources are responsible for conducting the district's business operating functions. Some of these functions include financial oversight, employee performance management and development, personnel hiring, public information, community outreach education and community risk reduction. The fire chief oversees the supervisors within these areas, which include the chief financial officer, human resources manager and the public information officer. In addition, the fire chief oversees the deputy chiefs in operations and administration, the division chief of fire prevention, and the chief's executive administrative assistant.

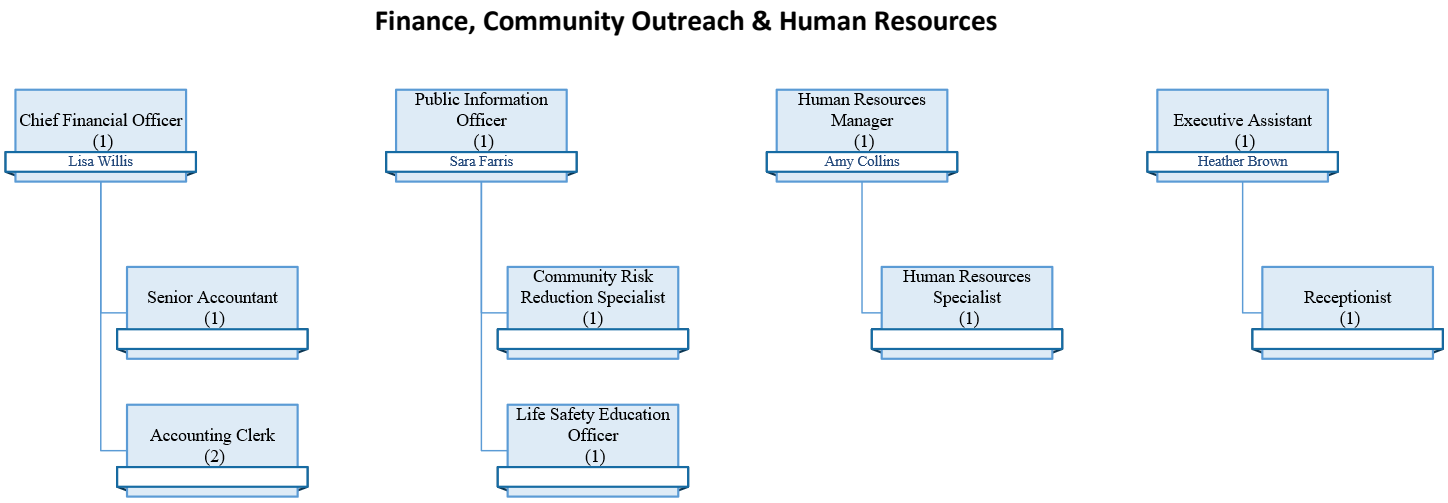


Figure 24 – Finance, Community Outreach and Human Resources Organizational Chart, (X): Number of personnel in position.

Fire Prevention Division

Over the years, the growth of the district has placed a large demand on the Fire Prevention Division, as it relates to plan review and code enforcement. With the large amount of undeveloped land in the district and projected regional growth, this demand will likely continue soon. As future occupancies are constructed, the need for increased inspections of these occupancies will occur. This, in turn, will place further demands on the Operations Division and the Fire Prevention Division, both of which conduct annual or bi-annual inspections of occupancies.

A division chief oversees the Fire Prevention Division, which is responsible for code enforcement, new construction plan reviews, occupancy inspections and fire investigations. The fire prevention division chief supervises a deputy fire marshal, a fire safety engineer, two fire plan reviewers, four fire inspectors/investigators and an administrative assistant, all of which is civilian staffed.

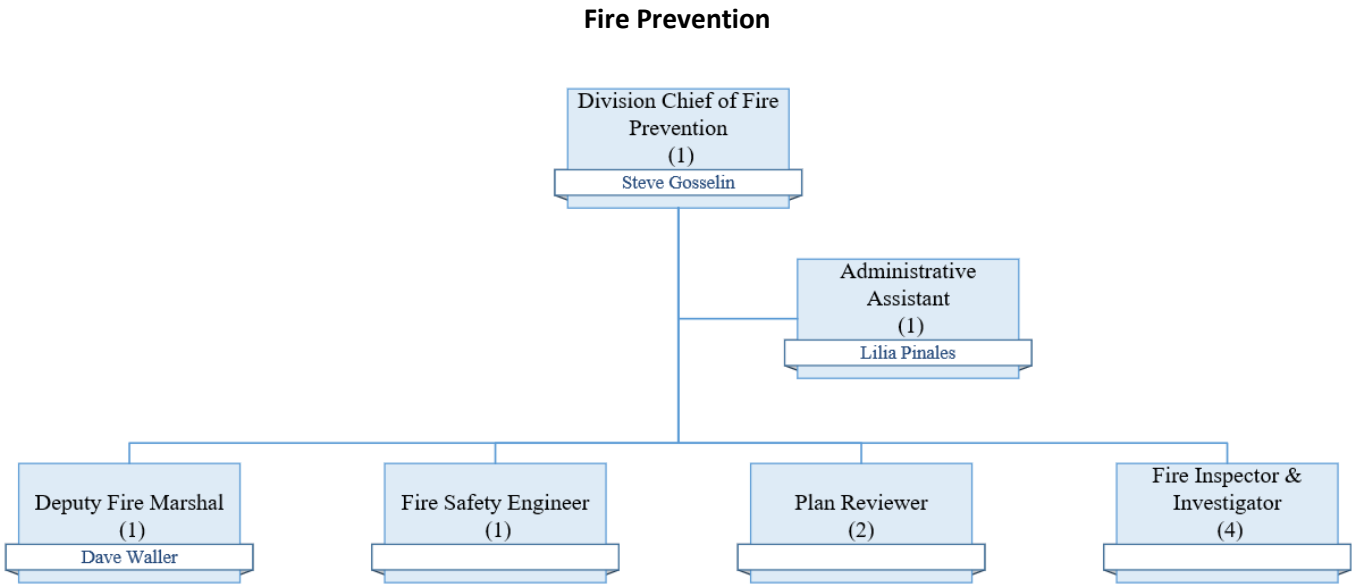


Figure 25 – Fire Prevention Organizational Chart, (X): Number of personnel in position.

Services Provided

North Metro Fire Rescue District is an all-hazard response fire department. Operational services include fire suppression, advanced-life support emergency medical services including transport, technical rescue, hazardous materials response, wildland firefighting and aircraft rescue and firefighting.

Fire Suppression

The district provides standardized structural firefighting response capabilities. Structure fire response includes four engines, one truck, two medic units, two battalion chiefs and a safety and medical officer. Each additional alarm request would include four engines, one aerial truck, one medic unit and one battalion chief. In both the initial alarm and second alarm request, all units respond emergent to the dispatched location. The initial arriving officer or battalion chief may upgrade the response to an additional alarm or add additional units based on dispatch

Figure 26 - NMFRD Structure Fire

information. Smoke investigations inside a structure receive a full structure fire response with the same emergent travel by all units. For further information on types of response, see *Section 3 – Critical Task Analysis and Effective Response Force.*

Emergency Medical Services (EMS)

The district maintains minimum staffing of Advanced Life Support (ALS) on all engines, trucks, medic units and Safety and Medical (SAM) units. The response to a standard medical incident is an engine or truck and a medic unit with the responding units traveling emergent to the incident location. The responding officer has discretion to downgrade the response to non-emergent on one or both units, based on additional dispatch information. For further information on types of response, see *Section 3 – Critical Task Analysis and Effective Response Force.*

The district employs both Emergency Medical Technicians (EMT) and paramedics. Engineers and officers are minimally qualified as EMTs, but some may also be paramedics. When staffing units with ALS, the district only considers paramedics at the firefighter and engineer level for minimum staffing. The district maintains its needed level of paramedics through the hiring process or through sending current firefighter/EMT's to paramedic school. The district delivers medical care under the direction of a physician advisor (Medical Director). Denver Metropolitan Prehospital Protocols outline the standards of care and define expected practices actions and procedures and are further supplemented from directions provided by the district's physician advisor.

Technical Rescue

All district line personnel are trained to a minimum of Awareness Level in the following technical rescue disciplines: structural collapse, rope rescue, confined space, trench rescue, surface water and ice rescue. The district has personnel trained to an Operations or Technician level in the same disciplines, per NFPA 1006 and 1670, with additional training in large vehicle stabilization, flood and swift water search and rescue, animal technical rescue, and tower rescue. These personnel comprise the North Metro Technical Rescue Team. The team maintains an advanced technical rescue response capability out of Station 66 with a recommended minimum staffing of three trained technicians on duty each day. In addition to a specially equipped rescue pumper (E66), the station houses a Structural Collapse and Trench Rescue unit (C66), and a squad outfitted for water and ice rescue.

NMFR is a participating agency in the 10- department North Area Technical Rescue Team (NATRT) which provides closest capable unit automatic aid in a technical recue incident to ensure adequate equipment

and staffing response. NMFR is also a participating agency with Colorado Task Force-1, a Department of Homeland Security (DHS)/Federal Emergency Management Agency (FEMA) Urban Search and Rescue team. Department members are rostered as Heavy Equipment Rigging Specialists, Rescue Specialists, Hazmat Specialists, Medical Specialists, Canine Search Specialists, Logistics Specialists, and Technical Information Specialists.

All district engines and trucks are equipped with hydraulic vehicle extrication tools that include cutters, spreaders and telescopic rams permitting both extrication and stabilization operations. The engines and trucks are also equipped with a complement of stabilization struts. In addition to this standard inventory of rescue equipment, Engine 66 is equipped with other advanced technical rescue equipment including an array of air bags, heavy vehicle stabilization struts, specialized rope rescue equipment, confined space equipment and heavy-duty winches.

Figure 27 - NMFRD Technical Rescue Team training.

Technical rescue response profiles vary according to the incident's nature. Unless downgraded based on dispatch information, all units respond emergent to the scene with the exception of the structural collapse trailer, which per standard operating procedure, always responds non-emergent.

A standard technical rescue response includes two engines/trucks, two medic units, one rescue unit, one battalion chief and one safety and medical officer. For further information on types of response, see *Section 3 – Critical Task Analysis and Effective Response Force.*

Hazardous Materials (HazMat)

All district firefighters are required to hold a Colorado State Hazardous Materials Operations certification. The district maintains a Hazardous Material Team whose members hold Colorado State Hazardous Materials Technician level certifications.

The district's Hazardous Materials Team, specialized equipment, apparatus, and personnel are located at Station 67. The engine operating out of this station has a required minimum staffing of two technicians.

The district is affiliated with a north area hazmat regional response with members from fire agencies within the CAD-to-CAD system and additional agencies through auto-aid request. This affiliation provides access to on-shift Hazardous Materials Technicians, specialized hazardous material equipment and regional training. Station 67 is one of the north area HazMat stations designated as a Command and Consult Hazmat resource providing research, resource deployment, and command functions to crews in the field needing hazmat support.

The North Metro hazardous materials response includes one engine/truck, one medic unit, one battalion chief and one safety and medical officer, all responding emergent to the incident location. For further information on types of response, see *Section 3 – Critical Task Analysis and Effective Response Force.*

Response to hazardous materials calls are categorized as Levels I, II, or III based on incident severity when considering such factors as the health and environmental impact of a leak, spill, or release, potential threat to local communities, and the technical expertise and equipment needed to stabilize the incident. Level I incidents are within the capabilities of the first-due engine or truck company staffed with trained and well-equipped firefighters with hazmat operations certifications. These types of incidents include small leaks or spills of commonly found fuels, household chemicals, and known substances that are not immediately dangerous to life and health and that do not require additional resources to mitigate.

A Level II response includes any incident that is outside the scope and hazmat capabilities of an engine or truck company, where additional or specialized resources are needed, where the leak, spill, or release involves an unknown substance(s), or where any quantity of a known hazardous materials threatens a public or populated area.

Figure 28 - NMFRD HazMat Team

A Level II Incident is considered a major incident that poses additional threats to first responders and the need for more complex solutions. These incidents often require additional manpower, equipment, and technical expertise from other agencies. These call types demand enhanced personal protective equipment, sophisticated detection, identification, and monitoring instrumentation, increased decontamination methods, and advanced control techniques.

Examples of a Level II incident include a train derailment with hazardous materials, large industrial accident, or terrorist attack involving chemical, biological, radiological or explosive weapons.

A Level III incident is a local disaster involving multiple regional hazmat teams, state agencies, and may activate federal resources. The incident will have escalated beyond the capabilities of the resources of NMFRD and regional response partners. The incident may last for days involving large-scale evacuation, extensive remediation, have the potential for significant health risk to local populations, and have a harmful environmental impact. Examples of a Level III response include Level II responses on a larger scale regarding the spill or release, evacuation, effected area, or hazard types.

Wildland

The district has little area that could be classified as "Wildland" but has several areas of tall native grass and light brush and abuts areas of extensive grassland. The district maintains a wildland team with an authorized roster of 30 members. The team utilizes the National Wildland Coordination Group (NWCG) qualification standards as a guideline for developing internal training programs and all members are minimally red card certified. Wildland deployments are classified as local mutual aid and national deployments. The district's wildland team may be deployed to either type of incident and has historically operated in the region and Western United States as part of a national wildfire control system.

Figure 29 - NMFRD Wildland Firefighting Team

On national deployments, the wildland team may attack active fire areas, provide structural protection to homes and businesses, and support local fire departments whose wildland resources are spread thin. Additionally, the district has specific personnel with qualifications that enable them to be deployed as individuals to serve as task force supervisors, heavy equipment operators and provide support for US Forest Service firefighting aircraft at the Rocky Mountain Metropolitan Airport, located within district boundaries. The program is funded through reimbursements by state and federal agencies, is revenue neutral, and adds substantial wildland training and experience to the district's personnel.

The district has four brush (Type VI) engines and one Type III engine. The Type VI engines are located at Station 61, Station 63, Station 66, and Station 67. The Type III engine will be placed into service in 2024. The district may also deploy a Type 1 engine, located at the district's fleet maintenance center. All deployments of Type I structural engines are minimally staffed by four NWCG red carded personnel, including one engine boss. All deployments of Type VI brush engines are minimally staffed by three NWCG red carded personnel, including one engine boss.

In addition to capabilities provided by the wildland team, all the primary engines and trucks within the district's stations maintain a basic complement of wildland/urban interface equipment and all frontline operations personnel have taken S-130 and S-190 classes.

Weed or brush fires within the district receive one engine/truck and one brush. All units respond emergent to the incident location. For further information on types of response, see *Section 3 – Critical Task Analysis and Effective Response Force.*

Aircraft Rescue and Firefighting (ARFF)

Rocky Mountain Metropolitan Airport (RMMA), located within district boundaries, is a general aviation airport that does not have an index rating requiring the need for dedicated on-site ARFF staffing and response. Despite this, the district houses an ARFF unit at station 65 and personnel respond to aircraft incidents in this unit along with the ARFF response of airport operations personnel.

The district has committed to training North Metro Fire Rescue personnel to the level of awareness and operation in aircraft incidents. The district has annual, dedicated funding for a 40-hour initial Aircraft Rescue and Firefighting (ARFF) basic training academy for all assigned company officers and engineers. This training focuses on operating within an airport emergency plan and understanding the tactics and strategies related to aircraft fires and victim rescue. Initial training is reinforced with on-going training and education through annual refresher and live burn evaluations. RMMA mechanics supplement response by staffing ARFF 55 during daytime hours. RMMA personnel have been trained to the same level of competency as NMFRD personnel to promote operational effectiveness, even though not required by Federal Aviation Administration (FAA).

The district has two ARFF's (one frontline and one reserve) located at Station 65. The crew from this station also cross staffs a fire engine. Due to the RMMA operational hours, there are two different types of

responses based on the day of the week and time of day. From the hours of 0700 to 1700, Monday through Friday, an aircraft incident receives four engines/trucks, two ARFFs (ARFF 55 (RMMA) and ARFF 65), two medic units, two battalion chiefs and one safety and medical officer. From the hours of 1700 to 0700, Monday through Friday and weekends, ARFF 55 is not in service, and the response receives one less ARFF. All of the units in both responses travel emergent to the incident location.

Aircraft emergencies are classified and toned as either an Alert 1, Alert 2 or Alert 3. Alert 1 is an aircraft known or suspected to have an operational defect unlikely to prevent a safe landing. No response is required, and this alert serves only to notify the on-duty battalion chief and Station 65 personnel. All RMMA units involved are staffed and positioned in quarters while awaiting further details. NMFRD units remain available unless otherwise directed.

An Alert 2 is an occurrence, other than an aircraft accident, associated with the operations of an aircraft which could potentially affect the safe operations of the aircraft. This alert receives the standard aircraft emergency response.

An Alert 3 is an aircraft incident involving death or injury, or substantial aircraft damage. This alert receives the standard aircraft emergency response and may be modified based on the needs of the incident commander. For further information on types of response, see *Section 3 – Critical Task Analysis and Effective Response Force.*

Current Deployment

Station placement (location) is the primary determiner of response time. Older district stations were placed near existing population concentrations that have changed over time. As areas were developed and populations grew, new stations were built to serve areas of increased call volume. Station placement was impacted by several factors: area call volume, travel distance and land availability.

Station distribution across the district, while not ideal, has generally provided adequate primary unit response times to most areas. Continued population and industry growth into previously rural areas will require the building of at least two additional stations to ensure goal response times. These locations will include service areas in the southwest and northeast of the district. At this report's completion, development of a station site in the southwest of the district is underway.

Station and Facility Locations

The district staffs seven operational fire stations, an administration building and a 14-acre training center with a vehicle maintenance facility. An unstaffed eighth station is on the training center grounds.

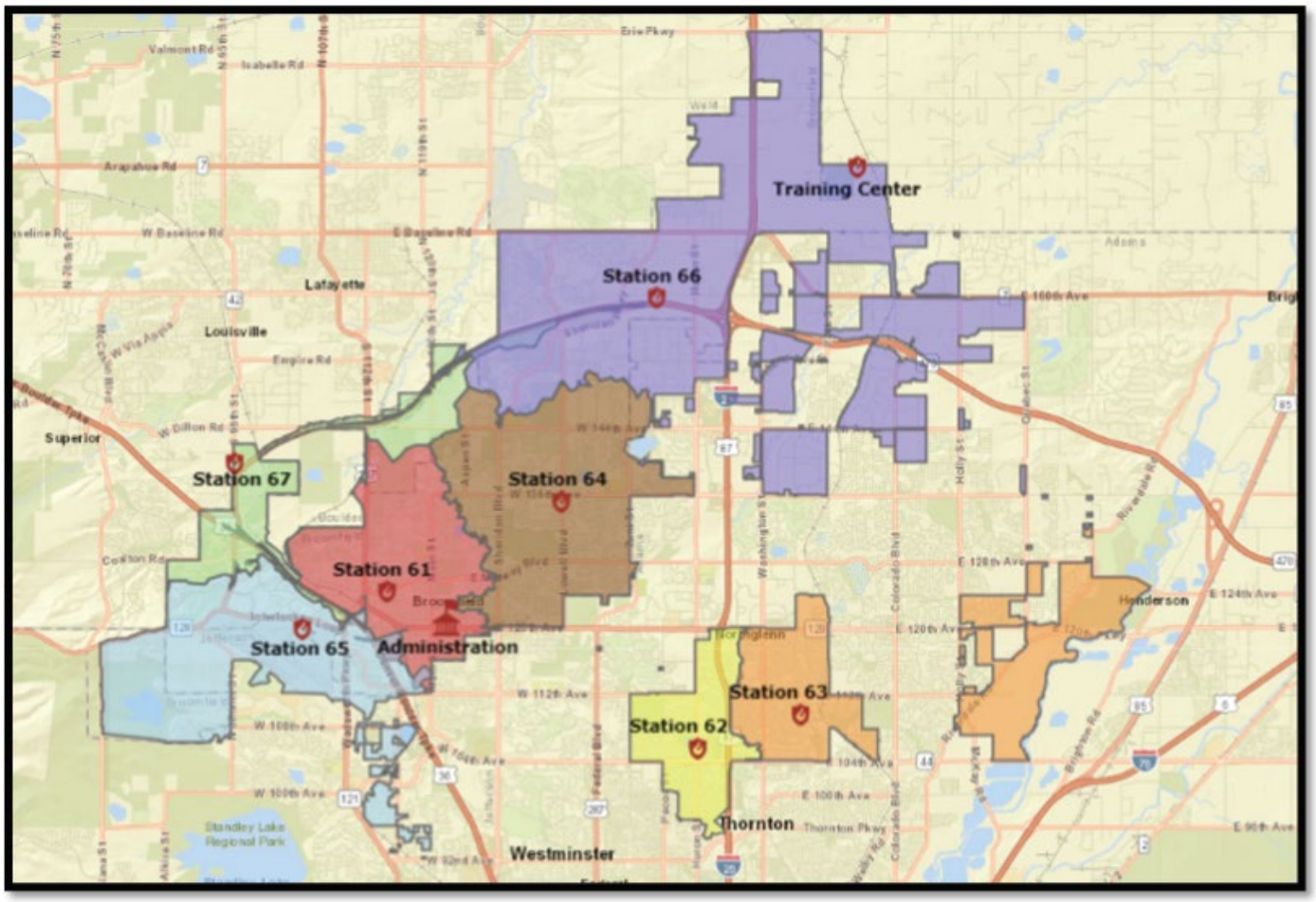


Figure 30 - NMFRD station boundaries and locations, 2024.

Station Appraisals

North Metro Fire Rescue District Station 61 1275 Midway Blvd, Broomfield, CO 80020	
	Local governmental fire station consisting of a one-story facility (with bay mezzanine) for independent fire suppression and all-hazards operational support capabilities housing Engine 61, Medic 61 and Battalion 61 with a minimum of six (6) response personnel. **Year Built:** 2022 **Renovations:** NA (new build) Scrape and new build of original station constructed in 1952. **Square Footage:** 11,900 S.F.
Design:	Station 61 is a one-story with bay mezzanine facility. The station has four apparatus bays with a dayroom, firefighter and chief officer offices, kitchen, five restrooms, fitness room, SCBA room, eight bunkrooms, and laundry amenities.
Construction:	Masonry with CMU block and fired masonry with precast/tension slab supports. The roof is composite, EPDM material, rigid insulation on metal decking.
Safety:	V-B fully sprinkled wet system with smoke alarms at bunkrooms, fire extinguishers, and non-separated uses. One-level living excludes the need for stairs, improving turnout time safety.
Carcinogen Mitigation:	• Plymovent vehicle exhaust extraction system • Separate bunker gear room with ventilation • Bunker gear washer extractor • Decontamination room from bay to interior • Positive and negative air pressurization systems
Code Compliance:	• 2018 International Building, Fire, Plumbing, Mechanical, Energy Conservation and Fuel Gas Codes • 2018 National Electric Code • 2009 ANSI 117.1
Staff Facilities:	ADA compliant facility with kitchen, offices, fitness room, restroom facilities, dayroom and sleeping quarters.
Efficiency:	Highly functional firehouse equipped with First-In alert system and architectural design for improved turnout response times. LED exterior and interior lighting. Two, separately derived, natural gas fueled generators with max supply of 150kW/187.5 KVA.
Future Needs:	10-Year Capital Outlook: No needs currently. Security cameras.

North Metro Fire Rescue District Station 62 10550 Huron Street, Northglenn, CO 80234	
	Local governmental fire station, multi-level facility with a basement area independent fire suppression and all-hazards operational support capabilities housing Truck 62, Medic 62, Battalion 62 and minimum of six (6) response personnel. **Year Built:** 1967 **Renovations:** 1989, 2021 1989: The north wing was added to the station to create a fitness room, offices and bathrooms. 2021: Renovations occurred to the exterior and complete interior of the station. **Square Footage:** 12,731 S.F.

Design:	Multi-level facility with a basement. This facility is comprised of three apparatus bays, dayroom, office space, kitchen, unisex restrooms, eight bunkrooms, training classroom, training tower and laundry amenities. The basement level includes storage.
Construction:	Masonry with CMU Block. Mechanically fasten 90 mil EPDM roof membrane.
Safety:	V-B fully sprinkled wet system (with exception to bay) with smoke alarms at bunk rooms, fire extinguishers, and non-separated uses
Carcinogen Mitigation:	• Plymovent vehicle exhaust extraction system • Separate bunker gear room with ventilation • Decontamination room from bay to interior • Bunker gear washer extractor
Code Compliance:	• 2009 International Building, Fire, Plumbing, Mechanical, Energy Conservation and Fuel Gas Code • 2012 National Electric Code • 2009 ANSI 117.1
Staff Facilities:	Kitchen, fitness room, training room, training tower, restroom facilities, dayroom, sleeping quarters and 80 kW generator power.
Efficiency:	The station is equipped with First-In alert system and new design will improve turnout response times for 2021 and beyond.
Future Needs:	10-Year Capital Outlook: Completion of exterior/interior flatwork to rear parking and bays. Roof upgrade on remaining portion of building. Security cameras.

North Metro Fire Rescue District Station 63 10941 Irma Drive, Northglenn, CO 80233	
	Local governmental fire station consisting of a multi-level facility for independent fire suppression and all-hazards operational support capabilities housing Engine 63, Medic 63, Brush 63 and a minimum of five (5) response personnel. **Year Built:** 1963 **Renovations:** 2018 Very little of the original station was kept; the station layout was transformed to exit apparatus onto Irma Drive for community safety purposes and improved response route. Living quarters are above apparatus bays. **Square Footage:** 9,354 S.F.

Design:	Two-story facility with a main level comprised of three apparatus bays, firefighter office, kitchen, fitness room, Limited Use/ Limited Application (LULA) Elevator and two restrooms. The second level has six bunkrooms, three full bathrooms, meeting space, office, laundry amenities, fire pole and day room.
Construction:	Masonry veneer with CMU and wood stud backing. Steel beams, joist, and girders. Prefabricated wood trusses. Mechanically fasten 90 mil EPDM roof membrane.
Safety:	V-B fully sprinkled wet system with smoke alarms at bunkrooms, fire extinguishers and non-separated uses
Carcinogen Mitigation:	• Plymovent vehicle exhaust extraction system • Separate bunker gear room with ventilation • Bunker gear washer extractor
Code Compliance:	• 2009 International Building, Plumbing, Fire, Energy Conservation and Fuel Gas Code • 2012 National Electric Code • 2009 ANSI 117.1 • American Disabilities Act (ADA) Code Compliance
Staff Facilities:	ADA compliant facility with a LULA elevator, offices, kitchen, fitness room, restrooms, dayroom, and sleeping quarters.
Efficiency:	Highly functional firehouse equipped with First-In alert system and architectural design for improved turnout response times. LED exterior and interior lighting. 60kW generator.
Future Needs:	10-Year Capital Outlook: Needs a decontamination room and security cameras.

North Metro Fire Rescue District Station 64 13515 Lowell Blvd, Broomfield, CO 80020	
	Local governmental fire station consisting of a one-story facility with a basement for independent fire suppression and all-hazards operational support capabilities housing Engine 64, Medic 64, SAM Officer and a minimum of six (6) response personnel. **Year Built:** 1977 **Renovations:** 2002 A wing was added to the west of the original facility and sleeping quarters, fitness room and basement storage were added. **Square Footage:** 7,287 S.F.

Design:	One story facility with a partial basement. The main level is comprised of three apparatus bays, dayroom, office, kitchen, restrooms, fitness room, seven bunkrooms and laundry amenities. The basement level is comprised of storage.
Construction:	Masonry veneer with CMU block with the roof over the living quarters is a metal standing seam and over the apparatus bay is 90 mil EDPM membrane.
Safety:	V-B fully sprinkled dry system with smoke alarms at bunkrooms and non-separate uses.
Carcinogen Mitigation:	• Plymovent vehicle exhaust extraction system • Bunker gear washer extractor
Code Compliance:	• 1998 International Building, Plumbing, Mechanical, Electrical, Fire and Energy Conservation Code • 1998 ANSI 117.1 • American Disabilities Act (ADA) Code Compliance
Staff Facilities:	Main level includes kitchen, exercise room, restroom facilities, dayroom, sleeping quarters and 25kW generator power.
Efficiency:	Highly functional firehouse equipped with First-In alert system and architectural design for improved turnout response times. Exterior & apparatus bay LED Lighting upgrade.
Future Needs:	10-Year Capital Outlook: Addition of a fourth apparatus bay that includes a ventilated bunker gear room and a decontamination room. Security cameras.

North Metro Fire Rescue District Station 65 9900 West 120th Ave, Broomfield CO 80021	
	Local governmental fire station consisting of a one-story facility for independent fire suppression and all-hazards operational support capabilities housing Engine 65, Aircraft Rescue and Firefighting (ARFF) 65 and a minimum of four (4) response personnel. **Year Built:** 1992 **Renovations:** 2007 An apparatus bay was added to the east side of the station structure to accommodate improved response times and much needed apparatus space. **Square Footage:** 6,120 S.F.

Design:	One story facility comprised of three total apparatus bays, one with drive-through capabilities, dayroom, office, kitchen, restrooms, fitness room, five bunkrooms and laundry amenities.
Construction:	Masonry veneer with CMU and wood stud backing. Metal standing seam roof.
Safety:	V-B fully sprinkled with smoke alarms at new addition (east) apparatus bay only.
Carcinogen Mitigation:	• Plymovent vehicle exhaust extraction system • Separate bunker gear room with ventilation • Bunker gear washer extractor
Code Compliance:	• 2003 International Building, Plumbing, Fire, Mechanical and Energy Conservation Code • 2005 National Electric Code • American Disabilities Act (ADA) Code Compliance
Staff Facilities:	Facility includes kitchen, fitness room, restroom facilities, dayroom, sleeping quarters and 35 kW generator power.
Efficiency:	Functional station equipped with First-In alert system and architectural design for improved turnout response times. New LED exterior and apparatus bay lighting.
Future Needs:	10-Year Capital Outlook: Exterior windows, HVAC upgrades and potential kitchen renovation. The facility is extremely small, and district needs to consider re-location or an extensive remodel project to provide more resources. Security cameras.

North Metro Fire Rescue District Station 66 1750 West 160th Ave, Broomfield, CO 80023	
	Local governmental fire station consisting of a one-story facility with a basement for independent fire suppression and all-hazards operational support capabilities housing Engine 66, Medic 66, Heavy Rescue 66, Brush 66 and a minimum of five (5) response personnel. **Year Built:** 2005 **Renovations:** 2018 The station had major settling issues that were addressed with concrete repair, drywall repair and roof repair. **Square Footage:** 11,770 S.F.

Design:	One story facility with a partial basement. The main level is comprised of four apparatus bays, all with drive through capabilities, dayroom, office, kitchen, men's, and women's separate locker/restrooms, eight bunk rooms, training classroom, training tower and laundry amenities. The basement level includes the fitness room, storage, and the radio tower server room. The sanitation sewer is on septic system.
Construction:	Brick veneer with CMU block and fiber cement board panel walls w/ battens. The roof is a metal standing seam.
Safety:	V-B fully sprinkled dry system with smoke alarms at bunkrooms and non-separated uses
Carcinogen Mitigation:	• Plymovent vehicle exhaust extraction system • Separate bunker gear room with ventilation • Bunker gear washer extractor
Code Compliance:	• 2003 International Building, Plumbing, Fire, Mechanical Code • 2002 National Electric Code • 1998 ANSI 117.1 • American Disabilities Act (ADA) Code Compliance
Staff Facilities:	Main level includes kitchen, restroom, office, dayroom, sleeping quarters, and 70kW generator.
Efficiency:	Highly functional firehouse equipped with First-In alert system and architectural design for improved turnout response times.
Future Needs:	10-Year Capital Outlook: Connection to city public sewer system (complete in 2024), subgrade stabilization plan. LED lighting upgrades, decontamination room, security cameras.

North Metro Fire Rescue District Station 67 13975 South 96th Street, Broomfield, CO 80020	
	Local governmental fire station consisting of a one-story facility for independent fire suppression and all-hazards operational support capabilities housing Engine 67, Hazmat 67, Hazmat 2, Brush 67 and a minimum of three (3) response personnel. **Year Built:** 2010 **Renovations:** NA **Square Footage:** 8,451 S.F.
Design:	One story facility with a main level comprised of three drive-through apparatus bays, dayroom, office, kitchen, fitness room, men's, and women's separate locker/restrooms, six bunk rooms, and laundry amenities. The sanitation sewer is on septic system.
Construction:	Stone veneer with CMU block and fiber cement board panel walls w/ battens. The roof is a standing seam metal.
Safety:	V-B fully sprinkled wet system with smoke alarms at bunk rooms, fire extinguishers, and non-separated uses
Carcinogen Mitigation:	• Plymovent vehicle exhaust extraction system • Separate bunker gear room with ventilation • Bunker gear washer extractor
Code Compliance:	• 2006 International Building, Plumbing, Mechanical, Fire and Energy Conservation Code • 2005 National Electric Code • 2003 ANSI 117.1 • American Disabilities Act (ADA) Code Compliance
Staff Facilities:	Facility includes kitchen, fitness room, restroom facilities, dayroom and sleeping quarters.
Efficiency:	Functional firehouse equipped with First-In alert system and architectural design for improved turnout response times. LED exterior lighting, 130kW Generator.
Future Needs:	10-Year Capital Outlook: Connection to public sewer system (complete in 2024), LED lighting upgrade. The fitness room is excessively small and needs to be improved if more personnel are added to the station. Decontamination room and security cameras.

North Metro Fire Rescue District Training Center Station 1006 Weld County Road 11, Bldg. A, Northglenn, CO 80516	
	Local governmental fire station facility for independent fire suppression and operational support capabilities. The station is not currently staffed with response personnel but houses two (2) Administrative EMS staff and district reserve apparatus units. The station is a part of the Training Center complex, which includes maintenance facility, classroom facility, training prop buildings and 14 acres with driving track. **Year Built:** 2008 **Renovations:** NA **Square Footage:** 10,088 S.F.
Design:	One story facility comprised of four drive-through apparatus bays, dayroom, office, kitchen, men's, and women's separate locker/restrooms, six bunkrooms, and laundry amenities. The sanitation sewer is on septic system.
Construction:	Brick veneer with CMU block and vertical fiber cement board panel walls w/ battens. The roofing system is a standing seam metal.
Safety:	V-B fully sprinkled wet system with smoke alarms at bunkrooms and non-separated uses per section 302.3.1.
Carcinogen Mitigation:	No current mitigation components
Code Compliance:	• 2003 International Building, Plumbing, Fire, Mechanical, Energy Conservation and Fuel Gas Code • 2002 National Electric Code • 1998 ANSI 117.1 • American Disabilities Act (ADA) Code Compliance
Staff Facilities:	Facility includes kitchen, restroom facilities, dayroom, sleeping quarters and 150 kW generator power. The fitness room is located in an Educational Facility.
Efficiency:	Highly functional firehouse equipped with architectural design for improved turnout response times.
Future Needs:	10-Year Capital Outlook: LED lighting upgrade for interior and exterior. Connection of entire Training Center complex to public sewer system.

North Metro Fire Rescue District Dennis D. Day Educational Facility 1006 Weld County Road 11, Bldg. C, Northglenn, CO 80516	
	Local governmental facility consisting of a one story, multi-classroom instructional training and education center for fire suppression, and specialized drill training for first responders. Four (4) training personnel work in this facility on a Monday through Friday schedule. **Year Built:** 2008 **Renovations:** NA **Square Footage:** 14,653 S.F.
Design:	Educational Facility consists of four classrooms, instructor prep quarters, fitness room (for all of TC Complex), men's and women's locker rooms, kitchen with break room, training staff offices, three burn prop buildings, a confined space/trench rescue prop, a hazardous material prop, an extrication yard, and a driving track. The sanitation sewer is on septic system.
Construction:	Brick veneer with CMU block and vertical fiber cement board panel walls w/ battens. The roofing system is a standing seam metal.
Safety:	V-B fully sprinkled with smoke alarms at bunkrooms and non-separated uses per section
Carcinogen Mitigation:	• Bunker gear washer extractor
Code Compliance:	• 2003 International Building, Plumbing, Mechanical, Fire, Energy Conservation and Fuel Gas Code • 2002 National Electric Code • 1998 ANSI 117.1 • American Disabilities Act (ADA) Code Compliance
Staff Facilities:	Facility includes kitchen, fitness room, restrooms & locker rooms, staff offices, firefighting training prop simulation buildings/classrooms.
Efficiency:	Highly functional instructional training classroom facility equipped with state-of-the-art amenities for specialized training and great architectural design.
Future Needs:	10-Year Capital Outlook: LED lighting upgrade. Needs generator for backup power plan and connection to public sewer system.

North Metro Fire Rescue District Fleet Vehicle Maintenance 1006 Weld County Road 11, Bldg. B, Northglenn, CO 80516	
	Local governmental facility consisting of a one-story facility with mezzanine for fleet vehicle maintenance support operations, preventative maintenance and unscheduled service and repair on all district vehicles. Two (2) personnel work in this facility on a Monday through Friday schedule. **Year Built:** 2008 **Renovations:** NA **Square Footage:** 9,238 S.F.

Design:	Facility consists of four drive-through apparatus bays, storage for apparatus parts, workshop, breakroom, restrooms with lockers, laundry amenities, office & workspace with below grade waste oil tank. The sanitation sewer is on septic system.
Construction:	Brick veneer with CMU block and vertical fiber cement board panel walls w/ battens. The roofing system is a standing seam metal.
Safety:	V-B fully sprinkled with smoke alarms at bunk rooms and non-separated uses
Carcinogen Mitigation:	• Plymovent vehicle exhaust extraction system
Code Compliance:	• 2003 International Building, Plumbing, Mechanical, Fire, Energy Conservation and Fuel Gas Code • 2002 National Electric Code • 1998 ANSI 117.1 • American Disabilities Act (ADA) Code Compliance
Staff Facilities:	ADA compliant facility with breakroom, restroom & lockers, Office, waiting room, laundry amenities and 150 kW generator power.
Efficiency:	Highly functional fleet vehicle maintenance shop equipped to support all functions related to staff vehicle fire/medic repairs and services.
Future Needs:	10-Year Capital Outlook: LED lighting upgrade Connection to public gravity sewer system. Security cameras.

North Metro Fire Rescue District NMFRD Administration Headquarters 101 Spader Way, Broomfield, CO 80020	
	A local governmental public administration facility consisting of a two-story office building and an underground parking garage. Gold LEED sustainability design. More than twenty-five (25) personnel work in this facility on a Monday through Friday schedule. **Year Built:** 2010 **Renovations:** NA **Square Footage:** 31,369 S.F.

Design:	Two story office building with a large board/community room, conference rooms, numerous offices, and cubicle configurations, building plans storage, fitness room, kitchen and two breakrooms.
Construction:	Masonry brick veneer with CMU block and large storefront glass units. Mechanically fasten EPDM roof membrane.
Safety:	V-B fully sprinkled wet system with smoke alarms, fire extinguishers and non-separated uses
Code Compliance:	• 2006 International Building, Plumbing, Mechanical, Fire and Energy Conservation Code • 2005 National Electric Code • 2003 ANSI 117.1 • American Disabilities Act (ADA) Code Compliance
Staff Facilities:	ADA compliant facility with elevator, full kitchen, fitness room with locker rooms, restrooms, laundry amenities and underground parking garage.
Efficiency:	Gold LEED facility equipped with solar photovoltaic panels. LED exterior lighting, 150 kW generator.
Future Needs:	10-Year Capital Outlook: Redesign of NW entry area and reception desk to accommodate guests. Additional office space, restroom needs, LED lighting upgrade for interior. Security cameras.

Minimum Staffing

Well-trained personnel are the district's most valuable asset. The correct amount of personnel on the appropriate apparatus, with reliable equipment dictates how safely and efficiently an emergency is mitigated.

The district is often staffed with more personnel than minimum staffing, resulting in multiple engines and/or the truck being overstaffed and having four personnel. However, the district has a minimum of 36 firefighters per day. The five stations that have a medic unit, have a minimum staffing of three personnel on the engines/truck. The two stations where there are no medic units, Station 65 and Station 67, have minimum engine staffing of four personnel. Medic units have minimum staffing of two personnel, a single SAM unit has one, and two Battalion Chiefs on duty each day. Apart from the battalion chief position, all NMFRD apparatus are staffed with a minimum of one paramedic.

6 Engine Companies (All ALS)			
1 Truck Company (ALS)			
5 Medic Companies (All ALS)			
2 Battalion Chiefs			
1 Safety and Medical Officer (ALS)			
Station No.	**Front Line Appartatus**	**Minimum Staffing**	**Special Teams**
Station 61 1275 Midway Blvd. Broomfield	Engine 61 Medic 61 Battalion Chief 61 Brush 61	3 2 1 Cross Staffed	
Station 62 10550 Huron St. Northglenn	Truck (Quint) 62 Medic 62 Battalion Chief 62	3 2 1	
Station 63 10941 Irma Dr. Northglenn	Engine 63 Medic 63 Brush 63	3 2 Cross Staffed	
Station 64 13515 Lowell Blvd. Broomfield	Engine 64 Medic 64 SAM 61	3 2 1	
Station 65 9900 W. 120th Ave. Broomfield	Engine 65 ARFF 65 Brush Engine 65	4 Cross Staffed Cross Staffed	ARFF
Station 66 1750 W. 160th Ave. Broomfield	Engine 66 Medic 66 Brush 66 Collapse 66 Rescue 66 Squad 66	3 2 Cross Staffed Cross Staffed Cross Staffed Cross Staffed	Tech Rescue
Station 67 13975 S. 96th St. Broomfield	Engine 67 Brush 67 Decon Trailer Foam Truck/Trailer 67 Hazmat 2	4 Cross Staffed Cross Staffed Cross Staffed Cross Staffed	HazMat
Minimum Staffing Shift Total		36	

Table 8 - NMFRD Minimum Staffing, 2024

Apparatus and Resource Capabilities

The district's vehicles consist of frontline apparatus, cross-staffed apparatus, reserve apparatus and support vehicles. Front line apparatus are the primary response vehicles used by crews. Crews use cross-staffed apparatus when a specific call type warrants its use. The district describes its apparatus and function as follows:

- **Engine/Pumper** – a fire apparatus with a permanently mounted fire pump capable of delivering 1,500 GPM (gallons per minute) of water that has a tank capacity of at least 500 gallons. The engine carries a supply of hose, and its primary purpose is to combat structure and other fires. All district engines carry hydraulic extrication tools, vehicle stabilization struts and ALS medical equipment. Engines are minimally staffed with at least one certified paramedic.
- **Truck (Quint)** – a fire apparatus that has five different components: fire pump, water tank, hose bed, ground ladder and aerial ladder. The district has one frontline truck, and it has a 500-gallon water tank with a 1500 GPM (gallons per minute) pump capacity. The truck carries hydraulic extrication tools, vehicle stabilization struts and ALS medical equipment. The truck has a permanently installed waterway capable of discharging water at positions elevated from the ground. The truck carries ALS medical equipment and is minimally staffed with at least one certified paramedic.
- **Medic** – an ALS ambulance staffed with firefighters and their appropriate structural firefighting PPE (personal protective equipment) including SCBA (self-contained breathing apparatus). All district medic units are minimally staffed with at least one certified paramedic.
- **Brush Truck**– a one-ton truck with a chassis mounted pump that can deliver at or above 125 GPM (gallons per minute) pump capacity. The brush truck has a water and foam tank to combat wildland/grass fires and carries an assortment of wildland firefighting tools.
- **ARFF** – a specialized apparatus designed specifically for aircraft rescue firefighting. This type of apparatus generally carries a larger amount of water and foam than a standard fire engine. This apparatus may also be driven off-road to allow access to an aircraft accident location and can pump water while it is in motion.
- **Rescue –** a specialized apparatus used for technical rescue and vehicle extrication.
- **Tech Rescue Truck –** a specialized box truck used for technical rescue, specifically trench and building collapse incidents.

- **Squad –** a specialized unit used for water rescue. The unit consists of a ½-ton pickup truck and aluminum utility boat with motor.
- **Hazmat –** a specialized apparatus used for hazard identification, containment, control and decontamination of hazardous material releases, spills, and leaks.
- **Foam Truck & Trailer –** a specialized unit, used for hazmat incidents related to oil and gas fires or other incidents requiring large volumes of foam. The unit consists of a 1-ton truck with a trailer-mounted remote-controlled monitor that has a flow capacity of 1200 GPM (gallons per minute) of water. The trailer also has 660 gallons of foam.

In the chart below, frontline apparatus has a *blue fill* and cross-staffed apparatus has a *white fill*.

Unit ID	Year	Make	Model	Assigned Designator
Station 61				
U-16	2019	Pierce Velocity	Pumper	Engine 61
M-17	2024	Ford	Medic	Medic 61
C-39	2020	Chevrolet	Silverado	BC 61
U-22	2023	Ford	F-550 BFX	Brush 61
Station 62				
T-4	2019	Pierce Velocity	107 ft. Aerial	Truck 62
M-15	2022	Ford	Medic	Medic 62
C-43	2021	Chevrolet	Silverado	BC 62
Station 63				
U-23	2024	Pierce Velocity	Pumper	Engine 63
M-18	2024	Ford	Medic	Medic 63
U-15	2018	Ford	F-550 BFX	Brush 63
Station 64				
U-24	2024	Pierce Velocity	Pumper	Engine 64
M-16	2023	Ford	Medic	Medic 64
C-47	2024	Chevrolet	Silverado	Safety & Medical
Station 65				
U-21	2021	Pierce Velocity	Pumper	Engine 65
U-19	2002	OSHKOSH	Striker 1500	ARFF 65
U-25	2023	Freightliner	M2 106 (Type III)	Brush Engine 65
Station 66				
U-20	2021	Pierce Velocity	8410 Fire Engine	Engine 66
M-14	2019	Ford AEV	Medic	Medic 66
U-05	2000	Ford American LaFrance	Brush Attack	Brush 66
R-15	2019	International	Truck	Collapse 66
C-07	1998	GMC	Pickup	Squad 66
R-03	1992	Boat and Trailer	Water Rescue	Station 66
Station 67				
U-17	2019	Pierce Velocity	Pumper	Engine 67
R-01	1994/2000	Ford/Marion	Heavy Rescue	Hazmat 67
U-07	2003	Ford American LaFrance	Brush Attack	Brush 67
C-35	2019	Chevrolet	Silverado	Foam Truck 67
R-16	2018	Foam Chariot	Trailer	Foam Trailer 67
Administration				
R-05	2006	Bauer AC Trailer	Trailer	Air/Light

Table 9 - District Frontline (blue) and Cross Staffed (white) Apparatus, Current as of Sept. 2024

Reserve apparatus are vehicles operationally maintained and serve as a temporary apparatus when the frontline apparatus needs maintenance.

Reserves				
Unit ID	Year	Make	Model	Assigned Location
T-03	2008	Spartan/Smeal	75 ft Aerial	Reserve
U-11	2008	Spartan/Smeal	Pumper	Reserve
U-12	2008	Spartan/Smeal	Pumper	Reserve
U-13	2017	Spartan/Smeal	Pumper	Reserve
U-14	2017	Spartan/Smeal	Pumper	Reserve
M-07	2011	Ford	Medic	Reserve
M-08	2012	Ford	Medic	Reserve
M-09	2015	Ford	Medic	Reserve
M-12	2015	Ford	Medic	Training
C-22	2008	Chevrolet	Tahoe	Battalion Chief 61
C-38	2017	Chevrolet	Silverado	Reserve Sam

Table 10 - District Reserve Apparatus (grey), Current as of Sept. 2024

The district currently has two engine/pumper apparatus placed on order. One engine is scheduled to be the primary response unit for Station 68, once construction is complete. The additional engine is either a replacement engine for Station 61, which Station 61's primary unit is a 2019, or the primary unit for Station 69, should that station be constructed. Both units are scheduled to be delivered in 2026.

Unit ID	Year	Make	Model	Station to Receive
On Order				
Not assigned	2026	Pierce Velocity	Pumper	Station 68
Not assigned	2026	Pierce Velocity	Pumper	Engine 61 or 69

Table 11 - District Apparatus on Order, Current as of Sept. 2024

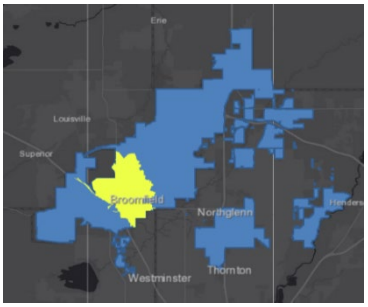
Several staff members utilize support vehicles but are not considered in minimum staffing.

Support Vehicles				
Unit ID	Year	Make	Model	Assigned Location
C-02	2006	GMC	Service Truck	Fleet Truck
C-06	2002	Chevrolet	Tahoe	Fleet Pool Vehicle
C-11	2004	Chevrolet	Tahoe	Training
C-15	1999	Ford	Pickup	Building Maintenance
C-18	2005	Chevrolet	Trailblazer	Fleet Pool Vehicle
C-19	2005	Chevrolet	Trailblazer	Investigator Vehicle
C-20	2005	Chevrolet	Trailblazer	CRR Vehicle
C-21	2008	Ford	F-250	Fire Prevention
C-23	2008	GMC	Sierra 2500HD	Facility Manager
C-24	2008	Ford	Taurus	Fire Prevention
C-25	2009	Chevrolet	Tahoe	Fleet Pool Vehicle
C-26	2016	Chevrolet	2500	Facility Maintenance
C-28	2015	Chevrolet	Tahoe	EMS Captain
C-29	2015	Chevrolet	Tahoe	Fleet Pool Vehicle
C-30	2017	Chevrolet	Equinox	EMS Lieutenant
C-31	2017	Chevrolet	Pickup	Training Chief
C-32	2019	Chevrolet	Equinox	Prevention Pool Vechicle
C-33	2019	Chevrolet	Equinox	Life Safety Education
C-34	2019	Chevrolet	Tahoe	Fire Chief
C-36	2019	Chevrolet	Equinox	PIO
C-37	2019	Chevrolet	Equinox LS	Fire Prevention Inspector
C-40	2020	Chevrolet	Equinox	Deputy Chif of Operations
C-41	2020	Chevrolet	Equinox	IT
C-42	2020	Chevrolet	Equinox	Fire Prevention Inspector
C-44	2022	Chevrolet	Equinox	Division Chief of Fire Prevention
C-45	2023	Chevrolet	Traverse	EMS Chief
C-46	2023	Chevrolet	Silverado	Training Truck
C-48	2024	Chevrolet	Tahoe	Deputy Chief of Support Services
C-49	2024	Chevrolet	Equinox	Deputy Chief

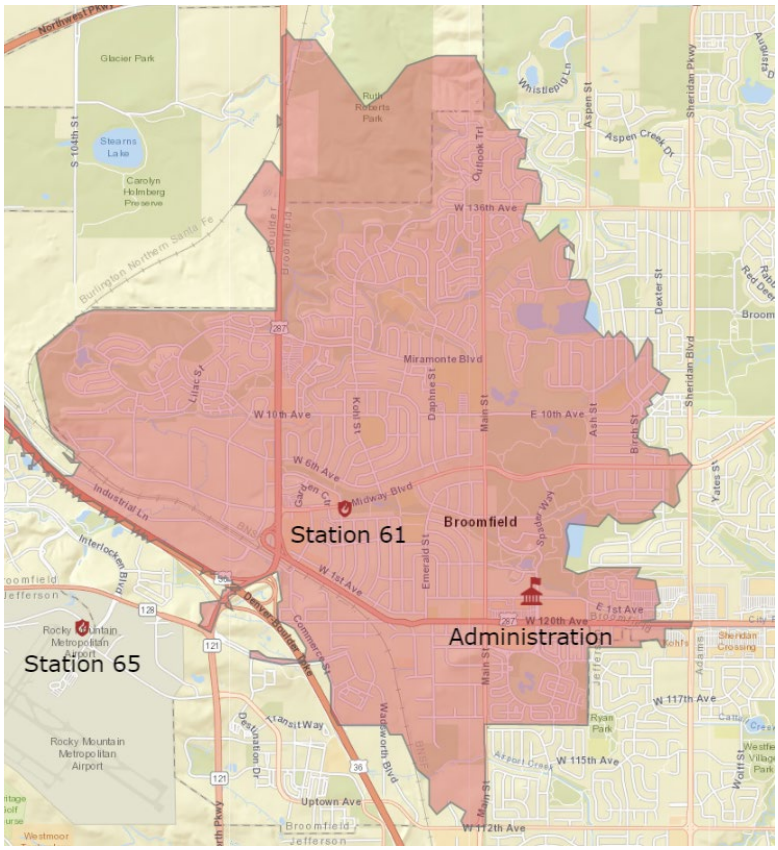
Table 12 - District Support Vehicles, Current as of Sept. 2024

Response Areas

The district's station response areas differ by population, demographics, and occupancy classification. Analysis of these area characteristics, along with call volume and type data, can drive resource placement and distribution decisions and aid in the development of services and programs to effectively meet the needs of citizens. This analysis is important when assessing resiliency, or the district's ability to quickly recover from an incident or event, or to adjust easily to the changing needs of its citizens.

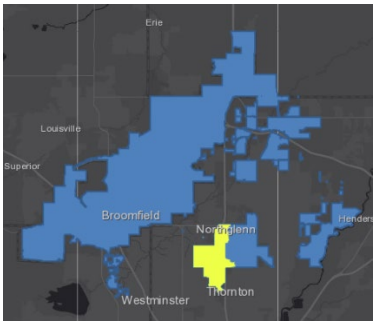


Station 61 This response area is 6.32 square miles and serves a population of 18,643 (ESRI Community Analyst, community profile, 2023). This area was Broomfield's first filing and has the oldest buildings within the city. The median age of the population is 40.7 years old, and the average household size is 2.4. The median household income is $100,066 with 54.5% of the population having a bachelor's degree or higher. Seventy-five percent of the employed workforce are white collar, 12.2% are blue collar and 12.8% are services. There are 1,182 total businesses and 15,172 total employees within the station area.

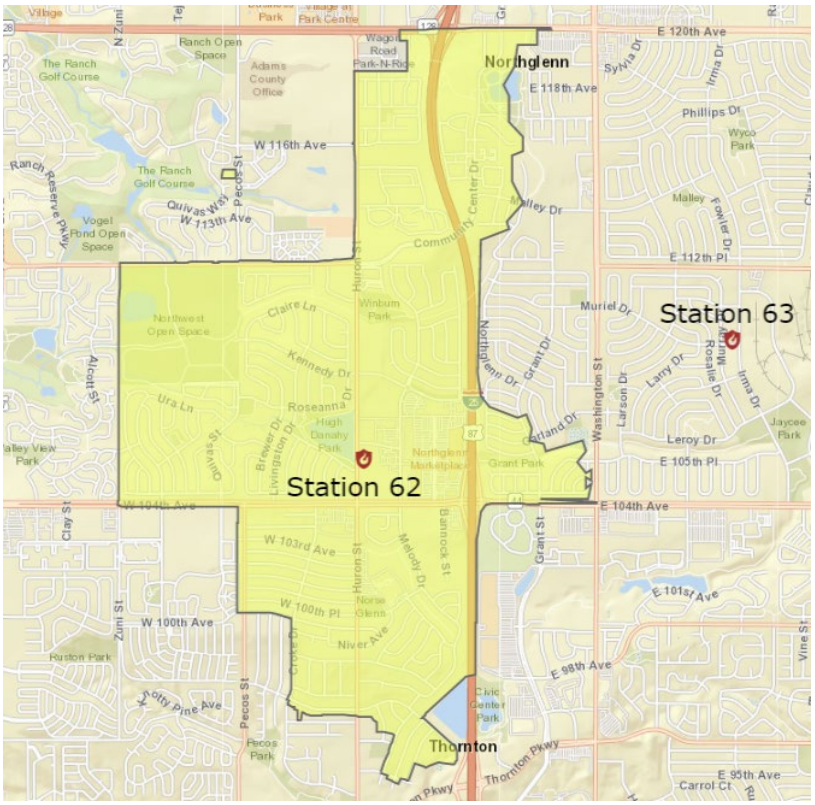


Most of Broomfield's industrial manufacturing, warehouses and automotive repair facilities are within this area. There are also many restaurants, small and big box retail along 120th Avenue and Highway 287. In addition to these commercial properties, the response area also contains city and county municipality facilities including the Broomfield City & County Building, Broomfield Combined Courts, Broomfield Health & Human Services, Broomfield Community Center and the Broomfield Library. The district's

administrative building is in this area, close to the city and county buildings mentioned. East of Highway 287 and north of 120th Avenue is largely comprised of single-family homes.



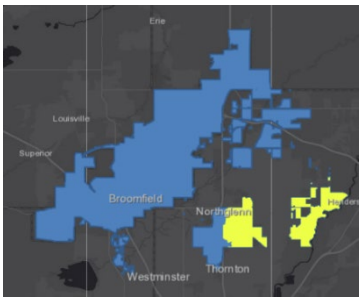
Station 62 This response area is 3.13 square miles and serves a 2023 population of 14,811 (ESRI Community Analyst, community profile, 2023). The median age of the population is 36 years old, and the average household size is 2.7. The median household income is $75,190 with 25% of the population having a bachelor's degree or higher. Fifty-one percent of the employed workforce are white collar, 32.8% are blue collar and 16% are services. There are 627 total businesses and 6,214 total employees within the station area.



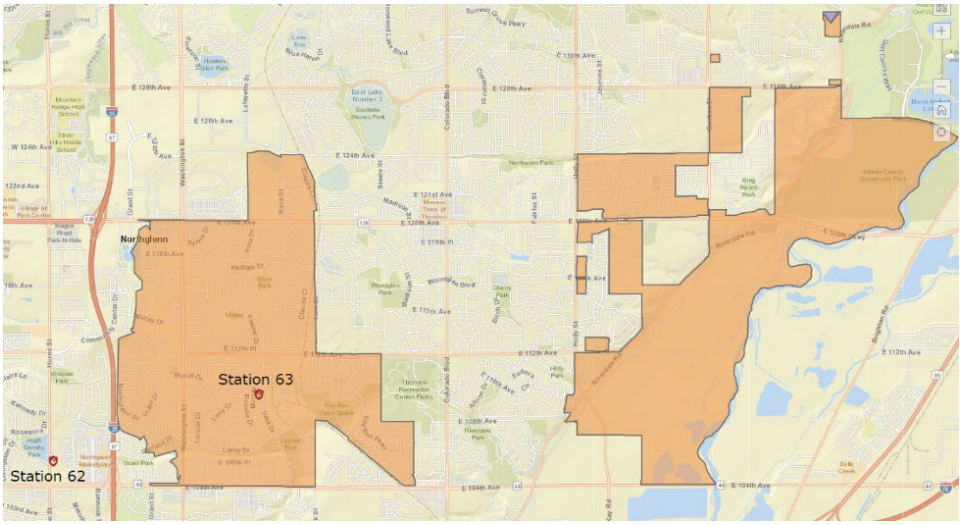
The city of Northglenn is divided by Interstate 25 into an east and west portion. Station 62 is on the West side and Station 63 is on the East. The city originated in the East and most of the structures within the city were built in the 1960's and 1970's. NMFRD built and staffed Station 62 in 1967 as Northglenn expanded to the West.

Most of Station 62's response area structures are comprised of residential single-family homes. The commercial areas are mainly along 104th Avenue and Huron Street. Northglenn Marketplace, a large open-air mall, consists of a variety of large and small retail stores and restaurants and is on the east portion of the response area near Interstate 25 and 104th Avenue. The Northglenn municipality buildings are also located within the Northeast portion of this area and consist of Northglenn City Hall and Municipal Courts, Northglenn Recreation Center and Northglenn Police Department.

Station 63 This response area is 6.95 square miles and serves a 2023 population of 28,272 (ESRI Community Analyst, community profile, 2023). The median age of the population is 35.8 years old, and the average household size is 2.8. The median household income is $79,146 with 25.4% of the population having a bachelor's degree or higher. Fifty eight percent of the employed workforce are white collar, 27.5% are blue collar and 14.8% are services. There are 446 total businesses and 4,285 total employees within the station area.

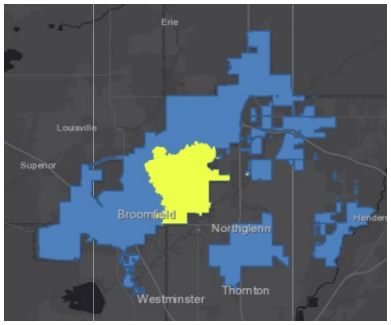


The city of Northglenn is divided by Interstate 25 into an east and west portion. Station 62 is in the West and Station 63 is on the East. The city originated in the East and most of the structures within the city were built in the 1960's and 1970's. The western portion of Station 63's response area is within the city of Northglenn. The eastern portion is unincorporated areas of Adams County. The city of Thornton, served by the Thornton Fire Department, runs through the middle of the response area.

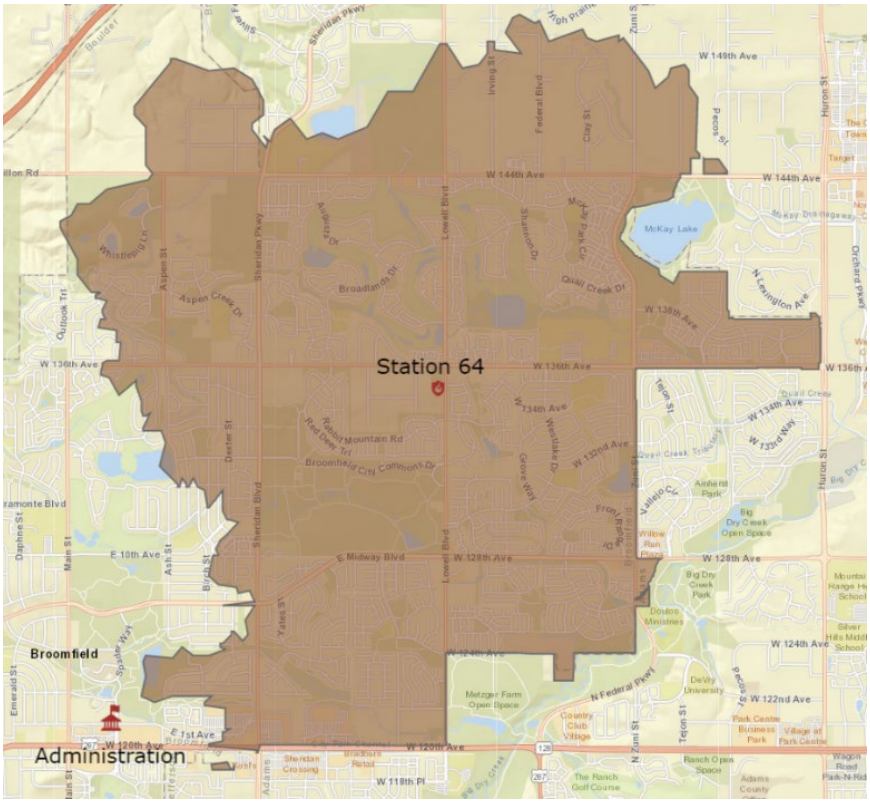


Most of Station 63's response area structures are comprised of residential single-family homes. Most of the retail is located along 104th Avenue, 120th Avenue and Washington Street. The area has an industrial manufacturing and warehouse zone east of Station 63, along Irma Drive. Station 63 also has the most senior care facilities in the district, with the majority in the central-west portion of the response area along Malley Drive. The unincorporated area of Adams County, to the East, is largely comprised of developed, single-family homes within neighborhoods and rural homes on acreage lots.

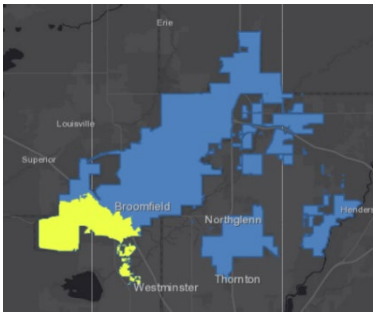
Station 64 This response area is 9.02 square miles and serves a 2023 population of 33,414 (ESRI Community Analyst, community profile, 2023). The median age of the population is 37.6 years old, and the average household size is 2.9. The median household income is $126,762 with 55.5% of the population having a bachelor's degree or higher. Seventy-five percent of the employed workforce are white collar, 14.6% are blue collar and 10.4% are services. There are 553 total businesses and 6,220 total employees within the station area.



Most of Station 64's response area structures are single-family residential homes. There is some small retail and big box retail in the southwestern portion of the response area along 120th Avenue with additional retail along the eastern portions of 136th Avenue and 144th Avenue. This response area has an increasing number of senior care facilities and is second in quantity only to Station 63's response area.

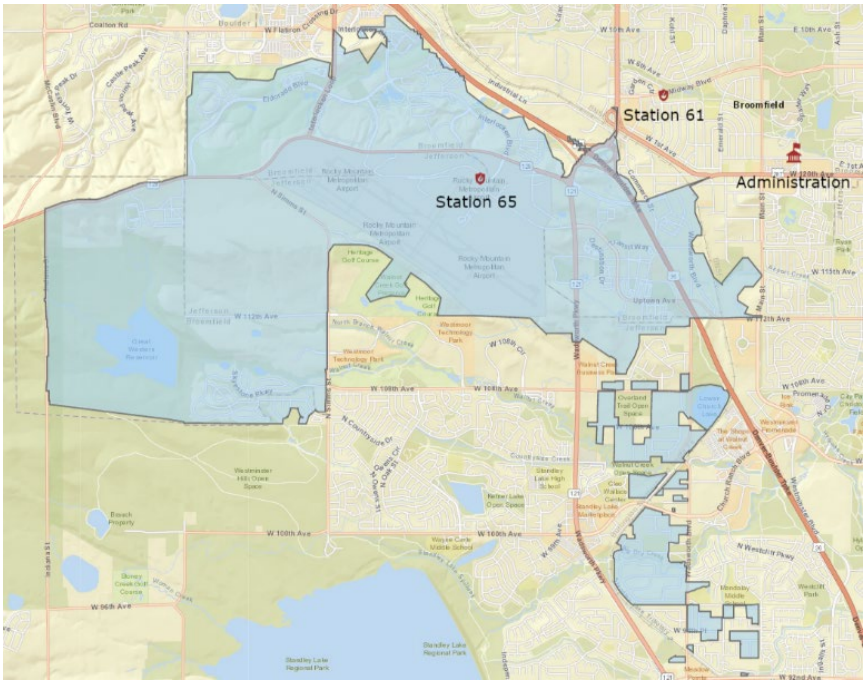


The age of the structures within the response area increases towards the southwestern portion of the response area, with the homes there being built in the late 1980's and early 1990's. As you move to the northeast, the structures become increasingly newer with some neighborhoods still under construction.



Station 65 This response area is 8.27 square miles and serves a population of 9,605 (ESRI Community Analyst, community profile, 2023). The median age of the population is 34.4 years old, and the average household size is 1.8. The median household income is $83,058 with 61% of the population having a bachelor's degree or higher. Eighty-one percent of the employed workforce are white collar, 10.9% are blue collar and 8.3% are services. There are 692 total businesses and 15,011 total employees within the station area.

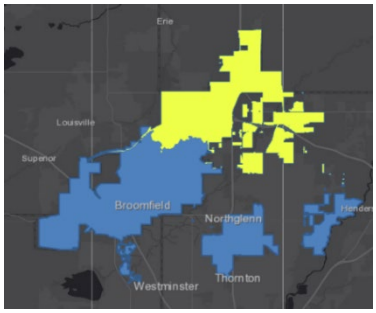
Station 65's response area has three distinct areas, with most structures built from the mid-1990s or newer. These areas include Arista, Rocky Mountain Metropolitan Airport and Interlocken. Arista is on the eastern portion of the response area and contains high-density multi-family apartments, townhomes and condominiums with some commercial retail constructed live/work. The area is constructed around the 1st Bank Center, which is a mid-sized event venue. The venue can hold 6,500 people and accommodates live music, family shows, sporting events and community functions.



Rocky Mountain Metropolitan Airport is a public use airport owned and operated by Jefferson County that covers 1,700 acres adjacent to Station 65, located on airport property. The airport is included in the National Plan of Integrated Airport Systems, categorized as a reliever airport.

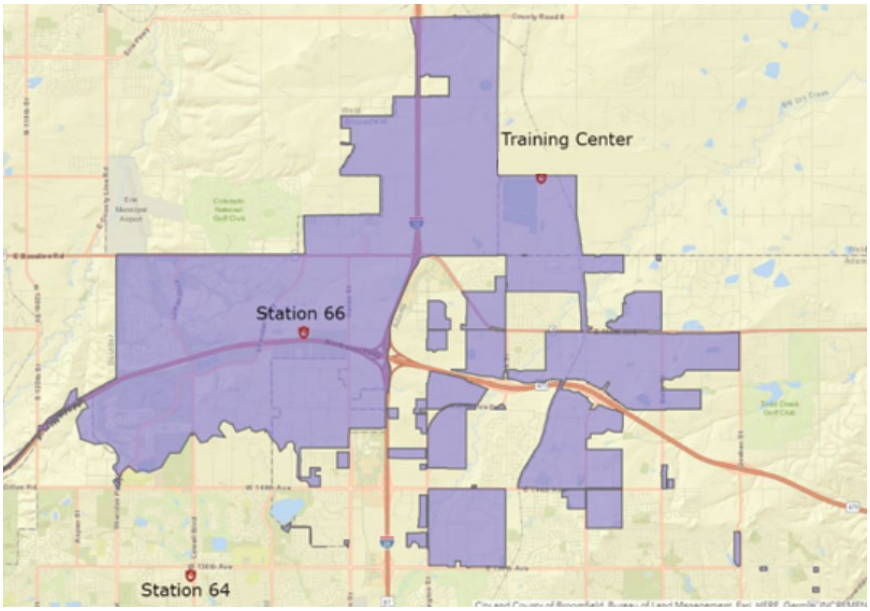
Interlocken, located north of Station 65, is a 963-acre business park with 4.337 million square feet (about half the total floor space of the Pentagon) of office space. This large business park contributes to Station 65's large increase in daytime population. Interlocken has a concentration of high-tech corporations, institutions of higher education, research and development laboratories and some of Colorado's largest

and most prestigious employers. The district's tallest buildings, some of which are 10 stories or more, are in this area.



Station 66 This response area is 21.52 square miles and serves a population of 16,505 (ESRI Community Analyst, community profile, 2023). The median age of the population is 41.6 years old, and the average household size is 2.8. The median household income is $163,454 with 70.7% of the population having a bachelor's degree or higher. Eighty-two percent of the employed workforce are white collar, 8.3% are blue collar and 9.9% are services. There are 173 total businesses and 1,447 total employees within this station area.

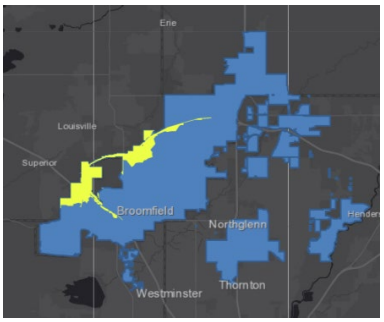
While the response area of Station 66 is one of the largest in square miles covered, most of the population is currently within proximity to the station location and is overwhelmingly residential. There is presently limited commercial retail along State Highway 7, just west of Interstate 25. There is a large, master planned community north of the station, which includes a portion of the community dedicated to age restricted homes of 55+.



As the response area expands to the east, across Interstate 25, the residential homes become more dispersed situated on rural, acreage lots that include many small farms. Active development is occurring north along Interstate 25 with future growth in an area called Baseline. Baseline is a new 1,100-acre development in northern Broomfield just north of the Northwest Parkway and west of Interstate 25. Once complete, the development is anticipated to have over 9,000 residential units and 170 acres of open land.

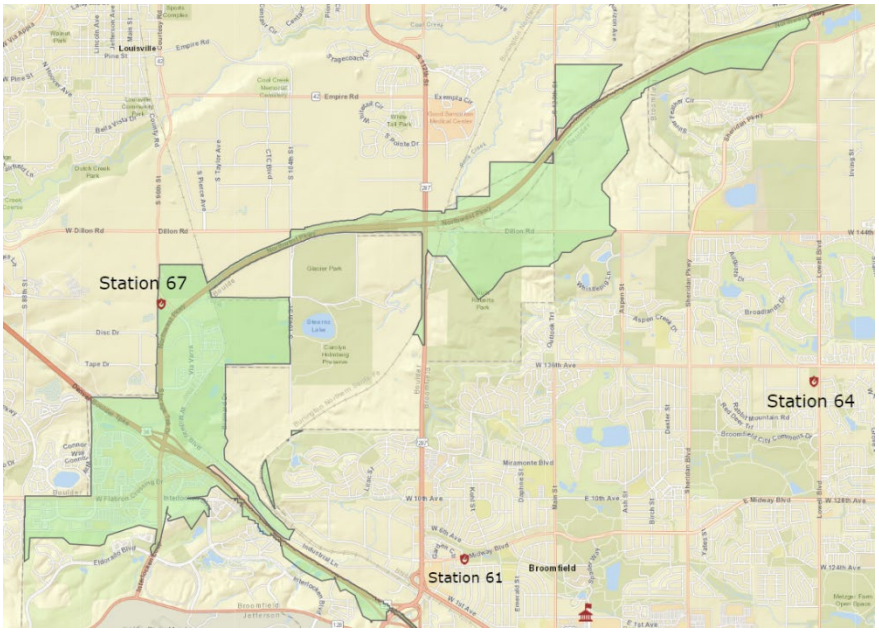
Station 66's response area is larger than the district's other response areas primarily because the growth east of Interstate 25 and north of State Highway 7 have been slower to develop. The training center fire

station, constructed in 2008, was built to handle projected rapid future growth in the area. Due to the housing recession in late 2008, the station was not staffed and the anticipated growth stalled. The station sits on the same property as the district's training center and fleet maintenance building and is currently occupied as office space for additional training staff. The station is available for future needs should growth in the area warrant the additional response necessity.



Station 67 This response area is 3.77 square miles and serves a population of 5,460 (ESRI Community Analyst, community profile, 2023). The median age of the population is 35.5 years old, and the average household size is 1.7. The median household income is $81,386 with 70.7% of the population having a bachelor's degree or higher. Seventy-six percent of the employed workforce are white collar, 10% are blue collar and 13.9% are services. There are 292 total businesses and 9,426 total employees within the station area.

Station 67's response area and population are the smallest within the district. Station 67's response area is North of the response area for Station 65 and has a similar daytime population increase due to the large amount of commercial and retail property. This area is densely populated and includes a shopping mall of nearly 1.5 million square feet of retail space, numerous restaurants, big box retail stores and additional large retail and service occupancies.



District response areas are overwhelmingly made up of single-family residential homes, except Station 65 and Station 67. Station 67's residential structure makeup is primarily multi-family apartments, condominiums and townhomes. The response area contains a few single-family residential homes, most of which are along the district's eastern portion in large, acreage lots

and farming property. The largest portion of multi-family buildings are directly across the street from the station, in the Via Varra area.

Response Area Demographics

District Population Demographics by Station Response Area

	Station #61	Station #62	Station #63	Station #64	Station #65	Station #66	Station #67
2023 Total Population	18,643	14,811	28,272	33,414	9,605	16,505	5,460
2023 Total Daytime Population	22,358	13,480	17,643	24,663	21,577	11,406	7,074
2023 % Increase/Decrease Population vs. Daytime Population	19.9%	-9.0%	-37.6%	-26.2%	124.6%	-30.9%	29.6%
2023 Population Density (Pop per Square Mile)	2,950.0	4,729.2	4,067.7	3,703.2	1,160.9	767.0	1,448.5
2028 Total Population	19,891	14,767	28,505	34,396	10,461	18,238	6,320
2028 Population Density (Pop per Square Mile)	3,147.5	4,715.2	4,101.3	3,812.1	1,264.3	847.5	1,676.7
2023-2028 Population: Compound Annual Growth Rate	1.30%	-0.06%	0.16%	0.58%	1.72%	2.02%	2.97%
2023 Median Age	40.7	36.2	35.8	37.6	34.4	41.6	35.5
2023 Senior Population (Age 65+) (%)	18.05%	15.60%	13.82%	11.92%	10.40%	20.01%	13.30%
2028 Senior Population (Age 65+) (%)	20.40%	16.83%	14.65%	14.49%	10.95%	21.63%	12.75%
2023 Average Household Size	2.38	2.72	2.79	2.86	1.79	2.80	1.69
2023 Median Household Income	$100,066	$75,190	$79,146	$126,762	$83,058	$163,454	$81,386
2023 Population Age 25+: 9-12th Grade/No Diploma (%)	1.89%	6.13%	5.43%	3.33%	0.77%	1.49%	0.38%
2023 Population Age 25+: High School Diploma (%)	13.10%	25.62%	28.05%	12.33%	8.62%	8.62%	6.24%
2023 Population Age 25+: Bachelor's Degree (%)	35.96%	17.18%	16.88%	34.33%	39.84%	41.27%	42.77%
2023 Population Age 25+: Graduate/Professional Degree (%)	18.55%	7.79%	8.54%	21.16%	21.14%	29.46%	27.91%
2023 Hispanic Population (%)	13.85%	38.80%	36.90%	16.50%	12.69%	9.92%	11.76%
2023 Diversity Index	53.3	78.9	76.9	59.8	53.3	50.4	54.1
2023 Unemployment Rate (Index)	51	28	70	40	72	51	44
2021 Households Below the Poverty Level (%)	4.23%	8.16%	8.07%	3.98%	6.41%	2.08%	15.99%

Table 13 - Sourced information from ESRI Community Analyst, 2024

District Population with Language Barrier by Station Response Area (2014-2018, Aged 18-64)

Language	Station 61	Station 62	Station 63	Station 64	Station 65	Station 66	Station 67
2020 Pop 18-64 Speak Spanish & No English	23	87	55	0	0	0	0
2020 Pop 18-64 Speak Spanish & No English (%)	0.13%	0.62%	0.21%	0.00%	0.00%	0.00%	0.00%
2020 Pop 18-64 Speak Spanish & English Not Well	107	217	425	282	2	5	2
2020 Pop 18-64 Speak Spanish & English Not Well (%)	0.59%	1.53%	1.64%	0.91%	0.03%	0.05%	0.05%
2020 Pop 18-64 Speak Indo-European & No English	0	11	9	0	0	0	0
2020 Pop 18-64 Speak Indo-European & No English (%)	0.00%	0.08%	0.03%	0.00%	0.00%	0.00%	0.00%
2020 Pop 18-64 Speak Indo-Eur & English Not Well	15	24	15	0	6	0	0
2020 Pop 18-64 Speak Indo-Eur & English Not Well (%)	0.08%	0.17%	0.06%	0.00%	0.09%	0.00%	0.00%
2020 Pop 18-64 Speak Asian-Pacific Isl & No English	44	23	76	20	0	0	0
2020 Pop 18-64 Speak Asian-Pacific Isl & No English (%)	0.24%	0.16%	0.29%	0.06%	0.00%	0.00%	0.00%
2020 Pop 18-64 Speak Asian-PI & English Not Well	45	110	17	85	32	54	0
2020 Pop 18-64 Speak Asian-PI & English Not Well (%)	0.25%	0.78%	0.07%	0.28%	0.47%	0.56%	0.00%
2020 Pop 18-64 Speak Other Language & No English	0	0	0	0	0	0	0
2020 Pop 18-64 Speak Other Language & No English (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2020 Pop 18-64 Speak Oth Language & English Not Well	0	0	27	0	0	0	0
2020 Pop 18-64 Speak Oth Language & English Not Well (%)	0.00%	0.00%	0.10%	0.00%	0.00%	0.00%	0.00%

Table 14 - Sourced information from ESRI Community Analyst ACS, 2020

District Population with Language Barrier by Station Response Area (2014-2018, Aged 65+)

Language	Station 61	Station 62	Station 63	Station 64	Station 65	Station 66	Station 67
2020 Pop 65+ Speak Spanish & No English	0	0	242	0	0	0	0
2020 Pop 65+ Speak Spanish & No English (%)	0.00%	0.00%	0.93%	0.00%	0.00%	0.00%	0.00%
2020 Pop 65+ Speak Spanish & English Not Well	4	1	0	4	0	0	0
2020 Pop 65+ Speak Spanish & English Not Well (%)	0.02%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%
2020 Pop 65+ Speak Indo-European & No English	0	0	0	14	0	0	0
2020 Pop 65+ Speak Indo-European & No English (%)	0.00%	0.00%	0.00%	0.05%	0.00%	0.00%	0.00%
2020 Pop 65+ Speak Indo-Eur & English Not Well	0	0	0	0	0	0	0
2020 Pop 65+ Speak Indo-Eur & English Not Well (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2020 Pop 65+ Speak Asian-Pacific Isl & No English	16	0	3	11	0	0	0
2020 Pop 65+ Speak Asian-Pacific Isl & No English (%)	0.09%	0.00%	0.01%	0.04%	0.00%	0.00%	0.00%
2020 Pop 65+ Speak Asian-PI & English Not Well	5	10	4	42	0	0	0
2020 Pop 65+ Speak Asian-PI & English Not Well (%)	0.03%	0.07%	0.02%	0.14%	0.00%	0.00%	0.00%
2020 Pop 65+ Speak Oth Language & No English	0	0	0	0	0	0	0
2020 Pop 65+ Speak Oth Language & No English (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2020 Pop 65+ Speak Oth Language & English Not Well	0	0	0	0	0	0	0
2020 Pop 65+ Speak Oth Language & English Not Well (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

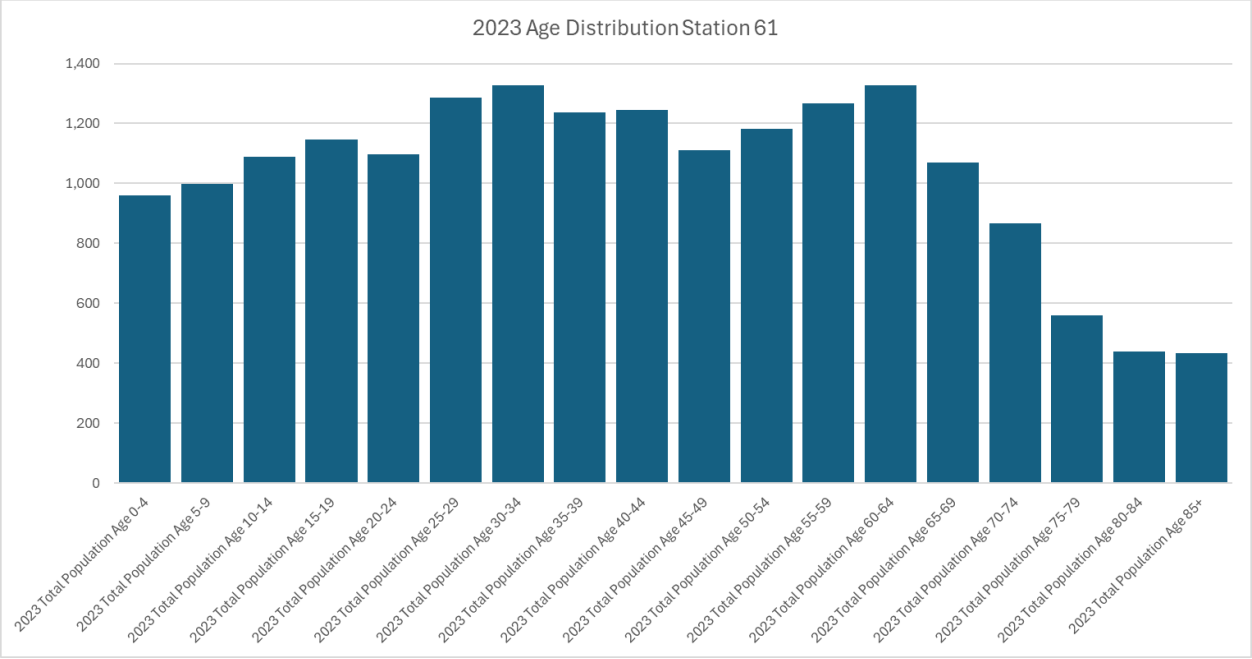
Table 15 - Sourced information from ESRI Community Analyst, ACS 2020

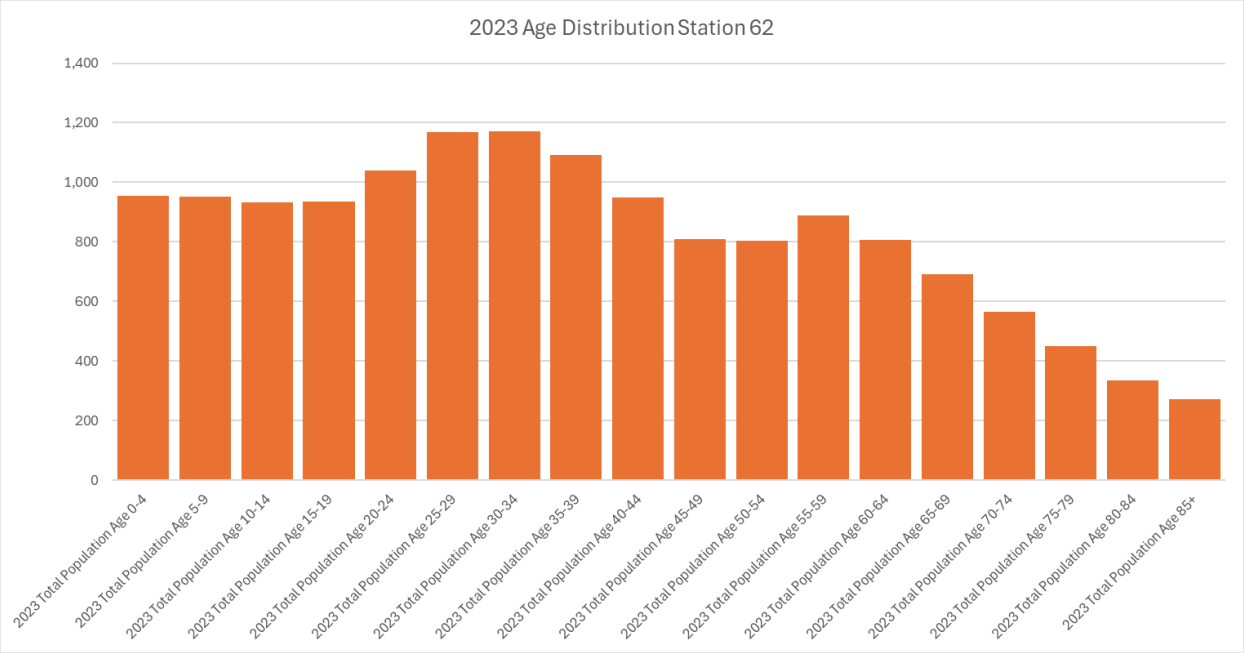
District Households and Businesses by Station Response Area

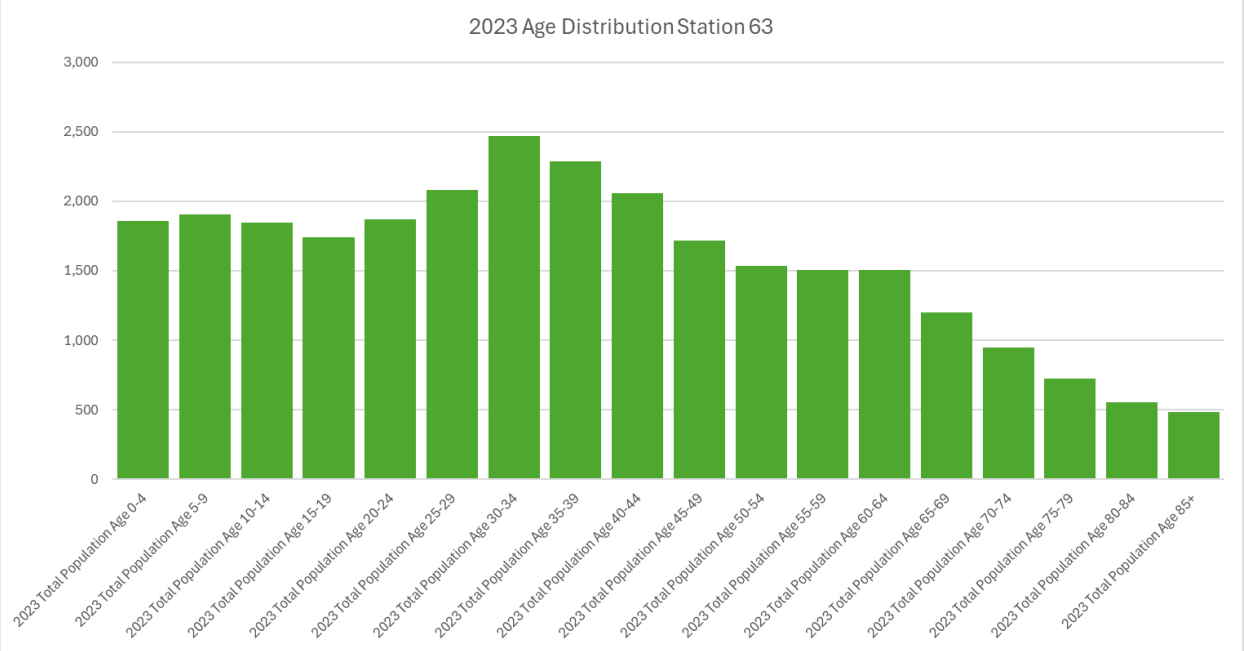
	Station #61	Station #62	Station #63	Station #64	Station #65	Station #66	Station #67
2023 Total Housing Units	7,917	5,749	10,410	11,860	5,789	6,161	3,558
2023 Owner Occupied Housing Units	4,960	3,028	6,029	9,765	886	5,140	307
2023 Renter Occupied Housing Units	2,821	2,409	4,008	1,889	4,412	765	2,779
2023 Vacant Housing Units	136	312	373	206	491	256	472
2021 Median Year Structure Built (Total Housing Units)	1,979	1,973	1,981	1,998	2,012	2,011	2,008
2021 Housing Units Built in 1950-1959 (%)	15.52%	3.89%	4.14%	0.67%	0.45%	0.45%	0.00%
2021 Housing Units Built in 1960-1969 (%)	9.85%	37.48%	28.13%	1.67%	1.87%	0.63%	0.38%
2021 Housing Units Built in 1970-1979 (%)	25.23%	23.60%	15.56%	16.79%	3.97%	2.31%	0.59%
Legacy Construction (1950-1979)	50.60%	64.97%	47.83%	19.13%	6.29%	3.39%	0.97%
2021 Housing Units Built in 1980-1989 (%)	20.16%	8.07%	9.21%	8.43%	4.51%	3.28%	0.76%
2021 Housing Units Built in 1990-1999 (%)	17.74%	17.37%	22.37%	28.96%	9.24%	5.16%	10.00%
2021 Housing Units Built in 2000-2009 (%)	6.09%	3.59%	16.66%	36.71%	15.89%	34.24%	47.13%
2021 Housing Units Built in 2010-2019 (%)	4.08%	5.15%	2.64%	6.19%	62.78%	50.32%	41.14%
Lightweight Construction (1980-Present)	48.07%	34.18%	50.88%	80.29%	*92.42%	93.00%	*99.03%
2023 Total (SIC01-99) Businesses	1,182	627	446	553	692	173	292
2023 Total (SIC01-99) Employees	15,172	6,214	4,285	6,220	15,011	1,447	9,426
**Newer construction but dominated by multi-family/commercial with sprinkler protection*							

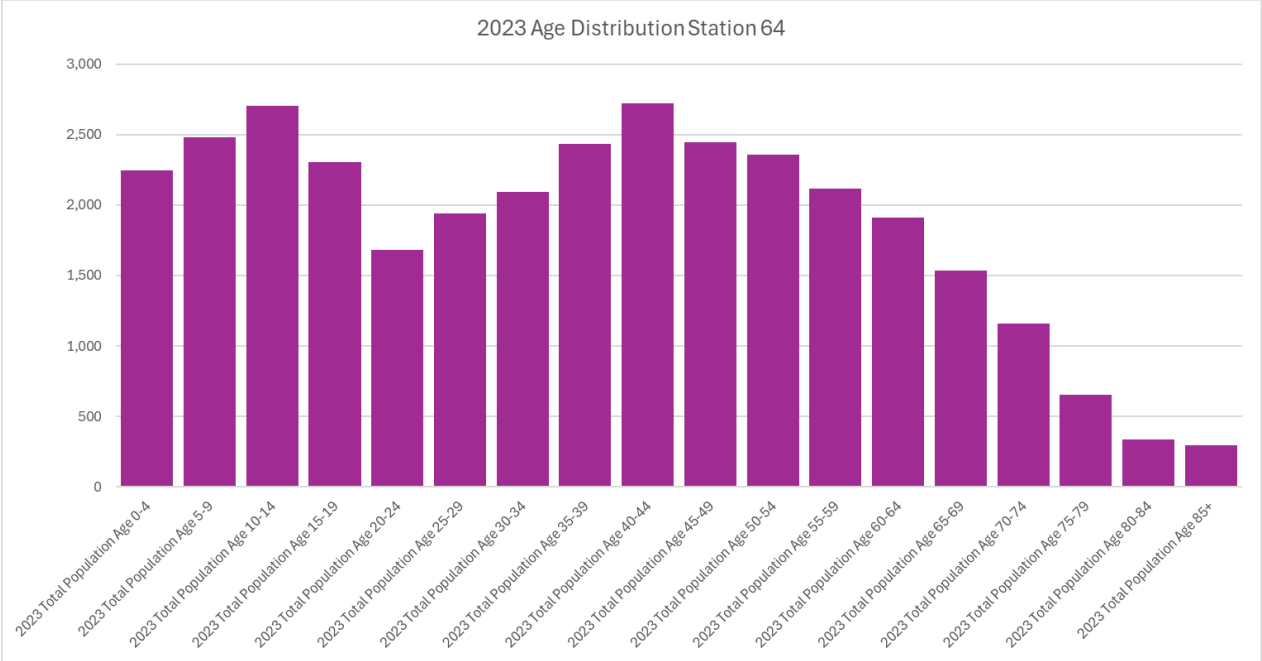
Table 16 - Sourced information from ESRI Community Analyst, 2021-2023

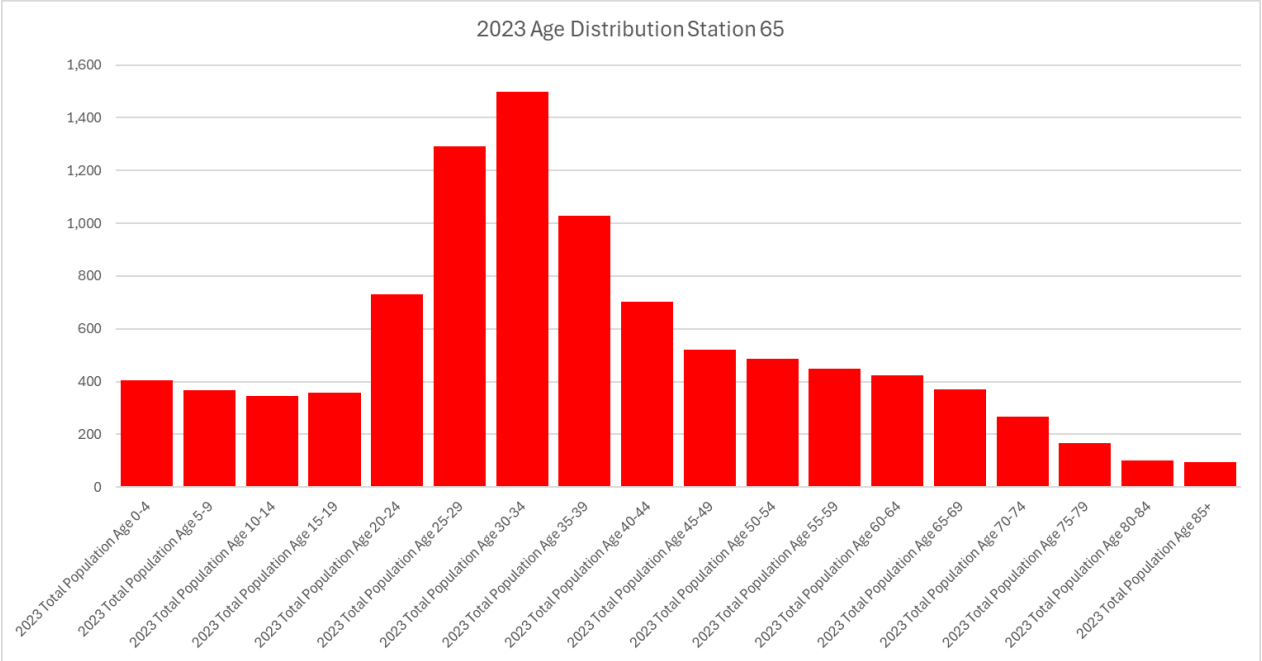
District's Population Age Distribution by Station

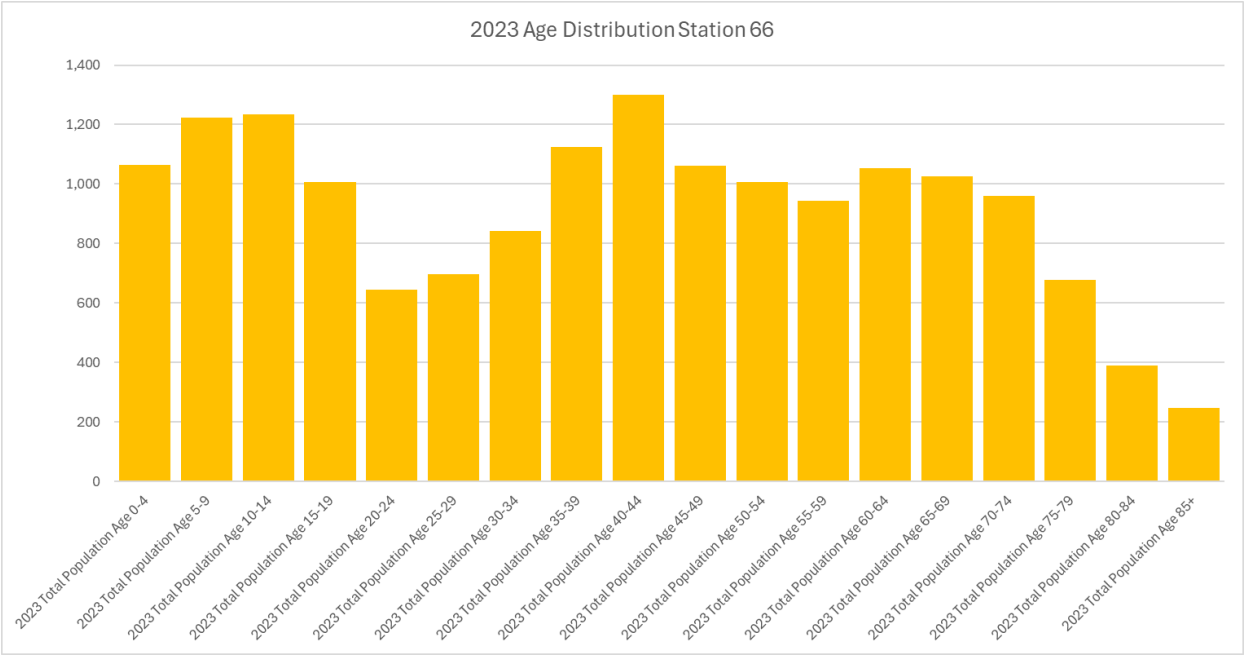


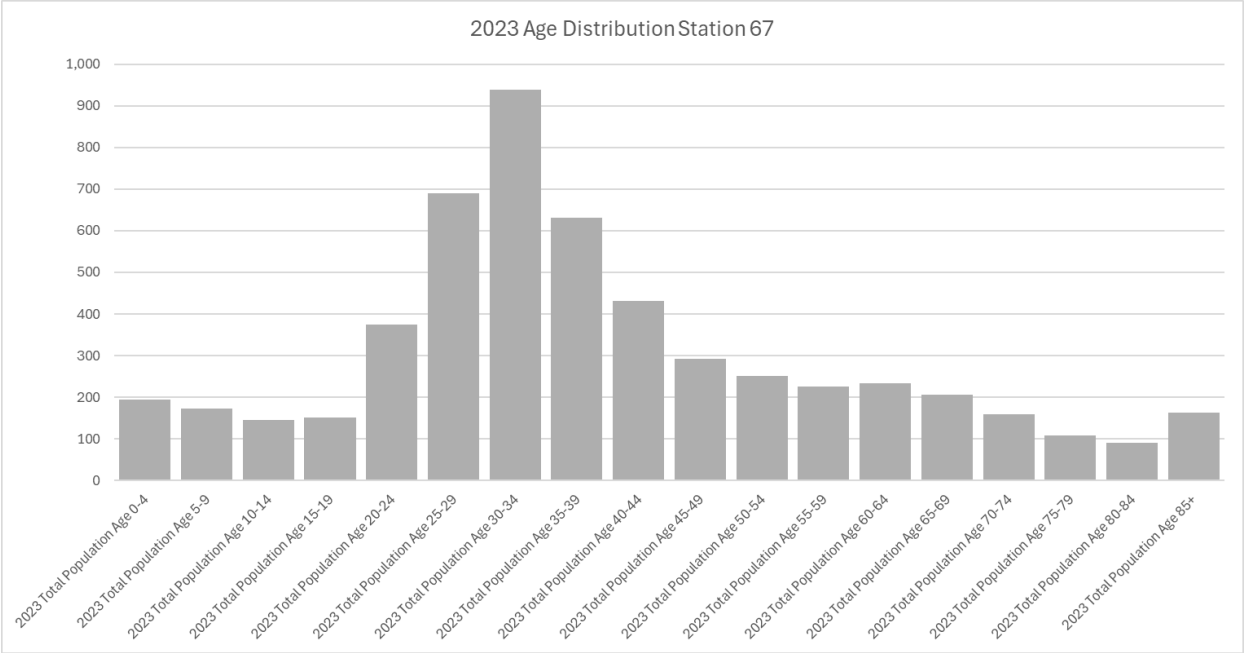

2023 Age Distribution Station 62
1,400
1,200
1,000
800
600
400
200
0
2023 Total Population Age 0-4
2023 Total Population Age 5-9
2023 Total Population Age 10-14
2023 Total Population Age 15-19
2023 Total Population Age 20-24
2023 Total Population Age 25-29
2023 Total Population Age 30-34
2023 Total Population Age 35-39
2023 Total Population Age 40-44
2023 Total Population Age 45-49
2023 Total Population Age 50-54
2023 Total Population Age 55-59
2023 Total Population Age 60-64
2023 Total Population Age 65-69
2023 Total Population Age 70-74
2023 Total Population Age 75-79
2023 Total Population Age 80-84
2023 Total Population Age 85+


2023 Age Distribution Station 63
3,000
2,500
2,000
1,500
1,000
500
0
2023 Total Population Age 0-4
2023 Total Population Age 5-9
2023 Total Population Age 10-14
2023 Total Population Age 15-19
2023 Total Population Age 20-24
2023 Total Population Age 25-29
2023 Total Population Age 30-34
2023 Total Population Age 35-39
2023 Total Population Age 40-44
2023 Total Population Age 45-49
2023 Total Population Age 50-54
2023 Total Population Age 55-59
2023 Total Population Age 60-64
2023 Total Population Age 65-69
2023 Total Population Age 70-74
2023 Total Population Age 75-79
2023 Total Population Age 80-84
2023 Total Population Age 85+


2023 Age Distribution Station 64
3,000
2,500
2,000
1,500
1,000
500
0
2023 Total Population Age 0-4
2023 Total Population Age 5-9
2023 Total Population Age 10-14
2023 Total Population Age 15-19
2023 Total Population Age 20-24
2023 Total Population Age 25-29
2023 Total Population Age 30-34
2023 Total Population Age 35-39
2023 Total Population Age 40-44
2023 Total Population Age 45-49
2023 Total Population Age 50-54
2023 Total Population Age 55-59
2023 Total Population Age 60-64
2023 Total Population Age 65-69
2023 Total Population Age 70-74
2023 Total Population Age 75-79
2023 Total Population Age 80-84
2023 Total Population Age 85+


2023 Age Distribution Station 65
1,600
1,400
1,200
1,000
800
600
400
200
0
2023 Total Population Age 0-4
2023 Total Population Age 5-9
2023 Total Population Age 10-14
2023 Total Population Age 15-19
2023 Total Population Age 20-24
2023 Total Population Age 25-29
2023 Total Population Age 30-34
2023 Total Population Age 35-39
2023 Total Population Age 40-44
2023 Total Population Age 45-49
2023 Total Population Age 50-54
2023 Total Population Age 55-59
2023 Total Population Age 60-64
2023 Total Population Age 65-69
2023 Total Population Age 70-74
2023 Total Population Age 75-79
2023 Total Population Age 80-84
2023 Total Population Age 85+


2023 Age Distribution Station 66
1,400
1,200
1,000
800
600
400
200
0
2023 Total Population Age 0-4
2023 Total Population Age 5-9
2023 Total Population Age 10-14
2023 Total Population Age 15-19
2023 Total Population Age 20-24
2023 Total Population Age 25-29
2023 Total Population Age 30-34
2023 Total Population Age 35-39
2023 Total Population Age 40-44
2023 Total Population Age 45-49
2023 Total Population Age 50-54
2023 Total Population Age 55-59
2023 Total Population Age 60-64
2023 Total Population Age 65-69
2023 Total Population Age 70-74
2023 Total Population Age 75-79
2023 Total Population Age 80-84
2023 Total Population Age 85+


2023 Age Distribution Station 67
1,000
900
800
700
600
500
400
300
200
100
0
2023 Total Population Age 0-4
2023 Total Population Age 5-9
2023 Total Population Age 10-14
2023 Total Population Age 15-19
2023 Total Population Age 20-24
2023 Total Population Age 25-29
2023 Total Population Age 30-34
2023 Total Population Age 35-39
2023 Total Population Age 40-44
2023 Total Population Age 45-49
2023 Total Population Age 50-54
2023 Total Population Age 55-59
2023 Total Population Age 60-64
2023 Total Population Age 65-69
2023 Total Population Age 70-74
2023 Total Population Age 75-79
2023 Total Population Age 80-84
2023 Total Population Age 85+

Section 3 - All-Hazard Risk Assessment for the Community

The district's Community Risk Assessment is an evaluation of fire and non-fire hazards and risks, considering all pertinent facts that increase or decrease risk to define standards of cover. The assessment of risk allows more accurate placement of resources at advantageous locations, with the appropriate staffing. In addition to resource placement, it also allows the district to hone its risk reduction efforts as it relates to mitigation measures. Combined, these efforts help to provide a safer environment for the district's citizens and reduce the number and types of resources needed.

Geographical Planning Zones

The district collects, analyzes, and formulates decisions based on data from multiple planning zone models. Many times, the data collected is a macro-view of the district's entire response area. Other times, the analysis requires a deeper, more micro-view of specific areas. To accomplish this, the district divides the geographical areas into response areas based on station locations and then further, into emergency response zones (ERZ's).

The district's apparatus is dispatched using computer aided dispatch (CAD) which selects the appropriate unit for the type of incident based on the Global Positioning System (GPS) location of that specific unit. This is the most efficient method of dispatching resources allowing the closest appropriate unit to respond to the incident location, reducing overall response times and increasing the likelihood of successful outcomes.

The response areas based on station location are created using drive times of apparatus from their respective station coordinates. Using Aeronautical Reconnaissance Coverage Geographic Information System (ARCGIS) software, the district has developed station response areas based on the speed limit of the road network the apparatus uses to travel to the emergency incident. This software allows the district to establish borders where modeled, theoretical responding apparatus, from different stations, meet. There are seven response areas, one for each station.

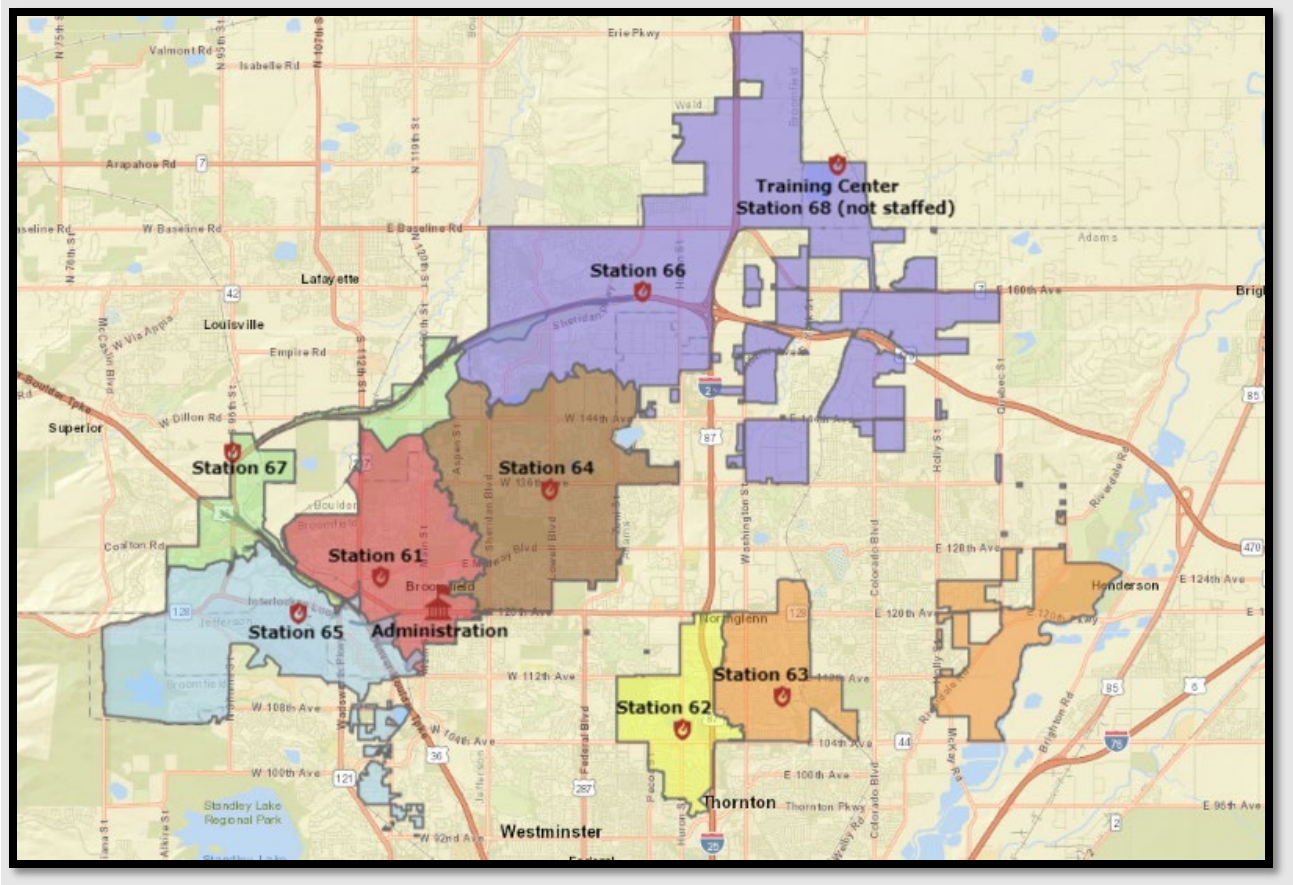


Figure 31 - District Response Areas by Station

The emergency response zones (ERZ's), are smaller divisions of the district geography, primarily divided into neighborhoods where the boundary lines run down the middle of the main thoroughfares. The district has 64 ERZ's, four of which are exclusively highways. The ERZ's vary in square mileage and are designated as rural or urban based on the population per square mile. The ERZ naming reads from top to bottom, left to right, numerically. The letters after the number correlate to the county the ERZ falls within (BF = Broomfield County, AC = Adams County, JF = Jefferson County, WC = Weld County and BO = Boulder County). By dividing the area into smaller, more manageable zones, the district can further analyze specific community risk that may inform the placement of equipment and personnel resources.

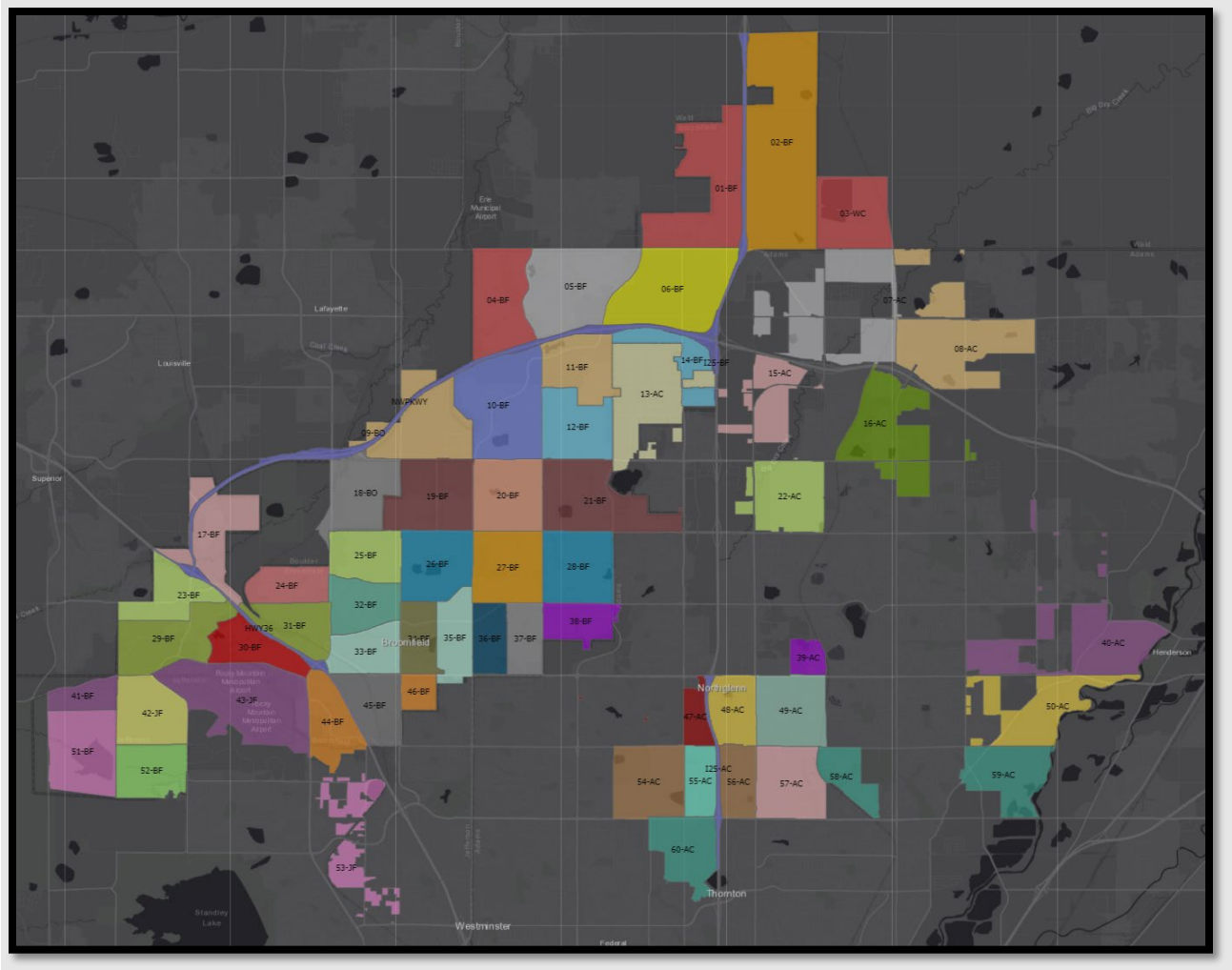


Figure 32 - District Emergency Response Zones (ERZ's) with 64 total zones, four of which are exclusively highway.

Geospatial Characteristics of the Service Area

The geospatial characteristics include political boundaries, growth boundaries, construction limitations and infrastructure limitations. Political boundaries within the district are differentiated by county and municipal boundaries and their respective governing bodies, laws, ordinances and codes. Growth boundaries are areas of the district that will require new or increased service due to development. Construction limitations are restrictions, or the lack thereof, on the size, height, or complexity of new development. Infrastructure limitations are areas where development would overtake the existing infrastructure, such as water, power, sewer and streets.

Political Boundaries

The district operates in the city and county of Broomfield, the city of Northglenn and unincorporated areas of Adams, Boulder, Jefferson, and Weld counties. Because the district operates in multiple cities and counties, there are differences in code adoption, specifically in building and fire prevention codes. While the district serves as a consultant to the counties and municipalities in the code adoption process, code adoption decisions made at the city and county level are outside of the district's direct control. The district enforces the adopted fire codes, while the city and county enforce the building codes. The following is the adopted fire code and building code with respect to each area served:

- **City and County of Broomfield** – 2021 International Fire Code and 2021 International Building Code, with Broomfield's specific local amendments
- **City of Northglenn** – 2021 International Fire Code and 2021 International Building Code, with Northglenn's specific local amendments
- **Unincorporated Adams County** – 2018 International Fire Code and 2018 International Building Code, with Adams County's specific local amendments
- **Unincorporated Boulder County** – 2015 International Fire Code and 2015 International Building Code, with Boulder County's specific local amendments
- **Unincorporated Jefferson County** – 2018 International Fire Code and 2018 International Building Code, as published by ICC (no local fire code amendments)
- **Unincorporated Weld County** – 2018 International Fire Code, and 2018 International Building code, as published by ICC (no local fire code amendments)

Growth Boundaries

The highest growth rates are along the western and northern portion of the district. Specifically, in the response area of Station 65, Station 66, and Station 67. New commercial and high-density multifamily residential homes contribute significantly to the corresponding growth in each of these respective response areas.

	Station 61	Station 62	Station 63	Station 64	Station 65	Station 66	Station 67
2023 Total Population	18,643	14,811	28,272	33,414	9,605	16,505	5,460
2023 Total Daytime Population	22,358	13,480	17,643	24,663	21,577	11,406	7,074
2023 Population Density (Pop per Square Mile)	2,950	4,729	4,068	3,703	1,161	767	1,449
2028 Total Population	19,891	14,767	28,505	34,396	10,461	18,238	6,320
2028 Population Density (Pop per Square Mile)	3,148	4,715	4,101	3,812	1,264	848	1,677
2023-2028 Population: Compound Annual Growth Rate	1.30%	-0.06%	0.16%	0.58%	1.72%	2.02%	2.97%

Table 17 - Population Statistics 2023 – 2028, ESRI Community Analyst

Station 65 has an estimated growth rate of 1.72% from 2023-2028 (ESRI Community Analyst – Population). This is primarily due to the continued growth (areas in red, in figure 33 below) in Arista and mixed-use projects on the western portion of the response area. In addition to the continued growth in these areas, there is large, expected growth (areas in blue in figure 33) in Verve, a high-density mixed-use project, along with future mixed use and future residential single-family homes in the same vicinity.

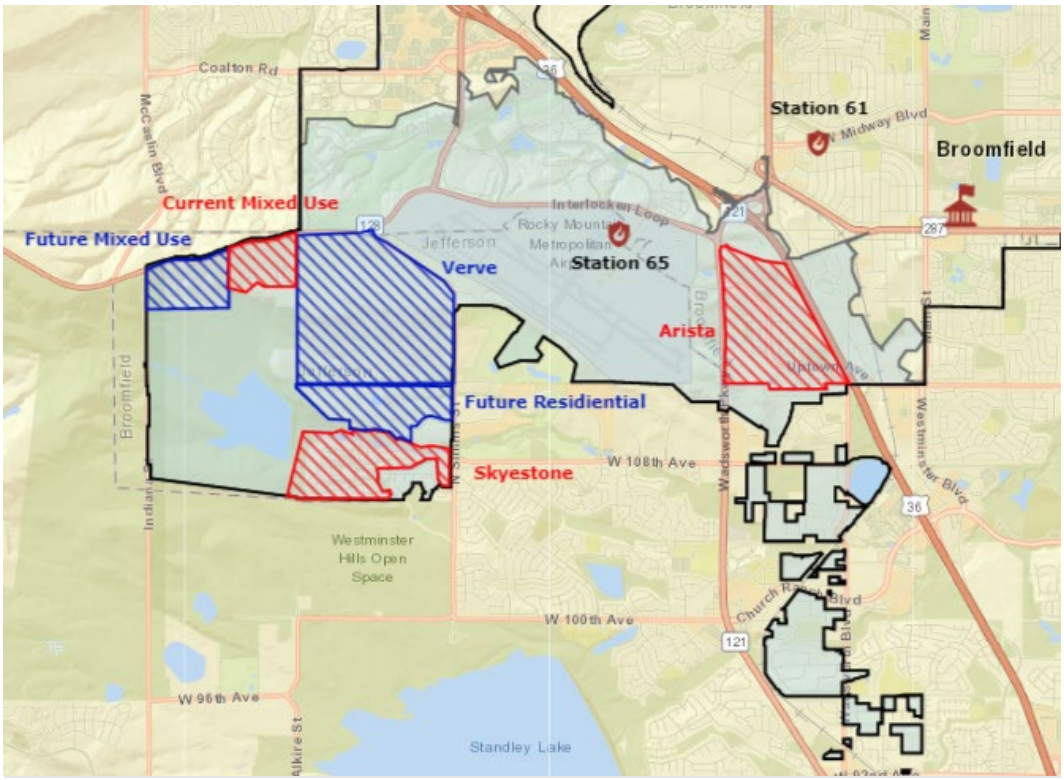


Figure 33 - Areas of Growth Station 65 Response Area

Station 66 has an estimated growth rate of 2.02% from 2023-2028 (ESRI Community Analyst – Population). This is primarily due to the scheduled growth to the center and northern portion of the Station 66 response area. There is continued commercial and residential development in Palisade Park (area in red/blue in figure 34 below) along the northern side of State Highway 7. There is also active construction in the Baseline neighborhood, which will be home to over 9,000 residential units, 17.2 million square feet of commercial space, and 170 acres of open lands (shown in blue in figure 34 below).

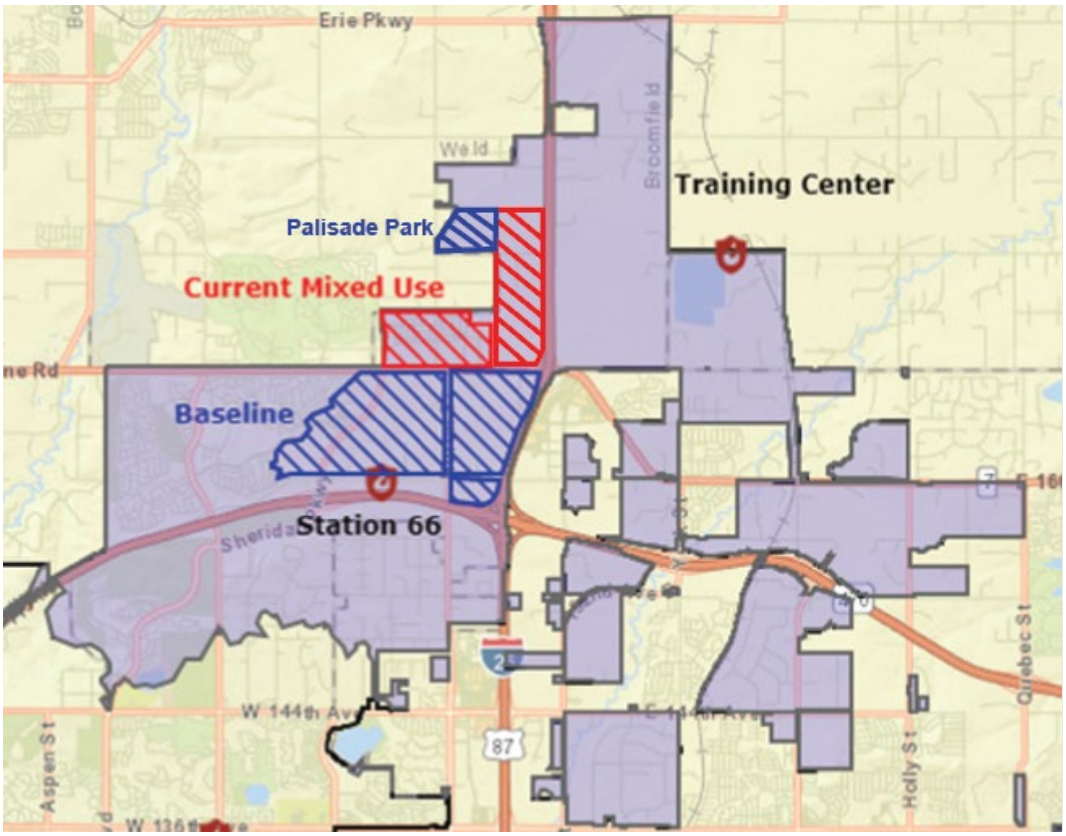


Figure 34 - Areas of Growth Station 66 Response Area

Station 67 has an estimated growth rate of 2.97% from 2023-2028 (ESRI Community Analyst – Population). This growth is primarily due to high-density, multi-family residential homes constructed to the east of Station 67 in an area known as Via Varra (area in red in figure 35 below). In addition to the residential homes within this area, there is also new commercial construction and additional planned commercial development. Redevelopment is actively occurring in the southeastern portion of Station 67's response area (area in blue in figure 35 below). This area had vacant commercial buildings that were torn down to develop high-density multi-family residential homes.

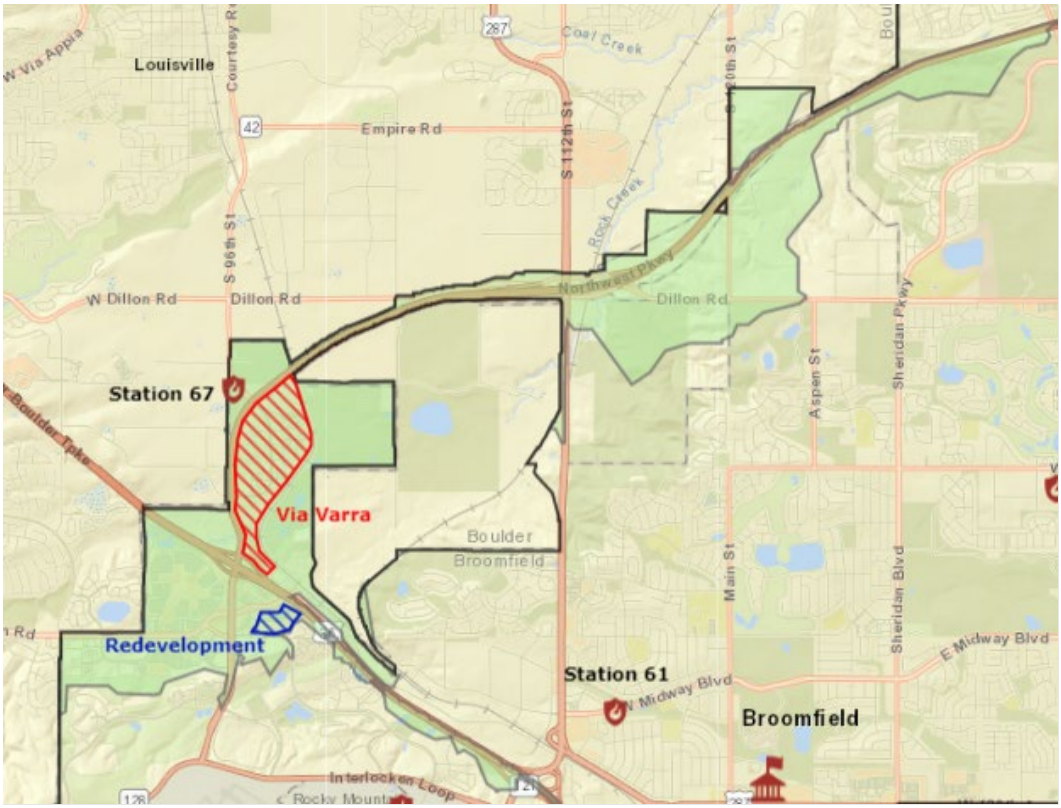


Figure 35 - Areas of Growth Station 67 Response Area

Construction Limitations

The construction limitations within the district are based in the building codes adopted by the Authority Having Jurisdiction (AHJ). See Section 3 - Political Boundaries.

Infrastructure Limitations

The district does not currently have areas where development is overtaking required infrastructure. In areas currently being developed, the Fire Prevention Division works to ensure adequate emergency access, sufficient water resources and appropriate code requirements are being met. The Fire Prevention Division communicates response relevant information with operations personnel.

Topography

Arranging natural and artificial physical features of an area can impact emergency response capabilities. These topographical features include response barriers, elevation changes and open space/interface. Response barriers include areas not easily accessed due to a lack of connectivity. Elevation changes are areas where grade differential requires steep roads, extreme changes in water pressure or narrow, windy

roads, which may delay response. Open space/interface are undeveloped areas which act as impediments to response or inhibit access.

Response Barriers

Station 65 contains a response barrier due to the lack of connectivity to the southwestern portion of the district. The response barrier is the positioning of Rocky Mountain Metropolitan Airport (RMMA) within the district. Station 65 is on the northeastern portion of RMMA property. RMMA property is also expanding further west, creating a larger geographical barrier for responding units. Indexing at RMMA does not currently require a 24-hour ARFF and emergency response presence at Station 65 and units stationed there are available for responses off airport property. The positioning of the Station results in extended response times to those portions of the district located south and west of RMMA as units must circumnavigate the airport perimeter to reach those areas.

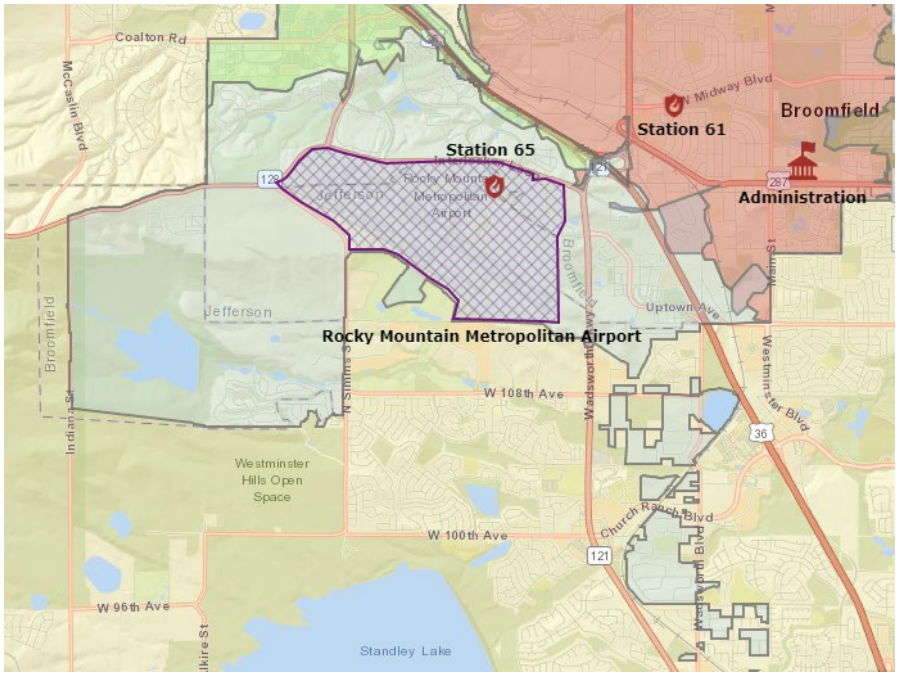


Figure 36 - Rocky Mountain Metropolitan Airport

Elevation Changes

The district does not have areas where grade differential requires steep roads, extreme changes in water pressure or narrow, windy roadways. As shown in figure 37 below, the differential elevation changes are mainly on the western portion of the district. Response areas in Station 61, Station 65 and Station 66 have some hills of varying grades with the steepest located on the western portion of Station 65's response area. Specifically, Indiana St., which runs North/South on the far western border of Station 65's response area, has elevation changes, which can become extremely icy during the winter months.

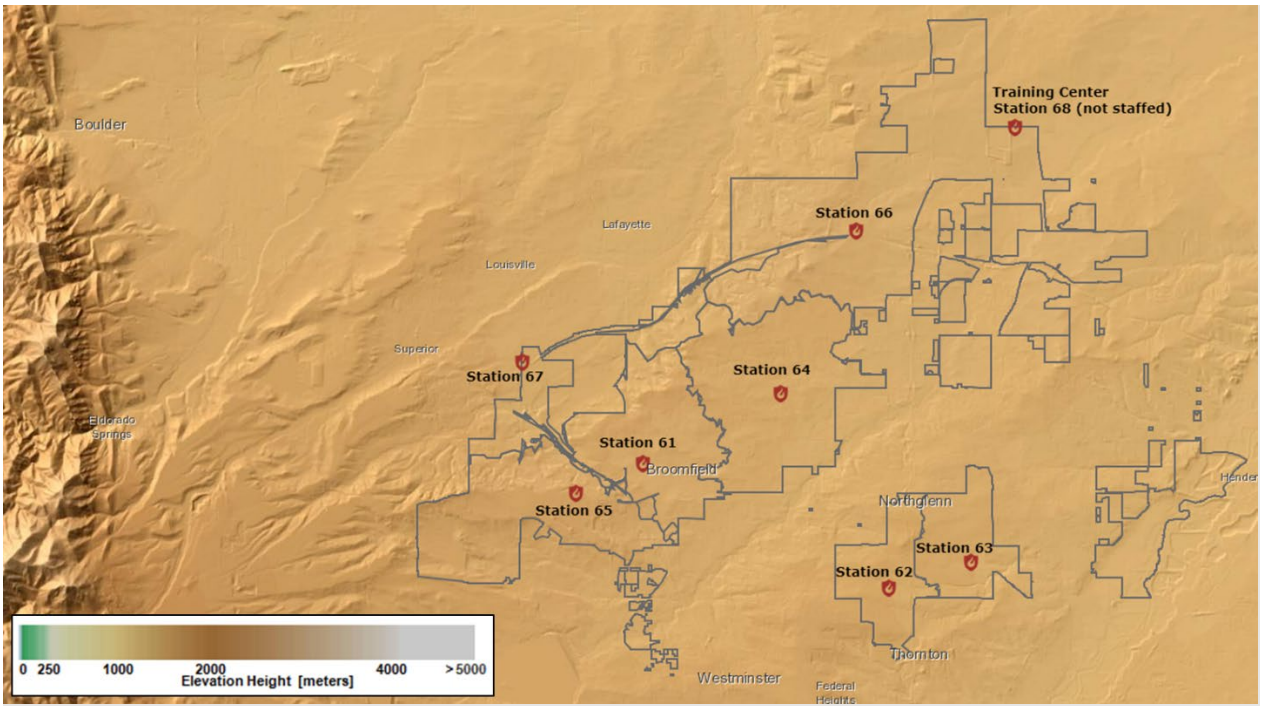


Figure 37 - NMFRD Terrain: Elevation Tinted Hill Shade ArcGIS Community Analyst

Open Space/Interface

Undeveloped areas within the district, including parks and open space, may act as impediments to response or inhibit access for responding units. These areas present a challenge for emergency response units as they must find alternate routes around the open space. Incidents occurring within the open space require personnel to use poorly developed access roads or park outside of the area and walk to the incident. It is important for personnel to recognize the location of open spaces and parks within their response area and the routing and access challenges they may represent.

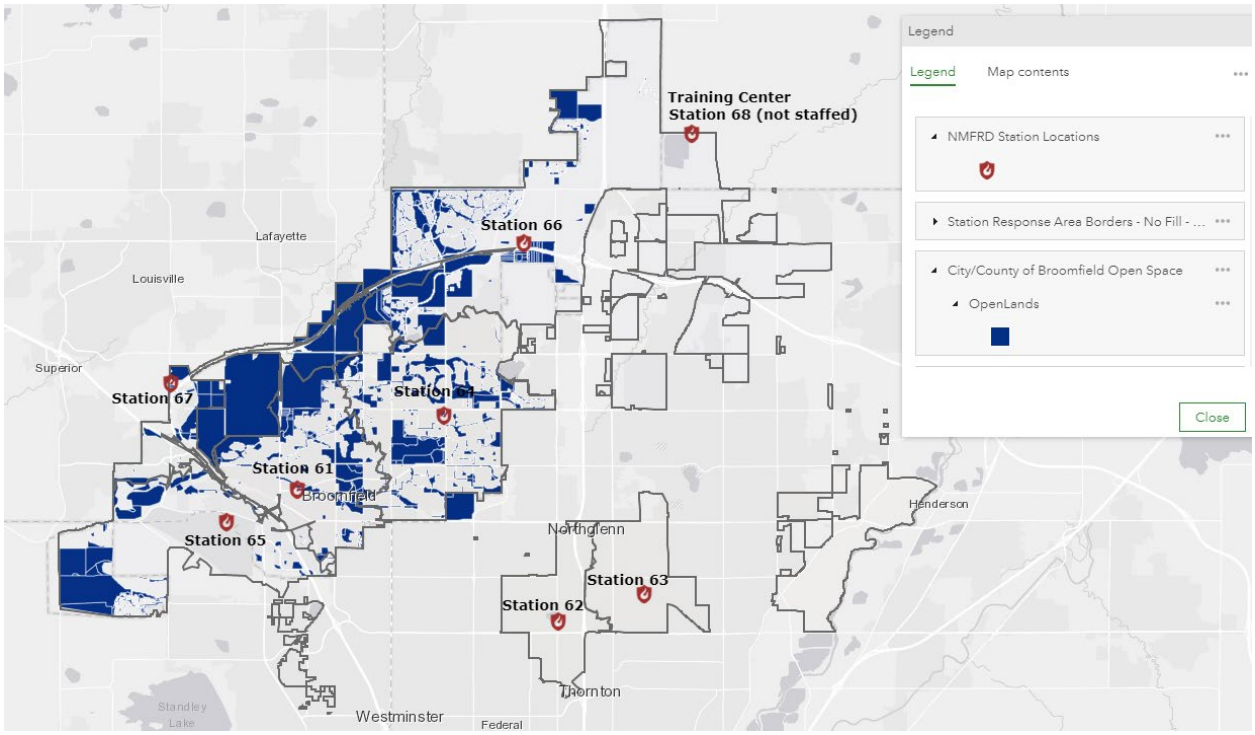


Figure 38 - City and County of Broomfield Open Space

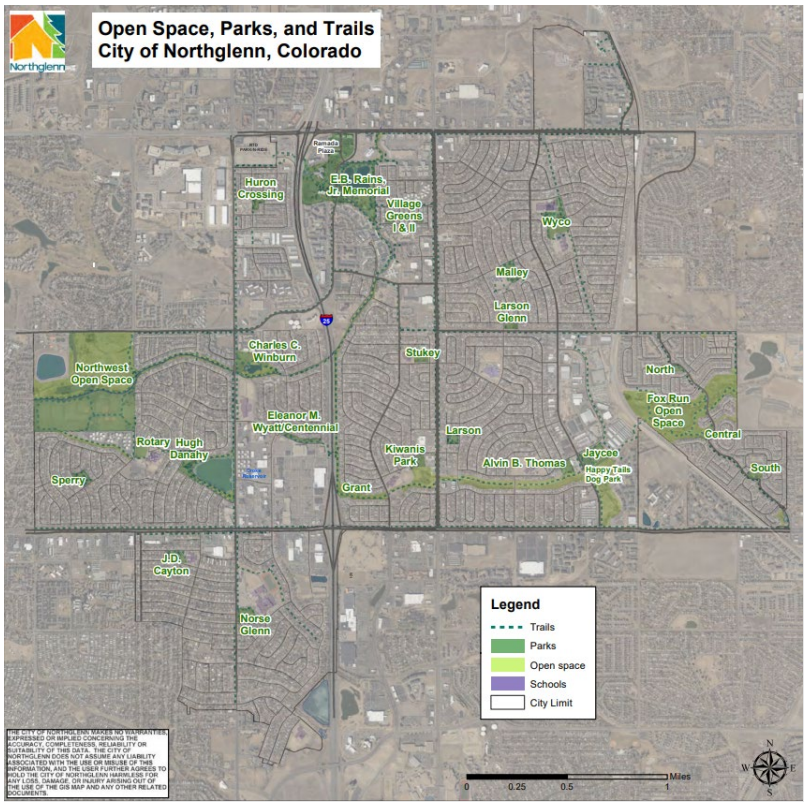


Figure 39 - City of Northglenn Parks and Open Space

Transportation Network

A significant portion of the district's emergency responses are generated from the transportation network itself. Street continuity or consistency and thoroughfare characteristics have a direct impact on response considerations such as accessibility, travel time and travel distance. Rail lines account for most of the freight moved throughout the country, including hazardous materials, and can generate complex, low frequency responses. Like rail lines, airports can generate specialized responses with specific needs with potential large-scale incidents.

Roads

The district recognizes that roads and vehicles are a source of incidents within the response area. Emergency incidents generated within the road network are from vehicle accidents, medical calls and fires. Generally, the more traveled the road or highway is, the greater the number of incidents it produces.

The district has multiple major highways within the coverage area. Highways have an increased traffic volume and vehicle speed which results in an increased risk to the district citizens, visitors, and firefighting personnel. U.S. Highway 36 travels 4 miles along the northeast border of Station 65 and the southwest border of Station 61. This portion of highway divides Station 67's coverage area in half on the district's northwestern boundary.

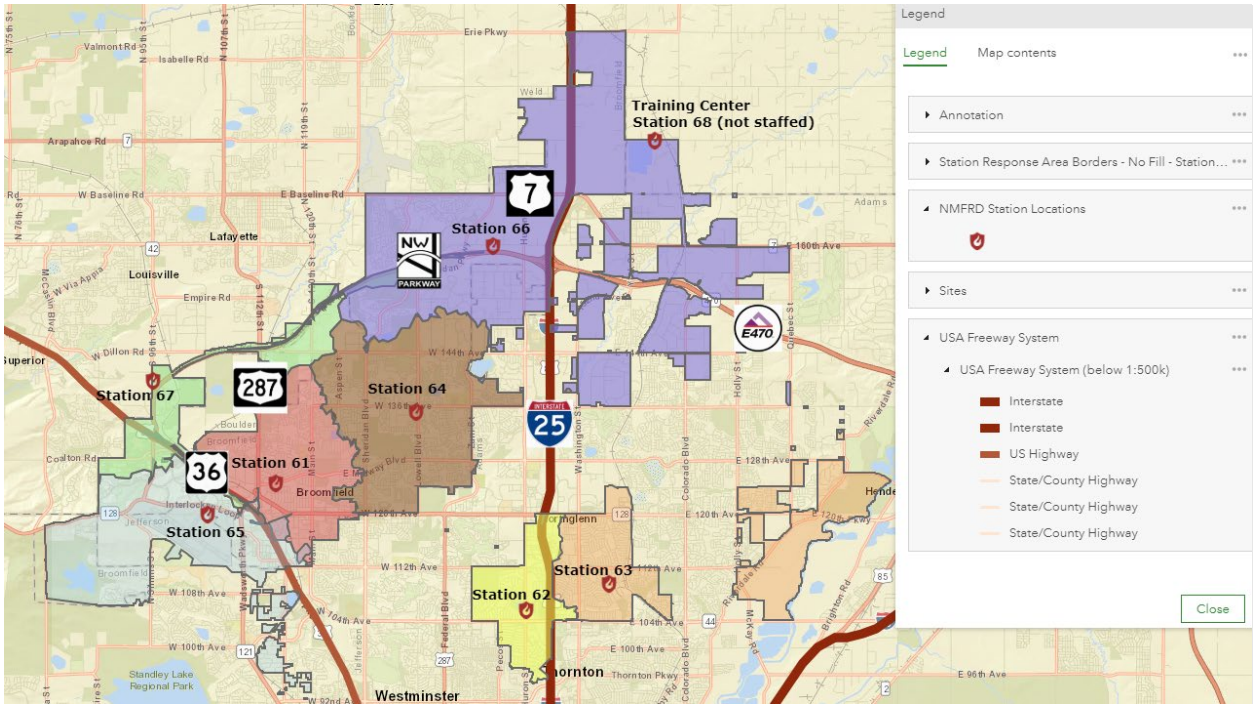


Figure 40 – NMFRD Major Highways, ESRI Community Analyst 2024

U.S. Highway 287 travels in an east/west direction along the southern border of Station 64 before intersecting Station 61's area of coverage. It then travels through the middle of Station 61's area where it changes to a north/south direction. The district's coverage of U.S. Highway 287 ends to the north at the intersection of Dillion Road. There is 5.7 miles of U.S. Highway 287 within the district's boundaries.

The Northwest Parkway begins at the U.S. Highway 36 interchange and runs along the northern border of the response area for Station 67, Station 61, and Station 64. The parkway then bisects the response area of Station 66 before it ends at Interstate 25. The Northwest Parkway has 9.5 miles, all within district boundaries.

E-470 begins just east of Interstate 25 where the Northwest Parkway terminates. The district provides emergency services to the E-470 portion between Quebec Street and Interstate 25. This portion of the parkway is 4.8 miles in length.

Interstate 25 runs north and south and travels through Broomfield and Northglenn. Coming from the north and traveling south, Broomfield's portion of Interstate 25 begins at Erie Parkway. Both north and south directions of travel are within the district's boundary from Erie Parkway until Colorado State Highway 7. From Colorado State Highway 7, the district's area of coverage is southbound direction of travel (no northbound) until 150th Avenue. Broomfield's portion of Interstate 25 terminates at 150th Avenue and the

district does not initially cover the portion of Interstate 25 from 150th Avenue to 120th Avenue. The district resumes both north and southbound coverage of Interstate 25 in Northglenn from 120th Avenue to 104th Avenue. At 104th Avenue, the district's area of coverage is southbound (not northbound) direction of travel to roughly 1/10th of a mile north of Thornton Parkway. The portion of Interstate 25 in Northglenn and Broomfield is 3.1 miles and 5.2 miles, respectively.

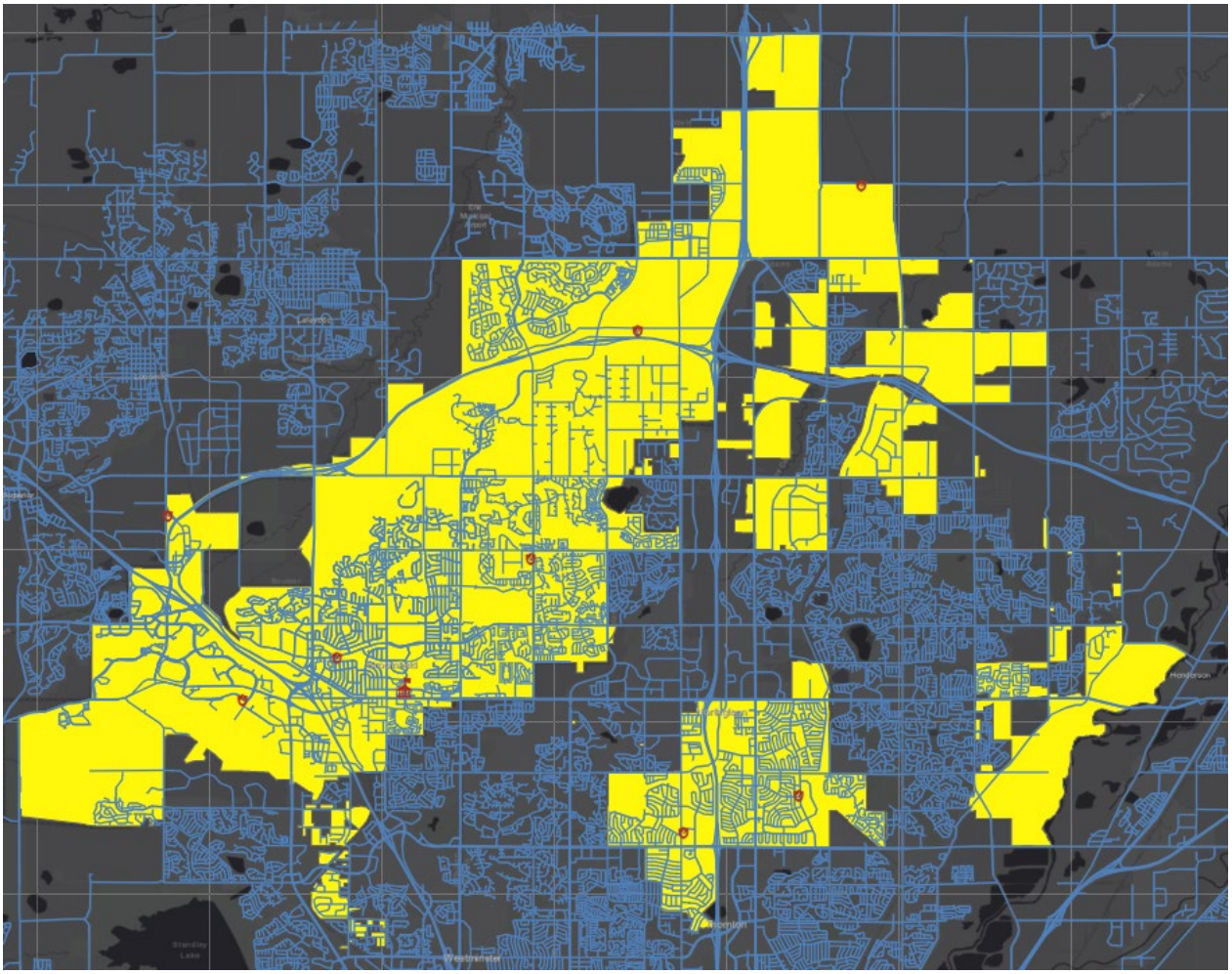


Figure 41 - NMFD Road Network, ESRI US Open Streets, 2024

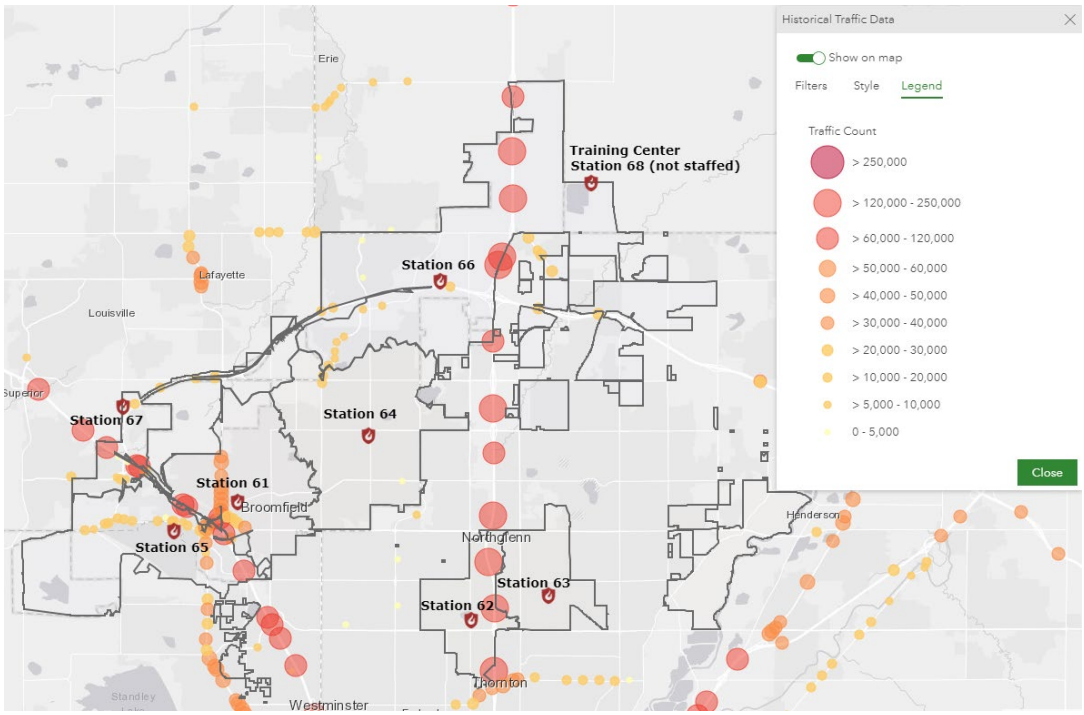


Figure 42 - NMFRD Annual Daily Traffic, ESRI Community Analyst, 2024

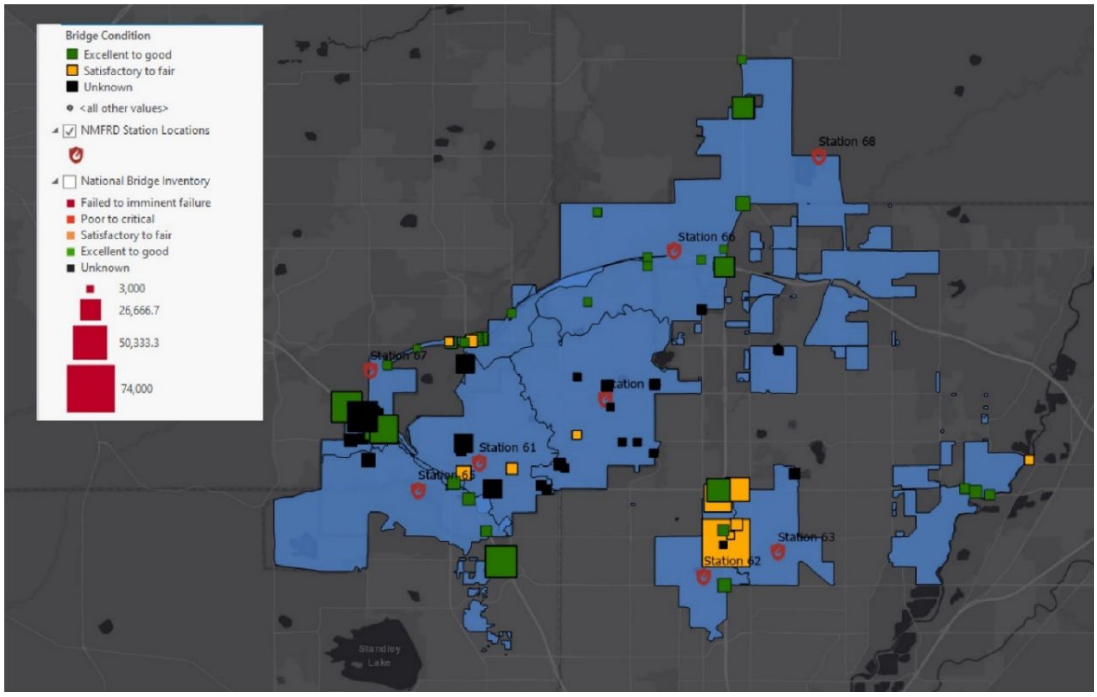


Figure 43 - National Bridge Inventory (NBI) includes Interstate Highways, U.S. highways, State and county roads, as well as publicly accessible bridges on Federal lands. Represents summary analysis of the number, location, and general condition of highway bridges from 2024.

Rail Lines

The district has roughly 15.5 miles of active railroad tracks operated by Burlington Northern Santa Fe Railway and Union Pacific Railroad Company. Burlington Norther Santa Fe Railway runs through the district in Broomfield and has railway in the response area of Station 61, Station 65, and Station 67. Union Pacific runs through the district in Broomfield, Northglenn and unincorporated areas of Adams and Weld County and has railway in the response area of Station 63 and Station 66.

Station	Sum of Miles of Track
61	5.68
63	2.82
65	0.02
66	5.12
67	1.92
Grand Total	**15.56**

Table 18 - Miles of Railroad Track per Station Area

According to the Bureau of Transportation, in 2023 there was 11 fatalities, 122 total injuries and 1,818 total train accidents, nationally. These statistics are for both freight and passenger railroad operations and represent train accidents only and do not include highway-rail grade crossing accidents. (27) According to the Federal Railroad Administration (FRA), highway-rail incidents at public and private crossings in 2023 include 2,190 collisions, 248 fatalities and 754 injuries (data marked as preliminary statistics for 2023). A calculation of NHTSA statistics on the rate of deaths per collision in vehicle/vehicle crashes versus the FRA statistics of deaths per collision in vehicle/train crashes reveals that a motorist is almost 20 times more likely to die in a crash involving a train than in a collision involving another motor vehicle. (28)

According to a journal titled *The Case for Rail Transport of Hazardous Materials."*

> *"Due to the increasing highway congestion, the U.S. Department of Transportation (DOT) has predicted that U.S. freight railroad demand will rise 88 percent by 2035. Railroads will take on an increasing responsibility for movement of the nation's goods including hazardous materials. In terms of safety, rail freight is significantly safer than truck freight and incurs about 12 percent of the fatalities and 6 percent of the injuries that trucks do per trillion ton-miles."* (Spraggins, B., Pg. 2) (29)

Hazardous materials, or dangerous goods, include explosives, gases, flammable liquids and solids, oxidizing substances, poisonous and infectious substances, radioactive materials, corrosive substances, and hazardous wastes. Due to the nature of most chemicals, many can pose hazards of explosion, toxic release, and fire. Twenty percent of the nation's chemicals are transported by rail and the district recognizes the risks this may cause to the public and its personnel. Both railroads and trucks carry roughly equal hazmat ton-mileage per year, but trucks have 16 times more hazmat releases than railroads. Statistically, railroads are the safer form of transportation for these types of materials. (30)

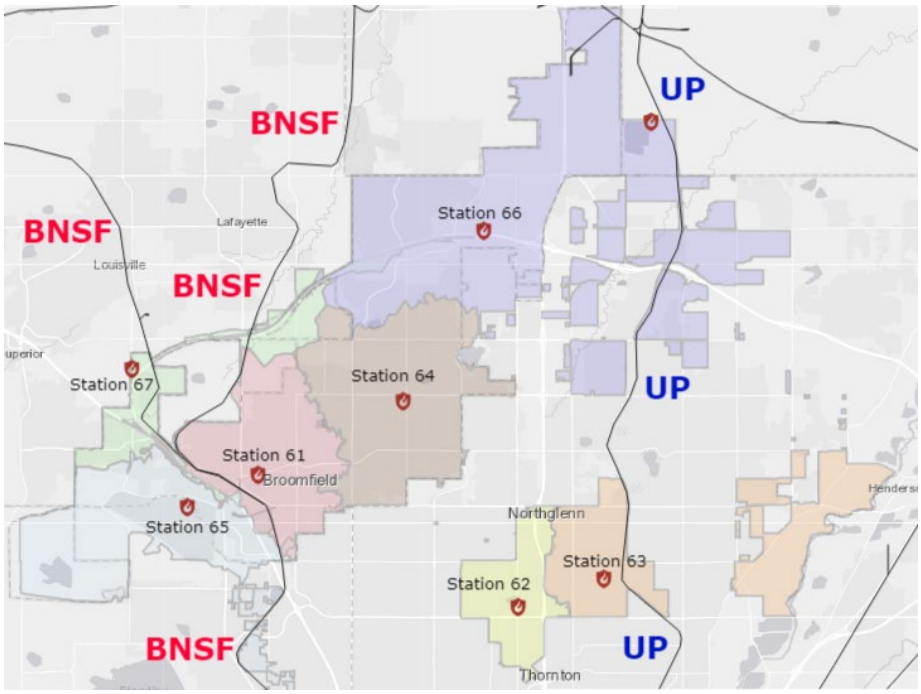


Figure 44 - Burlington Northern Santa Fe and Union Pacific Railway

Airports

Rocky Mountain Metropolitan Airport is in the southwest corner of the district in the response area of Station 65. The airport is owned and operated by Jefferson County and is a public-use airport that covers an area of 1,700 acres and is at an elevation of 5,673 feet above mean sea level. The airport is included in the National Plan of Integrated Airport Systems and is categorized as a reliever airport. Its proximity to the nearby Interlocken business district contributes to its business traveler clientele. The airport has a control tower operating on radio frequency 118.6 (Local) and 121.7 (Ground) that is open from 0600 to 2200 Mountain Time.

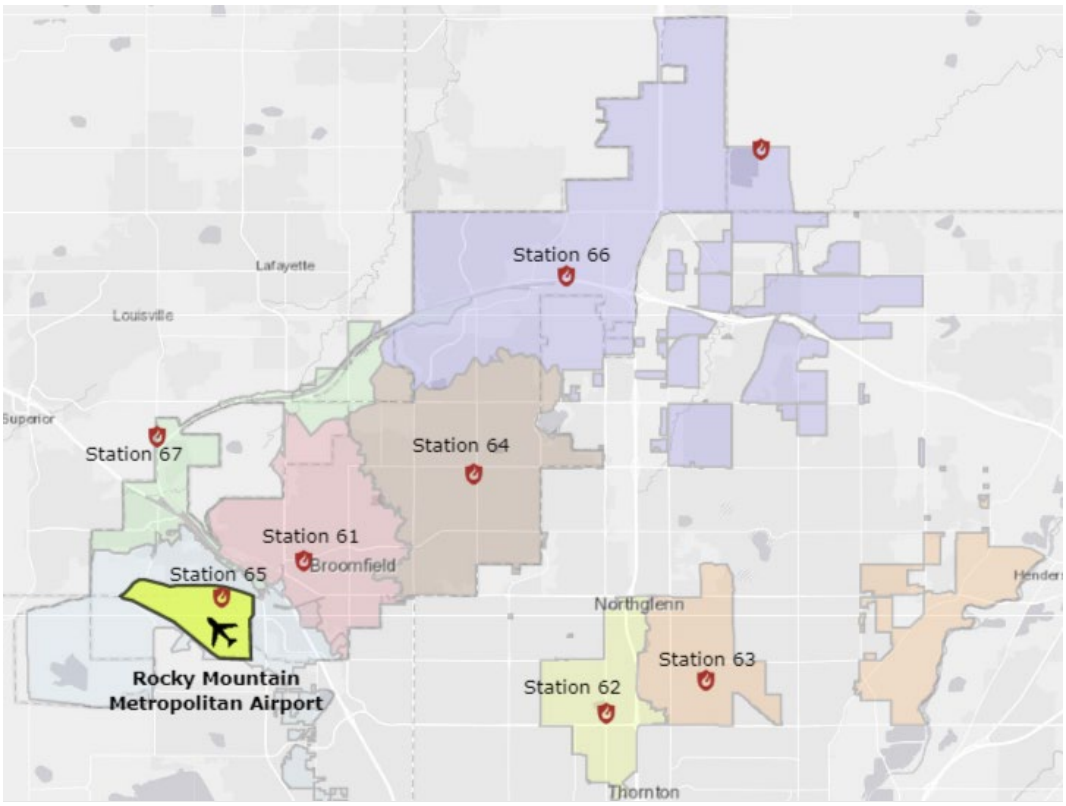


Figure 45 - Rocky Mountain Metropolitan Airport Location

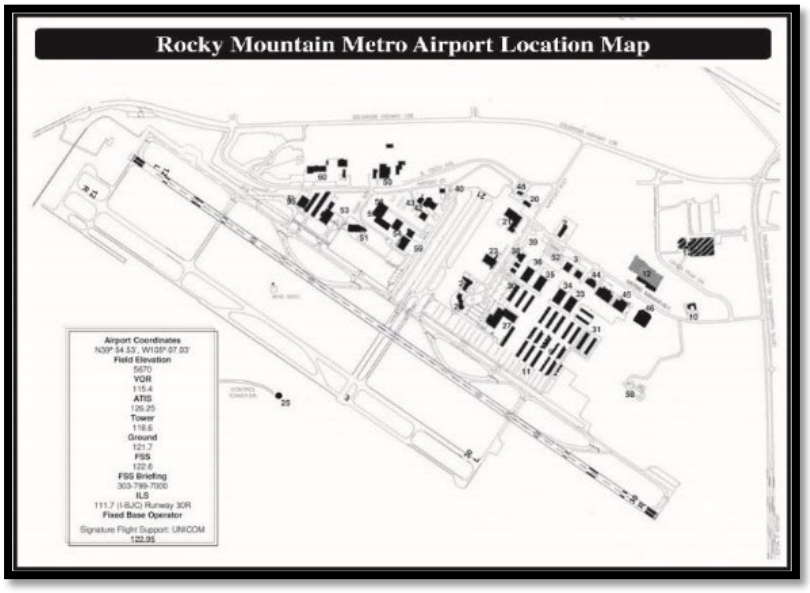


Figure 46 - Rocky Mountain Metropolitan Airport Diagram

The airport has three asphalt-paved runways. 12L/30R is 9,000 feet in length by 100 feet in width. 12R/30L is 7,002 feet in length by 75 feet in width. 3/21 is 3,600 feet in length by 75 feet in width. The airport's three runways were renamed in November 2014 to align them with magnetic directions. During this time, the primary runway, 12L/30R, underwent an $8.83 million renovation. In 2012, a $23.7 million state-of-the-art airport traffic control tower was completed. It is south of the airport runways and the structure includes a 124-foot-tall control tower topped by a 525 square-foot tower cab with four air traffic controller positions and one supervisor position. A 6,000

square-foot, single story base building houses administrative offices, training rooms and equipment rooms.

Figure 47 - NMFRD ARFF Training

Rocky Mountain Metropolitan Airport is the fourth busiest airport in Colorado. For a 12-month period ending on September 30, 2018, the airport had 175,759 aircraft operations, an average of 482 per day. Of these, 92% were general aviation, 4% were air taxi, 3% were military and less than 1% were air carrier. There were 360 aircraft based at the airport of which 70% were single-engine, 17% were multi-engine, 9% were jet and 4% were helicopter. Currently, there are two Fixed Based Operators (FBO's) that operate at the airport, Signature Flight Support and Sheltair. The United States Forest Service also maintains its Jefferson County Tanker Base at the airport. In addition to this, Pilatus Aircraft has a 188,000 square foot North American completion center for the new PC-24 business jet. There is a vacant tract of airport-owned land to the southwest of the runways. The airport is in the planning stages to develop this area, known as "The Verve", for various aviation and non-aviation mixed-use development. (31)

Service Infrastructure

It is important for the district to recognize the location of critical service infrastructure throughout the response area. Service infrastructure includes water supply systems, electrical systems, petroleum supply pipelines, natural gas supply pipelines and traffic control systems.

Without these services, the continuity of area functionality is interrupted which has a cascading increase in the demand of emergency response requirements. This effect would inevitably result in further risk to the population.

Water Supply

A continuous, uninterrupted water supply is imperative to successful firefighting operations. Most of the district's structures are in areas that have access to fire hydrant water supply. Rural areas in the northeastern and eastern portions of the district do not have fire hydrant water supply. These areas must have a water tender dispatched in the initial structure fire response, and this occurs automatically within the Computer Aided Dispatch (CAD).

Ninety eight percent of the district's population is in areas with fire hydrant water supply. 46,914 or 98.3% of the district's housing units have access to fire hydrants. The remaining 782, or 1.7% of the district's housing units, do not have access to fire hydrants without excessive supply-hose lays, relay pumping or water-shuttle operations.

The areas without hydrant access in the district are largely undeveloped or rural in nature. Because these areas are rural, the land is primarily made up of small farms, large-acreage, single-family homes sites and undeveloped fields. The area without hydrant access is 12 square miles, which totals 20.5% of the district's 58.33 square mile total.

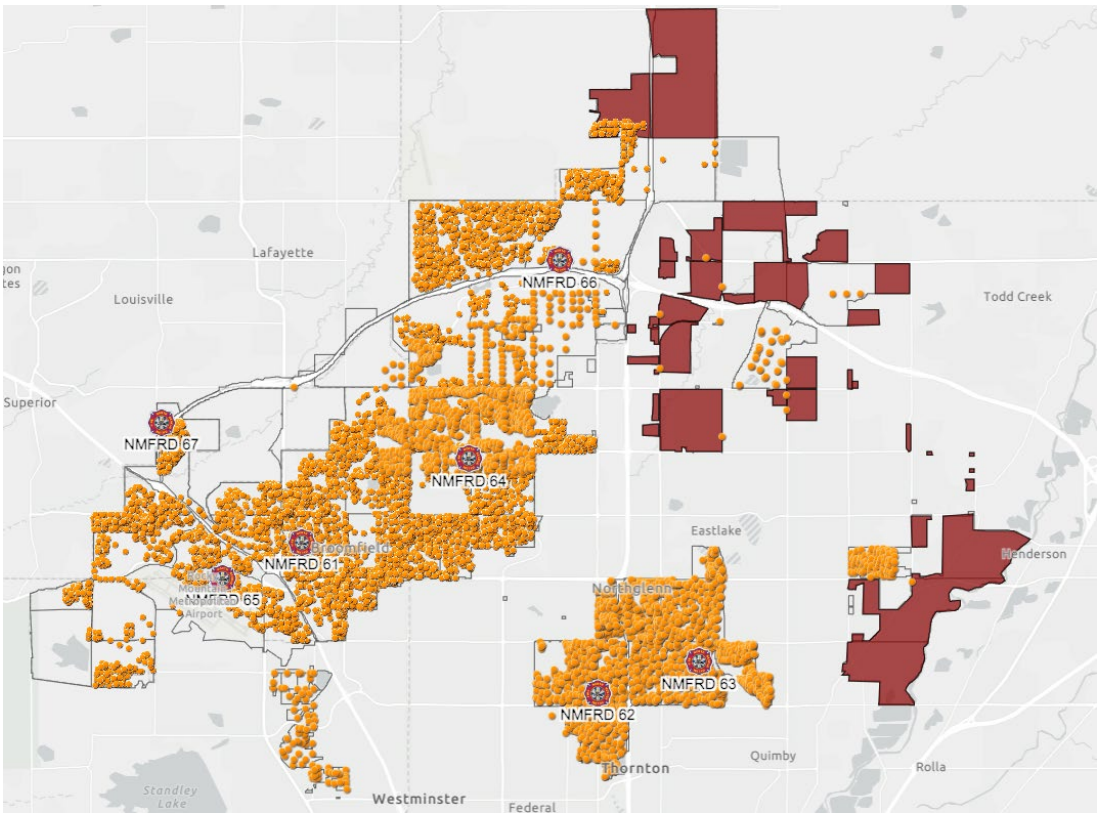


Figure 48 - NMFRD Fire Hydrant Locations and Areas with No Fire Hydrants (red), Source ARCGIS Community Analyst, 2023

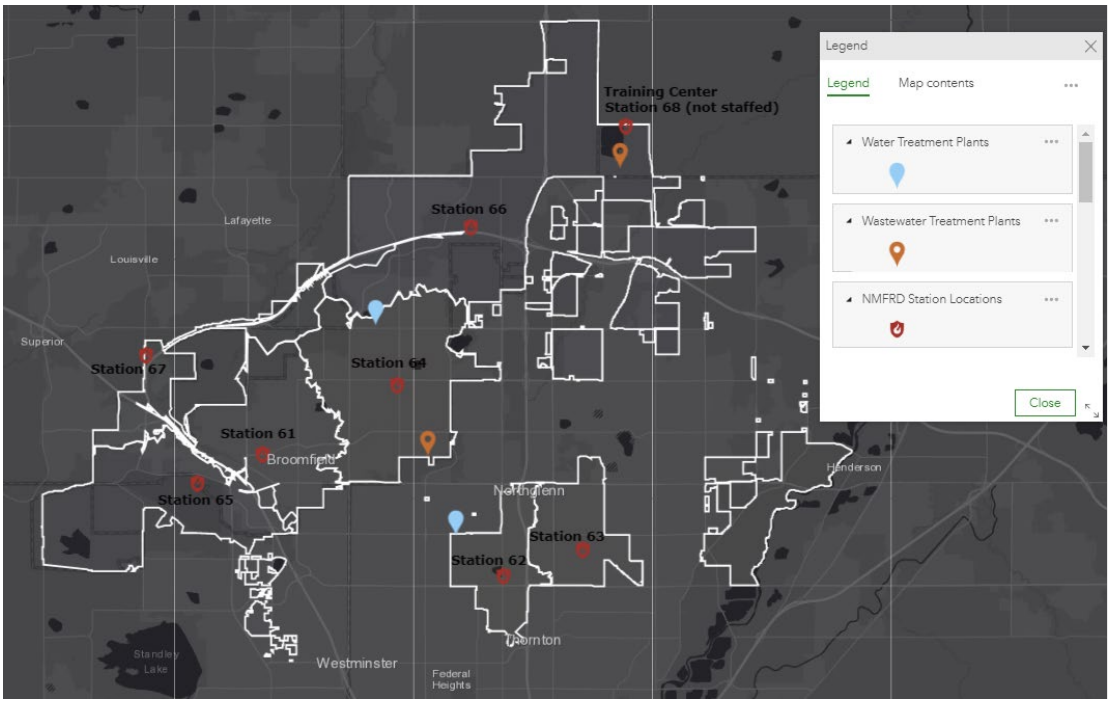


Figure 49 - NMFRD Water and Wastewater Treatment Plant Locations

Electrical Systems

Natural and man-made disasters may result in disruptions to the power grid, which may have negative impacts to the district's vulnerable population. According to the US National Library of Medicine and National Institutes of Health, "Although a power outage, however brief, may be considered a nuisance to many, for certain medically fragile people, it has the potential to cause an acute decompensation that, depending on the severity and duration, may become life-threatening in a matter of hours. Outside the institutional setting, one particularly vulnerable population are those who depend on durable medical equipment (DMEs) that are electrically powered, such as ventilators and oxygen concentrators, to at a minimum sustain life for some and even maintain some degree of independence for others. This is a fully electricity-dependent population. For transport and mobility, DMEs can be operated using batteries for a limited time. For oxygen concentrators, the battery life can be around 2 to 4 hours, and with backup external packs and used at the lowest settings, can be extended up to 12 hours. In the event of a power outage, these vulnerable persons will need to take immediate action to maintain power to their DME. Prolonged power outages can be life-threatening to individuals who rely on electricity dependent DME and reside at home." (32)

In addition to the medically vulnerable and electricity-dependent population, the Colorado climate has frequent durations during the winter months where temperatures can reach below freezing. Loss of power during these times can result in a portion of the district losing the ability to heat their dwelling. According to the Center for Disease Control (CDC), carbon monoxide (CO) poisonings increase after storms that result in a loss of power due to many people using alternative power sources for heating their homes. These methods can result in CO build-ups, putting the occupants at an increased risk of CO poisoning. (33)

The following maps show the districts electrical power transmission lines and electrical substations.

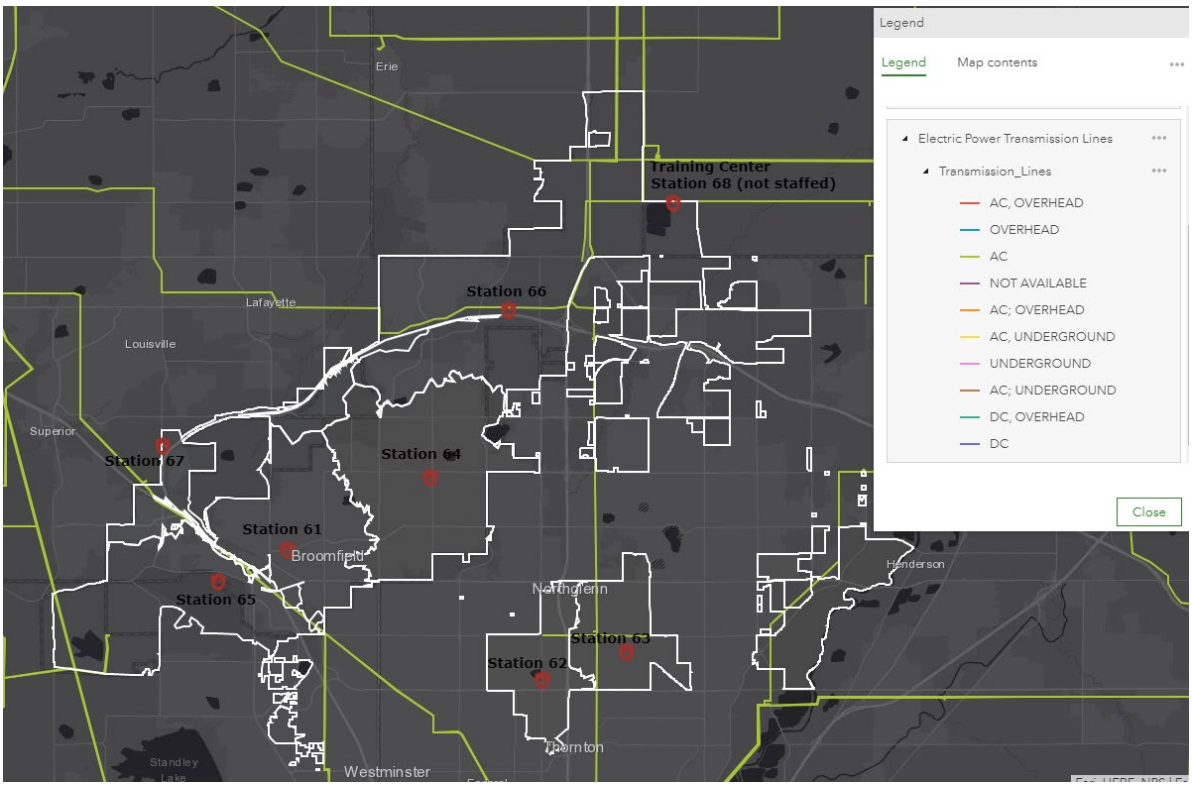


Figure 50 - Power transmission lines, source Homeland Infrastructure Foundation Level Database (HIFLD)

Figure 51 - Electric Substations within NMFR District Borders, Source Homeland Infrastructure Foundation-Level Data (HIFLD)

Petroleum Supply Pipelines

Pipeline emergencies are a low frequency, high-risk incident to both the citizens and emergency responders. Pipelines may contain hazardous, flammable, and deadly petroleum gases, liquids and other chemical products that may present hazards to the surrounding community and emergency personnel. Amplified hazards related to a pipeline incident may occur depending on weather, topography and type of material involved. Like other HAZMAT incidents, one of the most important initial steps emergency responders must take is to identify the type of material involved and to contact the appropriate pipeline operator. The pipeline operators may have remote capability to control pipeline valves to either divert or stop potential spills. They also employ a variety of specialists who can assist in emergency operations.

The district has access to the National Pipeline Mapping System (NPMS), determined by the Pipeline and Hazardous Materials Safety Administration (PHMSA), which is under the jurisdiction of the United States Department of Transportation (US DOT). Due to the data containing sensitive pipeline critical infrastructure information, the locations and materials cannot be shared with the public, resulting in a restriction of the maps and identified materials within this document. The district uses the geodatabase information within the Computer Aided Dispatch (CAD) system to identify types of materials and pipeline operator contact information should emergency units respond to a reported incident.

The following maps are publicly available, non-restricted, from the Energy Information Administration (EIA) and represent some of the major petroleum and natural gas pipelines in or near the district's borders.

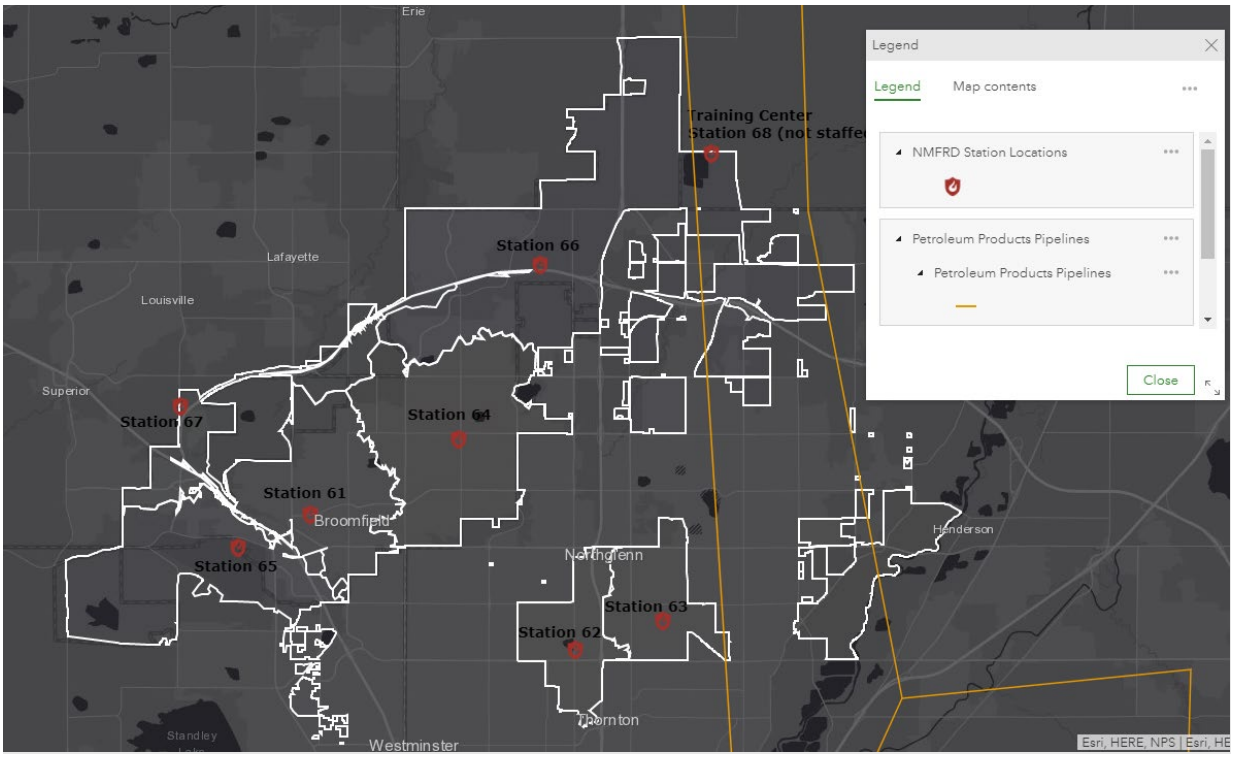


Figure 52 - Major Petroleum Pipelines in the United States, source Energy Information Administration (EIA) May 2023

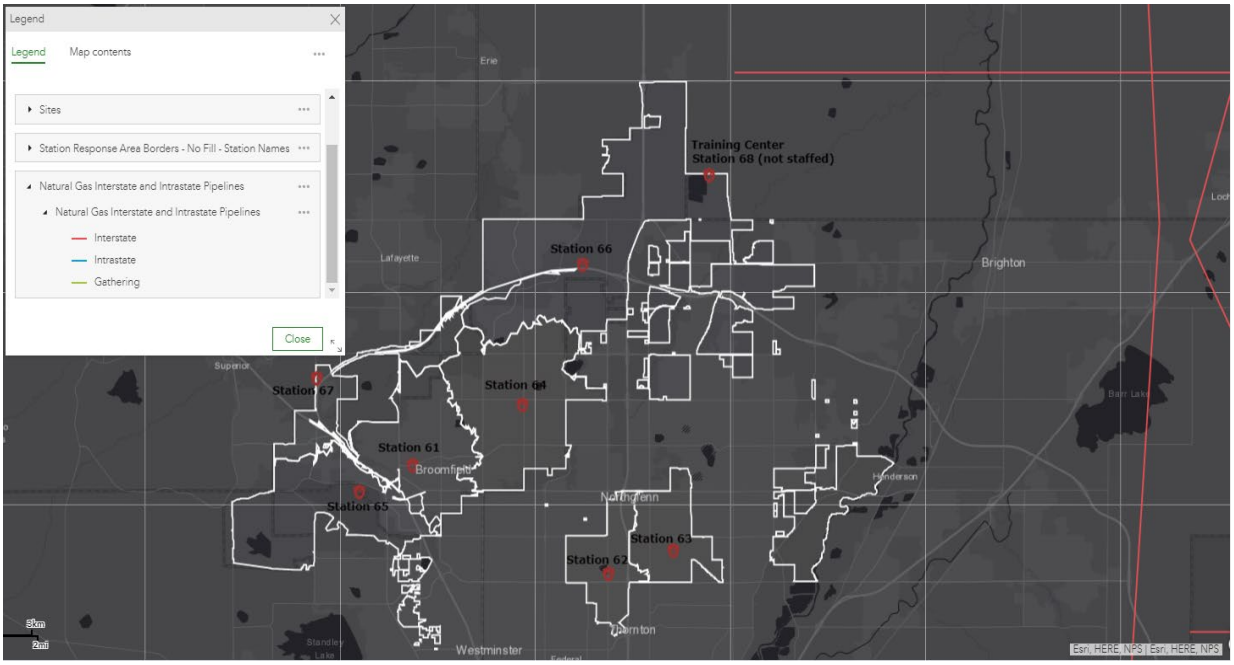


Figure 53 - Interstate and Intrastate Natural Gas Pipelines within the United States, source Energy Information Administration (EIA) May 2023

Oil & Gas Wells

The district sits atop the Denver-Julesburg basin, a geological formation containing rich stores of oil and gas. There are two primary oil and gas companies operating within the district: Civitas (formerly Extraction) and PDC (formally Great Western).

Accidents and other emergency incidents during oil and gas operations may pose risks to the health and safety of site workers, responders, and neighboring populations. The best way to address these emergencies is to prevent their occurrence in the first place. The district has partnered with developers and counties to establish strict and comprehensive policies and procedures aimed at ensuring that operations at oil and gas facilities conform to all applicable industry, health, and safety standards.

According to the Occupational Health and Safety Administration (OSHA), there are many hazards associated with oil and gas extraction due to the equipment and materials involved. These hazards primarily affect the workers within the production site and may include vehicle collisions, struck-by/caught-in/caught-between objects, explosions and fires, falls, confined spaces, ergonomic hazards, high-pressure lines and equipment, electrical and other hazardous energy, and machine hazards. (34) In addition to the

hazards imposed on workers, there are also environmental concerns with hydrocarbon spills, gas releases and on-site chemical spills. The district has had spills of mandatory reportable quantities of hydrocarbons at several sites but did not require fire department intervention.

Oil and gas site development and production involve the use of heavy equipment and chemicals in an environment of pressurized equipment and flammable liquids and gases. The number of staff onsite during development and production phases varies. Specific hazards that staff may encounter will depend on the stage of site operations, including site preparation, drilling, hydraulic fracturing, sustained production and auxiliary operations. During site development, multiple stages of operations (such as flow back and drill out) can occur simultaneously at the same location.

Oil and gas well emergency responses impacting the public would most often originate at the well site and may pose risks to the surrounding areas. This risk can be magnified by the proximity and density of nearby residential development.

Community exposure could be the result of smoke or plumes related to a fire, explosion, gas leaks or chemical release. The district recognizes that early air-monitoring and unified command decisions, made with law enforcement, could lead to surrounding areas being evacuated or sheltered in-place. In addition to the risks associated with active well sites, there is also a potential that the public may be adversely affected from leaks at plugged and abandoned wells, scores of which are located throughout the district. The threat posed by incorrectly plugged and abandoned wells is illustrated by the high-profile fatal explosion of a home in a nearby jurisdiction.

Within the past five years, the district has seen a substantial increase in oil and gas well production, specifically in the northern response areas, primarily within station 66's district. According to the Colorado

Oil and Gas Conservative Commission (COGCC), the official repository for Colorado's oil and gas information, the district has over 300 operating wells within its jurisdiction.

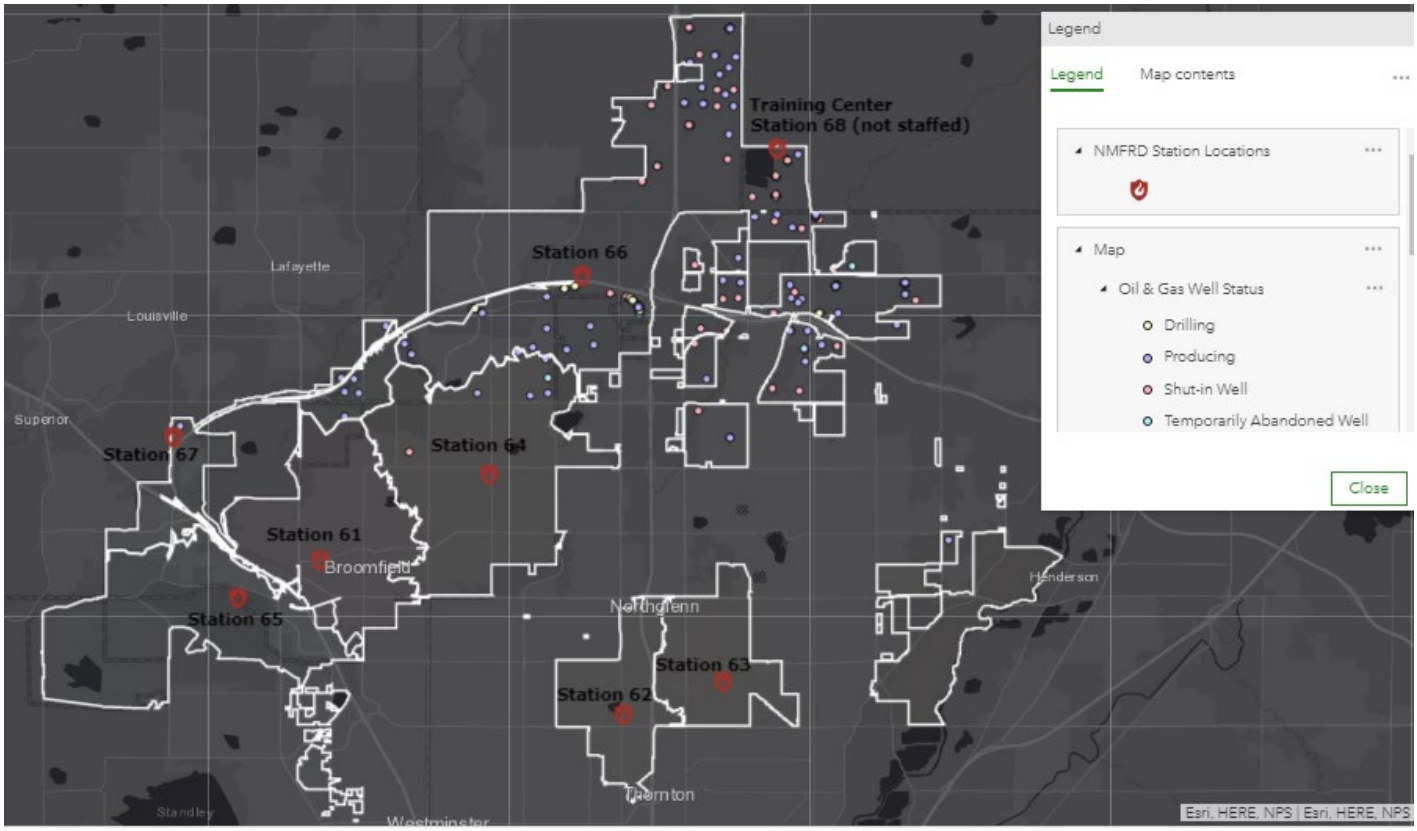


Figure 54 - The Colorado Oil and Gas Conservation Commission (COGCC) showing oil and gas well locations within the NMFR district.

Traffic Control Systems

According to the U.S. Fire Administration Emergency Vehicle Safety Initiative, intersections are the most common place where emergency vehicles are involved in collisions. Most collisions are the result of drivers who fail to yield to emergency vehicles. (35)

Recognizing that intersections pose an elevated risk to both emergency personnel and citizens, most traffic light-controlled intersections are equipped with traffic signal pre-emption devices. The signal pre-emption devices are activated using line-of-sight emitters installed on all emergency response apparatus, permitting responding emergency vehicles to obtain right-of-way through controlled intersections prior to arriving at the intersection. This not only increases the safety of citizens and emergent responding vehicles but also

helps reduce response times while increasing fuel efficiency. The following map shows the locations of the traffic pre-emption devices within the district's area of coverage.

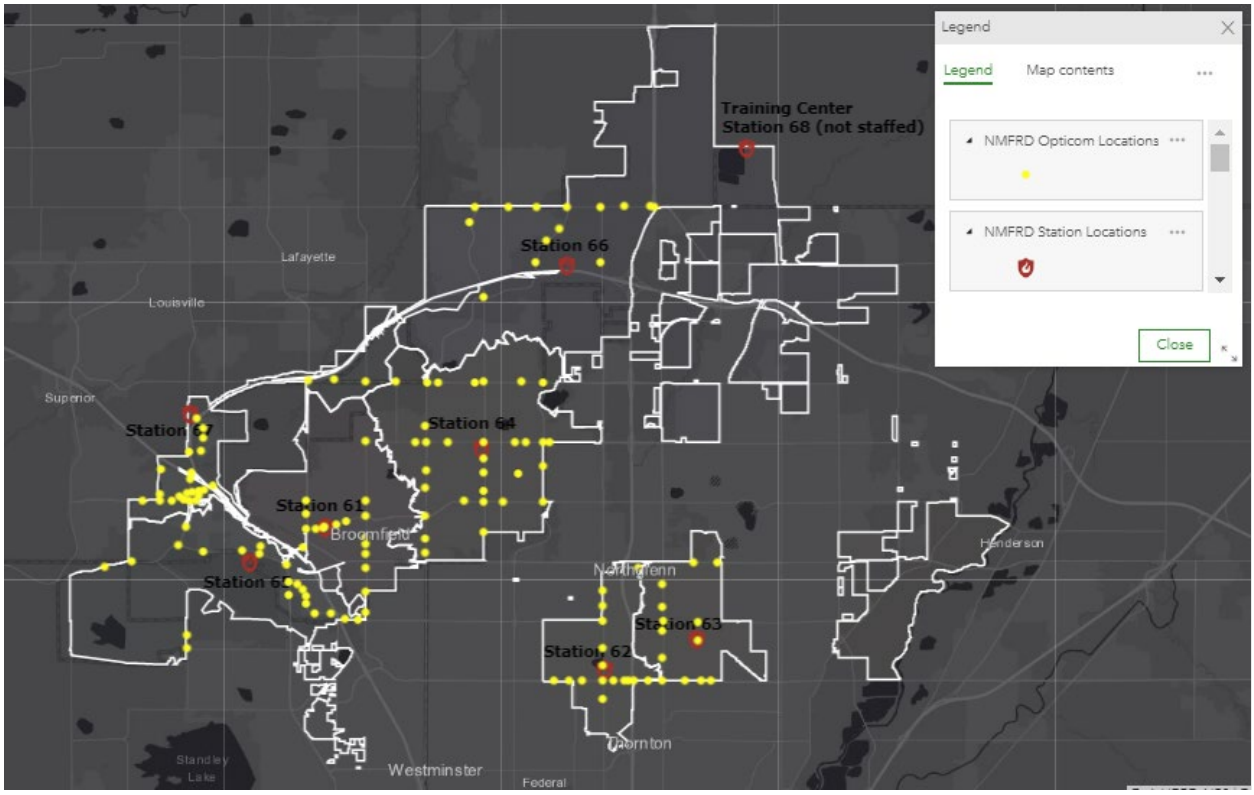


Figure 55- NMFRD Traffic Control Devices (Opticom) locations.

Climatic Impact

Conditions related to weather and the physical environment may have an impact on service delivery. Conditions, such as snow, rain, ice, hail, thunderstorms/lightning, and tornados not only cause harm to the citizens of the district but can also impede emergency response times and drawdown available resources.

Winter Storms

Blizzards can put a strain on district resources and increase risk to citizens. The Colorado Division of Homeland Security and Emergency Management (DHSEM), refers to winter storms as "deceptive killers." The Colorado DHSEM goes on to state, "This is because most deaths are indirectly related to the storm. Fatalities may occur due to prolonged exposure to the cold, which leads to hypothermia, or in traffic accidents on icy roads. Every area in Colorado has the potential to be impacted by severe winter weather. Some winter storms are large enough to affect several states, while others affect only a single community. Winter storms can range from moderate snow over a few hours to a blizzard that lasts for several days.

Blizzards are severe winter storms that consist of blowing snow and wind resulting in very low visibility. In Colorado, blizzards may occur anytime from fall to winter, and even into the spring." (36)

Thunderstorms

Of all the climatic impacts to the district, thunderstorms are the most common. Along with thunderstorms, hail, lightning, wind events and tornados also present risk. During the spring and summer, thunderstorms are quite common among the Colorado Front Range. According to the Colorado DHSEM, "The typical thunderstorm is 15 miles in diameter and lasts an average of 30 minutes. Lightning can occur anywhere there is a thunderstorm and can strike miles away from the storm. Examining where lightning occurs helps describe where the most prevalent thunderstorm activity is in Colorado. The greatest number of lightning flashes are not found across the high mountain elevations, as might be expected, but rather where the mountains and plains intersect. These incidents are most common during summer afternoons and evenings. In addition, wildfire ignition by lightning is of great concern in Colorado. Every year, lightning causes numerous fires across the U.S. According to the National Fire Protection Association, lightning causes an average of about 24,600 fires each year." (37)

Hail

The district can also experience thunderstorms that generate hail from mid-April to mid-September. According to the Rocky Mountain Insurance Information Association, "Colorado's Front Range is in the heart of "Hail Alley" which receives the highest frequency of large hail in North America and most of the world. Colorado residents can usually count on three or four catastrophic (defined as at least $25 million in insured damage) hailstorms every year." (38)

Date	Location	Cost When Occurred (Millions)	2018 Dollars (Millions)*
May 8, 2017	Denver Metro	$2.3 Billion	NA
July 20, 2009	Denver Metro	$767.6	$892.8
July 11, 1990	Denver Metro	$625.0	$1.19 Billion
June 6-15, 2009	Denver Metro	$353.3	$410.9
July 28, 2016	Colorado Springs	$352.8	$366.8
June 6-7, 2012	CO Front Range	$321.1	$349
June 13-14, 1984	Denver Metro	$276.7	$664.5
June 18-19, 2018	North Denver and Denver Metro	$276.4	$276.4
July 29, 2009	Pueblo	$232.8	$270.7
October 1, 1994	Denver Metro	$225.0	$378.8
September 29, 2014	Denver Metro	$213.3	$224.8
May 22, 2008	Windsor	$193.5	$224.2

*2018 estimated cost calculations based on the Consumer Price Index.

Table 19 - Colorado's Most Costly Hailstorms

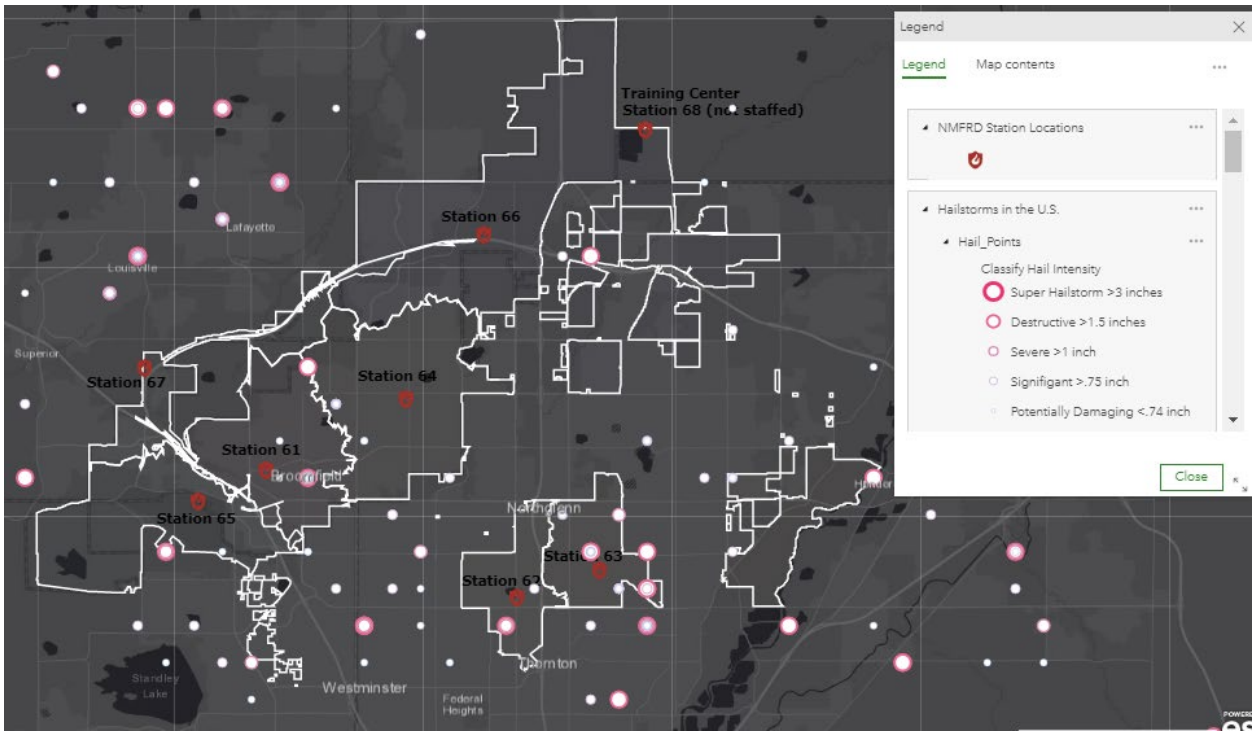


Figure 56 - National Oceanic and Atmospheric Administration (NOAA), hailstorms in the United States between 1955 and 2022

Tornados

A tornado can result in an extremely complex incident due to the total geographical area involved, infrastructure damage that hinders emergency response access, time requirements to locate and assess damage and victims and accountability of citizens and emergency response personnel. In addition to the traumatic related injuries a tornado presents to citizens, a tornado can also present many diverse types of hazards and risks to emergency personnel. According to the Occupation Safety and Health Administration (OSHA), "potential hazards include: hazardous driving conditions due to slippery and/or blocked roadways, slips and falls due to slippery walkways, falling and flying objects such as tree limbs and utility poles, sharp objects including nails and broken glass, electrical hazards from downed power lines or downed objects in contact with power lines, falls from heights, burns from fires caused by energized line contact or equipment failure, exhaustion from working extended shifts and heat and dehydration." (39) Most tornados in Colorado occur in May, June and July, primarily during the afternoon and evening.

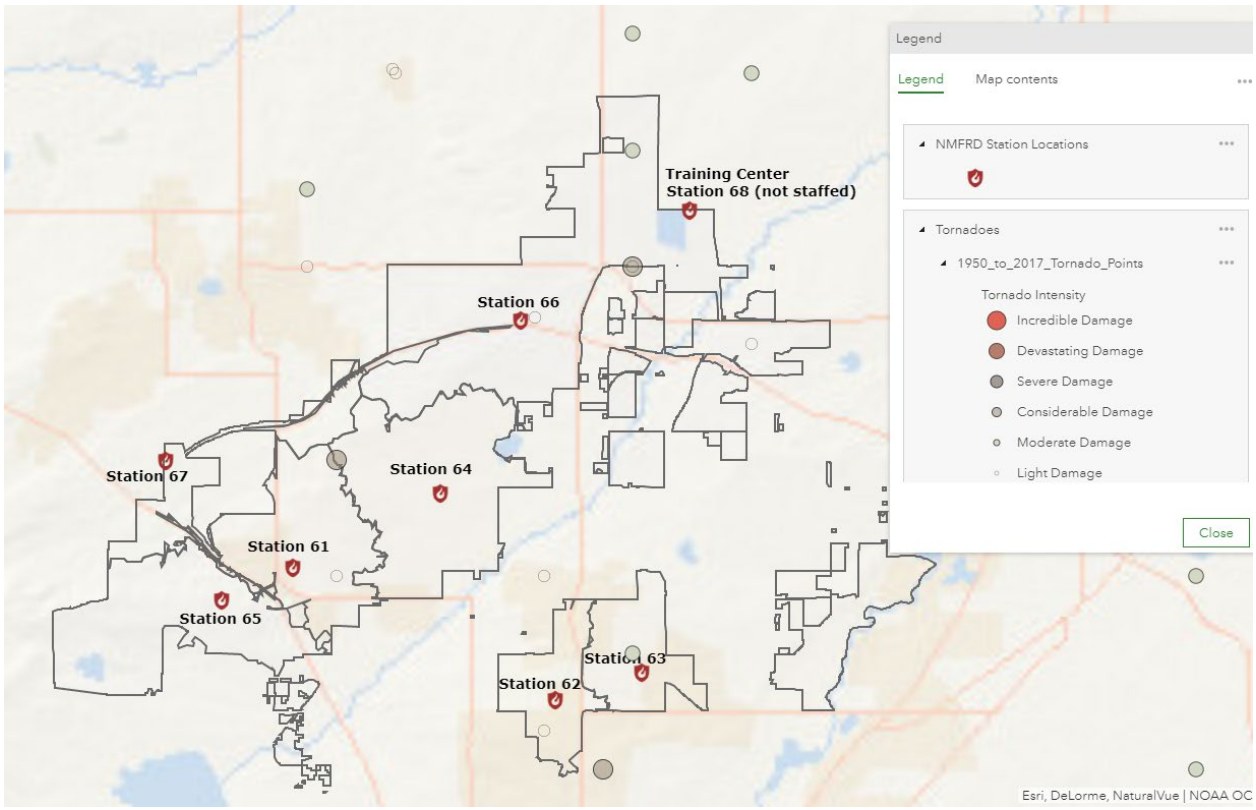


Figure 57 - National Oceanic and Atmospheric Administration (NOAA) Tornadoes in the United States (1950-2017)

Disaster Exposure

Natural disasters, such as earthquakes, floods, and wildfires, can cause immense damage to property, wildlife, the environment, and human health. These disasters can present a risk for residents and workers in affected areas by causing injury and loss of life, damaging infrastructure, and interrupting normal daily activities.

According to the National Institute for Occupational Safety and Health (NIOSH),

> "Emergency response and recovery workers may be at risk of exposure to multiple health hazards associated with the occurrence of an event. These hazards can include physical, chemical, ergonomic, biologic, radiologic, psychological, and behavioral health hazards." (40)

Earthquakes

According to Colorado Geological Survey, "Colorado is considered an active tectonic province that is essentially being pulled apart where the Rio Grande Rift cuts north/south across the mountainous, central part of the state. Colorado's high mountains are a result of uplift on faults (with associated earthquakes)

that are part of the rift system. The active landscape of the state — with the still-rising mountains containing thousands of faults — features over 90 potentially active faults and more than 700-recorded earthquakes of magnitude 2.5 or higher since 1867. Colorado experiences fewer and less frequent earthquakes on average than more seismically active states like California. However, the state has experienced large natural (magnitude 6.5 or higher) and human-triggered (induced) earthquakes in recorded history and will continue to periodically experience large earthquakes in the future." (41)

Figure 48 below, shows Colorado's earthquake locations for the past 50 years, including the current fault line locations. Most of the earthquakes occur in the western and southern portion of the state with very few historical earthquakes occurring within the district's boundaries. In the past 50 years, the district has had only three earthquakes within or near its borders. These occurred in 1981 (4.3 magnitude), 1982 (2.8 magnitude) and 1984 (2.5 magnitude).

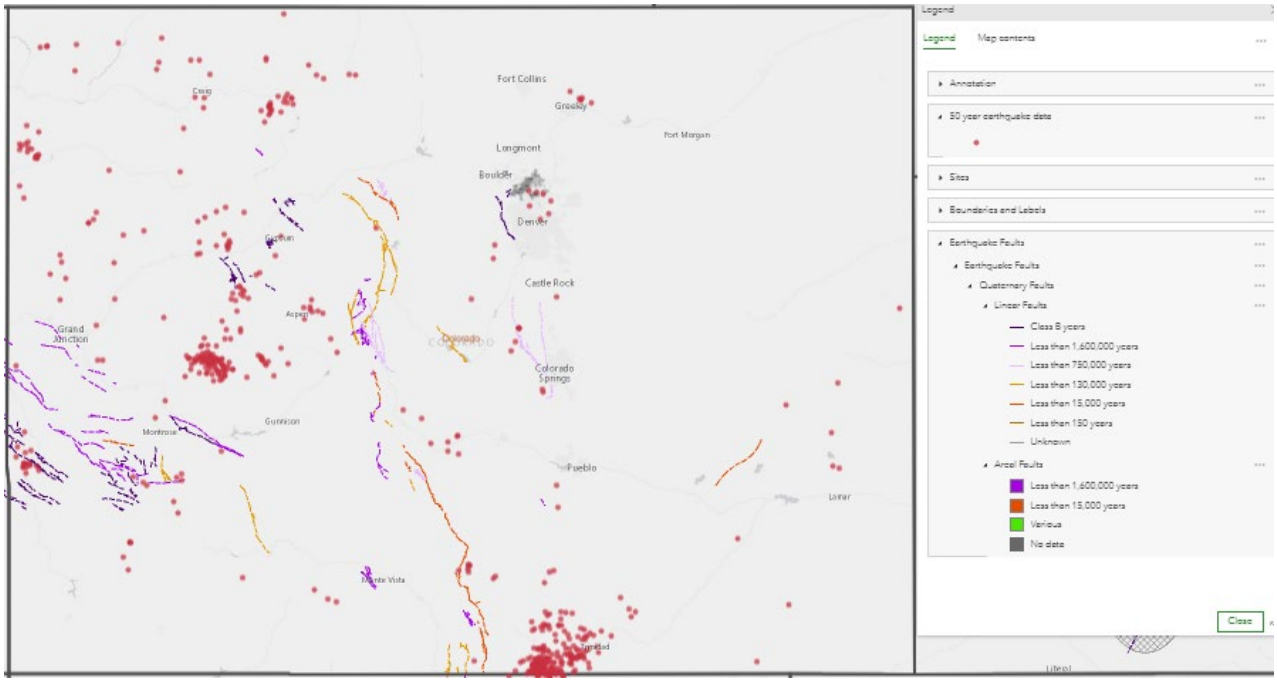


Figure 58 - Colorado Last 50 Years Earthquake Locations & Current Fault Lines

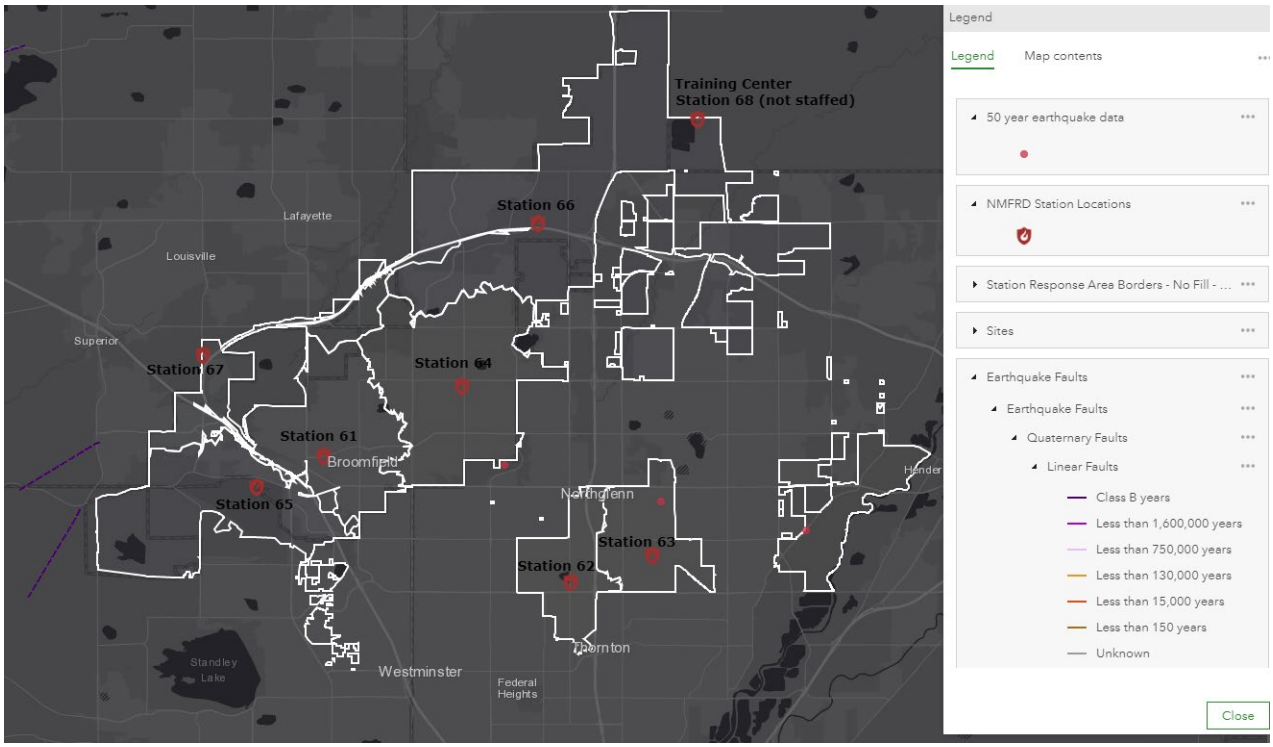


Figure 59 - NMFRD Earthquake Locations within or Near District Border, Quaternary Faults and Fold Database & U.S. Geological Survey

Floods

As Colorado transitions from winter to spring, flooding from rapid snowmelt, thunderstorms and overflowing rivers and streams become an increasing concern for emergency providers. Flood threats also increase during large storms prevalent between July and September.

The district recognizes the importance of knowing where flood zones are located. The Federal Emergency Management Agency (FEMA) produces Flood Insurance Rate maps and identifies Special Flood Hazard Areas as part of the National Flood Insurance Program's floodplain management. Special Flood Hazard Areas have regulations that include the mandatory purchase of flood insurance.

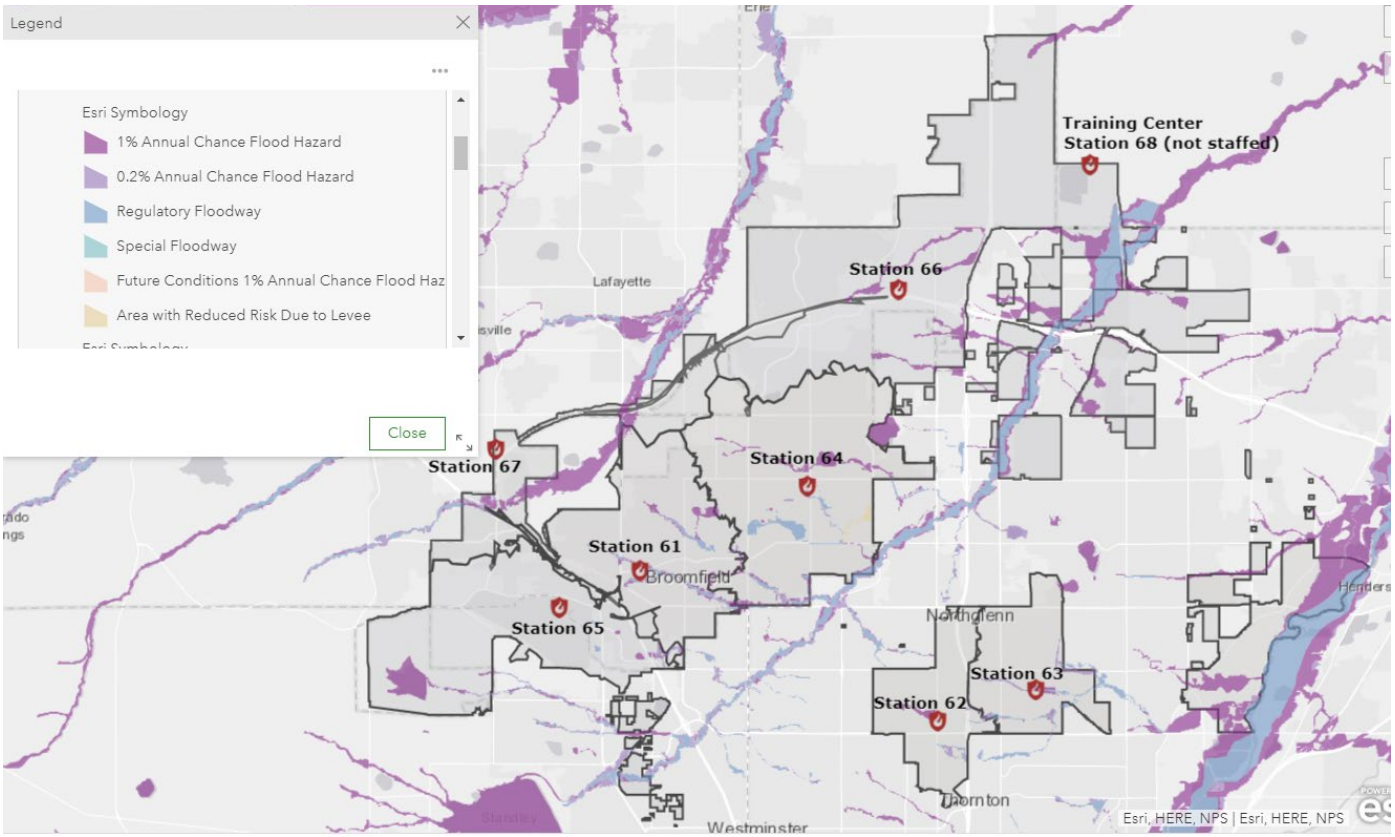


Figure 60 - FEMA 2022 Special Flood Hazard Area Map

In addition to the Special Flood Hazard Areas above, the district recognizes that other types of emergencies can result from rivers, streams, and bodies of water. These emergencies include ice rescue, swift-water rescue, and potential drownings. Figure 61 below shows the district's rivers, streams, and bodies of water.

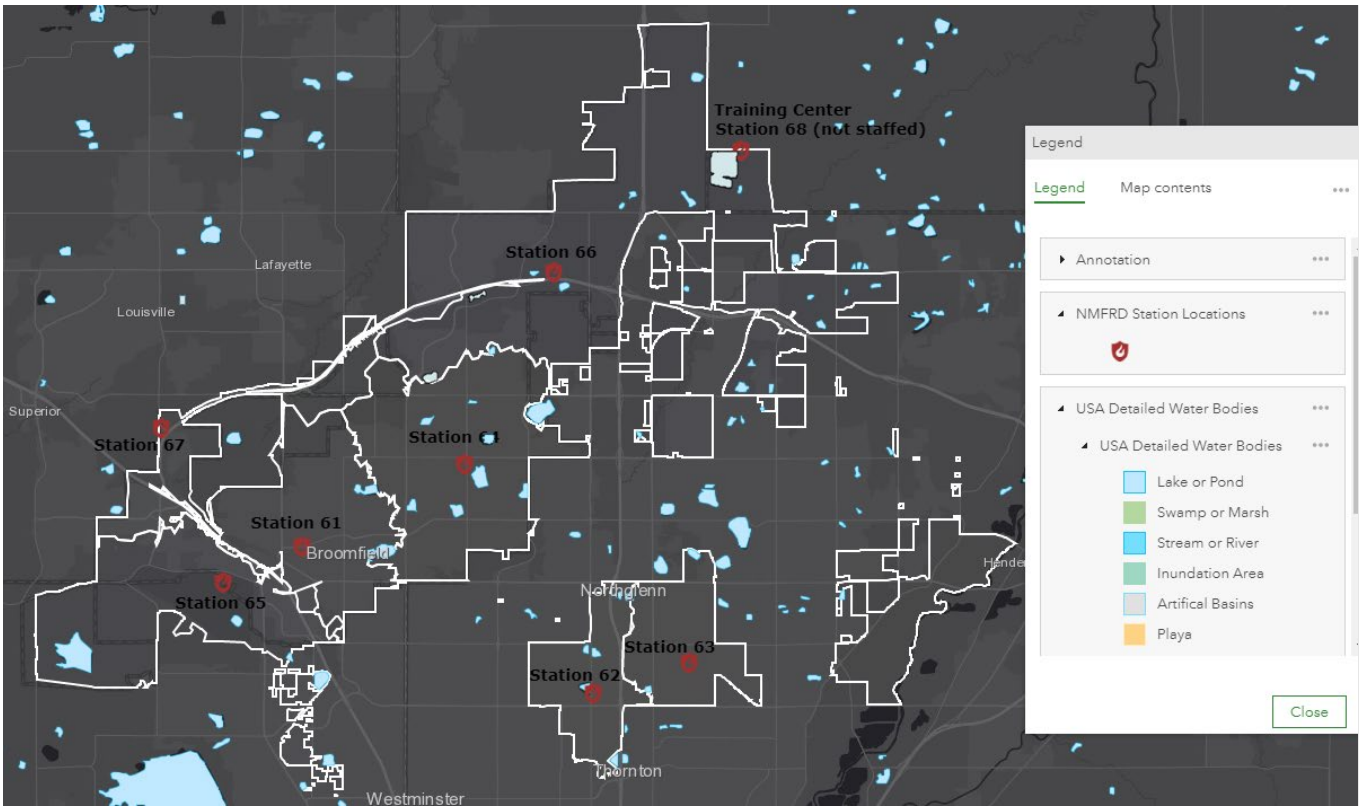


Figure 61 - NMFRD District Rivers, Streams, and Bodies of Water (ESRI Community Analyst using USGS dataset)

Wildland Interface

Historically speaking, farming dominated district land tracks for many years. This included wheat, corn, hay, and pasture fields. Over a 30-year period, development has broken up many of the large agricultural tracts of land. With the loss of land, active farming has diminished and has been transformed into an urban landscape with small tracts of fallow land. City and county planning has designated and managed open space within the district's boundaries. All the wildland urban interface (WUI) areas fall in the area between low and medium concern.

The district contains four of the thirteen fuel models. Fuel model 1- short grass, fuel model 2- sage and grass, fuel model 3- tall grass 3' and fuel model 8- light timber with litter understory. The grass group fuels are dependent on spring moisture for height and fuel load. The timber model is typical cottonwood that normally surrounds a riparian area.

Many of these areas border residential developments that could be defined as wildland-urban interface. The common definition of wildland-urban interface is the zone where natural areas and human

development meet. WUI are most commonly considered areas consisting of forested areas of land that have been growing over several decades. While the district does not have forested areas of land that abut residential developments, it does have large areas of open space with tall grasses and brush bordering residential developments that present potential risk should a grass fire ignite, particularly on a high wind day.

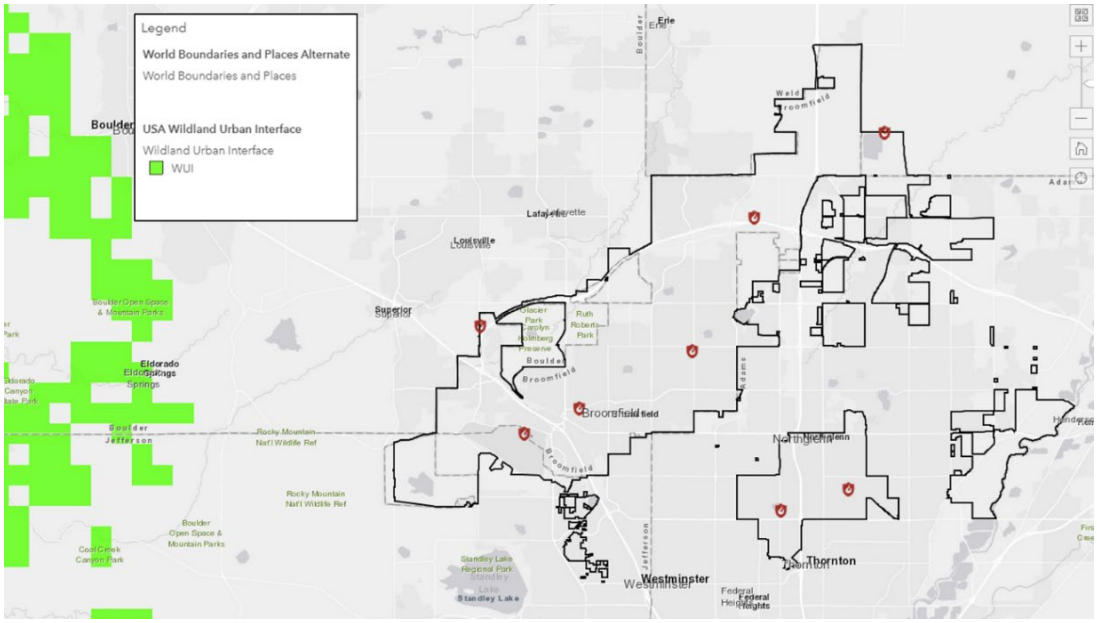


Figure 62 - Wildland-Urban Interface (WUI) Sources include USDA Forest Service, Forest Health Technology Enterprise Team (FHTET), and US Fish and Wildlife Service

As part of district risk evaluation, NMFRD has completed a Wildland risk assessment for the overall jurisdiction. In addition, the district has also completed focused WUI mitigation assessments for homeowners and associations who have requested them. The district also completes company level assessments for access and hazards.

The City and County of Broomfield and the City of Northglenn actively manage the open space, parks and development land within its respective borders. It is typical to have a mow line on municipal property between a community fence line and the open land. Mow lines are also commonly used on either side of a municipally maintained bike path or trail. These mow areas provide firebreaks useful in containing and extinguishing wildland fires. They also provide access points for brush trucks to drive on when needed.

The map layer below, in figure 63, shows the wildfire hazard potential within the jurisdictional boundaries and areas adjacent to the district's borders. As mentioned above, the map can be used to identify higher risk areas that then receive focused assessments. These focused assessments can then be used to

recommend fuel management programs and other mitigation efforts. Risk assessments are based on relative fire and life safety risk using internal definitions of low-risk colored as yellow, moderate-risk colored as orange and high-risk colored as red. These risk thresholds are based on the district's specific wildland risk and vary greatly from actual wildland risk with areas that truly abut forest. Open spaces with 1-2' fuels and low-grade slopes which back to single-family homes are listed as low risk (yellow). These homes are predominantly surrounded by green grass that will not readily burn and pose no immediate danger to life. A moderate-risk (orange) example has 2-3' fuels on a 20–30-degree slope that exposes a large storage area and office building. This poses some risk to life given the stated conditions. A high-risk (red) example would consist of 3-4' fuels on a 40-degree slope that directly exposes a non-sprinklered apartment complex. This example poses a higher risk to life and property.

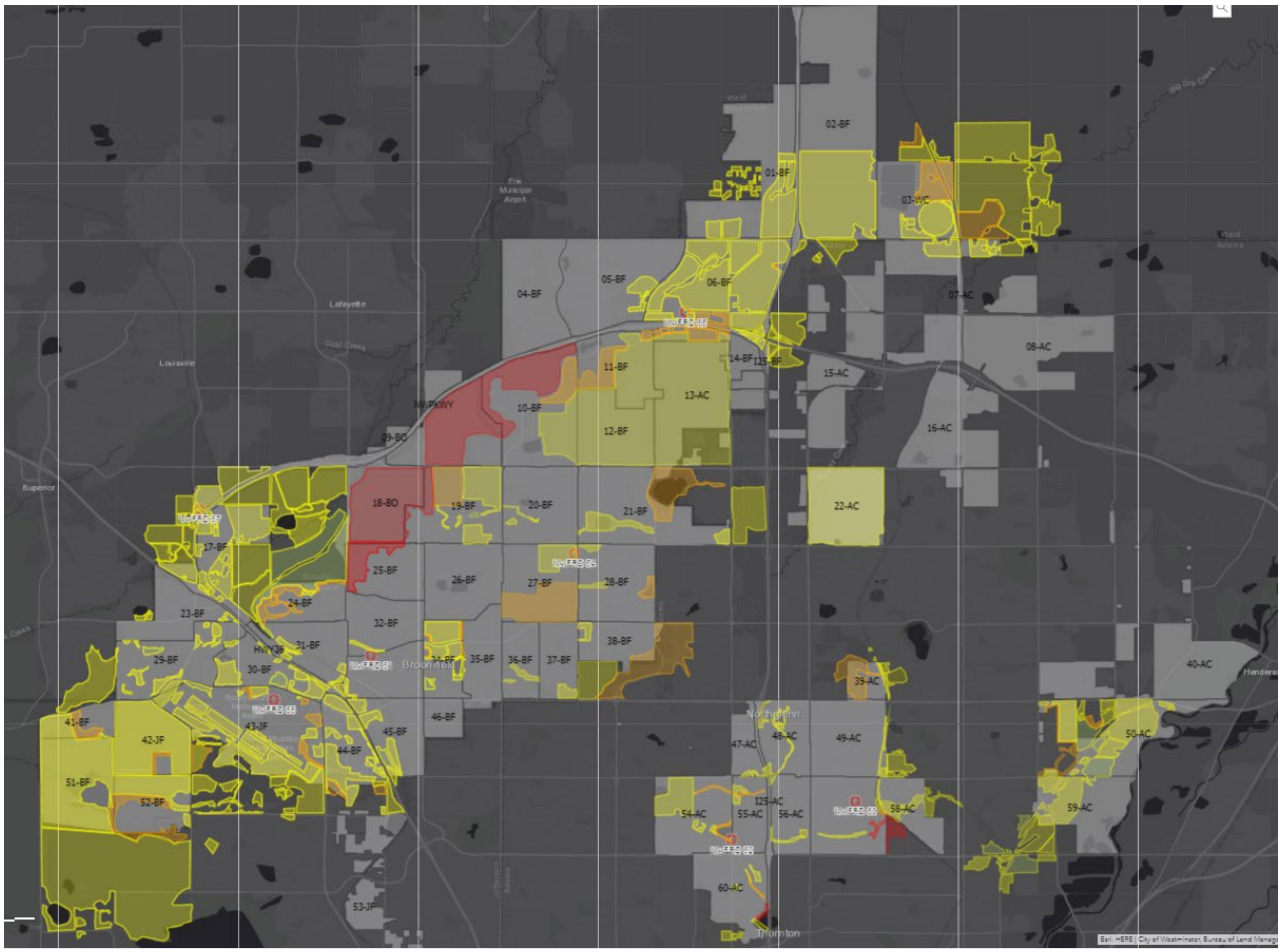


Figure 63 - Wildland fire potential derived from the district's wildland team leaders and station captains, 2024.

Physical Assets Protected

Understanding the district's building types and their physical characteristics is a critical component of risk analysis. Many different factors can increase or decrease a building's risk, specifically as it relates to fire. The district makes efforts to reduce the risk to building occupants through fire inspections, code enforcement, building plan review and community outreach safety programs.

Building Risk Attributes and Relationship to Severity

The district includes over one thousand inspected buildings with over 5,000 occupants (businesses within a building). This total does not include residential, single-family homes or individually owned condominiums unless the condominiums have a shared common space or fire protection system. This total does include all multi-family apartment complexes.

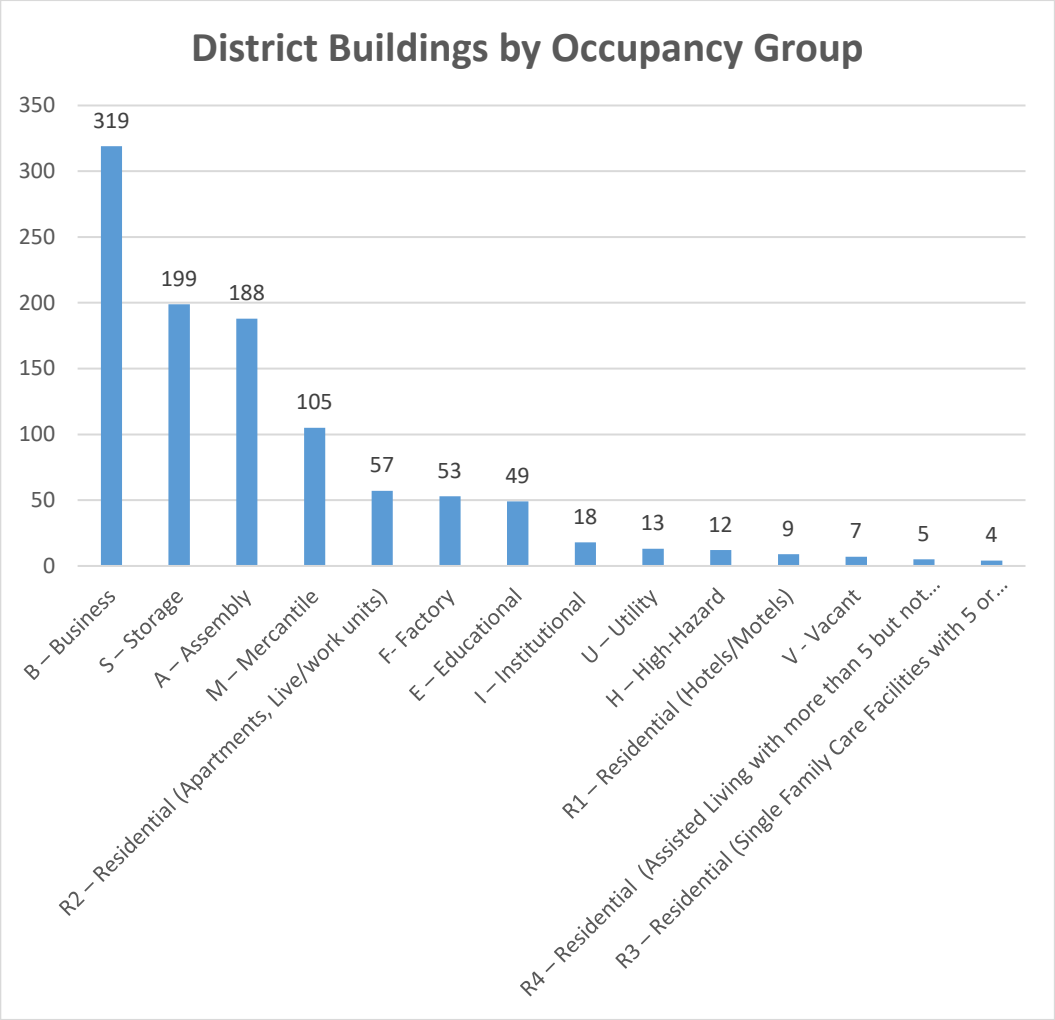


Figure 64 - District's inspected buildings by occupancy group, 2024.

The district collects and stores data regarding specific building attributes that determine a calculated risk score for all inspected buildings. There are twelve building attributes collected, which also include risk mitigation efforts such as fire protection systems. The fire prevention division collects these attributes for newly constructed buildings at plan review and final walk, prior to the issuing of the certificate of occupancy. Attributes for previously constructed buildings were incomplete. The district collected missing or incomplete data using site-visits, county assessor data, building department data and fire prevention plan review data. The district applies a risk score to the building using the scoring matrix below. The sum of individual building attribute scores determines the total risk score for each building.

NMFRD Building Risk Attribute Scoring Matrix

Risk Label for Total Location Points	Low:			Moderate:		High:	
Points Per Category	0	2	4	6	8	10	15
IBC Occupancy Group*	Detached Residential Garage or Small Out Building	Group U	Group R3 & B	Groups M & S	Group R4, F, E & A (low risk Assembly)	Group R1 & A (moderate risk Assembly)	Group R2, I, H & A (high risk Assembly)
Construction Type	Type I	Type II	Type III	Type IV	Type V		Under Construction
Total Square Feet	< 1500	1501-3,000	3,001-7,000	7,001-15,000	15,001-40,000	40,001-100,000	>100,000
Story Above Grade**		1 floor above grade	2 floors above grade	3 floors above grade	4 floors above grade	5-6 floors above grade	7 floors or more above grade
Story Below Grade	No floors below grade		1 floor below grade	2 floors below grade	3 floors below grade	> 3 floors below grade	
Minimum Separation from Exposures (feet)	> 100'	100' - 76'	75' - 51'	50' - 25'	24' - 10'	< 10'	
Number of Accessible Sides (1 to 4)	4	3	2	1		0	
Fire Flow (GPM)***		1,500 or less GPM	1,750 - 2,750	3,000 - 3,750 GPM	4,000 - 6,000 GPM	6,250 - 8000 GPM	
Mobility of Occupants	Not regularly occupied		All occupants are capable of self-rescue			90% of occupants are capable of self-rescue	10% or more of occupants are not capable of self-rescue
Economic & Community Impact		Personal/Family Loss	Business loss, minor community impact		Large community impact	Impact felt outside the community	Irreplaceable
Fire Alarm Presence	Present			None Present (actual value 5)			
Automatic Extinguishing System Presence	Present			Partial System Present (actual value 5)		None Present	
	*Group A is further devided by risk using alcohol consumption and size which separates Group A's into low, moderate and high.						
	**Buildings 5-6 floors receive an additional 10 points above the displayed 10 points (total of 20 points). Buildings 7 floors or greater receive an additional 15 points above the displayed 15 points (total of 30 points).						
	**ImageTrend data contains unadjusted fire flow, fire flows are adjusted on backend using 2018 IFC Fire Flow Requirements for Buildings in Appendix B.						

Figure 65 - Building attribute risk matrix, NMFRD 2024

IBC Occupancy Group is a useful metric to gauge property use. Group A – Assembly has varying degrees of risk based on use. Assemblies can range from a small restaurant or church up to a large, indoor, stadium event center. Due to these variances, the district factored the average building size and the likelihood of alcohol consumption into this specific occupancy group. This resulted in Group A having three separate risk levels: low, moderate and high. The district then scored the three levels of Assembly according to the NMRD Building Risk Attribute Scoring Matrix (above).

3-Digit Code	Property Use	Alcohol Consumption (Likely = 2, Possible = 1, Unlikely = 0)	General Size which equates to likely number of people (Large = 2, Med. = 1, Small = 0)	Total	Risk (0-2 = Low, 3 = Moderate, 4 = High)
173	Bus station	0	0	0	Low
154	Memorial structure, including monument & statues	0	0	0	Low
170	Passenger terminal, other	0	0	0	Low
124	Playground	0	0	0	Low
142	Clubhouse	1	0	1	Low
160	Eating, drinking places, other	1	0	1	Low
134	Funeral parlor	0	1	1	Low
130	Places of worhips, funeral parlors, other	0	1	1	Low
185	Radio, television studio	0	1	1	Low
116	Swimming facility: indoor or outdoor	0	1	1	Low
141	Athletic/health club	0	2	2	Low
131	Church, mosque, synagogue, temple, chapel	0	2	2	Low
122	Convention center, exhibition hall	0	2	2	Low
155	Courthouse	0	2	2	Low
186	Film/movie production studio	0	2	2	Low
110	Fixed-use recreation places, other	0	2	2	Low
114	Ice rink: indoor, outdoor	0	2	2	Low
151	Library	0	2	2	Low
152	Museum	0	2	2	Low
150	Public or government, other	0	2	2	Low
174	Rapid transit station	0	2	2	Low
161	Restaurant or cafeteria	1	1	2	Low
115	Roller-rink: indoor or outdoor	0	2	2	Low
171	Aiport passenger terminal	1	2	3	Moderate
129	Amusement center: indoor/outdoor	1	2	3	Moderate
100	Assembly, other	1	2	3	Moderate
121	Ballroom, gymnasium	1	2	3	Moderate
162	Bar or nightclub	2	1	3	Moderate
140	Clubs, other	2	1	3	Moderate
113	Electronic amusement center	1	2	3	Moderate
181	Live performance theater	1	2	3	Moderate
183	Movie theater	1	2	3	Moderate
180	Studio/theater, other	1	2	3	Moderate
182	Auditorium, concernt hall	2	2	4	High
112	Billiard center, pool hall	2	2	4	High
111	Bowling establishment	2	2	4	High
144	Casino, gambling clubs	2	2	4	High
123	Stadium, arena	2	2	4	High
120	Variable-use amusement, recreation places, other (we place event centers)	2	2	4	High

Table 20 - Risk score adjustment factor to Occupancy Group A - Assembly, based on average size and likelihood of alcohol consumption, 2024.

The district determined that stories above grade (floors) add a significant amount of risk to firefighting operations, specifically when the building's floors are 5 or greater. The district has 18 buildings that are five or more floors above grade with five buildings reaching seven floors or greater. There are two buildings in the district that are 10 floors and two buildings that are 11 floors in height. For the total risk score to match reality, the district adjusted the scores higher for buildings that were five or more floors. Specifically, buildings with 5-6 floors receive an additional 10 points above the displayed 10 points in figure 65 (total of 20 points). Buildings seven floors or greater receive an additional 15 points above the displayed 15 points in figure 65 (total of 30 points).

The buildings were grouped based on their total risk score (from the Risk Attribute Scoring Matrix above), with the histogram below representing the results. The green, yellow, and red groupings identify a range for low, moderate and high-risk locations. The district uses the information from the building risk analysis for frequency within the inspection program, preplan prioritization and community outreach. Operations is working with neighboring north area fire departments within the CAD2CAD system to determine if response modifications, based on reliable dispatch information, would be beneficial to higher risk buildings. The histogram below shows buildings scoring 64 or greater as being high-risk totaling 6% of the overall locations within the district.

Risk Score Stats	
Min	22
25th Per	39
33rd	42
Mean	47.3
50th	47
66th	52
75th	55
85th	58
90th	60.2
94th	64
95th	65
Max	86

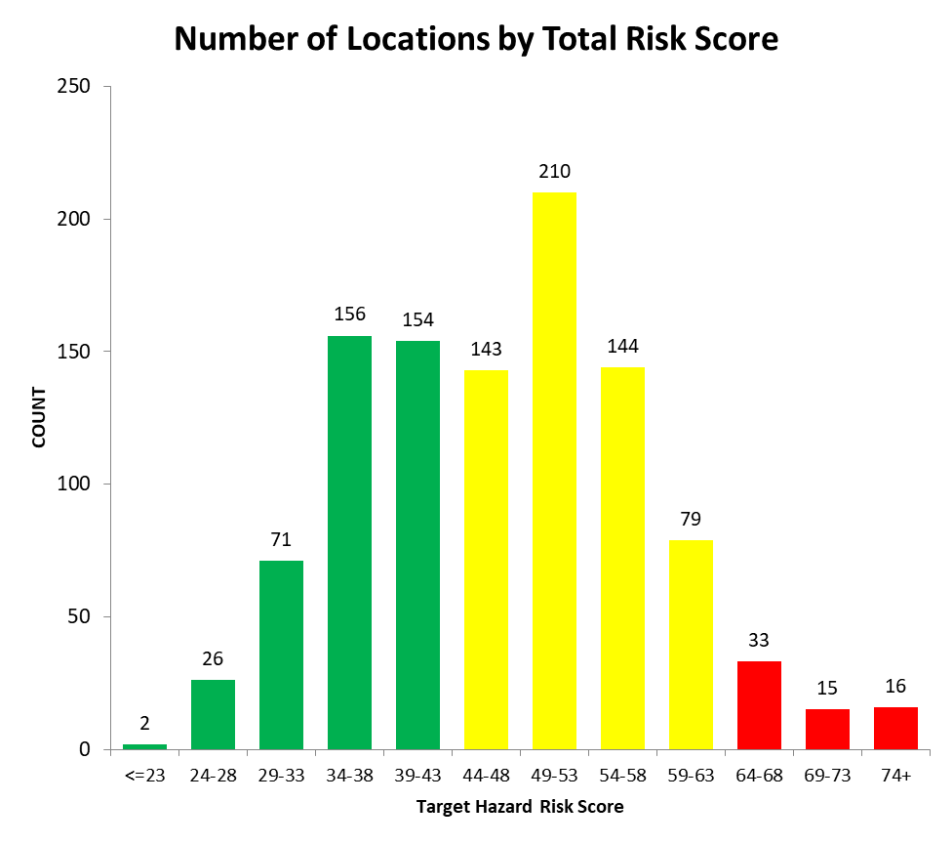


Figure 66 - Building risk histogram and risk score statistics, 2024.

District Parcel Use and Relationship to Frequency

Understanding the district's buildings and their specific attributes is one component of risk assessment that addresses severity, should an incident occur within that structure. Assessed severity is most applicable to fire and hazardous material incidents that occur within the building. However, just because a building's risk level is high does not mean an incident will occur at that location. Likewise, a low-risk building does not mean an incident will not occur at that location.

Equally important to risk assessment severity is frequency. Frequency is the rate at which incidents occur at a specific location. Frequency is often used to help predict future incident locations based on the past number of incidents. Due to the small amount of total annual structure fires and the fact that most of those fires occur within residential structures, frequency is not a useful assessment measure when analyzing commercial buildings based on a single address alone. However, when the buildings are grouped together using similar property use types and historical incidents are assessed by property use as opposed to location address, patterns of incident volume (frequency) emerge.

Exceptions to assessing frequency by location address are EMS responses and alarms and citizen assists incidents. Because 69% of total incident volume falls within the EMS classification, and 27% of total incident volume falls within the alarms and citizen assists classification, there is enough incidents to utilize frequency in the determination of future incident locations within these specific classifications.

To group buildings into similar property use categories, the district utilized county GIS data from the five counties within its jurisdiction. Each county uses different terms for parcel property uses so the district converted individual county property use names into standardized land use terms. To support varying degrees of assessment, the district categorized a single parcel into three levels of land use with each consecutive level becoming more descriptive. The categories are "Land Use Summary (L1), Land Use Summary (L2) and Land Use Summary (L3). These categories are also referred to as "Level 1, Level 2 and Level 3."

At the macro level, Level 1 land use consists of 10 different categories. Level 2 land use breaks down Level 1 land use into 24 more detailed categories. At the final, micro level, Level 3 land use breaks down Level 2 land use further, consisting of 45 categories. Figure 57 below, demonstrates these land use categories by level.

Land use summary (L1)	Land use summary (L2)	Land use summary (L3)
Mixed use	Mixed use	Mixed use residential
		Mixed use commercial
Residential	Single-family	Single-family detached
		Single-family attached
		Mobile home
	Multifamily	Multifamily
		Group quarters
	Senior	Group home
		Age restricted
		Assisted living
		Nursing/Rehabilitation home
	Common area residential	Common area residential
Commercial	Retail/Commercial	Retail Services
		Restaurant/Food
		Bar/Tavern/Nightclub
		Commercial centers
		Accommodation
		Commercial other
	Office	Office
	Commercial recreation	Commercial recreation
	Common area commercial	Common area commercial
Industrial/Warehouse	Industrial/Warehouse	Wholesale/Warehousing
		Light industrial
		Heavy industrial
Civic/Institutional	Civic facilities	Civic facilities
		Special use
		Emergency services
	Education	Primary/Secondary education
		Higher education
	Early education	Early education
	Hospitals	Hospitals
	Religious	Religious
	Military	Military
	Corrections facilities	Corrections facilities
Transportation/Utilities	Transportation/Utilities	Transportation
		Highway/Street/Road
		Utilities/Communications
Open Space	Parks/Recreation	Parks/Recreation
		Golf Courses
	Cemeteries	Cemeteries
	Open space	Open space
Agriculture or Vacant/Other	Agriculture or Vacant/Other	Agriculture or Vacant/Other
Natural resources	Natural resources	Forestry
		Extraction
Natural/Conservation	Natural/Conservation	Natural conservation

Figure 67 - NMFRD Land Use Summary by Levels 1, 2 and 3

The map below shows the district's parcels by Land Use Summary Level 1, 2 and 3.

Level 1 Land Use Summary

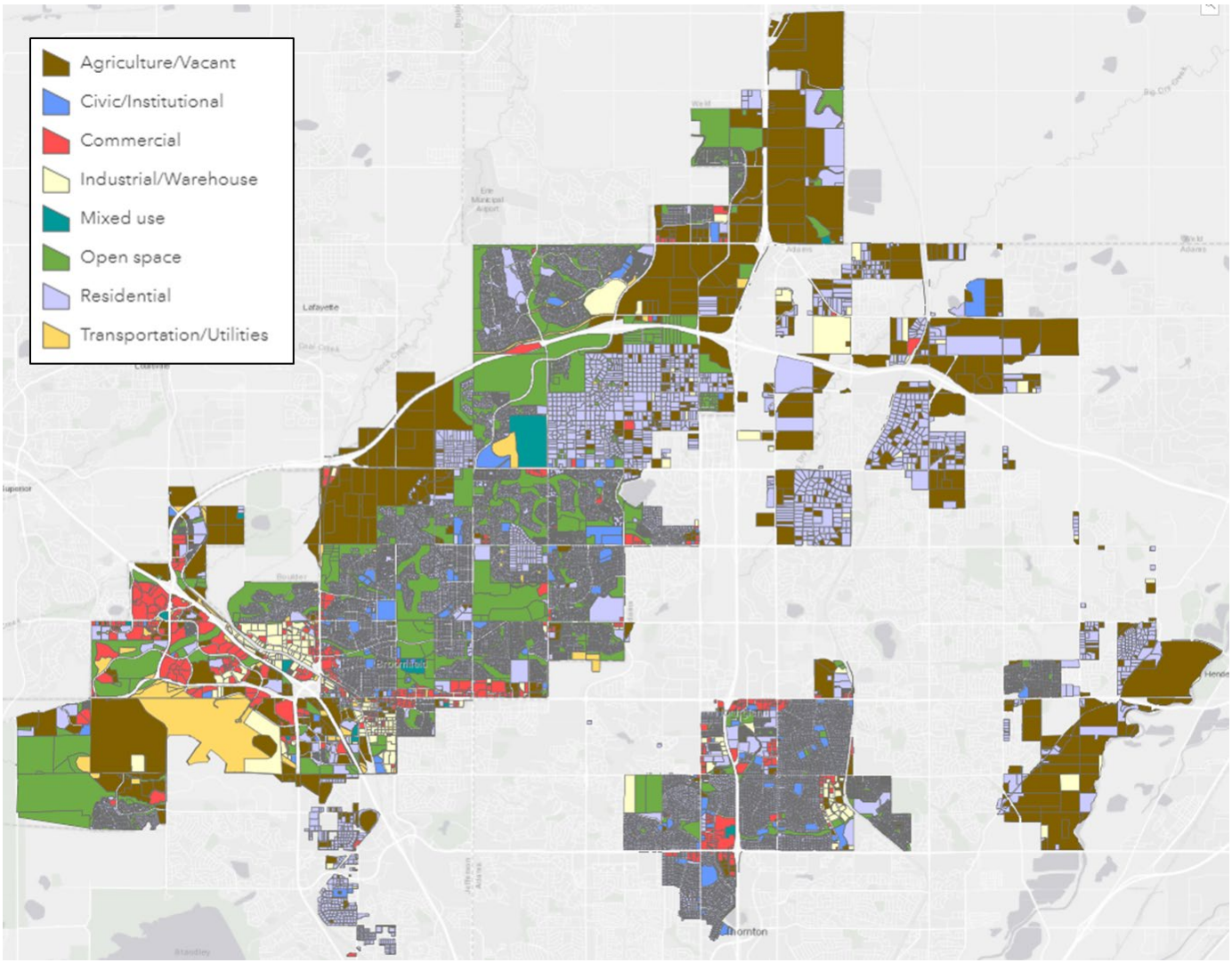


Figure 68 - NMFRD parcels by land use summary (L1) or level 1.

Level 2 Land Use Summary

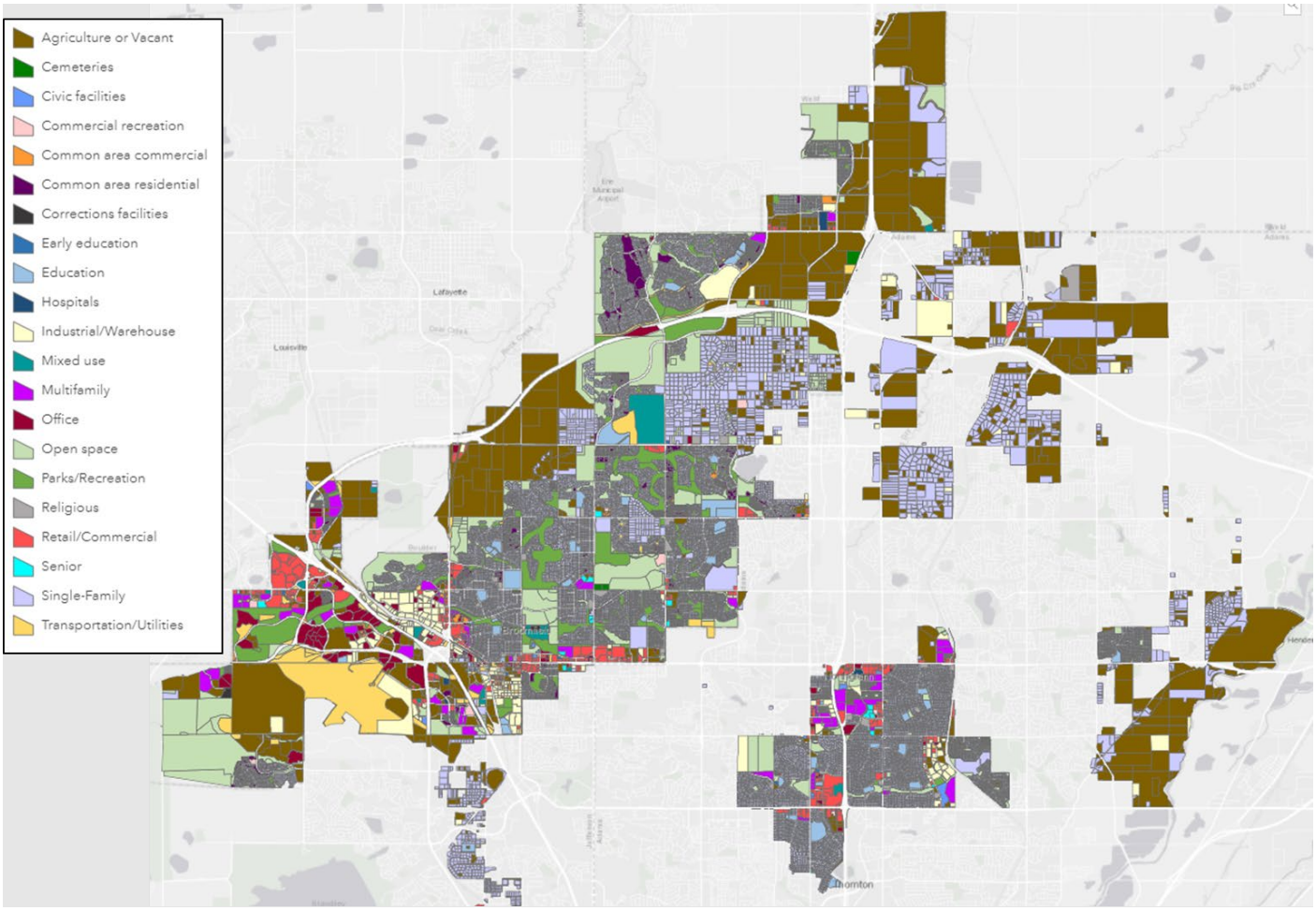


Figure 69 - NMFRD parcels by land use summary (L2) or level 2.

Level 3 Land Use Summary

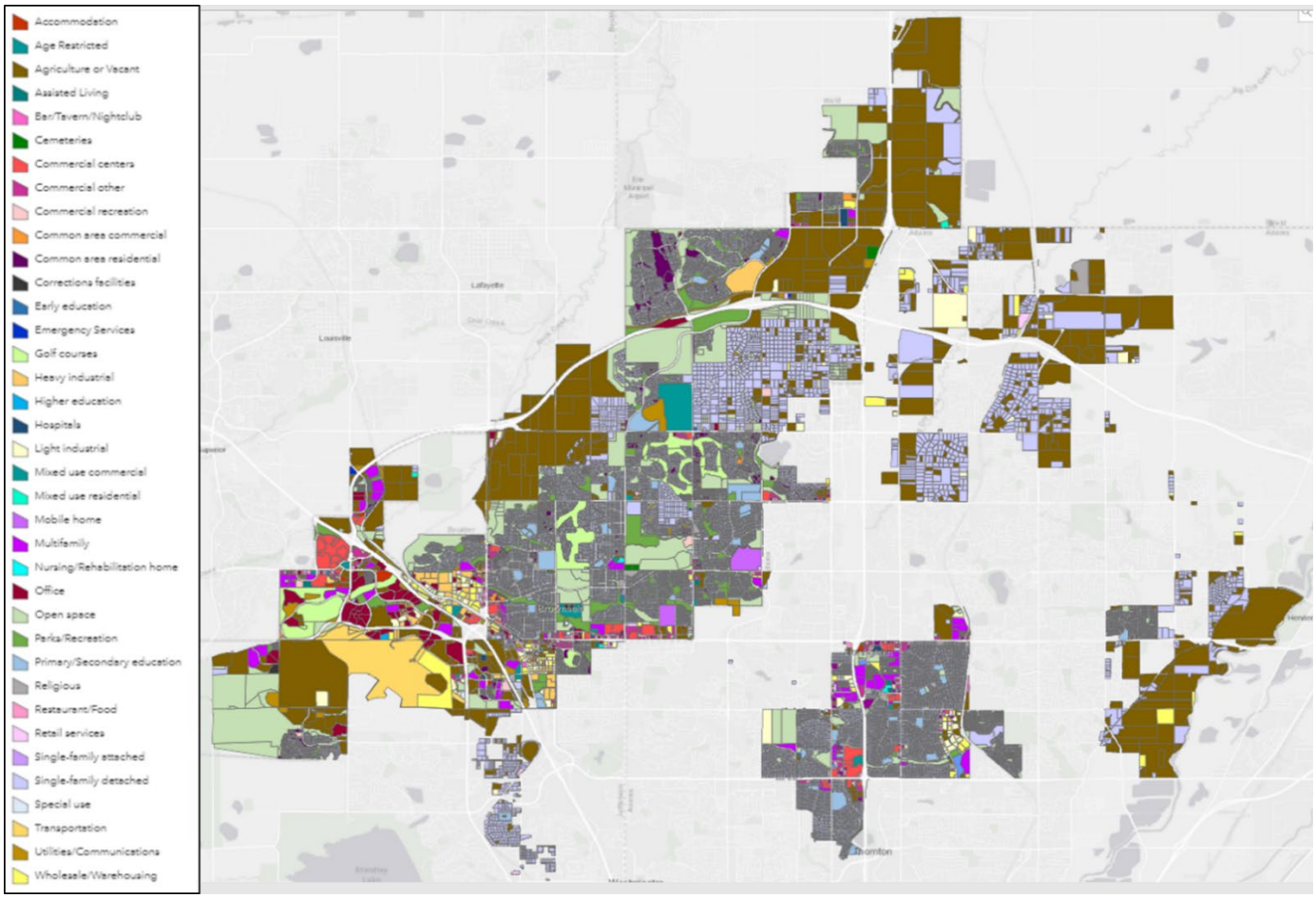


Figure 70 - NMFRD parcels by land use summary (L3) or level 3.

The district further assessed buildings that fall within the inspection, preplan or community outreach programs by property use. Of the 1000+ buildings that fall within the fire inspection program, the property use breakdown, by Land Use Summary Level, is as follow:

NMFRD Inspected Buildings by Land Use (Level 1, 2 & 3)

Level 1	Count	Percentage
Agriculture or Vacant	28	3%
Civic/Institutional	126	11%
Commercial	531	48%
Industrial/Warehouse	222	20%
Mixed use	23	2%
Open space	17	2%
Residential	107	10%
Transportation/Utilities	44	4%
Grand Total	**1098**	**100%**

Level 2	Count	Percentage
Agriculture or Vacant	28	3%
Cemeteries	1	0%
Civic facilities	15	1%
Commercial recreation	11	1%
Common area commercial	2	0%
Common area residential	11	1%
Corrections facilities	2	0%
Early education	16	1%
Education	45	4%
Hospitals	4	0%
Industrial/Warehouse	222	20%
Mixed use	23	2%
Multifamily	55	5%
Office	136	12%
Open space	7	1%
Parks/Recreation	9	1%
Religious	44	4%
Retail/Commercial	382	35%
Senior	26	2%
Single-Family	15	1%
Transportation/Utilities	44	4%
Grand Total	**1098**	**100%**

Level 3	Count	Percentage
Accommodation	11	1%
Age restricted	7	1%
Agriculture or Vacant	28	3%
Assisted living	15	1%
Bar/Tavern/Nightclub	9	1%
Cemeteries	1	0%
Civic facilities	3	0%
Commercial centers	55	5%
Commercial other	151	14%
Commercial recreation	11	1%
Common area commercial	2	0%
Common area residential	11	1%
Corrections facilities	2	0%
Early education	16	1%
Emergency Services	7	1%
Golf courses	5	0%
Group Home	2	0%
Heavy industrial	44	4%
Higher education	1	0%
Hospitals	4	0%
Light industrial	100	9%
Mixed use commercial	19	2%
Mixed use residential	4	0%
Mobile home	2	0%
Multifamily	55	5%
Nursing/Rehabilitation home	2	0%
Office	163	15%
Open space	7	1%
Parks/Recreation	4	0%
Primary/Secondary education	44	4%
Religious	44	4%
Restaurant/Food	71	6%
Retail services	58	5%
Single-family attached	1	0%
Single-family detached	12	1%
Special use	5	0%
Transportation	30	3%
Utilities/Communications	14	1%
Wholesale/Warehousing	78	7%
Grand Total	**1098**	**100%**

Figure 71 - NMFRD inspected buildings by Land Use Summary Level, 2024

Three years of historical incidents, totaling 33,890 points of data, were overlaid by latitude and longitude onto the Land Use Summary maps. The district was then able to correlate incident types and quantity, by classification (fire, EMS, rescue, hazmat, wildland, ARFF, domestic preparedness and alarms & citizen assists), to land use. The district then applied frequency of incidents by classification to the inspected buildings based on their corresponding land use. This process allows the district to estimate the likelihood of future incidents occurring within a specific building location based on its property use.

NMFRD Total Incidents, 2020 – 2022, by Land Use (Level 1, 2 & 3)

District Calls by Parcel Type 1

Parcel Type	Count	%
Agriculture or Vacant	384	1%
Civic/Institutional	1787	5%
Commercial	3987	12%
Industrial/Warehouse	425	1%
Mixed use	147	0%
Open space	638	2%
Residential	22106	65%
Transportation/Utilities	4396	13%
Natural/Conservation	20	0%
Grand Total	**33890**	**100%**

District Calls by Parcel Type 2

Parcel Type	Count	%
Agriculture or Vacant	384	1%
Cemeteries	2	0%
Civic facilities	519	2%
Commercial recreation	243	1%
Common area commercial	10	0%
Common area residential	58	0%
Corrections facilities	298	1%
Early education	73	0%
Education	542	2%
Hospitals	236	1%
Industrial/Warehouse	425	1%
Mixed use	147	0%
Multifamily	4479	13%
Office	720	2%
Open space	499	1%
Parks/Recreation	137	0%
Religious	119	0%
Retail/Commercial	3014	9%
Senior	3884	11%
Single-Family	13685	40%
Transportation/Utilities	4396	13%
Natural/Conservation	20	0%
Grand Total	**33890**	**100%**

District Calls by Parcel Type 3

Parcel Type	Count	%
Accommodation	422	1%
Age Restricted	1274	4%
Agriculture or Vacant	233	1%
Agriculture or Vacant/Other	151	0%
Assisted Living	1907	6%
Bar/Tavern/Nightclub	28	0%
Cemeteries	2	0%
Civic facilities	341	1%
Commercial centers	999	3%
Commercial other	1102	3%
Commercial recreation	243	1%
Common area commercial	10	0%
Common area residential	58	0%
Corrections facilities	298	1%
Early education	73	0%
Emergency Services	107	0%
Extraction	3	0%
Forestry	1	0%
Golf courses	20	0%
Group home	102	0%
Group quarters	1	0%
Heavy industrial	122	0%
Higher education	2	0%
Highway/Street/Road	3922	12%
Hospitals	236	1%
Light industrial	154	0%
Mixed use commercial	121	0%
Mixed use residential	26	0%
Mobile home	579	2%
Multifamily	4478	13%
Natural conservation	16	0%
Nursing/Rehabilitation home	601	2%
Office	773	2%
Open space	499	1%
Parks/Recreation	117	0%
Primary/Secondary education	540	2%
Religious	119	0%
Restaurant/Food	346	1%
Retail services	64	0%
Single-family attached	1317	4%
Single-family detached	11789	35%
Special use	71	0%
Transportation	343	1%
Utilities/Communications	131	0%
Wholesale/Warehousing	149	0%
Grand Total	**33890**	**100%**

Figure 72 – NMFRD total incidents by Land Use Summary Level, 2020 – 2022

Estimation of Future Incident Volume Based on Land Use

Zoning laws regulate the use and development of land. This regulation function allows municipalities to structure growth in a manner that aligns with the overall vision of the community. An additional benefit of parcel identification is the district's ability to estimate increases in future incident volume prior to development completion, permitting the district to anticipate the needs of the community before development impacts a particular area or station responses. This is critical to a cooperative planning relationship between the district and the cities and the counties that control zoning. Estimation of incident volume based on property use allows the district to meet response time benchmarks while anticipating future needs.

The district is comprised of 40,960 acres of land, of which 34% is agricultural or vacant. Nearly one-third of the district's land coverage, not including parks or open space, has future development potential. Development increases emergency demand, which can vary greatly based on the specific land use. Annexation by neighboring jurisdictions, specifically the City of Thornton, will impact total district area and land use in the eastern portion of the district.

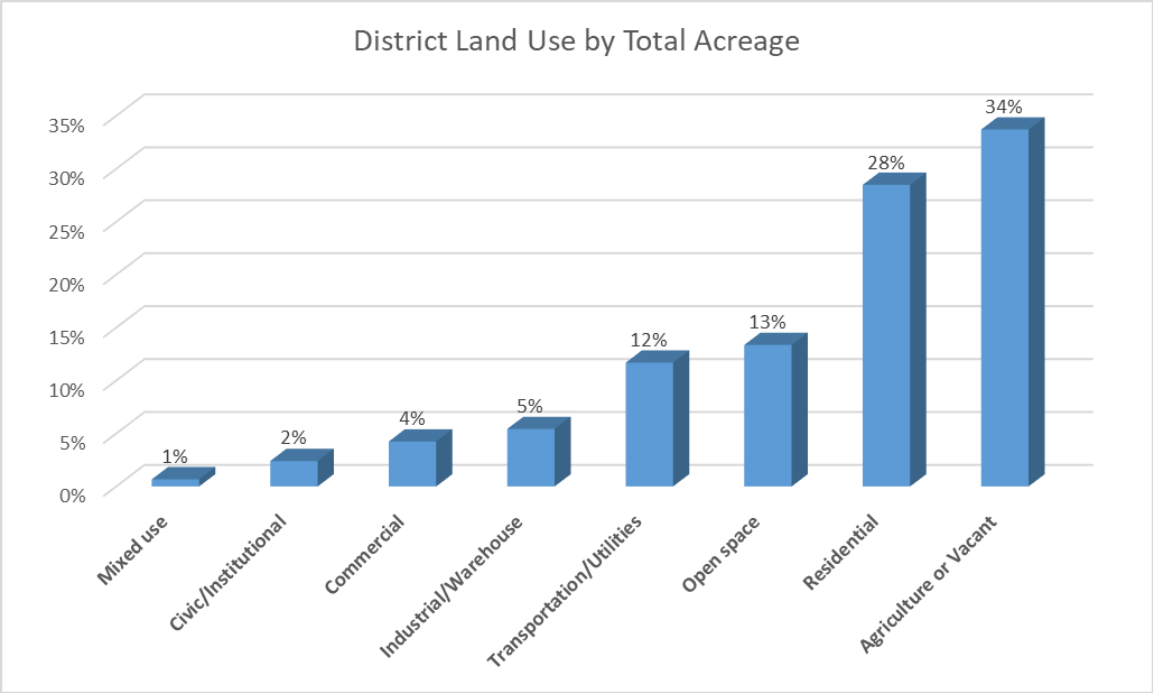


Figure 73 - NMFRD land use by parcel type, Level 1 Land Use, 2024

Identifying parcel use for the entire district and applying three years of incident data to the parcels, enabled the district to correlate incident volume to land use, by acre. The district removed agricultural or vacant land from this analysis due to multiple contributing factors. Agricultural and vacant land accounts for 34% of the total district land, but only 1% of annual incidents occur within this classification, resulting in other land use types calculating artificially high in their incident correlation. The base, or average incidents per acre per year, for the entire district, is .28 incidents per acre, per year. When excluding agriculture or vacant land and incidents, the base is .41 average incidents per acre per year. This basis more accurately predicts the correlation between future development and incident volume.

Utilizing the previous analysis base calculation of .41 incidents (annually per acre), any land use type calculations that are below .41 incidents (annually per acre) should produce less calls per acre and have a lower impact on future incident volume. Conversely, any land use types that are above the .41 incidents (annually per acre) should produce more annual calls per acre and have a higher impact on future incident volume.

The results of the analysis were extremely informative to the district and the data will add immense value to future planning collaboration with the cities and counties within the district boundaries. The study displayed best at Land Use Level 2 and Land Use Level 3.

Land Use Type (Level 2)	Incidents (2018 - 2020)	Avg. Incidents Per Year	Acres	Average Annual Incidents per Acre	Multiplier Increase from Baseline
Corrections facilities	298	99	15.4	6.5	15.7
Senior	4521	1507	403.5	3.7	9.1
Multifamily	4479	1493	602.1	2.5	6.0
Hospitals	236	79	32.0	2.5	6.0
Early education	73	24	20.2	1.2	2.9
Commercial recreation	243	81	80.9	1.0	2.4
Retail/Commercial	3014	1005	1023.7	1.0	2.4
Civic facilities	519	173	180.5	1.0	2.3
Office	720	240	549.6	0.4	1.1
Single-Family	13048	4349	10104.7	0.4	1.0
Education	542	181	511.8	0.4	0.9
Transportation/Utilities	4396	1465	4790.0	0.3	0.7
Mixed use	147	49	276.2	0.2	0.4
Religious	119	40	224.8	0.2	0.4
Industrial/Warehouse	425	142	2222.0	0.1	0.2
Open space	519	173	3953.6	0.04	0.1
Common area commercial	10	3	84.4	0.04	0.1
Common area residential	58	19	556.6	0.03	0.1
Parks/Recreation	137	46	1489.9	0.03	0.1
Cemeteries	2	1	30.9	0.02	0.1
Agriculture or Vacant*	384*	128*	13807.5*	0.01	0.0
Totals	33,506	11,169	27,152	**Baseline = .41**	

*Removed from study based on reasoning within SOC/CRA "Estimation of Future Incident Volume Based on Land Use"

Table 21 - NMFRD Incident Correlation to Land Use, Level 2 Land Use, 2018 - 2020

Land Use Type (Level 3)	Incidents (2018 - 2020)	Avg. Incidents Per Year	Acres	Avg. Inicdents Per Year Per Acre	Multiplier Increase from Baseline
Group home	103	34	0.5	65.1	158.3
Assisted Living	1907	636	23.1	27.6	67.0
Nursing/Rehabilitation home	601	200	9.7	20.6	50.0
Age Restricted Attached	1274	425	25.7	16.5	40.2
Corrections facilities	298	99	15.4	6.5	15.7
Emergency Services	107	36	11.0	3.3	7.9
Single-family attached	1317	439	140.2	3.1	7.6
Accommodation	422	141	47.4	3.0	7.2
Multifamily	4478	1493	602.1	2.5	6.0
Hospitals	236	79	32.0	2.5	6.0
Special use	71	24	12.1	2.0	4.8
Age Restricted Detached	637	212	344.5	1.8	4.5
Commercial other	1102	367	225.1	1.6	4.0
Mobile home	579	193	133.6	1.4	3.5
Early education	73	24	20.2	1.2	2.9
Restaurant/Food	346	115	98.0	1.2	2.9
Commercial recreation	243	81	80.9	1.0	2.4
Civic facilities	341	114	157.4	0.7	1.8
Bar/Tavern/Nightclub	28	9	13.6	0.7	1.7
Commercial centers	999	333	511.7	0.7	1.6
Mixed use residential	26	9	13.6	0.6	1.5
Office	773	258	579.5	0.4	1.1
Single-family detached	11152	3717	9831.0	0.4	0.9
Primary/Secondary education	540	180	505.4	0.4	0.9
Highway/Street/Road	3922	1307	3697.1	0.4	0.9
Retail services	64	21	98.0	0.2	0.5
Religious	119	40	224.8	0.2	0.4
Transportation	343	114	712.3	0.2	0.4
Mixed use commercial	121	40	262.5	0.2	0.4
Heavy industrial	122	41	281.4	0.1	0.4
Utilities/Communications	131	44	380.7	0.1	0.3
Higher education	2	1	6.5	0.1	0.3
Wholesale/Warehousing	149	50	943.9	0.1	0.1
Light industrial	154	51	996.7	0.1	0.1
Parks/Recreation	117	39	824.1	0.0	0.1
Open space	519	173	3953.6	0.0	0.1
Common area commercial	10	3	84.4	0.0	0.1
Common area residential	58	19	556.6	0.0	0.1
Cemeteries	2	1	30.9	0.0	0.1
Golf courses	20	7	665.7	0.0	0.0
Agriculture or Vacant*	384*	128*	13807.5*	0.0	0.0
Totals	33,506	11,169	27,152	**Baseline = .41**	

*Removed from study based on reasoning within SOC/CRA "Estimation of Future Incident Volume Based on Land Use"

Table 22 - NMFRD Incident Correlation to Land Use, Level 3 Land Use, 2018 - 2020

As shown in Table 22, single-family detached homes match the baseline average incidents per year, per acre, averaging .40 incidents per acre. Because single-family detached homes overwhelmingly make up the largest proportion of the district at 36.2% (see Portion of district by Land Use figure 74 below), the district believes it is appropriate to make comparisons of land use in relation to single-family detached homes, as opposed to the .41 "baseline." By assigning an easily understood, relatable land use category like single-family detached home, land use comparisons are more easily conveyed to stakeholders. For example, on average, assisted living facility generates a much higher voluime of incidents per year, per acre, than single-family detached homes.

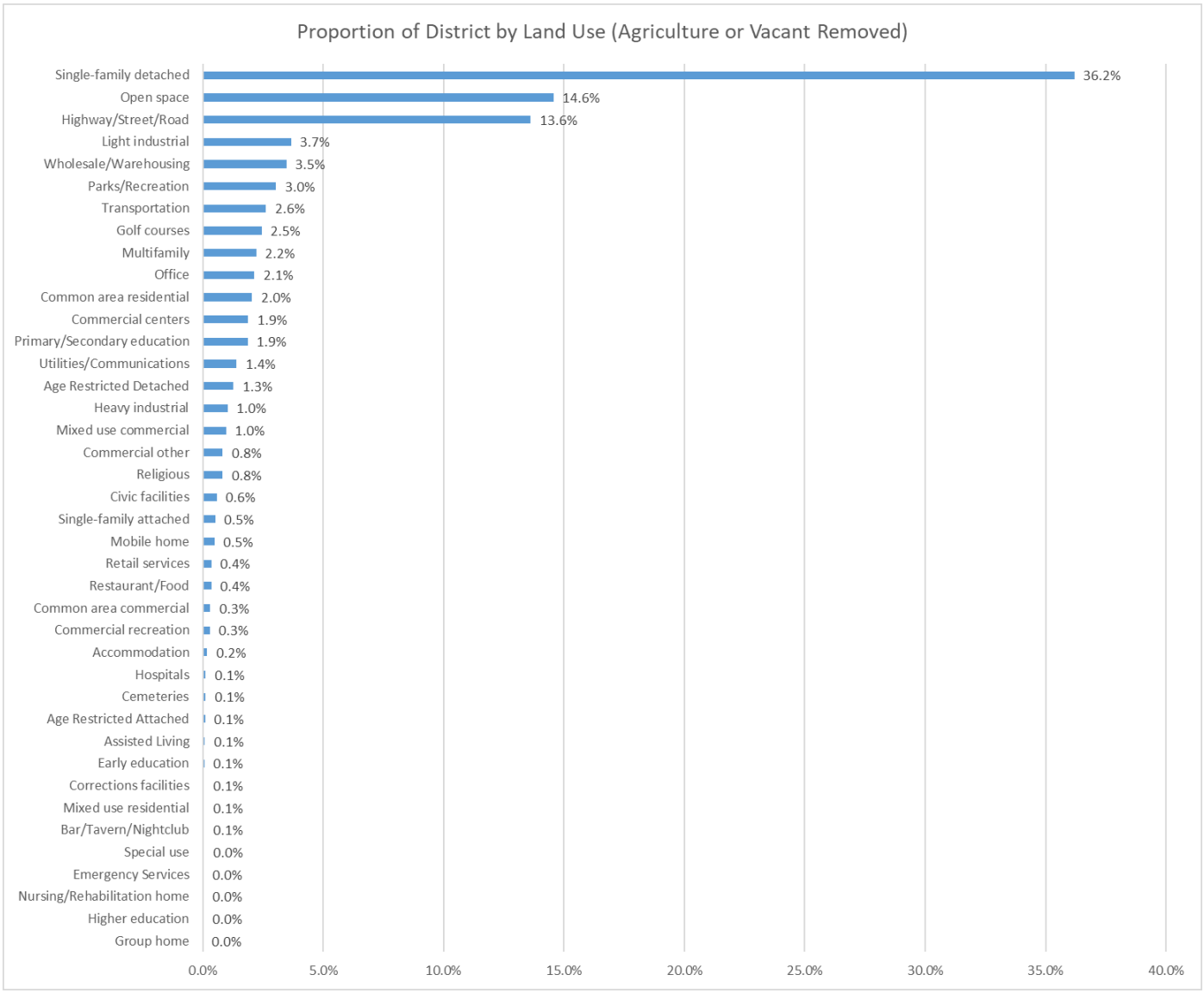


Figure 74 - Proportion of NMFRD by land use, with agriculture or vacant parcels removed, Level 3 Land Use, 2022

Historical Incident Response Analysis

An important predictor of future incident load, incident type and resource allocation are historical incident responses. District areas that have a higher incident volume impact the ability to address numerous or simultaneous incidents due to increased resource commitment. Historical analysis allows the district to make theoretical risk predictions and plan for the impact of future growth.

Incident Types

Incident types are grouped together using the classifications discussed later in this document in Risk Assessment Methodology, specifically, *Identification and Classification of Risk*. The following chart shows a breakdown of in-district incident type by classification (for 2021 – 2023).

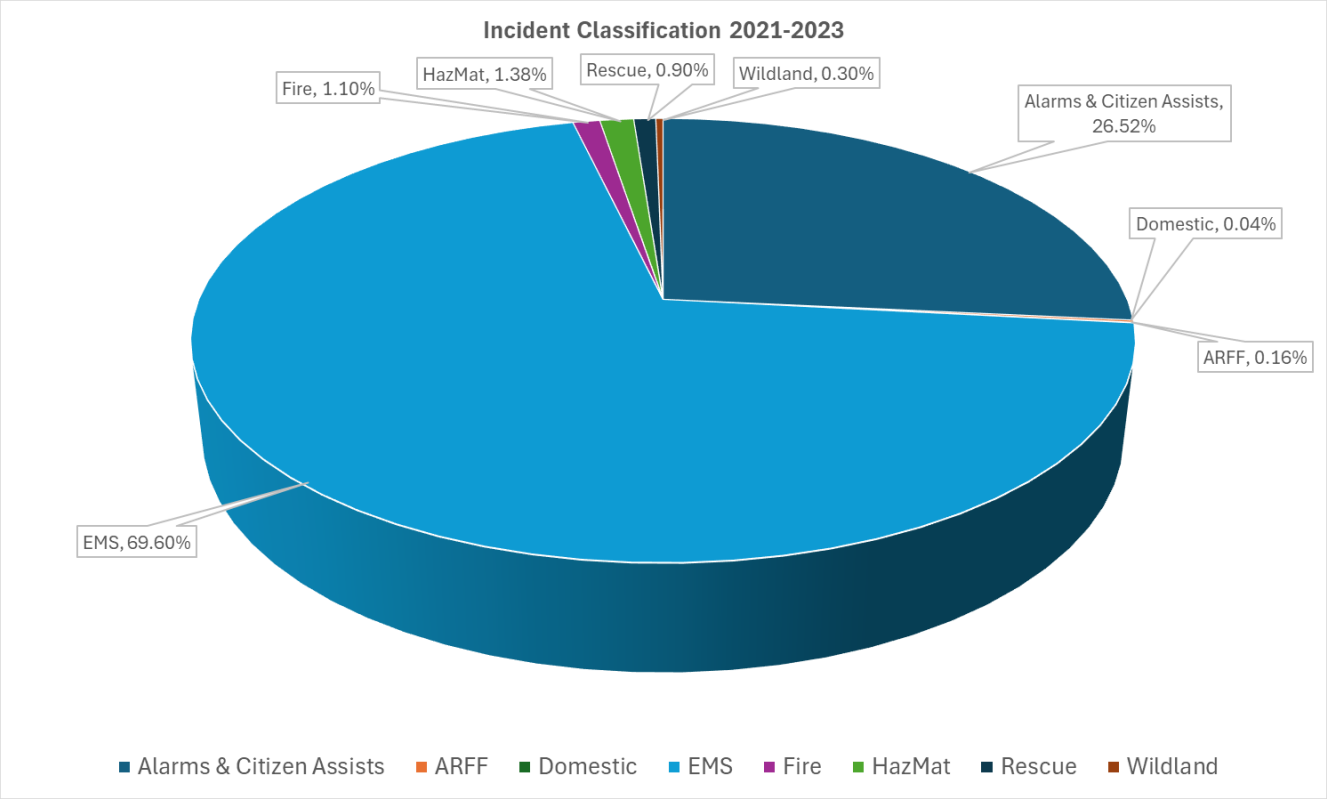


Figure 75 - NMFRD Incident Classification by incident type, in-district only, both non-emergent and emergent responses, 2021 – 2023

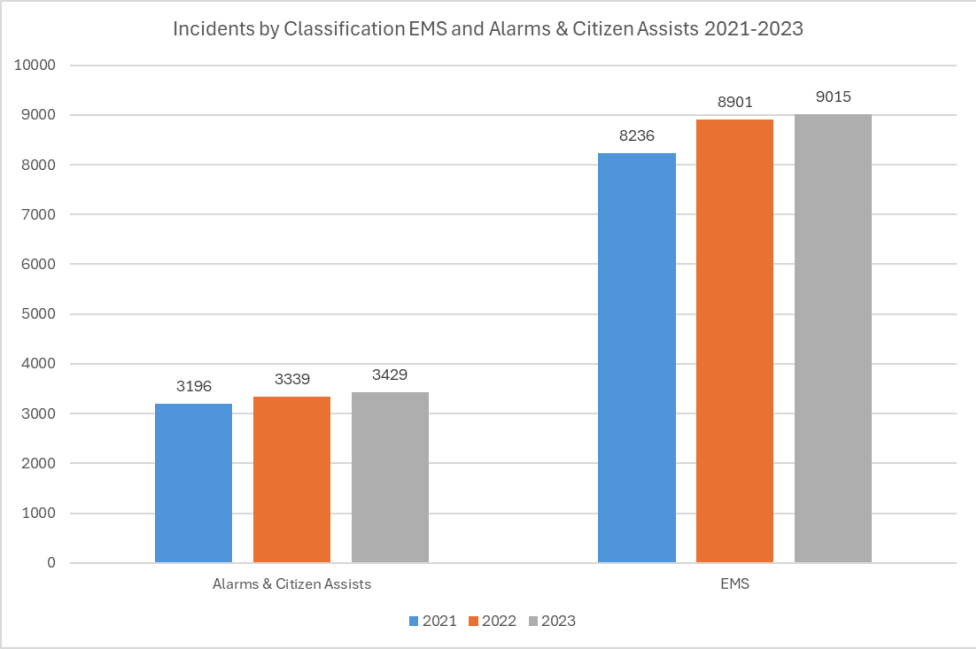


Figure 76 - NMFRD Incidents by Classification Alarms & Citizen Assists and EMS, in-district only, both non-emergent and emergent responses, 2021 – 2023

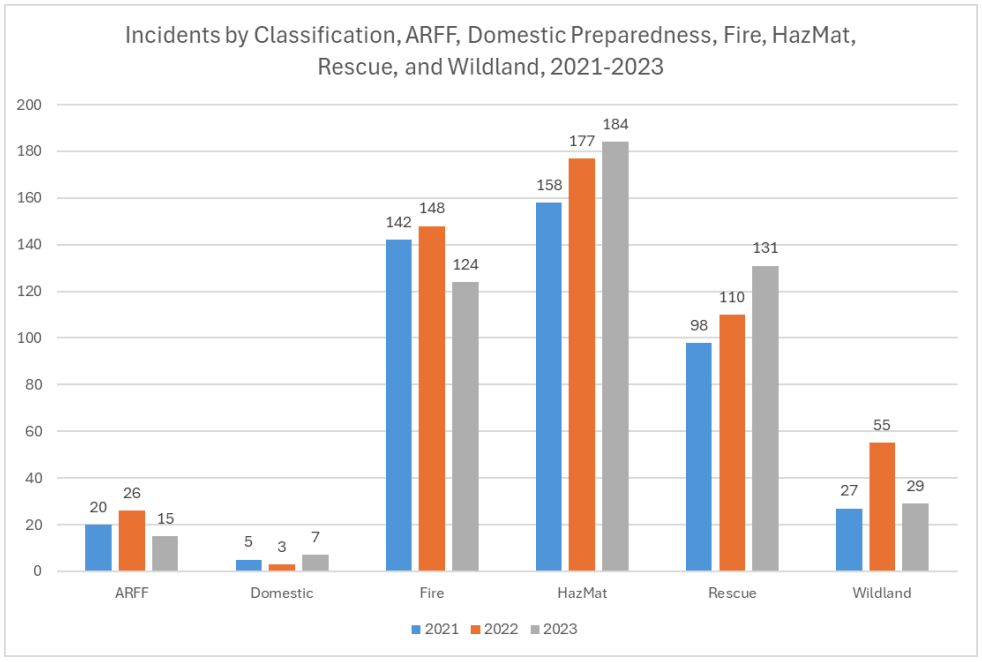


Figure 77 - NMFRD Incidents by Classification ARFF, Domestic Preparedness, Fire, HazMat, Rescue, and Wildland, in-district only, both non-emergent and emergent responses, 2021 – 2023

Incident Locations

The district analyzes the density of incident volume by station response area and emergency response zone to allow a better understanding of incident locations, workload, and future incident demand. In addition, analysis by emergency response zone may indicate potential problematic locations that are affecting increases in response demand.

All Responses by Station Response Area (2021 – 2023)

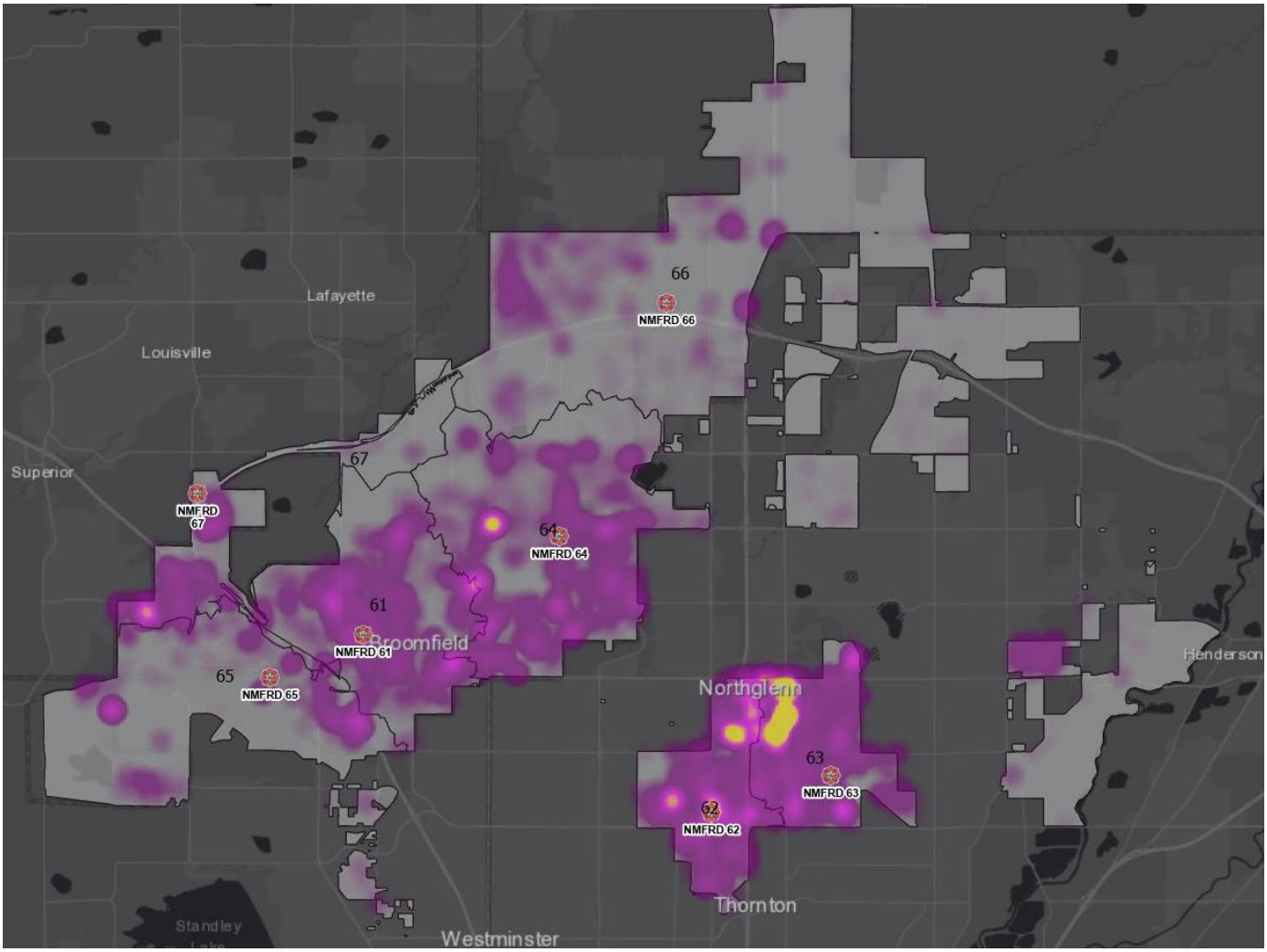


Figure 78 - NMFRD incident locations by station response area, in-district only, both non-emergent and emergent responses, 2021 – 2023

All Incidents by Emergency Response Zone (2021 – 2023)

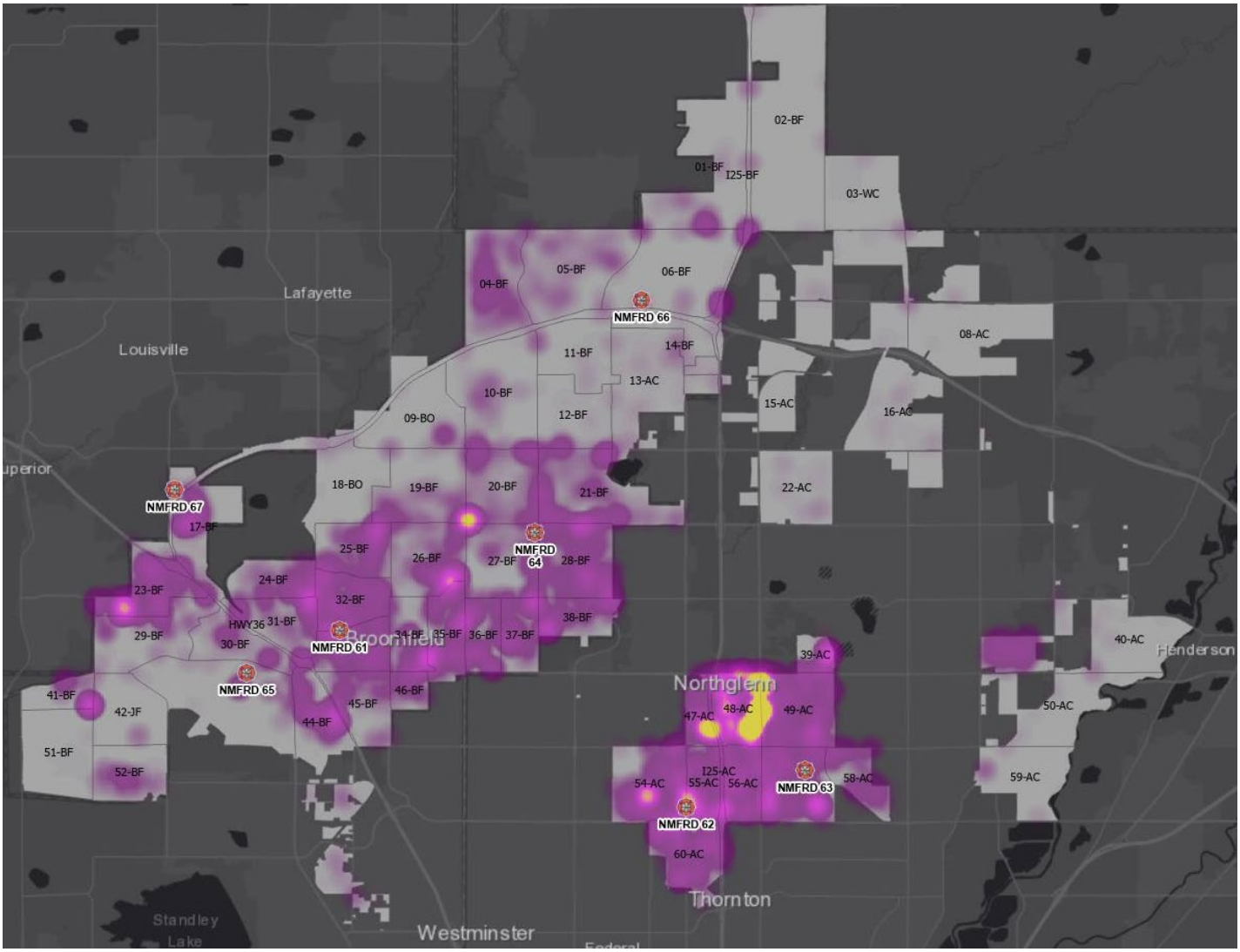


Figure 79 - NMFRD incident locations by emergency response zone, in-district only, both non-emergent and emergent responses, 2021 – 2023

Incident volume and location closely correlate to population density. The more people in each area, the more likely it is to produce incidents. Viewing incident location overlaid onto population density shows this correlation.

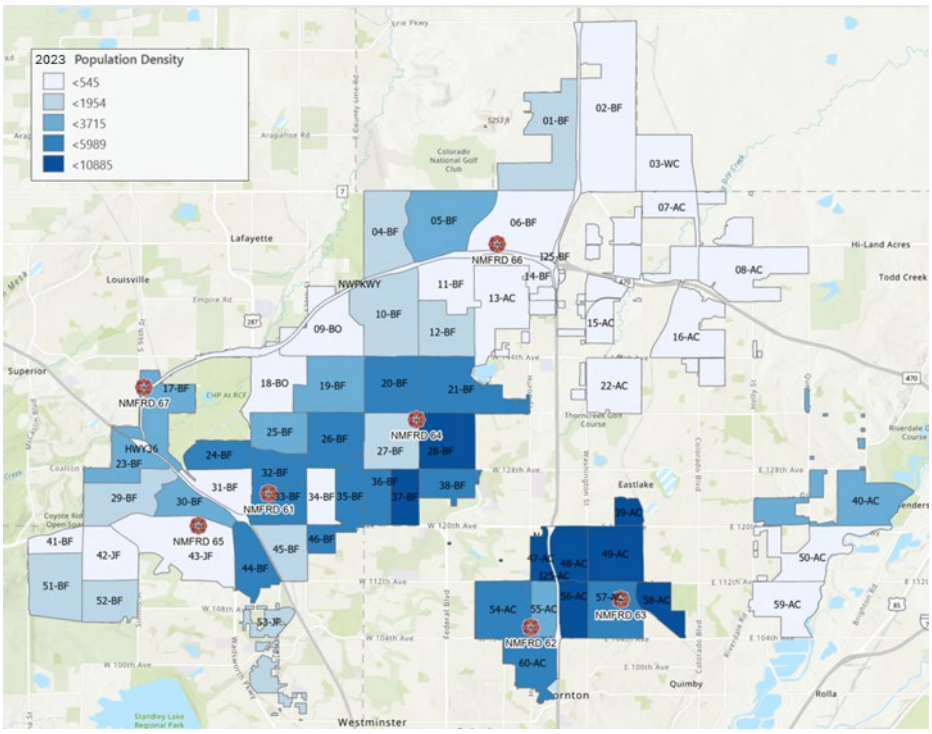


Figure 80 - NMFRD population density by emergency response zone, 2023.

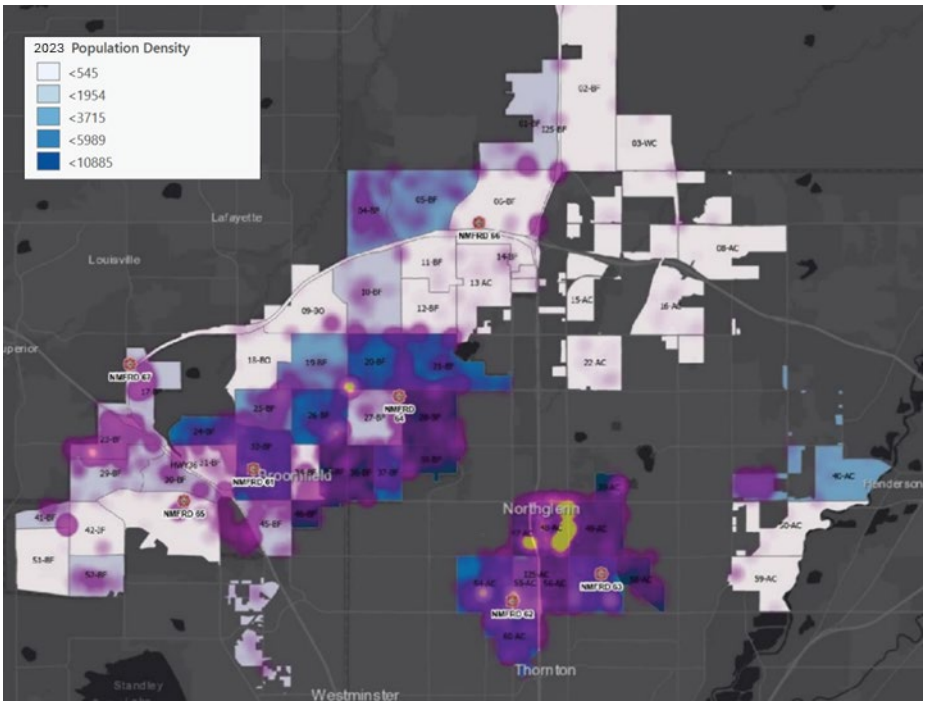


Figure 81 - NMFRD incident locations, in-district only, both non-emergent and emergent responses, 2021 – 2023, over population density, 2023, by emergency response zone.

Incidents by Property Use

Level 1 to 3 Hierarchy				
Level 1	Level 2	Level 3	Count	%
Agriculture or Vacant	Agriculture or Vacant	Agriculture or Vacant	394	1.08%
Civic/Institutional	Civic facilities	Civic facilities	252	0.69%
		Emergency Services	123	0.34%
		Special use	58	0.16%
	Corrections facilities	Corrections facilities	232	0.64%
	Early education	Early education	62	0.17%
	Education	Higher education	7	0.02%
		Primary/Secondary education	434	1.19%
	Hospitals	Hospitals	368	1.01%
	Religious	Religious	153	0.42%
Commercial	Commercial recreatio	Commercial recreation	138	0.38%
	Common area comme	Common area commercial	14	0.04%
	Office	Office	523	1.43%
	Retail/Commercial	Accommodation	498	1.36%
		Bar/Tavern/Nightclub	38	0.10%
		Commercial centers	994	2.72%
		Commercial other	1166	3.19%
		Office	60	0.16%
		Restaurant/Food	297	0.81%
		Retail services	72	0.20%
Industrial/Warehouse	Industrial/Warehouse	Heavy industrial	91	0.25%
		Light industrial	189	0.52%
		Wholesale/Warehousing	181	0.50%
Mixed use	Mixed use	Mixed use commercial	141	0.39%
		Mixed use residential	41	0.11%
Open space	Open space	Open space	721	1.97%
	Parks/Recreation	Golf courses	21	0.06%
		Parks/Recreation	117	0.32%
Residential	Common area resider	Common area residential	60	0.16%
	Multifamily	Multifamily	6287	17.21%
	Senior	Age restricted	153	0.42%
		Assisted living	1300	3.56%
		Nursing/Rehabilitation home	337	0.92%
	Single-Family	Mobile home	594	1.63%
		Single-family attached	1636	4.48%
		Single-family detached	12451	34.09%
Transportation/Utilities	Transportation/Utiliti	Transportation	196	0.54%
		Utilities/Communications	78	0.21%
		Highway/Street/Road	6045	16.55%
Grand Total			**36522**	**100.00%**

Table 23 - NMFRD, in-district only, all incidents by property use, 2021 - 2023

Incident Workload

Analysis of the district's incident responses by unit is another important factor in understanding current and future workloads. Units with higher workloads are likely to generate gaps in coverage, producing longer response times. The district also provides automatic and mutual aid to surrounding fire departments, which has an impact on unit availability and the district's ability to handle future workloads. The district records each emergency response as a single incident. Total incidents do not consider the number of resources responding to a single incident. For example, a typical structure fire receives four engines, a truck, two medic units, two battalion chiefs and a safety and medical officer. Responses by unit allows the district to analyze workload by unit, which is a more accurate representation of unit activity. The following chart highlights total responses, by unit, both in-district and out-of-district, by year (2018 – 2020).

Responses by Unit and Year (2021 – 2023)

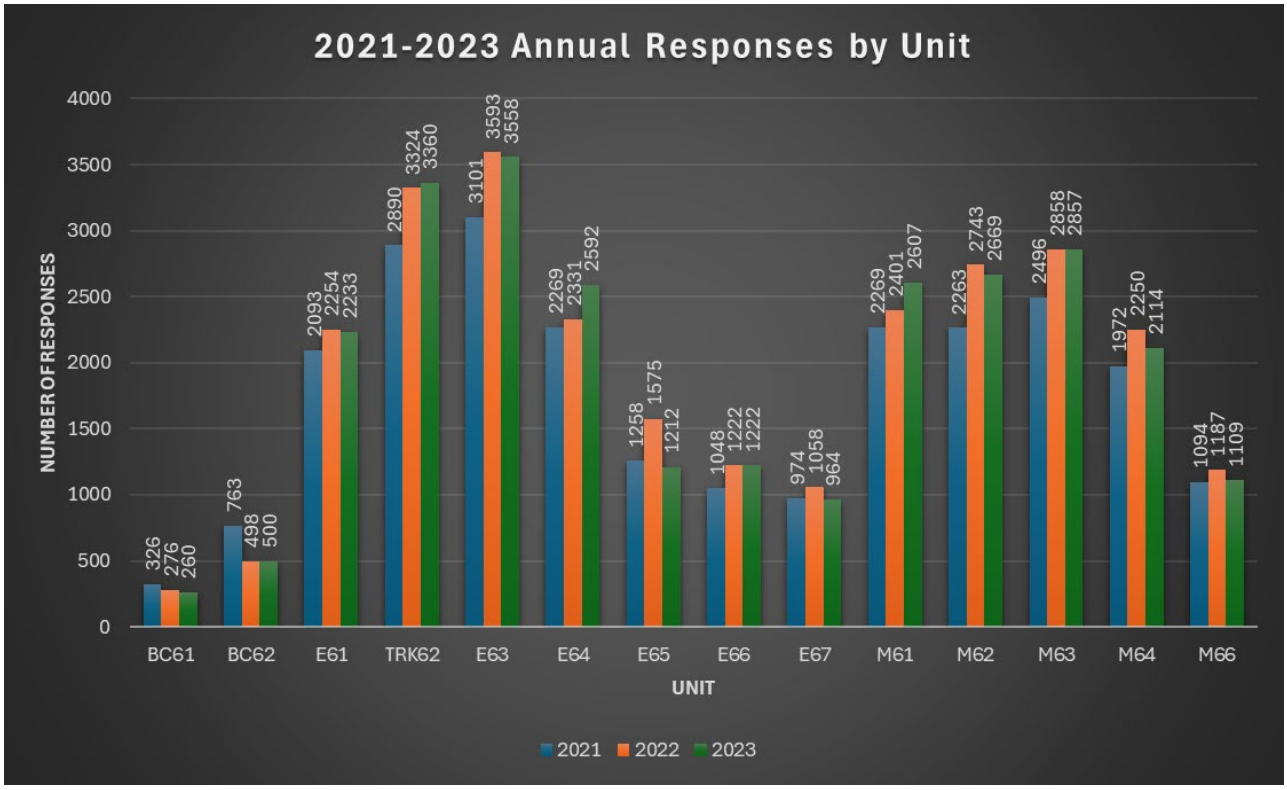


Figure 82 - NMFRD responses by unit and year, both in-district and out-of-district, 2021 – 2023

Total Responses by Unit (2021 – 2023)

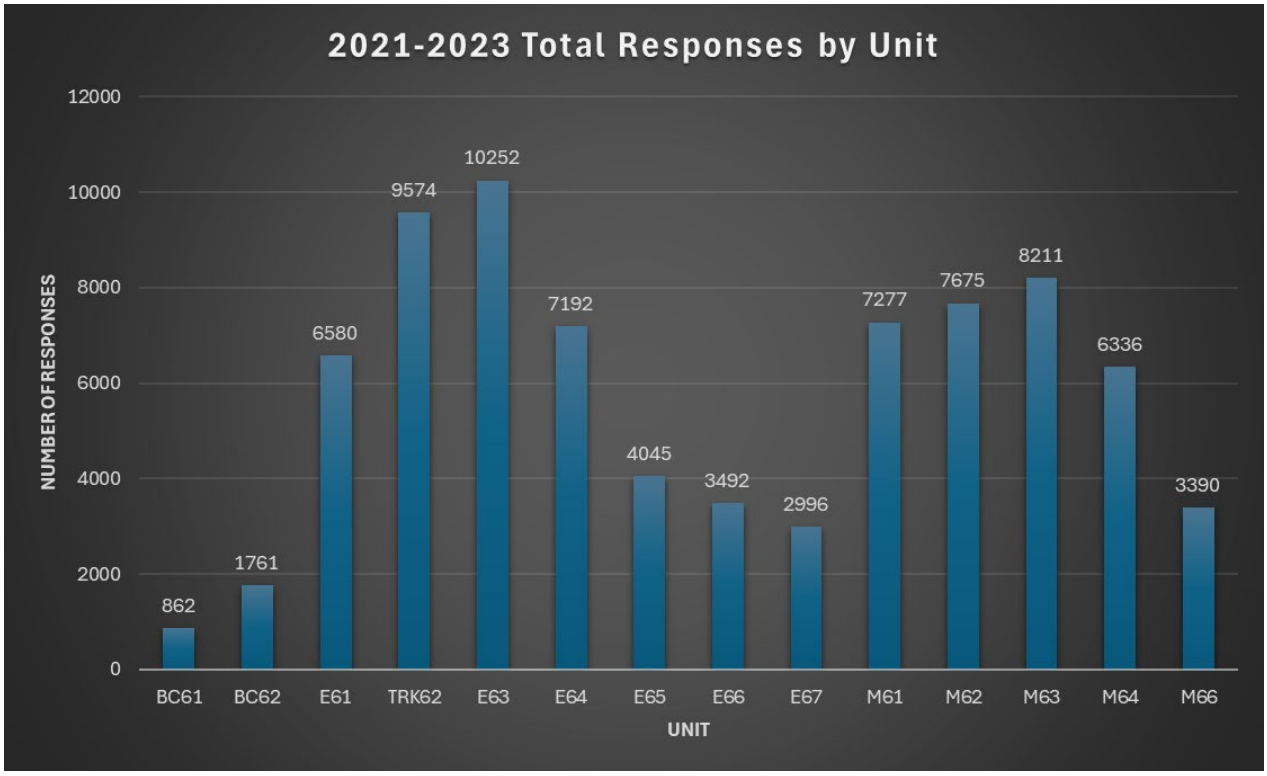


Figure 83 - NMFRD total responses by unit, both in-district and out-of-district, 2021 – 2023

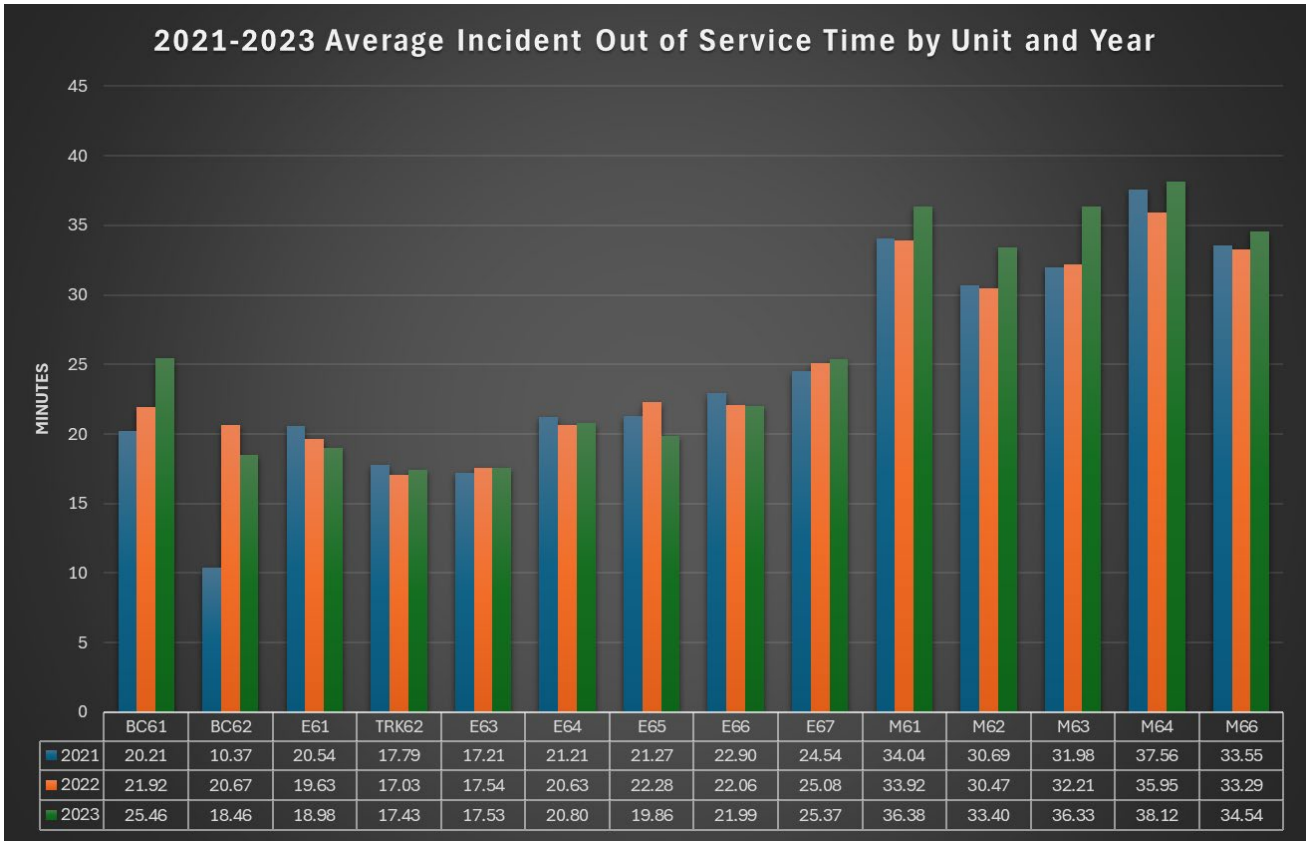
The district's ability to handle the workload within specific response areas is affected by the next nearest unit's availability. If a primary unit is unavailable, and an incident occurs within their response area, the next closest resource needed to address that specific type of incident, responds. Often this coverage gap increases the response time to the incident. A useful metric to utilize is the average out-of-service time per incident, by unit. A unit is out-of-service when it responds to an incident and is measured using the "en route" time to the "available" time. A unit status changes from "available" to "en route" after it is dispatched to an incident and is responding. A unit status changes back to "available" when the incident is terminated, and the unit is ready for response with the required personnel and equipment.

Many factors can affect the unit's average out-of-service time. Larger response areas often result in longer response times due to longer average travel distance. Medic units have longer average out-of-service time than engines or trucks due to patient transport and hospital processing times. The medic unit's status does not change to available until transfer of patient care occurs with the hospital's emergency department staff and the medic unit is fully staffed and equipped. The distance from the incident location and the receiving

hospital, road network, on-scene interventions and weather are other factors that can impact out of service times for medic units.

Engines and trucks may also have variations of average out-of-service times due to their corresponding road network and/or building size. For example, a station located with immediate access to multiple lane roads or highways that travel both north/south and east/west will typically have faster response times than stations that do not have similar access. In addition, stations that respond to highway incidents may have longer on-scene times due to the nature of safely blocking the scene for fire and law enforcement personnel. Out-of-service times may also be affected by building size, incident complexity and many other factors. The district recognizes these variances but with sufficient data sets, average out-of-service time is an important metric to analyze to determine future response needs of the district.

Average Incident Out-of-Service Time by Unit and Year 2021-2023



	BC61	BC62	E61	TRK62	E63	E64	E65	E66	E67	M61	M62	M63	M64	M66
2021	20.21	10.37	20.54	17.79	17.21	21.21	21.27	22.90	24.54	34.04	30.69	31.98	37.56	33.55
2022	21.92	20.67	19.63	17.03	17.54	20.63	22.28	22.06	25.08	33.92	30.47	32.21	35.95	33.29
2023	25.46	18.46	18.98	17.43	17.53	20.80	19.86	21.99	25.37	36.38	33.40	36.33	38.12	34.54

Figure 84 - NMFRD average incident out-of-service time by unit and year, both in-district and out-of-district, 2021 – 2023

Average Out-of-Service Time by Unit 2021 – 2023

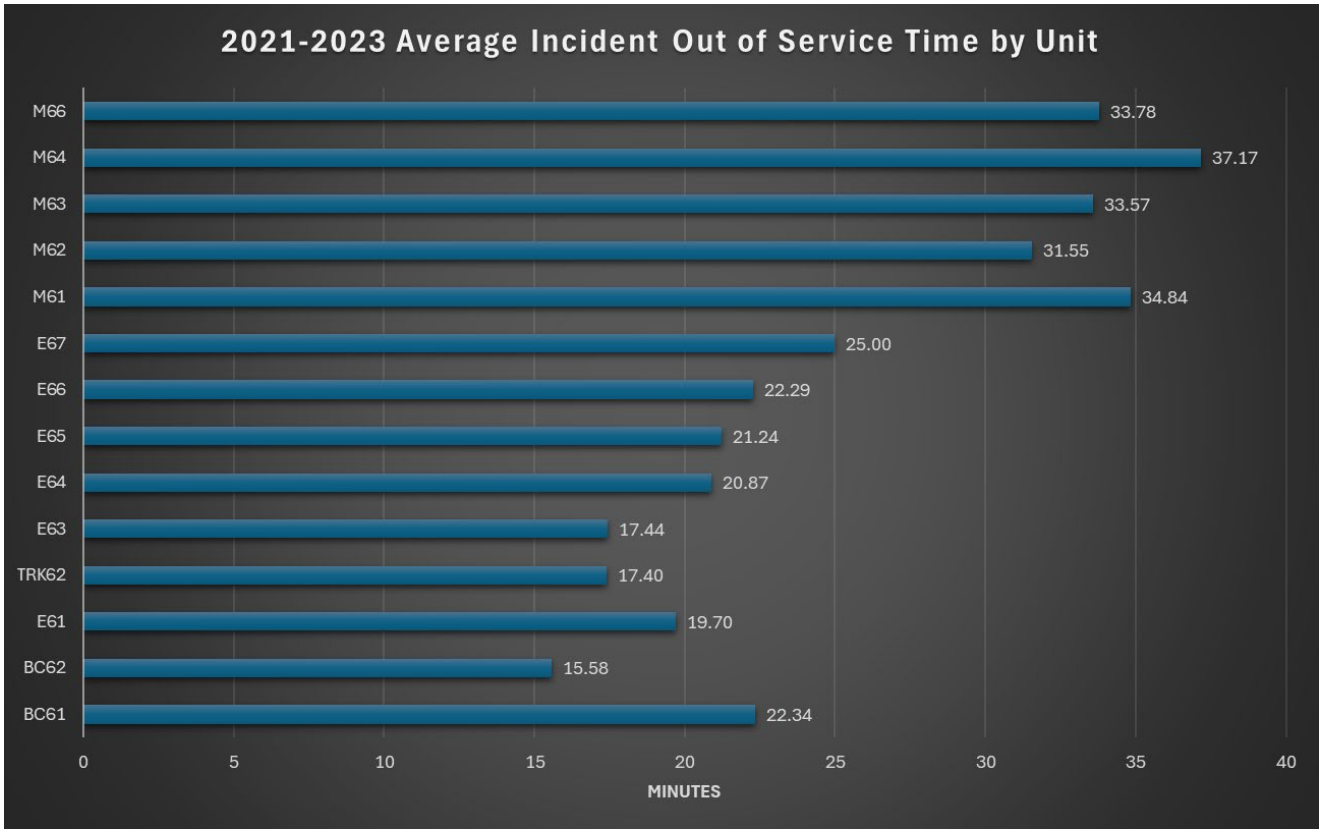


Figure 85- Average out-of-service time by unit, both in-district and out-of-district, 2021 – 2023

Hourly Workload 2021 – 2023

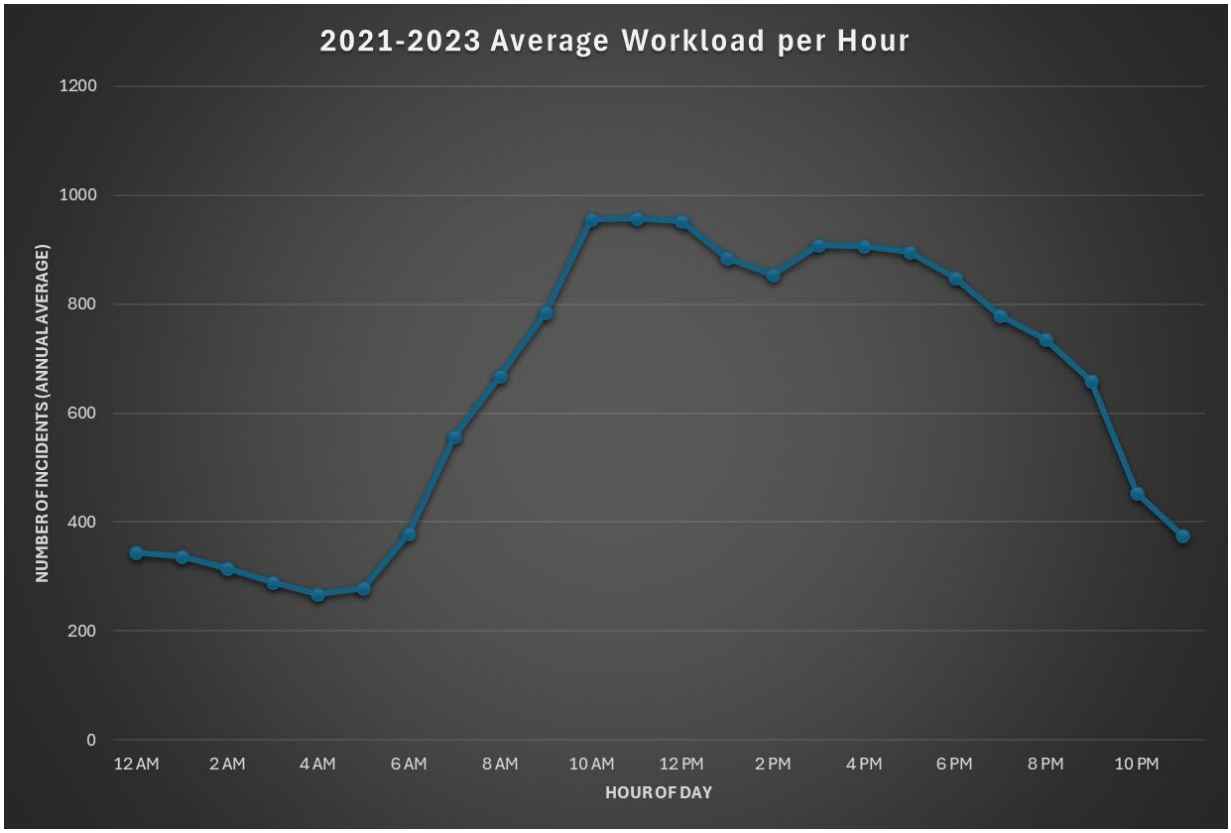


Figure 86 - NMFRD Hourly Workload, All Units (Engines, Truck, Medic Units, BC) both in-district and out-of-district, 2021 – 2023.

Daily & Hourly Workload 2021 – 2023

Day of the Week	Hour of Day																							Total
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Sun	180	199	180	156	144	127	139	184	212	312	357	344	363	314	321	338	346	354	374	310	317	292	186	160	6209
Mon	127	137	113	123	116	131	164	270	303	343	435	407	452	340	370	392	400	389	354	317	293	277	185	149	6587
Tues	130	137	121	94	93	129	167	267	316	330	406	410	380	421	370	392	398	378	377	361	289	293	192	134	6585
Wed	131	109	130	126	110	112	176	259	329	328	418	449	413	403	366	379	424	388	384	312	326	260	160	158	6650
Thurs	133	126	115	112	108	114	176	244	310	392	427	415	405	400	375	429	371	410	349	335	287	266	179	144	6622
Fri	162	139	117	111	120	117	153	254	303	340	429	428	415	393	405	425	425	387	374	365	357	289	225	191	6924
Sat	169	162	168	147	115	108	164	192	234	309	394	420	431	385	353	369	357	381	336	340	339	299	236	192	6600
Total	1032	1009	944	869	806	838	1139	1670	2007	2354	2866	2873	2859	2656	2560	2724	2721	2687	2548	2340	2208	1976	1363	1128	46177

Table 24 - NMFRD Hourly/Daily Workload, All Units (Engines, Truck, Medic Units, BC) both in-district and out-of-district, 2021 – 2023

Monthly Workload 2021 – 2023

Month	Year		
	2021	2022	2023
January	931	1268	1379
February	1001	1052	1262
March	1023	1055	1340
April	1060	1147	1397
May	1099	1320	1232
June	1062	1494	1234
July	1151	1535	1512
August	1081	1439	1519
September	1108	1381	1502
October	1229	1522	1517
November	1094	1486	1408
December	1178	1642	1517
Total	13017	16341	16819

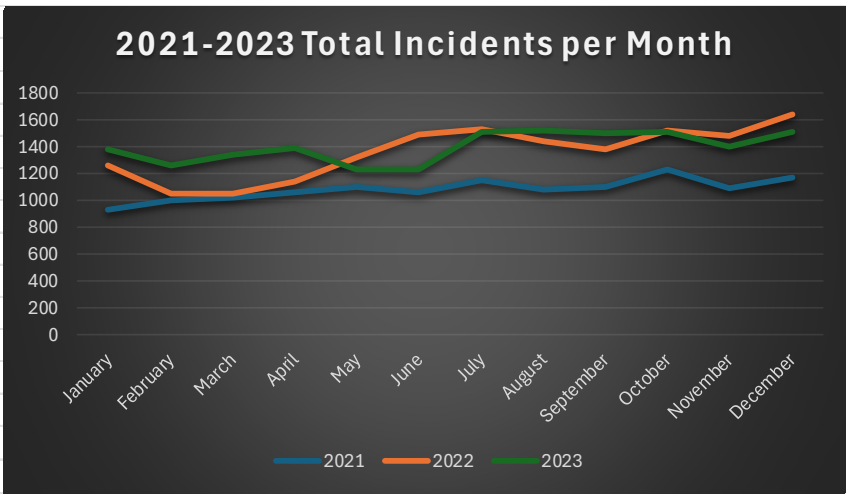


Figure 87 - NMFRD Monthly Workload, All Units (Engines, Truck, Medic Units, BC) both in-district and out-of-district, 2021 – 2023.

Unit Utilization Rate

Unit utilization rate is the amount of time a unit is unavailable for response to emergencies because the unit is already committed to another incident. Unit utilization rate is expressed as a percentage and is commonly expressed as "Unit Hour Utilization (UHU)." The larger the percentage value, the more the unit is utilized. Units with higher percentages are less likely to be available to handle subsequent incidents. In addition, higher unit utilization rates can lead to crew fatigue and burnout, which may affect morale and safety. UHU does not account for other tasks completed by crews throughout the day, such as fire inspections, fire preplans, fitness, report writing, training and community outreach.

The unit utilization rate is calculated by summing the total annual time, in seconds, a unit is committed to an incident divided by the total seconds in the year (31,536,000 seconds annually). The district's unit utilization rate for engines and trucks ranges from 4.6% - 12% from 2021-2023. The district's unit utilization rate for medic units ranges from 7% - 19.8% from 2021 – 2023. The district's unit utilization rate for the battalion chief units are 1.1% - 2% from 2021 – 2023.

NMFRD Committed Time and Utilization Rate (2021-2023)													
Apparatus Type	Apparatus	Total Committed Time (Hours)				Average Committed Time per Call (Minutes)				Utilization Rate (%)			
		2021	2022	2023	Total	2021	2022	2023	Average	2021	2022	2023	Average
BC	BC61	109.8	100.8	110.3	321.0	20.21	21.92	25.46	22.53	1.25%	1.15%	1.26%	1.22%
	BC62	131.9	171.5	153.8	457.3	10.37	20.67	18.46	16.50	1.51%	1.96%	1.76%	1.74%
Engine/Truck	E61	716.4	737.5	706.5	2160.4	20.54	19.63	18.98	19.72	8.18%	8.42%	8.07%	8.22%
	TRK62	857.1	943.6	976.0	2776.6	17.79	17.03	17.43	17.42	9.78%	10.77%	11.14%	10.57%
	E63	889.5	1050.3	1039.4	2979.3	17.21	17.54	17.53	17.43	10.15%	11.99%	11.87%	11.34%
	E64	801.9	801.5	898.5	2502.0	21.21	20.63	20.80	20.88	9.15%	9.15%	10.26%	9.52%
	E65	446.0	584.9	401.2	1432.1	21.27	22.28	19.86	21.14	5.09%	6.68%	4.58%	5.45%
	E66	400.0	449.3	447.9	1297.2	22.90	22.06	21.99	22.32	4.57%	5.13%	5.11%	4.94%
	E67	398.4	442.2	407.6	1248.3	24.54	25.08	25.37	25.00	4.55%	5.05%	4.65%	4.75%
Medic Unit	M61	1287.1	1357.4	1580.6	4225.1	34.04	33.92	36.38	34.78	14.69%	15.50%	18.04%	16.08%
	M62	1157.7	1393.1	1485.6	4036.3	30.69	30.47	33.40	31.52	13.22%	15.90%	16.96%	15.36%
	M63	1330.2	1534.4	1729.9	4594.5	31.98	32.21	36.33	33.51	15.18%	17.52%	19.75%	17.48%
	M64	1234.5	1348.0	1343.1	3925.6	37.56	35.95	38.12	37.21	14.09%	15.39%	15.33%	14.94%
	M66	611.8	658.6	638.4	1908.8	33.55	33.29	34.54	33.80	6.98%	7.52%	7.29%	7.26%

Table 25 - District Unit Total Committed Time, Average Committed Time and Utilization Rate, 2021 – 2023

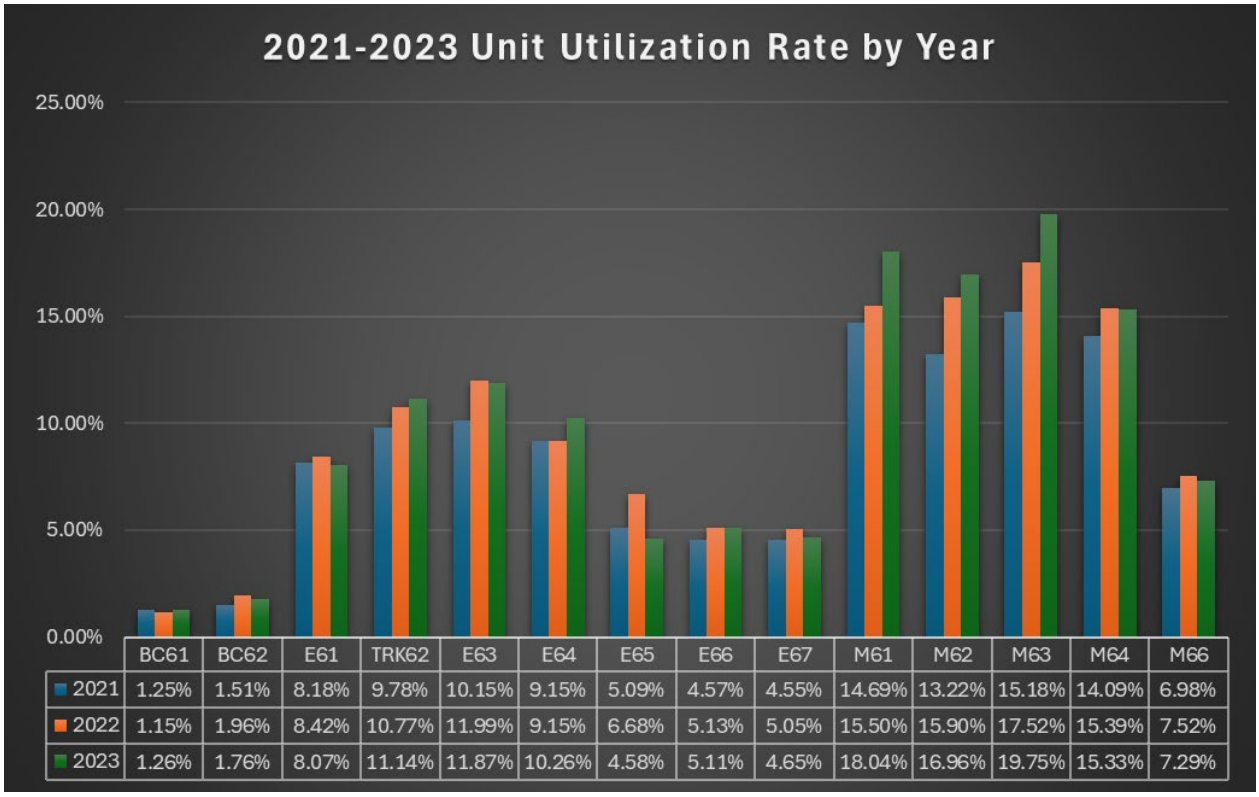


Figure 88 - District Unit Utilization Rate by Year, 2021 – 2023

The district recognizes the importance of continual evaluation to maximize unit reliability and limit crew fatigue. The following graphs explore further analysis of unit utilization rate by comparing like units (medics followed by engines/truck) by hour of the day, day of the week and month of the year. This allows the district to make data driven decisions related to area coverage while strategically planning crew training to avoid high demand incident times.

Medic Units

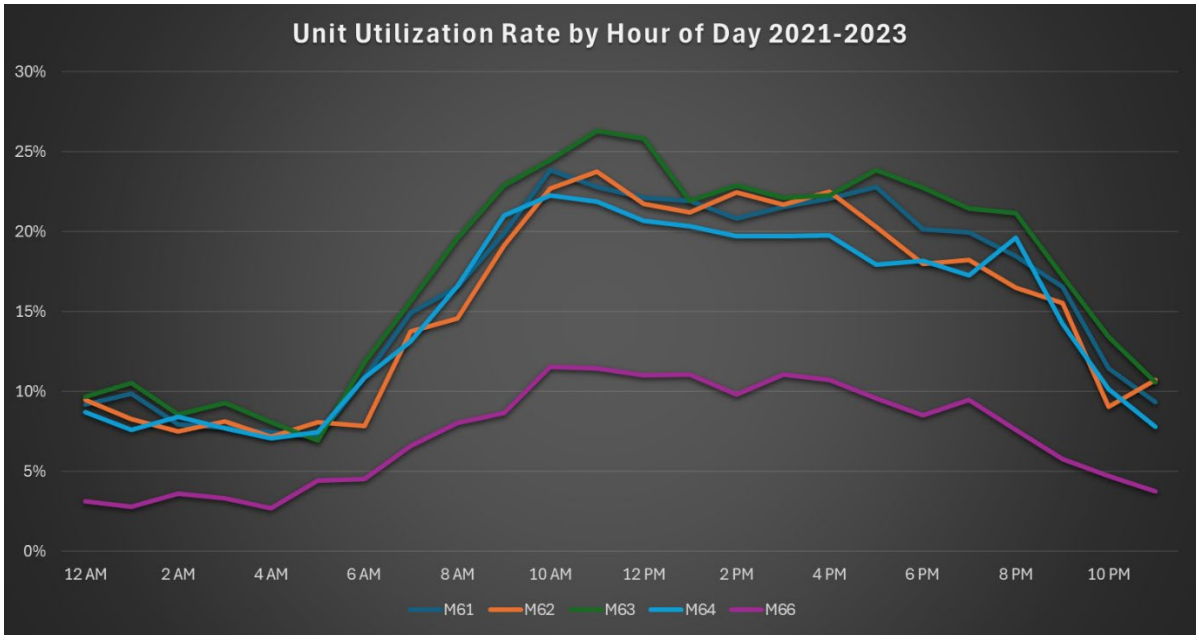
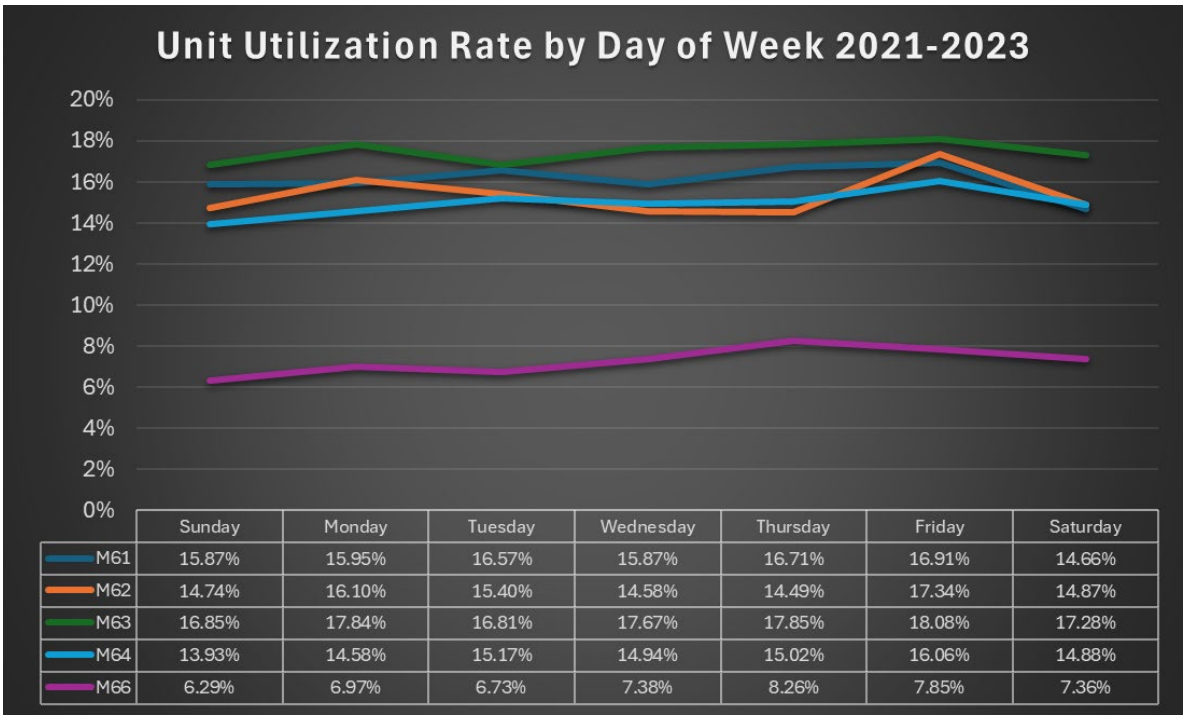
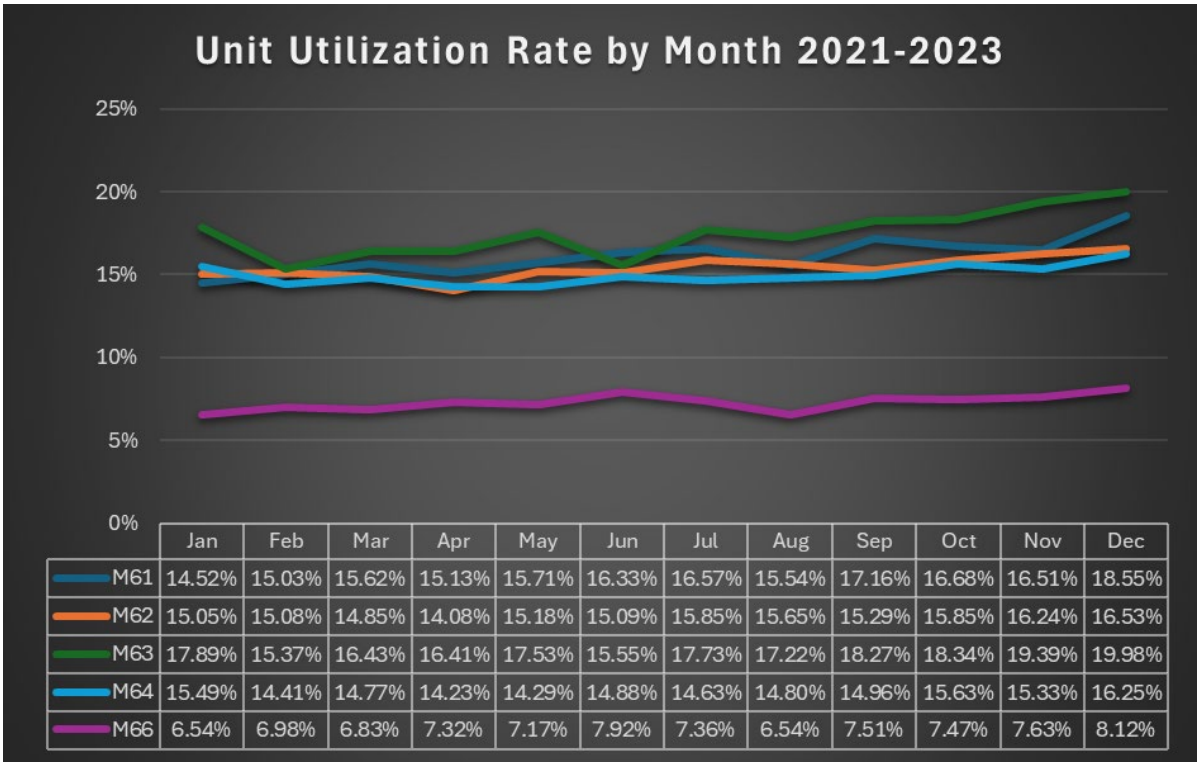


Figure 89 - District Medic Unit Utilization Rate by Hour of Day, 2021 – 2023



	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
M61	15.87%	15.95%	16.57%	15.87%	16.71%	16.91%	14.66%
M62	14.74%	16.10%	15.40%	14.58%	14.49%	17.34%	14.87%
M63	16.85%	17.84%	16.81%	17.67%	17.85%	18.08%	17.28%
M64	13.93%	14.58%	15.17%	14.94%	15.02%	16.06%	14.88%
M66	6.29%	6.97%	6.73%	7.38%	8.26%	7.85%	7.36%

Figure 90 - District Medic Unit Utilization Rate by Day, 2021 – 2023



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
M61	14.52%	15.03%	15.62%	15.13%	15.71%	16.33%	16.57%	15.54%	17.16%	16.68%	16.51%	18.55%
M62	15.05%	15.08%	14.85%	14.08%	15.18%	15.09%	15.85%	15.65%	15.29%	15.85%	16.24%	16.53%
M63	17.89%	15.37%	16.43%	16.41%	17.53%	15.55%	17.73%	17.22%	18.27%	18.34%	19.39%	19.98%
M64	15.49%	14.41%	14.77%	14.23%	14.29%	14.88%	14.63%	14.80%	14.96%	15.63%	15.33%	16.25%
M66	6.54%	6.98%	6.83%	7.32%	7.17%	7.92%	7.36%	6.54%	7.51%	7.47%	7.63%	8.12%

Figure 91 - District Medic Unit Utilization Rate by Month, 2021 – 2023

Engines/Truck & Battalion Chief

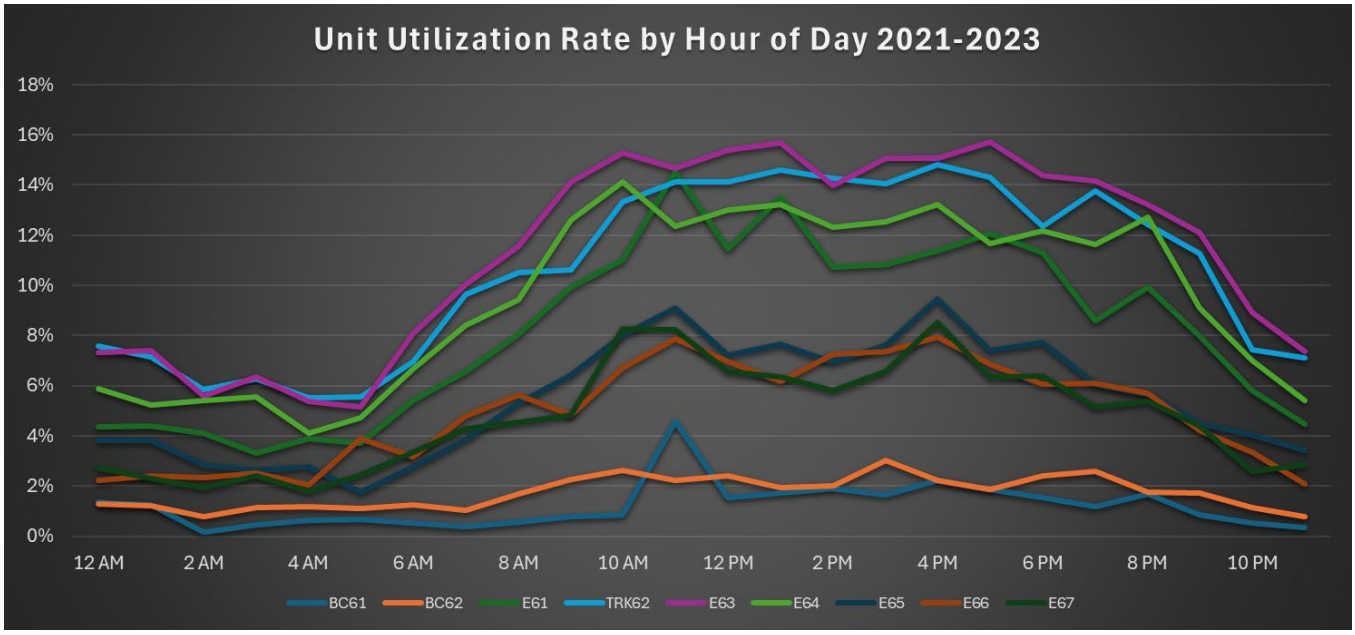
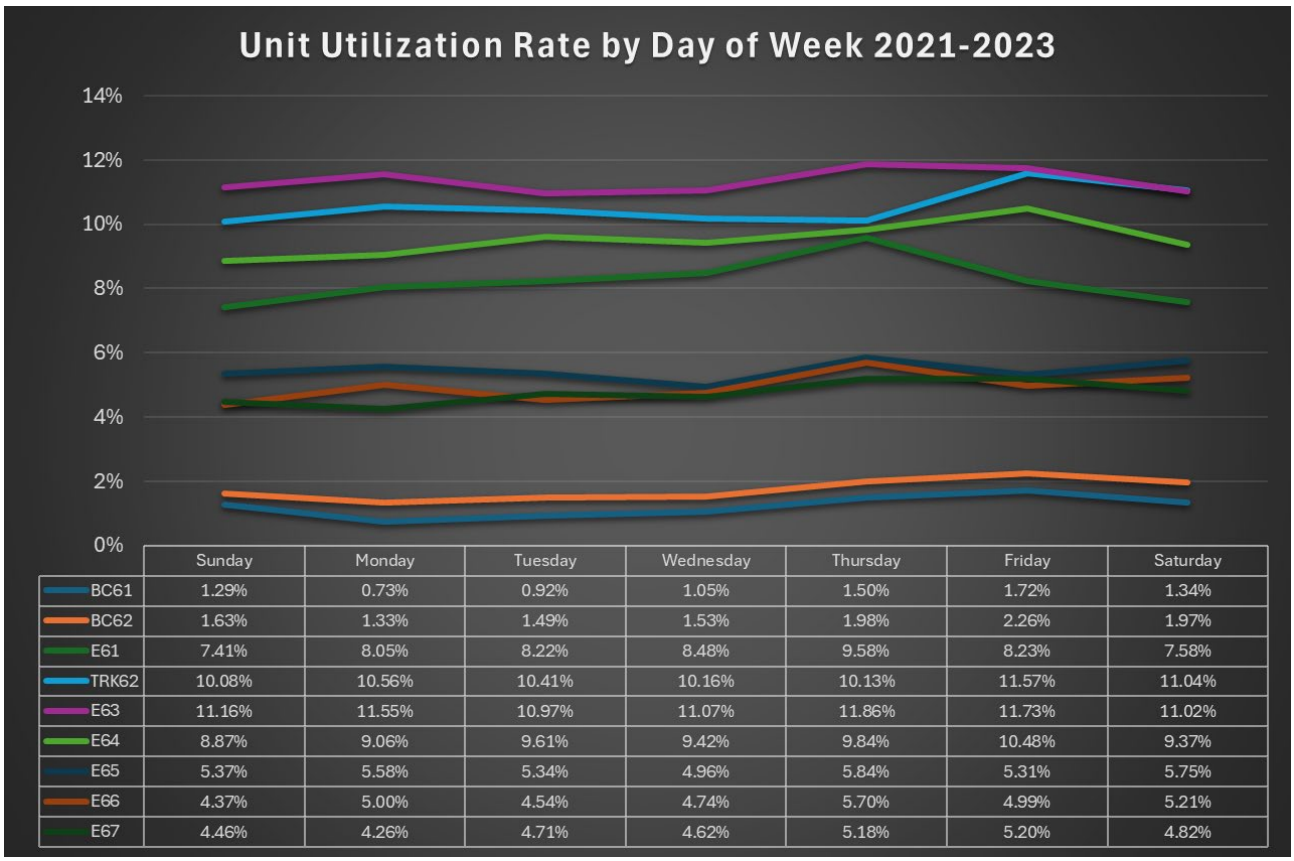
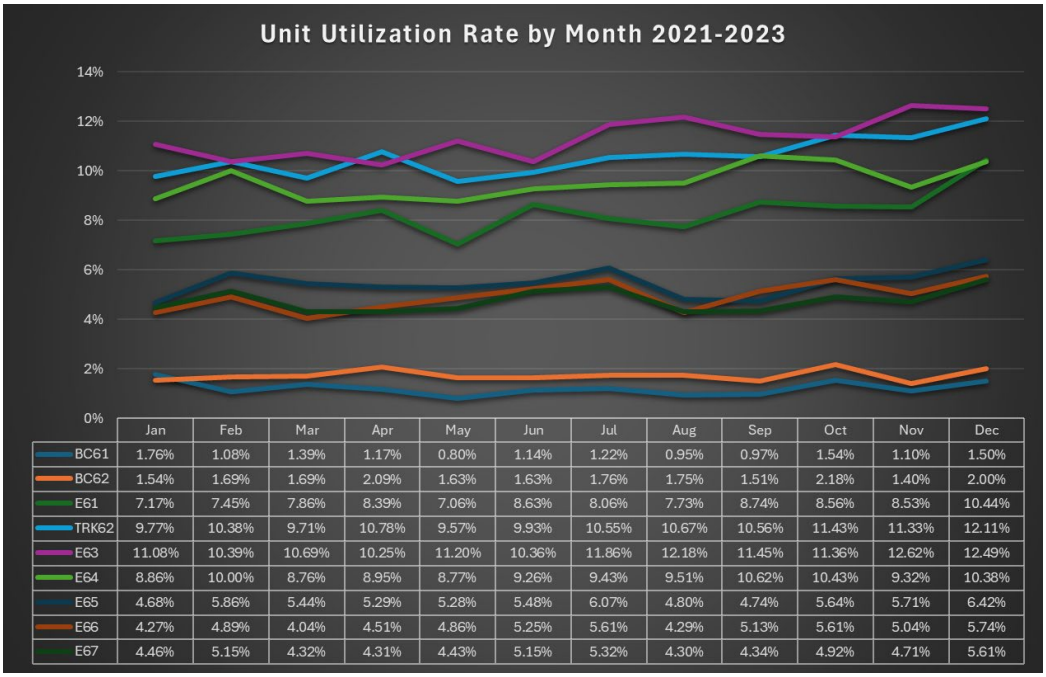


Figure 92 - District Engine/Truck & BC Unit Utilization Rate by Hour of Day, 2021 – 2023



	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
BC61	1.29%	0.73%	0.92%	1.05%	1.50%	1.72%	1.34%
BC62	1.63%	1.33%	1.49%	1.53%	1.98%	2.26%	1.97%
E61	7.41%	8.05%	8.22%	8.48%	9.58%	8.23%	7.58%
TRK62	10.08%	10.56%	10.41%	10.16%	10.13%	11.57%	11.04%
E63	11.16%	11.55%	10.97%	11.07%	11.86%	11.73%	11.02%
E64	8.87%	9.06%	9.61%	9.42%	9.84%	10.48%	9.37%
E65	5.37%	5.58%	5.34%	4.96%	5.84%	5.31%	5.75%
E66	4.37%	5.00%	4.54%	4.74%	5.70%	4.99%	5.21%
E67	4.46%	4.26%	4.71%	4.62%	5.18%	5.20%	4.82%

Figure 93 - District Engine/Truck & BC Unit Utilization Rate by Day, 2021 – 2023



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
BC61	1.76%	1.08%	1.39%	1.17%	0.80%	1.14%	1.22%	0.95%	0.97%	1.54%	1.10%	1.50%
BC62	1.54%	1.69%	1.69%	2.09%	1.63%	1.63%	1.76%	1.75%	1.51%	2.18%	1.40%	2.00%
E61	7.17%	7.45%	7.86%	8.39%	7.06%	8.63%	8.06%	7.73%	8.74%	8.56%	8.53%	10.44%
TRK62	9.77%	10.38%	9.71%	10.78%	9.57%	9.93%	10.55%	10.67%	10.56%	11.43%	11.33%	12.11%
E63	11.08%	10.39%	10.69%	10.25%	11.20%	10.36%	11.86%	12.18%	11.45%	11.36%	12.62%	12.49%
E64	8.86%	10.00%	8.76%	8.95%	8.77%	9.26%	9.43%	9.51%	10.62%	10.43%	9.32%	10.38%
E65	4.68%	5.86%	5.44%	5.29%	5.28%	5.48%	6.07%	4.80%	4.74%	5.64%	5.71%	6.42%
E66	4.27%	4.89%	4.04%	4.51%	4.86%	5.25%	5.61%	4.29%	5.13%	5.61%	5.04%	5.74%
E67	4.46%	5.15%	4.32%	4.31%	4.43%	5.15%	5.32%	4.30%	4.34%	4.92%	4.71%	5.61%

Figure 94 - District Engine/Truck & BC Unit Utilization Rate by Month, 2021 – 2023

Historical Fire Incidents

The district has averaged 138 in-district (not including automatic or mutual-aid given to surrounding departments) incidents that fall within the *Fire* classification, annually, from 2021-2023. This accounts for 1.1% of the incidents within all classifications. Leading historical incidents within the fire classification are passenger vehicle fires, cooking fires (confined to container), dumpster/trash fires, single-family structure fires, apartment structure fires, and outside rubbish fires.

Fires related to natural vegetation are not represented in the fire classification but are accounted for in the wildland classification. Similarly, fires related to aircraft are also not represented in the fire classification and are accounted for in the ARFF classification.

Historical Fire Incident Frequency 2021 – 2023

FIRE	NFIRS Code	Classification	2021 Total Per Incident Type	2022 Total Per Incident Type	2023 Total Per Incident Type	2021-2023 Total	Average Incident Types per Year 2021-2023
Passenger vehicle fire (131)	131	Fire	30	32	22	84	28
Cooking fire, confined to container (Burnt food) (113)	113	Fire	27	16	22	65	22
Outside rubbish, trash or waste fire (151)	151	Fire	27	17	18	62	21
Building Fire (Structure) (111) - Single Family Home	111	Fire	15	17	15	47	16
Dumpster or other outside trash receptacle fire (154)	154	Fire	13	15	13	41	14
Building Fire (Structure) (111) - Apartment Complex	111	Fire	9	8	7	24	8
Outside rubbish fire, other (150)	150	Fire	5	2	4	11	4
Building Fire (Structure) (111) - Commercial Building	111	Fire	1	7	3	11	4
Trash or rubbish fire, contained (118)	118	Fire	1	6	3	10	3
Mobile property (vehicle) fire, other (130)	130	Fire	3	2	3	8	3
Outside equipment fire (162)	162	Fire	1	4	3	8	3
Fire, other (100)	100	Fire	1	4	2	7	2
Special outside fire, other (160)	160	Fire	2	4	0	6	2
Road freight or transport vehicle fire (132)	132	Fire	1	3	2	6	2
Fires in structure other than in a building (112)	112	Fire	3	1	0	4	1
Outside storage fire (161)	161	Fire	1	1	2	4	1
Off-road vehicle or heavy equipment fire (138)	138	Fire	0	3	0	3	1
Building Fire (Structure) (111) - Hotel/motel, commercial	111	Fire	1	0	2	3	1
Incinerator overload or malfunction, fire confined (115)	115	Fire	0	2	0	2	1
Camper or recreational vehicle (RV) fire (137)	137	Fire	0	2	0	2	1
Fire in portable building, fixed location (123)	123	Fire	0	1	1	2	1
Fuel burner/boiler malfunction, fire confined (116)	116	Fire	0	1	0	1	0
Construction or demolition landfill fire (153)	153	Fire	1	0	0	1	0
Fire in mobile home used as fixed residence (121)	121	Fire	0	0	1	1	0
Outside gas or vapor combustion explosion (163)	163	Fire	0	0	1	1	0
Commercial Compactor fire, confined to rubbish (117)	117	Fire	0	0	0	0	0
Outside stationary compactor/compacted trash fire (155)	155	Fire	0	0	0	0	0
Chimney or flue fire, confined to chimney or flue (114)	114	Fire	0	0	0	0	0
Water vehicle fire (134)	134	Fire	0	0	0	0	0
Self-propelled motor home or recreational vehicle (136)	136	Fire	0	0	0	0	0
Garbage dump or sanitary landfill fire (152)	152	Fire	0	0	0	0	0
Outside mailbox fire (164)	164	Fire	0	0	0	0	0
Fire in mobile prop. Used as a fixed structure., other (120)	120	Fire	0	0	0	0	0
Fire in motor home, camper, recreational vehicle (122)	122	Fire	0	0	0	0	0
Rail vehicle fire (133)	133	Fire	0	0	0	0	0
Building Fire (Structure) (111) - High-Rise	111	Fire	0	0	0	0	0

Table 26 - NMFRD frequency of Fire incidents by incident type (Fire Classification), 2021 – 2023

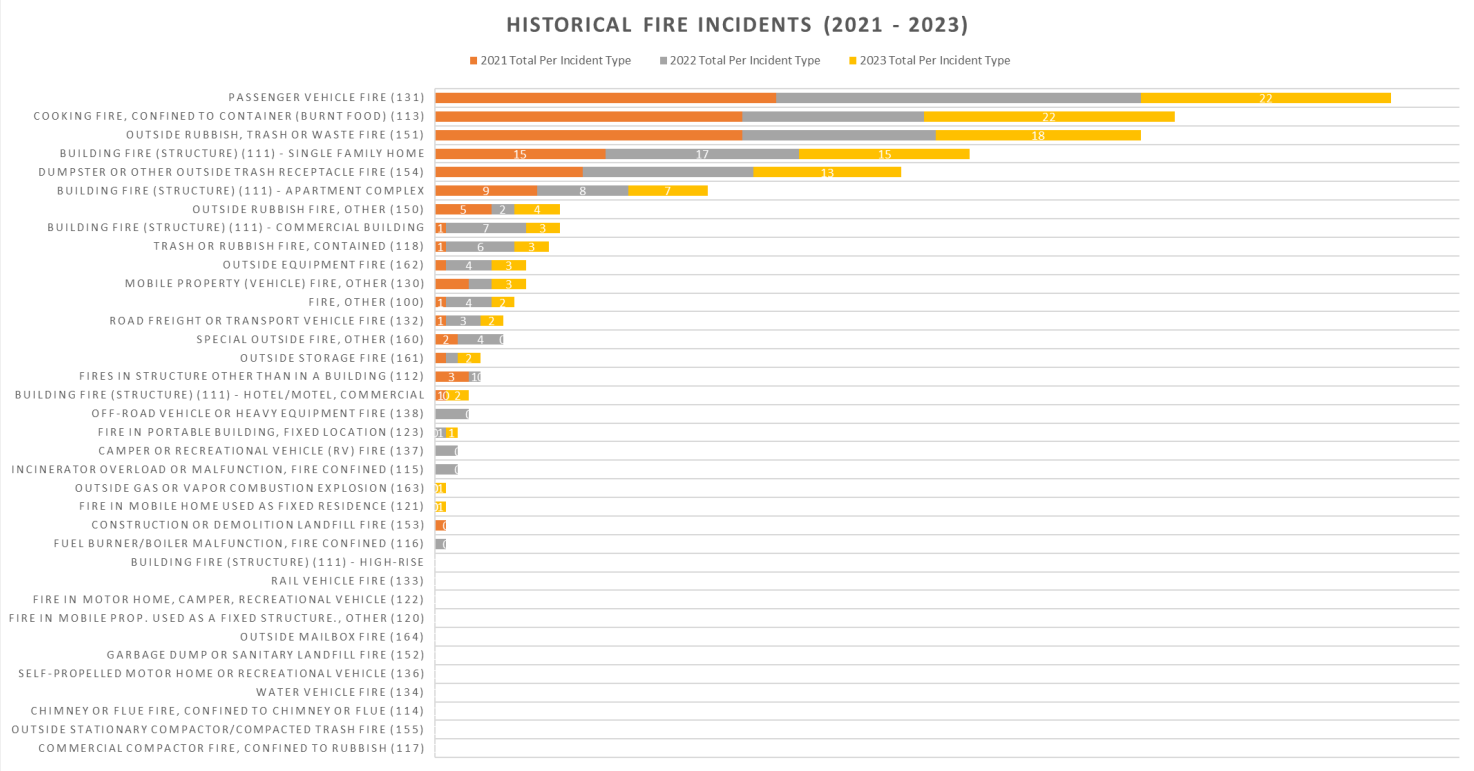


Figure 95 - NMFRD Fire Classification NFIRS Incident Types by year, 2021 – 2023

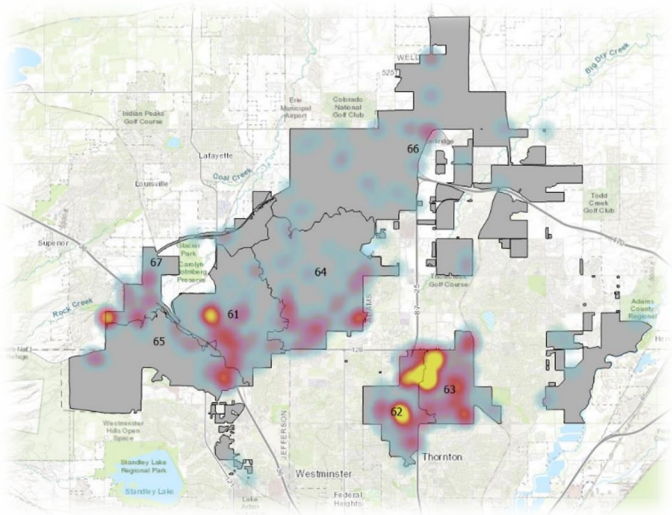


Figure 96- NMFRD Fire classification incidents by station response area, 2021 – 2023.

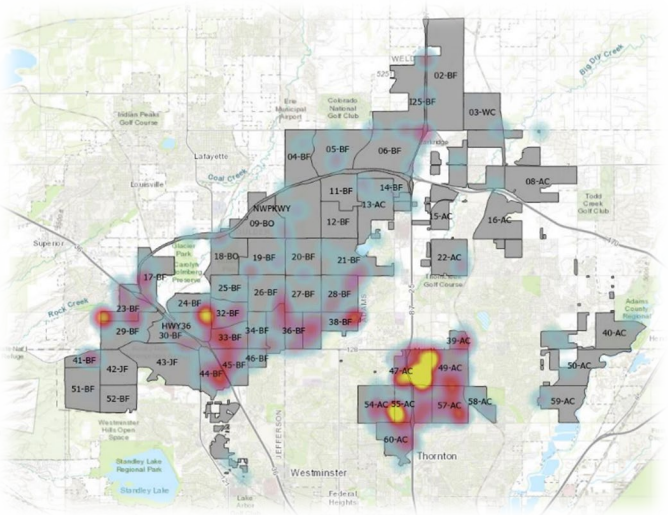


Figure 97 - NMFRD Fire classification incidents by emergency response zone (ERZ), 2021 – 2023

Historical Fire Incidents by Property Use 2021 – 2023

Level 1 to 3 Hierarchy				
Level 1	Level 2	Level 3	Count	%
Agriculture or Vacant	Agriculture or Vacant	Agriculture or Vacant	13	2.83%
Civic/Institutional	Civic facilities	Civic facilities	2	0.43%
	Corrections facilities	Corrections facilities	1	0.22%
	Education	Primary/Secondary education	5	1.09%
	Hospitals	Hospitals	1	0.22%
Commercial	Office	Office	7	1.52%
	Retail/Commercial	Accommodation	8	1.74%
		Bar/Tavern/Nightclub	4	0.87%
		Commercial centers	13	2.83%
		Commercial other	13	2.83%
		Office	3	0.65%
		Restaurant/Food	2	0.43%
Industrial/Warehouse	Industrial/Warehouse	Heavy industrial	2	0.43%
		Light industrial	11	2.39%
		Wholesale/Warehousing	5	1.09%
Mixed use	Mixed use	Mixed use commercial	6	1.30%
Open space	Open space	Open space	5	1.09%
	Parks/Recreation	Parks/Recreation	4	0.87%
Residential	Multifamily	Multifamily	89	19.35%
	Senior	Age restricted	1	0.22%
		Assisted living	3	0.65%
	Single-Family	Mobile home	8	1.74%
		Single-family attached	10	2.17%
		Single-family detached	122	26.52%
Transportation/Utilities	Transportation/Utiliti	Transportation	2	0.43%
		Utilities/Communications	2	0.43%
		Highway/Street/Road	118	25.65%
Grand Total			**460**	**100.00%**

Table 27 - NMFRD, in-district only, fire classification incidents by property use, 2021 - 2023

Historical Emergency Medical Services (EMS) Incidents

From 2021-2023, the district has averaged 8,753 in-district incidents that fall within the EMS classification, accounting for 68.4% of the incidents within all classifications. The most common historical incidents within the EMS classification are EMS call with other agency transporting, non-violent traumatic injuries, general illness, alcohol/drug problem or overdose, difficulty breathing, motor vehicle accident with injuries, and abdominal pain.

Historical EMS Incident Frequency 2021 – 2023

EMS	NFIRS Code	Classification	2021 Total Per Incident Type	2022 Total Per Incident Type	2023 Total Per Incident Type	2021-2023 Total	Average Incident Types per Year 2021-2023
EMS call, (321) - (No PCR Associated)	321	EMS	801	1491	1637	3929	1310
Traumatic Injury (G89.11) Non-Violent - (Subcategory of 321)	321	EMS	1254	1301	1227	3782	1261
General Illness (R69) - (Subcategory of 321)	321	EMS	1168	1154	1260	3582	1194
Difficulty Breathing (R06.02) - (Subcategory of 321)	321	EMS	502	485	555	1542	514
Alcohol/Drug Problem or Overdose (F10.9) - (Subcategory of 321)	321	EMS	527	466	452	1445	482
Motor vehicle accident with no injuries (324)	324	EMS	459	431	452	1342	447
Motor vehicle accident with injuries (322)	322	EMS	433	430	421	1284	428
Behavioral/Psychiatric Problem (Z86.59) - (Subcategory of 321)	321	EMS	408	413	441	1262	421
Abdominal Pain (R10.84) - (Subcategory of 321)	321	EMS	382	465	371	1218	406
Altered Level of Consciousness (R41.82) - (Subcategory of 321)	321	EMS	355	347	335	1037	346
Chest Pain (Cardiac) (R07.9) - (Subcategory of 321)	321	EMS	321	354	318	993	331
Pain (Non Traumatic, Abdominal, or Chest) (R52) - (Subcategory of 321)	321	EMS	312	311	312	935	312
Syncope/Fainting (R55) - (Subcategory of 321)	321	EMS	283	309	307	899	300
Seizure/Convulsions (R56.9) - (Subcategory of 321)	321	EMS	245	231	243	719	240
Cardiac Arrest (I46.2) - (Subcategory of 321)	321	EMS	165	158	137	460	153
Suspected Stroke/CVA (G46.4) - (Subcategory of 321)	321	EMS	162	150	131	443	148
Diabetic Problem (E08) - (Subcategory of 321)	321	EMS	69	94	87	250	83
Not Applicable/Recorded - (Subcategory of 321)	321	EMS	131	89	0	220	73
No Patient Complaint (Z00.00) - (Subcategory of 321)	321	EMS	45	82	84	211	70
PD Blood Draw (Z52.0) - (Subcategory of 321)	321	EMS	68	33	39	140	47
Allergic Reaction (L50.0) - (Subcategory of 321)	321	EMS	40	42	46	128	43
Gunshot Wound/Stabbing - (Subcategory of 321)	321	EMS	21	32	33	86	29
Motor vehicle/pedestrian accident (MV Ped) (323)	323	EMS	24	19	30	73	24
Emergency medical service, other (320)	320	EMS	26	11	23	60	20
OB/GYN Problem (Z01.411) - (Subcategory of 321)	321	EMS	22	15	23	60	20
Medical assist, assist EMS crew (311)	311	EMS	25	19	14	58	19
Environmental Problem (Z77.12) - (Subcategory of 321)	321	EMS	16	16	25	57	19
Childbirth (O60.23) - (Subcategory of 321)	321	EMS	9	8	5	22	7
Rescue or EMS standby (381)	381	EMS	7	4	7	18	6
Rescue, EMS incident, other (300)	300	EMS	3	0	1	4	1
Mass Causality Incident (No NFIRS code, > 3 units transporting)	NA	EMS	0	0	0	0	0

Table 28 - NMFRD frequency of EMS incidents by incident type (EMS Classification) 2021 – 2023

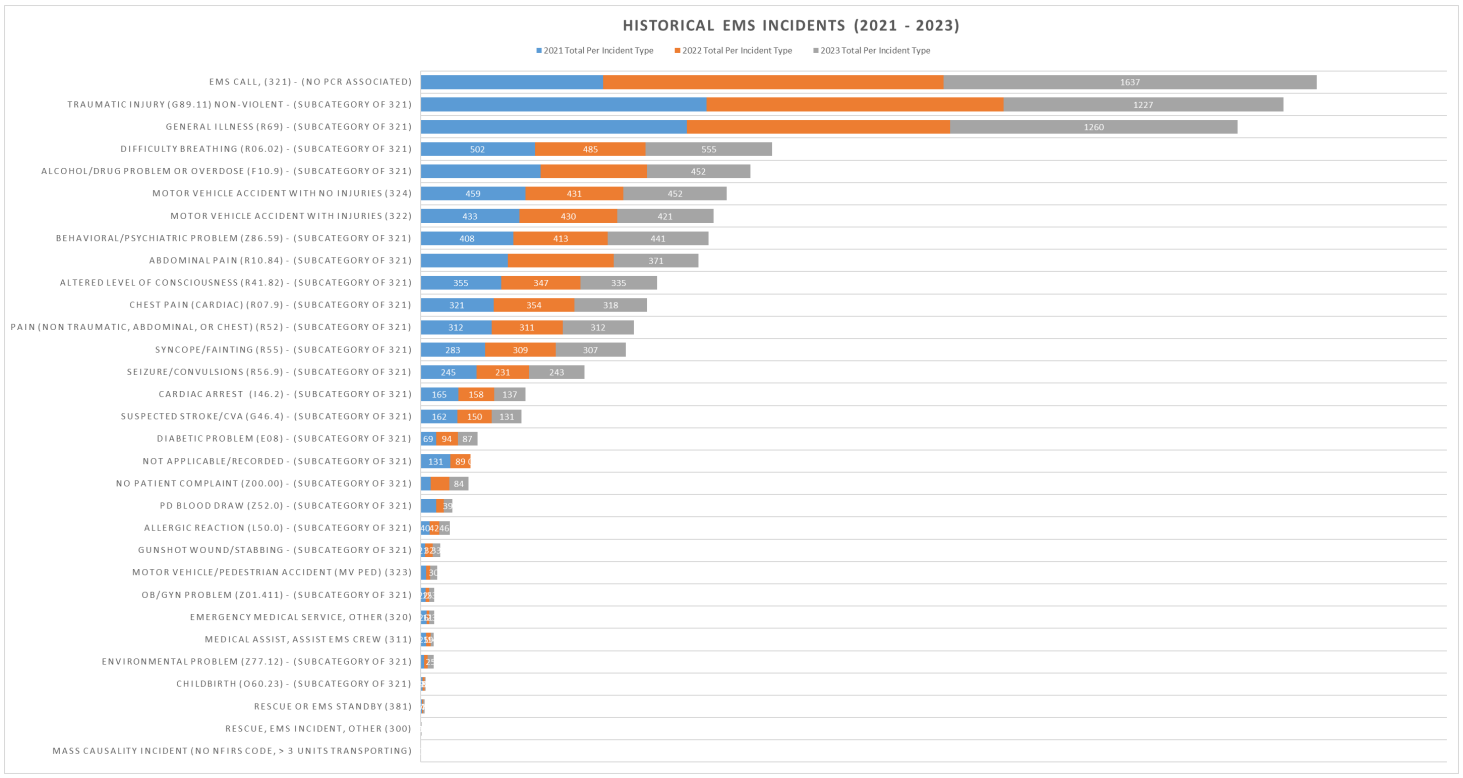


Figure 100 - NMFRD EMS Classification NFIRS Incident Types by year, 2021 – 20203

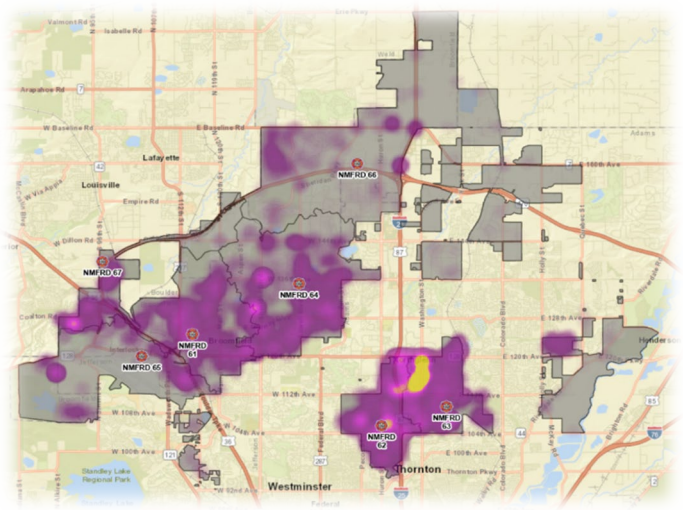


Figure 99 - NMFRD EMS classification incidents by station response area, 2021 – 2023.

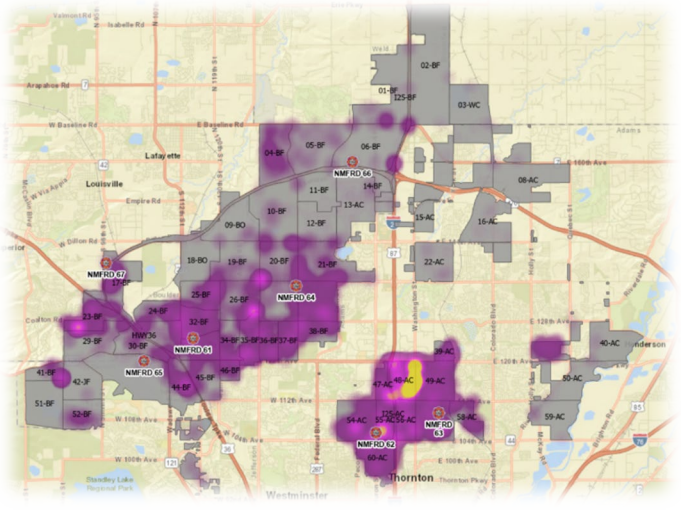


Figure 98 - NMFRD EMS classification incidents by emergency response zone (ERZ), 2021 – 2023

The majority of motor vehicle incidents fall within the EMS classification. Incidents within this classfication are either *motor vehicle accidents with injuries (322) or motor vehicle accident with no injuries (324). Extrications of victim(s) from vehicle (352)* is the other motor vehicle incident but it falls within the Rescue classification. The following maps display all motor vehicle incident locations from 2021 – 2023.

Motor Vehicle Incidents by Location and Speed of Vehicle, 2021 – 2023

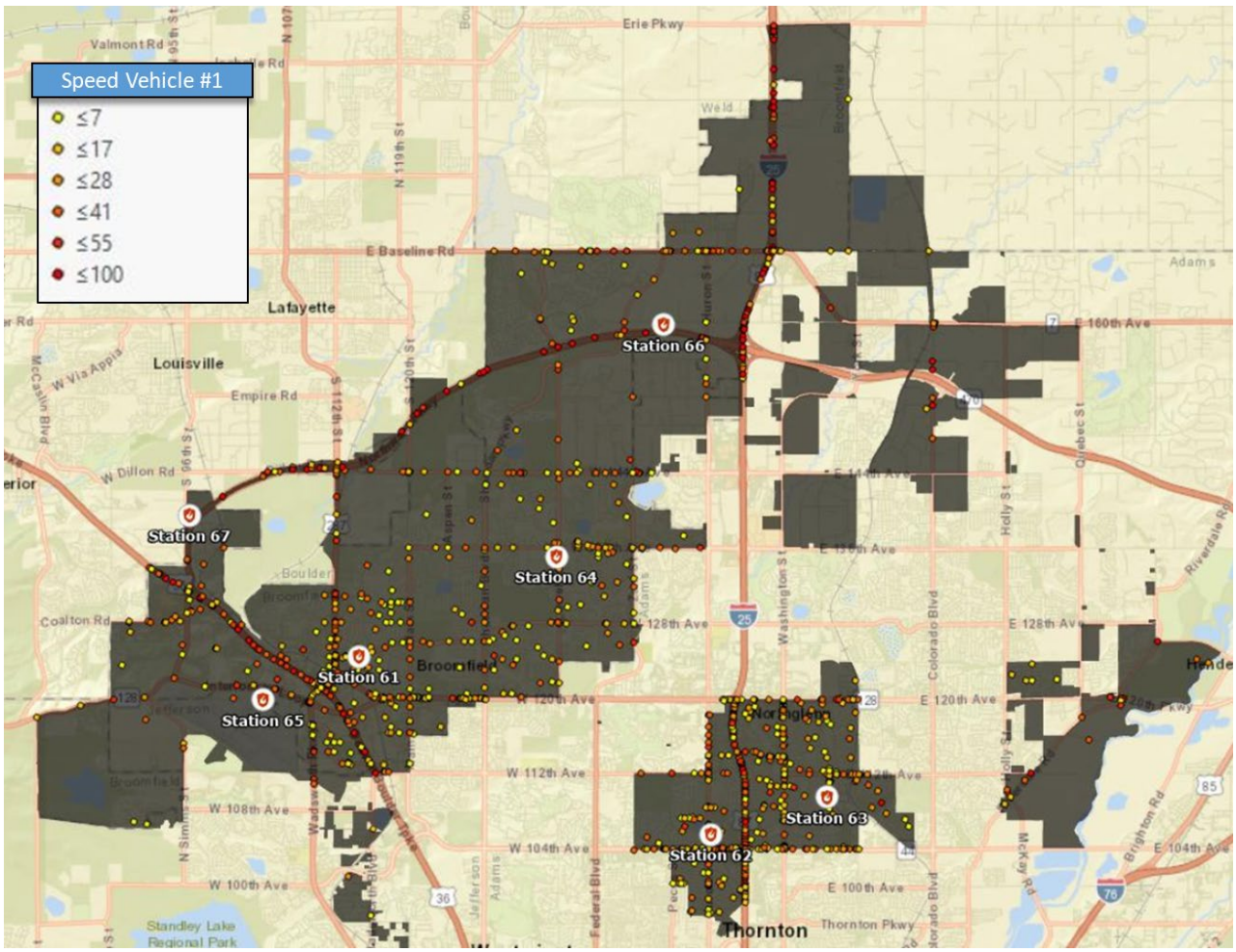


Figure 101 - NMFD motor vehicle incidents by speed of vehicle #1, DRCOG data set, 2021 - 2023.

Motor Vehicle Incidents by Location, 2021 – 2023

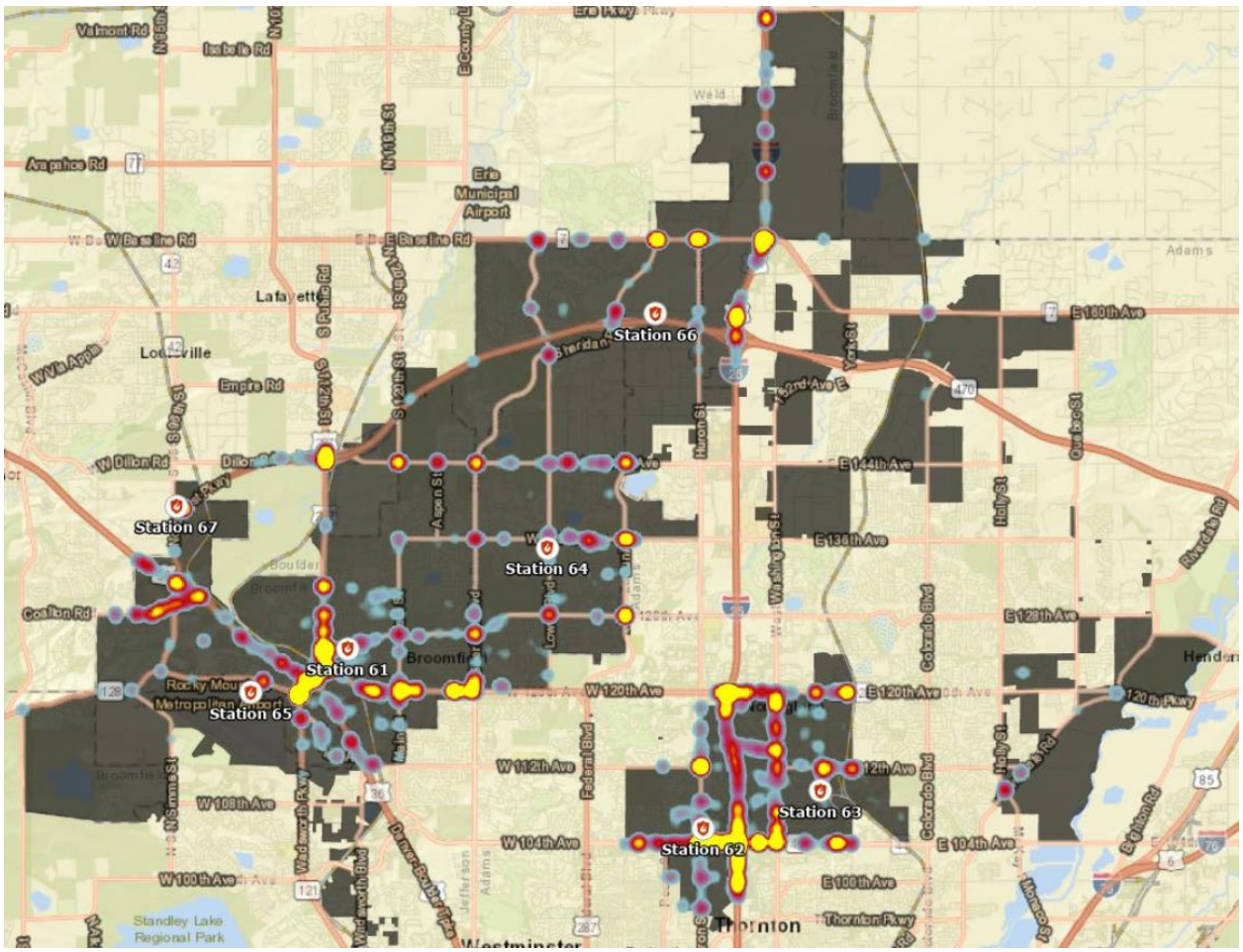


Figure 102 - NMFD motor vehicle incidents by location, DRCOG data set, 2021 - 2023.

Historical EMS Incidents by Property Use, 2021 – 2023

Level 1 to 3 Hierarchy				
Level 1	Level 2	Level 3	Count	%
Agriculture or Vacant	Agriculture or Vacant	Agriculture or Vacant	222	0.90%
Civic/Institutional	Civic facilities	Civic facilities	179	0.73%
		Emergency Services	85	0.34%
		Special use	38	0.15%
	Corrections facilities	Corrections facilities	157	0.64%
	Early education	Early education	12	0.05%
	Education	Higher education	2	0.01%
		Primary/Secondary education	266	1.08%
	Hospitals	Hospitals	253	1.03%
	Religious	Religious	92	0.37%
Commercial	Commercial recreatio	Commercial recreation	90	0.37%
	Common area comme	Common area commercial	6	0.02%
	Office	Office	309	1.25%
	Retail/Commercial	Accommodation	275	1.12%
		Bar/Tavern/Nightclub	29	0.12%
		Commercial centers	646	2.62%
		Commercial other	744	3.02%
		Office	40	0.16%
		Restaurant/Food	193	0.78%
		Retail services	38	0.15%
Industrial/Warehouse	Industrial/Warehouse	Heavy industrial	49	0.20%
		Light industrial	91	0.37%
		Wholesale/Warehousing	86	0.35%
Mixed use	Mixed use	Mixed use commercial	75	0.30%
		Mixed use residential	18	0.07%
Open space	Open space	Open space	441	1.79%
	Parks/Recreation	Golf courses	9	0.04%
		Parks/Recreation	69	0.28%
Residential	Common area resider	Common area residential	28	0.11%
	Multifamily	Multifamily	4221	17.13%
	Senior	Age restricted	127	0.52%
		Assisted living	1120	4.54%
		Nursing/Rehabilitation home	316	1.28%
	Single-Family	Mobile home	442	1.79%
		Single-family attached	1071	4.35%
		Single-family detached	8486	34.43%
Transportation/Utilities	Transportation/Utiliti	Transportation	70	0.28%
		Utilities/Communications	31	0.13%
		Highway/Street/Road	4220	17.12%
Grand Total			**24646**	**100.00%**

Table 29 - NMFRD, in-district only, EMS classification incidents by property use, 2021 – 2023

Historical Technical Rescue Incidents

From 2021-2023, the district averages 113 in-district incidents that fall within the Technical *Rescue* classification. This accounts for .9% of the incidents within all classifications. The most common historical incidents within the technical rescue classification are removal of victim(s) from stalled elevator, lock-in (person locked inside), extrication of victim(s) from vehicle, and ice rescue. Extrication of victim(s) from vehicle (352) is historically under-reported due to data entry error, with most extrication incidents being recorded under motor vehicle accident with injuries (322) or EMS call (321), both of which are in the EMS classification.

Historical Technical Rescue Incident Frequency 2021 – 2023

RESCUE	NFIRS Code	Classification	2021 Total Per Incident Type	2022 Total Per Incident Type	2023 Total Per Incident Type	2021-2023 Total	Average Incident Types per Year
Removal of victim(s) from stalled elevator (353)	353	Rescue	52	68	66	186	62
Lock-in (Person locked inside) (331)	331	Rescue	29	34	43	106	35
Extrication of victim(s) from vehicle (352)	352	Rescue	8	2	7	17	6
Ice rescue (362)	362	Rescue	2	3	3	8	3
Building or structure weakened or collapsed (461)	461	Rescue	1	1	3	5	2
Extrication of victim(s) from building/structure (351)	351	Rescue	2	0	2	4	1
Accident, potential accident, other (460)	460	Rescue	1	0	2	3	1
Water & ice-related rescue, other (360)	360	Rescue	1	1	1	3	1
Extrication, rescue, other (350)	350	Rescue	0	1	1	2	1
Extrication of victim(s) from machinery (357)	357	Rescue	1	0	1	2	1
Electrical, rescue, other (370)	370	Rescue	0	1	0	1	0
High-angle rescue (356)	356	Rescue	0	0	1	1	0
Trench/below-grade rescue (354)	354	Rescue	1	0	0	1	0
Confined space rescue (355)	355	Rescue	0	0	1	1	0
Electrocution or potential electrocution (371)	371	Rescue	0	0	0	0	0
Search for lost person, other (340)	340	Rescue	0	0	0	0	0
Search for person on land (341)	341	Rescue	0	0	0	0	0
Search for person in water (342)	342	Rescue	0	0	0	0	0
Search for person underground (343)	343	Rescue	0	0	0	0	0
Surf rescue (364)	364	Rescue	0	0	0	0	0
Watercraft rescue (365)	365	Rescue	0	0	0	0	0
Swimming/recreational water areas rescue (361)	361	Rescue	0	0	0	0	0
Trapped by power lines (372)	372	Rescue	0	0	0	0	0
Swift water rescue (363)	363	Rescue	0	0	0	0	0

Table 30 - NMFRD frequency of Rescue incidents by incident type (Rescue Classification) 2021 – 2023

Historical Technical Rescue Incidents by Property Use, 2021 – 2023

Level 1 to 3 Hierarchy				
Level 1	Level 2	Level 3	Count	%
Agriculture or Vacant	Agriculture or Vacant	Agriculture or Vacant	4	1.42%
Civic/Institutional	Civic facilities	Emergency Services	2	0.71%
	Early education	Early education	5	1.77%
	Education	Primary/Secondary education	7	2.48%
	Hospitals	Hospitals	7	2.48%
	Religious	Religious	4	1.42%
Commercial	Commercial recreatio	Commercial recreation	3	1.06%
	Common area comme	Common area commercial	2	0.71%
	Office	Office	17	6.03%
	Retail/Commercial	Accommodation	31	10.99%
		Commercial centers	15	5.32%
		Commercial other	10	3.55%
		Office	1	0.35%
		Restaurant/Food	1	0.35%
		Retail services	4	1.42%
Industrial/Warehouse	Industrial/Warehouse	Heavy industrial	1	0.35%
		Light industrial	1	0.35%
		Wholesale/Warehousing	7	2.48%
Mixed use	Mixed use	Mixed use commercial	3	1.06%
Open space	Open space	Open space	6	2.13%
	Parks/Recreation	Parks/Recreation	2	0.71%
Residential	Multifamily	Multifamily	45	15.96%
	Senior	Assisted living	1	0.35%
	Single-Family	Mobile home	1	0.35%
		Single-family attached	3	1.06%
		Single-family detached	29	10.28%
Transportation/Utilities	Transportation/Utiliti	Transportation	5	1.77%
		Highway/Street/Road	65	23.05%
Grand Total			**282**	**100.00%**

Table 31 - NMFRD, in-district only, Rescue classification incidents by property use, 2021 – 2023

Historical Hazardous Materials (HazMat) Incidents

Incident types are grouped together using the classifications discussed later in this document in Risk Assessment Methodology, specifically, *Identification and Classification of Risk*. The following chart shows a breakdown of in-district incident type by classification (for 2021 – 2023).

Historical HazMat Incident Frequency 2021 – 2023

HAZMAT	NFIRS Code	Classification	2021 Total Per Incident Type	2022 Total Per Incident Type	2023 Total Per Incident Type	2021-2023 Total	Average Incident Types per Year 2021-2023
Gas leak (natural gas or LPG) (412)	412	HazMat	97	104	110	311	104
Carbon monoxide incident (424)	424	HazMat	20	41	25	86	29
Gasoline or other flammable liquid spill (411)	411	HazMat	14	10	19	43	14
Chemical spill or leak (422)	422	HazMat	4	5	5	14	5
Oil or other combustible liquid spill (413)	413	HazMat	5	3	4	12	4
Excessive heat, scorch burns with no ignition (251)	251	HazMat	5	1	5	11	4
Chemical hazard (no spill or leak) (421)	421	HazMat	4	2	4	10	3
Hazardous condition, other (400)	400	HazMat	3	3	2	8	3
Combustible/flammable gas/liquid condition, other (410)	410	HazMat	2	1	2	5	2
Refrigeration leak (423)	423	HazMat	0	2	2	4	1
Overpressure rupture of air or gas pipe/pipeline (221)	221	HazMat	2	0	2	4	1
Overpressure rupture, explosion, overheat, other (200)	200	HazMat	1	1	1	3	1
Air or gas rupture of pressure or process vessel (223)	223	HazMat	0	2	1	3	1
Fireworks explosion (no fire) (243)	243	HazMat	1	1	0	2	1
Toxic condition, other (Meth Lab) (420)	420	HazMat	0	0	1	1	0
Overpressure rupture of boiler from air or gas (222)	222	HazMat	0	1	0	1	0
Chemical reaction rupture of process vessel (231)	231	HazMat	0	0	1	1	0
Radiation leak, radioactive material (431)	431	HazMat	0	1	0	1	0
Explosion (no fire), other (240)	240	HazMat	1	0	0	1	0
Overpressure rupture of steam boiler (212)	212	HazMat	0	0	0	0	0
Overpressure rupture from air or gas, other (220)	220	HazMat	0	0	0	0	0
Overpressure rupture from steam, other (210)	210	HazMat	0	0	0	0	0
Overpressure rupture of steam pipe or pipeline (211)	211	HazMat	0	0	0	0	0
Steam rupture of pressure or process vessel (213)	213	HazMat	0	0	0	0	0
Radioactive condition, other (430)	430	HazMat	0	0	0	0	0
Dust explosion (no fire) (244)	244	HazMat	0	0	0	0	0

Table 32 - NMFRD frequency of HazMat incidents by incident type (HazMat Classification) 2021 – 2023

Historical HazMat Incidents by Property Use, 2021 – 2023

Level 1 to 3 Hierarchy				
Level 1	Level 2	Level 3	Count	%
Agriculture or Vacant	Agriculture or Vacant	Agriculture or Vacant	6	1.21%
Civic/Institutional	Civic facilities	Civic facilities	1	0.20%
		Emergency Services	1	0.20%
		Special use	3	0.60%
	Early education	Early education	1	0.20%
	Education	Higher education	1	0.20%
		Primary/Secondary education	5	1.01%
	Hospitals	Hospitals	3	0.60%
	Religious	Religious	1	0.20%
Commercial	Common area comme	Common area commercial	1	0.20%
	Office	Office	7	1.41%
	Retail/Commercial	Accommodation	2	0.40%
		Bar/Tavern/Nightclub	2	0.40%
		Commercial centers	14	2.82%
		Commercial other	35	7.06%
		Office	2	0.40%
		Restaurant/Food	4	0.81%
		Retail services	1	0.20%
Industrial/Warehouse	Industrial/Warehouse	Heavy industrial	3	0.60%
		Light industrial	10	2.02%
		Wholesale/Warehousing	2	0.40%
Mixed use	Mixed use	Mixed use commercial	4	0.81%
Open space	Open space	Open space	4	0.81%
Residential	Common area resider	Common area residential	4	0.81%
	Multifamily	Multifamily	35	7.06%
	Senior	Assisted living	2	0.40%
	Single-Family	Mobile home	6	1.21%
		Single-family attached	24	4.84%
		Single-family detached	241	48.59%
Transportation/Utilities	Transportation/Utiliti	Transportation	2	0.40%
		Highway/Street/Road	69	13.91%
Grand Total			**496**	**100.00%**

Table 33 - NMFRD, in-district only, HazMat classification incidents by property use, 2021 – 2023

Historical Aircraft Rescue and Firefighting (ARFF) Incidents

From 2021-2023 the district has averaged 21 in-district incidents that fall within the *ARFF* classification, accounting for .2% of the incidents within all classifications. The most common historical incidents within the ARFF classification are aircraft standby or incident (no fire) Alert 2, and aircraft standby or incident (no fire) Alert 1.

Alert 1 is an aircraft that is known or suspected to have an operational defect that should not normally impact a safe landing. Alert 1 initiates notification only and generally, an incident report is not completed because there was no incident or response required. Alert 2 incidents are standby responses where the pilot of an aircraft has recognized a malfunction in the aircraft that could affect safe landing. Dispatched units respond to the scene and ensure safe landing of the aircraft. Alert 2 incidents do not result in an aircraft accident or crash. Alert 3 incidents are confirmed aircraft accidents or crashes.

Historical ARFF Incident Frequency 2021 – 2023

ARFF	NFIRS Code	Classification	2021 Total Per Incident Type	2022 Total Per Incident Type	2023 Total Per Incident Type	2021-2023 Total	Average Incident Types per Year 2021-2023
Aircraft standby or incident (No fire) (462) - Alert 2	462	ARFF	13	19	8	40	13
Aircraft standby or incident (No fire) (462) - Alert 1	462	ARFF	5	2	6	13	4
Aircraft standby or incident (No fire) (462) - Alert 3	462	ARFF	3	5	1	9	3
Aircraft fire (135)	135	ARFF	0	0	0	0	0

Table 34 - NMFRD frequency of ARFF incidents by incident type (ARFF Classification) 2021 – 2023

Historical ARFF Incidents by Property Use, 2021 – 2023

Level 1 to 3 Hierarchy				
Level 1	Level 2	Level 3	Count	%
Civic/Institutional	Hospitals	Hospitals	5	7.94%
Industrial/Warehouse	Industrial/Warehouse	Wholesale/Warehousing	1	1.59%
Transportation/Utilities	Transportation/Utiliti	Transportation	50	79.37%
		Highway/Street/Road	7	11.11%
Grand Total			63	100.00%

Table 35 - NMFRD, in-district only, ARFF classification incidents by property use, 2021 – 2023

Historical Wildland Incidents

From 2021-2023 the district has averaged 38 in-district incidents that fall within the *Wildland* classification, accounting for .3% of the incidents within all classifications. The most common historical incidents within the wildland classification are brush or brush-and-grass mixture fire, grass fire, and natural vegetation fire.

Historical Wildland Incident Frequency 2021 – 2023

WILDLAND	NFIRS Code	Classification	2021 Total Per Incident Type	2022 Total Per Incident Type	2023 Total Per Incident Type	2021-2023 Total	Average Incident Types Per Year 2021-2023
Brush or brush-and-grass mixture fire (142) - 7 or less personnel needed	142	Wildland	11	22	12	45	15
Grass fire (143) - 7 or less personnel needed	143	Wildland	10	23	9	42	14
Natural vegetation fire, other (140) - 7 or less personnel needed	140	Wildland	2	4	3	9	3
Grass fire (143) - 8 or more personnel needed	143	Wildland	2	5	1	8	3
Brush or brush-and-grass mixture fire (142) - 8 or more personnel needed	142	Wildland	3	1	3	7	2
Natural vegetation fire, other (140) - 8 or more personnel needed	140	Wildland	1	1	0	2	1
Cultivated grain or crop fire (171)	171	Wildland	0	0	1	1	0
Cultivated vegetation, crop fire, other (170)	170	Wildland	0	0	0	0	0
Cultivated orchard or vineyard fire (172)	172	Wildland	0	0	0	0	0
Cultivated trees or nursery stock fire (173)	173	Wildland	0	0	0	0	0
Forest, woods or wildland fire (141)	141	Wildland	0	0	0	0	0

Table 36 - NMFRD frequency of Wildland incidents by incident type (ARFF Classification) 2021 – 2023

Historical Wildland Incidents by Property Use, 2021 – 2023

Level 1 to 3 Hierarchy				
Level 1	Level 2	Level 3	Count	%
Agriculture or Vacant	Agriculture or Vacant	Agriculture or Vacant	4	2.78%
Civic/Institutional	Civic facilities	Civic facilities	3	2.08%
	Hospitals	Hospitals	7	4.86%
	Religious	Religious	1	0.69%
Commercial	Office	Office	1	0.69%
	Retail/Commercial	Commercial centers	1	0.69%
		Commercial other	5	3.47%
		Office	1	0.69%
		Restaurant/Food	3	2.08%
Industrial/Warehouse	Industrial/Warehouse	Light industrial	3	2.08%
Mixed use	Mixed use	Mixed use residential	1	0.69%
Open space	Open space	Open space	4	2.78%
	Parks/Recreation	Parks/Recreation	2	1.39%
Residential	Multifamily	Multifamily	12	8.33%
	Single-Family	Single-family attached	2	1.39%
		Single-family detached	32	22.22%
Transportation/Utilities	Transportation/Utiliti	Transportation	3	2.08%
		Utilities/Communications	1	0.69%
		Highway/Street/Road	58	40.28%
Grand Total			**144**	**100.00%**

Table 37 - NMFRD, in-district only, Wildland classification incidents by property use, 2021 – 2023

Historical Domestic Preparedness Incidents

From 2021-2023 the district averages five in-district incidents that fall within the *Domestic Preparedness* classification, accounting for .04% of the incidents within all classifications. The frequency of incidents within this classification is low and generally correlates to natural, weather-related responses.

Historical Domestic Preparedness Incident Frequency 2021 – 2023

DOMESTIC PREPAREDNESS	NFIRS Code	Classification	2021 Total Per Incident Type	2022 Total Per Incident Type	2023 Total Per Incident Type	2021-2023 Total	Average Incident Types Per Year 2021-2023
Flood assessment (812)	812	Domestic	3	3	5	11	4
Severe weather or natural disaster, other (800)	800	Domestic	0	0	2	2	1
Wind storm, tornado/hurricane assessment (813)	813	Domestic	1	0	0	1	0
Bomb scare – no bomb (721)	721	Domestic	1	0	0	1	0
Biological hazard, confirmed or suspected (451)	451	Domestic	1	0	0	1	0
Earthquake assessment (811)	811	Domestic	0	0	0	0	0
Explosive, bomb removal (471)	471	Domestic	0	0	0	0	0
Munition or bomb explosion (no fire) (241)	241	Domestic	0	0	0	0	0
Blasting agent explosion (no fire) (242)	242	Domestic	0	0	0	0	0
Active Shooter (no NFIRs code, numbers pulled from 321)	321	Domestic	0	0	0	0	0

Table 38 - NMFRD frequency of Domestic Preparedness incidents by incident type (Domestic Preparedness Classification) 2021 – 2023

Historical Domestic Preparedness Incidents by Property Use, 2021 – 2023

Level 1 to 3 Hierarchy				
Level 1	Level 2	Level 3	Count	%
Agriculture or Vacant	Agriculture or Vacant	Agriculture or Vacant	1	11.11%
Commercial	Retail/Commercial	Commercial other	1	11.11%
Residential	Single-Family	Single-family attached	1	11.11%
		Single-family detached	4	44.44%
Transportation/Utilities	Transportation/Utiliti	Highway/Street/Road	2	22.22%
Grand Total			9	100.00%

Table 39 - NMFRD, in-district only, Domestic Preparedness classification incidents by property use, 2021 – 2023

Historical Alarms & Citizen Assists Incidents

From 2021-2023 the district has averaged 3,553 in-district incidents that fall within the *Alarms & Citizen Assists* classification, accounting for 27.8% of the incidents within all classifications. While many of the incident types within this classification are low-consequence, false alarms and citizen assists, the total number accounts for a large overall percentage of total incident volume. Due to this high frequency, the incidents within this classification can greatly affect unit workload, which may increase response times as primary units are committed to these types of events.

Historical Alarms & Citizen Assists Incident Frequency 2021 – 2023

ALARMS & Citizen Assists	NFIRS Code	Classification	2021 Total Per Incident Type	2022 Total Per Incident Type	2023 Total Per Incident Type	2021-2023 Total	Average Incident Types Per Year 2021-2023
Assist invalid (Lift Assist) (554)	554	Alarms & Citizen Assists	752	726	927	2405	802
No incident found on arrival at dispatch address (622)	622	Alarms & Citizen Assists	501	470	500	1471	490
Dispatched and cancelled enroute (611)	611	Alarms & Citizen Assists	549	538	257	1344	448
Police matter (552)	552	Alarms & Citizen Assists	261	199	165	625	208
Alarm system activation, no fire – unintentional (745)	745	Alarms & Citizen Assists	141	174	189	504	168
Alarm system sounded due to malfunction (735)	735	Alarms & Citizen Assists	137	183	170	490	163
Smoke detector activation due to malfunction (733)	733	Alarms & Citizen Assists	111	123	117	351	117
Assist police or other governmental agency (551)	551	Alarms & Citizen Assists	104	122	108	334	111
Smoke detector activation, no fire – unintentional (743)	743	Alarms & Citizen Assists	93	84	93	270	90
False alarm or false call, other (700)	700	Alarms & Citizen Assists	95	75	97	267	89
Smoke scare, odor of smoke (651)	651	Alarms & Citizen Assists	62	117	84	263	88
Public service assistance, other (550)	550	Alarms & Citizen Assists	85	68	69	222	74
Public service (553)	553	Alarms & Citizen Assists	78	77	65	220	73
Lock-out (Person not locked inside) (511)	511	Alarms & Citizen Assists	32	68	70	170	57
CO detector activation due to malfunction (736)	736	Alarms & Citizen Assists	44	47	54	145	48
Smoke or odor removal (531)	531	Alarms & Citizen Assists	39	48	50	137	46
Water or steam leak (522)	522	Alarms & Citizen Assists	39	67	20	126	42
Sprinkler activation due to malfunction (731)	731	Alarms & Citizen Assists	41	49	26	116	39
HazMat release investigation w/no HazMat (671)	671	Alarms & Citizen Assists	48	29	30	107	36
Detector activation, no fire – unintentional (744)	744	Alarms & Citizen Assists	17	36	35	88	29
Carbon monoxide detector activation, no CO (746)	746	Alarms & Citizen Assists	26	24	34	84	28
Unauthorized burning (561)	561	Alarms & Citizen Assists	26	33	18	77	26
Defective elevator, no occupants (555)	555	Alarms & Citizen Assists	20	29	24	73	24
Arcing, shorted electrical equipment (445)	445	Alarms & Citizen Assists	27	31	13	71	24
Unintentional transmission of alarm, other (740)	740	Alarms & Citizen Assists	22	23	17	62	21
Sprinkler activation, no fire – unintentional (741)	741	Alarms & Citizen Assists	38	16	7	61	20
Electrical wiring/equipment problem, other (440)	440	Alarms & Citizen Assists	9	26	17	52	17
Authorized controlled burning (631)	631	Alarms & Citizen Assists	22	16	8	46	15
Good intent call, other (600)	600	Alarms & Citizen Assists	12	10	19	41	14
Local alarm system, malicious false alarm (715)	715	Alarms & Citizen Assists	8	17	15	40	13
Central station, malicious false alarm (714)	714	Alarms & Citizen Assists	13	15	7	35	12
Service call, other (500)	500	Alarms & Citizen Assists	13	6	12	31	10
Attempted burning, illegal action, other (480)	480	Alarms & Citizen Assists	5	11	11	27	9
Steam, vapor, fog or dust thought to be smoke (652)	652	Alarms & Citizen Assists	9	8	6	23	8
System malfunction, other (730)	730	Alarms & Citizen Assists	6	6	11	23	8
Citizen complaint (911)	911	Alarms & Citizen Assists	6	4	12	22	7
Water problem, other (520)	520	Alarms & Citizen Assists	5	9	6	20	7
Municipal alarm system, malicious false alarm (711)	711	Alarms & Citizen Assists	5	7	7	19	6
Power line down (444)	444	Alarms & Citizen Assists	3	9	6	18	6
Heat from short circuit (wiring), defective/worn (441)	441	Alarms & Citizen Assists	6	5	6	17	6
Ring or jewelry removal (512)	512	Alarms & Citizen Assists	10	2	5	17	6
Steam, other gas mistaken for smoke, other (650)	650	Alarms & Citizen Assists	6	5	5	16	5
Smoke from barbecue, tar kettle (653)	653	Alarms & Citizen Assists	5	7	3	15	5
Overheated motor (442)	442	Alarms & Citizen Assists	7	2	5	14	5
Extinguishing system activation due to malfunction (732)	732	Alarms & Citizen Assists	5	3	6	14	5
Person in distress, other (510)	510	Alarms & Citizen Assists	5	3	4	12	4
Vehicle accident, general cleanup (463)	463	Alarms & Citizen Assists	4	5	2	11	4
EMS call, party transported by non-fire agency (661)	661	Alarms & Citizen Assists	2	6	2	10	3
Animal rescue (542)	542	Alarms & Citizen Assists	5	2	0	7	2
Malicious, mischievous false call, other (710)	710	Alarms & Citizen Assists	1	4	2	7	2
Heat detector activation due to malfunction (734)	734	Alarms & Citizen Assists	3	3	1	7	2
Special type of incident, other (900)	900	Alarms & Citizen Assists	1	2	4	7	2
Cover assignment, standby, move-up (571)	571	Alarms & Citizen Assists	3	2	0	5	2
Extinguishing system activation (742)	742	Alarms & Citizen Assists	2	1	0	3	1
Animal problem (541)	541	Alarms & Citizen Assists	2	0	1	3	1
Attempt to burn (481)	481	Alarms & Citizen Assists	1	0	2	3	1
Wrong location (621)	621	Alarms & Citizen Assists	1	1	1	3	1
Lightning strike (no fire) (814)	814	Alarms & Citizen Assists	0	0	2	2	1
Biological hazard investigation, none found (672)	672	Alarms & Citizen Assists	0	1	1	2	1
Water evacuation (521)	521	Alarms & Citizen Assists	1	0	0	1	0
Animal problem, other (540)	540	Alarms & Citizen Assists	1	0	0	1	0
Prescribed fire (632)	632	Alarms & Citizen Assists	0	1	0	1	0
Direct tie to FD, malicious false alarm (712)	712	Alarms & Citizen Assists	1	0	0	1	0
Telephone, malicious false alarm (713)	713	Alarms & Citizen Assists	0	0	1	1	0
Breakdown of light ballast (443)	443	Alarms & Citizen Assists	0	0	0	0	0
Threat to burn (482)	482	Alarms & Citizen Assists	0	0	0	0	0
Vicinity alarm (incident in other location) (641)	641	Alarms & Citizen Assists	0	0	0	0	0
Severe weather or natural disaster standby (815)	815	Alarms & Citizen Assists	0	0	0	0	0
Biological hazard, malicious false report (751)	751	Alarms & Citizen Assists	0	0	0	0	0

Table 40 - NMFRD frequency of Alarms & Citizen Assists incidents by incident type (Alarms & Citizen Assists Classification) 2021 – 2023

Historical Alarms & Citizen Assists Incidents by Property Use, 2021 – 2023

Level 1 to 3 Hierarchy				
Level 1	Level 2	Level 3	Count	%
Agriculture or Vacant	Agriculture or Vacant	Agriculture or Vacant	144	1.38%
Civic/Institutional	Civic facilities	Civic facilities	67	0.64%
		Emergency Services	35	0.34%
		Special use	17	0.16%
	Corrections facilities	Corrections facilities	74	0.71%
	Early education	Early education	44	0.42%
	Education	Higher education	4	0.04%
		Primary/Secondary education	151	1.45%
	Hospitals	Hospitals	92	0.88%
	Religious	Religious	55	0.53%
Commercial	Commercial recreatio	Commercial recreation	45	0.43%
	Common area comme	Common area commercial	5	0.05%
	Office	Office	182	1.75%
	Retail/Commercial	Accommodation	182	1.75%
		Bar/Tavern/Nightclub	3	0.03%
		Commercial centers	305	2.93%
		Commercial other	358	3.44%
		Office	13	0.12%
		Restaurant/Food	94	0.90%
		Retail services	29	0.28%
Industrial/Warehouse	Industrial/Warehouse	Heavy industrial	36	0.35%
		Light industrial	73	0.70%
		Wholesale/Warehousing	80	0.77%
Mixed use	Mixed use	Mixed use commercial	53	0.51%
		Mixed use residential	22	0.21%
Open space	Open space	Open space	261	2.50%
	Parks/Recreation	Golf courses	12	0.12%
		Parks/Recreation	40	0.38%
Residential	Common area resider	Common area residential	28	0.27%
	Multifamily	Multifamily	1885	18.09%
	Senior	Age restricted	25	0.24%
		Assisted living	174	1.67%
		Nursing/Rehabilitation home	21	0.20%
	Single-Family	Mobile home	137	1.31%
		Single-family attached	525	5.04%
		Single-family detached	3537	33.94%
Transportation/Utilities	Transportation/Utiliti	Transportation	64	0.61%
		Utilities/Communications	44	0.42%
		Highway/Street/Road	1506	14.45%
Grand Total			**10422**	**100.00%**

Table 41 - NMFRD, in-district only, Alarms & Citizen Assists classification incidents by property use, 2021 – 2023.

Risk Assessment Methodology

The district recognizes that to complete a comprehensive community risk assessment, a thorough evaluation of both fire and non-fire risks is required. The district accomplished this by identifying, classifying, assessing and categorizing risks. The risk assessment allows the district to create a data-driven approach to risk mitigation, which promotes a better understanding of district capabilities and capacity to address service needs. Furthermore, it allows the district the opportunity to work toward mitigation of risk through establishing risk reduction programs that address unit demand and improve service to the community.

Identification and Classification of Risks

The district utilizes The National Fire Incident Reporting System (NFIRS), established by the National Fire Data Center of the United States Fire Administration (USFA), to categorize incident types. Classification of incident types is undertaken to ensure assessment of like-events and that incidents are not mixed with other risk classes. The district uses historical incidents to identify the types of responses. Every incident the district responds to generates a corresponding incident number, report and incident type in addition to many other data fields collected within the report. The district utilizes ImageTrend© software to report and store incident data. An important point of clarification is that incident types are selected based on what the crews found on scene, not what they were dispatched to, as this often differs.

The district has tried to prioritize accurate data collection, and the process begins with selecting the appropriate NFIRS incident type. This process can be cumbersome due to the large amount of incident type selections and the relative similarity between many of the choices. To ensure the correct determination of incident type, the district has focused a significant amount of crew training on incident categorization. The following is an NFIRS Incident Type Selection Chart, created by the district, to aid crews with selection. The chart is available to all crews and a large format poster hangs on the walls of all station offices where report writing occurs.

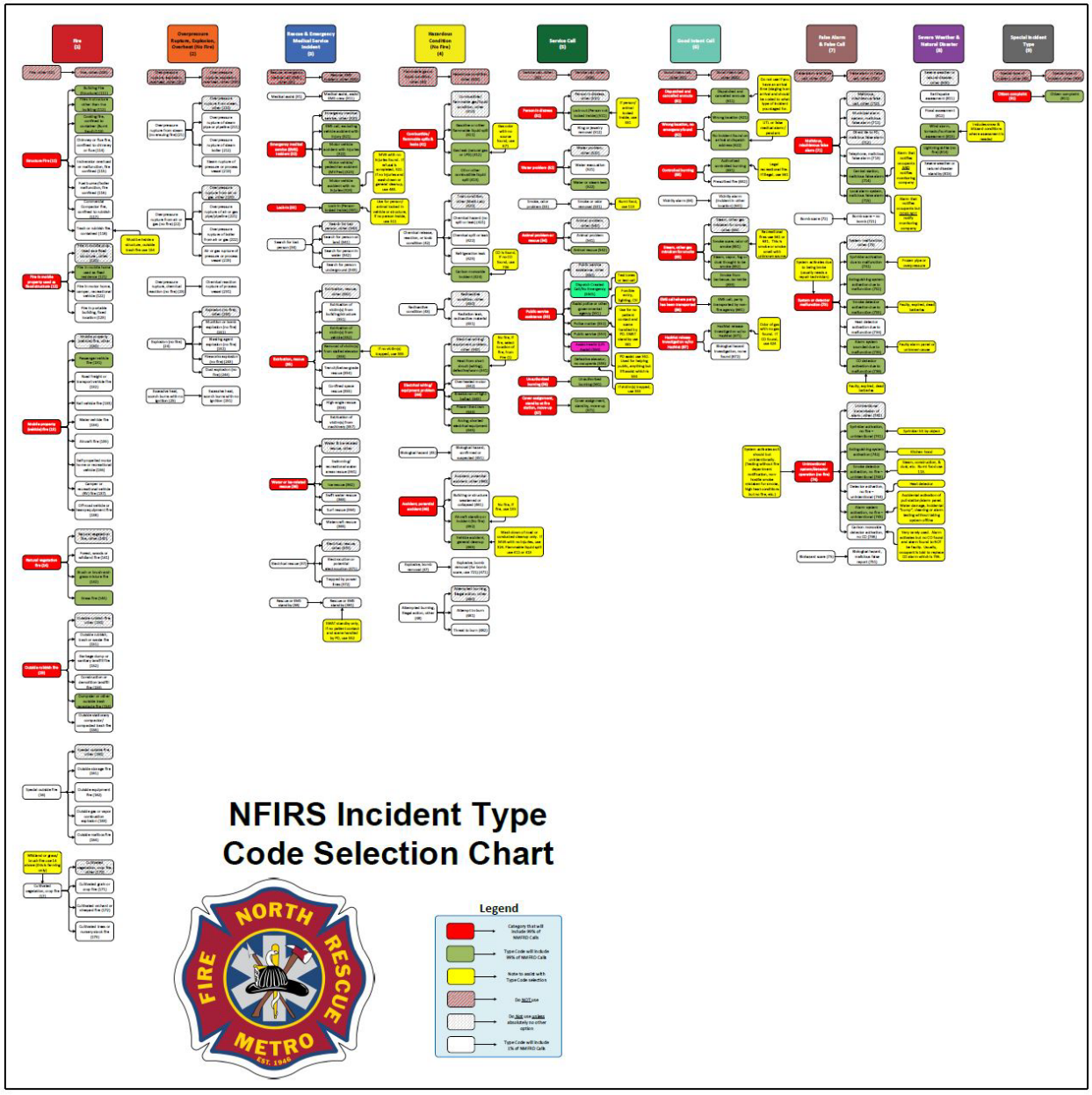


Figure 103 - NFIRS Incident Selection Chart used to aid crews to make informed decisions when selecting incident types within the incident documentation report.

While NFIRS codes are categorized into nine series based on general incident type groupings, these series were only a starting point for the district to identify risk. The district manually sorted the incident types based on the need to have incident classifications that differed from the NFIRS series categories but more clearly grouped incidents based on fire service disciplines. This sorting allowed the district to analyze historical incidents based on seven classifications. The classifications are as follows:

- Fire
- Emergency Medical Services (EMS)
- Technical Rescue
- Hazardous Materials (HazMat)
- Aircraft Rescue and Firefighting (ARFF)
- Wildland
- Domestic Preparedness

District risks were then sorted, based on these classifications, for incidents from 2018, 2019 and 2020.

Assessment of Risks

When assessing a risk, the district uses three components: **probability (threat), consequence and impact**.

Probability is the likelihood of a risk occurring. This allows the understanding of current and future workloads based on the response required to handle specific risks.

Consequence is the magnitude or loss expected to the citizens, community and response area if a specific risk occurs. Understanding consequences of risk allows the district to set service response levels and formulate risk management policies and procedures to prevent life or property loss.

Impact is the drawdown of district resources needed to mitigate an incident. Responding with insufficient resources is problematic as incident complexity or growth may cause an increased risk of loss to life and property. Similarly, responding with an excess number of resources may be detrimental to the next incident since the district has a finite amount of personnel and apparatus available for incident mitigation.

Probability is calculated by averaging the number of specific incident types, within each classification for the previous three years (2020-2022). The district then applies the frequency to a scoring matrix that values higher frequency with a higher score. Scores range from 2 – 10.

Threat/Probability		
Value	**Frequency**	**Description**
2	Yearly - Quarterly	Avg. of 0 - 4 calls per year
4	Quarterly - Monthly	Avg. of 4.1 - 12 calls per year
6	Monthly - Weekly	Avg. of 12.1 - 52 calls per year
8	Weekly - Daily	Avg. of 52.1 - 365 calls per year
10	More than Daily	Avg. of greater than 365 calls per year

Table 42 - Example of Probability Score Matrix (non-specific to any risk classification)

The district calculates consequences by identifying the risk to life or property based on the specific incident type within each classification. Some incidents may only affect property while others might affect property and life. Life supersedes property in determining the value of the consequence. As the loss to life or property increases the consequence score increases in value. Scores range from 2 – 10.

Consequence		
Value	**Life**	**Financial**
2	No loss of life	Small financial loss (< $20,000)
4	Potential loss of single life	Minor loss (property value > $20,000 but less than residential, single-family home)
6	Loss of single life	Moderate loss (property value equivalent to a residential, single-family home)
8	Loss of single life with potential for multiple lives	High loss (property value equivalent to multiple residential, single-family homes)
10	High probability of multiple lives lost	Extreme loss (property value equivalent to three or more residential, single-family homes, one multi-family apartment complex or one commercial building)

Table 43 - Example of Consequence Score Matrix (non-specific to any risk classification)

The district calculates impact by the number of personnel the specific incident type, within each classification receives on its corresponding dispatched response plan. As the number of personnel needed to mitigate an incident increase, the impact score increases in value. Scores range from 2 – 10.

Impact (Min. staffing per shift is 36)		
Value	**Number of Personnel**	**% of Total Staffing**
2	1-3	8%
4	4-5	14%
6	6-12	33%
8	13-22	61%
10	23 or greater	Greater than 61%

Table 44 - Example of Impact Score Matrix (non-specific to any risk classification)

Categorization of Risks

The district plotted the scores for response probability, consequence and impact on a 3-axis model with the values incrementally increasing as the severity increases. The three points form an inclusive triangle, and the district used Heron's formula to calculate the surface area of the triangle, which becomes a qualitative illustration of the calculated risk score.

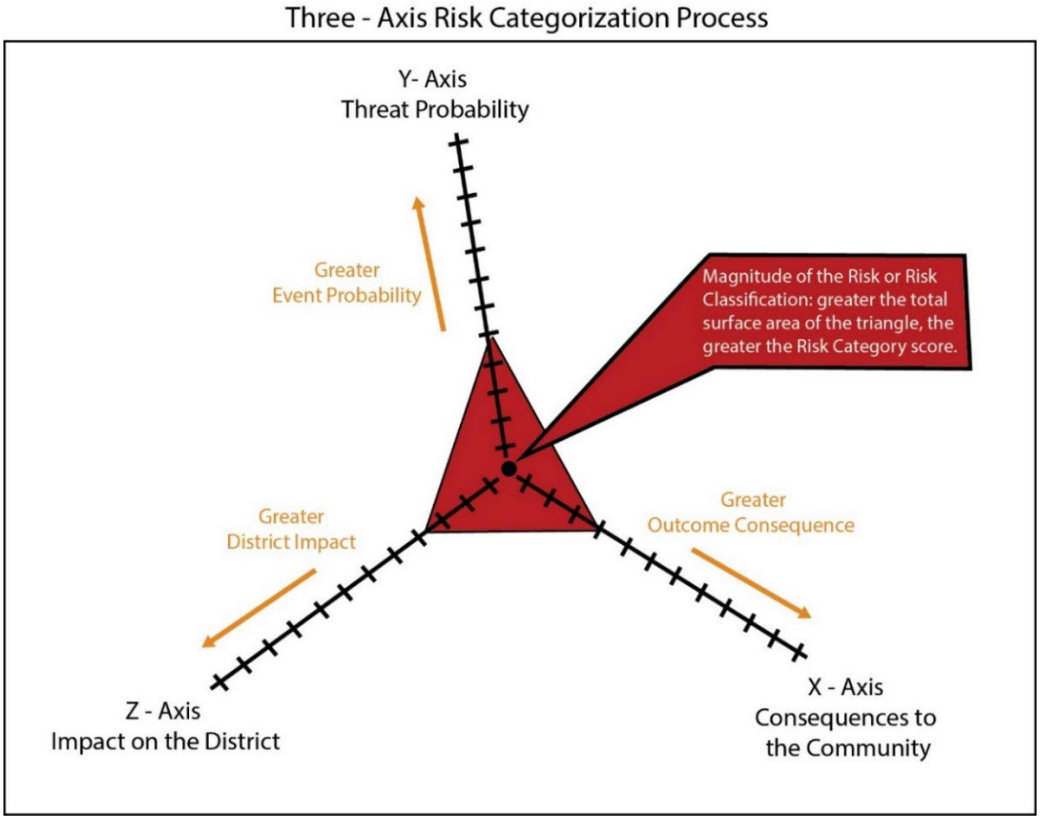


Figure 104 - Three-Axis Risk Categorization measures the magnitude of the risk. The greater the total surface area of the triangle, the greater the Risk Category score (CPSE – Quality Improvement for the Fire and Emergency Services).

The district then sorted the risk scores for specific incident types, derived from Heron's formula, from low to high within their corresponding classifications. The district then grouped incident types within each classification into categories: **low, moderate, high and maximum**.

Fire Risk

In order to avoid accounting for a single incident within two different risk classifications (i.e. Grass Fire NFIRS code 143 could be within the fire classification or the wildland classification), the district sorted some of the fire NFIRS codes into alternative classifications to better assess the risk. The results of these movements totaled 32 NFIRS incident types that fall within the fire risk classification. NFIRS incident type

111 – Building Fires (Structure) was subdivided further to separate the type of structure into Single-Family (419), Apartment Complex (429), Commercial Building (110, 161, 519, 549, 581, 592, 599, 700, 808, 849, 881), Hotel/Motel, commercial (449) and High-Rise. The district then applied the previously described risk assessment methodology to the fire incidents by means of the 3-axis approach to risk calculation using probability, consequence and impact.

Class of Risk - FIRE		
Threat/Probability		
Value	**Frequency**	**Description**
2	Yearly - Quarterly	Avg. of 0 - 4 calls per year
4	Quarterly - Monthly	Avg. of 4.1 - 12 calls per year
6	Monthly - Weekly	Avg. of 12.1 - 52 calls per year
8	Weekly - Daily	Avg. of 52.1 - 365 calls per year
10	More than Daily	Avg. of greater than 365 calls per year
Consequence		
Value	**Life**	**Financial**
2	No loss of life	Small financial loss (< $20,000)
4	Potential loss of single life	Minor loss (property value > $20,000 but less than residential, single-family home)
6	Loss of single life	Moderate loss (property value equivalent to a residential, single-family home)
8	Loss of single life with potential for multiple lives	High loss (property value equivalent to multiple residential, single-family homes)
10	High probability of multiple lives lost	Extreme loss (property value equivalent to three or more residential, single-family homes, one multi-family apartment complex or one commercial building)
Impact (Min. staffing per shift is 36)		
Value	**Number of Personnel**	**% of Total Staffing**
2	1-3	8%
4	4-5	14%
6	6-12	33%
8	13-22	61%
10	23 or greater	Greater than 61%

Table 45 - Value matrix for Fire Risk Classification

Fire Risk by Categorization

FIRE	2021 Total Per Incident Type	2022 Total Per Incident Type	2023 Total Per Incident Type	Average Incident Types per Year 2021-2023	Probability (Threat)	Consequence	Impact	Heron's Formula	Risk Categorization
Outside rubbish fire, other (150)	5	2	4	4	2	2	2	4.899	Low
Trash or rubbish fire, contained (118)	1	6	3	3	2	2	2	4.899	Low
Fire, other (100)	1	4	2	2	2	2	2	4.899	Low
Special outside fire, other (160)	2	4	0	2	2	2	2	4.899	Low
Incinerator overload or malfunction, fire confined (115)	0	2	0	1	2	2	2	4.899	Low
Fuel burner/boiler malfunction, fire confined (116)	0	1	0	0	2	2	2	4.899	Low
Commercial Compactor fire, confined to rubbish (117)	0	0	0	0	2	2	2	4.899	Low
Outside stationary compactor/compacted trash fire (155)	0	0	0	0	2	2	2	4.899	Low
Mobile property (vehicle) fire, other (130)	3	2	3	3	2	4	2	8.485	Low
Road freight or transport vehicle fire (132)	1	3	2	2	2	4	2	8.485	Low
Fires in structure other than in a building (112)	3	1	0	1	2	2	4	8.485	Low
Off-road vehicle or heavy equipment fire (138)	0	3	0	1	2	4	2	8.485	Low
Camper or recreational vehicle (RV) fire (137)	0	2	0	1	2	4	2	8.485	Low
Construction or demolition landfill fire (153)	1	0	0	0	2	2	4	8.485	Low
Chimney or flue fire, confined to chimney or flue (114)	0	0	0	0	2	2	4	8.485	Low
Water vehicle fire (134)	0	0	0	0	2	4	2	8.485	Low
Self-propelled motor home or recreational vehicle (136)	0	0	0	0	2	4	2	8.485	Low
Garbage dump or sanitary landfill fire (152)	0	0	0	0	2	2	4	8.485	Low
Outside mailbox fire (164)	0	0	0	0	2	4	2	8.485	Low
Passenger vehicle fire (131)	30	32	22	28	6	2	2	12.329	Low
Outside rubbish, trash or waste fire (151)	27	17	18	21	6	2	2	12.329	Low
Dumpster or other outside trash receptacle fire (154)	13	15	13	14	6	2	2	12.329	Low
Outside equipment fire (162)	1	4	3	3	2	4	4	13.856	Low
Outside storage fire (161)	1	1	2	1	2	4	4	13.856	Low
Fire in mobile prop. Used as a fixed structure., other (120)	0	0	0	0	2	4	4	13.856	Low
Fire in motor home, camper, recreational vehicle (122)	0	0	0	0	2	4	4	13.856	Low
Cooking fire, confined to container (Burnt food) (113)	27	16	22	22	6	2	4	19.799	Low
Fire in portable building, fixed location (123)	0	1	1	1	2	4	8	25.923	Moderate
Fire in mobile home used as fixed residence (121)	0	0	1	0	2	4	8	25.923	Moderate
Rail vehicle fire (133)	0	0	0	0	2	4	8	25.923	Moderate
Outside gas or vapor combustion explosion (163)	0	0	1	0	2	8	8	48.000	Moderate
Building Fire (Structure) (111) - Single Family Home	15	17	15	16	6	6	8	54.332	Moderate
Building Fire (Structure) (111) - Apartment Complex	9	8	7	8	4	10	8	67.171	High
Building Fire (Structure) (111) - Commercial Building	1	7	3	4	4	10	8	67.171	High
Building Fire (Structure) (111) - Hotel/motel, commercial	1	0	2	1	2	10	10	73.485	Maximum
Building Fire (Structure) (111) - High-Rise	0	0	0	0	2	10	10	73.485	Maximum

Table 46 - Fire Risk sorted by risk score and risk categorization (2021-2023).

The district sorted the fire incident types based on the value of Heron's formula, or the surface area of the triangle formed by the 3-axis risk plotting. The result produced a list of fire incident types in the fire classification, categorized into low, moderate, high and maximum risk (see Fire Risk by Categorization above).

Fire Risk Category Characteristics

As shown in the previous charts, fire risks may range from small incidents threatening no lives and a small amount of property loss, to large incidents that may threaten multiple lives and large amounts of property. Every fire incident is unique, and a small incident, without timely, effective mitigation, may grow in complexity and consequence to not only the citizens but also fire personnel. Generally, the district believes that fire risk category characteristics are described best using the following matrix:

Fire Risk Category Characteristics	
Low Risk	**Moderate Risk**
▪Typically has higher frequency (three times a month or more)	▪Typically occurs once a month or slightly more
▪Usually involves piece of equipment or vehicle	▪Usually involves a smaller structure and capacity
▪Does not typically involve threat to life	▪Threat to life is possible
▪*Examples:* Cooking fire, confined to container (burnt food), Passenger vehicle fire, Trash or rubbish fire, Outside equipment fire	▪*Examples:* Building fire (single-family home), Fire in portable building, Fire in mobile home
High Risk	**Maximum Risk**
▪Typically has lower frequency (less than once a month)	▪Typically has very low frequency (1-2 times per year or less)
▪Involves a structure that is larger in size and capacity (larger than a single-family home)	▪Involves a very large structure in size and capacity
▪Involves a structure where multiple lives are threatened	▪Involves a structure where multiple lives are threatened
▪*Examples:* Building fire (apartment complex), Building fire (commercial building)	▪*Examples:* Building fire (hotel/motel, commercial), Building fire (High-rise)

Figure 105 - NFMRD Fire risk category characteristics (low, moderate, high and maximum risk)

Emergency Medical Services (EMS) Risk

There are eight NFIRS incident types within the EMS classification (including NFIRS 321 - EMS call, excluding vehicle accidents with injuries). However, NFIRS EMS call, excluding vehicle accident with injuries (321) contains many different medical related subcategories. The decision to break NFIRS 321 into subcategories was made to have a better understanding of risk related to different types of medical emergencies. As a result, NFIRS 321 contains 23 different types of medical emergency incidents, bringing the incident type total within the EMS classification to 30.

In addition to the threat, consequence and impact score, the district adds a modifier score based on the likelihood of the incident resulting in an emergent transport to the hospital – a strong indicator of incident severity and risk. This modifier was added to adjust the calculated total risk score to more accurately match the reality of the associated risk. For example, Childbirth, a subcategory of NFIRS code 321, scores a total risk score of 19.6, which makes it the sixth lowest risk incident type within the EMS classification. This occurs because this type of incident only receives a score of 4 for threat (frequency of quarterly - monthly), a score of 4 for consequence (potential loss to single life) and a score of 4 for impact (4-5 personnel). Yet, this type of incident has significantly more risk than other incidents with similar total risk scores and results in emergent transports to the hospital over 31.8% of the time.

The district determined that even though an incident does not occur often (threat), does not result in the loss of a life (consequence) and does not require significant personnel to mitigate (impact), does not mean that the incident does not warrant a higher risk score. Due to threat and consequence being constant, the only way to increase the total risk score would be to adjust impact. However, the incident does not require additional personnel to mitigate, which is the only method to increase the impact score. In addition, district personnel are proficient in prehospital medicine and are aware of the associated risks involved while driving emergent to the hospital and do not transport patients to the hospital emergent when not necessary. The district reserves emergent transport for patients requiring immediate hospital intervention where time, or specific medical procedures, may impact patient outcomes. Using percentage of time, a specific EMS incident type results in an emergent transport to the hospital is a good indicator of risk, or the potential severity of the emergency to the patient.

The district applies this risk assessment methodology to all EMS incidents using the 3-axis approach to risk calculation using probability, consequence and impact, with the addition of a modifier derived from the calculated likelihood of the specific EMS incident resulting in an emergent transport.

Class of Risk Components - EMS		
Threat/Probability		
Value	**Frequency**	**Description**
2	Yearly - Quarterly	Avg. of 1 - 4 calls per year
4	Quarterly - Monthly	Avg. of 4.1 - 12 calls per year
6	Monthly - Weekly	Avg. of 12.1 - 52 calls per year
8	Weekly - Daily	Avg. of 52.1 - 365 calls per year
10	More than Daily	Avg. of greater than 365 calls per year
Consequence		
Value	**Life**	**Financial**
2	No loss of life	Small financial loss (< $20,000)
4	Potential loss of single life	Minor loss (property value > $20,000 but less than residential, single-family home)
6	Loss of single life	Moderate loss (property value equivalent to a residential, single-family home)
8	Loss of single life with potential for multiple lives	High loss (property value equivalent to multiple residential, single-family homes)
10	High probability of multiple lives lost	Extreme loss (property value equivalent to three or more residential, single-family homes, one multi-family apartment complex or one commercial building)
Impact (Min. staffing per shift is 36)		
Value	**Number of Personnel**	**% of Total Staffing**
2	1-3	8%
4	4-5	14%
6	6-7	19%
8	8-14	39%
10	15 or greater	Greater than 39%
Emergent Transport to Hospital Modifier		
0-10%	0	
10.1-30%	10	
30.1-50%	15	
50.1-70%	20	
70.1-100%	25	

Table 47 - Value matrix for EMS Risk Classification

EMS Risk by Categorization

EMS	2021 Total Per Incident Type	2022 Total Per Incident Type	2023 Total Per Incident Type	Average Incident Types per Year 2021-2023	% of Patients within Specific Incident Type Transported Emergent to Hospital	Modifier Based on Likelihood of Emergent Transport to Hospital	Probability (Threat)	Consequence	Impact	Heron's Formula	Risk Categorization
Rescue, EMS incident, other (300)	3	0	1	1	25.0%		2	2	4	8.49	Low
Medical assist, assist EMS crew (311)	25	19	14	19	0.0%		6	2	2	12.33	Low
Emergency medical service, other (320)	26	11	23	20	0.0%		6	2	2	12.33	Low
PD Blood Draw (Z52.0) - (Subcategory of 321)	68	33	39	47	0.0%		6	2	2	12.33	Low
Rescue or EMS standby (381)	7	4	7	6	0.0%		4	2	4	13.86	Low
Environmental Problem (Z77.12) - (Subcategory of 321)	16	16	25	19	0.0%		6	2	4	19.80	Low
Allergic Reaction (L50.0) - (Subcategory of 321)	40	42	46	43	4.7%		6	2	4	19.80	Low
No Patient Complaint (Z00.00) - (Subcategory of 321)	45	82	84	70	0.0%		8	2	4	25.92	Low
Not Applicable/Recorded - (Subcategory of 321)	131	89	0	73	2.3%		8	2	4	25.92	Low
Diabetic Problem (E08) - (Subcategory of 321)	69	94	87	83	2.0%		8	2	4	25.92	Low
Seizure/Convulsions (R56.9) - (Subcategory of 321)	245	231	243	240	4.2%		8	2	4	25.92	Low
Syncope/Fainting (R55) - (Subcategory of 321)	283	309	307	300	3.7%		8	2	4	25.92	Low
Pain (Non Traumatic, Abdominal, or Chest) (R52) - (Subcategory of 321)	312	311	312	312	0.2%		8	2	4	25.92	Low
Abdominal Pain (R10.84) - (Subcategory of 321)	382	465	371	406	2.1%		10	2	4	32.12	Low
Behavioral/Psychiatric Problem (Z86.59) - (Subcategory of 321)	408	413	441	421	0.6%		10	2	4	32.12	Low
Motor vehicle accident with no injuries (324)	459	431	452	447	0.1%		10	2	4	32.12	Low
Alcohol/Drug Problem or Overdose (F10.9) - (Subcategory of 321)	527	466	452	482	1.9%		10	2	4	32.12	Low
General Illness (R69) - (Subcategory of 321)	1168	1154	1260	1194	1.9%		10	2	4	32.12	Low
Childbirth (O60.23) - (Subcategory of 321)	9	8	5	7	31.8%	15	4	4	4	34.60	Moderate
OB/GYN Problem (Z01.411) - (Subcategory of 321)	22	15	23	20	10.0%	10	6	4	4	36.53	Moderate
Motor vehicle accident with injuries (322)	433	430	421	428	3.7%		10	4	4	41.57	Moderate
Difficulty Breathing (R06.02) - (Subcategory of 321)	502	485	555	514	8.3%		10	4	4	41.57	Moderate
Traumatic Injury (G89.11) Non-Violent - (Subcategory of 321)	1254	1301	1227	1261	2.4%		10	4	4	41.57	Moderate
Chest Pain (Cardiac) (R07.9) - (Subcategory of 321)	321	354	318	331	12.7%	10	8	4	4	43.94	Moderate
Altered Level of Consciousness (R41.82) - (Subcategory of 321)	355	347	335	346	13.9%	10	8	4	4	43.94	Moderate
Motor vehicle/pedestrian accident (MV Ped) (323)	24	19	30	24	13.7%	10	6	4	6	44.99	Moderate
Gunshot Wound/Stabbing - (Subcategory of 321)	21	32	33	29	29.1%	10	6	6	6	54.09	High
Suspected Stroke/CVA (G46.4) - (Subcategory of 321)	162	150	131	148	70.7%	25	8	4	4	58.94	High
Cardiac Arrest (I46.2) - (Subcategory of 321)	165	158	137	153	16.1%	10	8	6	6	64.33	High
Mass Causality Incident (No NFIRS code, > 3 units transporting)	0	0	0	0	0.0%	15	2	10	10	88.48	Maximum
EMS call, (321) - (No PCR Associated)	801	1491	1637	1310	0.0%						No Risk Associated

Table 48 - EMS Risk sorted by risk score and risk categorization (2021-2023).

The district sorted the EMS incident types based on the value of Heron's formula, or the surface area of the triangle formed by the 3-axis risk plotting with the addition of the modifier. The result produced a list of EMS incident types, in the EMS classification, categorized into low, moderate, high and maximum risk as shown in the preceding table 48.

EMS Risk Category Characteristics

As discussed, EMS risks may range from minor incidents threatening no lives to large incidents that may threaten multiple lives. Every EMS incident is unique, however, and a minor incident -without timely, effective mitigation - may have a significant impact on patient outcome. Generally, the district believes that EMS risk category characteristics are described best using the following matrix:

EMS Risk Category Characteristics	
Low Risk	**Moderate Risk**
▪Typically has higher frequency (daily or more than daily)	▪Typically has higher frequency (daily or more than daily)
▪Very low percentage of emergent transport to hospital	▪Moderate percentage of emergent transport to hospital
▪Does not typically involve threat to life	▪Threat to life is possible
▪*Examples:* Alcohol/Drug problem or overdose, General illness, Motor vehicle accident with no injuries, Pain (non-traumatic, Diabetic problem	▪*Examples:* Childbirth, OB/GYN problems, Traumatic injury, Motor vehicle accident with injuries, Motor vehicle/pedestrian accident, Difficulty breathing, Chest pain
High Risk	**Maximum Risk**
▪Frequency may vary depending on type of incident	▪Typically has very low or no frequency
▪Moderate to high percentage of emergent transport to hospital	▪High percentage of emergent transport to hospital
▪Threat to life is likely	▪Threat to life possible to likely
▪*Examples:* Gunshot wound/stabbing, Suspected stroke/CVA, Cardiac arrest	▪*Examples:* Mass Causality Incident

Figure 106 - NFMRD EMS risk category characteristics (low, moderate, high and maximum risk)

Technical Rescue Risk

There are 24 NFIRS incident codes within the technical rescue classification (including NFIRS *352-Extrication of victims from vehicle).* Reporting of the total number of incidents that fall within NFIRS 352-Extrication of victims from vehicle is historically low, partly due to the district transporting most patients to the hospital, post-extrication. This often results in the incidents being categorized within NFIRS *322 – Motor vehicle accident with injuries,* which falls within the EMS classification.

In addition to the threat, consequence and impact score, the district chose to add a modifier score based on the level of training necessary to mitigate the specific type of incident and the relative frequency of the event. This added modifier was primarily due to the total risk score not matching the reality of the associated risk. For example, High-angle rescue (356) carries an associated total risk score of 19.6, which makes it just above a low risk and on the lower end of moderate risk within the technical rescue classification. This incident would only receive a score of 2 for threat (frequency of yearly - quarterly), a score of 4 for consequence (potential loss to single life) and a score of 6 for impact (6-12 personnel). Yet, this type of incident has significantly more risk than other incidents with similar total risk scores.

The district has a specialized technical rescue station that has crewmembers qualified to the technical rescue technician level. In addition, the district is a member of the North Area Technical Rescue Team, which deploys technician qualified units within a northern area response plan. Having well-trained personnel that specialize in specific types of technical rescue incidents is imperative to successful mitigation and is the best method for mitigating emergencies that have a very low frequency.

Class of Risk - Rescue		
Threat/Probability		
Value	**Frequency**	**Description**
2	Yearly - Quarterly	Avg. of 1 - 4 calls per year
4	Quarterly - Monthly	Avg. of 4.1 - 12 calls per year
6	Monthly - Weekly	Avg. of 12.1 - 52 calls per year
8	Weekly - Daily	Avg. of 52.1 - 365 calls per year
10	More than Daily	Avg. of greater than 365 calls per year
Consequence		
Value	**Life**	**Financial**
2	No loss of life	Small financial loss (< $20,000)
4	Potential loss of single life	Minor loss (property value > $20,000 but less than residential, single-family home)
6	Loss of single life	Moderate loss (property value equivalent to a residential, single-family home)
8	Loss of single life with potential for multiple lives	High loss (property value equivalent to multiple residential, single-family homes)
10	High probability of multiple lives lost	Extreme loss (property value equivalent to three or more residential, single-family homes, one multi-family apartment complex or one commercial building)
Impact (Min. staffing per shift is 36)		
Value	**Number of Personnel**	**% of Total Staffing**
2	1-3	8%
4	4-5	14%
6	6-12	33%
8	13-22	61%
10	23 or greater	Greater than 61%
Modifier Based on Level of Training and Familiarity Crews have to Mitigate Incident		
All crews trained with higher frequency	-5	
All crews trained with moderate frequency	0	
All crews trained with low or no frequency	5	
Specialized training with lower frequency	10	
Specialized training with very low or no frequency	15	

Table 49 - Value matrix for Technical Rescue Risk Classification

Technical Rescue Risk by Categorization

RESCUE	2021 Total Per Incident Type	2022 Total Per Incident Type	2023 Total Per Incident Type	Average Incident Types per Year 2021-2023	Modifer Based on Level of Training and Familiarity Crews have to Mitigate Incident	Probability (Threat)	Consequence	Impact	Heron's Formula	Risk Categorization
Lock-in (Person locked inside) (331)	29	34	43	35	-5	6	2	2	7.329	Low
Extrication, rescue, other (350)	0	1	1	1		2	4	2	8.485	Low
Electrical, rescue, other (370)	0	1	0	0		2	4	2	8.485	Low
Removal of victim(s) from stalled elevator (353)	52	68	66	62	-5	8	2	2	11.248	Low
Accident, potential accident, other (460)	1	0	2	1		2	4	4	13.856	Low
Electrocution or potential electrocution (371)	0	0	0	0		2	4	4	13.856	Low
Building or structure weakened or collapsed (461)	1	1	3	2		2	4	6	19.799	Moderate
Search for lost person, other (340)	0	0	0	0		2	4	6	19.799	Moderate
Search for person on land (341)	0	0	0	0		2	4	6	19.799	Moderate
Search for person in water (342)	0	0	0	0		2	4	6	19.799	Moderate
Search for person underground (343)	0	0	0	0		2	4	6	19.799	Moderate
Surf rescue (364)	0	0	0	0		2	4	6	19.799	Moderate
Watercraft rescue (365)	0	0	0	0		2	4	6	19.799	Moderate
Ice rescue (362)	2	3	3	3	5	2	4	6	24.799	Moderate
Water & ice-related rescue, other (360)	1	1	1	1	5	2	4	6	24.799	Moderate
Swimming/recreational water areas rescue (361)	0	0	0	0	5	2	4	6	24.799	Moderate
Trapped by power lines (372)	0	0	0	0	10	2	4	6	29.799	Moderate
Extrication of victim(s) from vehicle (352)	8	2	7	6	5	4	4	6	31.533	Moderate
Extrication of victim(s) from machinery (357)	1	0	1	1	10	2	4	8	35.923	Moderate
High-angle rescue (356)	0	0	1	0	15	2	4	8	40.923	High/Maximum
Swift water rescue (363)	0	0	0	0	15	2	4	8	40.923	High/Maximum
Trench/below-grade rescue (354)	1	0	0	0	15	2	6	8	51.770	High/Maximum
Confined space rescue (355)	0	0	1	0	15	2	6	8	51.770	High/Maximum
Extrication of victim(s) from building/structure (351)	2	0	2	1	15	2	10	10	88.485	High/Maximum

Table 50 - Technical Rescue Risk sorted by risk score and risk categorization (2021-2023).

The district sorted the technical rescue incident types based on the value of Heron's formula, or the surface area of the triangle formed by the 3-axis risk plotting with the addition of the modifier. The result produced a list of technical rescue incident types, in the technical rescue classification, categorized into low, moderate, and high/maximum risk as shown in the preceding table 50.

Technical Rescue Risk Category Characteristics

As seen above, technical rescue risks may range from minor incidents threatening no lives to large incidents that may threaten multiple lives. Every technical rescue incident is unique and a minor incident, without timely, effective mitigation, may have a significant impact to patient outcome. Generally, the district believes that technical rescue risk category characteristics are described best using the following matrix:

Technical Rescue Risk Category Characteristics	
Low Risk	**Moderate Risk**
▪Typically has moderate frequency (monthly to weekly)	▪Typically has low frequency (once a year or once a quarter)
▪All crews are trained to mitigate	▪All crews are trained to mitigate but specialized training might be needed (need for technical rescue team)
▪Does not typically involve threat to life	▪Threat to life is possible
▪*Examples:* Lock-in (person locked inside), Removal of victims from stalled elevator, Electrical, rescue, other, Accident, potential accident, other	▪*Examples:* Search for lost person, Ice rescue, Extrication of victims from vehicle, Water & ice related rescue, Swimming/recreational water areas rescue, Extrication of victims from machinery, Trapped by power lines
High/Maximum Risk	
▪Typically has very low or no frequency	
▪Specialized training required (need for technical rescue team and/or north area technical rescue team	
▪Threat to life possible to likely	
▪*Examples:* High-angle rescue, Trench/below-grade rescue, Confined space rescue, Extrication of victims from building/structure	

Figure 107 - NFMRD Technical Rescue risk category characteristics (low, moderate and high/maximum risk)

Hazardous Materials (HazMat) Risk

To avoid accounting for a single incident within two risk classifications (i.e. Explosion – no fire NFIRS code 240, could be within the hazardous materials classification or the domestic preparedness classification), the district sorted the fire NFIRS codes into alternative classifications. The results of these movements totaled 26 NFIRS incident types that fall within the hazardous materials risk classification. The district then applied the previously described risk assessment methodology to the hazardous materials incidents using the 3-axis approach to risk calculation using probability, consequence and impact.

Class of Risk - HazMat		
Threat/Probability		
Value	**Frequency**	**Description**
2	Yearly - Quarterly	Avg. of 1 - 4 calls per year
4	Quarterly - Monthly	Avg. of 4.1 - 12 calls per year
6	Monthly - Weekly	Avg. of 12.1 - 52 calls per year
8	Weekly - Daily	Avg. of 52.1 - 365 calls per year
10	More than Daily	Avg. of greater than 365 calls per year
Consequence		
Value	**Life**	**Financial**
2	No loss of life	Small financial loss (< $20,000)
4	Potential loss of single life	Minor loss (property value > $20,000 but less than residential, single-family home)
6	Loss of single life	Moderate loss (property value equivalent to a residential, single-family home)
8	Loss of single life with potential for multiple lives	High loss (property value equivalent to multiple residential, single-family homes)
10	High probability of multiple lives lost	Extreme loss (property value equivalent to three or more residential, single-family homes, one multi-family apartment complex or one commercial building)
Impact (Min. staffing per shift is 36)		
Value	**Number of Personnel**	**% of Total Staffing**
2	1-3	8%
4	4-5	14%
6	6-12	33%
8	13-22	61%
10	23 or greater	Greater than 61%

Table 51 - Value matrix for HazMat Risk Classification

Hazardous Materials Risk by Categorization

HAZMAT	2021 Total Per Incident Type	2022 Total Per Incident Type	2023 Total Per Incident Type	Average Incident Types per Year 2021-2023	Probability (Threat)	Consequence	Impact	Heron's Formula	Risk Categorization
Chemical spill or leak (422)	4	5	5	5	2	2	2	4.899	Low
Chemical hazard (no spill or leak) (421)	4	2	4	3	2	2	2	4.899	Low
Combustible/flammable gas/liquid condition, other (410)	2	1	2	2	2	2	2	4.899	Low
Refrigeration leak (423)	0	2	2	1	2	2	2	4.899	Low
Oil or other combustible liquid spill (413)	5	3	4	4	4	2	2	8.485	Low
Excessive heat, scorch burns with no ignition (251)	5	1	5	4	2	4	2	8.485	Low
Carbon monoxide incident (424)	20	41	25	29	6	2	2	12.329	Low
Gasoline or other flammable liquid spill (411)	14	10	19	14	6	2	2	12.329	Low
Gas leak (natural gas or LPG) (412)	97	104	110	104	8	2	2	16.248	Low
Hazardous condition, other (400)	3	3	2	3	2	4	6	19.799	Moderate
Toxic condition, other (Meth Lab) (420)	0	0	1	0	2	4	6	19.799	Moderate
Overpressure rupture of air or gas pipe/pipeline (221)	2	0	2	1	2	4	8	25.923	High
Overpressure rupture, explosion, overheat, other (200)	1	1	1	1	2	4	8	25.923	High
Air or gas rupture of pressure or process vessel (223)	0	2	1	1	2	4	8	25.923	High
Overpressure rupture of boiler from air or gas (222)	0	1	0	0	2	4	8	25.923	High
Chemical reaction rupture of process vessel (231)	0	0	1	0	2	4	8	25.923	High
Overpressure rupture of steam boiler (212)	0	0	0	0	2	4	8	25.923	High
Overpressure rupture from air or gas, other (220)	0	0	0	0	2	4	8	25.923	High
Overpressure rupture from steam, other (210)	0	0	0	0	2	4	8	25.923	High
Overpressure rupture of steam pipe or pipeline (211)	0	0	0	0	2	4	8	25.923	High
Steam rupture of pressure or process vessel (213)	0	0	0	0	2	4	8	25.923	High
Radiation leak, radioactive material (431)	0	1	0	0	2	6	8	36.770	High
Radioactive condition, other (430)	0	0	0	0	2	6	8	36.770	High
Explosion (no fire), other (240)	1	0	0	0	2	8	8	48.000	High
Fireworks explosion (no fire) (243)	1	1	0	1	2	8	10	59.397	Maximum
Dust explosion (no fire) (244)	0	0	0	0	2	8	10	59.397	Maximum

Table 52 - Hazardous Materials Risk sorted by risk score and risk categorization (2021-2023).

The district sorted the hazardous materials incident types based on the value of Heron's formula, or the surface area of the triangle formed by the 3-axis risk plotting. The result produced a list of hazardous materials incident types, in the hazardous materials classification, categorized into low, moderate, high and maximum risk as shown in the preceding table 52.

Hazardous Materials Risk Category Characteristics

As seen above, hazardous materials risks may range from minor incidents threatening no lives to large incidents that may threaten multiple lives. Every hazardous materials incident is unique and a minor incident, without timely, effective mitigation, may have a significant impact on a single patient or an entire area of the district affecting large portions of the population. Generally, the district believes that hazardous materials risk category characteristics are described best using the following matrix:

Hazardous Materials Risk Category Characteristics	
Low Risk	**Moderate Risk**
▪Typically has high frequency (weekly to daily)	▪Typically has very low or no frequency
▪All crews have appropriate equipment and training to mitigate	▪All crews are trained to mitigate but specialized training possibly needed (need for HazMat level response)
▪Does not typically involve threat to life	▪Threat to life is possible
▪*Examples:* Chemical spill or leak, Chemical hazard (no spill or leak), Combustible/flammable gas/liquid condition, Carbon monoxide incident, Gas leak (natural gas or LPG)	▪*Examples:* Hazardous condition, Toxic condition
High/Maximum Risk	
▪Typically has very low or no frequency	
▪Specialized training required (need for HazMat level response and/or Adams/Jeffco HazMat Team	
▪Threat to life is possible to likely	
▪*Examples:* Overpressure rupture, Chemical reaction rupture, Steam rupture, Radioactive condition, Radiation leak, Explosion (no fire), Fireworks explosion, Dust explosion, Train incident	

Figure 108 - NFMRD Hazardous Materials risk category characteristics (low, moderate and high/maximum risk)

Aircraft Rescue and Firefighting (ARFF) Risk

There are only two NFIRS incident codes that apply to the ARFF classification (including NFIRS *462 – Aircraft standby or incident no fire).* However, NFIRS *462 – Aircraft standby or incident (no fire*) contains three different aircraft related incident subcategories. These subcategories are not an official NFIRS subcategory but instead a district subcategory used to analyze the types of aircraft incidents that occur within the jurisdiction. The subcategories of NFIRS *462 – Aircraft standby or incident (no fire)* are Alert 1, Alert 2 and Alert 3.

Alert 1 is an aircraft that is known or suspected to have an operational defect that should not normally cause serious difficulty in achieving a safe landing. Alert 1 is "notification only" and generally an incident report is not completed because most often there is no action taken, and therefore, no incident. Alert 1 notifications do not require a response.

Alert 2 incidents are standby responses where the pilot of an aircraft has recognized a malfunction in the aircraft that could affect safe landing. Dispatched units respond to the scene and ensure safe landing of the aircraft. Alert 2 incidents do not result in an aircraft accident or crash.

Alert 3 incidents are confirmed aircraft accidents or crashes.

The additional subcategories totaled four incident types that fall within the ARFF risk classification. The district applied the previously described risk assessment methodology to the ARFF incidents using the 3-axis approach to risk calculation using probability, consequence and impact.

Class of Risk - ARFF		
Threat/Probability		
Value	**Frequency**	**Description**
2	Yearly - Quarterly	Avg. of 1 - 4 calls per year
4	Quarterly - Monthly	Avg. of 4.1 - 12 calls per year
6	Monthly - Weekly	Avg. of 12.1 - 52 calls per year
8	Weekly - Daily	Avg. of 52.1 - 365 calls per year
10	More than Daily	Avg. of greater than 365 calls per year
Consequence		
Value	**Life**	**Financial**
2	No loss of life	Small financial loss (< $20,000)
4	Potential loss of single life	Minor loss (property value > $20,000 but less than residential, single-family home)
6	Loss of single life	Moderate loss (property value equivalent to a residential, single-family home)
8	Loss of single life with potential for multiple lives	High loss (property value equivalent to multiple residential, single-family homes)
10	High probability of multiple lives lost	Extreme loss (property value equivalent to three or more residential, single-family homes, one multi-family apartment complex or one commercial building)
Impact (Min. staffing per shift is 36)		
Value	**Number of Personnel**	**% of Total Staffing**
2	1-3	8%
4	4-5	14%
6	6-12	33%
8	13-22	61%
10	23 or greater	Greater than 61%

Table 53 - Value matrix for Aircraft Rescue and Firefighting (ARFF) Risk Classification

ARFF Risk by Categorization

ARFF	2021 Total Per Incident Type	2022 Total Per Incident Type	2023 Total Per Incident Type	Average Incident Types per Year 2021-2023	Probability (Threat)	Consequence	Impact	Heron's Formula	Risk Categorization
Aircraft standby or incident (No fire) (462) - Alert 1	5	2	6	4	4	2	2	8.485	Low
Aircraft standby or incident (No fire) (462) - Alert 2	13	19	8	13	4	4	8	33.941	Moderate
Aircraft fire (135)	0	0	0	0	2	6	8	36.770	High/Maximum
Aircraft standby or incident (No fire) (462) - Alert 3	3	5	1	3	4	6	8	44.181	High/Maximum

Table 54 - Aircraft Rescue and Firefighting (ARFF) Risk sorted by risk score and risk categorization (2021-2023).

The district sorted the ARFF incident types based on the value of Heron's formula, or the surface area of the triangle formed by the 3-axis risk plotting. The result produced a list of ARFF incident types, in the ARFF classification, categorized into low, moderate, high and maximum risk as shown in the preceding table 54. Alert 1 calls for service were eliminated from the risk category because an Alert 1 does not generate a response and has no actual risk associated with it. This removal caused the low-risk category to be unnecessary as it was the only incident type categorized as low risk.

Aircraft Rescue and Firefighting (ARFF) Risk Category Characteristics

As seen above, ARFF risks may range from moderate incidents threatening a single life to large incidents that may threaten multiple lives. Every ARFF incident is unique and a moderate incident, without timely, effective mitigation, may have a significant impact on a single patient or an entire area of the district affecting large portions of the population. Generally, the district believes that ARFF risk category characteristics are described best using the following matrix:

ARFF Risk Category Characteristics	
Moderate Risk	**High/Maximum Risk**
▪Typically has very low frequency (occuring less than once per month)	▪Typically has very low frequency (occuring once every two months)
▪Specialized training required (need for ARFF level response which may include additional ARFF response from airport staff	▪Specialized training required (need for ARFF level response which may include additional ARFF response from airport staff
▪Threat to life is possible	▪Threat to life is possible to likely
▪*Examples:* Metro Tower tones crews and Battalion chief to Alert 2 incident, which receives full aircraft incident response and all units respond to predesignated positions	▪*Examples:* Aircraft fire or Aircraft incident Alert 3 (aircraft accident)

Figure 109 - NFMRD Aircraft and Rescue Fire Fighting (ARFF) risk category characteristics (moderate and high/maximum risk)

Wildland Risk

To avoid the categorization of a single incident within two different risk classifications (i.e. Grass fire NFIRS code 143 could be within the fire classification or the wildland classification), the district sorted some of the fire NFIRS codes into alternative classifications to further clarify risk. The results of this sorting totaled eleven NFIRS incident types that fall within the wildland risk classification.

The district applied the previously described risk assessment methodology to wildland incidents using the 3-axis approach to risk calculation using probability, consequence and impact.

Class of Risk - Wildland		
Threat/Probability		
Value	**Frequency**	**Description**
2	Yearly - Quarterly	Avg. of 1 - 4 calls per year
4	Quarterly - Monthly	Avg. of 4.1 - 12 calls per year
6	Monthly - Weekly	Avg. of 12.1 - 52 calls per year
8	Weekly - Daily	Avg. of 52.1 - 365 calls per year
10	More than Daily	Avg. of greater than 365 calls per year
Consequence		
Value	**Life**	**Financial**
2	No loss of life	Small financial loss (< $20,000)
4	Potential loss of single life	Minor loss (property value > $20,000 but less than residential, single-family home)
6	Loss of single life	Moderate loss (property value equivalent to a residential, single-family home)
8	Loss of single life with potential for multiple lives	High loss (property value equivalent to multiple residential, single-family homes)
10	High probability of multiple lives lost	Extreme loss (property value equivalent to three or more residential, single-family homes, one multi-family apartment complex or one commercial building)
Impact (Min. staffing per shift is 36)		
Value	**Number of Personnel**	**% of Total Staffing**
2	1-3	8%
4	4-7	14%
6	8-12	33%
8	13-22	61%
10	23 or greater	Greater than 61%
Modifier Based on Number of Personnel Needed to Mitigate Incident		
7 or less personnel on scene	0	
8 or more personnel on scene	10	

Table 55 - Value matrix for Wildland Risk Classification

Wildland Risk by Categorization

WILDLAND	2021 Total Per Incident Type	2022 Total Per Incident Type	2023 Total Per Incident Type	Average Incident Types Per Year 2021-2023	Modifer Based on Number of Personnel Needed to Mitigate Incident	Probability (Threat)	Consequence	Impact	Heron's Formula	Risk Categorization
Brush or brush-and-grass mixture fire (142) - 7 or less personnel needed	11	22	12	15		6	2	4	19.799	Low
Grass fire (143) - 7 or less personnel needed	10	23	9	14		6	2	4	19.799	Low
Natural vegetation fire, other (140) - 7 or less personnel needed	2	4	3	3		2	2	4	8.485	Low
Grass fire (143) - 8 or more personnel needed	2	5	1	3	10	2	4	6	29.799	Moderate
Brush or brush-and-grass mixture fire (142) - 8 or more personnel needed	3	1	3	2	10	2	4	6	29.799	Moderate
Natural vegetation fire, other (140) - 8 or more personnel needed	1	1	0	1	10	2	4	6	29.799	Moderate
Cultivated grain or crop fire (171)	0	0	1	0		2	6	6	28.142	Moderate
Cultivated vegetation, crop fire, other (170)	0	0	0	0		2	6	6	28.142	Moderate
Cultivated orchard or vineyard fire (172)	0	0	0	0		2	6	6	28.142	Moderate
Cultivated trees or nursery stock fire (173)	0	0	0	0		2	6	6	28.142	Moderate
Forest, woods or wildland fire (141)	0	0	0	0	10	2	8	6	46.770	Moderate

Table 56 - Wildland Risk sorted by risk score and risk categorization (2021-2023).

The wildland incident type contains a large selection of NFIRS incident code choices. Selection of incident type by crews has historically been inexact and the district can derive little variation in risk by the historical incident type selection. To account for this, the district grouped all wildland incident types together and determined that separation in risk would be determined by the number of personnel needed to mitigate the incident. If eight or more personnel arrived on scene, the incident was sorted into moderate risk. If seven or less personnel arrived on scene, the incident was sorted into low risk. The result produced a list of wildland incident types, in the wildland classification, categorized into low and moderate risk (see Wildland Risk by Categorization above).

Wildland Risk Category Characteristics

Wildland risks may range from minor incidents threatening no lives to large incidents that may threaten multiple lives. Every wildland incident is unique and a minor incident, without timely, effective mitigation, may have a significant impact to a single structure or area or an extensive area of the district affecting large portions of the population. Generally, the district believes that wildland risk category characteristics are described best using the following matrix:

Wildland Risk Category Characteristics	
Low Risk	**Moderate Risk**
▪Typically higher frequency (monthly to weekly)	▪Typically has very low or no frequency
▪All crews are trained to mitigate	▪All crews are trained to mitigate but may require specialized training and equipment (additional engines/type 1, brush trucks/type 6 and water tenders)
▪Does not typically involve threat to life	▪Threat to life is possible
▪*Examples:* Brush or brush-and-grass mixture fire (mitigated with 7 or less personnel)	▪*Examples:* Brush or brush-and-grass mixture fire (mitigated with 8 or more personnel)

Figure 110 - NFMRD Wildland risk category characteristics (low and moderate risk)

Domestic Preparedness Risk

The NFIRS incident category that most closely matches domestic preparedness would be Severe Weather & Natural Disasters. However, in addition to weather related incidents, domestic preparedness also includes incidents associated with acts of terror, including bombs, blasting agents and active shooter incidents. The district grouped NIFRS incident types associated with weather or acts of terror into this classification. The results of this combination totaled 10 NFIRS incident types that fall within the domestic preparedness risk classification.

It is important to note that the historical frequency of incidents within this classification is exceptionally low. The few annual number of incidents that fall within this classification usually correlate with a windstorm or severe weather incident. The lack of frequency in this classification does not mean that these events will not occur. For this reason, the district adjusted the threat/probability scores from other classifications to reflect a range of occurrence timeframes that score natural disasters and acts of terror more accurately. This allows the district to score incidents within this classification based on their relative frequency within this specific classification, as opposed to all incident types.

NFIRS incident *types Windstorm, tornado/hurricane assessment - 813, Flood assessment - 812* and *Earthquake assessment – 811* are defined as assessment only, with no rescue or treatment of injured patients. If personnel perform rescues, the response is classified within a specific discipline like technical

rescue. *Severe weather or natural disaster, other – 800,* is reserved for actual natural disasters that may occur, such as tornados or floods with potential for large population and geographical area impact.

The district applied the previously described risk assessment methodology to domestic preparedness incidents using the 3-axis approach to risk calculation using probability, consequence, and impact.

Class of Risk - Domestic Preparedness		
Threat/Probability		
Value	**Frequency**	**Description**
2	> 100 Years	Occurs greater than every 100 years
4	11-100 Years	Occurs every 11-100 years ("once-in-a-lifetime" event)
6	10 Years	Occurs in the range of about once every 10 years
8	2-5 Years	Occurs in the range of about once every 2-5 years
10	Annual Event or More	Annual event or assumed to occur at least once per year
Consequence		
Value	**Life**	**Financial**
2	No loss of life	Small financial loss (< $20,000)
4	Potential loss of single life	Minor loss (property value > $20,000 but less than residential, single-family home)
6	Loss of single life	Moderate loss (property value equivalent to a residential, single-family home)
8	Loss of single life with potential for multiple lives	High loss (property value equivalent to multiple residential, single-family homes)
10	High probability of multiple lives lost	Extreme loss (property value equivalent to three or more residential, single-family homes, one multi-family apartment complex or one commercial building)
Impact (Min. staffing per shift is 36)		
Value	**Number of Personnel**	**% of Total Staffing**
2	1-3	8%
4	4-5	14%
6	6-12	33%
8	13-22	61%
10	23 or greater	Greater than 61%

Table 57 - Value matrix for Domestic Preparedness Risk Classification

Domestic Preparedness Risk by Categorization

DOMESTIC PREPAREDNESS	2021 Total Per Incident Type	2022 Total Per Incident Type	2023 Total Per Incident Type	2021-2023 Total	Average Incident Types Per Year 2021-2023	Probability (Threat)	Consequence	Impact	Heron's Formula	Risk Categorization
Flood assessment (812)	3	3	5	11	4	4	4	2	13.856	Low
Wind storm, tornado/hurricane assessment (813)	1	0	0	1	0	4	4	2	13.856	Low
Earthquake assessment (811)	0	0	0	0	0	4	10	2	32.125	Low
Bomb scare – no bomb (721)	1	0	0	1	0	8	2	8	48.000	Low
Explosive, bomb removal (471)	0	0	0	0	0	8	4	8	55.426	Maximum
Biological hazard, confirmed or suspected (451)	1	0	0	1	0	4	10	8	67.171	Maximum
Munition or bomb explosion (no fire) (241)	0	0	0	0	0	4	8	10	67.171	Maximum
Blasting agent explosion (no fire) (242)	0	0	0	0	0	4	8	10	67.171	Maximum
Severe weather or natural disaster, other (800)	0	0	2	2	1	6	10	8	78.435	Maximum
Active Shooter (no NFIRs code, numbers pulled from 321)	0	0	0	0	0	6	10	10	92.736	Maximum

Table 58 - Domestic Preparedness Risk sorted by risk score and risk categorization (2021-2023).

The district sorted the domestic preparedness incident types based on the value of Heron's formula, or the surface area of the triangle formed by the 3-axis risk plotting. The result produced a list of domestic preparedness incident types, in the domestic preparedness classification, categorized into low and maximum risk as shown in the preceding table.

Domestic preparedness risks may range from minor incidents threatening no lives to large incidents that may threaten multiple lives. Every domestic preparedness incident is unique and a minor incident, without timely, effective mitigation, may have a significant impact to a single patient or an entire area of the district, affecting large portions of the population.

Another important element of these incidents is the psychological toll the occurrence has on the community. The effects of these types of incidents can be lingering and the impact felt by the community may last for years. Generally, the district believes that domestic preparedness risk category characteristics are described best using the following matrix:

Domestic Preparedness Risk Category Characteristics	
Low Risk	**Maximum Risk**
▪Typically has very low or no frequency	▪Typically has no frequency
▪All crews are trained to mitigate and typically is associated with damage caused by weather.	▪All crews are trained to mitigate but will require specialized training and equipment (Urban Search and Rescue Teams, North Area Technical Rescue Team). Larger incidents may require outside agencies (law enforcement, federal agency response)
▪No loss of life or injuries, financial loss only	▪Threat to life is probable to likely
▪*Examples:* Wind storm, tornado/hurricane assessment, flood assessment, Earthquake assessment	▪*Examples:* Severe weather or natural disaster, Biological hazard, Explosive, bomb removal, Munition or bomb explosion, Blasting agent explosion, Active Shooter

Figure 111 - NFMRD Domestic Preparedness risk category characteristics (low and maximum risk)

Alarms & Citizen Assists Risk

The district recognizes that many incidents do not threaten life or property and therefore result in much lower risk to personnel and the community. Most of the risk from the alarms & citizen assists classification comes from the volume of incidents within this classification. From 2021-2023 the district has averaged 3,553 in-district incidents that fall within the alarms & citizen assists classification. This number of responses accounts for 27.8% of the incidents within all classifications. While many of the incident types within this classification are low-consequence responses such as false alarms and citizen assists, the total number of incidents accounts for a large overall portion of total response volume and a deeper assessment is necessary due to their high frequency. The incidents within this classification can greatly affect unit workload, which may increase response times as primary units are committed to these types of events thereby reducing unit reliability.

The district determines the risk within alarms & citizen assists classification from probability (frequency). The moderate risk incidents have a higher risk score due to the large frequency from the corresponding probability score. The consequence score is constant for all incidents within this classification and thus received the lowest score possible. There is slight variation in the impact scores, and this is primarily due to some incidents having a medic unit toned with the engine/truck under the assumption that the incident could result in an EMS transport. Therefore, there was no benefit to creating risk category characteristics

or conducting critical task analysis within this classification. The main goal of analysis within this classification was to recognize incidents creating abnormal frequency and to use this information to support incident reduction efforts at the community outreach and operations level.

The district also determined building alarm reliability from frequency of false alarms, often from the same addresses. If a location continually has false alarms, the alarm system, dependent on the cause of the false alarm, may no longer be reliable. Fire Prevention staff are then able to notify building owners of the issue and correct the faulty system, resulting in fewer alarms and increased unit availability.

There are 69 NFIRS incident types that fall within the alarms & citizen assist risk classification. The district applied the previously described risk assessment methodology to the alarms & citizen assist incidents using the 3-axis approach to risk calculation using probability, consequence, and impact.

Class of Risk - Alarms & Citizen Assists		
Threat/Probability		
Value	**Frequency**	**Description**
2	Yearly - Quarterly	Avg. of 1 - 4 calls per year
4	Quarterly - Monthly	Avg. of 4.1 - 12 calls per year
6	Monthly - Weekly	Avg. of 12.1 - 52 calls per year
8	Weekly - Daily	Avg. of 52.1 - 365 calls per year
10	More than Daily	Avg. of greater than 365 calls per year
Consequence		
Value	**Life**	**Financial**
2	No loss of life	Small financial loss (< $20,000)
4	Potential loss of single life	Minor loss (property value > $20,000 but less than residential, single-family home)
6	Loss of single life	Moderate loss (property value equivalent to a residential, single-family home)
8	Loss of single life with potential for multiple lives	High loss (property value equivalent to multiple residential, single-family homes)
10	High probability of multiple lives lost	Extreme loss (property value equivalent to three or more residential, single-family homes, one multi-family apartment complex or one commercial building)
Impact (Min. staffing per shift is 36)		
Value	**Number of Personnel**	**% of Total Staffing**
2	1-3	8%
4	4-5	14%
6	6-12	33%
8	13-22	61%
10	23 or greater	Greater than 61%

Table 59 - Value matrix for Alarms & Citizen Assists Risk Classification

Alarms & Citizen Assists Risk by Categorization

ALARMS & Citizen Assists	2021 Total Per Incident Type	2022 Total Per Incident Type	2023 Total Per Incident Type	Average Incident Types Per Year 2021-2023	Probability (Threat)	Consequence	Impact	Heron's Formula	Risk Categorization
Local alarm system, malicious false alarm (715)	8	17	15	13	2	2	2	4.899	Low
Service call, other (500)	13	6	12	10	2	2	2	4.899	Low
System malfunction, other (730)	6	6	11	8	2	2	2	4.899	Low
Citizen complaint (911)	6	4	12	7	2	2	2	4.899	Low
Water problem, other (520)	5	9	6	7	2	2	2	4.899	Low
Municipal alarm system, malicious false alarm (711)	5	7	7	6	2	2	2	4.899	Low
Ring or jewelry removal (512)	10	2	5	6	2	2	2	4.899	Low
Steam, other gas mistaken for smoke, other (650)	6	5	5	5	2	2	2	4.899	Low
Extinguishing system activation due to malfunction (732)	5	3	6	5	2	2	2	4.899	Low
Person in distress, other (510)	5	3	4	4	2	2	2	4.899	Low
Vehicle accident, general cleanup (463)	4	5	2	4	2	2	2	4.899	Low
Animal rescue (542)	5	2	0	2	2	2	2	4.899	Low
Malicious, mischievous false call, other (710)	1	4	2	2	2	2	2	4.899	Low
Heat detector activation due to malfunction (734)	3	3	1	2	2	2	2	4.899	Low
Special type of incident, other (900)	1	2	4	2	2	2	2	4.899	Low
Cover assignment, standby, move-up (571)	3	2	0	2	2	2	2	4.899	Low
Extinguishing system activation (742)	2	1	0	1	2	2	2	4.899	Low
Animal problem (541)	2	0	1	1	2	2	2	4.899	Low
Attempt to burn (481)	1	0	2	1	2	2	2	4.899	Low
Lightning strike (no fire) (814)	0	0	2	1	2	2	2	4.899	Low
Water evacuation (521)	1	0	0	0	2	2	2	4.899	Low
Animal problem, other (540)	1	0	0	0	2	2	2	4.899	Low
Prescribed fire (632)	0	1	0	0	2	2	2	4.899	Low
Direct tie to FD, malicious false alarm (712)	1	0	0	0	2	2	2	4.899	Low
Telephone, malicious false alarm (713)	0	0	1	0	2	2	2	4.899	Low
Breakdown of light ballast (443)	0	0	0	0	2	2	2	4.899	Low
Threat to burn (482)	0	0	0	0	2	2	2	4.899	Low
Vicinity alarm (incident in other location) (641)	0	0	0	0	2	2	2	4.899	Low
Severe weather or natural disaster standby (815)	0	0	0	0	2	2	2	4.899	Low
Unintentional transmission of alarm, other (740)	22	23	17	21	4	2	2	8.485	Low
Electrical wiring/equipment problem, other (440)	9	26	17	17	4	2	2	8.485	Low
Good intent call, other (600)	12	10	19	14	4	2	2	8.485	Low
Attempted burning, illegal action, other (480)	5	11	11	9	4	2	2	8.485	Low
Steam, vapor, fog or dust thought to be smoke (652)	9	8	6	8	4	2	2	8.485	Low
Heat from short circuit (wiring), defective/worn (441)	6	5	6	6	4	2	2	8.485	Low
Smoke from barbecue, tar kettle (653)	5	7	3	5	4	2	2	8.485	Low
Overheated motor (442)	7	2	5	5	4	2	2	8.485	Low
Wrong location (621)	1	1	1	1	2	2	4	8.485	Low
False alarm or false call, other (700)	95	75	97	89	6	2	2	12.329	Moderate
Public service assistance, other (550)	85	68	69	74	6	2	2	12.329	Moderate
Lock-out (Person not locked inside) (511)	32	68	70	57	6	2	2	12.329	Moderate
Smoke or odor removal (531)	39	48	50	46	6	2	2	12.329	Moderate
Water or steam leak (522)	39	67	20	42	6	2	2	12.329	Moderate
Sprinkler activation due to malfunction (731)	41	49	26	39	6	2	2	12.329	Moderate
Detector activation, no fire – unintentional (744)	17	36	35	29	6	2	2	12.329	Moderate
Carbon monoxide detector activation, no CO (746)	26	24	34	28	6	2	2	12.329	Moderate
Unauthorized burning (561)	26	33	18	26	6	2	2	12.329	Moderate
Defective elevator, no occupants (555)	20	29	24	24	6	2	2	12.329	Moderate
Arcing, shorted electrical equipment (445)	27	31	13	24	6	2	2	12.329	Moderate
Sprinkler activation, no fire – unintentional (741)	38	16	7	20	6	2	2	12.329	Moderate
Authorized controlled burning (631)	22	16	8	15	6	2	2	12.329	Moderate
Central station, malicious false alarm (714)	13	15	7	12	6	2	2	12.329	Moderate
Power line down (444)	3	9	6	6	6	2	2	12.329	Moderate
Biological hazard investigation, none found (672)	0	1	1	1	2	2	6	12.329	Moderate
Biological hazard, malicious false report (751)	0	0	0	0	2	2	6	12.329	Moderate
EMS call, party transported by non-fire agency (661)	2	6	2	3	4	2	4	13.856	Moderate
Alarm system activation, no fire – unintentional (745)	141	174	189	168	8	2	2	16.248	Moderate
Alarm system sounded due to malfunction (735)	137	183	170	163	8	2	2	16.248	Moderate
Smoke detector activation due to malfunction (733)	111	123	117	117	8	2	2	16.248	Moderate
Smoke detector activation, no fire – unintentional (743)	93	84	93	90	8	2	2	16.248	Moderate
Smoke scare, odor of smoke (651)	62	117	84	88	8	2	2	16.248	Moderate
Public service (553)	78	77	65	73	8	2	2	16.248	Moderate
CO detector activation due to malfunction (736)	44	47	54	48	8	2	2	16.248	Moderate
HazMat release investigation w/no HazMat (671)	48	29	30	36	8	2	2	16.248	Moderate
Assist police or other governmental agency (551)	104	122	108	111	6	2	4	19.799	Moderate
Assist invalid (Lift Assist) (554)	752	726	927	802	10	2	2	20.199	Moderate
Police matter (552)	261	199	165	208	8	2	4	25.923	Moderate
No incident found on arrival at dispatch address (622)	501	470	500	490	10	2	4	32.125	Moderate
Dispatched and cancelled enroute (611)	549	538	257	448	10	2	4	32.125	Moderate

Table 60 - Alarms & Citizen Assists Risk sorted by risk score and risk categorization (2021-2023).

The district sorted the alarms & citizen assists incident types based on the value of Heron's formula, or the surface area of the triangle formed by the 3-axis risk plotting. The result produced a list of alarms & citizen assists incident types, in the alarms & citizen assists classification, categorized into low and moderate risk as shown in the preceding table 60.

Critical Task Analysis and Effective Response Force

Through the community risk assessment, the district has identified seven classifications of risk. Each risk classification contains groupings of incident types by risk category (low, moderate, high and maximum).

Critical tasks are the actions that emergency personnel need to accomplish to safely and effectively mitigate the specific risk within each classification. The quantity and types of resources vary depending on the risk classification that the critical task analysis is addressing. For example, a moderate risk EMS critical task analysis will have a different number of critical tasks required than a moderate risk Fire critical task analysis.

Capability and capacity are two important factors when assessing the resource needs of an incident. Referencing Center for Public Safety Excellence, Quality Improvement for the Fire and Emergency Service 10th Edition, "capability is, in part, the knowledge, skill, and similar abilities necessary to perform critical tasks essential for successful control and termination of an incident. Functional capabilities include the physical resources needed to support performance of the critical tasks." Capability ensures that the district is responding with personnel that have the appropriate level of training and skills to mitigate the specific type of incident. Referencing the same publication," capacity refers to the numbers of appropriate physical resources and the quantities of appropriately knowledgeable and skillful human resources necessary to meet the multitude and types of responsibilities within the response arena." Capacity ensures that the district is responding with the correct quantity of personnel and apparatus to mitigate the specific type of incident.

The critical task analysis matches the correct number of personnel (capacity), which have the correct level of skill and training (capability), to a specific required task. Associating a specific quantity of personnel to a given task allows the district to determine the minimum number of personnel needed to mitigate an incident within the given classification. The total number of personnel, with their responding apparatus required for mitigation within the specific incident classification and category is the Effective Response Force or ERF.

The Effective Response Force is not always the number of personnel responding to the incident. The district often sends additional resources that can help address an escalating incident or may end up staging or being cancelled by command. These resources are not included in the critical task analysis. However, some incidents are more labor-intensive and require additional personnel to supplement the incident needs and replace crews in need of rehabilitation. These additional, responding crews are tactical reserves. The total quantity of personnel, with their corresponding apparatus, from the effective response force and the tactical reserve is the dispatched response force (DRF). The dispatched response force receives tones automatically based on the incident type. The first responding company and/or command can request additional specific resources or additional alarms based on the incident needs or dispatched information.

Fire Critical Task Analysis and Effective Response Force

Low Risk - Fire (Dumpster Fire, Hazard Fire, Vehicle Fire)	
Critical Task	**Minimum Personnel**
Command/Safety	1
Driver/Pump Operator	1
Fire Attack	1
Total ERF:	**3**
Dispatched Response Force: 1 Engine/Truck Company (3-4 personnel). ***Total Minimum Personnel: 3***	

Moderate Risk - Fire (Structure Fire - Single Family, Electrical Fire)	
Critical Task	**Minimum Personnel**
Command (assumption of command to incident conclusion)	1
Fire Attack/Command (first arrival to BC arrival)	2
Driver/Pump Operator	1
Water Supply/Utilities/Ventilation	3
Search and Rescue	3
On-Deck (RIC)	3
Medical	2
Safety	1
Total ERF:	**16**
Dispatched Response Force: 4 Engines (12-16 personnel), 1 Truck Company (3-4 personnel), 2 Medic Units (4 personnel), 2 Battalion Chiefs (2 personnel) and 1 Safety and Medical Officer. ***Total Minimum Personnel: 22***	

High Risk - Fire (Apartment Fire, Commercial Building Fire)	
Critical Task	**Minimum Personnel**
Command (assumption of command to incident conclusion)	1
Fire Attack/Command (first arrival to BC arrival)	4
Driver/Pump Operator	1
Water Supply/Utilities/Ventilation/Secondary Egress	3
Search and Rescue	3
Aerial Operations/Forcible Entry	3
On-Deck (RIC)	3
Medical	2
Safety	1
Total ERF:	**21**
Dispatched Response Force: 4 Engines (12-16 personnel), 1 Truck Company (3-4 personnel), 2 Medic Units (4 personnel), 2 Battalion Chiefs (2 personnel) and 1 Safety and Medical Officer. ***Total Minimum Personnel: 22***	
Different occupancy types require different amounts and types of resources based on additional information and needs. First responding company and command have the ability to request additional specific resources or additional alarms (4 Engines, 1 Truck, 1 Medic Unit, 1 Battalion Chief and 1 Safety and Medical Officer).	

Maximum Risk - Fire (High-Rise Fire)	
Critical Task	**Minimum Personnel**
Command (assumption of command to incident conclusion)	2
Fire Attack/Search & Rescue	5
Back-up/Out-Crew (initial)	3
Lobby Control	1
Water Supply & FDC Sprinkler/Standpipe Support	1
Elevator Control	1
Search and Rescue/Fire Extension Floor Above	3
Ventilation/Stairway Control	3
RIC	3
Rehab	2
Medical	4
Safety	1
Total ERF:	**29**
Dispatched Response Force: 4 Engines (12-16 personnel), 1 Truck Company (3-4 personnel), 2 Medic Units (4 personnel), 2 Battalion Chiefs (2 personnel) and 1 Safety and Medical Officer. ***Total Minimum Personnel: 22***	
Different occupancy types require different amounts and types of resources based on additional information and needs. First responding company and command have the ability to request additional specific resources or additional alarms (4 Engines, 1 Truck, 1 Medic Unit, 1 Battalion Chief and 1 Safety and Medical Officer).	

Maximum Risk - Fire (Oil-Gas Facility Fire)	
Critical Task	**Minimum Personnel**
Unified Command with Site Supervisor	2
Recon Team (Extent/Isolation/Potential Victims)	3
Search & Rescue	3
Water Supply (on-site)	3
Air/Plume Monitoring/Foam Trailer Attack Team	3
Decon	3
Water Tender Supply	3
Rehab	2
Medical/Treatment/Transport	2
Safety	1
Total ERF:	**25**
Dispatched Response Force: 4 Engines (12-16 personnel), 1 Truck Company (3-4 personnel), 2 Medic Units (4 personnel), 2 Battalion Chiefs (2 personnel), Foam Trailer (cross-staffed from engine) , Water Tender (3 personnel) and 1 Safety and Medical Officer. ***Total Minimum Personnel: 25***	
Different oil & gas incident types require different amounts and types of resources based on additional information and needs. First responding company and command have the ability to request additional specific resources or additional alarms (4 Engines, 1 Truck, 1 Medic Unit, 1 Battalion Chief and 1 Safety and Medical Officer).	

Emergency Medical Services (EMS) Critical Task Analysis and Effective Response Force

Low Risk - EMS (Medical Alarm, General Illness, Allergic Reaction, Back Pain, Diabetic Reaction, Etc.) Likely Non-Emergent Transport to Hospital	
Critical Task	**Minimum Personnel**
Command/Safety & Documentation	1
Patient Assessment/Treatment	1
Treatment Support and Transport	1
Treatment Support/Patient Packaging	2
Total ERF:	**5**
Dispatched Response Force: 1 Engine/Truck Company (3-4 personnel with minimum of one being ALS) and 1 Medic Unit (2 personnel with minimum of one being ALS). ***Total Minimum Personnel: 5***	

Moderate Risk - EMS (Chest Pain, Auto vs Pedestrian Accident, Motor Vehicle Accident with Injuries, Etc.) Higher Likelihood of Emergent Transport to Hospital	
Critical Task	**Minimum Personnel**
Command/Safety & Documentation	1
Patient Assessment/Treatment	1
Treatment Support and Transport	1
Treatment Support/Patient Packaging	2
Total ERF:	**5**
Dispatched Response Force: Engine/Truck Company (3-4 personnel with minimum of one being ALS) and 1 Medic Unit (2 personnel with minimum of one being ALS). ***Total Minimum Personnel: 5****	
**Highway incidents receive an additional Engine/Truck Company (3-4 personnel with minimum of one being ALS) for blocking and additional support, if needed. Total response on highways would receive 8 personnel.*	

High - EMS (Cardiac Arrest, Gun Shot Wound, Stabbing)	
Critical Task	**Minimum Personnel**
Command/Safety & Documentation	1
Patient Assessment/Treatment	1
Treatment Support and Transport	1
Treatment Support/Patient Packaging	2
Total ERF:	**5**
Dispatched Response Force: 1 Engine/Truck Company (3-4 personnel with minimum of one being ALS), 1 Medic Unit (2 personnel with minimum of one being ALS), 1 Battalion Chief (discretionary response on non-violent, high-risk EMS) and 1 Safety and Medical Officer (ALS). ***Total Minimum Personnel: 7****	
**Different EMS incidents require different amounts and types of resources based on additional information and needs. First responding company and command have the ability to request additional specific resources, based on dispatch information or scene size-up, which usually correlate to the number of patients needing transported. Highway incidents receive an additional Engine/Truck Company (3-4 personnel with minimum of one being ALS) for blocking and additional support, if needed. Total response on highways would receive 10 personnel.*	

Maximum Risk - EMS (MCI or > than 3 units transporting)	
Critical Task	**Minimum Personnel**
Command	1
Patient Assessment/Treatment	3
Treatment Support/Patient Packaging	4
Triage	1
Safety	1
Total ERF:	**10**

Dispatched Response Force: ***MCI Response Group 1*** *receives 4 Engines/Truck Companies (12-16 personnel with minimum of one being ALS on each apparatus), 5 Transport Units (10 personnel with minimum of one being ALS on each unit), 1 Battalion Chief and 1 Safety and Medical Officer (ALS).* ***Total Minimum Personnel: 24****

Dispatched Response Force: ***MCI Response Group 2*** *receives 8 Engines/Truck Companies (24-32 personnel with minimum of one being ALS on each apparatus), 10 Transport Units (20 personnel with minimum of one being ALS on each unit), 2 Battalion Chiefs and 2 Safety and Medical Officers (both ALS).* ***Total Minimum Personnel: 48****

**Different EMS incidents require different amounts and types of resources based on additional information and needs. First responding company and command have the ability to request additional specific resources, based on dispatch information or scene size-up, which usually correlate to the number of patients needing transported. The MCI Response Groups above are resources that would be in addition to the initial resources responding to the incident.*

Technical Rescue Critical Task Analysis and Effective Response Force

Low Risk - Rescue (Non-Injury) (Lock-Out with Person Locked Inside, Elevator Rescue, Electrical Hazard) *Training & Equipment Capable on all Responding Engines/Truck*	
Critical Task	**Minimum Personnel**
Command/Safety	1
Rescue/Support	2
Total ERF:	**3**
Dispatched Response Force: 1 Engine/Truck Company (3-4 personnel) ***Total Minimum Personnel: 3***	

Low Risk - Rescue (Non-Injury MVA) (Vehicle Rollover, Non-Extrication *Training & Equipment Capable on all Responding Engines/Truck*	
Critical Task	**Minimum Personnel**
Command/Safety	1
Vehicle Stabilization & Hazard Mitigation	2
Total ERF:	**3**
Dispatched Response Force: Engine/Truck Company (3-4 personnel with minimum of one being ALS) and 1 Medic Unit (2 personnel with minimum of one being ALS). ***Total Minimum Personnel: 5****	
**Highway incidents receive an additional Engine/Truck Company (3-4 personnel with minimum of one being ALS) for blocking and additional support, if needed. Total response on highways would receive 8 personnel.*	

Moderate Risk - Rescue (Vehicle) (Vehicle Accident with Extrication, Accident into a Structure) *Training & Equipment Capable on all Responding Engines/Truck*	
Critical Task	**Minimum Personnel**
Command/Safety	1
Vehicle/Structure Stabilization	3
Extrication	3
Treatment/Transport	2
Total ERF:	**9**
Dispatched Response Force: 2 Engine/Truck Companies (6-8 personnel with minimum of one being ALS on each unit), 1 Medic Units (2 personnel with minimum of one being ALS on each unit), 1 Battalion Chief and 1 Safety and Medical Officer (ALS). ***Total Minimum Personnel: 10****	
**Different extrication incidents require different amounts and types of resources based on additional information and needs. First responding company and command have the ability to request additional specific resources (when a structure is involved, usually technical rescue E66 and a representative from jurisdictional building department). If incident occurs on highway, 2nd responding Engine/Truck is used for additional blocking.*	

Moderate Risk - Rescue (Water/Ice Rescue) (Patient Rescue in Open Water or Ice) *Training & Equipment Capable on all Responding Engines/Truck*	
Critical Task	**Minimum Personnel**
Command/Safety	1
Primary Rescuer	1
Secondary Rescuer	1
Support (Haul Team)	4
Treatment/Transport	2
Total ERF:	**9**
Dispatched Response Force: 2 Engine/Truck Companies (6-8 personnel with minimum of one being ALS on each unit), 1 Medic Unit (2 personnel with minimum of one being ALS), 1 Battalion Chief and 1 Safety and Medical Officer (ALS). ***Total Minimum Personnel: 10****	
**Different water rescue incidents require different amounts and types of resources based on additional information and needs. First responding company and command have the ability to request additional specific resources (typically technical rescue E66 and/or Dive Team which includes mutual-aid WFD D1 and TFD D75).*	

Moderate Risk - Industrial (Industrial Accident)	
Critical Task	**Minimum Personnel**
Command/Safety	1
Liason to On-Site Specialist	1
Rescue	2
Support	3
Treatment/Transport	2
Total ERF:	**9**
Dispatched Response Force: 2 Engine/Truck Companies (6-8 personnel with minimum of one being ALS on each unit), 1 Rescue Company (3-4 personnel with minimum of 2 being rescue technicians), 2 Medic Units (4 personnel with minimum of one being ALS on each unit), 1 Battalion Chief and 1 Safety and Medical Officer (ALS). ***Total Minimum Personnel: 15****	
**Different technical rescue incidents require different amounts and types of resources based on additional information and needs. First responding company and command have the ability to request additional specific resources, based on dispatch information or scene size-up. Requesting the North Area Technical Rescue Team (NATRT), through dispatch, receives an additional 2 Rescue Companies (6 personnel with rescue technician qualifications) specializing with the skills and equipment to the technical rescue discipline related to the request (building collapse, confined space, heavy rescue, rope rescue or trench rescue) and additional 2 Rescue Companies (6 personnel with rescue technician qualifications) for a total additional response of 12 rescue technician qualified personnel. If the incident is upgraded with a NATRT response, the total incident personnel, including initial response, would be 27 personnel.*	

High/Maximum Risk - Rescue (Technical Rescue Technician Level Incident) (Confined Space, Rope Rescue, Trench Rescue, Swift-Water Rescue, Collapse)	
Critical Task	**Minimum Personnel**
Command/Incident Safety Officer	1
Assistant Safety Officer	1
Operations Branch Director	1
RIC	3
Rescue Group Supervisor	1
Rescue Group	8
Support	5
Triage/Treatment/Transport	4
Total ERF:	**24**
Dispatched Response Force: 2 Engine/Truck Companies (6-8 personnel with minimum of one being ALS on each unit), 1 Rescue Company (3-4 personnel with minimum of 2 being rescue technicians), 2 Medic Units (4 personnel with minimum of one being ALS on each unit), 1 Battalion Chief and 1 Safety and Medical Officer (ALS). ***Total Minimum Personnel: 15****	
**Different technical rescue incidents require different amounts and types of resources based on additional information and needs. First responding company and command have the ability to request additional specific resources, based on dispatch information or scene size-up. Requesting the North Area Technical Rescue Team (NATRT), through dispatch, receives an additional 2 Rescue Companies (6 personnel with rescue technician qualifications) specializing with the skills and equipment to the technical rescue discipline related to the request (building collapse, confined space, heavy rescue, rope rescue or trench rescue) and additional 2 Rescue Companies (6 personnel with rescue technician qualifications) for a total additional response of 12 rescue technician qualified personnel. If the incident is upgraded with a NATRT response, the total incident personnel, including initial response, would be 27 personnel.*	

Hazardous Materials (HazMat) Critical Task Analysis and Effective Response Force

Low Risk - HazMat (Non-Injury) (Fuel/Oil Spill, CO Alarm with No Complaints of Illness, Odor Investigation - Inside & Outside) *Training & Equipment Capable on all Responding Engines/Truck*	
Critical Task	**Minimum Personnel**
Command/Safety	1
Operation Level Mitigation	2
Total ERF:	**3**
Dispatched Response Force: 1 Engine/Truck Company (3-4 personnel). ***Total Minimum Personnel: 3***	

Moderate Risk - HazMat (Possible Injury/Sick) (Unknown Chemical/Spill Leak, Hazardous/Toxic Condition) *Training & Equipment Capable on all Responding Engines/Truck*	
Critical Task	**Minimum Personnel**
Command	1
HazMat Branch Director	1
Research	1
Entry Team Leader	1
Entry Team	2
Backup	2
Decon Team Leader	1
Decon Team	5
HazMat Medical Leader	1
Treatment/Transport	2
HazMat Safety (SAM)	1
Total ERF:	**18**
Dispatched Response Force: 1 Engine/Truck Companies (3-4 personnel with minimum of one being ALS and all with minimum hazmat operations level certification), 1 Medic Units (2 personnel with minimum of one being ALS on each unit and all with minimum of hazmat operations level certification), 1 Battalion Chief and 1 Safety and Medical Officer (ALS and minimum of hazmat operations level certification). ***Total Minimum Personnel: 7****	
**Different hazmat incidents require different amounts and types of resources based on additional information and needs. First responding company and command have the ability to request additional specific resources (typically hazmat 2 and/or E67 with hazmat technician members and specialized hazmat equipment). Highway incidents receive an additional Engine/Truck Company (3-4 personnel with minimum of one being ALS) for blocking and additional support, if needed. Total response on highways would receive 10 personnel.*	

High/Maximum Risk - HazMat (Explosions, Over Pressure/Ruptures, Train Incidents) *Training & Equipment Capable on all Responding Engines/Truck*	
Critical Task	**Minimum Personnel**
Command	1
Fire Attack/Command (first arrival to BC arrival)	2
Driver/Pump Operator	1
Water Supply/Utilities/Ventilation	3
Search and Rescue	3
On-Deck (RIC)	3
Medical	2
Safety	1
HazMat Branch Director	1
Research	1
Entry Team Leader	1
Entry Team	2
Backup	2
Decon Team Leader	1
Decon Team	5
HazMat Medical Leader	1
Treatment/Transport	2
HazMat Safety (SAM)	1
Total ERF:	**33**
Dispatched Response Force: 4 Engine/Truck Companies (12-16 personnel with minimum of one being ALS and all with minimum hazmat operations level certification), 2 Medic Units (4 personnel with minimum of one being ALS on each unit and all with minimum of hazmat operations level certification), 2 Battalion Chiefs and 1 Safety and Medical Officer (ALS and minimum of hazmat operations level certification). ***Total Minimum Personnel: 22****	
**Different hazmat incidents require different amounts and types of resources based on additional information and needs. First responding company and command have the ability to request additional specific resources (typically hazmat 2 and/or E67 with hazmat technician members and specialized hazmat equipment).*	

Aircraft Rescue and Firefighting (ARFF) Critical Task Analysis and Effective Response Force

Moderate Risk - ARFF (Alert 2) (Aircraft with known or suspected operational defect, affects normal flight operations)	
Critical Task	**Minimum Personnel**
Command/Safety	**1**
Level I Staging	**6**
Total ERF:	**7**
Dispatched Response Force: 4 Engines (12-16 personnel), 1 ARFF (cross staffed), 1 Truck Company (3-4 personnel), 2 Medic Units (4 personnel), 2 Battalion Chiefs (2 personnel) and 1 Safety and Medical Officer. Engine 65 (min. staffing of 4) cross staffs ARFF 65. ***Total Minimum Personnel: 23***	
Alert 2 - An aircraft that is known or is suspected to have an operational defect that affects normal flight operations to the extent that there is danger of an accident. All units respond to pre-designated positions. Example ATC has been notified of an in-flight defect that has not been corrected and the aircraft intends to land.	

High/Maximum Risk - ARFF (Alert 3) (Aircraft Accident or Aircraft Fire)	
Critical Task	**Minimum Personnel**
Command/Safety	1
ARFF Pump Operator	1
Fire Attack	3
Search & Rescue	3
Extrication/Forcible Entry	3
On-Deck	3
Treatment/Transport	2
Total ERF:	**16**
Dispatched Response Force: 4 Engines (12-16 personnel), 1 ARFF (cross staffed), 1 Truck Company (3-4 personnel), 2 Medic Units (4 personnel), 2 Battalion Chiefs (2 personnel) and 1 Safety and Medical Officer. Engine 65 (min. staffing of 4) cross staffs ARFF 65. ***Total Minimum Personnel: 23**** *ARFF 55 is additional apparatus that may or may not be staffed depending on incident time-of-day and day-of-week. ARFF 55 is not considered part of ERF. See notes below on availabity of ARFF 55.***	
Alert 3 - An aircraft incident/accident has occurred on or in the vicinity of the airport.	
**Different Aircraft incidents require different amounts and types of resources based on additional information and needs. First responding company and command have the ability to request additional specific resources, based on dispatch information or scene size-up, which usually correlate to the number of patients needing transported or the number of souls on-board.*	
**ARFF 55 Availability and Staffing: Staffing of ARFF 55 is provided by Airport Operations personnel, and is dependent on their availability. -Monday through Friday, 0700 to 1700: During these hours, 1 to 7 Airport Operations personnel are on duty. ARFF 55 will be staffed during these hours. -Monday through Friday, 1700 to Midnight: During these hours 1 to 2 personnel are on duty and may staff ARFF 55 (availability must be confirmed). -Saturday and Sunday: During these hours 1 to 2 personnel are on duty and may staff ARFF 55 (availability must be confirmed). Airport 9 (Security) will be available for other assistance. -Midnight to 0700, seven days a week: ARFF 55 will not be staffed. Airport 9 (Security) will be available for other assistance.	

Wildland Critical Task Analysis and Effective Response Force

Low Risk - Wildland (Grass Fire, Natural Vegetation Fire, Brush or brush-and-grass mixture fire) *Incident mitigated with 7 or less personnel*	
Critical Task	**Minimum Personnel**
Command/Safety	1
Engine (Type 1) Pump Operator	1
Fire Attack/Containment	1
Total ERF:	**3**
Dispatched Response Force: 1 Engine/Truck Company (3-4 personnel) and 1 Brush Truck (3-4 personnel from cross staffed additional engine). ***Total Minimum Personnel: 6****	
**Different wildland incidents require different amounts and types of resources based on additional information and needs. First responding company and command have the ability to request additional specific resources (typically additional engines/type 1, brush trucks/type 6 and water tenders).*	

Moderate - Wildland (Grass Fire, Natural Vegetation Fire, Brush or brush-and-grass mixture fire) *Incident mitigated with 8 or more personnel*	
Critical Task	**Minimum Personnel**
Command/Safety	1
Engine (Type 1) Pump Operator	1
Brush Truck (Type 6) Driver/Pump Operator	2
Fire Attack/Containment	4
Total ERF:	**8**
Dispatched Response Force: 1 Engine/Truck Company (3-4 personnel) and 1 Brush Truck (3-4 personnel from cross staffed additional engine). ***Total Minimum Personnel: 6****	
**Different wildland incidents require different amounts and types of resources based on additional information and needs. First responding company and command have the ability to request additional specific resources (typically additional engines/type 1, brush trucks/type 6 and water tenders).*	

Domestic Preparedness Critical Task Analysis and Effective Response Force

Low Risk - Domestic Preparedness (Natural Disaster Assessment)	
Critical Task	**Minimum Personnel**
Command/Safety	1
Assessment	2
Total ERF:	**3**
Dispatched Response Force: No specific response based on disaster assessment (NFIRs codes 800, 811, 812 and 813). Incident would likely be toned as Citizen Assist (1 Engine/Truck with 3-4 personnel) and Battalion Chief would recommend units needed based on dispatched information.	

Maximum - Domestic Preparedness (Severe weather or natural disaster with large impact)	
Critical Task	**Minimum Personnel**
Command	1
Recon/Wide Area Search	3
Rescue	6
Triage Supervisor	1
Treatment & Transport Supervisor	1
Medical	4
Staging Officer	1
Transport	4
Safety	1
Total ERF:	**22**
Dispatched Response Force: 4 Engines (12-16 personnel), 1 Truck Company (3-4 personnel), 2 Medic Units (4 personnel), 2 Battalion Chiefs (2 personnel) and 1 Safety and Medical Officer. ***Total Minimum Personnel: 22****	
**Different natural disaster incidents require different amounts and types of resources based on additional information and needs. First responding company and command have the ability to request additional specific resources, based on dispatch information or scene size-up, which usually correlate to the number of patients needing transported. In addition, it is likely a Hazmat and Technical Rescue response would be initiated.*	

Maximum Risk - Domestic Preparedness (Munition, Blasting Agent or Bomb Explosion)	
Critical Task	**Minimum Personnel**
Unified Command	2
Fire Attack/Command (first arrival to BC arrival)	4
Driver/Pump Operator	1
Water Supply/Utilities/Ventilation/Secondary Egress	3
Search and Rescue	3
Aerial Operations/Forcible Entry	3
On-Deck (RIC)	3
Medical	2
Safety	1
Total ERF:	**22**
Dispatched Response Force: 4 Engines (12-16 personnel), 1 Truck Company (3-4 personnel), 2 Medic Units (4 personnel), 2 Battalion Chiefs (2 personnel) and 1 Safety and Medical Officer. ***Total Minimum Personnel: 22****	
**Different domestic terrorism incidents require different amounts and types of resources based on additional information and needs. First responding company and command have the ability to request additional specific resources, based on dispatch information or scene size-up, which usually correlate to the number of patients needing transported. In addition, it is likely a Hazmat and Technical Rescue response would be initiated.*	

Maximum Risk - Domestic Preparedness (Active Shooter)	
Critical Task	**Minimum Personnel**
Unified Command	2
Rescue Task Force (two teams of three)	6
Extraction Team (two teams of three)	6
Staging Officer	1
Triage & Transport	2
Transport (two teams of two)	4
Safety	1
Total ERF:	**22**
Dispatched Response Force: 5 Engine/Truck Companies (15-20 personnel with minimum of one being ALS on each unit), 2 Medic Units (4 personnel with minimum of one being ALS on each unit), 2 Battalion Chiefs and 1 Safety and Medical Officer (ALS). ***Total Minimum Personnel: 22****	
**Different domestic terrorism incidents require different amounts and types of resources based on additional information and needs. First responding company and command have the ability to request additional specific resources, based on dispatch information or scene size-up, which usually correlate to the number of patients needing transported.*	

Critical Task Process and Validation Methodology

The district derives the critical task analyses from tabletop exercises, training evolutions, emergency responses, input from special team leaders and various regional and industry standards. Tabletop exercises permit participants to simulate emergency events that have a low probability of occurring. This training allows the district to anticipate the tasks necessary for mitigation. This is especially useful if the district has not had historical experience with the specific incident type. Training evolutions also allow incident commanders to assign the required tasks of the incident without artificially estimating completion times. Incident commanders then can provide feedback to command staff regarding the application of identified adjustments at the strategic level.

Similarly, significant emergency incidents receive after action reviews (AAR's) where analysis occurs of task assignments and completion timeframes. Recommendations for alterations made to the critical task analysis or dispatched response force start with command staff and the north area operations chiefs (incident response forces are standardized among the participating north area agencies).

Critical task analysis for specialized team operations involved special team leaders from fire, EMS, technical rescue, hazmat, wildland, airport operations and domestic preparedness to assist command staff in critical task analysis. Team leaders offered specific input on required tasks and the number of personnel it would take for completion. Team leads and command staff members collectively agreed upon the final critical tasks analyses and appropriate dispatched response forces.

Finally, the district also bases its critical task force analyses on many different regional and industry standards, including NFPA 1710, NFPA 472, NFPA 473, NFPA 475, NFPA 1072, NFPA 1006, NFPA 1670, NFPA 402, NFPA 403, and operating policies of the Adams-Jeffco Hazardous Material Authority and the North Area Technical Rescue Team. These standards, studies and response plans guide the district in making informed decisions regarding task assignments and the number of personnel required for incident mitigation.

Section 4 – Community and Employee Feedback

The district desires to align the goals of the organization with the needs and expectations of the community it serves. The district recognizes that both internal and external stakeholder feedback is imperative to continuous improvement. Developing the current strategic plan involved input from both citizens and employees of the district.

The district invited citizens to attend three weeknight meetings of approximately three hours each. The district invited citizen input through a press release and targeted mailings to citizens that had previous engagement and interest in the district. Interested parties completed applications submitted to the district board of directors for final citizen task force selection.

Prior to attending the first meeting, citizen task force participants completed a survey asking them to assess different types of risk the community and district personnel could encounter. For each risk, the survey asked both the probability (likelihood of occurrence) and consequence (the result or effect to the community) of the event. The participant answers were anonymous with answers based on personal perception, not researched information. The results of the survey are as follows:

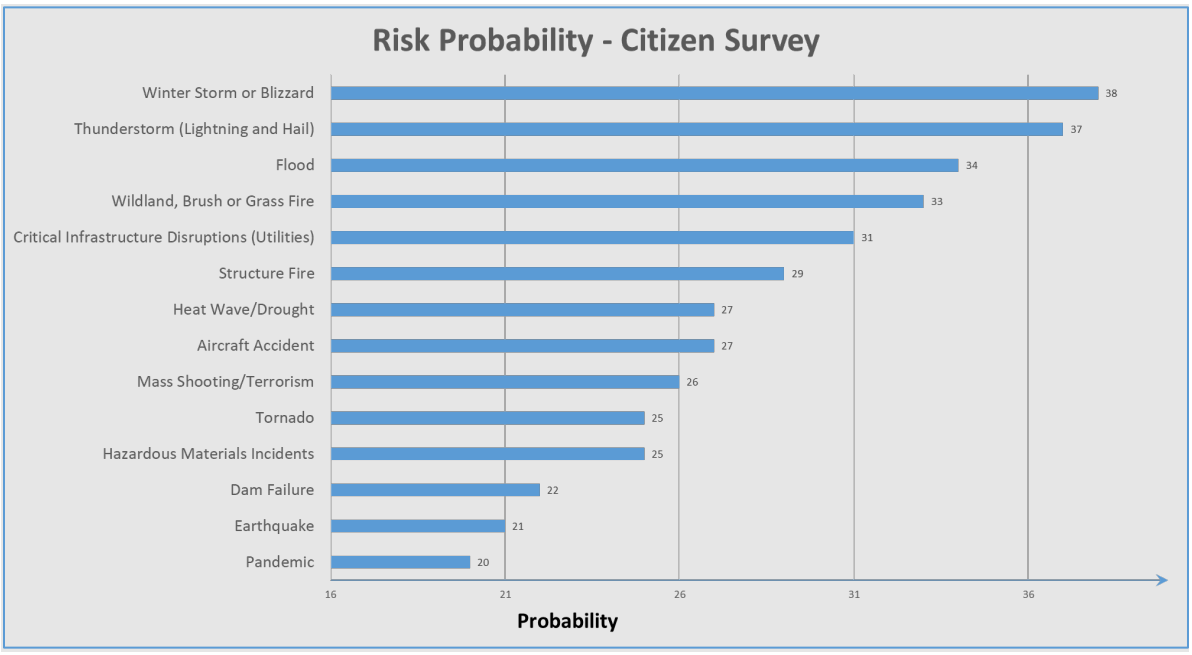


Figure 112 - Citizen Task Force survey results, perception of community risk based on likelihood of occurrence.

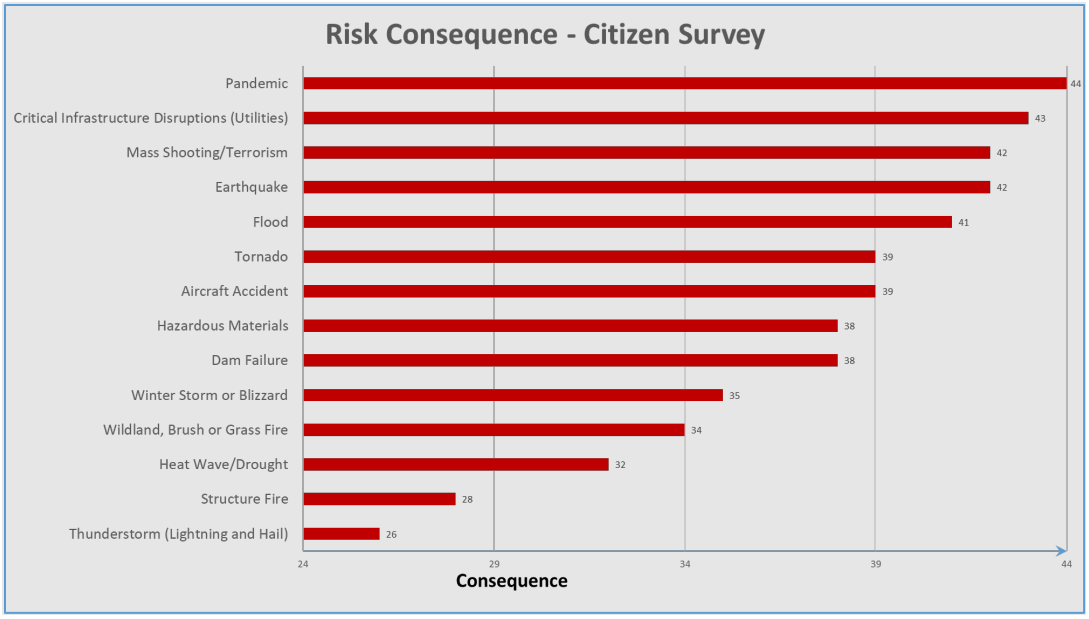


Figure 113 - Citizen Task Force survey results, perception of community consequence based on risk.

The citizen task force survey and the meetings occurred prior to the Covid-19 pandemic. Interestingly, the citizen task force assessed "pandemic" as the highest risk consequence but the lowest risk probability. The district reviewed the results of the survey with the citizen task force and highlighted some risks that the district correlates as being higher, including hazardous materials incidents and structure fires. The collected information from perceived risk versus actual risk was extremely beneficial to the district and highlighted future public messaging opportunities. The community feedback from the survey and information gathered during the three meetings was very valuable to the district when formulating the strategic plan.

Also important to the strategic plan was the participation of the district's personnel. Interested district personnel participated in three employee strategic vision meetings. In the first meeting, district personnel reviewed SWOT assessments from all divisions and program areas with priorities ranked to help guide the goal-making process. In the second meeting, the group reviewed insights provided by the district's customer satisfaction survey. These surveys covered operations, emergency medical services and fire prevention. In addition, participating personnel received a presentation on the expectations and feedback from the citizen task force including review and revisions made to the existing mission and vision statements. Participating district personnel also slightly modified the existing organizational Core Values and a shared long-term vision for the district was created. In the final meeting, the group developed high-level goals and identified short and long-term objectives to accomplish those goals.

Section 5 - Current Deployment and Performance

Time-Critical Response Needs

The district values timely responses for emergencies requiring immediate intervention. Two specific time-critical response needs for first unit arrival goals are the *point of flashover* for a structure fire and *point of brain death* for cardiac arrest patients.

Flashover Point

To reduce the likelihood of a loss of life and to maximize conservation of property value, an early, aggressive, offensive interior fire attack is necessary to contain a working fire to the area of origin when possible. If a working fire progresses past the area/room of origin, the likelihood of life and property loss increases significantly.

Flashover is a stage in fire development that is between the *fire growth* and *fully developed* stages. The U.S Fire Administration defines flashover as:

> "Flashover is a thermally driven event during which every combustible surface exposed to thermal radiation in a compartment or enclosed space rapidly and simultaneously ignites. Flashover normally occurs when the upper portion of the compartment reaches a temperature of approximately 1,100 °F for ordinary combustibles." (42)

Extension of fire may occur prior to flashover of course, but if a working fire reaches flashover, fire extension outside the room of origin is nearly inevitable. Flashover is a significant event that threatens both the occupants of a structure and firefighting personnel.

As a fire burns without mitigation efforts, temperature increases can lead to eventual flashover. To prevent a working fire from reaching this point, firefighting personnel must apply water to the area of fire origin and evacuate the hot gases produced through combustion. Fire prevention and mitigation efforts, such as sprinkler systems may keep a fire in the incipient stage (smoldering or developing fire) and allow additional time for firefighters to extinguish fires and conserve life and property.

In structures without sprinkler systems, a timely response from the appropriate number of fire personnel with adequate firefighting apparatus and equipment is imperative to prevent flashover. Additional delays in mitigation efforts include the time it takes to detect and report the fire. Automatic-alarm systems may

reduce the notification delay and positively affect the outcome of suppression efforts. The following statistics demonstrate the importance of containing a fire to the area of origin and the threats to human life and property loss should the fire extend beyond the room of origin.

National Reported Fires in 2022 by Incident Type

Incident Type	Fires		Civilian Deaths		Civilian Injuries		Property Loss (In Millions)[1]	
Structure Fire	**522,500**	**(35%)**	**2,910**	**(77%)**	**11,720**	**(88%)**	**$15,024**	**(80%)**
Residential Structure Fire	**382,500**	**(25%)**	**2,760**	**(73%)**	**10,320**	**(78%)**	**$10,955**	**(56%)**
Home structure fire	360,000	(24%)	2,710	(72%)	9,940	(75%)	$10,537	(55%)
One- and two-family homes, including manufactured homes	*280,000*	*(19%)*	*2,240*	*(59%)*	*7,190*	*(54%)*	*$8,626*	*(44%)*
Apartment or other multi-family housing	*80,000*	*(5%)*	*470*	*(12%)*	*2,750*	*(21%)*	*$1,911*	*(11%)*
Other residential structure fire	*22,500*	(1%)	50	(1%)	380	(3%)	$418	(2%)
Non-residential structure fire	140,000	(9%)	150	(4%)	1,400	(11%)	$4,068	(22%)
Vehicle Fire	**222,000**	**(15%)**	**700**	**(18%)**	**960**	**(7%)**	**$2,649**	**(14%)**
Highway vehicle fire	188,500	(13%)	610	(16%)	710	(5%)	$1,994	(10%)
Other vehicle fire	33,500	(2%)	90	(2%)	250	(2%)	$655	(4%)
Outside and Other Fire*	**760,000**	**(51%)**	**180**	**(5%)**	**580**	**(4%)**	**$399**	**(2%)**
Fire outside, but no vehicle (outside storage, crops, timber, etc.)	95,000	(6%)	*	*	*	*	$250	(1%)
Fire in brush, grass, or wildland (excluding crops and timber) with no dollar loss	338,500	(22%)	*	*	*	*	*	*
Outside rubbish fire	235,000	(16%)	*	*	*	*	*	*
All other fires	91,500	(6%)	*	*	*	*	$149	(1%)
Total	**1,504,500**	**(100%)**	**3,790**	**(100%)**	**13,250**	**(100%)**	**$18,072**	**(100%)**

Table 61 - NFPA 1710 Table A.5.2.2.2.1 (2020).

*** Casualty data is not reported for subcategories of outside and other fires. Property damage is not captured for brush, grass, or wildland with no dollar loss or outside rubbish fires. Note: Sums may not equal totals due to rounding errors. Source: NFPA's 2022 survey of fire departments for US fire experience and surveys of state fire authorities for large loss and catastrophic multiple-death fires*

Source: NFIRS and NFPA annual fire experience survey.

NMFRD 2021-2023 Property, Injury and Life Loss Due to Fire Related Incidents

Year	Property Loss	Content Loss	Total Loss (Property + Content)	Civilian Deaths	Civilian Injuries
2021	$ 1,609,180	$ 439,033	$ 2,048,213	1	1
2022	$ 2,161,789	$ 579,389	$ 2,741,178	1	6
2023	$ 1,485,148	$ 301,641	$ 1,786,789	0	2
Grand Total	**$ 5,256,117**	**$ 1,320,063**	**$ 6,576,180**	**2**	**9**

Table 62 - Property, injury and life loss from 2021-2023 fire related incidents, NMFRD

Cardiac Arrest Response Time Performance

According to the American Heart Association (AHA), cardiovascular disease (CVD), as the underlying cause of death, accounted for 928,741 deaths in the United States in 2020. Cardiovascular disease claims more lives each year than all forms of cancer and chronic lower respiratory disease combined. Worldwide, CVD accounted for about 19.05 million deaths in 2020, expected to grow to over 22.2 million by 2030.

In addition, the AHA reports that coronary heart disease (CHD) remains the number one cause of death in the United States. CHD accounted for approximately 382,820 deaths in the United States in 2020. Approximately every 40 seconds an American will have a heart attack. (43)

Clearly, the United States and the world suffers from heart disease, which often leads to sudden cardiac arrest. Unfortunately, the number of people diagnosed with heart disease is rising annually and will most likely continue to be a leading cause of death. According to the AHA data published in 2017, the majority of out of hospital cardiac arrests (OHCA) occur at a home or residence (69.5 %). Public settings (18.8%) and nursing homes (11.7 %) were the second and third most common locations of OHCA. Unfortunately, the United States survival rates from OHCA is less than 12 percent. Immediate cardiopulmonary resuscitation (CPR) can double or triple the chances of survival. (44)

When cardiac arrest occurs, the district recognizes that response times from emergency personnel play a significant role in patient outcomes. According to the AHA, for every minute without life-saving CPR and defibrillation the chance of survival decreases 7%-10%. (45) While efficiencies in emergency dispatching and response time standards and improvements remain a critical goal of the district, some of the most important steps towards improving patient outcomes come from the actions of non-emergency personnel. According to the AHA, a significant percentage of OHCA victims survived when bystander(s) administered CPR. Nationwide, the emphasis toward improving cardiac arrest outcomes focuses on the actions taken prior to EMS arrival. The first of these actions is immediate recognition of cardiac arrest and the activation

of the emergency response system. This step ensures that the dispatching agency and emergency personnel receive the response notification with minimal patient downtime. After early recognition, immediate CPR is needed, emphasizing chest compressions. When cardiac arrest occurs, the heart cannot pump blood to the rest of the body, including the lungs and brain. CPR mimics the heart's pumping of the blood by using chest compression to perfuse oxygenated blood to the bodies' vital organs. The final step towards improving cardiac arrest outcomes prior to EMS arrival is access to automated external defibrillators (AED). AEDs deliver an electric shock when the heart is in a dangerous rhythm. According to an AHA circulation journal report:

> "An international team of researchers looked at 49,555 out-of-hospital cardiac arrests that occurred in major U.S. and Canada cities. They analyzed a key subgroup of these arrests, those that occurred in public, were witnessed and were shockable. The researchers found that nearly 66 percent of these victims survived to hospital discharge after a shock delivered by a bystander. Their findings emphasized that bystanders make a critical difference is assisting cardiac arrest victims before emergency responders can get to the scene." (46)

For these reasons, the greatest improvements towards patient survival rates come from layperson education, their willingness to act using CPR and access to AEDs. In addition to the community outreach efforts the district performs in these areas, emergency response time goals remain the organization's constant focus. Documenting, analyzing and improving emergency response times while focusing on improving prehospital care will support the district's mission of improving cardiac arrest outcomes.

Figure 114 – American Heart Association (AHA) Adult Out-of-hospital Chain of Survival, 2021 (47)

One-Year Cardiac Arrest Registry to Enhance Survival (CARES) National Data

Utstein Survival Report

All Agencies/National Data

Date of Arrest: From 01/01/2023 Through 12/31/2023

Non-Traumatic Etiology Survival Rates	
Overall:	10.2% (144394)
Bystander Wit'd:	15.5%(53131)
Unwitnessed:	4.6% (74200)
Utstein[1]:	32.5% (15076)
Utstein Bystander[2]:	36.1% (9132)

Bystander Intervention Rates [3]	
CPR:	41.0% (109583)
Public AED Use:	11.8% (19658)

Figure 115 - Cardiac Arrest Registry to Enhance Survival (CARES) data from National Utstein Survival Report (2022, 2023)
[1]Utstein: Witnessed by bystander and found in shockable rhythm.
[2]Utstein Bystander: Witnessed by bystander, found in shockable rhythm, and received some bystander intervention (CPR and/or AED application).
[3]Bystander CPR rate excludes 911 Responder Witnessed, Nursing Home, and Healthcare Facility arrests. Public AED Use rate excludes 911 Responder Witnessed, Home/Residence, Nursing Home, and Healthcare Facility arrests.

One-Year Cardiac Arrest Registry to Enhance Survival (CARES) North Metro Fire Rescue District Data

Utstein Survival Report

North Metro Fire Rescue District

Date of Arrest: From 01/01/2023 Through 12/31/2023

Non-Traumatic Etiology Survival Rates	
Overall:	6.8% (74)
Bystander Wit'd:	25.0%(12)
Unwitnessed:	3.4% (59)
Utstein[1]:	100.0% (2)
Utstein Bystander[2]:	100.0% (1)

Bystander Intervention Rates [3]	
CPR:	34.4% (61)
Public AED Use:	0.0% (3)

Figure 116 - Cardiac Arrest Registry to Enhance Survival (CARES) data from North Metro Fire Rescue District Utstein Survival Report (2022, 2023)

[1]Utstein: Witnessed by bystander and found in shockable rhythm.
[2]Utstein Bystander: Witnessed by bystander, found in shockable rhythm, and received some bystander intervention (CPR and/or AED application).
[3]Bystander CPR rate excludes 911 Responder Witnessed, Nursing Home, and Healthcare Facility arrests. Public AED Use rate excludes 911 Responder Witnessed, Home/Residence, Nursing Home, and Healthcare Facility arrests.

Community Response History

Effective emergency response performance requires the delivery of appropriate resources within a timely manner to protect the health, safety and property of the community while simultaneously providing for the safety of emergency responders. Summary response time history is collected for each response area within the district. This community response history is an important measure of how well district resources are placed to provide timely emergency interventions within a given response area.

To understand response time history, it is important to define the components of response time, and the calculations used to formulate total response time. Additional components of response time are also parsed out to assist with data analysis.

Performance Terminology

Alarm Handling Time: The time interval from the receipt of the alarm at the primary Public Safety Answering Point (PSAP) until the beginning of the transmittal of the response information via voice or electronic means to emergency response units. ***Alarm handling time is comprised of alarm transfer time, alarm answering time and alarm processing time*.**

Turnout Time: The time interval that begins when emergency response units receive call notification by either an audible alarm or visual annunciation (or both) and ends at the beginning point of travel time.

Travel Time: The time interval that begins when a unit is en route to an emergency incident and ends when the unit arrives at the scene.

Total Response Time: The time interval from the receipt of the alarm at the agency's PSAP to when the first emergency response unit arrives at the scene. ***Total response time is comprised of alarm handling time, turnout time and travel time*.**

90th Percentile: In a data set of 100, the 90th percentile would be the value under which 90 percent of the data in the distribution falls. Therefore, it would be the 91st value when sorted in rank order.

Effective Response Force (ERF) Time: The total response time necessary to collectively assemble sufficient staffing and equipment resources at a specific emergency location fully capable of initial fire suppression,

EMS, HazMat, Rescue, ARFF, Wildland or Domestic Preparedness mitigation. The ERF requirement varies by incident type and is the result of the concentration needs derived from the critical task analysis.

Emergency Response Zone (ERZ): Smaller divisions of the district geography primarily divided into neighborhoods. ERZ boundary lines run down the middle of the streets on main thoroughfares. Dividing district areas into smaller, more manageable zones allows the district to further analyze overall community risk and identify the correlation to resource use. There are 64 ERZ's within district boundaries, four of which are comprised exclusively of highways. The ERZ's vary in square mileage and are designated as *rural* or *urban* based on the population per square mile.

Population Density: Urban population density is greater than or equal to 1000 people per square mile. The rural population density is less than 1000 people per square mile.

Distribution: Geographic location of first-due resources for initial intervention. Generally, measured from fixed response points, such as fire stations, and expressed as a measure of time. Within response time performance, distribution is the primary determiner of the first unit arrival time.

Concentration: Spacing of multiple resources arranged so that an initial "effective response force" can arrive on scene within the time frames outlined in the on-scene performance expectations. Within response time performance, the ERF arrival time is determined when the last unit to complete the ERF total arrives on scene.

Baseline: The measurement of actual performance in an organizational context. Refers to the district's current response time performance. Response time analysis applies to in-district, emergent response incidents only. There is no incident analysis when a response occurs outside the district (automatic or mutual aid) and/or when the responding unit traveled non-emergent (no lights and sirens).

Benchmark: An established standard to base future desired performance on (i.e. unit turnout times).

Public Safety Communications Centers

The district receives emergency response notifications from two different public safety communications centers. The Adams County Communication Center Authority (ADCOM) is a full-service public safety communication center that answers 911 calls and dispatches police, fire and EMS services to multiple agencies in the northern metro Denver area. ADCOM dispatches North Metro Fire Rescue District incidents within the city of Northglenn and unincorporated areas of Adams County and Weld County.

The City and County of Broomfield Public Safety Communications Center is responsible for answering all 911, emergency, and non-emergency calls for service for both Broomfield Police Department and North Metro Fire Rescue District within the city and county limits of Broomfield. In addition, the Broomfield Public Safety Communications Center also dispatches incidents resulting from Public Safety Answering Point (PSAP) transfers. These transfers occur from unincorporated areas of the district within Jefferson and Boulder County and occasionally from Weld County.

Cascade of Events Chart

Figure 107 below, titled *Cascade of Events Chart* from *NFPA 1710 (2020), Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*, represents the consecutive order of events pertaining to an emergency and their corresponding time components.

Cascade of Events Chart

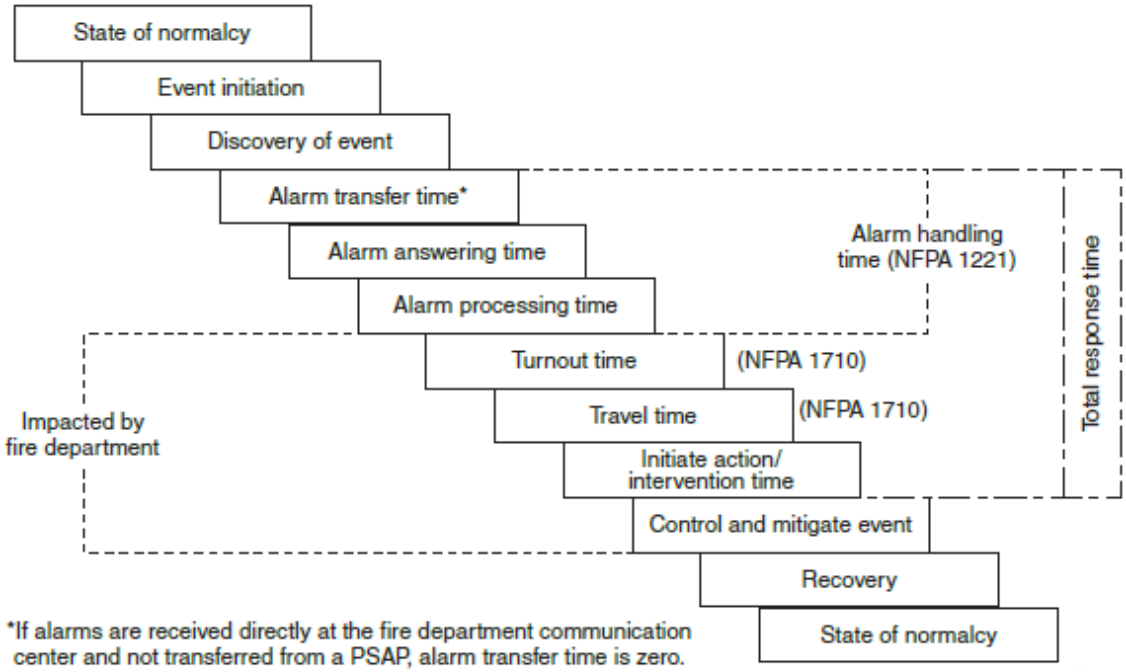


Figure 117 - Cascade of Events Chart, from NFPA 1710 (2020), Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments

The district has some influence over the alarm handling time goals generated from the public safety communication centers. The alarm handling times are included in the total response time, but the district has less capability to improve those times than they do turnout time and travel time.

Turnout time goals may vary based on the type of incident district personnel are responding to as the response may require different amounts and types of personnel protection equipment (PPE). Most agencies have turnout goals related to fire and non-fire responses. Turnout goals for fire incidents are typically longer due to the length of time needed to don structural PPE. The district has taken steps to reduce turnout time by installing *First-In* Alerting systems within all district stations. First-In Alerting allows the public safety communications centers to pre-alert tone stations while using automated voice dispatch. These functions decrease station-alerting times while allowing the dispatcher to maintain uninterrupted communication with the emergency caller.

The road network that surrounds the fire station locations, and the distance between other fire stations primarily influences travel times. Generally, to improve travel times, an organization needs to either build additional fire stations *(distribution*) or rely upon automatic aid, particularly around district borders.

The district has realized a reduction in travel times by utilizing available technology to assist the public safety communications centers in selecting the ideal emergency response unit. District apparatus and personnel are dispatched using computer aided dispatch (CAD) which selects the appropriate unit for the type of incident utilizing the Global Positioning System (GPS) location of that specific unit. This is the most efficient method of dispatching resources as it allows the closest unit to respond to the incident location, reducing overall response times and increasing the likelihood of successful mitigation.

District Travel Time Road Network (NMFRD Stations)

The figure below displays the district's road network and the travel times from all district stations without automatic aid.

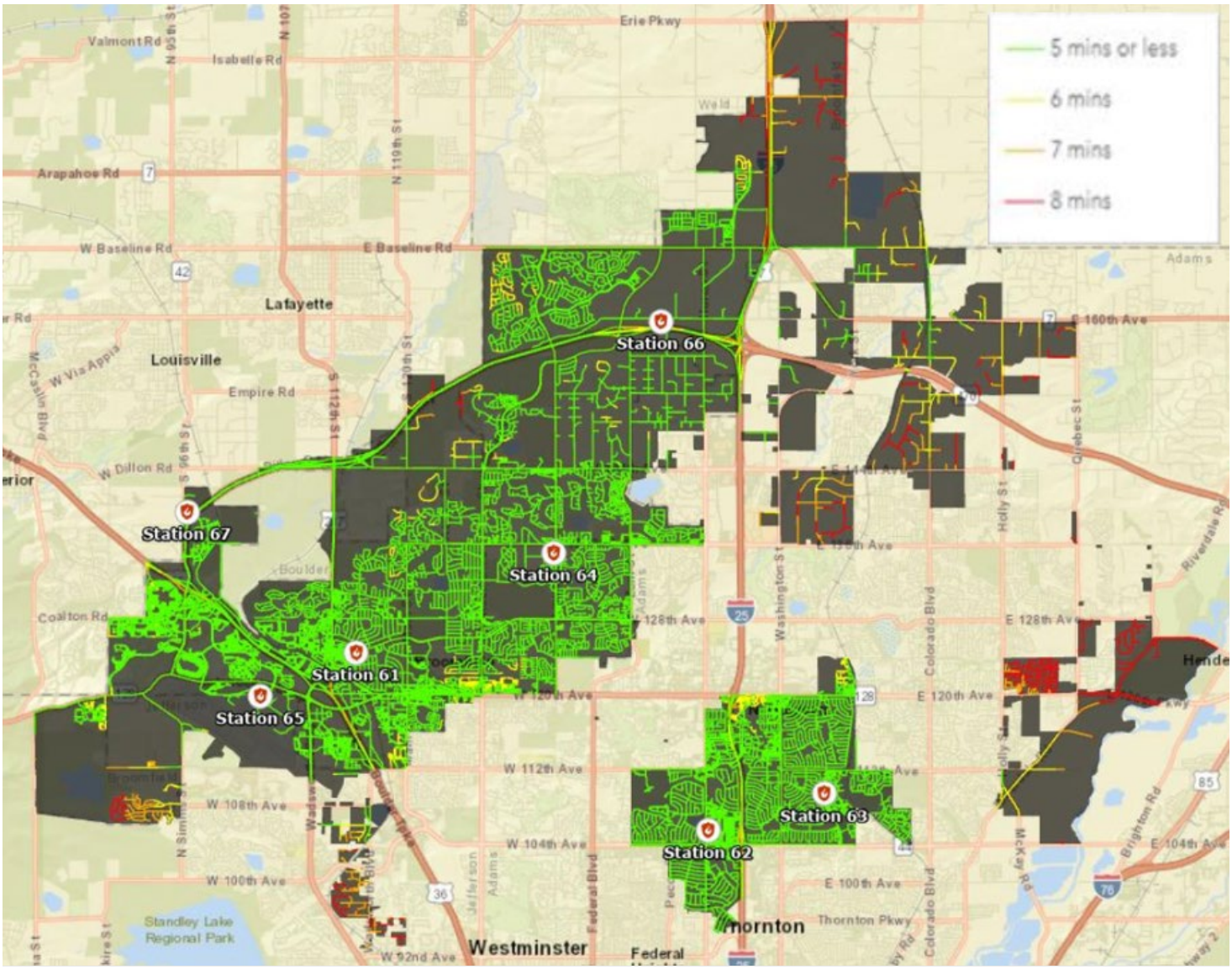


Figure 118 - Road Network Emergent Travel Time from all NMFRD Stations without Automatic Aid Response

Automatic Aid Resources

The district maintains Intergovernmental Agreements (IGAs) with most fire departments and districts in the northern metro Denver area. All agencies on the district's borders are a part of automatic aid agreements with NMFRD contained within four separate agreements. Three of the agreements are reciprocal agreements between a single department and NMFRD. These agreements are with Mountain View Fire Protection (light blue area on figure 110 to the north and northwest of the district), Lafayette Fire Department (purple area) and Louisville Fire Department (orange area). The last agreement is reciprocal between ten different fire agencies: Adams County Fire Protection District (red), Frederick-Firestone Fire Protection District (not shown), Brighton Fire Rescue District (light green), Hudson Fire Protection District (not shown), Sable-Altura Fire Protection District (not shown), South Adams County Fire Protection District (light pink), Federal Heights Fire (purple area), Thornton Fire (brown area) and Westminster Fire (dark blue area).

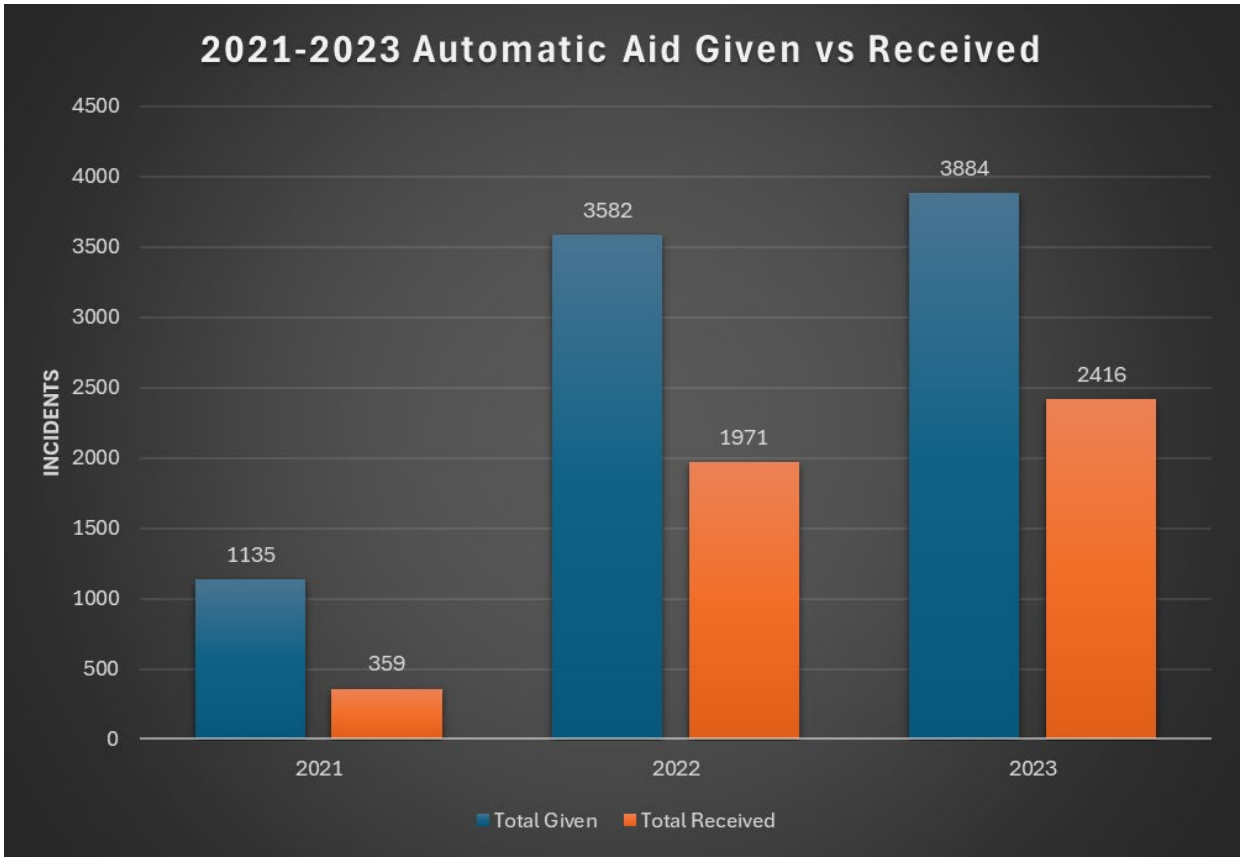


Figure 119 – NMFRD automatic aid given to other fire departments in comparison to automatic aid received from other fire departments, 2021-2023.

North Area Fire Agency Station Locations and Coverage Areas

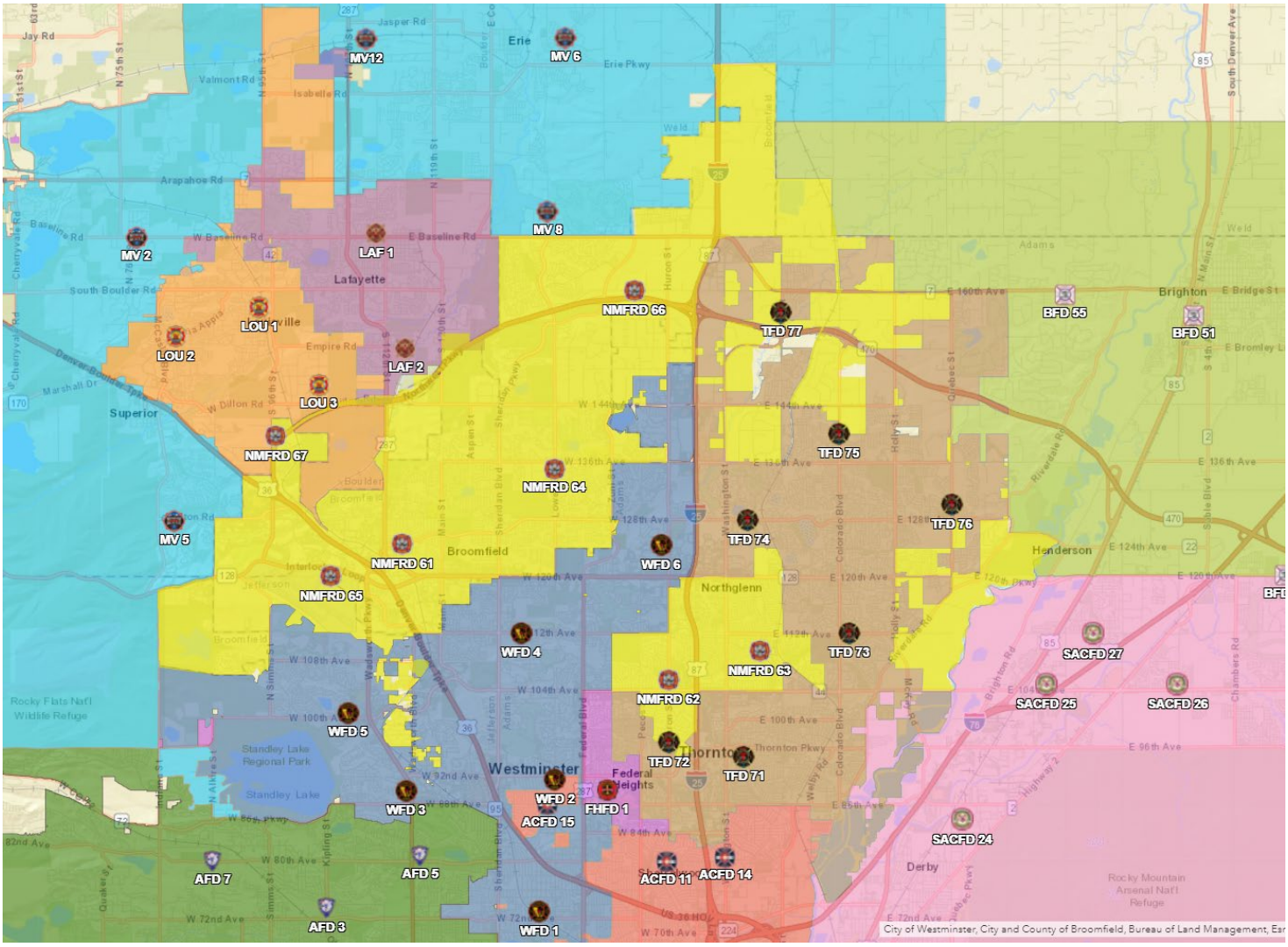


Figure 120 - North area fire stations and district or city boundaries, 2024.

CAD2CAD Exchange and Improvements to Travel Times

As stated in *Section 3 – Geographical Planning Zones*, the district uses closest unit response, based on the incident location and the GPS location of the specific unit required to mitigate an emergency incident. Previously, this included only district apparatus. Within the last 5 years, the district has worked with neighboring fire department representatives from Thornton Fire, Westminster Fire, Adams County Fire Protection District, South Adams County Fire Protection District and Brighton Fire Rescue District, to send the closest available unit to mitigate an emergency incident regardless of jurisdiction.

This response plan has obvious advantages in reducing travel times and requires significantly less capital to meet response time goals, as the district needs fewer stations to cover areas, particularly on the district's borders.

There are significant complexities and inefficiencies when different public safety communication centers attempt to dispatch units outside of their specific agencies' resources. In the north area, the fire agencies were dispatched from four different public safety communications centers. These inefficiencies create lengthened call processing times often negating any timesaving to be gained by dispatching closer units.

The solution is CAD2CAD data exchange, which provides current state of the art interoperability among public safety communication centers and their Computer Aided Dispatching (CAD) systems with real time unit status. CAD2CAD allows dispatch centers to dispatch the closest unit from any participating fire agency, without any of the previously mentioned inefficiencies in call processing time.

District Travel Time Road Network (Modeled CAD2CAD)

The following map displays modeled travel times the district expects to achieve from the CAD2CAD project, which has been operational within the district's boundaries since September 2022. The map models emergent drive-time analysis using the district's stations and other agency stations that are partners in the CAD2CAD project. This map does not include the recently constructed and staffed Thornton Fire Station 7, which would further improve drive-times within the northeast portion of the district. Even though there are five other agencies involved in the project, the district expects its largest travel time gains to come from the closest adjoining agencies, Thornton Fire and Westminster Fire. With the CAD2CAD project completed, the district expects travel times, and thus, total response times, to improve in the southwest and eastern portions of the district, specifically where Thornton Fire and Westminster Fire border NMFRD.

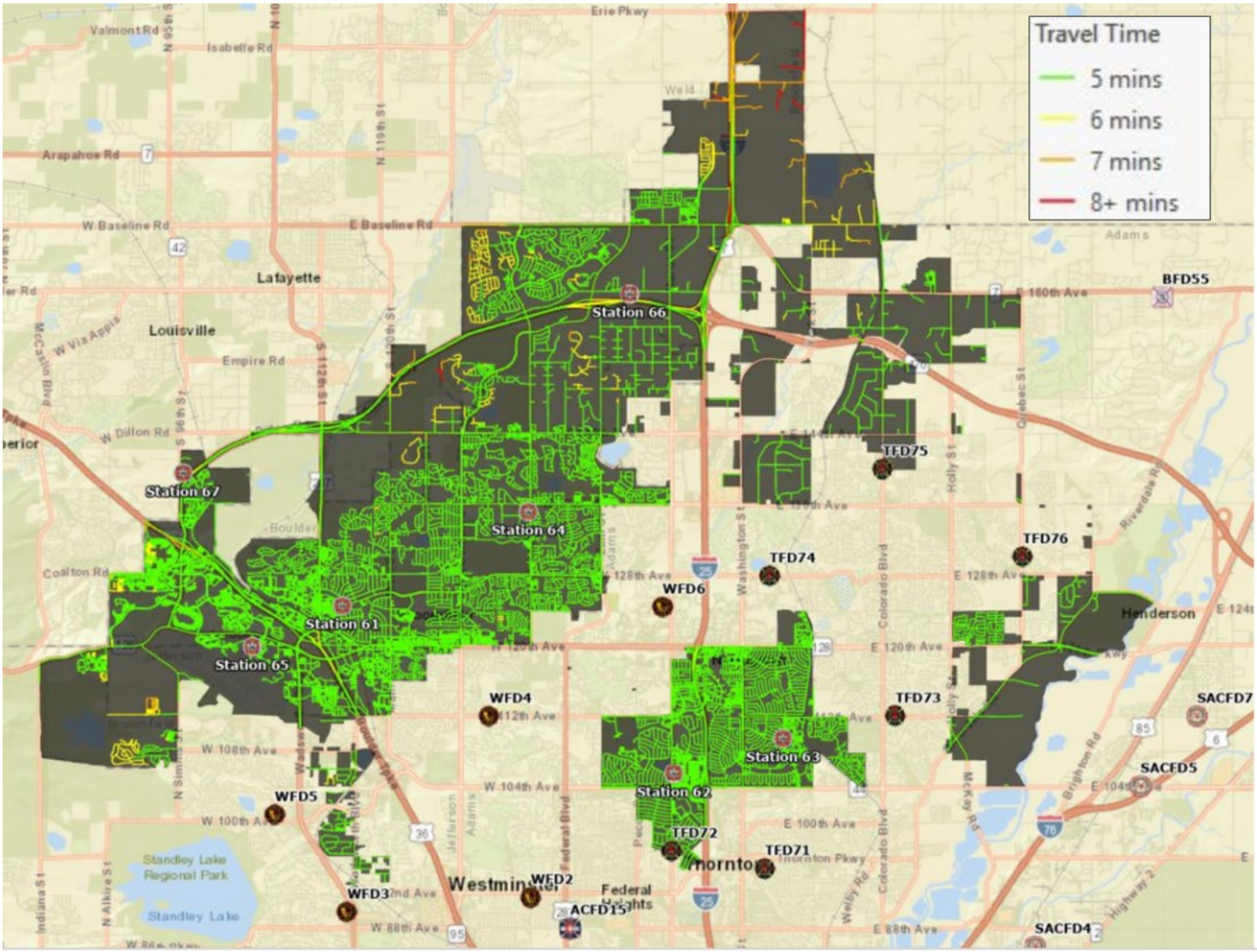


Figure 121 –Post CAD2CAD Modeled Road Network Emergent Travel Time from all NMFRD Stations and Other Agency Stations Involved in CAD2CAD Project.

Emergency Response Zone Designations by Population Density

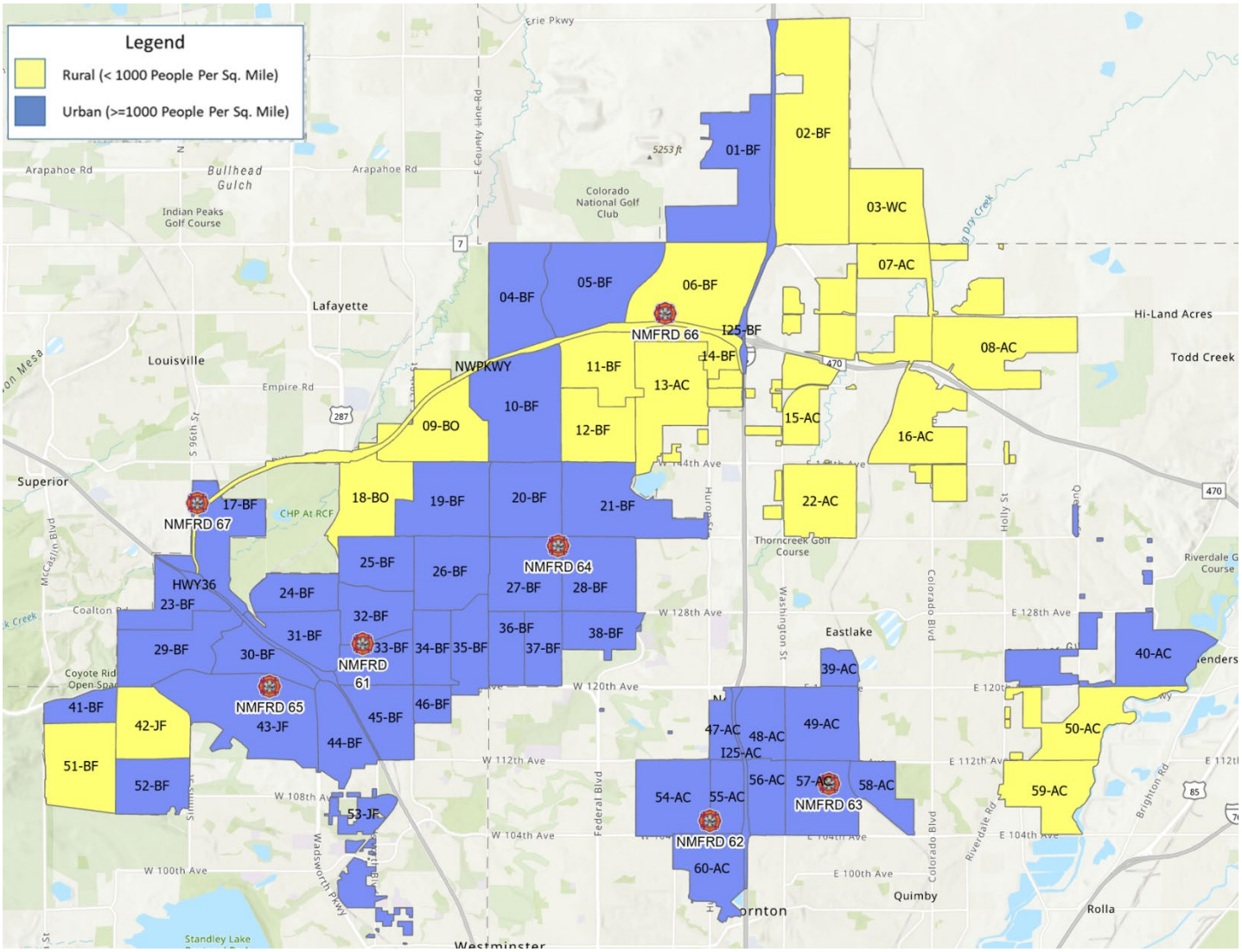


Figure 122 - Emergency Response Zone designations by population density using population per square mile from ESRI Community Analyst, 2023 data. Population density per square mile is the greater total between nighttime and daytime population measures.

As discussed previously in *Section 3, Geographical Planning Zones*, the district divided the boundaries covered into 64 emergency response zones (ERZ's) that vary in geographical size. Even though ERZ's vary in square miles, the district calculated their corresponding population density per square mile using ESRI Community Analyst. There are 19 rural ERZ's (one of which is strictly highway) and 45 urban ERZ's (three of which are strictly highways).

Calculations for population density are determined by using population density (often referred to as nighttime population) and daytime population density. Variances in daytime population versus nighttime population occur as areas become either more or less dense during the day as people commute out of, or into, an ERZ. The district uses the higher population density per square mile between nighttime and daytime populations. This methodology affects seven ERZ's. *10-BF*, 41-BF, *52-BF and 53-JF*, for example, would be rural based on daytime population per square mile, but the district designated them as urban using its corresponding nighttime population per square mile. Similarly, *31-BF. 34-BF* and 43-JF would be rural based on nighttime population per square mile, but the district designated them as urban using their corresponding daytime population per square mile.

Methodology for Urban and Rural Response Benchmarks

North Metro Fire Rescue District has densely populated areas (urban) and sparsely populated (rural). Many square miles in the district's northeastern and eastern portion have low population densities with large amounts of undeveloped agricultural land. Emergency Response Zone population densities range from less than 20 people per square mile, to over 10,800 people per square mile.

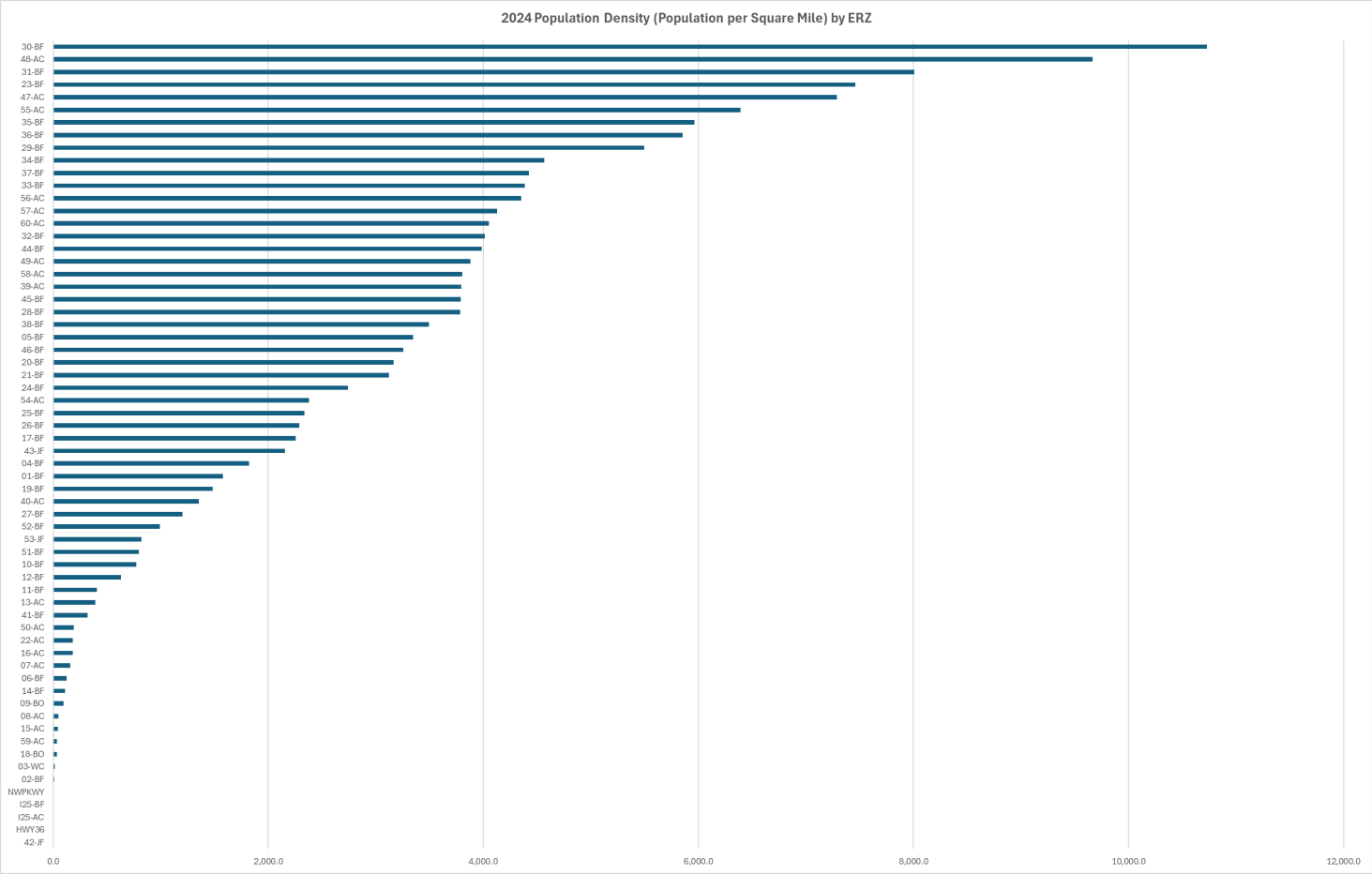


Figure 123 - 2024 population density per square mile by Emergency Response Zone, ESRI Community Analyst, 2024

It is not economically feasible to construct and staff fire stations in areas that have low population densities. Because population density closely correlates to incident volume, these areas also produce very few incidents. Concentrating response assets in these areas would be an inefficient use of finite district funds.

Baseline (actual response time performance) and benchmark (response time goal performance) are measured at the 90th percentile (see *Performance Terminology*, above). It is the district's belief that

separate benchmark response times, based on population density within the ERZ (urban/rural) allows for continual improvement on response time goals. As rural ERZ's continue to develop, their corresponding population densities will increase. The district continually monitors ERZ population density per square mile, incident volume and performance gaps for 90th percentile response times. The district can then use these metrics to determine when an ERZ should move from rural to urban and when it may become necessary to construct new fire stations to meet or exceed benchmark response time goals.

Methodology for Categories of Risk by Classification within Individual Emergency Response Zones

The district assesses its 64 emergency response zones (ERZ's) annually and categorizes the risk based on classification. The categories of risk are low, moderate, and high. The classifications described in *Section 3 - Risk Assessment Methodology*, are fire, EMS, technical rescue, hazardous materials, aircraft rescue and firefighting, wildland, and domestic preparedness. Because the classifications vary greatly in probability, consequence and impact, each classification is assessed differently using specific methodology.

Fire Risk Methodology

With a relatively small quantity of fire incidents in relation to total incidents, historical fire incident locations are not a reliable indicator of future fire incidents, specifically as it relates to commercial buildings. In addition, only 21% of the district's total fire incidents are structure fires, which represent the largest likelihood of life and property loss occurring.

When analyzing district structure fires only, most of the risk is associated with residential properties. This is helpful to a certain extent but does not reflect the fire risk associated with other property uses, specifically commercial structures. This information does, however, assist the district in its justification of higher risk scoring in parcels associated with residential structures as explained in further detail below.

District Calls 2020-2022 by Parcel Type Level 1		
Parcel Type	**Count**	**%**
Agriculture or Vacant	1	1%
Civic/Institutional	2	2%
Commercial	6	6%
Industrial/Warehouse	4	4%
Mixed use	4	4%
Open space	1	1%
Residential	71	72%
Transportation/Utilities	10	10%
Grand Total	**99**	**100%**

Table 63 - NMFRD Structure Fires by Land Use (Level 1), 2018-2020

Section 3 – Physical Assets Protected describes the efforts made by the district to score inspected

buildings based on their physical characteristics and type of occupancy use. The resulting score, titled *Building Risk Attribute Score*, scores, and ranks 1000+ buildings within the district based on fire risk. This score does not reflect the likelihood, or probability of a fire occurring at a specific location. The score reflects the severity of a potential structure fire incident at that specific location. The *Building Risk Attribute Score* is a starting point to assess the ERZ's risk associated with fire.

The makeup of the district ERZs vary based on land use and size of the ERZ. To assess ERZs that differ in size with equity, the district needed to convert the previously described *Building Risk Attribute Scores* into a score based on the acreage of the parcel a building sits on. The individual score was either increased or decreased in relation to one acre. For example, if a building received a score of 55 and was located on a parcel of land that measured 4.5 acres, the total score for that parcel is 247.5 (55 x 4.5 acres = 247.5). If that same building was located on a parcel of land that measured .75 acres, the score for that parcel is 41.25 (55 x .75 = 41.25). Most commercial or multifamily residential buildings within the district efficiently use the parcel of land for the building as generally, for-profit entities do not buy additional land they do not intend to make profitable. Therefore, the newly factored scores related to parcel size became an accurate way to compare fire risk, even if the property comparisons varied in land use and acreage size. However, this score only reflected the parcels that the district inspects, which do not include single-family attached or detached homes. When summed, the total acreage of inspected parcels is only 18.7% of the district total.

NFPA 2022 Nationwide Civilian Fire Deaths by Occupancy

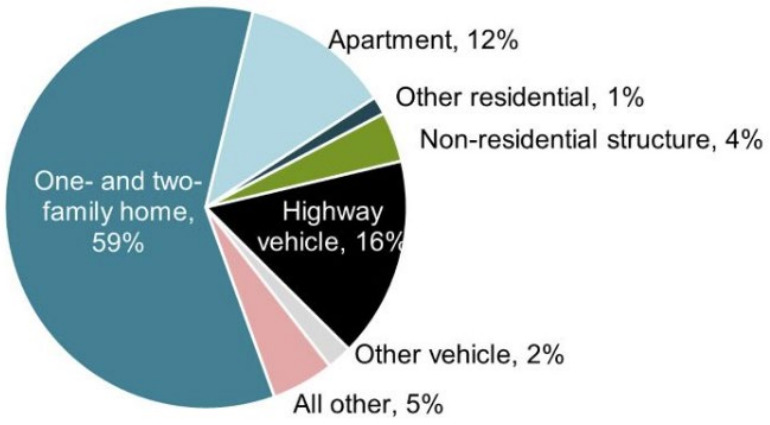


Figure 124 – Civilian Fire Loss in the United States during 2022 (48)

According to National Fire Protection Association 2021 data (48), three-quarters of the 2021 civilian fire deaths occurred in home properties including one or two-family homes and apartments or other multifamily housing. When analyzing structure fires only, most fires within the district are located within single-family (54%) and multifamily homes (17%). In conjunction with the national civilian fire fatality data and the probability of most structure fires in the district occurring in residential properties, most fire risk is associated with multifamily and single-family parcels, or locations where residents live and sleep. The district inspects these residential locations: R1 – Hotels/Motels, R2 – Apartments & Live/Work, R3 – Single Family Care Homes with < 6 people, R4 – Assisted Living Facility w/more than 5 but less than 17 people and I – Institutional Facilities. With this, the district needed a factor applied to the Building Risk Attribute Score to increase the score to more accurately reflect the risk associated with these residential locations. The district determined that the score should be increased by a risk factor of four (4x). National data from NFPA, 2015-2019, supports this factor because while only 26% of fires occur in home environments, they account for 75% of civilian deaths (49).

District Calls 2020-2022 by Parcel Type Level 2		
Parcel Type	**Count**	**%**
Agriculture or Vacant	1	1%
Education	2	2%
Industrial/Warehouse	4	4%
Mixed use	4	4%
Multifamily	17	17%
Office	2	2%
Open space	1	1%
Retail/Commercial	4	4%
Senior	1	1%
Single-Family	53	54%
Transportation/Utilities	10	10%
Grand Total	**99**	**100%**

Table 64 - NMFRD Structure Fires by Parcel Type (Level 2) 2018 - 2020

Because structure fires attribute to the largest loss of life and property in relation to all types of fire incidents, it makes logical sense to only assess parcels that contain structures when assessing fire risk (wildland fires are assessed in the wildland classification). 56.1% of the district contains parcels without structures including: agricultural or vacant (may include structures such as barns/sheds but is generally not a threat to loss of human life), open space, highway/street/road, parks/recreation, golf courses and cemeteries (red bars below).

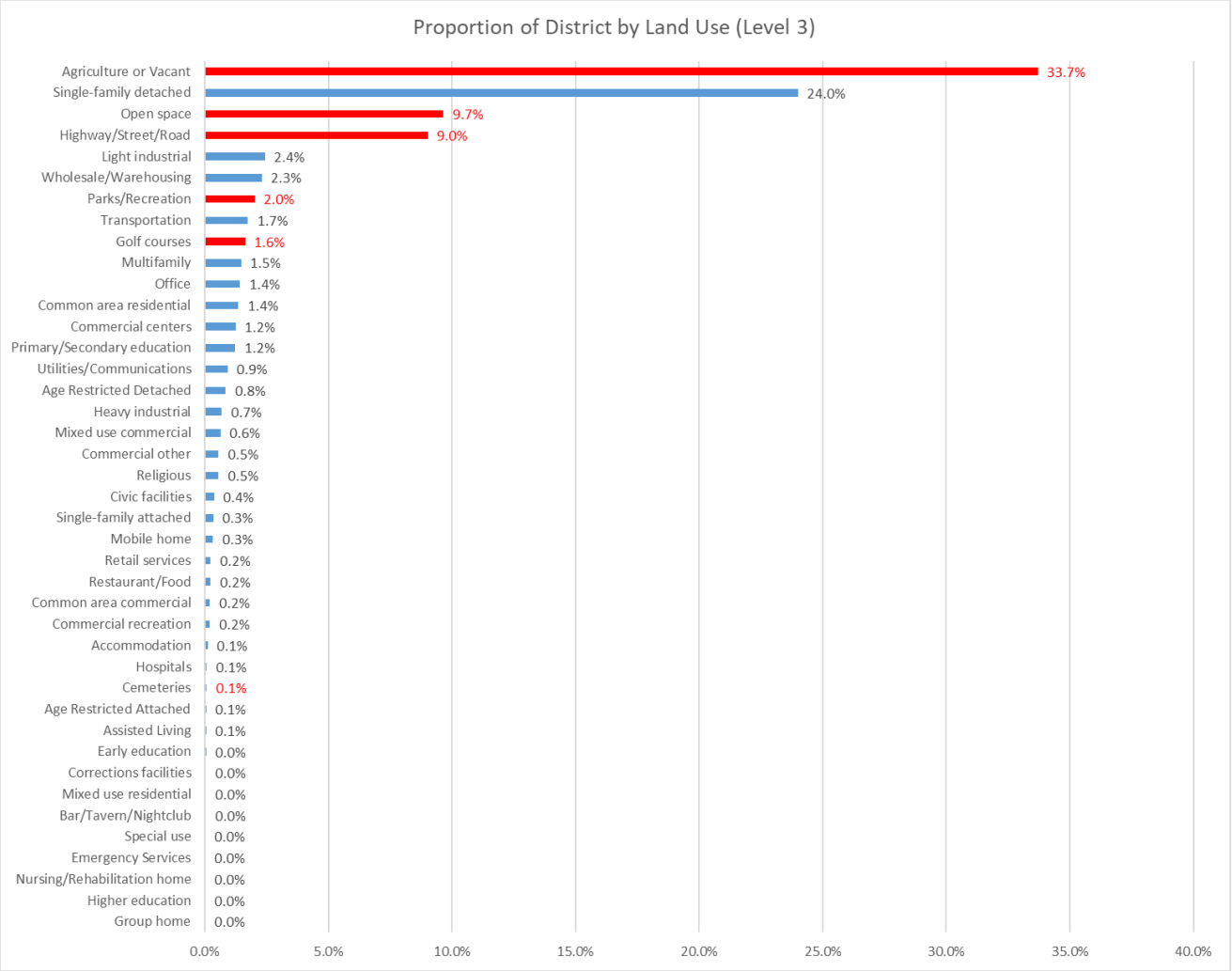


Figure 125 - NMFRD Land Use (Level 3), 2023

As previously mentioned in relation to fire risk, 18.7% of the district's assessed land includes inspected structures. The remaining 25.2% of the district's land is single-family detached (24%), age restricted detached (0.8%) and single-family attached (0.3%). This uninspected portion of land use is large and does not have a corresponding Building Risk Attribute Score because private residences do not receive a fire inspection from the district.

Because 64% of national civilian fire deaths occurring in one and two-family homes (see NFPA 2021 Civilian Fire Deaths by Occupancy, above) the district decided to apply a risk score of 17 to every single-family detached, age-restricted detached and single-family attached parcel. The district applied the score to the parcel as opposed to using acreage-size to reflect a score on a per-home basis. Generally, parcel (or lot)

sizes on homes vary and homes located in rural areas may have large acreage parcel sizes. In most cases, a single home (or structure) is on one parcel, regardless of the parcel size.

Finally, the district summed the risk scores associated with each parcel and totaled the score for the specific ERZ. The scores included the acreage adjusted *Building Risk Attribute Score* to account for all inspected parcels within the district. The factor increased the score related to all R-1, R-2, R-3 (other than single-family homes), R-4 and I groups and the individual parcel score for all single-family detached, age restricted detached and single-family attached homes (25.2% of total land area). The district did not apply a score to parcels of land that did not contain a structure (56.1% of total land area). Because the district's ERZs vary in square mileage (or acreage), the associated total fire risk score was evaluated based on a risk score per acre (total ERZ risk score divided by total ERZ acres). This allowed the district to analyze fire risk based on the makeup of the structures within the ERZ as opposed to the ERZ size.

EMS Risk Methodology

EMS historical incident locations are a reliable indicator of future incident locations. This is primarily due to the large volume of incidents within the EMS classification. When overlaying three years' worth of historical EMS incidents (24,646 incidents) onto a geospatial map and associating those locations to their parcel use, the district is able to estimate future EMS risk based on land use, explained in *Section 3 - Estimation of Future Incident Volume Based on Land Use*. However, those estimations use all incident data and do not specifically identify correlation of EMS incident data. The following chart is a correlation of EMS incidents to land use completed for a study in 2020 (2018-2020 data). Using this data, the district can estimate future EMS risk to developing ERZs based on planned land use.

Parcel Type	Calls (2018 - 2020)	Avg. Calls Per Year	Acres	Avg. Incidents Per Year Per Acre
Corrections facilities	240	80.0	15.4	5.21
Senior	3520	1173.3	403.5	2.91
Hospitals	169	56.3	32.0	1.76
Multifamily	2885	961.7	602.1	1.60
Commercial recreation	198	66.0	80.9	0.82
Civic facilities	398	132.7	180.5	0.73
Retail/Commercial	2001	667.0	1023.7	0.65
Single-Family	8837	2945.7	10104.7	0.29
Office	475	158.3	549.6	0.29
Early education	15	5.0	20.2	0.25
Education	352	117.3	511.8	0.23
Transportation/Utilities	3234	1078.0	4790.0	0.23
Religious	71	23.7	224.8	0.11
Mixed use	83	27.7	276.2	0.10
Industrial/Warehouse	211	70.3	2222.0	0.03
Open space	343	114.3	3953.6	0.03
Parks/Recreation	84	28.0	1489.9	0.02
Common area commercial	4	1.3	84.4	0.02
Cemeteries	1	0.3	30.9	0.01
Common area residential	18	6.0	556.6	0.01
Agriculture or Vacant	181	60.3	13807.5	0.00

Table 65 - NMFRD 2018-2020 EMS Incident Correlation to Land Use

The district designated risk categories assigned to fully developed ERZs by historical EMS incident volume. The number of EMS incidents closely correlates to population density. The more populated the ERZ, the more EMS incident volume is created. It is recognized that EMS incident volume in these ERZs is likely to trend with total incident volume growth, and without incident reduction efforts, is likely to continue to increase, straining current resources.

In addition to population density, EMS incident volume and category of risk is closely related to the specific property uses contained within the ERZ. Similar to the process conducted in the research contained in *Section 3 - Estimation of Future Incident Volume Based on Land Use*, by removing Agriculture or Vacant land use, the district is able to obtain a more accurate baseline for average annual incidents per acre, based on specific land use. The following research reveals that the baseline number of average annual EMS incidents per acre is .28. As demonstrated in the following table, ERZs containing land uses with higher "multiplier increase from baseline" land use types, will substantially increase the EMS incident volume within the ERZ.

*Removed from study based on reasoning within SOC/CRA "Estimation of Future Incident Volume Based on Land Use"

Land Use Type (Level 2)	Incidents (2018 - 2020)	Avg. Incidents Per Year	Acres	Average Annual Incidents Per Acre	Multipler Increase from Baseline	Percent Above District Average
Corrections facilities	240	80.0	15.4	5.2	18.34	1834%
Senior	3520	1173.3	403.5	2.9	10.24	1024%
Hospitals	169	56.3	32.0	1.8	6.20	620%
Multifamily	2885	961.7	602.1	1.6	5.62	562%
Commercial recreation	198	66.0	80.9	0.8	2.87	287%
Civic facilities	398	132.7	180.5	0.7	2.59	259%
Retail/Commercial	2001	667.0	1023.7	0.7	2.29	229%
Single-Family	8837	2945.7	10104.7	0.3	1.03	103%
Office	475	158.3	549.6	0.3	1.01	101%
Early education	15	5.0	20.2	0.2	0.87	87%
Education	352	117.3	511.8	0.2	0.81	81%
Transportation/Utilities	3234	1078.0	4790.0	0.2	0.79	79%
Religious	71	23.7	224.8	0.1	0.37	37%
Mixed use	83	27.7	276.2	0.1	0.35	35%
Industrial/Warehouse	211	70.3	2222.0	0.0	0.11	11%
Open space	343	114.3	3953.6	0.0	0.10	10%
Parks/Recreation	84	28.0	1489.9	0.0	0.07	7%
Common area commercial	4	1.3	84.4	0.0	0.06	6%
Cemeteries	1	0.3	30.9	0.0	0.04	4%
Common area residential	18	6.0	556.6	0.0	0.04	4%
Agriculture or Vacant*	181	60.3	13807.5	0.0	0.02	2%
Totals	**23,139**	**7,713**	**27,152.5**	**Baseline = .28**		

Table 66 - NMFRD EMS Incident Correlation to Land Use with Multiplier Study, 2018-2020

Technical Rescue Risk Methodology

Moderate and high-risk technical rescue incidents occur infrequently, and historical incidents are not reliable indicators of future incidents. Ninety-one percent of technical rescue incidents involve low-risk incidents such as vehicle lock-ins (person locked inside) and removal of victim(s) from stalled elevators.

The district categorizes risk within this classification by providing GIS maps of flood zones, topography/elevation changes, highway vehicle counts and other technical rescue applicable data to the NMFRD technical rescue team leaders and command staff for review. Command staff and the technical rescue team leaders then assign categories of risk to the individual ERZs based on technical rescue risk potential.

Hazardous Material Risk Methodology

Moderate and high-risk hazardous materials incidents occur infrequently, and historical incidents are not reliable indicators of future incidents. Ninety percent of district hazardous materials incidents are low-risk responses such as gas leaks (natural gas or LPG), flammable liquid spills or carbon monoxide incidents. While single-family residential homes are the largest contributor to these types of incidents, they represent primarily low-risk categories of hazardous materials responses.

The district categorizes risk within this classification by providing GIS maps of rail transport, highway vehicle counts, airport locations and packaged transport facilities locations to the NMFRD technical rescue team leaders and command staff. In addition, the district utilizes annual GIS chemical Computer-Aided Management of Emergency Operations (CAMEO) data, which contains facility names, locations and chemicals stored on the business' property. This data layer is included on the district's ERZ boundary map for team leaders and command staff review. Based on this information, command staff and hazardous materials team leaders assigned categories of risk to the individual ERZs based on hazardous material risk potential.

Aircraft Rescue and Firefighting (ARFF) Material Risk Methodology

Historical incident location, related to ARFF classification emergencies, are helpful to a certain extent. Specifically, ERZs that contain airports are associated with the largest number of incidents because most aircraft emergencies occur during takeoff and landing. ERZs close to the end of runways are also associated with higher risk based on the same reasoning. Although historical incidents within the ARFF classification occur in ERZs that do not contain airports and are not close to the end of runways, these incidents are rare and do not present higher, calculable risk for the ERZs where they occur.

The district categorizes risk within this classification by consulting GIS maps of airport locations overlaid onto the ERZ boundary map. The district has one airport within its boundary and a second airport, Erie Municipal Airport, just outside of district boundaries, classified as a GA – Local airport. The district consults the *Rocky Mountain Metropolitan Airport Environs Land Use Plan, prepared for Jefferson County by the Jefferson County Planning & Zoning & Rocky Mountain Metropolitan Airport* (50) when risking ERZs within certain distances of runway endpoints, known as Airport Critical Zones. According to the previously stated land use plan:

1.3.5 Airport Critical Zones

Certain areas around Airports have more potential to be impacted by and on airport activities. These areas are Critical Zones and include Runway Protection Zones (RPZ) and Approach Zones.

According to the Model Land Use Regulations published by the Colorado Land Use Commission, Airport Critical Zones are:

a) Areas 2,000 feet wide extending 5,000 feet horizontally from a point 200 feet from each end of visual runways.

b) Areas 4,000 feet wide extending 10,000 feet horizontally from a point 200 feet from each end of instrument runways.

Runway Protection Zones represent the most important type of critical zone at the Airport. The purpose of Runway Protection Zones, as defined by the FAA, "is to enhance the protection of people and property on the ground. They are also identified to protect airport approaches. Acquisition of Runway Protection Zones is eligible for state and federal funding programs. The FAA prefers that control of the Runway Protections Zones is achieved through ownership. The Rocky Mountain Metropolitan Airport owns most of their Runway Protection Zones.

Based on this information, command staff and the ARFF team leaders assigned categories of risk to the individual ERZs based on ARFF risk potential.

Wildland Risk Methodology

The district categorizes risk within this classification by providing GIS maps of land areas assessed by station captains and wildland team leaders. This assessment considers vehicle access, water supply, terrain, likely wind direction, exposures and type/quantity/height of fuels. This data layer is included on the district's ERZ boundary map and the wildland team leaders correlate this information to the corresponding ERZs. Based on this information, command staff and the wildland team leaders assigned categories of risk to the individual ERZs based on wildland risk potential.

Domestic Preparedness Risk Methodology

Historical incidents within the domestic preparedness classification occur infrequently and are not reliable indicators of future incidents. The district categorizes risk within this classification by providing the emergency manager GIS maps of schools, hospitals, government buildings, emergency response facilities, senior facilities, transportation facilities, water treatment facilities, event centers, oil & gas extraction sites, flood potential, dam locations, rail lines and highways. This data layer is included on the district's ERZ boundary map and the district's emergency manager correlates this information to the corresponding ERZs. Based on this information, command staff and the emergency manager assigned categories of risk to the individual ERZs based on domestic preparedness risk potential.

Current Risk Reduction Efforts

The district's risk reduction team delivers fire and life safety programs to prevent fires, injuries and other emergencies while enhancing the overall safety and preparedness of the community. The district has developed educational programs and outreach initiatives to target top areas of community risk.

Youth education: For elementary and middle school students, life safety education specialists deliver programs focused on bicycle safety, concussion prevention, fire escape planning, arson awareness and prevention and general fire safety and prevention. The team focuses on fire safety, including fire safety while cooking, driving safety, CPR instruction and fire extinguisher training for high school students. The team also delivers a youth-fire-setter program for children who have set fires or who are at risk of setting fires. Finally, the team facilitates campus fire drills in every school district.

Adult programs: Life safety education specialists focus on CPR education for the adult community and businesses and car seat safety for parents and grandparents. Personnel also teach a "Stop the Bleed" program to educate residents how to respond to a bleeding trauma to prevent death. Annually, the team conducts a Citizens Academy to educate residents about the operations of the fire district and train them in CPR, "Stop the Bleed" and fire extinguisher use.

Older Adults Programs: The education specialists also deliver a variety of fire and life safety presentations to senior groups and senior living residences throughout the year to help lower the risk of fire and injury within the senior population. The interactive educational classes cover fall prevention, CPR, emergency evacuation, home safety and other safety topics. The specialists also facilitate emergency evacuation planning with senior living residences and oversee evacuation drills with their staff and residents.

Collaborative health program: The district's community risk reduction specialist works with higher risk community members who are frequent users of 911 services and connects them with relevant community resources to help alleviate their need of emergency services. The specialist uses a combined approach focused on education and prevention and coordinating with community partners to best support an individual's non-emergent health needs.

Community Events: Throughout the year, the education specialists also participate in community events, where they educate residents on fire safety and teach CPR.

Personnel within the risk reduction team stay up to date on safety measures, industry standards and best practices within the field. Personnel attend professional development courses centered on risk reduction. The specialists are active members of the state's professional organization, the Colorado Risk Reduction Network. Additionally, personnel with the responsibility for these programs maintain certifications in Fire Life Safety Educator I and Educator II, Youth Fire Setter, Car Seat Technician, and CPR Instructor, as well as other certifications such as the "Stepping On" fall prevention certification.

Baseline Performance Statements

The following performance statements are the district's current response times at the 90th percentile using response data from 2021 – 2023. Response time analysis applies to in-district, emergent response incidents only. The district does not analyze incidents that occur outside the district and/or when the responding unit traveled non-emergent.

All Incidents Performance & Baseline Statements

All Times - 90th Percentile Baseline			**2021-2023**	**2023**	**2022**	**2021**
Alarm Handling	Pick-up to Dispatch	Urban	1:20	1:28	1:18	1:14
		Rural	1:31	1:41	1:23	1:30
Turnout Time	Turnout Time 1st Unit	Urban	2:30	2:30	2:27	2:34
		Rural	3:06	2:54	2:34	3:54
Travel Time	Travel Time 1st Unit Distribution	Urban	5:58	5:56	6:02	5:55
		Rural	7:09	6:59	7:16	7:12
	Travel Time ERF **Concentration**	Urban	7:21	7:05	7:23	7:37
		Rural	8:34	8:04	8:17	9:26
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	8:52	9:06	8:49	8:40
			n=30385	n=10568	n=10462	n=9355
		Rural	10:39	10:31	10:20	11:08
			n=926	n=323	n=310	n=293
	Total Response Time ERF **Concentration**	Urban	10:40	11:42	10:08	10:07
			n=29270	n=10158	n=10125	n=8987
		Rural	12:19	12:33	11:18	13:09
			n=857	n=297	n=287	n=273

Current response times at the 90th percentile using response data from 2021-2023. Response time analysis applies to in-district, emergent response incidents only.

For 90 percent of **all emergent, in-district incidents**, the total response time for the arrival of the first due unit is: 8 minutes and 52 seconds in urban areas; and 10 minutes and 39 seconds in rural areas.

For 90 percent of **all emergent, in-district incidents**, the total response time for the arrival of the Effective Response Force (ERF) is: 10 minutes and 40 seconds in urban areas; and 12 minutes and 19 seconds in rural areas.

Fire Suppression Performance & Baseline Statements

Low Risk Fires

Low Fire Suppression - 90th Percentile Baseline			**2021-2023**	**2023**	**2022**	**2021**
Alarm Handling	Pick-up to Dispatch	Urban	1:19	1:27	1:07	1:25
		Rural	1:08	0:46	1:23	0:40
Turnout Time	Turnout Time 1st Unit	Urban	2:48	2:46	2:58	2:39
		Rural	2:06	1:19	2:15	2:00
Travel Time	Travel Time 1st Unit Distribution	Urban	5:41	5:53	5:17	5:53
		Rural	4:33	0:57	5:14	4:08
	Travel Time ERF **Concentration**	Urban	5:41	5:53	5:17	5:53
		Rural	4:32	0:57	5:14	4:08
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	8:15	8:19	8:04	8:21
			n=271	n=82	n=93	n=96
		Rural	7:37	3:46	8:36	6:38
			n=22	n=2	n=14	n=6
	Total Response Time ERF **Concentration**	Urban	8:15	8:19	8:04	8:21
			n=257	n=82	n=88	n=87
		Rural	7:41	3:46	8:36	6:38
			n=17	n=2	n=12	n=3

Current response times for low-risk fires at the 90th percentile using response data from 2021-2023. Response time analysis applies to in-district, emergent response incidents only.

For 90 percent of all **low-risk fires incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, is: 8 minutes and 15 seconds in urban areas; and 7 minutes and 37 seconds in rural areas. The first due unit can provide 500 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; initiate command; request additional resources; establish an uninterrupted water supply; and advance an attack line flowing a minimum of 150 gpm.

For 90 percent of all **low-risk fires incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 3 firefighters, is: 8 minutes and 15 seconds in urban areas; and 7 minutes and 41 seconds in rural areas. The ERF can provide 500 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; initiate command; request additional resources; establish an uninterrupted water supply; and advance an attack line flowing a minimum of 150 gpm.

Moderate Risk Fires

Moderate Fire Suppression - 90th Percentile Baseline			**2021-2023**	**2023**	**2022**	**2021**
Alarm Handling	Pick-up to Dispatch	Urban	1:04	1:14	0:52	1:05
		Rural	1:17	-	1:17	-
Turnout Time	Turnout Time 1st Unit	Urban	2:38	1:56	2:18	3:00
		Rural	1:50	-	1:50	-
Travel Time	Travel Time 1st Unit Distribution	Urban	4:44	5:17	5:53	3:26
		Rural	3:00	-	3:00	-
	Travel Time ERF **Concentration**	Urban	14:39	11:21	17:00	10:31
		Rural	10:17	-	10:17	-
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	7:33	8:08	7:24	7:00
			n=47	n=17	n=16	n=14
		Rural	6:07	-	6:07	-
			n=1	n=0	n=1	n=0
	Total Response Time ERF **Concentration**	Urban	19:37	15:43	22:32	14:31
			n=31	n=9	n=14	n=8
		Rural	15:14	-	15:14	-
			n=1	n=0	n=1	n=0

Current response times for moderate-risk fires at the 90th percentile using response data from 2021-2023. Response time analysis applies to in-district, emergent response incidents only.

For 90 percent of all **moderate risk fires incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, is: 7 minutes and 33 seconds in urban areas. The first due unit can provide 500 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; initiate command; request additional resources; establish an uninterrupted water supply; and advance an attack line flowing a minimum of 150 gpm.

For 90 percent of all **moderate risk fires incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 16 firefighters, is: 19 minutes and 37 seconds in urban areas. The ERF can establish command; assign a safety officer; provide an uninterrupted water supply; provide a rapid intervention crew (RIC); advance an attack line or backup line for fire control; force entry; control utilities; conduct search and rescue; ventilate; perform salvage and overhaul; and triage, treat and transport injured civilians or firefighters.

From 2021-2023, the district had one moderate risk fire incident in rural areas. Per the CPSE University, Performance Statements (pg. 4), the commission stated that ten or less responses during the study period are insignificant and does not require baseline performance statements due to the small sample size of responses.

High Risk Fires

High Fire Suppression - 90th Percentile Baseline			2021-2023	2023	2022	2021
Alarm Handling	Pick-up to Dispatch	Urban	1:11	1:27	1:01	1:15
		Rural	-	-	-	-
Turnout Time	Turnout Time 1st Unit	Urban	2:41	2:24	3:02	2:23
		Rural	-	-	-	-
Travel Time	Travel Time 1st Unit Distribution	Urban	5:07	5:10	4:28	6:06
		Rural	-	-	-	-
	Travel Time ERF **Concentration**	Urban	11:55	6:46	14:07	9:23
		Rural	-	-	-	-
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	7:15	6:52	7:26	7:16
			n=30	n=7	n=14	n=9
		Rural	-	-	-	-
			n=0	n=0	n=0	n=0
	Total Response Time ERF **Concentration**	Urban	20:21	10:51	24:26	15:33
			n=11	n=2	n=7	n=2
		Rural	-	-	-	-
			n=0	n=0	n=0	n=0

Current response times for high-risk fires at the 90th percentile using response data from 2021-2023. Response time analysis applies to in-district, emergent response incidents only.

For 90 percent of all **high-risk fire incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, is: 7 minutes and 15 seconds in urban areas. The first due unit can provide 500 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; initiate command; request additional resources; establish an uninterrupted water supply; and advance an attack line flowing a minimum of 150 gpm.

For 90 percent of all **high-risk fires incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 21 firefighters, is: 20 minutes and 21 seconds in urban areas. The ERF is capable of establishing command; assigning a safety officer; providing an uninterrupted

water supply; providing rapid intervention crew (RIC) or on-deck crew; advancing an attack line and a backup line for fire control; completing forcible entry; completing utility control; conducting search and rescue; performing ventilation; performing salvage and overhaul; and providing triage, treatment and transport of injured civilians or firefighters, if required. The ERF for high-risk fires are also capable of placing elevated streams into service from aerial ladders.

From 2021-2023, the district had zero high-risk fire incidents in rural areas. Per the CPSE University, Performance Statements (pg. 4), the commission stated that ten or less responses during the study period are insignificant and does not require baseline performance statements due to the small sample size of responses.

Maximum Risk Fires (High Rise)

From 2021-2023, the district had zero maximum-risk fire incidents in urban areas and zero in rural areas. Per the CPSE University, Performance Statements (pg. 4), the commission stated that ten or less responses during the study period are insignificant and does not require baseline performance statements due to the small sample size of responses.

Maximum Risk Fires (Oil-Gas Facility Fire)

From 2021-2023, the district had zero maximum-risk fire incidents in urban areas and zero in rural areas. Per the CPSE University, Performance Statements (pg. 4), the commission stated that ten or less responses during the study period are insignificant and does not require baseline performance statements due to the small sample size of responses.

Emergency Medical Services (EMS) Performance & Baseline Statements

Low Risk EMS

Low EMS - 90th Percentile Baseline			2021-2023	2023	2022	2021
Alarm Handling	Pick-up to Dispatch	Urban	1:20	1:31	1:14	1:14
		Rural	1:24	1:35	1:22	1:14
Turnout Time	Turnout Time 1st Unit	Urban	2:20	2:23	2:19	2:19
		Rural	2:22	2:19	2:03	2:44
Travel Time	Travel Time 1st Unit Distribution	Urban	5:55	5:44	6:06	5:56
		Rural	6:50	6:19	7:10	7:02
	Travel Time ERF **Concentration**	Urban	7:58	7:38	8:04	8:12
		Rural	8:36	8:44	8:21	8:43
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	8:39	8:54	8:33	8:29
			n=11120	n=3705	n=3745	n=3670
		Rural	9:47	9:02	9:29	10:51
			n=277	n=96	n=90	n=91
	Total Response Time ERF **Concentration**	Urban	12:34	12:50	12:30	12:20
			n=10340	n=3523	n=3484	n=3333
		Rural	13:37	13:16	14:00	13:40
			n=230	n=84	n=72	n=74

Current response times for low-risk EMS at the 90th percentile using response data from 2021-2023. Response time analysis applies to in-district, emergent response incidents only.

For 90 percent of all **low-risk EMS incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 2 firefighters, at least one of which is qualified as an advanced life support provider (ALS) is: 8 minutes and 39 seconds in urban areas; and 9 minutes and 47 seconds in rural areas. The first due unit can establish command and assess scene safety; requesting additional resources if needed; performing initial patient assessment; initiating advanced life support (ALS) care; and assisting with patient packaging and transport.

For 90 percent of all **low risk EMS incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 5 firefighters, at least two of which are qualified as an advanced life support provider (ALS) is: 12 minutes and 34 seconds in urban areas; and 13 minutes and 37 seconds in rural areas. The ERF is capable of establishing command and assessing scene safety; requesting additional resources if needed; assessing the patient; performing advanced life support (ALS) care; and conducting patient packaging and transport.

Moderate Risk EMS

Moderate EMS - 90th Percentile Baseline			**2021-2023**	**2023**	**2022**	**2021**
Alarm Handling	Pick-up to Dispatch	Urban	1:12	1:19	1:10	1:07
		Rural	1:33	1:55	1:20	1:24
Turnout Time	Turnout Time 1st Unit	Urban	2:20	2:21	2:21	2:19
		Rural	2:26	2:26	2:22	2:30
Travel Time	Travel Time 1st Unit Distribution	Urban	5:46	5:40	5:51	5:47
		Rural	7:20	6:56	7:08	7:52
	Travel Time ERF **Concentration**	Urban	7:55	7:36	8:09	8:01
		Rural	10:15	7:58	9:18	13:10
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	8:20	8:29	8:23	8:08
			n=7971	n=2657	n=2693	n=2621
		Rural	10:23	10:10	10:31	10:28
			n=219	n=70	n=70	n=79
	Total Response Time ERF **Concentration**	Urban	12:31	12:40	12:43	12:08
			n=7558	n=2584	n=2543	n=2431
		Rural	15:27	13:52	14:39	17:37
			n=198	n=65	n=62	n=71

Current response times for moderate-risk EMS at the 90th percentile using response data from 2021-2023. Response time analysis applies to in-district, emergent response incidents only.

For 90 percent of all **moderate risk EMS incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 2 firefighters, at least one of which is qualified as an advanced life support provider (ALS) is: 8 minutes and 20 seconds in urban areas; and 10 minutes and 23 seconds in rural areas. The first due unit can establish command and assess scene safety; requesting additional resources if needed; performing initial patient assessment; initiating advanced life support (ALS) care; and assisting with patient packaging and transport.

For 90 percent of all **moderate risk EMS incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 5 firefighters, at least two of which are qualified as an advanced life support provider (ALS) is: 12 minutes and 31 seconds in urban areas; and 15 minutes and 27 seconds in rural areas. The ERF is capable of establishing command and assessing scene safety; requesting additional resources if needed; assessing the patient; performing advanced life support (ALS) care; and conducting patient packaging and transport.

High Risk EMS

High EMS - 90th Percentile Baseline			2021-2023	2023	2022	2021
Alarm Handling	Pick-up to Dispatch	Urban	1:09	1:17	1:04	1:08
		Rural	1:01	0:38	1:08	1:09
Turnout Time	Turnout Time 1st Unit	Urban	2:12	2:18	2:05	2:14
		Rural	2:01	1:36	2:00	2:17
Travel Time	Travel Time 1st Unit Distribution	Urban	5:44	5:45	5:51	5:35
		Rural	6:18	6:49	5:53	6:20
	Travel Time ERF **Concentration**	Urban	7:39	7:41	7:38	7:37
		Rural	7:16	6:51	6:44	8:06
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	8:10	8:26	8:11	7:55
			n=907	n=279	n=311	n=317
		Rural	9:22	9:04	8:11	10:35
			n=20	n=5	n=7	n=8
	Total Response Time ERF **Concentration**	Urban	11:44	12:14	11:16	11:45
			n=845	n=267	n=288	n=290
		Rural	10:56	10:43	9:21	12:41
			n=19	n=5	n=7	n=7

Current response times for high-risk EMS at the 90th percentile using response data from 2021-2023. Response time analysis applies to in-district, emergent response incidents only.

For 90 percent of all **high-risk EMS incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 2 firefighters, at least one of which is qualified as an advanced life support provider (ALS) is: 8 minutes and 10 seconds in urban areas; and 9 minutes and 22 seconds in rural areas. The first due unit can establish command and assess scene safety; requesting additional resources if needed; performing initial patient assessment; initiating advanced life support (ALS) care; and assisting with patient packaging and transport.

For 90 percent of all **high-risk EMS incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 5 firefighters, at least two of which are qualified as an advanced life support provider (ALS) is: 11 minutes and 44 seconds in urban areas; and 10 minutes and 56 seconds in rural areas. The ERF can establish command and assess scene safety; request additional resources if needed; assess the patient; perform advanced life support (ALS) care; and conduct patient packaging and transport.

Maximum Risk EMS

From 2021-2023, the district had zero maximum-risk EMS incidents in urban areas and zero in rural areas. Per the CPSE University, Performance Statements (pg. 4), the commission stated that ten or less responses during the study period are insignificant and does not require baseline performance statements due to the small sample size of responses.

Technical Rescue Performance & Baseline Statements

Low Risk Rescue

Low Rescue - 90th Percentile Baseline			2021-2023	2023	2022	2021
Alarm Handling	Pick-up to Dispatch	Urban	1:31	1:33	1:34	1:22
		Rural	0:40	0:54	0:12	-
Turnout Time	Turnout Time 1st Unit	Urban	2:13	2:33	2:11	1:43
		Rural	1:08	1:06	1:13	-
Travel Time	Travel Time 1st Unit Distribution	Urban	6:29	6:22	7:15	5:20
		Rural	4:12	3:13	6:10	-
	Travel Time ERF **Concentration**	Urban	6:29	6:22	7:15	5:20
		Rural	4:12	3:13	6:10	-
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	9:22	9:15	10:07	8:14
			n=154	n=60	n=60	n=34
		Rural	6:42	6:15	7:35	-
			n=3	n=2	n=1	n=0
	Total Response Time ERF **Concentration**	Urban	9:22	9:15	10:07	8:14
			n=154	n=60	n=60	n=34
		Rural	6:42	6:15	7:35	-
			n=3	n=2	n=1	n=0

Current response times for low-risk rescue at the 90th percentile using response data from 2021-2023. Response time analysis applies to in-district, emergent response incidents only.

For 90 percent of all **low-risk technical rescue incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, at least one of which is qualified as an advanced life support provider (ALS), is: 9 minutes and 22 seconds in urban areas. The first due unit can establish command and assess scene safety; requesting additional resources if needed; performing scene assessment; developing an incident action plan; and conducting low-risk technical rescue operations.

For 90 percent of all **low-risk technical rescue incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 3 firefighters, at least one of which is qualified as an advanced life support provider (ALS), is**:** 9 minutes and 22 seconds in urban areas. The first due unit can establish command and assess scene safety; requesting additional resources if needed; performing scene assessment; developing an incident action plan; and conducting low-risk technical rescue operations.

From 2021-2023, the district had three low-risk rescue incidents in rural areas. Per the CPSE University, Performance Statements (pg. 4), the commission stated that ten or less responses during the study period are insignificant and does not require baseline performance statements due to the small sample size of responses.

Moderate Risk Rescue

Moderate Rescue - 90th Percentile Baseline			2021-2023	2023	2022	2021
Alarm Handling	Pick-up to Dispatch	Urban	1:11	1:13	0:53	1:18
		Rural	1:21	1:17	1:25	1:26
Turnout Time	Turnout Time 1st Unit	Urban	1:58	2:11	1:52	1:43
		Rural	1:46	1:21	3:02	1:21
Travel Time	Travel Time 1st Unit Distribution	Urban	5:49	5:48	3:28	7:10
		Rural	5:09	3:24	5:25	8:21
	Travel Time ERF **Concentration**	Urban	9:31	5:48	5:06	15:57
		Rural	5:01	3:24	6:38	-
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	8:12	8:19	5:38	9:27
			n=26	n=12	n=5	n=9
		Rural	8:20	6:10	9:52	11:08
			n=4	n=2	n=1	n=1
	Total Response Time ERF **Concentration**	Urban	17:39	18:54	10:03	18:30
			n=16	n=8	n=2	n=6
		Rural	12:32	10:56	14:07	-
			n=2	n=1	n=1	n=0

Current response times for moderate-risk rescue at the 90th percentile using response data from 2021-2023. Response time analysis applies to in-district, emergent response incidents only.

For 90 percent of all **moderate risk technical rescue incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, at least one of which is qualified as an advanced life support provider (ALS), is: 8 minutes and 12 seconds in urban areas. The first due unit can establish command and assessing scene safety; requesting additional resources if needed; performing initial scene assessment; developing an initial incident action plan; initiating moderate risk technical rescue operations; and if needed, assessing the patient, performing advanced life support (ALS) care and conducting patient packaging.

For 90 percent of all **moderate risk technical rescue incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 9 firefighters, at least three of which is qualified as an advanced life support provider (ALS), is**:** 17 minutes and 39 seconds in urban areas. The ERF can establish command and assessing scene safety; requesting additional resources if needed; performing scene assessment; developing incident action plan; conducting moderate risk technical rescue operations; and if needed, assessing patient(s), performing advanced life support (ALS) care and conducting patient packaging and transport.

From 2021-2023, the district had four moderate-risk rescue incidents in rural areas for 1st unit on scene and two with an ERF. Per the CPSE University, Performance Statements (pg. 4), the commission stated that ten or less responses during the study period are insignificant and does not require baseline performance statements due to the small sample size of responses.

High/Maximum Risk Rescue

From 2021-2023, the district had three high/maximum-risk rescue incidents in urban areas and zero in rural areas. Per the CPSE University, Performance Statements (pg. 4), the commission stated that ten or less responses during the study period are insignificant and does not require baseline performance statements due to the small sample size of responses.

Hazardous Materials (HazMat) Performance & Baseline Statements

Low Risk HazMat

Low HazMat - 90th Percentile Baseline			**2021-2023**	**2023**	**2022**	**2021**
Alarm Handling	Pick-up to Dispatch	Urban	1:17	1:27	1:14	1:10
		Rural	1:48	2:40	1:20	0:42
Turnout Time	Turnout Time 1st Unit	Urban	2:34	2:31	2:44	2:25
		Rural	2:35	2:13	1:56	3:32
Travel Time	Travel Time 1st Unit Distribution	Urban	6:54	6:32	7:14	6:54
		Rural	8:36	9:14	6:46	8:38
	Travel Time ERF **Concentration**	Urban	6:54	6:32	7:14	6:54
		Rural	8:36	9:14	6:46	8:38
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	9:27	9:34	9:39	9:03
			n=357	n=122	n=136	n=99
		Rural	11:44	12:45	8:05	12:13
			n=22	n=11	n=4	n=7
	Total Response Time ERF **Concentration**	Urban	9:27	9:34	9:39	9:03
			n=357	n=122	n=136	n=99
		Rural	11:44	12:45	8:05	12:13
			n=22	n=11	n=4	n=7

Current response times for low-risk HazMat at the 90th percentile using response data from 2021-2023. Response time analysis applies to in-district, emergent response incidents only.

For 90 percent of all **low-risk hazardous materials incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, all of which is minimally qualified at hazardous materials operations level is: 9 minutes and 27 seconds in urban areas; and 11 minutes and 44 seconds in rural areas. The first due unit can establish command and assess scene safety; request additional resources; perform scene assessment; develop an incident action plan; isolate access to the scene; performing area evacuation; and performing hazardous material operations level mitigation.

For 90 percent of all **low-risk hazardous materials incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 3 firefighters, all of which is minimally qualified at hazardous materials operations level is: 9 minutes and 27 seconds in urban areas; and 11 minutes and 44 seconds in rural areas. The first due unit can establish command and assessing scene safety; requesting additional resources if needed; performing scene assessment; developing an incident action plan; isolating access to the scene; performing area evacuation (if needed); performing hazardous material operations level mitigation.

Moderate Risk HazMat

From 2021-2023, the district had five moderate-risk HazMat incidents in urban areas and zero in rural areas. Per the CPSE University, Performance Statements (pg. 4), the commission stated that ten or less responses during the study period are insignificant and does not require baseline performance statements due to the small sample size of responses.

High/Maximum Risk HazMat

From 2021-2023, the district had eight high/maximum-risk HazMat incidents in urban areas and one in rural areas. Per the CPSE University, Performance Statements (pg. 4), the commission stated that ten or less responses during the study period are insignificant and does not require baseline performance statements due to the small sample size of responses.

Aircraft Rescue and Firefighting (ARFF) Performance & Baseline Statements

Moderate Risk ARFF

Moderate ARFF - 90th Percentile Baseline			2021-2023	2023	2022	2021
Alarm Handling	Pick-up to Dispatch	Urban	2:22	0:43	4:04	0:48
		Rural	-	-	-	-
Turnout Time	Turnout Time 1st Unit	Urban	2:33	1:26	2:04	3:59
		Rural	-	-	-	-
Travel Time	Travel Time 1st Unit Distribution	Urban	4:07	2:04	5:06	3:55
		Rural	-	-	-	-
	Travel Time ERF **Concentration**	Urban	7:08	4:52	8:49	5:28
		Rural	-	-	-	-
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	6:30	4:08	8:06	5:33
			n=35	n=7	n=17	n=11
		Rural	-	-	-	-
			n=0	n=0	n=0	n=0
	Total Response Time ERF **Concentration**	Urban	11:24	7:41	13:51	9:23
			n=13	n=3	n=7	n=3
		Rural	-	-	-	-
			n=0	n=0	n=0	n=0

Current response times for moderate-risk ARFF at the 90th percentile using response data from 2021-2023. Response time analysis applies to in-district, emergent response incidents only.

For 90 percent of all **moderate risk aircraft rescue and firefighting incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, at least one of which is qualified as an advanced life support provider (ALS), is: 6 minutes and 30 seconds in urban areas. The first due unit can communicate with Metro Tower or Denver approach for ground clearance into the movement area if needed; establish command and assess scene safety; request additional resources; inform incoming units

of staging locations; and assess the scene if the incoming aircraft is involved in an accident (Alert 2 becomes Alert 3).

For 90 percent of all **moderate risk aircraft rescue and firefighting incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 7 firefighters, at least two of who are qualified as an advanced life support provider (ALS), is: 11 minutes and 24 seconds in urban areas. The ERF can communicate with Metro Tower or Denver approach for ground clearance into the movement area if needed; establishing command and assessing scene safety; requesting additional resources if needed; informing incoming units of staging locations; preparing for initial scene assessment and ARFF operations if the incoming aircraft is involved in an accident (Alert 2 becomes Alert 3).

From 2021-2023, the district had zero moderate-risk ARFF incidents in rural areas. Per the CPSE University, Performance Statements (pg. 4), the commission stated that ten or less responses during the study period are insignificant and does not require baseline performance statements due to the small sample size of responses.

High/Maximum Risk ARFF

From 2021-2023, the district had seven high/maximum-risk ARFF incidents in urban areas and zero in rural areas. Per the CPSE University, Performance Statements (pg. 4), the commission stated that ten or less responses during the study period are insignificant and does not require baseline performance statements due to the small sample size of responses.

Wildland Performance & Baseline Statements

Low Risk Wildland

Low Wildland - 90th Percentile Baseline			2021-2023	2023	2022	2021
Alarm Handling	Pick-up to Dispatch	Urban	1:04	1:23	1:06	0:40
		Rural	0:50	-	0:50	0:51
Turnout Time	Turnout Time 1st Unit	Urban	3:03	2:28	3:24	3:02
		Rural	3:58	-	3:11	8:43
Travel Time	Travel Time 1st Unit Distribution	Urban	6:24	6:13	5:24	8:30
		Rural	5:07	-	5:45	1:17
	Travel Time ERF **Concentration**	Urban	6:24	6:13	5:24	8:30
		Rural	5:07	-	5:45	1:17
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	9:25	9:24	9:05	10:04
			n=81	n=23	n=38	n=20
		Rural	9:34	-	9:21	10:51
			n=7	n=0	n=6	n=1
	Total Response Time ERF **Concentration**	Urban	9:25	9:24	9:05	10:04
			n=81	n=23	n=38	n=20
		Rural	9:34	-	9:21	10:51
			n=7	n=0	n=6	n=1

For 90 percent of all **low-risk wildland incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, is: 9 minutes and 25 seconds in urban areas. The first due unit is capable of establishing command and assessing scene safety; requesting additional resources if needed; performing initial scene assessment; developing an initial incident action plan; informing incoming units of fire size, fuel type, rate of spread, potential (acreage and structures threatened), staging and/or access locations; extending appropriate hose line(s) using progressive hose lays or mobile attack; and extinguishing the fire.

*The majority of **low-risk wildland incidents** are mitigated with the first arriving engine/truck company. Many times, the additional responding units (Type 6 brush truck and battalion chief with discretionary response) are canceled or arrive on scene and is staged, but not assigned. For this reason, the Effective Response Force (ERF) total for **low-risk wildland incidents** is derived from any wildland incident with an arrival of 3-7 firefighters*. For 90 percent of all **low-risk wildland incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 3-7 firefighters, is: 9 minutes and 25 seconds in urban areas. The ERF is capable of establishing command and assessing scene safety; requesting additional resources if needed; performing scene assessment; developing an incident action plan; informing incoming units of fire size, fuel type, rate of spread, potential (acreage and structures threatened), staging and/or access locations; extending appropriate hose line(s) using progressive hose lays or mobile attack; and extinguishing the fire.

From 2021-2023, the district had seven low-risk wildland incidents in rural areas. Per the CPSE University, Performance Statements (pg. 4), the commission stated that ten or less responses during the study period are insignificant and does not require baseline performance statements due to the small sample size of responses.

Moderate Risk Wildland

Moderate risk wildland incidents *are any wildland incidents requiring resources beyond the initially toned units of an engine/truck, Type 6 brush truck and battalion chief (the battalion chief has a discretionary response). If the size, fuel type, rate of spread or potential (acreage and structures threatened) warrants additional units beyond the initial response of seven or less firefighters, the incident qualifies as a* ***moderate risk wildland incident****.*

From 2021-2023, the district had nine moderate-risk wildland incidents in urban areas and three in rural areas. Per the CPSE University, Performance Statements (pg. 4), the commission stated that ten or less responses during the study period are insignificant and does not require baseline performance statements due to the small sample size of responses.

Domestic Preparedness Performance & Baseline Statements

From 2021-2023, the district had five low-risk domestic preparedness incidents in urban areas and one in rural areas. Per the CPSE University, Performance Statements (pg. 4), the commission stated that ten or less responses during the study period are insignificant and does not require baseline performance statements due to the small sample size of responses.

From 2021-2023, the district had zero high/maximum-risk domestic preparedness incidents in urban areas and zero in rural areas. Per the CPSE University, Performance Statements (pg. 4), the commission stated that ten or less responses during the study period are insignificant and does not require baseline performance statements due to the small sample size of responses.

Section 6 – Future Deployment and Performance

After analyzing the baseline performance of the district's response times, it is important for the district to improve upon response metrics to provide the community with the best possible service. The district accomplishes this by setting benchmark response times that are intended to improve baseline response times.

Benchmark Performance Statements

The following are benchmark statements for all fire and non-fire related risks. These statements are included for all classifications (fire, EMS, technical rescue, HazMat, ARFF, wildland and domestic preparedness) and categories of risk (low, moderate, high and maximum).

When referencing benchmark response times, the times stated are at the 90th percentile and correlate to the specific risk classification. Response time benchmarks apply to in-district, emergent response incidents only. Benchmark statements and charts were formed using a combination of baseline performance for specific classifications, 85th percentile times created from baseline performance, and all-incident (emergent in-district) baseline performance (as seen on pg. 247). This combination of metrics used to inform the creation of benchmark statements was necessary due to the lack of incidents (n value) in many classifications and categories of risk.

Fire Benchmark Statements

The district has benchmark statements for low, moderate, high and maximum fire risks. Moderate, high and maximum risk fires receive an initial alarm and may be upgraded to a second or third alarm (or greater) based on dispatch information or incident commander needs. The district discussed the specific numbers of personnel related to risk classification and category in *Section 3 - Critical Task Analysis and Effective Response Force.*

Maximum risk fires have two different ERF numbers due to having two different types of maximum risk fire incidents with different corresponding critical task analyses (High-rise fire and Oil-gas facility fire). However, due to the district having no baseline maximum risk fires to analyze to create benchmark statements, the benchmarks created for both maximum risk fire types use baseline performance from high-risk fires to inform the benchmark statements, with the realization that maximum risk fires would be supplemented with additional alarms.

Fire Response Benchmarks			Low	Moderate	High	Maximum
Alarm Handling	Pick-up to Dispatch	Urban	1:04	1:04	1:04	1:04
		Rural	1:04	1:04	1:04	1:04
Turnout Time	Turnout Time 1st Unit	Urban	2:00	2:00	2:00	2:00
		Rural	2:00	2:00	2:00	2:00
Travel Time	Travel Time 1st Unit	Urban	5:45	5:45	5:45	5:45
		Rural	6:45	6:45	6:45	6:45
	Travel Time ERF	Urban	5:45	11:00	12:00	14:00
		Rural	6:45	13:00	14:00	16:00
Total Response Time	Total Response Time 1st Unit on Scene	Urban	8:49	8:49	8:49	8:49
		Rural	9:49	9:49	9:49	9:49
	Total Response Time ERF **Concentration**	Urban	8:49	16:48	17:53	19:53
		Rural	9:49	18:48	19:53	21:53

Low Risk Fire Incidents

For 90 percent of all **low-risk fires incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The first due unit can provide 500 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; initiate command; request additional resources; establish an uninterrupted water supply; and establish and advance an attack line flowing a minimum of 150 gpm.

For 90 percent of all **low-risk fires incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 3 firefighters, shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The ERF can provide 500 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; initiating command; requesting additional resources; establishing an uninterrupted water supply; and establishing and advancing an attack line flowing a minimum of 150 gpm.

Moderate Risk Fire Incidents

For 90 percent of all **moderate risk fires incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The first due unit shall be capable of providing 500 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; initiating command; requesting additional

resources; establishing an uninterrupted water supply; and establishing and advancing an attack line flowing a minimum of 150 gpm.

For 90 percent of all **moderate risk fires incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 16 firefighters, shall be: 16 minutes and 48 seconds in urban areas; and 18 minutes and 48 seconds in rural areas. The ERF shall be capable of establishing command; assigning a safety officer; providing an uninterrupted water supply; providing rapid intervention crew (RIC) or on-deck; advancing an attack line and a backup line for fire control; completing forcible entry; completing utility control; conducting search and rescue; performing ventilation; performing salvage and overhaul; and providing triage, treatment and transport of injured civilians or firefighters, if required.

High Risk Fire Incidents

For 90 percent of all **high-risk fire incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The first due unit shall be capable of providing 500 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; initiating command; requesting additional resources; establishing an uninterrupted water supply; and establishing and advancing an attack line flowing a minimum of 150 gpm.

For 90 percent of all **high-risk fires incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 21 firefighters, shall be: 17 minutes and 53 seconds in urban areas; and 19 minutes and 53 seconds in rural areas. The ERF shall be capable of establishing command; assigning a safety officer; providing an uninterrupted water supply; providing rapid intervention crew (RIC) or on-deck; advancing an attack line and a backup line for fire control; completing forcible entry; completing utility control; conducting search and rescue; performing ventilation; performing salvage and overhaul; and providing triage, treatment and transport of injured civilians or firefighters, if required. The ERF for high-risk fires can also place elevated streams into service from aerial ladders.

Maximum Risk Fire Incidents (High Rise)

For 90 percent of all **maximum risk fires incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The first due unit shall be capable of providing 500 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; initiating command; requesting additional

resources; establishing an uninterrupted water supply; and establishing and advancing an attack line flowing a minimum of 150 gpm.

For 90 percent of all **maximum risk fires incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 29 firefighters, shall be: 19 minutes and 53 seconds in urban areas; and 21 minutes and 53 seconds in rural areas. The ERF shall be capable of establishing command; assigning a safety officer; providing an uninterrupted water supply and FDC sprinkler/standpipe and fire pump support; providing lobby control; advancing an attack line and a backup line for fire control; providing rapid intervention crew (RIC); completing forcible entry; completing utility control; conducting search and rescue and fire extension on the floor above the fire floor; performing ventilation and stairway control; performing elevator control; performing salvage and overhaul; establishing rehab; and providing triage, treatment and transport of injured civilians or firefighters, if required. The ERF for maximum risk fires can also place elevated streams into service from aerial ladders.

Maximum Risk Fire Incidents (Oil-Gas Facility Fire)

For 90 percent of all **maximum risk fires incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The first due unit shall be capable of providing 500 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; initiating command; requesting additional resources; establishing an uninterrupted water supply; and establishing and advancing an attack line flowing a minimum of 150 gpm.

For 90 percent of all **maximum risk fires incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 25 firefighters, shall be: 19 minutes and 53 seconds in urban areas; and 21 minutes and 53 seconds in rural areas. The ERF shall be capable of establishing unified command; assigning a safety officer; establishing an uninterrupted water supply; establishing a recon team capable of assessing extent, identifying isolation measures and locating potential victims; conducting search and rescue; performing air/plume monitoring and foam trailer fire attack; performing emergency decontamination; setting up water tender operations; establishing rehab; and providing triage, treatment and transport of injured civilians or firefighters, if required.

Emergency Medical Services (EMS) Response Benchmark Statements

The district has benchmark statements for low/moderate/high and maximum EMS risks. In 2021, the district added an additional response known as Mass Causality Incident (MCI). This incident type is categorized as maximum risk for EMS incidents categorization. For analysis purposes, the district qualifies any historical EMS incident as an MCI if the incident had greater than three transporting units respond, and each unit transported at least one patient to the hospital. The district discussed the specific numbers of personnel related to risk classification and category in *Section 3 - Critical Task Analysis and Effective Response Force.*

EMS Response Benchmarks			Low/Moderate/High	Maximum
Alarm Handling	Pick-up to Dispatch	Urban	1:04	1:04
		Rural	1:04	1:04
Turnout Time	Turnout Time 1st Unit	Urban	2:00	2:00
		Rural	2:00	2:00
Travel Time	Travel Time 1st Unit	Urban	5:45	5:45
		Rural	6:45	6:45
	Travel Time ERF	Urban	6:45	8:45
		Rural	7:45	9:45
Total Response Time	Total Response Time 1st Unit on Scene	Urban	8:49	8:49
		Rural	9:49	9:49
	Total Response Time ERF **Concentration**	Urban	12:00	14:00
		Rural	13:00	15:00

Low, Moderate & High-Risk Emergency Medical Service (EMS) Incidents

For 90 percent of all **low, moderate and high risk EMS incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 2 firefighters, at least one of which is qualified as an advanced life support provider (ALS) shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The first due unit can establish command and assess scene safety; request additional resources; perform initial patient assessment; initiating advanced life support (ALS) care; and assisting with patient packaging and transport.

For 90 percent of all **low, moderate and high risk EMS incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 5 firefighters, at least two of which are

qualified as an advanced life support provider (ALS) shall be: 12 minutes in urban areas; and 13 minutes in rural areas. The ERF shall be capable of establishing command and assessing scene safety; requesting additional resources if needed; assessing the patient; performing advanced life support (ALS) care; and conducting patient packaging and transport.

Maximum Risk Emergency Medical Service (EMS) Incidents

For 90 percent of all **maximum risk EMS incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 2 firefighters, at least one of which is qualified as an advanced life support provider (ALS) shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The first due unit can establish command and assess scene safety; request resources; perform patient assessment; initiate advanced life support (ALS) care; and assist with patient packaging and transport.

For 90 percent of all **maximum risk EMS incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 10 firefighters, at least four of which are qualified as an advanced life support provider (ALS) shall be: 14 minutes in urban areas; and 15 minutes in rural areas. The ERF can establish command and assess scene safety; request resources; assign a safety officer and triage officer; perform patient assessment; perform advanced life support (ALS) care; and conduct patient packaging and transport.

Technical Rescue Response Benchmark Statements

The district has benchmark statements for low, moderate and high/maximum technical rescue risks. The district discussed the specific numbers of personnel related to risk classification and category in *Section 3 - Critical Task Analysis and Effective Response Force.*

Low risk rescue has two different critical task analyses due to having two different types of low-risk rescue incidents with dissimilar corresponding critical tasks needs (Non-injury, Non-MVA and Non-Injury MVA). However, both low risk rescue types have the same ERF number.

Moderate risk rescue has three critical task analyses due to having three different types of moderate risk rescue incidents with different corresponding critical tasks needs (Vehicle Extrication, Water/Ice Rescue and Industrial Accident). However, all three of the moderate risk rescue types have the same ERF number.

Technical Rescue Response Benchmarks			Low	Moderate	High/Maximum
Alarm Handling	Pick-up to Dispatch	Urban	1:04	1:04	1:04
		Rural	1:04	1:04	1:04
Turnout Time	Turnout Time 1st Unit	Urban	2:00	2:00	2:00
		Rural	2:00	2:00	2:00
Travel Time	Travel Time 1st Unit	Urban	5:45	5:45	5:45
		Rural	6:45	6:45	6:45
	Travel Time ERF	Urban	5:45	8:45	14:00
		Rural	6:45	10:45	16:00
Total Response Time	Total Response Time 1st Unit on Scene	Urban	8:49	8:49	8:49
		Rural	9:49	9:49	9:49
	Total Response Time ERF **Concentration**	Urban	8:49	14:00	20:00
		Rural	9:49	16:00	22:00

Low Risk Technical Rescue Incidents

For 90 percent of all **low risk technical rescue incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, at least one of which is qualified as an advanced life support provider (ALS), shall be: 8 minutes and 49 seconds urban areas; and 9 minutes and 49 seconds in rural areas. The first due unit shall be capable of establishing command and assessing scene safety; requesting additional resources if needed; performing scene assessment; developing an incident action plan; and conducting low risk technical rescue operations.

The first due unit, staffed with a minimum of 3 firefighters, is the same total for the ERF (3), so benchmark ERF times for urban and rural areas at the 90th percentile are the same as the first due unit urban and rural 90th percentile times. The capabilities of the ERF (or first due unit) are stated above.

Moderate Risk Technical Rescue Incidents

For 90 percent of all **moderate risk technical rescue incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, at least one of which is qualified as an advanced life support provider (ALS), shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The first due unit shall be capable of establishing command and assessing scene safety; requesting additional resources if needed; performing initial scene assessment; developing an initial

incident action plan; initiating moderate risk technical rescue operations; and if needed, assessing the patient, performing advanced life support (ALS) care and conducting patient packaging.

For 90 percent of all **moderate risk technical rescue incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 9 firefighters, at least three of which is qualified as an advanced life support provider (ALS), shall be: 14 minutes in urban areas; and 16 minutes in rural areas. The ERF shall be capable of establishing command and assessing scene safety; requesting additional resources if needed; performing scene assessment; developing incident action plan; conducting moderate risk technical rescue operations; and if needed, assessing patient(s), performing advanced life support (ALS) care and conducting patient packaging and transport.

High/Maximum Risk Technical Rescue Incidents

For 90 percent of all **high/maximum risk technical rescue incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, at least one of which is qualified as an advanced life support provider (ALS), shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The first due unit shall be capable of establishing command and assessing scene safety; requesting additional resources if needed (NATRT specific to the technical rescue discipline related to the incident); performing initial scene assessment; developing an initial incident action plan; and if needed, assessing the patient, performing advanced life support (ALS) care and conducting patient packaging.

For 90 percent of all **high/maximum risk technical rescue incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 24 firefighters, shall be: 20 minutes in urban areas; and 22 minutes in rural areas. The ERF shall be capable of establishing command and assessing scene safety; requesting additional resources if needed; performing scene assessment; developing an incident action plan; conducting maximum risk technical rescue operations; and if needed, assessing patient(s), performing advanced life support (ALS) care and conducting patient packaging and transport.

Hazardous Materials (HazMat) Response Benchmark Statements

The district has benchmark statements for low, moderate and high/maximum hazardous materials risks. The district discussed specific numbers of personnel related to risk classification and category in *Section 3 - Critical Task Analysis and Effective Response Force.*

HazMat Response Benchmarks			Low	Moderate	High/Maximum
Alarm Handling	Pick-up to Dispatch	Urban	1:04	1:04	1:04
		Rural	1:04	1:04	1:04
Turnout Time	Turnout Time 1st Unit	Urban	2:00	2:00	2:00
		Rural	2:00	2:00	2:00
Travel Time	Travel Time 1st Unit	Urban	5:45	5:45	5:45
		Rural	6:45	6:45	6:45
	Travel Time ERF	Urban	5:45	12:00	18:00
		Rural	6:45	14:00	20:00
Total Response Time	Total Response Time 1st Unit on Scene	Urban	8:49	8:49	8:49
		Rural	9:49	9:49	9:49
	Total Response Time ERF **Concentration**	Urban	8:49	17:48	22:48
		Rural	9:49	19:48	24:48

Low Risk Hazardous Materials Incidents

For 90 percent of all **low risk hazardous materials incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, all of which is minimally qualified at hazardous materials operations level shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The first due unit shall be capable of establishing command and assessing scene safety; requesting additional resources if needed; performing scene assessment; developing an incident action plan; isolating access to the scene; performing area evacuation (if needed); performing hazardous material operations level mitigation.

The first due unit, staffed with a minimum of 3 firefighters, all of which is minimally qualified at hazardous materials operations level is the same total for the ERF (3), so benchmark ERF times for urban and rural areas at the 90th percentile the same as the first due unit urban and rural 90th percentile times. The capabilities of the ERF (or first due unit) are stated above.

Moderate Risk Hazardous Materials Incidents

For 90 percent of all **moderate risk hazardous materials incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, all of which is minimally qualified at hazardous materials operations level, shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The first due unit shall be capable of establishing command and assessing scene safety; requesting additional resources; performing initial scene assessment; developing an initial incident action plan; isolating access to the scene; initiating area evacuation (if needed); performing hazardous material operations level mitigation.

For 90 percent of all **moderate risk hazardous materials incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 18 firefighters, all of which is minimally qualified at hazardous materials operations level, shall be: 17 minutes and 48 seconds in urban areas; and 19 minutes and 48 seconds in rural areas. The ERF shall be capable of establishing command and assessing scene safety; requesting additional resources if needed; isolating area access; performing evacuation, area monitoring and plume modeling; performing line-of-site rescue; performing material/scene research; assigning a hazmat safety officer; assigning a hazmat branch director; assigning an entry team leader; assigning an entry team; assigning a backup team; assigning a decontamination team leader; and decontamination team; assigning a hazmat medical leader; performing hazardous material technician level mitigation; and providing triage, treatment and transport of injured civilians or firefighters.

High/Maximum Risk Hazardous Materials Incidents

For 90 percent of all **high/maximum risk hazardous materials incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, all of which is minimally qualified at hazardous materials operations level, shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The first due unit shall be capable of establishing command and assessing scene safety; requesting additional resources (Hazmat 2, HM67 and/or E67, 2nd and/or 3rd alarm for fire operations); performing initial scene assessment; developing an initial incident action plan; isolating access to the scene; initiating area evacuation; performing hazardous material operations level mitigation.

For 90 percent of all **high/maximum risk hazardous materials incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 33 firefighters, all of which is minimally qualified at hazardous materials operations level, shall be: 22 minutes and 48 seconds in urban

areas; and 24 minutes and 48 seconds in rural areas. The ERF shall be capable of establishing command and assessing scene safety; requesting additional resources if needed; isolate the threat, deny entry; performing area evacuation, monitoring and plume model; performing rescue; performing material/scene research; assigning a hazmat safety officer; assigning a hazmat branch director; assigning an entry team leader; assigning an entry team; assigning a backup team; assigning a decontamination team leader; assigning a decontamination team; assigning a hazmat medical leader; performing hazardous material technician level mitigation; providing an uninterrupted water supply; providing rapid intervention crew (RIC) or on-deck; advancing an attack line and a backup line for fire control; completing forcible entry; completing utility control; conducting search and rescue; performing ventilation; performing salvage and overhaul; and providing triage, treatment and transport of injured civilians or firefighters, if required. The ERF for high/maximum risk hazardous materials incidents can also place elevated streams into service from aerial ladders.

Aircraft Rescue and Firefighting (ARFF) Response Benchmark Statements

The district has benchmark statements for moderate and high/maximum airport and rescue firefighting risks. The district discussed specific numbers of personnel related to risk classification and category in *Section 3 - Critical Task Analysis and Effective Response Force.*

ARFF Response Benchmarks			Moderate	High/Maximum
Alarm Handling	Pick-up to Dispatch	Urban	1:04	1:04
		Rural	1:04	1:04
Turnout Time	Turnout Time 1st Unit	Urban	2:00	2:00
		Rural	2:00	2:00
Travel Time	Travel Time 1st Unit	Urban	5:45	5:45
		Rural	6:45	6:45
	Travel Time ERF	Urban	7:08	11:00
		Rural	9:08	13:00
Total Response Time	Total Response Time 1st Unit on Scene	Urban	8:49	8:49
		Rural	9:49	9:49
	Total Response Time ERF **Concentration**	Urban	11:00	16:48
		Rural	13:00	18:48

Moderate Risk Aircraft Rescue and Firefighting Incidents

For 90 percent of all **moderate risk aircraft rescue and firefighting incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, at least one of which is qualified as an advanced life support provider (ALS), shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The first due unit shall be capable of communicating with Metro Tower or Denver approach for ground clearance into the movement area if needed; establishing command and assessing scene safety; requesting additional resources if needed; informing incoming units of staging locations; preparing for initial scene assessment if the incoming aircraft is involved in an accident (Alert 2 becomes Alert 3).

For 90 percent of all **moderate risk aircraft rescue and firefighting incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 7 firefighters, at least two of which is qualified as an advanced life support provider (ALS), shall be: 11 minutes in urban areas; and 13 minutes in rural areas. The ERF shall be capable of communicating with Metro Tower or Denver approach for ground clearance into the movement area if needed; establishing command and assessing scene safety; requesting additional resources if needed; informing incoming units of staging locations; preparing for initial scene assessment and ARFF operations if the incoming aircraft is involved in an accident (Alert 2 becomes Alert 3).

High/Maximum Risk Aircraft Rescue and Firefighting Incidents

For 90 percent of all **high/maximum risk aircraft rescue and firefighting incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, at least one of which is qualified as an advanced life support provider (ALS), shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The first due unit shall be capable of communicating with Metro Tower or Denver approach for ground clearance into the movement area if needed; establishing command and assessing scene safety; performing initial scene assessment; developing an initial incident action plan; requesting additional resources if needed; advancing an attack line and/or turret stream for fire control; conducting search and rescue; and providing triage, treatment and transport of injured civilians or firefighters, if required.

For 90 percent of all **high/maximum risk aircraft rescue and firefighting incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 16 firefighters, at least five of which is qualified as an advanced life support provider (ALS), shall be: 16 minutes and 48 seconds in

urban areas; and 18 minutes and 48 seconds in rural areas. The ERF shall be capable of communicating with Metro Tower or Denver approach for ground clearance into the movement area if needed; establishing command and assessing scene safety; requesting additional resources if needed; performing scene assessment; developing an incident action plan; advancing an attack line and/or turret stream for fire control; conducting search and rescue; performing extrication and/or forcible entry; assessing extinguishment needs of area vegetation; controlling area access; and providing triage, treatment and transport of injured civilians or firefighters, if required.

Wildland Response Benchmark Statements

The district has benchmark statements for low and moderate wildland risks. The district discussed specific numbers of personnel related to risk classification and category in *Section 3 - Critical Task Analysis and Effective Response Force.*

Wildland Response Benchmarks			Low	Moderate
Alarm Handling	Pick-up to Dispatch	Urban	1:04	1:04
		Rural	1:04	1:04
Turnout Time	Turnout Time 1st Unit	Urban	2:00	2:00
		Rural	2:00	2:00
Travel Time	Travel Time 1st Unit	Urban	5:45	5:45
		Rural	6:45	6:45
	Travel Time ERF	Urban	5:45	7:08
		Rural	6:45	9:08
Total Response Time	Total Response Time 1st Unit on Scene	Urban	8:49	8:49
		Rural	9:49	9:49
	Total Response Time ERF **Concentration**	Urban	8:49	11:00
		Rural	9:49	13:00

Low Risk Wildland Incidents

For 90 percent of all **low-risk wildland incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The first due unit shall be capable of establishing command and assessing scene safety; requesting additional resources if needed; performing initial scene assessment; developing

an initial incident action plan; informing incoming units of fire size, fuel type, rate of spread, potential (acreage and structures threatened), staging and/or access locations; extending appropriate hose line(s) using progressive hose lays or mobile attack; and extinguishing the fire.

The majority of **low-risk wildland incidents** are mitigated with the first arriving engine/truck company. Many times, the additional responding units (type 6 brush truck and battalion chief with discretionary response) are canceled or arrive on scene and is staged, but not assigned. For this reason, the Effective Response Force (ERF) total for **low-risk wildland incidents** is derived from any wildland incident with an arrival of 3-7 firefighters. For 90 percent of all **low-risk wildland incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 3-7 firefighters, shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The ERF shall be capable of establishing command and assessing scene safety; requesting additional resources if needed; performing scene assessment; developing an incident action plan; informing incoming units of fire size, fuel type, rate of spread, potential (acreage and structures threatened), staging and/or access locations; extending appropriate hose line(s) using progressive hose lays or mobile attack; and extinguishing the fire.

Moderate Risk Wildland Incidents

For 90 percent of all **moderate risk wildland incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The first due unit shall be capable of establishing command and assessing scene safety; requesting additional resources if needed; performing initial scene assessment; developing an initial incident action plan; informing incoming units of fire size, fuel type, rate of spread, potential (acreage and structures threatened), staging and/or access locations; extending appropriate hose line(s) using progressive hose lays or mobile attack; and extinguishing the fire.

Moderate risk wildland incidents are any wildland incidents requiring resources beyond the initially toned units of an engine/truck, type 6 brush truck and battalion chief (the battalion chief has a discretionary response). If the size, fuel type, rate of spread or potential involvement (acreage and structures threatened) warrants additional units beyond the initial response of seven or less firefighters, the incident qualifies as a **moderate risk wildland incident**. For 90 percent of all **moderate risk wildland incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 8 firefighters, shall be: 11 minutes in urban areas; and 13 minutes in rural areas. The ERF shall be capable of establishing command and assessing scene safety; requesting additional resources if needed; performing

scene assessment; developing an incident action plan; informing incoming units of fire size, fuel type, rate of spread, potential (acreage and structures threatened), staging and/or access locations; extending appropriate hose line(s) using progressive hose lays or mobile attack; and extinguishing the fire.

Domestic Preparedness Benchmark Statements

The district has benchmark statements for low and maximum domestic preparedness risks. The district discussed specific numbers of personnel related to risk classification and category in *Section 3 - Critical Task Analysis and Effective Response Force.*

Maximum risk domestic preparedness has three different critical task analyses due to having three different types of maximum risk domestic preparedness incidents with different corresponding critical tasks needs (Bomb explosion, Active Shooter and Severe Weather or Natural Disaster). However, all the maximum risk domestic preparedness types have the same ERF number.

Domestic Preparedness Response Benchmarks			**Low**	**Maximum**
Alarm Handling	Pick-up to Dispatch	Urban	1:04	1:04
		Rural	1:04	1:04
Turnout Time	Turnout Time 1st Unit	Urban	2:00	2:00
		Rural	2:00	2:00
Travel Time	Travel Time 1st Unit	Urban	5:45	5:45
		Rural	6:45	6:45
	Travel Time ERF	Urban	5:45	12:00
		Rural	6:45	14:00
Total Response Time	Total Response Time 1st Unit on Scene	Urban	8:49	8:49
		Rural	9:49	9:49
	Total Response Time ERF **Concentration**	Urban	8:49	17:53
		Rural	9:49	19:53

Low Risk Domestic Preparedness Incidents

For 90 percent of all **low risk domestic preparedness incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, at least one of which is qualified as an advanced life support provider (ALS), shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49

seconds in rural areas. The first due unit shall be capable of establishing command and assessing scene safety; performing initial scene assessment; requesting additional resources if needed; developing an initial incident action plan; informing incoming units of staging locations; isolating access to the scene; initiating area evacuation (if needed); assessing damage caused by natural disaster and contacting the appropriate agencies for assistance; assessing patient or patients (if needed); performing advanced life support (ALS) care; and conducting patient packaging and transport (if needed).

The first due unit, staffed with a minimum of 3 firefighters, one of which is minimally qualified as an advanced life support provider (ALS) is the same total for the ERF (3), so benchmark ERF times for urban and rural areas at the 90th percentile is the same as the first due unit urban and rural 90th percentile times. The capabilities of the ERF (or first due unit) are stated above.

Maximum Risk Domestic Preparedness Incidents (Bomb Explosion)

For 90 percent of all **maximum risk domestic preparedness incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, at least one of which is qualified as an advanced life support provider (ALS), shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The first due unit shall be capable of establishing command and assessing scene safety; performing initial scene assessment; requesting additional resources; developing an initial incident action plan; informing incoming units of staging locations; controlling access to the scene; initiating area evacuation; providing 500 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; establishing an uninterrupted water supply; and establishing and advancing an attack line flowing a minimum of 150 gpm.

For 90 percent of all **maximum risk domestic preparedness incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 22 firefighters, at least eight of which is qualified as an advanced life support provider (ALS), shall be: 17 minutes and 53 seconds in urban areas; and 19 minutes and 53 seconds in rural areas. The ERF shall be capable of: establishing command and assessing scene safety; performing scene assessment; requesting additional resources; developing an incident action plan; informing incoming units of staging locations; assigning a safety officer; controlling access to the scene; initiating area evacuation; providing 500 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; establishing an uninterrupted water supply; providing rapid intervention crew (RIC) or on-deck; advancing an attack line and a backup line for fire control; completing forcible entry; completing utility control; conducting search and rescue; performing ventilation; performing salvage and

overhaul; and providing triage, treatment (ALS) and transport of injured civilians or firefighters, if required. The ERF for high/maximum domestic preparedness incidents can also place elevated streams into service from aerial ladders.

Maximum Risk Domestic Preparedness Incidents (Active Shooter)

For 90 percent of all **maximum risk domestic preparedness incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, at least one of which is qualified as an advanced life support provider (ALS), shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The first due unit shall be capable of establishing unified command and assessing scene safety; performing initial scene assessment; requesting additional resources; developing an initial incident action plan; informing incoming units of staging locations; controlling access to the scene; initiating area evacuation; establishing ingress and egress routes for transporting units; working with law enforcement to establish entry and exit locations; and planning for incoming unit assignments which include rescue task forces, extraction teams and triage/treatment/transport.

For 90 percent of all **maximum risk domestic preparedness incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 22 firefighters, at least eight of which is qualified as an advanced life support provider (ALS), shall be: 17 minutes and 53 seconds in urban areas; and 19 minutes and 53 seconds in rural areas. The ERF shall be capable of establishing unified command and assessing scene safety; performing scene assessment; requesting additional resources; developing an incident action plan; informing incoming units of staging locations; assigning a safety officer; isolating access to the scene; initiating area evacuation; establishing ingress and egress routes for transporting units; assigning a staging officer; working with law enforcement to establish entry and exit locations; rescuing and extracting victims; transferring the injured to causality collection points; establishing triage; establishing treatment (ALS); establishing transport of injured civilians or firefighters, if required; and tracking transport hospital locations of victims.

Maximum Risk Domestic Preparedness Incidents (Severe Weather or Natural Disaster with Large Impact)

For 90 percent of all **maximum risk domestic preparedness incidents**, the total response time for the arrival of the first due unit, staffed with a minimum of 3 firefighters, at least one of which is qualified as an advanced life support provider (ALS), shall be: 8 minutes and 49 seconds in urban areas; and 9 minutes and 49 seconds in rural areas. The first due unit shall be capable of establishing unified command and assessing scene safety; performing initial scene assessment; requesting additional resources; developing an initial

incident action plan; informing incoming units of staging locations; isolating access to the scene; initiating area evacuation; establishing ingress and egress routes for transporting units; establishing geographical boundaries of damaged areas by working with law enforcement; planning for incoming unit assignments which include recon, wide area search, rescue and triage/treatment/transport.

For 90 percent of all **maximum risk domestic preparedness incidents**, the total response time for the arrival of the Effective Response Force (ERF), staffed with a minimum of 22 firefighters, at least eight of which is qualified as an advanced life support provider (ALS), shall be: 17 minutes and 53 seconds in urban areas; and 19 minutes and 53 seconds in rural areas. The ERF shall be capable of establishing unified command and assessing scene safety; performing scene assessment; requesting additional resources; developing an incident action plan; informing incoming units of staging locations; assigning a safety officer; isolating access to the scene; initiating area evacuation; establishing ingress and egress routes for transporting units; assigning a staging officer; establishing geographical boundaries of damaged areas by working with law enforcement; establishing reconnaissance of area (recon team); rescuing and extracting victims; transferring victims to causality collection points; establishing triage; establishing treatment (ALS); establishing transport of injured civilians or firefighters, if required; tracking transport hospital locations of victims.

Section 7 – Evaluation of Current Deployment and Performance

The district has assessed its current deployment methods for emergency services and found that they address the risk within its service area. The district strives to continually improve its deployment practices and increase the effectiveness, efficiency, and safety of its operations. A thorough analysis of the baseline performance data revealed areas in which the district may improve its response performance.

Methodology for Assessing Performance

To accomplish this goal, the district must continually evaluate its response performance. The district, according to documented procedures, reviews all components of emergency response times quarterly, with command staff. The response times are measured and reviewed for all Station Response Zones within the district. Variances in 90th percentile response times are presented and discussed with the intent to determine ERZs that have response times trending outside of benchmark goals. Once discussed, and

verified, with the battalion chiefs' input, causes for the performance deficiencies are identified and plans are created to improve specific response time performance.

In addition, monthly incident totals are analyzed and Emergency Response Zones (ERZ's) with higher incident growth are identified and presented in the same monthly meeting. Command staff determines, based on the cause of abnormal incident growth, if internal departments may assist in attempting to reduce specific ERZ incident totals. Fire prevention, community risk reduction, and community outreach (public education) play an integral role in the effort to reduce these incidents. Community outreach then creates a plan to assist with incident reduction efforts and presents the plan and its corresponding results back to command staff in the following monthly meetings.

Section 8 – Plan for Maintaining and Improving Response Capabilities

Utilizing ERZ analysis, the district has identified areas of the district where travel times are outside of benchmark standards for urban response zones. Specifically, the areas in the southwest corner of the district, ERZ 52-BF and the areas in the north portion, ERZ 1-BF. Previously, these ERZs were rural due to population density. However, recent construction and the corresponding population growth in these areas have increased their population beyond the district's rural density and moved these zones to an urban designation.

In addition, the reliability of Medic 61 has decreased because of increased unit utilization hours (UHU). This is partially due to CAD-to-CAD response into other agencies jurisdictions; however, this specific unit covers three station response areas (Station 61, Station 65, and Station 67) which further increases response totals, response times and overall reliability. While Station 65 and Station 67 tend to have lower incident volume, recent construction and corresponding population growth in these areas, with the addition of CAD-to-CAD response to neighboring departments have challenged Medic 61's reliability.

The district plans to build a station (Station 68) in ERZ 42-JF in 2024-2025. ERZ 42-JF is directly north of ERZ 52-BF and provides excellent coverage for both response zones. 42-JF, although still a rural ERZ, is actively being developed and will likely become an urban ERZ within the next couple of years. This ERZ is unlikely to meet the district's established population density for an urban designation as it primarily contains commercial type structures, however, due to daytime population, the district will likely consider this ERZ urban. This practice is similar to other ERZs the district has established as urban using daytime population density, as stated in Emergency Response Zone Designations by Population Density. Station

68 has capital funding allocated with district board approval. In addition, the district has personnel already in operations or actively in the district's fire academy to staff an engine for this location.

The district also plans on building a station (Station 69) in ERZ 1-BF. This ERZ has had significant growth in recent years, specifically in residential construction. This station is planned for construction in 2026, however, recent legislation at the state level will likely reduce property taxes, which is the primary source of revenue for the district. Based on the outcome of this legislation and the corresponding impact to the district's budget, the anticipated construction date could change, or alternative funding may have to be explored. The district has established long-term capital planning for this station, and its board of directors has agreed with this need based on the approval of the district's strategic plan, but this station's future is far from certain due to the previously stated budget restraints.

Finally, the district, with the authorization of the fire board, plans to staff a medic unit at Station 65 to reduce the response area of M61 and decrease M61's UHU. M65, with E68, will further reduce response times in the southwest portion of the district (ERZ 52-BF, 42-JF, and additional ERZs), specifically in effective response force (ERF) measurements. Like Station 69, timeframes for this unit being placed into service could change, or the unit being placed into service could be delayed indefinitely, based on upcoming legislation.

All the previously stated plans for maintaining and improving the response capabilities of the district are stated in the district's current strategic plan, which is approved by the district's board of directors. Capital expenses for facilities and apparatus are established in the district's long term capital plan, which uses current budget forecasts, not the reduced budgets from upcoming legislation.

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