

Unincorporated Salt Lake County

Community Risk Assessment



Unincorporated Salt Lake County Planning Zone

UFA has no stations within Unincorporated Salt Lake County (SLCo) and responds to all Unincorporated areas from surrounding municipal fire stations. This includes the majority of the canyons within the Salt Lake Valley and is probably the most dynamic of our planning zones due to types of responses. Responses include technical rescues (including swift water rescues and high angle rescues), motor vehicle accidents, brush fires, and urban interface fires. Other areas of interest include Kennecott/Rio Tinto, the Utah Data Center, and Camp Williams. UFA covers a total of 390.59 square miles with a population of 7,094 and responded to 1,168 calls for service in 2020.

Planning Zone	Population	Population Percentage of UFA	Square Miles	Population Density per Sq Mile	Classification
Unincorporated Salt Lake County	7,094	1.57%	390.59	<1	Wilderness

Surrounding UFA and Automatic/Mutual Aid Response Stations

Due to the unimproved and forested nature of much of Unincorporated Salt Lake County, as well as the various unincorporated pockets within the Salt Lake Valley, many of the remaining 9 fire agencies within the Salt Lake Valley have either contiguous borders with portions of Unincorporated Salt Lake County or are close to or provide service to pockets of Unincorporated Salt Lake County. Due to the nature of these unincorporated areas, it is difficult to accurately identify the agencies and stations within an eight-minute response time to Unincorporated Salt Lake County. While eight-minute response times can be determined to some degree along the major transportation routes and established communities, there are other areas within Unincorporated Salt Lake County with unimproved roads, or in some cases no roads, that make the collection of this data nearly impossible. The following table identifies the units and apparatus from UFA that responded into Unincorporated Salt Lake County on service calls.

Unit	Responses
AL115	1
BC11	114
BC12	8
BC13	27
DC14	10
E6102	3
E6106	6
E6111	4
E6112	14
E6116	3
E6125	1
HM109	3
HM124	1
HM126	7
HR117	16
HR121	5
HV117	3
MA101	54
MA109	53
MA110	73

Unit	Responses
MA118	3
MA120	5
MA126	12
MA204	78
MA206	91
MA210	28
MA211	61
MA221	41
MA223	17
MA225	4
MA226	18
ME101	15
ME102	71
ME103	57
ME104	106
ME108	34
ME112	185
ME113	131
ME115	19
ME116	152

Unit	Responses
ME117	4
ME118	1
ME119	25
ME123	4
ME125	1
ME126	6
ML106	34
ML109	43
ML110	49
ML111	24
ML117	10
ML121	2
OPS1	4
PIO2	1
PIO3	1
PIO4	1
SAFE1	1
WILD1	1
WILD2	1
WILD9	1

Table 138 - Apparatus Response in Unincorporated Salt Lake County - 2020

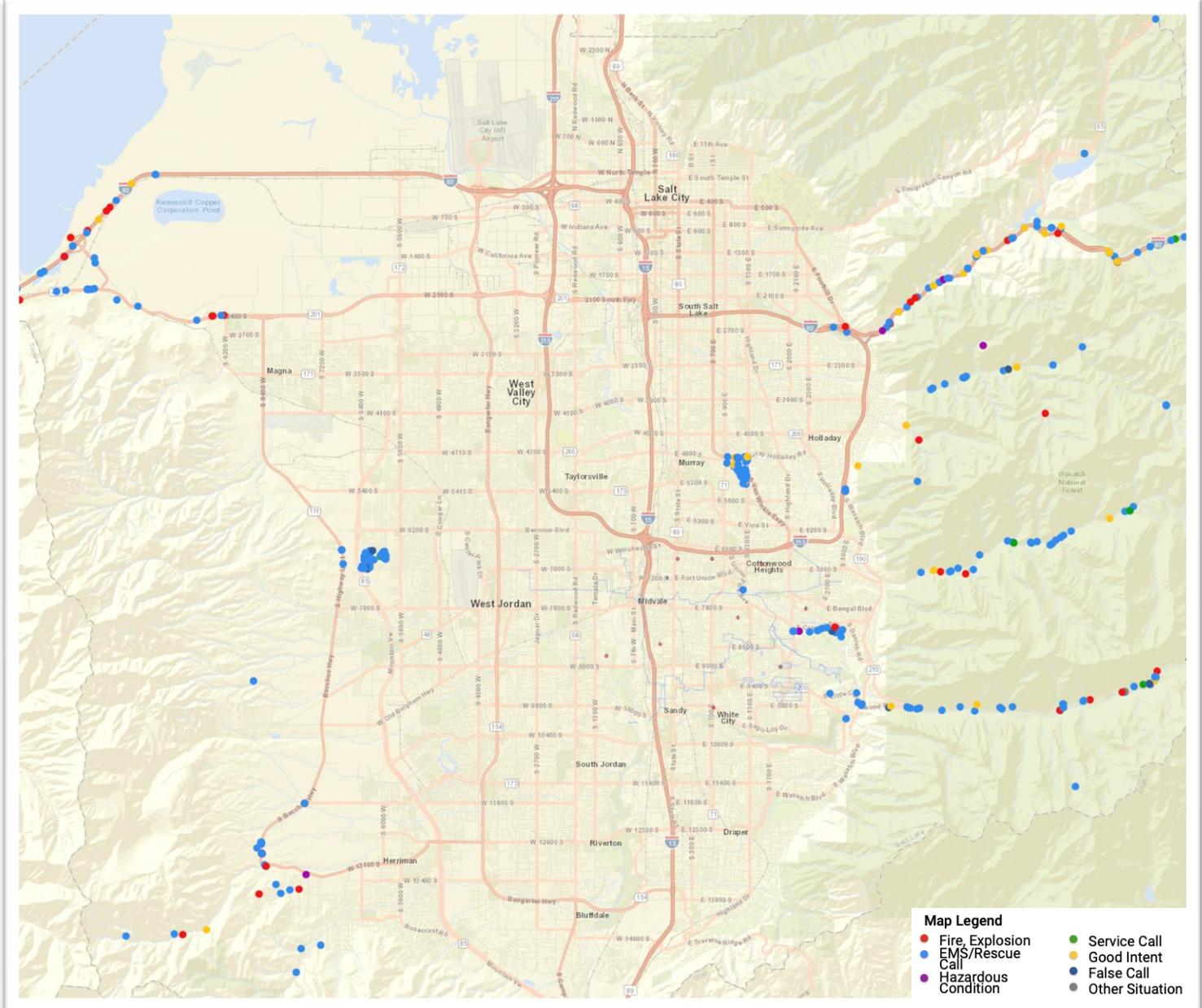
Unincorporated SLCo – Incidents by Dispatch Type

The following data is what the NFIRS type was when crews arrived on scene. This may be different than what was originally dispatched, including a reclassification of a call type from one to another. Cancelled calls occur if the company is cancelled en route to a call and never arrives on scene, which then changes the dispatch type to an NFIRS 611 call type.

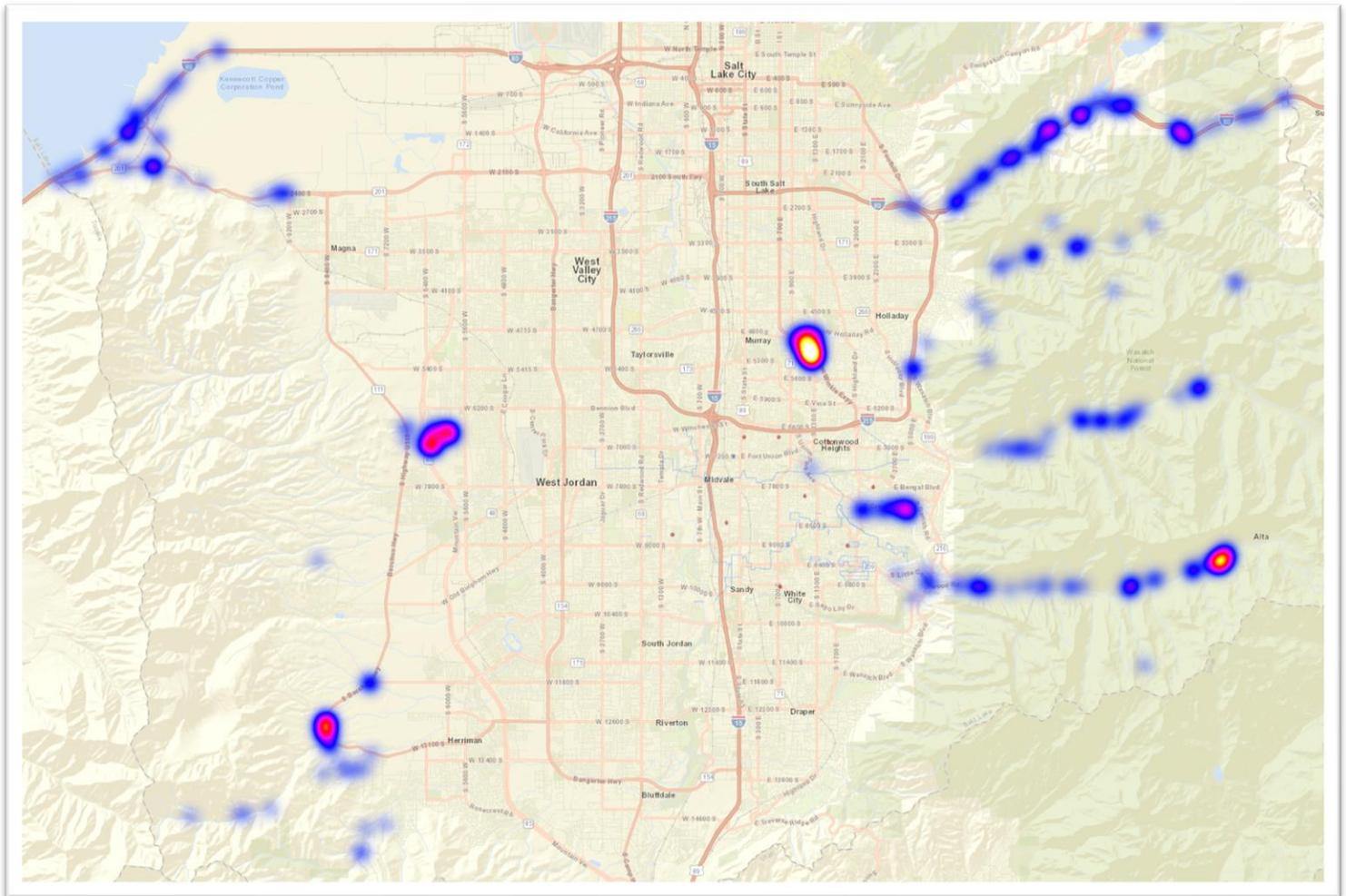
	CY 2020	CY 2019	CY 2018
Fire Suppression	50	25	60
EMS	528	575	628
Hazardous Materials	21	17	24
Service Calls	24	34	24
Good Intent	293	233	216
False Calls	42	21	24
Other (Misc., Flood, Overpressure)	4	1	2
Total	962	906	978
Cancelled	206	153	155
Overall Total	1,168	1,059	1,133

Table 139 – Unincorporated Salt Lake County Call Types

Unincorporated SLCo – 2020 Incidents and Heat Map



Map 213 – Unincorporated Salt Lake County Incident Calls by Type



Map 214 – Unincorporated Salt Lake County Call Volume Heat Map

NFPA 1710

The National Fire Protection Association is an international nonprofit organization that is devoted to eliminating death, injury, property, and economic loss due to fire, electrical and related hazards. The NFPA makes recommendations on over 300 codes and standards. NFPA 1710 recommendations are based off 90th percentile times.

💡 – In Other Words...

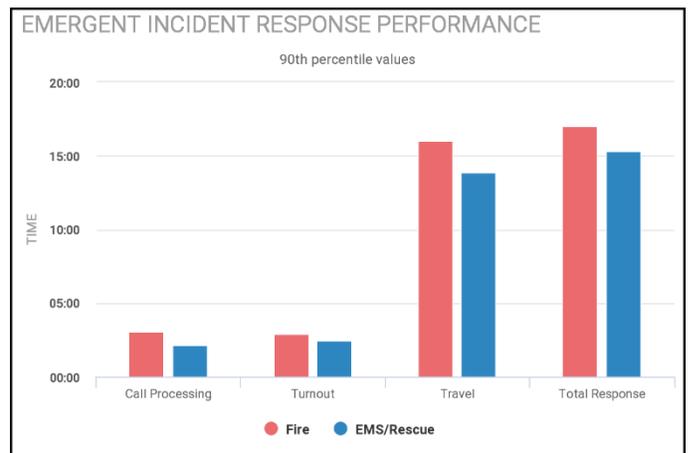
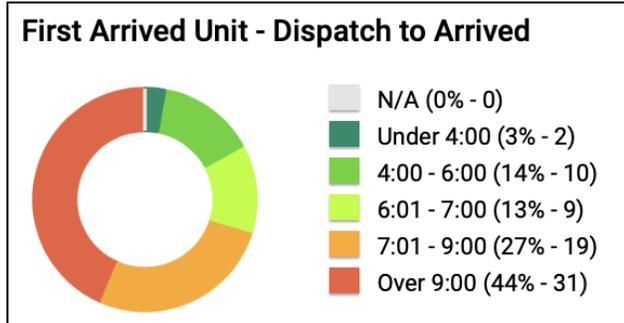
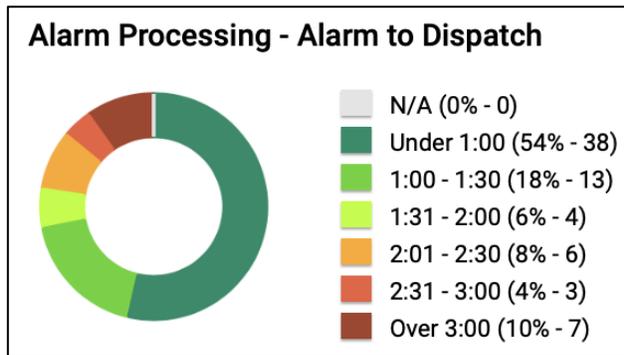
If a value is in the 90th percentile, it means the value is better than 90% of all other values in the dataset. In other words, it is within the top 10% of the values.

NFPA 1710 encompasses suggested standards for full-time fire departments and recommends the following times (all of which are at the 90th percentile): alarm

processing – 64 seconds; turnout time for EMS responses – 60 seconds; turnout time for fire responses – 80 seconds; first arriver apparatus – 240 seconds (4 minutes); initial full-alarm assignment for low and medium hazard responses – 480 seconds (8 minutes); or initial full-alarm assignment for high hazard/high-rise responses – 610 seconds (10 minutes 10 seconds). The total response times are the cumulative totals of call processing time, turnout time, and travel time. NFPA 1710 recommends a total response time of 6:24 for the first arriving apparatus for fire and 6:00 for the first arriving apparatus for EMS.

📌 – Of Note...
 NFPA 1710 response times have not been adopted by the UFA Board. One of the important elements of the community risk assessment and standards of cover is to identify current 90th percentile times (current baselines) within UFA and to identify realistic benchmarks for the UFA Board to consider for adoption.

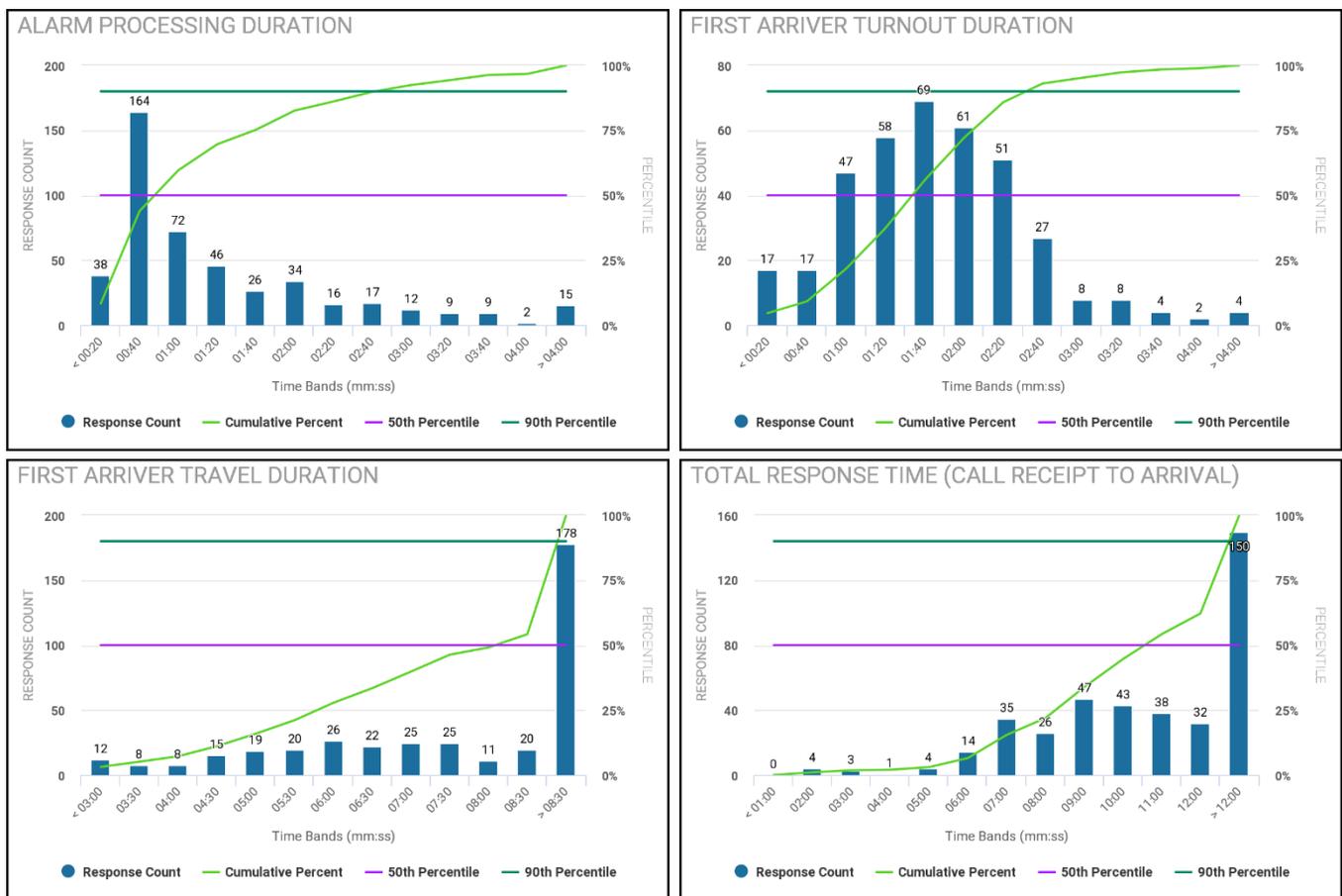
Unincorporated SLCo – 2020 Dispatch and Response Times



Rural	Call Processing: Fire	Turnout Time: Fire	Travel Time: Fire	Total Response: Fire	Call Processing: EMS	Turnout Time: EMS	Travel Time: EMS	Total Response: EMS
Unincorp SLCo	2:45	2:35	15:16	18:38	1:58	2:27	14:26	16:30
UFA Urban 2018-2020	2:16	2:39	7:36	10:34	1:47	2:32	6:29	9:18
UFA Rural 2018-2020	2:32	3:05	15:08	19:09	1:56	2:50	14:45	17:45
NFPA 1710	1:04	1:20	4:00	6:24	1:00	1:00	4:00	6:00

Table 140 – Unincorporated SLCo 2020 Emergent Response Times, 90th percentile values

Unincorporated SLCo – 2020 Turnout and Travel Time



The charts above illustrate the alarm processing, turnout and travel times for all units responding to service calls within Unincorporated Salt Lake County with the teal-colored line representing the 90th percentile target goal. The alarm processing for fire was 2:45 and 1:58 for EMS; turnout time was 2:35 for fire responses and 2:27 for EMS responses; travel time was 15:16 for fire responses and 14:26 for EMS. The 90th

percentile total response time was 18:38 for fire and 16:30 for EMS. For the charts above, they show both fire and EMS response times together.

⚡ – Of Note...

One item to note is that if you were to add the processing time, the turnout time, and the travel time, it will not necessarily (and often doesn't), sum the total response time. This is due to some of the limitations within the datasets and gaps within timestamps. Where there are missing timestamps, those particular key performance indicators (KPI) are excluded as they cannot accurately be calculated out.

Unincorporated SLCo – 2020 Incidents by Time of Day

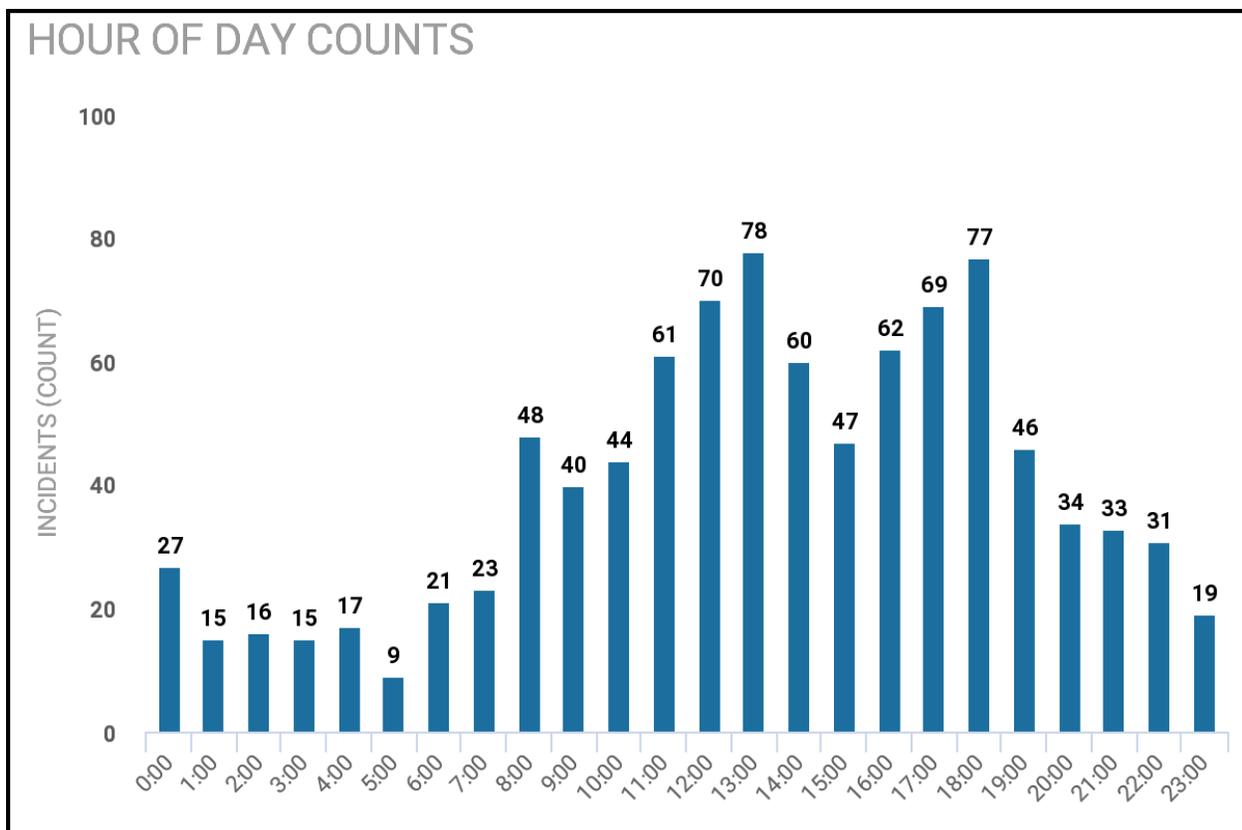


Chart 84 – Unincorporated SLCo 2020 Incidents by Time of Day

The above table demonstrates the incidents by time of day and the time of greatest demand within Unincorporated Salt Lake County for all service calls. This chart illustrates that the greatest demand for service delivery begins at 8:00 AM and starts to decrease at 6:00 PM.

Unincorporated SLCo – 2020 Incidents by Day of Week

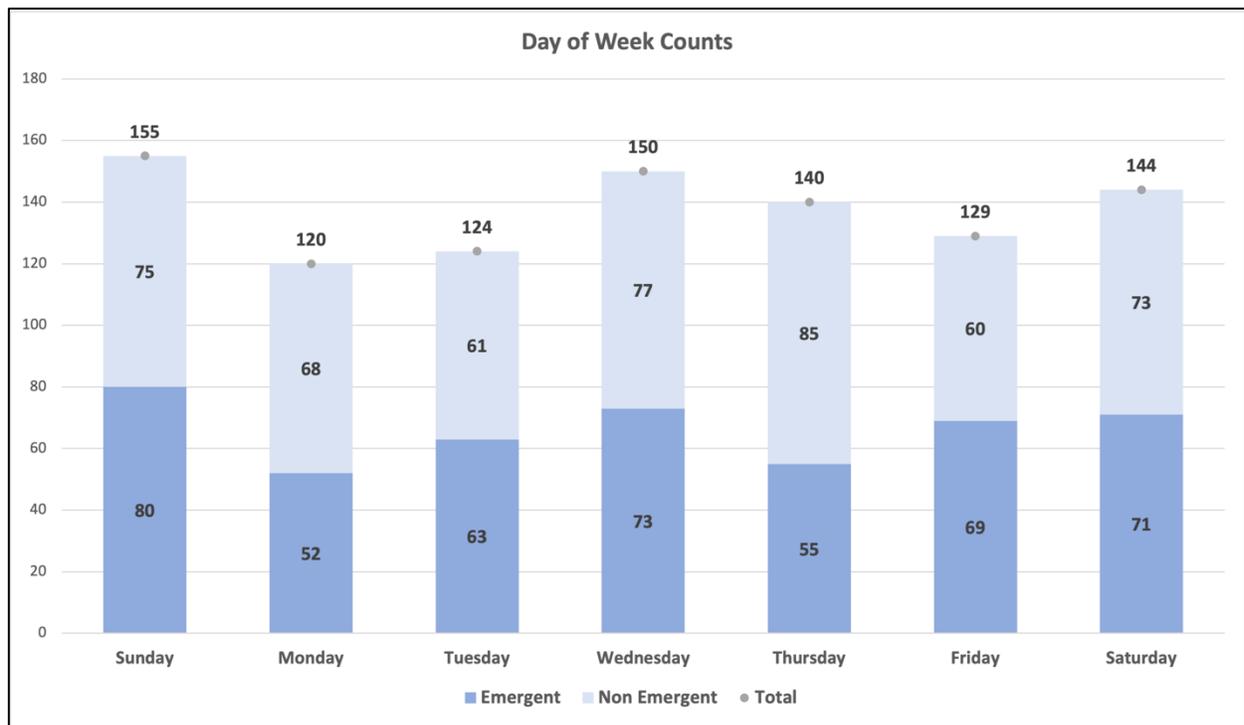


Chart 85 – Unincorporated SLCo Incidents by Day of Week

This chart demonstrates the call volume based on the day of the week, with an increase in all calls occurring on Sundays and Wednesdays and the peak volume for calls in Unincorporated Salt Lake County occurring on Sunday.

Unincorporated SLCo – 2020 Fire Incidents by Dispatch Type

NFIRS Description	Incident Count	% of Incidents
Structure Fire	8	16%
Natural Vegetation Fire	17	34%
Outside Rubbish Fire	2	4%
Mobile Property Fire	1	2%
Vehicle Fire	20	40%
Special Outside Fire	1	2%
Fire, Other	1	2%
Total	50	100%

Table 141 – Unincorporated SLCo 2020 Incidents by Dispatch Type

Unincorporated SLCo – Building Occupancy Classification and Risk Categories

Occupancy Classification	Low	Moderate	High	Maximum	Total
Assembly	39	2	3	0	44
Commercial/Industrial	13	4	3	0	20
Educational	0	0	5	0	5
Government	3	1	0	0	4
Healthcare	0	0	0	0	0
Hazardous	Unknown	Unknown	Unknown	Unknown	11*
Storage	0	0	0	0	0
Residential	542	1,702	559	15	2,818
Residential – Multi Unit	64	9	3	2	78
High Rise	N/A	N/A	0	3	3
Total	661	1,718	573	20	2,983

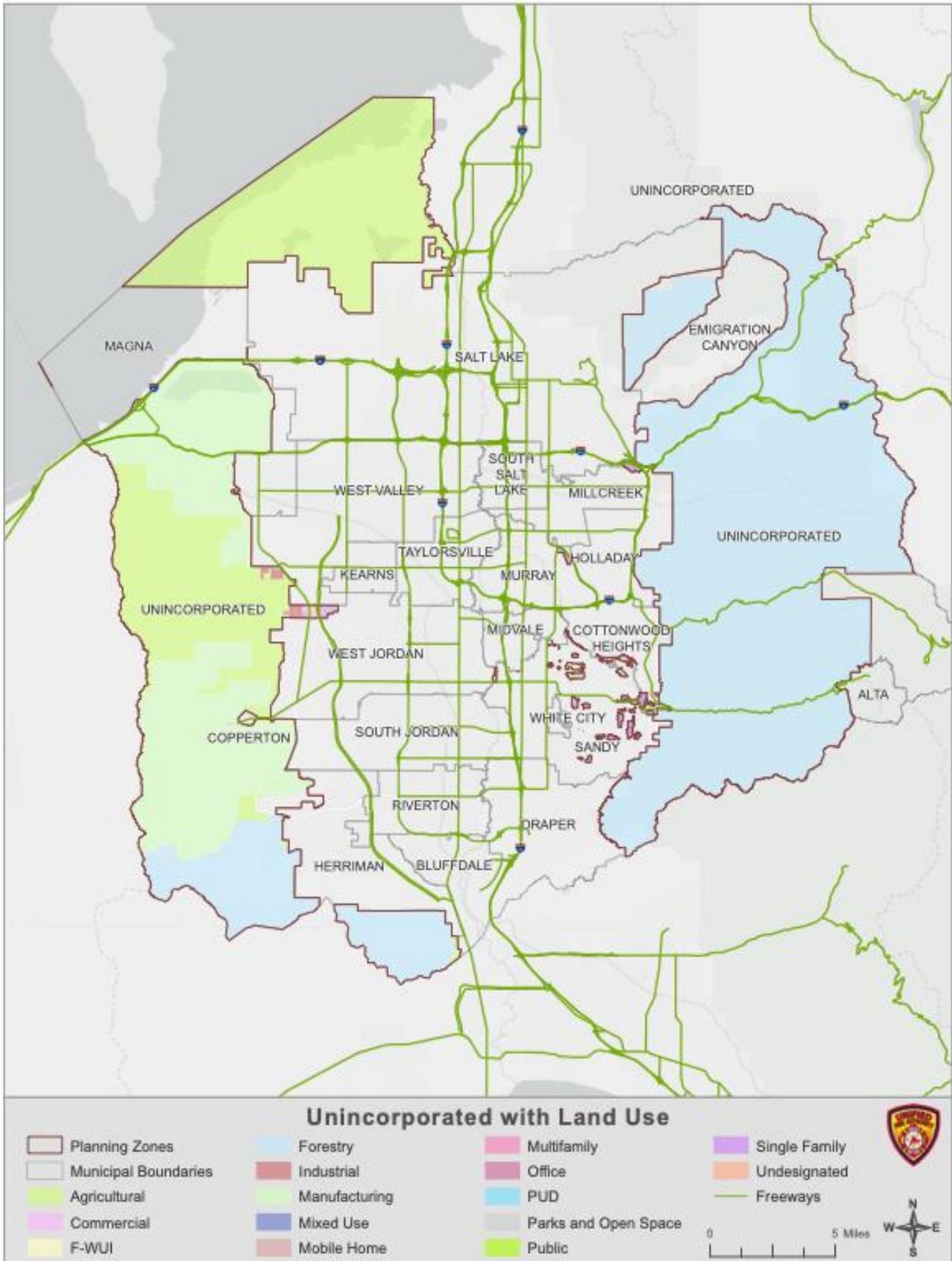
*There is currently a gap within the identification of building size regarding hazardous materials sites. This is a gap that is being closed over the next several years as we collect the data and information.

Table 142 – Unincorporated SLCo Building Occupancy and Risk Categories

Building Size / Considerations

For purposes of risk classification, UFA has outlined the following risk classifications for building size, regardless of occupancy type (except residential). Low risk = 1-4,999 square feet. Moderate risk = 5,000-9,999 square feet. High risk = 10,000-99,999 square feet. Maximum risk = >100,000 square feet.

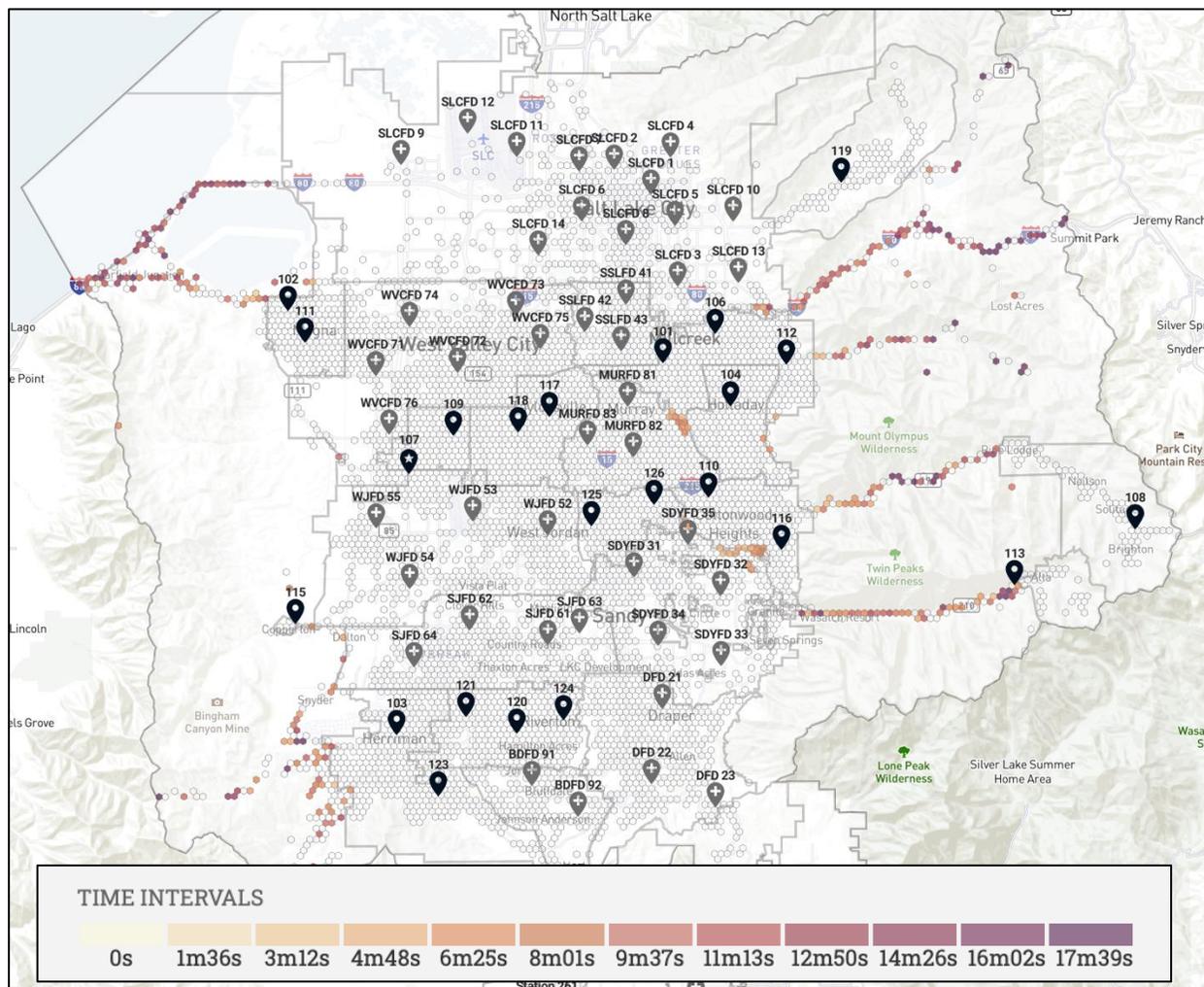
For residential occupancies, the following classifications apply. Low risk = 1-1,999 square feet. Moderate risk = 2,000-3,999 square feet. High risk = 4,000-9,999 square feet. Maximum risk = ≥10,000 square feet.



Map 215 - Unincorporated SLCo with Land Use

Unincorporated SLCo – First Arriver Travel Times

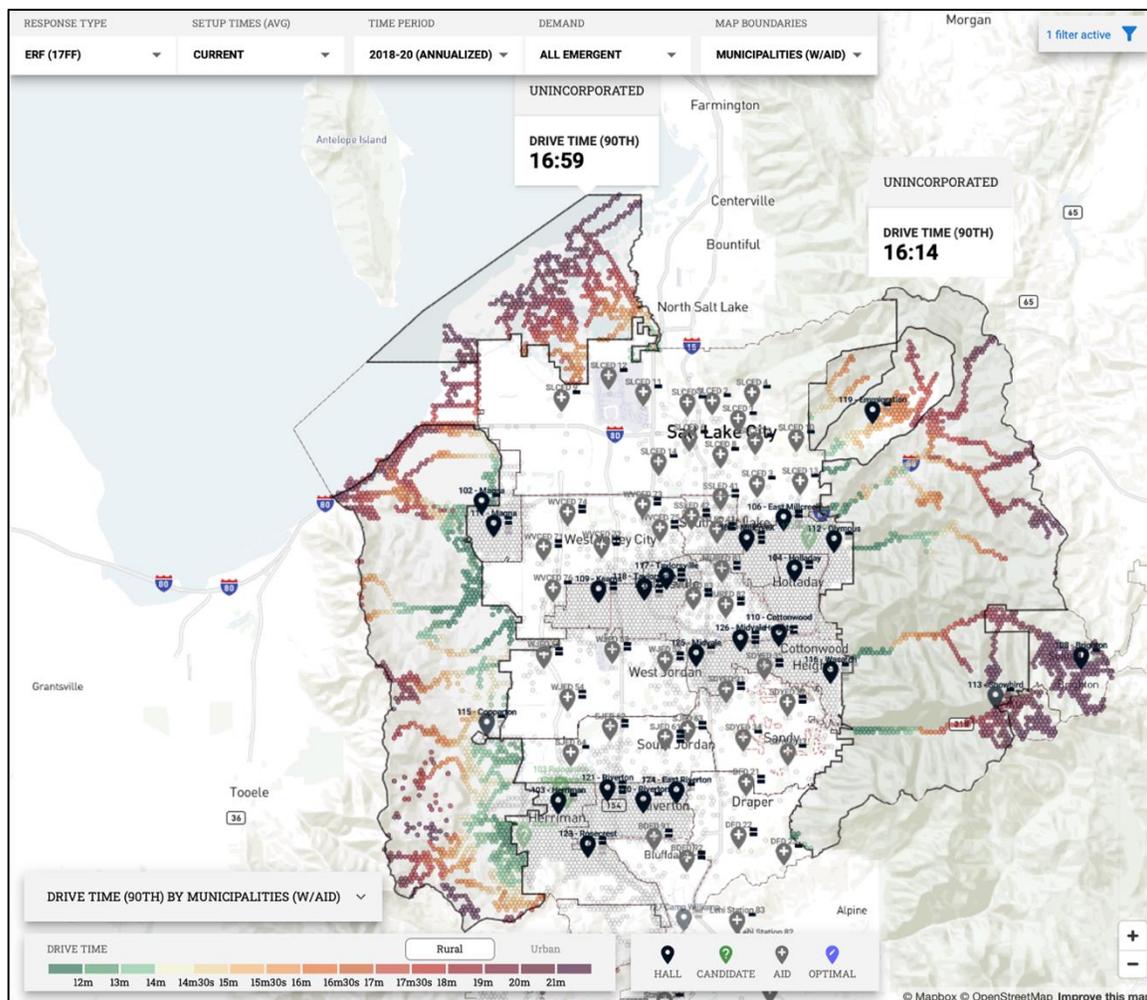
The following maps demonstrate the 90th percentile of travel times based off the last three years of historical data (2018-2020). The darker the color is, the more delayed the response, with the green and light colors demonstrating below or near target times. The darker colors on the bar within the key demonstrating longer travel times by apparatus. This map's drive times (or travel times) are based off the current NFPA 1710 standard of four minutes (90th percentile) from notification of the alarm to the arrival of the first arriving apparatus — not an adopted standard by UFA. UFA is currently in process of identifying benchmark and target standards to be adopted by the UFA Board of Directors. Currently, within the west portion of Unincorporated Salt Lake County, the 90th percentile drive time is 15:16 for fire and 14:26 for EMS, or a combined 90th percentile drive time of 14:52.



Map 216 – Unincorporated SLCo Response Times – All Aid

Unincorporated SLCo – Residential Fire Effective Response Force (17 FF)

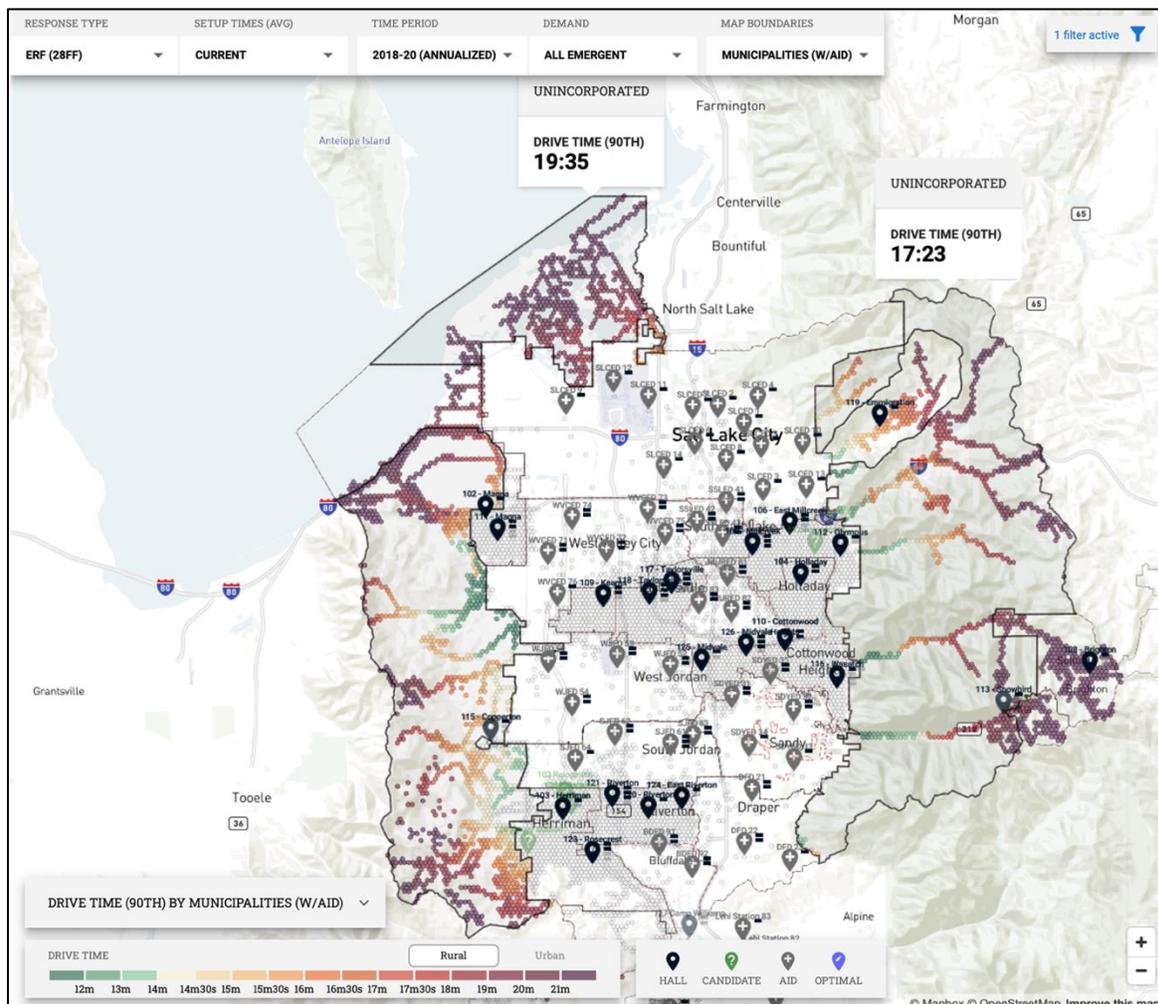
This map demonstrates the coverage of a multi-unit response to a residential fire based on all apparatus being located within their station at the time of dispatch. The green to light yellow demonstrates the ability to have seventeen firefighters (a residential fire effective response force) on scene based off a residential urban fire force response. This map's drive times (or travel times) are based off the current NFPA 1710 standard of eight minutes (90th percentile) from notification of the alarm to the arrival of the initial full alarm assignment (a minimum of 17 firefighters) for a residential, low, or medium hazard occupancy — not an adopted standard by UFA. UFA is currently in process of identifying benchmark and target standards to be adopted by the UFA Board of Directors. Based off predictive data, it is projected that the 90th percentile for 17 firefighters to arrive on scene would be 16:59 within the west area and 16:14 within the east area.



Map 217 – Unincorporated SLCo Response Times – Residential Fire Effective Response Force (17 ERF)

Unincorporated SLCo – Commercial Fire Effective Response Force (28 FF)

The map below demonstrates the coverage of a multi-unit response to a commercial fire based off all apparatus being within their station at the time of dispatch. The green to light yellow demonstrates the ability to have twenty-eight firefighters (a commercial fire effective response force) on scene based off a residential urban fire force response. This map's drive times (or travel times) are based off the current NFPA 1710 standard of ten minutes and 10 seconds (90th percentile) from notification of the alarm to the arrival of the initial full alarm assignment (a minimum of 28 firefighters) for a commercial, high hazard or high-rise assembly — not an adopted standard by UFA. UFA is currently in process of identifying benchmark and target standards to be adopted by the UFA Board of Directors. Based off predictive data, it is projected that the 90th percentile for 17 firefighters to arrive on scene would be 19:35 within the west area and 17:23 within the east area.



Unincorporated SLCo Risk Assessments

Infrastructure – Transportation	Infrastructure – Dams	Earthquake Liquefaction	Earthquake Faults	Avalanche	Unreinforced Masonry	Wildland Urban Interface	Tier II Sites	Hospitals	Schools	≥100,000 sq ft Structures	Residential Population
High	High	Low	High	Mod	Mod (West) High (East)	High	Mod	Low	Low	Mod	Low
Transportation: Low Risk = 0-99 Linear Miles; Moderate Risk = 100-199 Linear Miles; High Risk = >200 Linear Miles											
Dams: Low Risk = 0-3; Moderate Risk = 4-6; High Risk = ≥7											
Liquefaction: The areas of liquefaction vary throughout the valley, with areas of high susceptibility running South and East from the Great Salt Lake											
Earthquake Faults: Low Risk = 0-30,000 LF of fault line; Moderate Risk = 30,001-60,000 LF of fault line; High Risk = ≥60,001 LF of fault line											
Unreinforced Masonry: Low Risk = 0-100; Moderate Risk = 101-1,000; High Risk = ≥1,001											
Wildland Urban Interface: Low Risk = 0-25% WUI; Moderate Risk = 26-50% WUI; High Risk = ≥51% WUI											
Tier II Sites: Low Risk = 1-5; Moderate Risk = 6-10; High Risk = ≥11											
Hospitals: Low Risk = 0; Moderate Risk = 1; High Risk = ≥2											
Schools: Low Risk = 0-5; Moderate Risk = 6-10; High Risk ≥11											
100,000 sq ft Buildings: Low Risk = 0-5; Moderate Risk = 6-14; High Risk = ≥15											
Population: Low Risk = 1-19,999; Moderate Risk = 20,000-39,999; High Risk = ≥40,000											

Table 143 – Unincorporated SLCo Hazard Matrix

Infrastructure – Transportation

The primary roadways that run through Unincorporated Salt Lake County is I-80, which runs east/west on the northern side; U-201 which runs near parallel with I-80 on the west bench; State Road 190 up Big Cottonwood Canyon and State Road 210 up Little Cottonwood Canyon. There are 59.1 linear miles of Interstate/US Highway, 53 linear miles of State Highways, and 283.5 total linear miles of roadway. UTA also runs bus routes throughout Unincorporated Salt Lake County. Unincorporated Salt Lake County is in the high-risk category for road infrastructure.

Infrastructure – Water

There are several water districts within Unincorporated Salt Lake County. Copperton Improvement Water District; South Valley Sewer District; Cottonwood Improvement District; the Jordan Valley Water Conservancy District; the Mt Olympus Improvement

District; the Emigration Improvement District; and the Big Cottonwood Canyon Improvement District.

Infrastructure – Dams

There are sixty-eight identified dams of various types and sizes within Unincorporated Salt Lake County. Unincorporated SLCo is in the high-risk category for dam infrastructure.

Natural Hazards

Within Unincorporated Salt Lake County, there are moderate concerns with avalanche areas, as most of the high-risk avalanche areas within this planning zone are in areas not close to any roads or traveled areas. There are several identified fault lines that run through the area, with roughly 118,913 linear miles of fault lines (see Map 8). Unincorporated SLCo is in the low-risk category for liquefaction and high-risk category for fault lines. One of the biggest hazards that occur within an earthquake scenario is the number of unreinforced masonry (URM) buildings. Within Unincorporated SLCo, there are an estimated 755 URM's, which constitutes about 3.07% of the overall URM's within UFA's response areas. Unincorporated Salt Lake County is in the moderate-risk category for unreinforced masonry on the west bench of the County and in the high-risk category for unreinforced masonry on the east bench of the County.

Wildland Urban Interface

There is high risk of urban interface fires within Unincorporated Salt Lake County, with nearly all the Unincorporated Salt Lake County areas abutting residential structures and urban areas, particularly as building continues to occur within the unincorporated areas. Unincorporated Salt Lake County is in the high-risk category for Wildland Urban Interface.

Hazardous Materials / Tier II Sites

There are ten identified HazMat/Tier II Sites within Unincorporated Salt Lake County, which places this threat in the moderate-risk category.

Hospitals

Unincorporated Salt Lake County has no hospitals. This places Unincorporated SLCo in the low-risk category for hospitals.

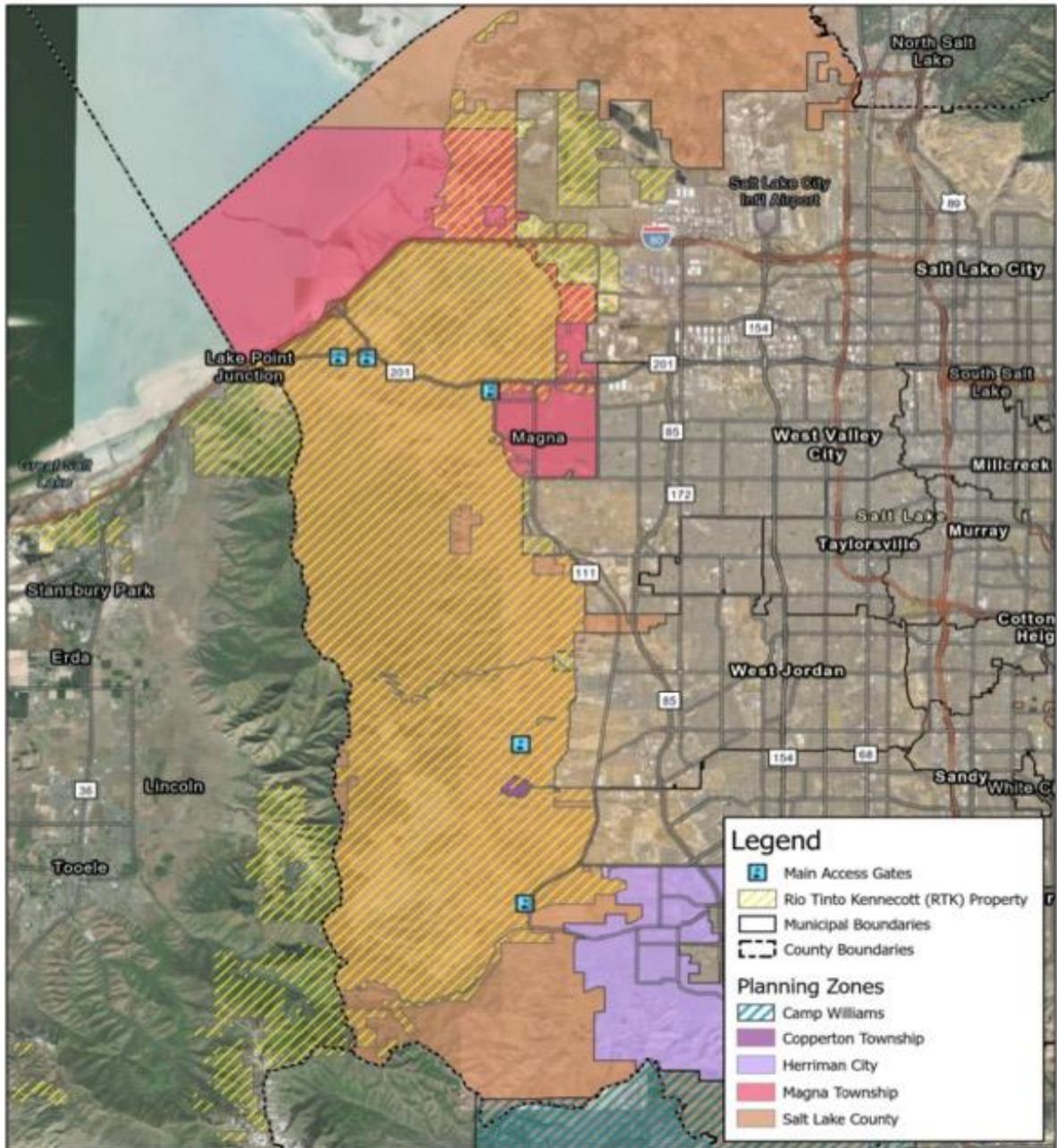
Schools

Unincorporated Salt Lake County has zero elementary schools, zero middle schools, and zero high school within city boundaries, which places it in the low-risk category.

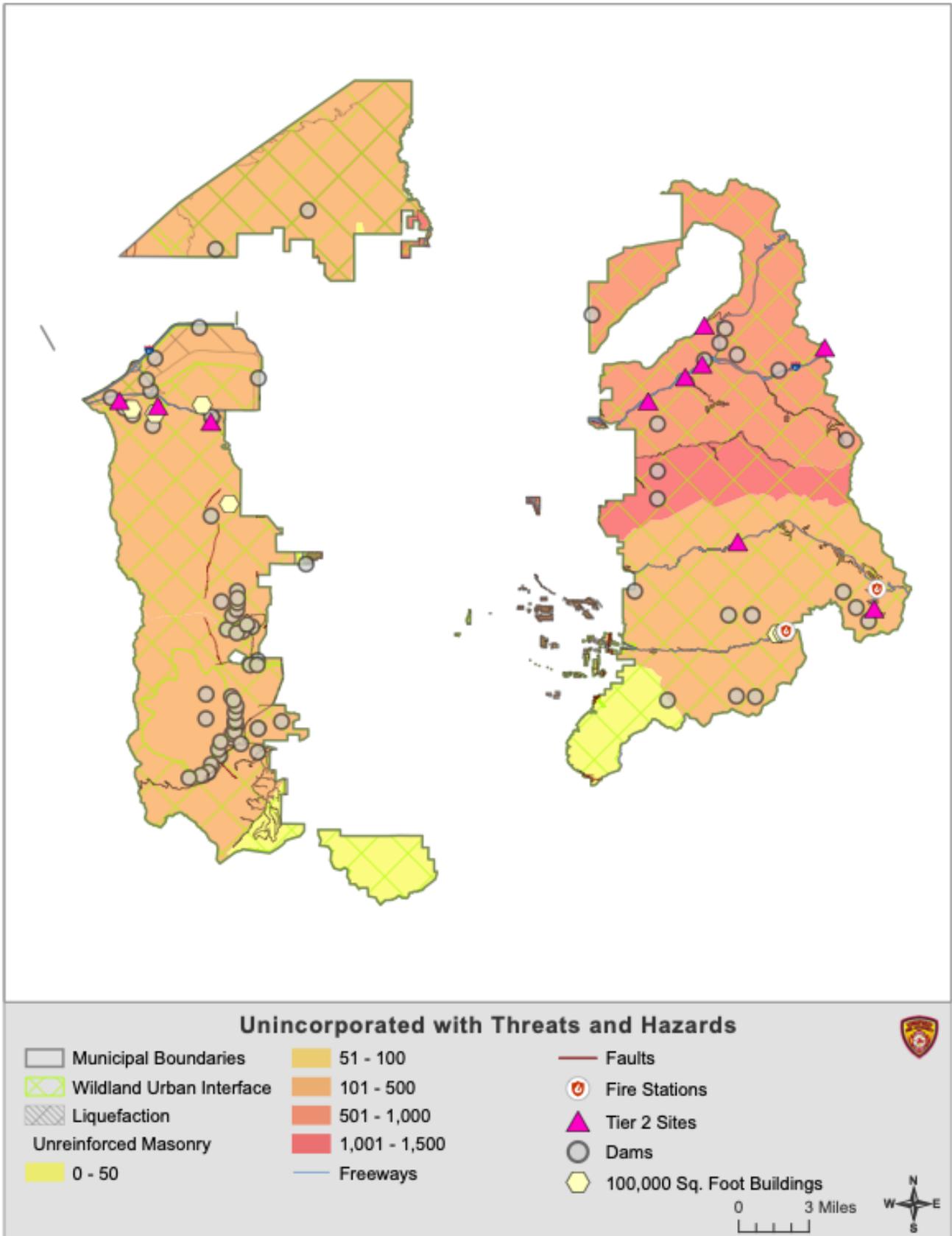
Rio Tinto Kennecott

Kennecott's Bingham Canyon Mine is the largest man-made excavation, and deepest open pit mine in the world. The mine operates 24 hours a day, 365 days a year. The overall operation includes the mine, a concentrator plant, a smelter, and a refinery, which are spread out on the west side of the service area of Unincorporated Salt Lake County. Response to the operation includes medical, fire, hazmat and technical rescue incidents.

RTK Overview



Map 219 - Rio Tinto Kennecott Property



Map 220 – Unincorporated SLCo with Combined Hazards

Life and Property Loss

From 2015-2020, there have been zero fatalities attributed to fire. There is a gap in identifying both property and content loss, as all fires are assigned to the first arriving unit as well as the fire zone, as opposed to Unincorporated Salt Lake County, as there has not been a distinction made between response zones and a dedicated fire management zone for Unincorporated Salt Lake County. Additionally, the vast majority of fires in Unincorporated Salt Lake County are wildland incidents.

Unified Fire Shared Services

With a regional-response model, the Unified Fire Authority brings special services to bear when the situation calls for it, not relying on automatic or mutual aid which provides a quicker and more effective delivery of service to its residents.

Battalion Chiefs

Unified Fire Authority staffs three operational battalion chiefs (BCs) daily, in addition to a 40-hour Operations Chief (OC). These BCs and OC respond to large, complex, or expanding incidents — providing incident command, safety, and operational direction. Each BC covers an area of UFA's service area and responds to calls for service in any jurisdiction. Battalion 11 is housed out of Station 101 in Millcreek, Battalion 12 is housed out of Station 121 in Riverton, and Battalion 13 is housed out of Station 118 in Taylorsville.

Heavy Rescue Companies

Heavy Rescue specializes in structural collapse, confined space rescue, trench collapse rescue, vehicle extrication, machinery disentanglement, rope rescue (high angle, low angle, rigging) and rapid intervention (Firefighter Rescue). The UFA Heavy Rescue Program consists of two independent rescue companies strategically placed in UFA's jurisdiction. Station 117 in Taylorsville, and Station 121 in Riverton house our Heavy Rescue Teams.

Hazardous Materials (HazMat) Companies

The Hazardous Materials Teams provide an efficient, effective, and professional Hazardous Material Mitigation response. HazMat Companies respond to hazardous material releases/spills for the purpose of mitigating the release/spill. They select and

use proper specialized chemical personal protective equipment dependent on the nature of the incident. The HazMat Program consists of two independent HazMat companies strategically placed in UFA's jurisdiction. Station 124 in Riverton, and Station 126 in Midvale house our HazMat Teams.

Water Rescue Teams

UFA has swift water and ice rescue capabilities. These companies respond to victims recreating in our swift canyon rivers and our lakes and reservoirs. Station 116 in Cottonwood Heights, Station 117 in Taylorsville, Station 121 in Riverton, and Station 123 in Herriman house companies with water rescue capabilities.

Wildland Division

UFA's Wildland Division provides highly trained and experienced wildland fire and all-risk response resources to local, state, and federal incidents. The Wildland Division oversees the training and certification of UFA personnel for response to wildland fires and all-hazard incidents. We also work with UFA Communities to educate residents on wildfire preparedness and provide mitigation services to reduce the risks of wildfire. UFA has a special capability where a Duty Officer is able to act as the Fire Warden within UFA's jurisdictions, allowing the ordering of resources much more quickly than having to rely on a Fire Warden that may or may not be readily accessible. Station 103 in Herriman currently houses the Duty Officer.

Other Locations and Services

UFA Logistics and Utah Task Force 1

UFA is the sponsoring agency for Utah Task Force 1 (UTTF1), is one of 28 federally funded Urban Search & Rescue (US&R) Teams. UTTF1's logistical cache is located in the same warehouse as UFA's Logistics Division, located at 6726 West Navigator Drive in West Jordan City. UFA's Logistics Division is responsible for maintaining all of UFA's facilities, stations, and apparatus.



Image 28 - UFA Logistics and UTTF1 Warehouse

UFA Special Enforcement Division



Image 29 - UFA Station 107, Special Enforcement Division

UFA has its own bomb squad and arson investigators that do any warranted investigations into origin and cause of any fire. There are currently five full-time investigators and one part-time investigator, and they are housed at UFA's Fire Station 107, located at 6305 South 5600 West, a previous UFA fire station that was no longer in an ideal

response location. UFA's bomb technicians and arson investigators respond as requested throughout Salt Lake County as well as state-wide through a memorandum of understanding (MOU) within the State of Utah. UFA also participates in the FBI's Joint Terrorism Task Force (JTTF) with two investigators.

	CY 2020	CY 2019	CY 2018
Arson Investigations in UFA	197	156	214
Bomb Responses	65	45	55
UFA Fatal Fires	1	2	0
Bomb Squad SWAT Assists	4	11	6
Explosive Detection K9 Deployments	33	24	29
Accelerant Detection K9 Deployments	33	24	29
Forensic Blood Draw	18	11	N/A
FBI JTIF/Counter IED Case	3	2	0
UFA SWAT PM Deployment	104	77	54
Multi-Jurisdictional Directed Enforcement Operation Support	4	4	4

Chart 86 - Special Enforcement Responses

Information Outreach

UFA has an Information Outreach Division that has six personnel, three civilian staff and three sworn staff. They have offices in both Station 126 and the Emergency Coordination Center (ECC). They coordinate all of UFA's external informational outreach, including public safety messaging, media releases and requests, and on-site incident PIO responsibilities.

Fire Training Division



Image 30 - UFA Training Tower

UFA has a fire training division that is located at UFA's Fire Training Tower, located at 3900 South 8000 West, Magna. UFA's Fire Training Division provides all training for new firefighter hires as well as continued training for all full- and part-time UFA firefighters. The training division has a six-story training tower on a fourteen-acre site, which also houses Utah Task Force 1's US&R rubble pile.

Medical Training Division

UFA has a medical training division that is located out of UFA headquarters and Salt Lake County's Emergency Communication Center (ECC). UFA provides basic life support (BLS) and advanced life support (ALS) functions. The medical training division provides all initial and ongoing training to its personnel that meet all standards from the Utah Bureau of Emergency Medical Services (BEMS) and national registry requirements.

Salt Lake County Emergency Management

UFA has a charter from Salt Lake County Government whereby UFA provides emergency management (EM) within Salt Lake County. EM helps to manage risks within communities and the environment by putting plans into action and mitigating both perceived and real threats that communities face.

The Salt Lake County Emergency Coordination Center (ECC) and UFA's headquarters is



Image 31 - SLCo Emergency Coordination Center and UFA Headquarters

co-located at 3380 S 900 W.

The Salt Lake County Division of Emergency Management serves citizens by directing and coordinating resources for disasters and emergencies through preparation, planning, mitigation, response, and recovery. The Salt Lake County Emergency Coordination Center (ECC) is activated and manned during any event—from small-scale to large-scale occurrences—to disasters, both natural and man-made that can or have exceeded the resources of any jurisdiction. Currently, the Salt Lake County ECC

assists and obtains resources for the 23 jurisdictions located within the Salt Lake Valley. EM assists these jurisdictions through the activation of 15 Emergency Support Functions (ESFs) filled by employees from a multitude of backgrounds. The ESF employees have authority throughout Salt Lake County to fill and order additional support for the operations occurring in the field until the impacted jurisdiction can return to normal operations and functions. The Emergency Management Division is committed to keeping the public safe through community outreach, training, dissemination of important public information, training of staff, and the creation of a more resilient community through mitigation, preparation, response, and recovery. The ECC has activated for several events such as the COVID-19 pandemic response, Magna earthquake, straight-line windstorm, civil unrest, wildland fires such as the Rosecrest and Machine Gun fires, flooding, hurricanes, Line of Duty Deaths (LODD), and many other events.

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Unified Fire Authority

3380 South 900 West
Salt Lake City, UT 84119