Section 3 –
# Standards of Cover

Unified Fire Authority

Section 3 – Risk Assessments and Standards of Cover

Risk Assessment & Risk Levels

UFA provides all-hazard risk mitigation to the various communities through planning, preparation, prevention, training, exercise, and response. A detailed analysis of risk factors specific to UFA and the Salt Lake Valley was conducted to determine the various risk factors for the community risk assessment – standards of cover (CRA-SOC). The evaluation of the community risk factors included the assessment of each community's demographics and development, review of fire planning zones (PZ), a review of mitigation factors and plans in place, and hazard profiles (natural and human-caused).

Risk assessment can be quantified by measuring the following three variables:

1. **Probability of Occurrence** – The measurement of the frequency of an event based on historical occurrence.

2. **Consequence to the Community** – The measurement of the relative impact to the community when the event occurs. This could include impact to an individual, a group, infrastructure, the environment, or the economy.

3. **Impact to the Organization** – The measurement of organizational commitment to an incident when it occurs. Organizational commitment means how many and what type of resources are engaged in incident management and for how long they must be committed.
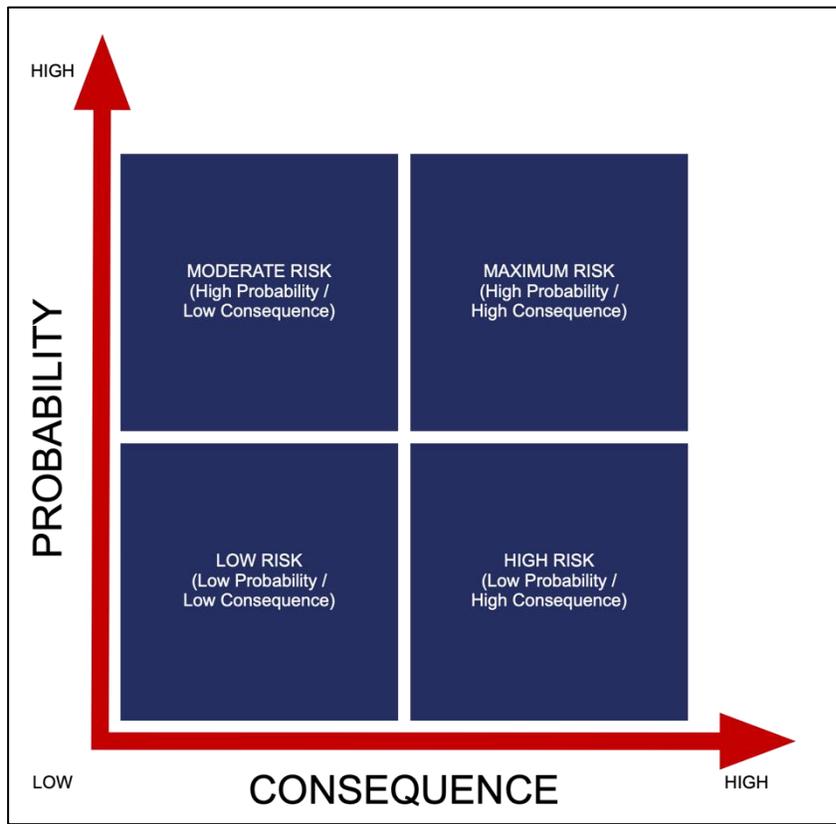
Chart 87 - Probability vs Consequence Graph

When conducting an analysis, it is important to consider consequence severity as it applies to individual or group life safety, economic consequences, and environmental consequences. For example, a vehicle fire is high in probability, but generally low in consequence, so it receives a single company response. However, if that vehicle fire were to occur in a parking garage or on a freeway, the consequences could be more widespread. Once probability, risk to community and impact to organization are quantified, each type of incident that UFA responds to can be plotted on either a two-dimensional or a three-dimensional graph which aids in comparing the relative severity of different incident types. The three-axis models and risk assessments can be found in Appendix B.
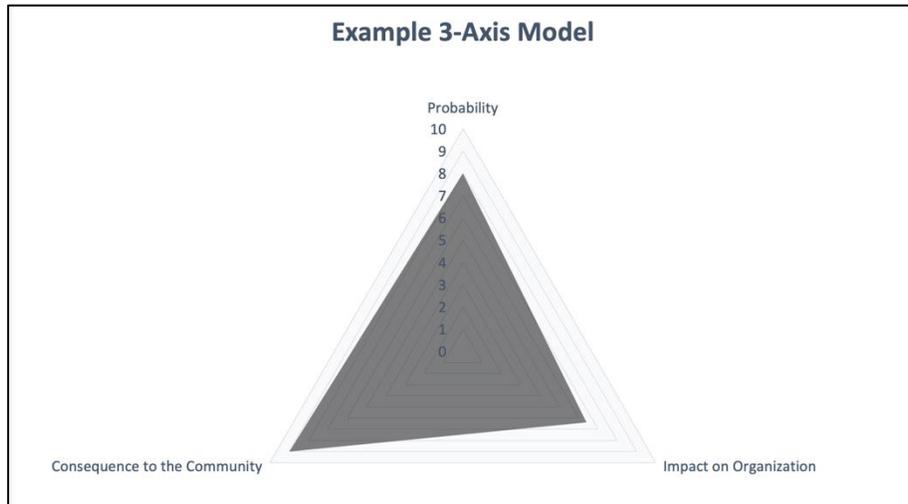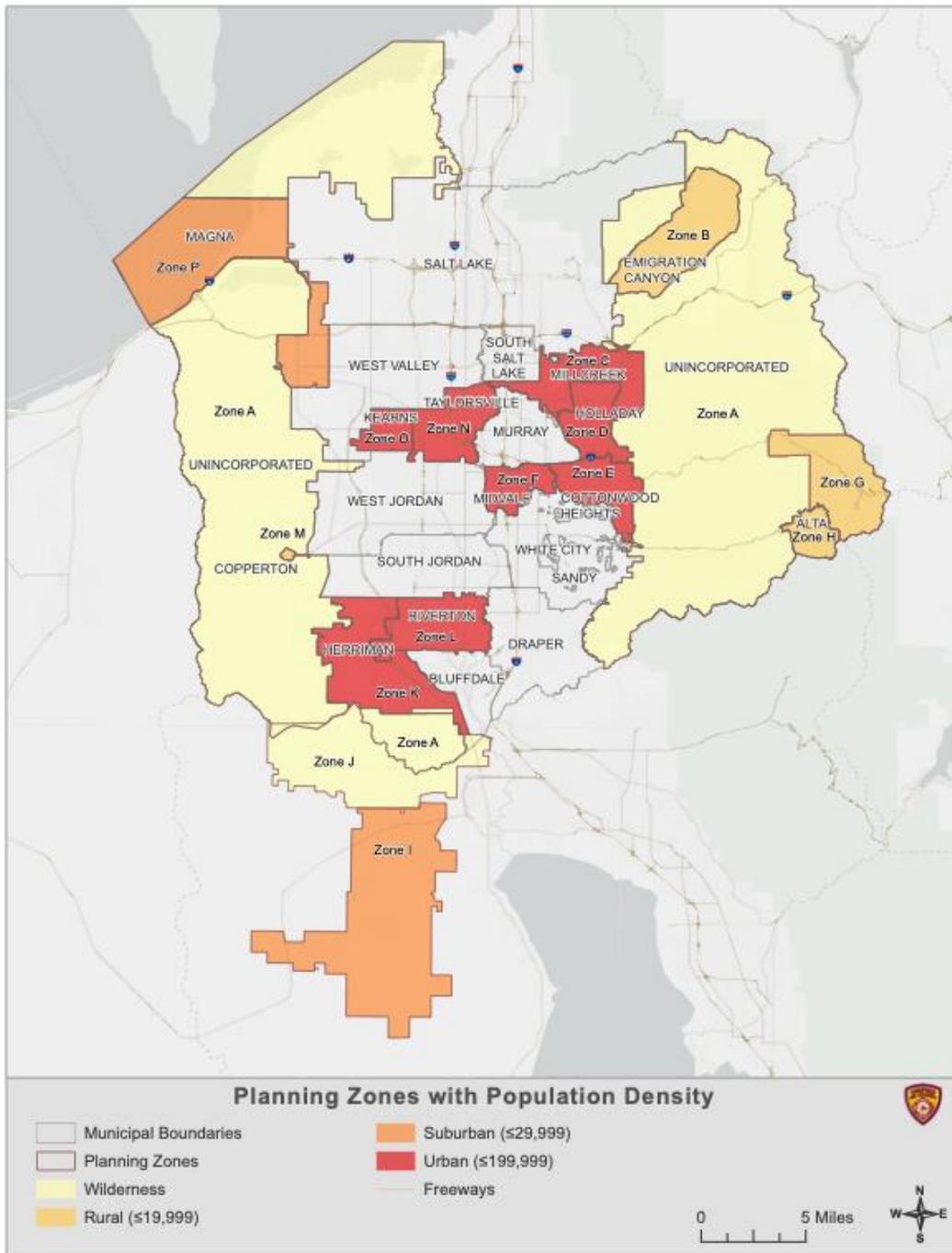
Chart 88 - Example 3-Axis Model for Community Risk

Risk Analysis Factors:

The following are elements and tables describing how common risk factors are quantified:

1. Population Density

Population density is a critical component when considering both an incident's potential consequences and the probability of occurrence. A wildland fire in a wilderness area, for example, has significantly different impacts than a wildland-urban interface fire burning near high-dollar value residential homes and the likelihood of a wildland fire occurring in the first place is very low in high density urban areas. Unified Fire Authority covers Urban, Suburban, Rural and Undeveloped/Wilderness areas identified on Map 180 – Planning Zones with Population Density.   UFA currently does not have any jurisdictions with the Dense Urban classification.

Population Density	Description	Risk Score
Undeveloped/Wilderness	Not Developed / Uninhabited	2
Rural	<500 persons per square mile	4
Suburban	500-1,000 persons per square mile	6
Urban	1,001-2,999 persons per square mile	8
Dense Urban	>3,000 persons per square mile and population over 200,000	10

Planning Zones with Population Density

	Legend		
	Municipal Boundaries		Suburban (≤29,999)
	Planning Zones		Urban (≤199,999)
	Wilderness		Freeways
	Rural (≤19,999)		

Map 221 - Planning Zones with Population Classifications

5

2. Probability of Occurrence

Incident Probability	Description	Risk Score
Quarterly/Yearly	0-4 occurrences per year	2
Monthly	5-12 occurrences per year	4
Weekly	13-15 occurrences per year	6
Daily	16 – 365 occurrences per year	8
Greater than daily	366 or more occurrences per year	10

3. Impact on the Organization

Organizational Impact	Description	Risk Score
Low	Less than 4 persons	2
Medium	5 – 9 persons committed	4
High	10 – 16 persons committed	6
Very High	17 – 26 persons committed	8
Extreme	27 or more persons committed	10

4. Consequence to the Community Consideration

Community Consequence	Description	Risk Score
Low	Single Individual or Vehicle	2
Medium	2-4 persons, 2 vehicles, single residential or commercial occupancy	4
High	5 or more persons, 3 or more vehicles, 2 residential or commercial occupancies	6
Very High	Multi-family occupancies, institutional structures, strip malls or box stores	8
Extreme	Mass Casualty, Major Hazard or Natural Disaster	10

5. Building Size – Commercial and Residential

Commercial Building Risk	Description	Risk Score
Low	1 – 4,999 square feet	2
Medium	5,000 – 9,999 square feet	4
High	10,000 – 99,000 square feet	6
Very High	Greater than 100,000 square feet	8

Residential Building Risk	Description	Risk Score
Low	1 – 1,999 square feet	2
Medium	2,000 – 3,999 square feet	4
High	4,000 – 9,999 square feet	6
Very High	Greater than 10,000 square feet	8

Deployment Considerations

UFA utilizes a Computer Aided Dispatch System (CAD) provided by VECC for call handling and dispatching. Once a location has been determined and basic details identified, a dispatcher at VECC sends out a digital dispatch while the rest of the details are being identified. UFA is currently in the process of a radio-less dispatch system, to where a unit will go en route, arrive on the radio and terminate command. Everything else is supposed to be done via mobile data terminal (MDT).

In March of 2021 UFA—with all other valley agencies—has implemented a priority dispatch system. With a priority dispatch, if it is a priority 1 (higher severity with critical life-safety issues at hand), the nearest units are dispatched via AVL. This dispatch occurs regardless of jurisdictional boundary with both the BLS and ALS units. Due to UFA's one-and-one ALS model, regardless of which unit is dispatched, there is ALS capability. This is not the same with all of UFA's mutual and automatic aid partners. A priority 2 dispatch will dispatch agency-specific heavy apparatus and ambulance within each respective jurisdictional boundary.

Critical Task Analysis

UFA's goal is to provide those fire and rescue services to the communities it serves in addition to matching the needs and desires of the citizens within those communities. The primary foundation of UFA's response level is NFPA 1710: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and

Special Operations to the Public by Career Fire Departments. NFPA 1710 outlines tasks for each risk classification and category.

A critical element in the assessment of any emergency service delivery system, is the ability to provide adequate resources for anticipated fire combat situations, medical emergencies, and other anticipated events. Each emergency requires a variable amount of staffing and resources to be effective. Properly trained and equipped fire companies must be notified, respond, arrive, and deployed at the event within specific timeframes and in proper numbers in order to mitigate the event.

The review of any given critical task analysis (CTA) identifies the tasks necessary at any given incident to ensure life safety, incident stabilization, property conservation, and mitigating environmental concerns. All operations that UFA responds to need to have a critical evaluation based on past, historical events, as well as anticipated needs based off of the identified risk matrices that UFA uses within the communities and across the organization as a whole.

Regardless of which incident type and kind UFA responds to, UFA is expected to properly identify and mitigate any emergent situation it encounters. The reported or encountered problem, or any specialized services needed, will possibly add companies and apparatus to assist those first arriving units to properly and safely mitigate those incidents. Regardless of incident type, UFA expects any first arriving 3- or 4- person company to have the capability to:

- Size-up the situation
- Establish command
- Operate one fire suppression handline
- Comply with NFPA 1500 and OSHA 1910.134 (two-in, two-out rule)
- Provide initial emergency medical care for a single patient or initiate proper triage for multiple medical patients
- Initiate mitigation and/or fire suppression efforts within one minute of arrival
- Initiate mitigation, isolation, and/or evacuation in the event of a hazardous materials release
- Identify any additional resources needed, based on call type and anticipated expansion

Although this list is identified, it is not all-inclusive nor an order which time-critical events may occur. All items and/or tasks are assigned by the first arriving Incident Commander (IC). The critical tasks described below assume that the crews are committed to those assigned tasks and would not be available for reassignment, until after the balance of the incident arrives on scene. Time performance standards associated with accomplishing each critical task are not included in this analysis.

For all Critical Task Analyses, refer to Appendix A.

Services & Effective Response Force

UFA provides initial response and some ongoing management services related to the following incident types:

1. 911 Emergency Medical Services (EMS)
2. Fire suppression - structure or vehicle
3. Wildland fire response, suppression, and management
4. Hazardous Material response (HazMat)
5. Technical rescue including vehicle extrication, rope rescue, trench rescue, confined space rescue, water rescue, ice rescue and large area search
6. Bomb/Explosive device response
7. Arson investigation
8. General emergency management including response to natural disasters
9. Fire prevention

Each type of incident requires a specific Effective Response Force (ERF) for meeting service and response standards. The ERF is established by evaluating critical tasks that must be completed on a type of incident and then identifying the number and type of people or equipment necessary to perform those critical tasks. Critical task analysis and effective response forces are all based on industry standards at the local, regional, and national levels as well as best practices identified by subject matter experts. Industry

standards and best practices are subject to change as technologies improve, new challenges arise, research is performed, and priorities change.

Initial incident response should be established with the goal of providing sufficient personnel and equipment to mitigate about 90 percent of the calls within that identified category (i.e., medical, structure fire, HazMat, etc.).

An "upgrade" response indicates personnel/functions and apparatus/equipment that is in addition to the basic response package and is typically utilized to manage the approximately 10 percent of calls not addressed by the initial responding unit(s).

Emergency Medical Services

911 Emergency Medical Service (EMS) calls are some of the most dynamic and time critical responses to which Unified Fire Authority responds. These calls represent approximately 70-80 percent of all UFA responses. In some states, emergency medical response is provided by private industry or hospital-based medical responders. The State of Utah utilizes fire-based EMS response almost exclusively. Because Unified Fire Authority equipment and personnel is strategically located in communities and staffed twenty-four hours a day, three hundred and sixty-five days a year, we are best equipped to respond to emergency medical services within our response area. Speed of response to EMS incidents can be a critical factor for saving lives in the pre-hospital environment, however, once appropriately trained EMS providers arrive on scene, service provision should be measured based on clinical guidelines and outcome measurements. One such set of system measures has been established by the National EMS Quality Alliance (NEMSQA) and is based on evidence-based medical care guidelines.

EMS calls are typically divided into 2 general categories: Basic Life Support (BLS), and Advanced Life Support (ALS).

Each request for service is "coded" by the 911 dispatch system to establish a general type of call and priority. For example, a ground level fall with no obvious injury is a priority 2 short fall. A rock climber who takes a 30-foot fall from a cliff would be a priority 1 long fall. Priority 2 calls typically require only BLS level care while priority 1 calls represent

incidents that potentially have immediate threats to life which may require advanced life support interventions. 911 call coding is certainly not an exact science and so many calls initially coded as priority 1 are actually less critical and calls initially coded as priority 2 may actually reflect an immediate threat to life or health.

For a number of reasons, information communicated by the complainant to the 911 call taker and then to EMS responders may not be accurate especially when it comes to coding. Some of these reasons may include the need to gather information quickly in order to expedite call processing time, the fact that complainants are communicating information under duress, that call takers and complainants may not have medical training, or the presence of a language barrier.

Because a request for emergency medical service may often be more or less severe than initially estimated, may be critically time sensitive, and may evolve in highly dynamic, stressful, and often dangerous environments, it is necessary to build a response system that is capable of adapting to different call types and severities in spite of limited or inaccurate initial information. This is part of the reasoning of the new dispatch model of priority dispatches that UFA and surrounding agencies established in March of 2021.

Patient care support includes the critical tasks of lifting and moving an immobile patient, call documentation and providing additional concurrent medical or scene interventions as outlined by UFA's Medical Director in standing orders (protocols) which seek to apply proven best practices for pre-hospital medical care. Medical licensure or certification levels for responders and apparatus/equipment are determined administratively and must meet Utah Bureau of EMS licensure requirements.

Incidents per Type with Risk Category	CY 2020	CY 2019	CY 2018	Total
EMS Response				
Low	9,589	9,855	9,402	28,846
Moderate	973	759	911	2,643
High	60	11	13	84
Maximum	0	1	1	2
EMS Emergency Total	10,622	10,626	10,327	31,575

Table 144 - EMS Responses with Risk Categories

The NFPA 1710 standard requires minimum EMS response capability of first responder/AED or as specified by the Authority Having Jurisdiction (AHJ). All UFA firefighters are trained, at a minimum, to the Emergency Medical Technician-Basic (EMT-B), or Basic Life Support (BLS) level. UFA currently has approximately 190 EMTs and 90 Advanced EMTs (AEMT). UFA also provides Advanced Life Support (ALS) services by staffing and positioning Paramedics on apparatus throughout the response area. Paramedic level service is the industry standard for all but undeveloped or rural populations. UFA currently staffs at least one paramedic on every front-line response apparatus. Currently, UFA has approximately 280 employees licensed at the paramedic level as of July 2022.

In addition to EMS response, UFA provides 911 emergency medical transport services within the response area through eleven 24-hour staffed ambulances and two "peak-load" 12-hour staffed ambulances.

EMS Upgrades

As noted above, medical calls are coded as to type and priority by the 911 call taker. Two medical call types that benefit from pre-established upgrade "packages" are motor vehicle accidents (MVA) where extrication of the patient from a damaged vehicle is necessary and multiple casualty incidents (MCI) where there are more patients requiring medical assessment or care than there are providers. Some motor vehicle accident types often require additional equipment and personnel in order to make a scene safe for the provision of medical treatment and also to access the patient.

Multiple Casualty Incidents

Responders and call takers must rely on 911 call questioning to determine the number of patients that may be present. In a multiple casualty situation, the range of severity of patients may be broad. These responses are the most complicated EMS calls for service.

An increasingly likely scenario in today's society is a multiple casualty incident related to an active shooter, active killer, or terrorist incident. These types of incidents require law

enforcement intervention for situational stabilization, however, rapid EMS intervention that can be taken prior to threat neutralization has been shown to save lives. A team of EMS responders integrated with a law enforcement "force protection" component is termed a "Rescue Task Force" (RTF) and requires additional safety equipment and personnel. This safety equipment is placed on apparatus based on administrative capabilities and requirements. This type of response is one of the most highly dynamic scenarios imaginable and as such is dependent almost entirely on the skill and training of responding officers and EMS providers.

Fire Suppression – Structure & Vehicle

911 fire responses include a wide variety of incidents where some item may be or suspected to be on fire. Fire responses are less prevalent than 911 EMS responses. Fire responses include fires that involve structures, contents within or adjacent to structures, vehicles, and wildland areas to name a few. The modern fire environment can be severely damaging and can develop rapidly. Response time is a critical factor in fire response as addressing a fire early in its development by rapidly deployed and effectively training resources can significantly reduce the likelihood of fire growth, reduce the need for a large number of responders, reduce property damage and reduce the likelihood of injury to both Firefighters and the public.

Unified Fire Authority's service area includes a wide range of fire environments including historical, modern, residential, commercial, industrial, and wildland/urban interface. Each of these fire environments present unique challenges and potentially require specialized training and equipment for safe and effective response.

For these reasons it is critically important to provide an initial response that is appropriate to the type of fire that is reported. A single engine company dispatched and responding quickly, for example, can eliminate the need for a full structure or wildland fire response by controlling a small fire rapidly. For this reason, fire response must include rapid, initial dispatch of minimally required resources with the ability for initial responding officers to upgrade the response based on further caller details or the environment present on scene.

Unified Fire Authority's fire response profile emphasizes rapid deployment of the closest available cross-trained resources with a "menu" of response upgrades to meet the anticipated strategic and tactical needs of developing incidents. Critical initial response benchmarks for structure fires include whether there is a confirmed fire and if that fire involves a structure or contents near or within a structure. The critical initial benchmark for a wildland fire is the reported potential for large fire growth (Wildland/Urban Interface vs. Field Fire).

	CY 2020	CY 2019	CY 2018	Total
Fire Suppression Incident Counts by Risk Category				
Low	585	1,002	611	2,198
Moderate	626	313	284	1,223
High	178	258	253	689
Maximum	12	12	15	39
Fire Suppression Total	1,401	1,585	1,163	4,149

Table 145 - Incidents by Risk Category – Fire Suppression

The various tasks associated with fire suppression activities include rescuing trapped victims, ventilation of superheated gases and smoke, and firefighting and suppression tactics to limit property damage. Initial UFA recruit training meets or exceeds the standards set forth in NFPA 1001: Standard for Fire Fighter Professional Qualifications.

Fire development within modern structures is evolving and becoming more challenging due to utilization of hydrocarbon-based furnishings, interior finishes and lightweight energy efficient construction methods. The modern structure fire environment that typically includes hydrocarbon-based furnishings and interior finishes, results in exponential fire growth, creating a volatile and deadly interior fire environment. Off-gassing of materials due to heating of the fire results in rapid flame spread, high heat release rates and the development of large volumes of toxic and flammable smoke. These dangerous factors result in dramatically reduced survivability for occupants remaining in the structure and increased danger and risk to firefighters.

The variables of fire growth dynamics along with life and property risk combine to determine critical fireground tasks. The integrated tasks which present competing priorities on the fireground are divided into two basic functions: fire suppression and/or

rescue. Suppression tasks are those related to extinguishing burning material while rescue tasks are those related to locating and removing trapped occupants from the structure.

Fire suppression tasks are generally accomplished with hand-held hose lines or master stream devices, either portable or fixed to a fire apparatus. The decision to utilize handheld hose lines or master stream devices depends upon the size of the fire, water supply, and available personnel. During certain early stages of fire growth, Firefighters can make an offensive fire attack utilizing handheld hose lines. Properly positioned and supported hose lines can quickly suppress a fire, limit, or delay fire growth, and dramatically reduce existing heat and smoke, all of which can protect occupants until they can be safely rescued from the environment. Once a fire has established itself within a structure and grown to a certain level of intensity, larger hoselines or master stream devices, both of which require additional personnel to operate effectively, must be utilized for extinguishment and control.

If the fire is in the post-flashover stage and has extended beyond the capacity of mobile handheld hose lines, or if fire involvement and/or structural damage is a threat to Firefighter safety, the structure is typically declared lost. In these situations, defensive master streams and exterior hose lines are deployed to extinguish the fire and keep it from extending to nearby exposed structures. The ultimate goal of a fire suppression system is to staff and position an ERF to be able to attack a fire before a structure is declared lost and rescue occupants before the environment becomes un-survivable.

Rescue tasks are based on a number of variables, including the number of occupants, their location relative to the fire and smoke, whether or not they have been injured or incapacitated, and their ability to take self-preserving actions. For example, ambulatory adults need less assistance than those with restricted mobility, the very young and elderly are more vulnerable and require more assistance. Before initiating operations, the Incident Commander must assess the situation and select an appropriate strategy (offensive, defensive or transitional) as each strategy has its own critical task demands. Tactical assignments must then be made to accomplish the strategy.

Offensive Strategy typically employs an aggressive nozzle advance to the seat-of-the fire, by the first arriving firefighters. The priorities of this strategy are to: immediately stabilize the incident, rescue trapped occupants and/or minimize property loss. The objective is to confine and extinguish the fire with the ultimate goal of protecting life, while simultaneously suppressing the fire and limiting property damage. The offensive strategy is the preferred fire attack method, due to its multiple benefits. Before employing this strategy, responders must consider the survivability of occupants, danger to responders, and availability of needed resources.

Defensive Strategy generally consists of an exterior attack designed to either confine the fire to the structure of origin or block the fire's expansion by taking a stand at a defensible position. No attempts are made to rescue civilian victims from the active fire area, due to either non-survivable conditions or structural risks that outweigh the chances of success. Nearly all firefighting is performed from outside the structure or from unaffected areas on or within the structure.

Transitional Strategy is utilized in the face of either changing resource levels or fire conditions. In the case of a transitional "defensive to offensive" attack, an initial exterior attack is utilized to reduce the threat from the fire, while awaiting the arrival of sufficient resources to safely mount an offensive attack or until a large fire is sufficiently controlled to permit a safe interior attack. Conversely, a transitional "offensive to defensive" strategy may be employed when fire spread renders a building unsafe for continued interior operations.

Single Unit Incident Response

The single unit incident response is the most basic emergency response profile. Unified Fire Authority's personnel are cross trained for a variety of different fire responses and are trained to understand when specialists or additional resources may be required. This response is intended to provide personnel and equipment for low acuity fires including vehicle fires, dumpster fires, illegal burning, smell of smoke in the area, low acuity HazMat response, residential and commercial alarm notifications, public or agency assistance, etc. The primary objective for this response package is general problem solving and rapid control of an event that could have a high impact on individuals or the community if left to develop un-controlled.

Initial Structure Fire Response

The initial structure fire response force is an intermediate response to medium acuity fires that do not fit the criteria of a confirmed structure fire. The intent of establishing an initial structure fire response force is to decrease the number of apparatus responding with lights and sirens to low and medium acuity fire calls. This reduction in the number of responding vehicles reduces exposure of Firefighters and the public to emergency vehicle response and also increases availability time for apparatus in busier areas. Many low- and medium-acuity fire responses can be safely and quickly addressed with fewer than a "full alarm" fire response.

The initial structure fire response should be dispatched immediately while additional information is gathered and can be upgraded by the responding officer(s) or the dispatch center if further information indicates the fire meets criteria

Technical Rescue

Those tasks associated with freeing people from entrapment or additional high-acuity rescue situations, including technical rescue, confined space rescue, rope rescue, vehicle and heavy machinery extrication, rope rescue (high- and low-angle), structure collapse rescue, trench collapse and urban search & rescue (US&R). UFA has two Heavy Rescue companies that meet or exceed minimum training standards identified in NFPA 1006: Standards for Technical Rescuer Professional Qualifications. Additionally, UFA is the sponsoring agency for Utah Task Force 1 (UT-TF1), a Federal FEMA resource which also may be tasked as a state asset.

Incidents per Type with Risk Category	CY 2020	CY 2019	CY 2018	Total
Technical Rescue				
Low	11	1	3	15
Moderate	4	2	1	7
High	4	1	0	5
Maximum	1	0	0	1
Technical Rescue Total	20	4	4	28

Table 146 - Technical Rescue Responses with Risk Categories

Hazardous Materials

17

Those tasks associated with the identification, mitigation, containment, and safe neutralization of hazardous, radioactive and/or toxic materials. All UFA firefighters are trained at a minimum to HazMat Awareness and Operations level. UFA has two HazMat companies that are trained to HazMat Technician level and meet or exceed both NFPA 471: Recommended Practice for Responding to Hazardous Materials Incidents and NFPA 472: Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents.

Incidents per Type with Risk Category	CY 2020	CY 2019	CY 2018	Total
HazMat Response				
Low	301	278	199	778
Moderate	22	34	32	88
High/Maximum	1	1	1	3
HazMat Response Total	324	313	232	869

Table 147 - HazMat Responses with Risk Categories

Water Rescue

Water rescue includes those tasks associated with the rescue of people from waterways and standing bodies of water. UFA has three identified companies trained to surface and swift water response and rescue and are trained to Swiftwater Rescue Technician level and meet or exceed NFPA Chapters 11 and 12 of NFPA 1006, Standard for Technical Rescuer Professional Qualifications in addition to maintaining Technical Rope Rescue – Technician. Additionally, these stations also maintain Ice Rescue Technician, meeting or exceeding NFPA Chapter 20 of NFPA 1006. UFA's Heavy Rescue companies also maintain water capabilities at the Technician level.

Incidents per Type with Risk Category	CY 2020	CY 2019	CY 2018	Total
Swiftwater/Ice Rescue				
Low	1	0	0	1
Moderate	1	0	0	1
High	0	0	0	0
Maximum	0	0	0	0
Swiftwater Rescue Total	2	0	0	2

Table 148 - Swiftwater/Ice Rescue Responses with Risk Categories

Wildland Urban Interface Fire Response

Incidents per Type with Risk Category	CY 2020	CY 2019	CY 2018	Total
Wildland Fire				
Low	230	119	80	429
Moderate	112	88	113	313
High	0	0	1	1
Maximum	0	0	0	0
Wildland Fire Suppression Total	342	207	194	743

Table 149 - Wildland Responses with Risk Categories

Wildland/Urban Interface (WUI) fire response includes those tasks associated with fire suppression activities in areas where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. UFA currently provides both fire suppression and mitigation work within those communities adjacent to and surrounded by wildland areas. Each county within the State of Utah has a Fire Warden that manages large-scale or growing incidents within their respective areas. Since the State of Utah implemented its Comprehensive Wildland Fire Policy in 2017, UFA has continued a long-standing partnership with the State in both preventing catastrophic wildfires and providing initial attack capabilities within Salt Lake County.

All UFA firefighters are trained to the Wildland Firefighter Type 2 level at a minimum. Additional wildland fire suppression capacity includes a fleet of specialized wildland fire response equipment, trained and experienced wildland fire managers, including an on-duty Wildland Duty Officer and a "fuels crew" that engages in fuels and risk reduction projects through the summer. Wildland fire events often have some of the most widespread and expensive impacts to communities and the organization.

Evaluation of Current Deployment and Performance

Performance Methodology

Resource Deployment

UFA maintains a daily minimum staffing of 113 full-time positions, with an additional ten part-time personnel (three ambulances running peak-load hours—six personnel running either 0700-1900 or 0900-2100 dependent on data and call volume—and two part-time positions running with a twenty-four-hour full-time paramedic partner running three ambulances). These personnel run fr forty-two pieces of front-line apparatus. An additional thirteen reserve ambulances and eighteen reserve heavy apparatus are available within UFA's system and are staged either at UFA's logistics warehouse or in different stations throughout UFA to provide backup in the case of mechanical problems with frontline apparatus.

Response Metrics

The first unit to arrive on the scene of any given emergent incident, or "first-due apparatus" will be able to establish incident command, perform a scene size-up, give an initial report and make assignments to other responding companies. Most UFA suppression units are staffed with a minimum of 4 personnel so this unit will also be able to initiate interior or exterior fire attack, identification and/or initial confinement of hazard, rescue of endangered persons, or initiation of ALS or BLS emergency medical care.

The Effective Response Force (ERF) measures the time of the accumulation of personnel and resources to meet the ERF defined in the critical task analyses documented in this SOC document.

Total Response Time Components

Total response time is the time it takes from the call to be received at the VECC Public Safety Answering Point (PSAP) until the first unit arrives on the scene of the emergency incident. Total response time is measured for all first-due and ERF responses. Total response time is composed of call-processing time, turnout time, and travel time.

- *Call Processing Time* is the time the call being received at the PSAP to the dispatching of the first UFA unit. This is measured for all emergency incidents.
- *Turnout Time* is the elapsed time from when a unit is dispatched until that unit changes their status to 'enroute'. This time is measured for all first-due units that are dispatched to an emergency incident.
- *Travel Time* is the elapsed time from when a unit begins to respond until it arrives on scene. This time is measured for all first-due and ERF responses.
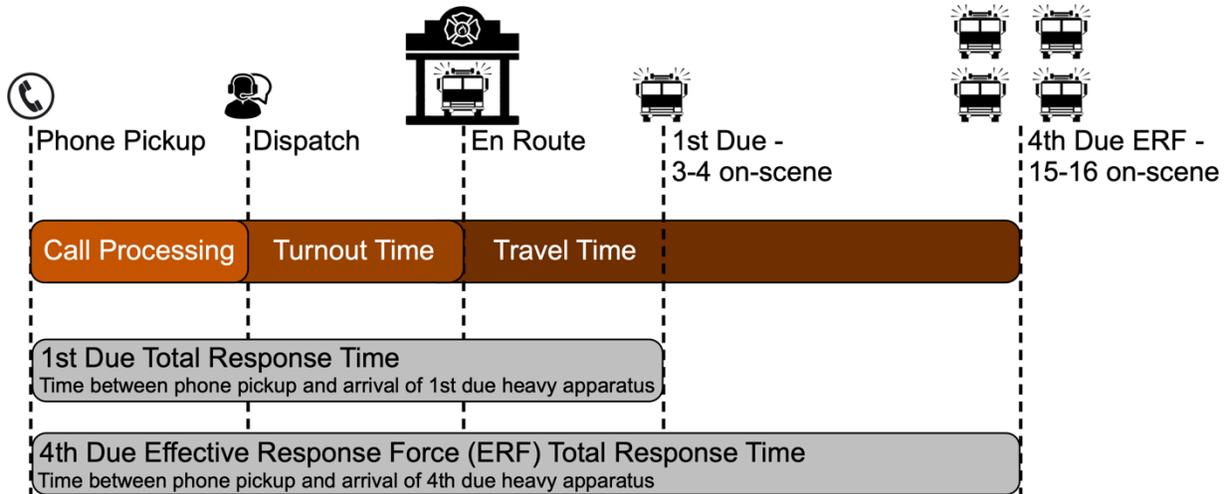
Benchmark Statements

UFA's benchmark statements for each risk classification and category are:

Low-Risk Responses (Non-EMS)

Low-Risk (Non-EMS)	Urban	Rural
Fire Suppression	10:30	15:00
HazMat	7:30	11:30
Technical Rescue	9:30	19:30
Water Rescue	10:30	20:30
Wildland Suppression	10:30	20:30

For 90% of low-risk fire suppression responses in urban areas, the total response time for the arrival of the first-due unit, staffed with a minimum of four persons, is ten minutes and thirty seconds.

For 90% of low-risk fire suppression responses in rural areas, the total response time for the arrival of the first-due unit, staffed with three persons, is fifteen minutes and zero seconds.

For 90% of low-risk hazardous materials responses in urban areas, the total response time for the arrival of the first-due unit, staffed with a minimum of four persons, is seven minutes and thirty seconds.

For 90% of low-risk hazardous materials responses in rural areas, the total response time for the arrival of the first-due unit, staffed with three persons, is eleven minutes and thirty seconds.

For 90% of low-risk technical rescue responses in urban areas, the total response time for the arrival of the first-due unit, staffed with a minimum of four persons, is nine minutes and thirty seconds.

For 90% of low-risk technical rescue responses in rural areas, the total response time for the arrival of the first-due unit, staffed with three persons, is nineteen minutes and thirty seconds.

For 90% of low-risk water rescue responses in urban areas, the total response time for the arrival of the first-due unit, staffed with a minimum of four persons, is ten minutes and thirty seconds.

For 90% of low-risk water rescue responses in rural areas, the total response time for the arrival of the first-due unit, staffed with three persons, is twenty minutes and thirty seconds.

For 90% of low-risk wildland suppression responses in urban areas, the total response time for the arrival of the first-due unit, staffed with a minimum of four persons, is ten minutes and thirty seconds.

For 90% of low-risk wildland suppression responses in rural areas, the total response time for the arrival of the first-due unit, staffed with three persons, is twenty minutes and thirty seconds.

Low-Risk Responses (EMS)

Low-Risk (EMS)	Urban	Rural
EMS Response	5:45	10:30

For 90% of all low-risk EMS responses in urban areas, the total response time for the arrival of the first-due unit, staffed with four persons, is five minutes and forty-five seconds.

For 90% of all low-risk EMS responses in rural areas, the total response time for the arrival of the first-due unit, staffed with three persons, is ten minutes and thirty seconds.

Moderate-Risk Responses (Non-EMS)

Moderate-Risk (Non-EMS)	Urban	Rural
Fire Suppression	10:30	15:00
HazMat	10:30	14:30
Technical Rescue	12:30	16:30
Water Rescue	13:45	21:00
Wildland Suppression	13:45	21:00

For 90% of moderate-risk fire suppression responses in urban areas, the total response time for the arrival of the ERF, staffed with eight persons, is ten minutes and thirty seconds.

For 90% of moderate-risk fire suppression responses in rural areas, the total response time for the arrival of the ERF, staffed with eight persons, is fifteen minutes and zero seconds.

For 90% of moderate-risk hazardous material responses in urban areas, the total response time for the arrival of the ERF, staffed with sixteen persons, is ten minutes and thirty seconds.

For 90% of moderate-risk hazardous material responses in rural areas, the total response time for the arrival of the ERF, staffed with sixteen persons, is fourteen minutes and thirty seconds.

For 90% of moderate-risk technical rescue responses in urban areas, the total response time for the arrival of the ERF, staffed with ten persons, is twelve minutes and thirty seconds.

For 90% of moderate-risk technical rescue responses in rural areas, the total response time for the arrival of the ERF, staffed with ten persons, is sixteen minutes and thirty seconds.

For 90% of moderate-risk water rescue responses in urban areas, the total response time for the arrival of the ERF, staffed with twelve persons, is thirteen minutes and forty-five seconds.

For 90% of moderate-risk water rescue responses in rural areas, the total response time for the arrival of the ERF, staffed with twelve persons, is twenty-one minutes and zero seconds.

For 90% of moderate-risk wildland suppression responses in urban areas, the total response time for the arrival of the ERF, staffed with nineteen persons, is thirteen minutes and forty-five seconds.

For 90% of moderate-risk wildland suppression responses in rural areas, the total response time for the arrival of the ERF, staffed with nineteen persons, is twenty-one minutes and zero seconds.

The ERF is capable of (regardless of fire suppression, technical rescue, hazardous materials, and swiftwater/surface ice rescue response):

- Establishing command
- Sizing up the situation
- Initiate mitigation efforts within one minute of arrival
- Identify specialized resource needs
- Initiate an action plan — in coordination with SMEs on hazard-specific events
  - Fire Suppression-specific
    - Establishing one suppression handline in service
    - Comply with two in-two out
    - Establish a water supply
    - Provide search and rescue
    - Provide ventilation
    - Provide a truck company
    - Provide a four-person initial rapid intervention team (IRIT)
  - Technical Rescue-specific

- Initiate patient care
- Provide technical rescue coordination and management of the operations
- Identify any additional resources or equipment needs
  - ○ Hazardous Materials-specific
    - Provide atmospheric monitoring
    - Initiate patient care, rescue, removal or plan of removal
    - Provide HazMat coordination and management of the operations
    - Initiate HazMat-specific identification and mitigation efforts
    - Identify any additional resources or equipment needs
    - Coordinate with SLCo Health Department on clean-up efforts and needs
  - ○ Swiftwater/Surface Ice Rescue-specific
    - Initiate patient care
    - Coordinate water/ice rescue efforts for patient care, rescue, removal or plan of removal

Moderate-Risk Responses (EMS)

Moderate-Risk (EMS)	Urban	Rural
EMS Response	8:00	14:15

For 90% of moderate-risk EMS responses in urban areas, the total response time for the arrival of the ERF, staffed with twelve persons, is eight minutes and zero seconds.

For 90% of moderate-risk EMS responses in rural areas, the total response time for the arrival of the ERF, staffed with twelve persons, is fourteen minutes and fifteen seconds.

The ERF is capable of:

- Establishing command
- Sizing up the situation
- Initiate triage, as needed, within one minute of
- Initiate patient care within one minute of arrival
- Identify and initiate an action plan
- Initiate ALS medical care, including cardiac defibrillation, within one minute of arrival
- Identify specialized resource needs

High-Risk Responses (Non-EMS)

High-Risk (Non-EMS)	Urban	Rural
Fire Suppression	21:00	30:00
HazMat	21:00	29:00
Technical Rescue	25:00	32:00
Water Rescue	27:30	42:00
Wildland Suppression	Unable to Determine	Unable to Determine

For 90% of high-risk fire suppression responses in urban areas, the total response time for the arrival of the ERF, staffed with twenty-five persons, is twenty-one minutes and zero seconds.

For 90% of high-risk fire suppression responses in rural areas, the total response time for the arrival of the ERF, staffed with twenty-five persons, is thirty minutes and zero seconds.

For 90% of high-risk hazardous material responses in urban areas, the total response time for the arrival of the ERF, staffed with thirty-five persons, is twenty-one minutes and zero seconds.

For 90% of high-risk hazardous material responses in rural areas, the total response time for the arrival of the ERF, staffed with thirty-five persons, is twenty-nine minutes and zero seconds.

For 90% of technical rescue suppression responses in urban areas, the total response time for the arrival of the ERF, staffed with twenty-seven persons, is twenty-five minutes and zero seconds.

For 90% of high-risk technical rescue responses in rural areas, the total response time for the arrival of the ERF, staffed with twenty-seven persons, is thirty-two minutes and zero seconds.

For 90% of high-risk water rescue responses in urban areas, the total response time for the arrival of the ERF, staffed with eighteen persons, is twenty-seven minutes and thirty seconds.

For 90% of high-risk water rescue responses in rural areas, the total response time for the arrival of the ERF, staffed with eighteen persons, is forty-two minutes and zero seconds.

For 90% of high-risk wildland suppression responses in urban areas, the total response time for the arrival of the ERF, staffed with seventy-six persons, cannot accurately be identified due to high-risk incidents being turned over to an Incident Management Team (IMT), which are primarily regional resources.

For 90% of high-risk wildland suppression responses in rural areas, the total response time for the arrival of the ERF, staffed with seventy-six persons, cannot accurately be identified due to high-risk incidents being turned over to an Incident Management Team (IMT), which are primarily regional resources.

The ERF is capable of (regardless of fire suppression, technical rescue, hazardous materials, and water rescue response):

- Establishing command
- Sizing up the situation
- Initiate mitigation efforts within one minute of arrival
- Identify specialized resource needs
- Initiate an action plan — in coordination with SMEs on hazard-specific events
    - Fire Suppression-specific
        - Establishing one suppression handline in service
        - Comply with two in-two out
        - Establish a water supply
        - Provide search and rescue
        - Provide ventilation
        - Provide a truck company
        - Provide a four-person initial rapid intervention team (IRIT)
    - Technical Rescue-specific
        - Initiate patient care
        - Provide technical rescue coordination and management of the operations
        - Identify any additional resources or equipment needs
    - Hazardous Materials-specific
        - Provide atmospheric monitoring
        - Initiate patient care, rescue, removal or plan of removal
        - Provide HazMat coordination and management of the operations
        - Initiate HazMat-specific identification and mitigation efforts
        - Identify any additional resources or equipment needs

- Coordinate with SLCo Health Department on clean-up efforts and needs
  - o Water Rescue-specific
    - Initiate patient care
    - Coordinate water/ice rescue efforts for patient care, rescue, removal or plan of removal

High and Maximum Risk Responses (EMS)

High/Maximum-Risk (EMS)	Urban	Rural
EMS Response	16:00	28:30

For 90% of high/maximum-risk EMS responses in urban areas, the total response time for the arrival of the ERF, staffed with thirty persons, is sixteen minutes and zero seconds.

For 90% of moderate-risk EMS responses in rural areas, the total response time for the arrival of the ERF, staffed with thirty persons, is twenty-eight minutes and thirty seconds.

The ERF is capable of:

- Establishing command
- Sizing up the situation
- Initiate triage, as needed, within one minute of arrival
- Initiate patient care within one minute of arrival
- Identify and initiate an action plan
- Initiate ALS medical care, including cardiac defibrillation, within one minute of arrival
- Identify specialized resource needs

Maximum-Risk Responses (Non-EMS)

Maximum-Risk (Non-EMS)	Urban	Rural
Fire Suppression	21:00	30:00
HazMat	21:00	29:00
Technical Rescue	25:00	32:00
Water Rescue	27:30	42:00
Wildland Suppression	Unable to Determine	Unable to Determine

For 90% of maximum-risk fire suppression responses in urban areas, the total response time for the arrival of the ERF, staffed with thirty-nine persons, is twenty-one minutes and zero seconds.

For 90% of maximum-risk fire suppression responses in rural areas, the total response time for the arrival of the ERF, staffed with thirty-nine persons, is thirty minutes and zero seconds.

For 90% of maximum-risk hazardous material responses in urban areas, the total response time for the arrival of the ERF, staffed with thirty-five persons, is twenty-one minutes and zero seconds.

For 90% of maximum-risk hazardous material responses in rural areas, the total response time for the arrival of the ERF, staffed with thirty-five persons, is twenty-nine minutes and zero seconds.

For 90% of maximum-risk technical rescue responses in urban areas, the total response time for the arrival of the ERF, staffed with thirty-one persons, is twenty-five minutes and zero seconds.

For 90% of maximum-risk fire suppression responses in rural areas, the total response time for the arrival of the ERF, staffed with thirty-one persons, is thirty-two minutes and zero seconds.

For 90% of maximum-risk water rescue responses in urban areas, the total response time for the arrival of the ERF, staffed with twenty-six persons, is twenty-seven minutes and thirty seconds.

For 90% of maximum-risk water rescue responses in rural areas, the total response time for the arrival of the ERF, staffed with twenty-six persons, is forty-two minutes and zero seconds.

For 90% of maximum-risk wildland suppression responses in urban areas, the total response time for the arrival of the ERF, staffed with two hundred plus persons, cannot accurately be identified due to maximum-risk incidents being turned over to a Type 1 or 2 Incident Management Team (IMT), which are national resources.

For 90% of maximum-risk wildland suppression responses in rural areas, the total response time for the arrival of the ERF, staffed with two hundred plus persons, cannot

accurately be identified due to maximum-risk incidents being turned over to a Type 1 or 2 Incident Management Team (IMT), which are national resources.

The ERF is capable of (regardless of fire suppression, technical rescue, hazardous materials, and swiftwater/surface ice rescue response):

- Establishing command
- Sizing up the situation
- Initiate mitigation efforts within one minute of arrival
- Identify specialized resource needs
- Initiate an action plan — in coordination with SMEs on hazard-specific events
    - Fire Suppression-specific
        - Establishing one suppression handline in service
        - Comply with two in-two out
        - Establish a water supply
        - Provide search and rescue
        - Provide ventilation
        - Provide a truck company
        - Provide a four-person initial rapid intervention team (IRIT)
    - Technical Rescue-specific
        - Initiate patient care
        - Provide technical rescue coordination and management of the operations
        - Identify any additional resources or equipment needs
    - Hazardous Materials-specific
        - Provide atmospheric monitoring
        - Initiate patient care, rescue, removal or plan of removal
        - Provide HazMat coordination and management of the operations
        - Initiate HazMat-specific identification and mitigation efforts
        - Identify any additional resources or equipment needs
        - Coordinate with SLCo Health Department on clean-up efforts and needs
    - Water Rescue-specific
        - Initiate patient care
        - Coordinate water/ice rescue efforts for patient care, rescue, removal or plan of removal

Responses Matrices Combined

Low-Risk (Non-EMS)	Urban	Rural
Fire Suppression	10:30	15:00
HazMat	7:30	11:30
Technical Rescue	9:30	19:30
Water Rescue	10:30	20:30
Wildland Suppression	10:30	20:30
Moderate-Risk (Non-EMS)		
Fire Suppression	10:30	15:00
HazMat	10:30	14:30
Technical Rescue	12:30	16:30
Water Rescue	13:45	21:00
Wildland Suppression	13:45	21:00
High-Risk (Non-EMS)		
Fire Suppression	21:00	30:00
HazMat	21:00	29:00
Technical Rescue	25:00	32:00
Water Rescue	27:30	42:00
Wildland Suppression	Unable to Determine	Unable to Determine
Maximum-Risk (Non-EMS)		
Fire Suppression	21:00	30:00
HazMat	21:00	29:00
Technical Rescue	25:00	32:00
Water Rescue	27:30	42:00
Wildland Suppression	Unable to Determine	Unable to Determine

Low-Risk (EMS)	Urban	Rural
EMS Response	5:45	10:30
Moderate-Risk (EMS)		
EMS Response	8:00	14:15
High/Maximum-Risk (EMS)		
EMS Response	16:00	28:30

Baseline Statements & Metrics

UFA measures and evaluates its service delivery against benchmarks and industry best practices. Identification of key metrics and predictive analyses are critical, in coordination with geographic information systems (GIS) mapping capabilities to properly identify UFA's current deployment and performance measures. In order to appropriately measure performance, UFA looks at industry standards. The time from phone pickup to dispatch is identified as call processing time. Turnout time is the amount of time from dispatch notification to the first due heavy apparatus beginning the travel time, i.e., going en route.

The travel time is the amount of time it takes for that first-due unit to arrive on scene. For the total response time, the time is taken from the time the call is picked up to the time that the unit arrives on scene. A good gauge of when the majority of an effective response force (ERF) arrives is by capturing the time of the fourth arriving unit. UFA doesn't currently have a good mechanism to capture the fourth arriving unit or the ERF, although that is one of the recommended items to capture.

The figures below are the actual timeframes for incident responses from 2018-2020. UFA utilizes automatic and mutual aid in its responses for the effective response force complement of personnel, for which there is a current lack of data and is denoted with 'unknown' in the tables.

Fire Suppression

For ninety percent of all fire suppression responses from 2018-2020, the total response time for the arrival of the first due unit, staffed with a minimum of four personnel in urban areas was eleven minutes: forty-three seconds and sixteen minutes and thirty-six seconds in rural areas.

All Risk Levels Emergent Fire Suppression – 90th % – Baseline Performance			Target (Agency Benchmark)	Average CY 18-20	CY 2020	CY 2019	CY 2018
Alarm Handling	Pickup to Dispatch	Urban	1:30	2:53	2:45	2:33	3:21
		Rural	1:30	2:50	2:50	3:07	2:34
Turnout Time	Turnout Time 1st Due	Urban	2:00	2:38	2:23	2:38	2:54
		Rural	2:00	3:18	3:13	3:22	3:20
Travel Time	Travel Time 1st Due	Urban	7:45	8:34	8:33	7:45	9:25
		Rural	12:30	14:02	13:15	11:53	16:59
	Travel Time ERF Concentration	Urban	15:30	Unk	Unk	Unk	Unk
		Rural	25:00	Unk	Unk	Unk	Unk
Total Response Time	Total Response Time 1st Due Distribution	Urban	10:30	11:43 n=1,542	11:24 n=2,026	10:57 n=1,478	12:49 n=1,123
		Rural	15:00	16:36 n=112	16:48 n=132	15:13 n=107	17:47 n=98
	Total Response Time ERF Concentration	Urban	21:00	Unk n=1,542	Unk n=2,026	Unk n=1,478	Unk n=1,123
		Rural	30:00	Unk n=112	Unk n=132	Unk n=107	Unk n=98

NOTE – NFPA 1221 and 1710 recommend an alarm handling time of 64 seconds (90th percentile); turnout time of 80 seconds (90th percentile); 1st arriving unit on-scene time of 240 seconds (4 minutes [90th percentile]); initial full-alarm arrival time for 480 seconds (8 minutes [90th percentile]) for low and medium hazard categories; and 610 seconds (10 minutes 10 seconds [90th percentile]) for high hazard categories. It is important to note that these are recommendations only.

Emergency Medical Services

For ninety percent of all EMS responses from 2018-2020, the total response time for the arrival of the first due unit, staffed with a minimum of two personnel in urban areas was eight minutes and fifty-four seconds: fifteen minutes and forty-nine seconds in rural areas.

All Risk Levels Emergent EMS – 90th % – Baseline Performance			Target (Agency Benchmark)	Average CY 18-20	CY 2020	CY 2019	CY 2018
Alarm Handling	Pickup to Dispatch	Urban	1:30	1:48	1:51	1:28	2:06
		Rural	1:30	2:07	2:06	1:50	2:26
Turnout Time	Turnout Time 1st Due	Urban	1:30	2:28	2:17	2:27	2:42
		Rural	1:30	3:09	3:03	3:07	3:18
Travel Time	Travel Time 1st Due	Urban	5:45	6:21	6:22	6:14	6:28
		Rural	10:30	11:36	10:37	10:34	13:39
	Travel Time ERF Concentration	Urban	11:30	Unk	Unk	Unk	Unk
		Rural	21:00	Unk	Unk	Unk	Unk
Total Response Time	Total Response Time 1st Due Distribution	Urban	8:00	8:54 n=9,626	8:00 n=9,138	9:00 n=9,914	9:42 n=9,825
		Rural	14:15	15:49 n=567	14:23 n=621	14:50 n=573	18:15 n=507
	Total Response Time ERF Concentration	Urban	16:00	Unk n=9,626	Unk n=9,138	Unk n=9,914	Unk n=9,825
		Rural	28:30	Unk n=567	Unk n=621	Unk n=573	Unk n=507

NOTE – NFPA 1221 and 1710 recommend an alarm handling time of 64 seconds (90th percentile); turnout time of 60 seconds (90th percentile) for EMS responses; 1st arriving unit on-scene time with a minimum of BLS capability of 240 seconds (4 minutes [90th percentile]); and travel time for ALS provider capability of 480 seconds (8 minutes [90th percentile]). It is important to note that these are recommendations and NFPA does not provide recommendations specific to EMS responses.

Hazardous Material Responses

For ninety percent of all HazMat responses from 2018-2020, the total response time for the arrival of the first due unit, staffed with a minimum of four personnel in urban areas was eleven minutes and forty-six seconds: sixteen minutes and three seconds in rural areas.

All Risk Levels Emergent HazMat Incidents – 90th % – Baseline Performance			Target (Agency Benchmark)	Average CY 18-20	CY 2020	CY 2019	CY 2018
Alarm Handling	Pickup to Dispatch	Urban	1:30	2:37	2:49	2:16	2:47
		Rural	1:30	1:58	2:01	1:38	2:17
Turnout Time	Turnout Time 1st Due	Urban	2:00	2:37	2:20	2:35	2:58
		Rural	2:00	3:11	2:55	2:33	4:06
Travel Time	Travel Time 1st Due	Urban	7:30	8:14	9:11	7:43	7:49
		Rural	11:30	12:41	13:28	11:15	13:22
	Travel Time ERF Concentration	Urban	15:00	Unk	Unk	Unk	Unk
		Rural	23:00	Unk	Unk	Unk	Unk
Total Response Time	Total Response Time 1st Due Distribution	Urban	10:30	11:46	12:41	11:20	11:17
				n=273	n=304	n=293	n=222
		Rural	14:30	16:03	16:49	13:37	17:45
				n=19	n=22	n=24	n=12
	Total Response Time ERF Concentration	Urban	21:00	Unk	Unk	Unk	Unk
				n=273	n=304	n=293	n=222
		Rural	29:00	Unk	Unk	Unk	Unk
				n=19	n=22	n=24	n=12

NOTE – NFPA 1221 and 1710 recommend an alarm handling time of 64 seconds (90th percentile); turnout time of 80 seconds (90th percentile); 1st arriving unit on-scene time of 240 seconds (4 minutes [90th percentile]); initial full-alarm arrival time for 480 seconds (8 minutes [90th percentile]) for low and medium hazard categories; and 610 seconds (10 minutes 10 seconds [90th percentile]) for high hazard categories. It is important to note that these are recommendations and NFPA does not provide recommendations specific to hazardous materials responses.

Technical Rescue Responses

For ninety percent of all technical rescue responses from 2018-2020, the total response time for the arrival of the first due unit, staffed with a minimum of four in urban areas was thirteen minutes and fifty-four seconds; eleven minutes and forty-six seconds in rural areas (note: there aren't enough incidents to accurately gauge timeframes).

All Risk Levels Emergent Tech Rescue Incidents – 90th % – Baseline Performance			Target (Agency Benchmark)	Average CY 18-20	CY 2020	CY 2019	CY 2018
Alarm Handling	Pickup to Dispatch	Urban	1:30	3:44	4:12	5:11	1:49
		Rural	1:30	2:18	2:15	2:21	N/A
Turnout Time	Turnout Time 1st Due	Urban	2:00	2:30	2:06	2:57	2:28
		Rural	2:00	2:02	1:59	2:05	N/A
Travel Time	Travel Time 1st Due	Urban	9:30	10:35	8:54	5:07	17:45
		Rural	9:30	7:27	9:26	5:28	N/A
	Travel Time ERF Concentration	Urban	19:00	Unk	Unk	Unk	Unk
		Rural	19:00	Unk	Unk	Unk	Unk
Total Response Time	Total Response Time 1st Due Distribution	Urban	12:30	13:54	14:46	6:12	20:44
				n=5	n=8	n=3	n=4
		Rural	12:30	11:46	13:39	9:54	N/A
				n=1	n=2	n=1	n=0
	Total Response Time ERF Concentration	Urban	25:00	Unk	Unk	Unk	Unk
				n=5	n=8	n=3	n=4
		Rural	25:00	Unk	Unk	Unk	Unk
				n=1	n=2	n=1	n=0

NOTE – NFPA 1221 and 1710 recommend an alarm handling time of 64 seconds (90th percentile); a turnout time of 80 seconds (90th percentile); 1st arriving unit on-scene time of 240 seconds (4 minutes [90th percentile]); initial full-alarm arrival time for 480 seconds (8 minutes [90th percentile]) for low and medium hazard categories; and 610 seconds (10 minutes 10 seconds [90th percentile]) for high hazard categories. It is important to note that these are recommendations and NFPA does not provide recommendations specific to technical rescue responses.

Water Rescue Responses

For ninety percent of all water rescue responses from 2018-2020, the total response time for the arrival of the first due unit, staffed with a minimum of four in an urban area was eight minutes and thirty seconds.

Of note, there was only one incident in 2020 identified with any NFIRS code of 360-365, water or ice-related rescue and it was located in an urban area, so there aren't enough incidents to accurately gauge timeframes.

All Risk Levels Emergent Swiftwater Incidents – 90th % – Baseline Performance			Target (Agency Benchmark)	Average CY 18-20	CY 2020	CY 2019	CY 2018
Alarm Handling	Pickup to Dispatch	Urban	1:30	N/A	2:13	N/A	N/A
		Rural	1:30	N/A	N/A	N/A	N/A
Turnout Time	Turnout Time 1st Due	Urban	2:00	N/A	0:34	N/A	N/A
		Rural	2:00	N/A	N/A	N/A	N/A
Travel Time	Travel Time 1st Due	Urban	10:30	N/A	4:07	N/A	N/A
		Rural	20:30	N/A	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	21:00	Unk	Unk	Unk	Unk
		Rural	41:00	Unk	Unk	Unk	Unk
Total Response Time	Total Response Time 1st Due Distribution	Urban	13:45	N/A	4:41	N/A	N/A
				n=	n=2	n=0	n=0
		Rural	21:00	N/A	N/A	N/A	N/A
				n=	n=0	n=0	n=0
	Total Response Time ERF Concentration	Urban	27:30	Unk	Unk	Unk	Unk
				n=	n=2	n=0	n=0
		Rural	42:00	Unk	Unk	Unk	Unk
				n=	n=0	n=0	n=0

NOTE – NFPA 1221 and 1710 recommend an alarm handling time of 64 seconds (90th percentile); turnout time of 80 seconds (90th percentile); 1st arriving unit on-scene time of 240 seconds (4 minutes [90th percentile]); initial full-alarm arrival time for 480 seconds (8 minutes [90th percentile]) for low and medium hazard categories; and 610 seconds (10 minutes 10 seconds [90th percentile]) for high hazard categories. It is important to note that these are recommendations and NFPA does not provide recommendations specific to water rescue responses.

Wildland Suppression Responses

For ninety percent of all wildland responses from 2018-2020, the total response time for the arrival of the first due unit, staffed with a minimum of four in an urban area was fifteen minutes and thirteen seconds; twenty-three minutes and eleven seconds in rural areas.

All Risk Levels Emergent Wildland Incidents – 90th % – Baseline Performance			Target (Agency Benchmark)	Average CY 18-20	CY 2020	CY 2019	CY 2018
Alarm Handling	Pickup to Dispatch	Urban	1:30	3:17	2:52	3:00	4:01
		Rural	1:30	3:55	3:30	4:17	3:59
Turnout Time	Turnout Time 1st Due	Urban	2:00	2:35	2:22	2:27	2:57
		Rural	2:00	3:35	2:42	4:11	3:54
Travel Time	Travel Time 1st Due	Urban	10:30	11:35	11:44	10:33	12:28
		Rural	20:30	22:32	19:38	19:33	28:26
	Travel Time ERF Concentration	Urban	21:00	Unk	Unk	Unk	Unk
		Rural	41:00	Unk	Unk	Unk	Unk
Total Response Time	Total Response Time 1st Due Distribution	Urban	13:45	15:13	14:45	13:18	17:36
				n=184	n=244	n=166	n=142
		Rural	21:00	23:11	23:04	20:23	26:07
				n=66	n=96	n=46	n=56
	Total Response Time ERF Concentration	Urban	27:30	Unk	Unk	Unk	Unk
				n=184	n=244	n=166	n=142
		Rural	42:00	Unk	Unk	Unk	Unk
				n=66	n=96	n=46	n=56

NOTE – NFPA 1221 and 1710 recommend an alarm handling time of 64 seconds (90th percentile); turnout time of 80 seconds (90th percentile); 1st arriving unit on-scene time of 240 seconds (4 minutes [90th percentile]); initial full-alarm arrival time for 480 seconds (8 minutes [90th percentile]) for low and medium hazard categories; and 610 seconds (10 minutes 10 seconds [90th percentile]) for high hazard categories. It is important to note that these are recommendations and NFPA does not provide recommendations specific to wildland suppression response.

Plan for Maintaining and Improving Response Capabilities

This CRA/SOC is an important document in showing our current personnel and the UFA Board of Directors a current snapshot of the risks inherent within the communities we serve, as well as elements that may have direct influence on the total response time(s) within each planning zone. Datasets will be pulled annually and compared against the accepted agency benchmarks to identify gaps and areas of trending in the wrong direction. An annual report will be prepared for the UFA Board of Directors and the communities UFA serves.

Additionally, UFA will continually review station placement, apparatus locations, risk assessments, etc., to seek improvement in both deployment models and travel times. Utilizing data analytics from Intterra as well as station planning and the review of effective response force deployment data from Darkhorse will allow a quicker identification of issues and problems before they become truly problematic.

A larger review of risk assessments will also occur and be addressed with a greater group of stakeholders every three years during the strategic planning process. This will also create an open forum where any identified or perceived challenges and threats can be identified, discussed, and addressed, allowing for recognition of pressing issues within the various communities served.

Correlation of CRA/SOC Document to CFAI Accreditation Model

CC	Cat	CFAI 10th Edition Quality Improvement for the Fire and Emergency Services	CRA/SOC Page(s)
		Category 2 – Assessment and Planning	
	2A.1	Service area boundaries for the agency are identified, documented and legally adopted by the authority having jurisdiction.	40-62
	2A.2	Boundaries for other service responsibility areas, such as automatic aid, mutual aid and contract areas, are identified, documented and appropriately approved by the authority having jurisdiction.	40-62
CC	2A.3	The agency has a documented and adopted methodology for organizing the response area(s) into geographical planning zones.	62
CC	2A.4	The agency assesses the community by planning zone and considers the population density within planning zones and population areas, as applicable, for the purpose of developing total response time standards.	62-80
	2A.5	Data that include property, life, injury, environmental and other associated losses, as well as the human and physical assets preserved and/or saved, are recorded for a minimum of three (initial accreditation agencies) to five (currently accredited agencies) immediately previous years.	55-58
	2A.6	The agency utilizes its adopted planning zone methodology to identify response area characteristics such as population, transportation systems, area land use, topography, geography, geology, physiography, climate, hazards, risks, and service provision capability demands.	9-33
	2A.7	Significant socioeconomic and demographic characteristics for the response area are identified, such as key employment types and centers, assessed values, blighted areas, and population earning characteristics.	72
	2A.8	The agency identifies and documents all safety and remediation programs, such as fire prevention, public education, injury prevention, public health, and other similar programs, currently active within the response area.	173-176, 182
	2A.9	The agency defines and identifies infrastructure that is considered critical within each planning zone.	
CC	2B.1	The agency has a documented and adopted methodology for identifying, assessing, categorizing and classifying all risks (fire and non-fire) throughout the community or area of responsibility.	177-204

	2B.2	The historical emergency and nonemergency service demands frequency for a minimum of three immediately previous years and the future probability of emergency and nonemergency service demands, by service type, have been identified and documented by planning zone.	62-172
	2B.3	Event outputs and outcomes are assessed for three (initial accrediting agencies) to five (currently accredited agencies) immediately previous years.	62-172
CC	2B.4	The agency's risk identification, analysis, categorization, and classification methodology has been utilized to determine and document the different categories and classes of risks within each planning zone.	62-172
	2B.5	Fire protection and detection systems are incorporated into the risk analysis.	
	2B.6	The agency assesses critical infrastructure within the planning zones for capabilities and capacities to meet the demands posed by the risks.	62-172, 218-228
	2B.7	The agency engages other disciplines or groups within its community to compare and contrast risk assessments in order to identify gaps or future threats and risks.	59-61, See UFA Strategic Plan, 2021-2024
CC	2C.1	Given the levels of risks, area of responsibility, demographics, and socioeconomic factors, the agency has determined, documented and adopted a methodology for the consistent provision of service levels in all service program areas through response coverage strategies.	218-228
CC	2C.2	The agency has a documented and adopted methodology for monitoring its quality of emergency response performance for each service type within each planning zone and the total response area.	62-172
	2C.3	Fire protection systems and detection systems are identified and considered in the development of appropriate response strategies.	
CC	2C.4	A critical task analysis of each risk category and risk class has been conducted to determine the first due and effective response force capabilities and a process is in place to validate and document the results.	218-252
CC	2C.5	The agency has identified the total response time components for delivery of services in each service program area and found those services consistent and reliable within the entire response area.	205-211
	2C.6	The agency identifies outcomes for its programs and ties them to the community risk assessment during updates and adjustments of its programs, as needed.	

	2C.7	The agency has identified the total response time components for delivery of services in each service program area and assessed those services in each planning zone.	62-172 196-211
CC	2C.8	The agency has identified efforts to maintain and improve its performance in the delivery of its emergency services for the past three (initial accreditation agencies) to five (currently accredited agencies) immediately previous years.	212
	2C.9	The agency's resiliency has been assessed through its deployment policies, procedures and practices.	192-252
CC	2D.1	The agency has a documented and adopted methodology for assessing performance adequacy, consistency, reliability, resiliency and opportunities for improvement for the total response area.	212
	2D.2	The agency continuously monitors, assesses and internally reports, at least quarterly, on the ability of the existing delivery system to meet expected outcomes and identifies and prioritizes remedial actions.	Annually, 212
CC	2D.3	The performance monitoring methodology identifies, at least annually, future external influences, altering conditions, growth and development trends, and new or evolving risks, for purposes of analyzing the balance of service capabilities with new conditions or demands.	212
	2D.4	The performance monitoring methodology supports the assessment of the efficiency and effectiveness of each service program at least annually in relation to industry research.	205-212
	2D.5	Impacts of incident mitigation program efforts, such as community risk reduction, public education, and community service programs, are considered and assessed in the monitoring process.	
CC	2D.6	Performance gaps for the total response area, such as inadequacies, inconsistencies, and negative trends, are determined at least annually.	212
CC	2D.7	The agency has systematically developed a continuous improvement plan that details actions to be taken within an identified timeframe to address existing gaps and variations.	192-212
	2D.8	The agency seeks approval of its standards of cover by the authority having jurisdiction (AHJ).	196-212
CC	2D.9	On at least an annual basis, the agency formally notifies the AHJ of any gaps in current capabilities, capacity and the level of service provided within its delivery system to mitigate the identified risks within its service area, as identified in its community risk assessment/standards of	212

		cover.	
	2D.10	The agency interacts with external stakeholders and the AHJJ at least once every three years to determine the stakeholders' and AHJ's expectations for types and levels of services provided by the agency.	212

CC=Core Competency and is required for accreditation
NOTE – There are 11 categories that are identified in the Quality Improvement for the Fire and Emergency Services manual (10th Ed.). Since Category 2 is the primary element with the CRA/SOC, it is the only category that is currently utilized in the matrix.

Recommendations

1. There is a lack of identification for multiple unit responses. Recommend adding in an identifier to capture arrival times for fourth unit responses, at a minimum, or the entire effective response force, to appropriately capture a benchmark arrival of the effective response force.

2. UFA is lacking in proper NFIRS reporting in final NFIRS code. Recommend additional training and identification for final reporting code.

3. UFA is lacking in proper NFIRS cost considerations in property and content loss as well as civilian injury information. Recommend adding in training and understanding of the importance of attempting to gather information on losses.

4. UFA is lacking the identification and capture of successes, including lives, property and environment protected. Recommend creating a system for capturing these items.

5. There is an issue separating call response times from low, medium, moderate and maximum risk, making 90th percentile call and response times inseparable from the varying risk levels. Recommend typing or creating a system within either dispatch or during NFIRS reporting to separate the varying risk levels.

6. There is a lack of understanding of target hazards, pre-plans, inspections and coordination between operations and prevention to have a good idea on those risks. Recommend that the Prevention Division lead a coordination in the identification, tracking and updating of target hazards, pre-plans and inspections.

7. Capturing the Effective Response Force from outside jurisdictions isn't regularly captured in NFIRS. 'Automatic/Mutual Aid Received' tab is filled out, but it is generally unknown which units responded to an incident, which greatly undermines the ability to determine the ERF and personnel that responded via NFIRS. Recommend taking a look at that to marry up various datasets.

Unified Fire Authority

3380 South 900 West
Salt Lake City, UT 84119