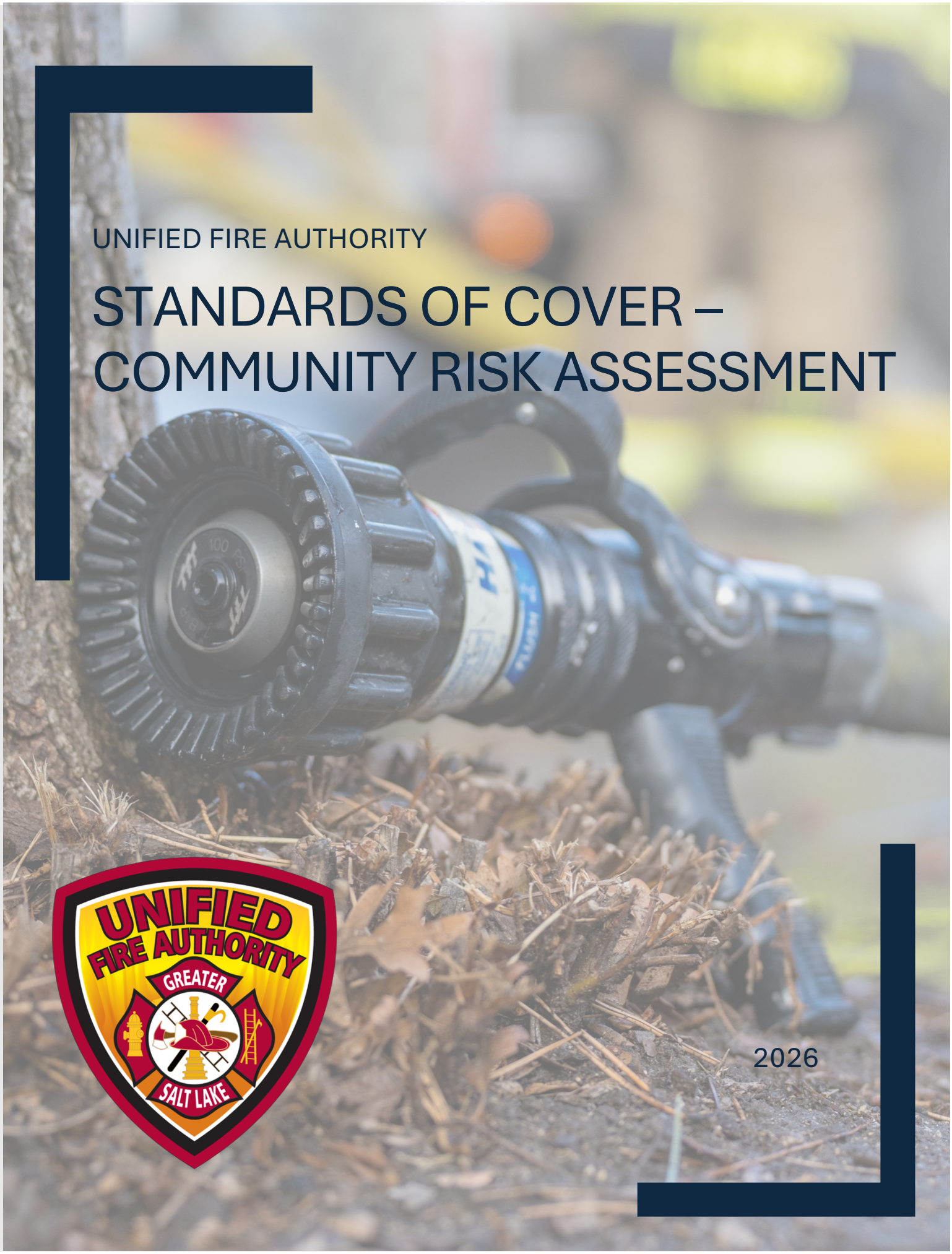


UNIFIED FIRE AUTHORITY

STANDARDS OF COVER – COMMUNITY RISK ASSESSMENT

2026

THIS PAGE INTENTIONALLY LEFT BLANK

Executive Summary

The term Standards of Cover (SOC) is defined as those written and adopted policies and procedures that establish the distribution and concentration of fixed and mobile response forces for fire, emergency medical services, hazardous materials and other specialized technical response. The SOC outlines the type and level of risk within the communities, current response and performance in mitigating those emergencies, and recommendations to improve performance for consideration by the Board of Directors. In essence, it provides clarity on the level of risk that the community is willing to accept.

The collaborative process with creating a SOC requires a thorough examination of potential risks in each of the communities we serve, the current capabilities of the UFA, and a specific set of benchmarks that Board Members and the Fire Chief use to measure success.

The current process has focused on establishing where we are and identifying areas where coverage is adequate to the risk and demand for service (we are not overwhelmed and doing well), as well as gaps or underserved areas.

The first SOC process occurred in 2018/2019, with the first Community Risk Assessment / Standards of Cover (CRA/SOC) being published in 2022 and adopted in 2023. With the updates to dispatching platforms as well as the enhancements to data collection, there have been large improvements of our understanding of the various identified gaps as well as areas of strength. The data itself was a vast improvement from the previous iteration of this document and has allowed us additional visibility of the operations of UFA.

Once reviewed and adopted by the Board of Directors, the intent is to again share the document with all UFA/UFSA municipalities and incorporate recommendations into the Strategic Plan and the annual budget process.

Current SOC Goals:

- **Comprehensive Community Risk Assessment (CRA)**
    - Evaluate fire, EMS, rescue, wildland, hazardous materials, technical rescue, and special hazard risks across all jurisdictions. Incorporate

demographics, incident history, building type, seasonal patterns, and geographic factors to understand community risk profiles.

- **Measure Current Deployment and Performance**
  - Assess call-processing, turnout time, travel time, total response time, unit hour utilization, ERF assembly, reliability, and workload distribution. Use these metrics to understand whether the current deployment model aligns with community risk and operational expectations.
- **Identify and Document Performance Gaps**
  - Determine where service levels do not meet community needs due to geography, station coverage, staffing limitations, resource distribution, or travel barriers. Document these gaps in a standardized, actionable format for planning and decision-making.
- **Plan for Maintaining and Improving Response Capabilities**
  - Maintain multi-year strategies for staffing, apparatus, capital improvements, and operational adjustments. Ensure plans account for population growth, redevelopment patterns, and increasing service demands.
- **Establish Benchmarks for Performance**
  - Create realistic, risk-based standards for turnout times, travel times, reliability, and ERF assembly in rural and urban settings. Benchmarks should reflect operational realities, community risk, and the Board's risk tolerance.on.
- **Improve Turnout Times**
  - Enhance station alerting, workflow, policy clarity, and training to reduce turnout time. Use data to identify outliers and implement sustainable improvements across the organization.
- **Improve Coding of Calls**
  - Increase accuracy in CAD and RMS call-type classification to ensure incident types reflect true service demand. Accurate coding strengthens community risk analysis, deployment modeling, and performance measurement.
- **Improve Data Entry and Data Integrity**
  - Enhance ESO and RMS documentation through standardized workflows, training, automated quality checks, and periodic audits. High-quality data supports accreditation, compliance, medical direction, performance analysis, and strategic planning.
- **Evaluate Station and Resource Locations for Growth & Redevelopment**
  - Assess the impact of new development, high-density redevelopment, and transportation changes. Identify where new stations, relocations, or additional resources are required to maintain effective service levels.

- **ERF Delivery and Risk-Specific ERF Benchmarks**
    - Define ERF requirements for single-family residences, multi-family structures, commercial occupancies, industrial hazards, WUI interface areas, and other high-risk environments. Develop time and staffing-based benchmarks for each major occupancy type and evaluate whether the organization can reliably meet them.

Table of Contents

EXECUTIVE SUMMARY 2

CURRENT SOC GOALS: 3

SECTION ONE – INTRODUCTION 7

UTAH AND SALT LAKE COUNTIES, UTAH 7
UTAH AND SALT LAKE COUNTY HISTORY 7
SALT LAKE COUNTY GOVERNMENT 8
GEOGRAPHY 9
TOPOGRAPHY 10
CLIMATE 11
SALT LAKE COUNTY POPULATION & DEMOGRAPHICS 12
UTAH COUNTY POPULATION & DEMOGRAPHICS 13
OCCUPANCY/ZONING 14
CRITICAL INFRASTRUCTURE 15
SALT LAKE COUNTY NATURAL HAZARDS RISKS 18
WEATHER – AVALANCHE 18
EARTHQUAKE 20
WILDLAND URBAN INTERFACE (WUI) 26
HAZARDOUS MATERIAL 28
HIGHWAYS AND ROADS 29
RAILROADS 30
HOSPITALS 31
SCHOOLS (PUBLIC/PRIVATE) 32
LARGE SQUARE FOOTAGE BUILDINGS 33
MID-RISE BUILDINGS 33

Section One – Introduction

Utah and Salt Lake Counties, Utah

Utah and Salt Lake County History

Previous to 1847, the Greater Salt Lake Valley was inhabited by various indigenous American Indian Tribes, identified as “Desert Gatherers” or “Fremont Indians”. They were followed by the Shoshone, Paiute, Goshute and Ute Native American Tribes, who were living throughout the Valley when the Mormon pioneers of The Church of Jesus Christ of Latter-day Saints fled religious persecution in the East and initially arrived in Emigration Canyon in 1847.

Those pioneers established a religious settlement and created a “State of Deseret” government. A legislative assembly later created the Great Salt Lake County on January 31, 1850, with over 11,000 residents living within the County. The first formal meeting of the Salt Lake County Government occurred on March 15, 1852, eighteen months after the Utah Territory was established by United States Congress.

In 1896, the Utah Territory was granted statehood and a county commission was created and started providing governmental services to the citizens of Salt Lake County, and Salt Lake County grew steadily. The Salt Lake County Fire Department was formed November 21, 1921, and various other governmental services continued to be formed or modified throughout the 20th century.

In the Oquirrh Mountains on the West side of Salt Lake County, the Bingham Canyon Mine, which contains vast deposits of copper and silver, was developed as the most productive of the county's mines. The mine, located in the southwest portion of the county, attracted thousands of workers to the narrow canyon. At its peak, the city of Bingham Canyon contained 20,000 residents, all crowded along the steep walls of the canyon, and natural disasters were a frequent occurrence. By the early 20th century, most of the mines in the county had closed, however, the Bingham Canyon Mine kept on expanding. In the early 21st century, it is among the largest open-pit mines in the world.

During the early 20th century, heavy industry came to the valley as well, diversifying its economy. Local and interurban trolley systems were built covering the more urban northeastern quarter of the valley. The city dismantled the trolley system by 1945, favoring the use of individual cars. Throughout the late 19th and early 20th centuries, the east side of the valley began to be more densely settled.

In the 1990s, the county's areas of rapid growth shifted further south and west. Farm and pasturelands were developed as suburbs. The cities of West Jordan, South Jordan, Riverton, Herriman, and Draper are some of the fastest-growing cities in the state. During the 1990s, Salt Lake City gained population for the first time in 40 years. Salt Lake City's selection as the host of the 2002 Winter Olympics spurred a construction boom in Salt Lake County that continued after the Olympics: slowing only in the 2008 recession.

In 2000, a new Mayor/Council form of government was chosen by the voters to replace the Salt Lake County Commission. The population of the Salt Lake County was 898,387. The County expanded services to include a new jail, more libraries and recreation centers and more programs for its aging population.

In 2024, Salt Lake County was made up of 18 cities and 5 metro townships. In 2024, Salt Lake County also passed a law forcing the conversion of the 5 metro townships to cities, as well as identifying that any unincorporated areas or ‘islands’ and requiring them to be annexed into a neighboring municipality or incorporating as a new city by July 1, 2027.

County government serves over 1.1 million residents providing public safety, health services, and cultural and recreation opportunities while also managing property, growth and development issues.[1]

Salt Lake County Government

Salt Lake County was originally governed from the Salt Lake City and County Building in Downtown Salt Lake City but now is based at the Salt Lake County Government Center at State Street and 2100 South Street. The county has a Mayor-Council form of government. The position of Mayor is decided in partisan elections; the current mayor (as

[1] Sources: https://slco.org/county-history/ and https://en.wikipedia.org/wiki/Salt_Lake_County%2C_Utah

of July 2025) is Jenny Wilson. The County Council is composed of 3 seats elected at-large and 6 elected by district. District-elected councilors are elected to staggered four-year terms; the at-large councilors are elected to six-year terms. [2]

At-large council members

Laurie Stringham
Suzanne Harrison
Natalie Pinkney

District council members

1st District — Jiro Johnson
2nd District — Carlos Moreno
3rd District — Aimee Winder Newton
4th District — Ross Romero
5th District — Sheldon Stewart
6th District — Dea Theodore

Geography

Salt Lake County has a geographic center of 40.67020581°(N), -111.95602902°(W). The Salt Lake Valley is fed by seven streams from the surrounding mountains. All the runoff water eventually ends in the Great Salt Lake, which has no outlet. The mountains rise precipitously from the relatively flat valley surfaces. The county has a total area of 807 square miles, of which 742 square miles is land and 65 square miles is water. It is the fifth-smallest county in Utah by area. The county borders on the Great Salt Lake and is traversed by the north-flowing Jordan River.

The western portion of the county is ringed by the Oquirrh Mountain Range and eastern portion of the county, famous for both summer and winter activities. The Wasatch mountains are administered as part of the Wasatch-Cache National Forest. Salt Lake County has four ski resorts: Snowbird and Alta in Little Cottonwood Canyon and Solitude

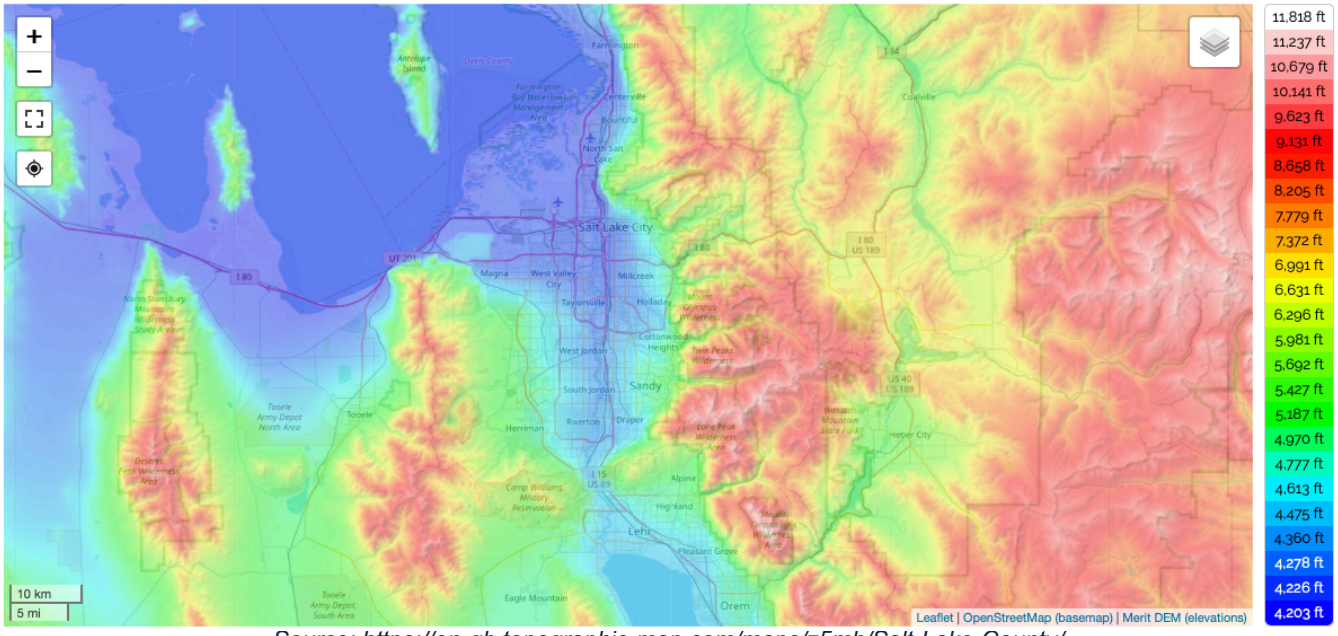
[2] Source: https://en.wikipedia.org/wiki/Salt_Lake_County%2C_Utah

and Brighton in Big Cottonwood Canyon. The south end of the valley is ringed by the Traverse Mountain Range.[3]

Image 1 - View of Salt Lake County Looking from the North

Topography

The lowest elevation in Salt Lake County is 4,137 feet and the highest elevation is 11,430 feet.



Source: https://en-gb.topographic-map.com/maps/z5mh/Salt-Lake-County/

[3] Source: https://en.wikipedia.org/wiki/Salt_Lake_County%2C_Utah

Climate

The Greater Salt Lake has a semi-arid continental climate with cold snowy winters, hot and dry summers, and modest seasonal rainfall.

The primary source of precipitation in Salt Lake City is massive storms that move in from the Pacific Ocean along the jet stream from October to May. In mid-to-late summer, precipitation mainly comes from afternoon thunderstorms caused by monsoonal moisture moving up from the Gulf of California. Although rainfall can be heavy, these storms are usually scattered in coverage and are rarely severe.

Snow falls on average from November to April producing a total average of 60 inches. The nearby Great Salt Lake is a significant contributor to precipitation in the county. The lake effect can enhance rain from summer thunderstorms and produces lake-effect snow approximately 6 to 8 times per year. It is estimated about 10% of the annual precipitation in the city can be attributed to the lake effect.

The Greater Salt Lake features large variations in temperatures between seasons. During summer, there are an average of 56 days per year with temperatures of at least 90 °F, 23 days of at least 95 °F, and 5 days of 100 °F. Winters are quite cold but rarely frigid. While an average of 127 days drop to or below freezing, and 26 days with high temperatures that fail to rise above freezing, the city only averages 2.3 days at or below 0 °F.

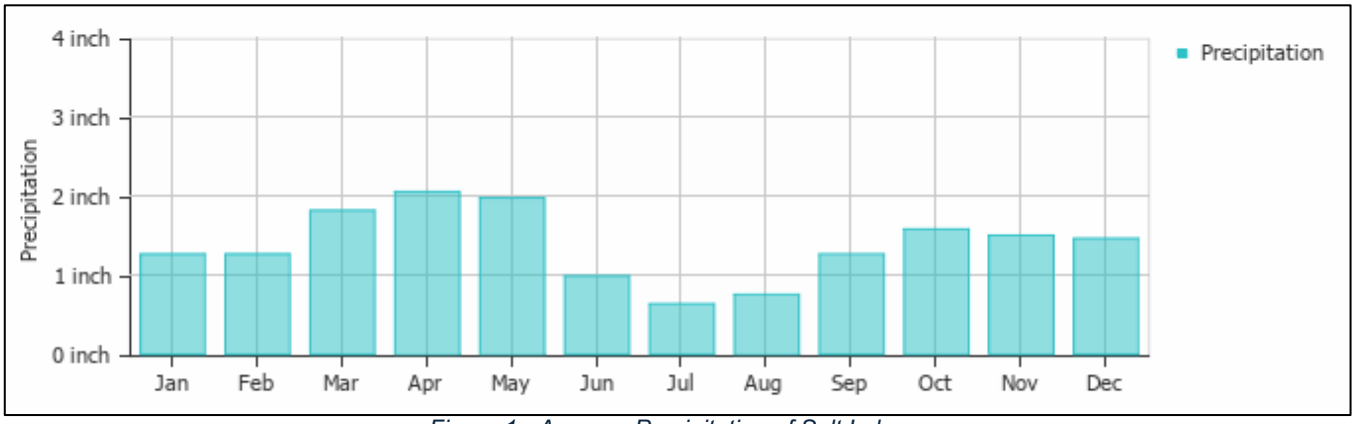


Figure 1 - Average Precipitation of Salt Lake
Source: weather-and-climate.com

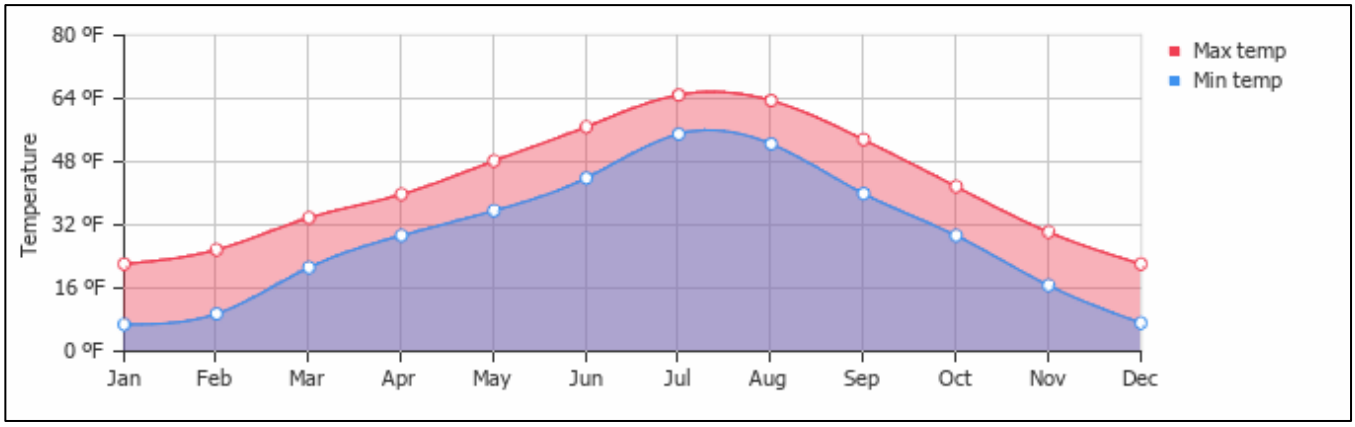


Figure 2 - Average Temperature of Salt Lake
Source: weather-and-climate.com

Salt Lake County Population & Demographics

The population of Salt Lake County is 1,232,666 (est July, 2025). The following table is the breakdown of the population of Salt Lake County and the racial demographics. Additional data is identified in the UFA-specific population and demographics section under Section 2.

Salt Lake County Demographics (2024 Estimates)	
Population, July 2024 (est)	1,232,666
Population, April, 2020	1,188,213
% Change, 2020-2024	4.85% Increase
Less than 5 years old	78,006
Over 18 years old	878,345
Over 65 years old	137,137
Females	585,990
Males	598,699
White	804,254
Black or African American	19,552
American Indian and Alaska Native	5,757
Asian	48,154
Native Hawaiian And Other Pacific Islander	17,828
Hispanic Or Latino	236,654
Two or More Races	47,594
Other Races	4,896

Table 1 - Salt Lake County Population and Demographics – Source: Kem C Gardner Policy Institute

Utah County Population & Demographics

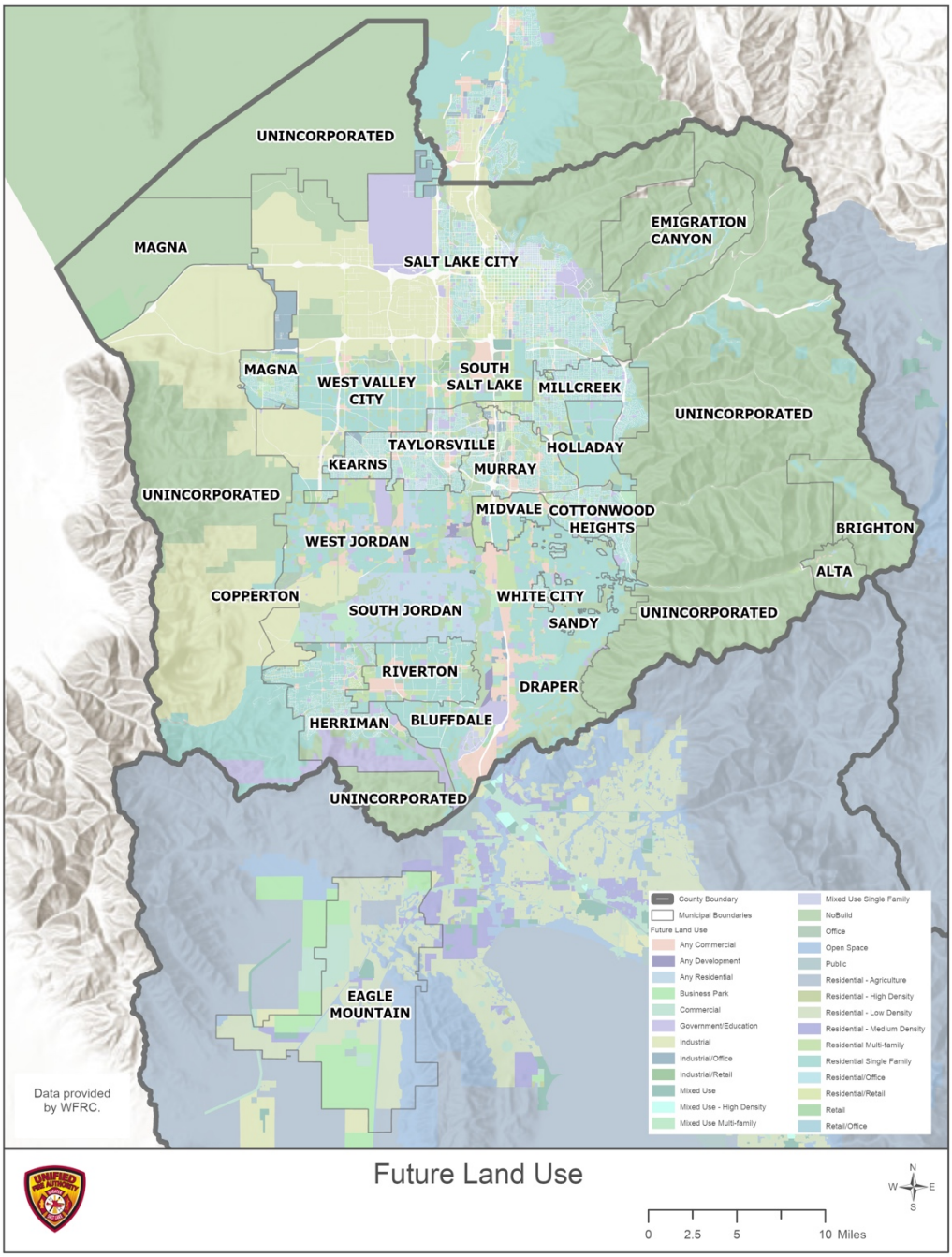
The population of Salt Lake County is 683,622 (est July, 2025). The following table is the breakdown of the population of Utah County and the racial demographics. Additional data is identified in the UFA-specific population and demographics section under Section 2.

Utah County Facts Demographics (2024 Estimates)	
Population, July 2025 (est)	683,622
Population, April, 2020	659,399
% Change, 2020-2024	3.54% Increase
Less than 5 years old	59,337
Over 18 years old	463,691
Over 65 years old	53,214
Females	336,781
Males	346,841
White	539,347
Black or African American	4,093
American Indian and Alaska Native	1,689
Asian	9,805
Native Hawaiian And Other Pacific Islander	5,390
Hispanic Or Latino	94,727
Two or More Races	26,693
Other Races	1,878

Table 2 – Utah County Population and Demographics – Source: Kem C Gardner Policy Institute

Occupancy/Zoning

The following map demonstrates the land use breakdown as well as anticipated future land use across UFA's planning zones. To see a more detailed breakdown of each area, refer to the UFA profile section per planning zone.

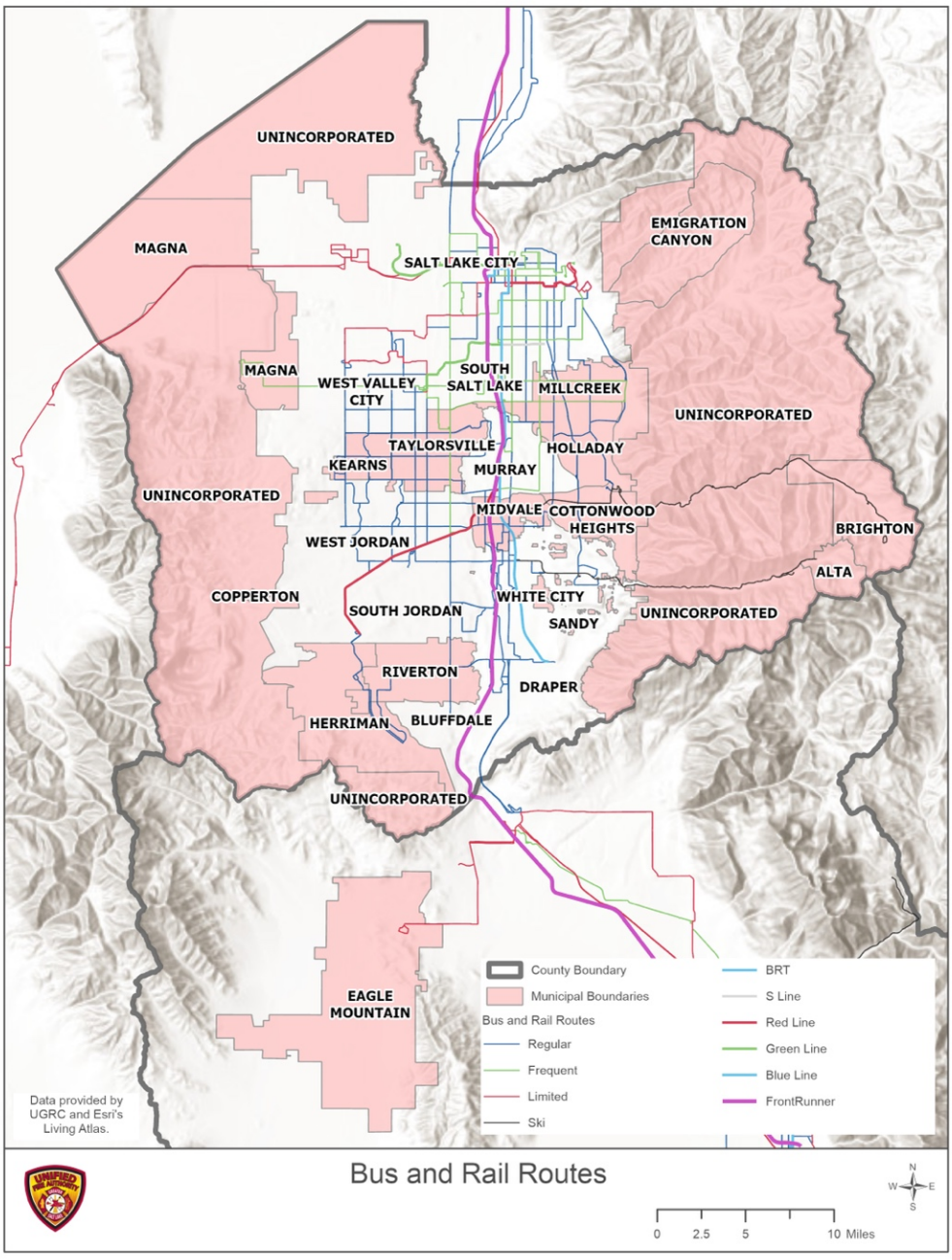


Map 2 - Municipalities with Occupancy and Land Use

Critical Infrastructure

Infrastructure – Transportation

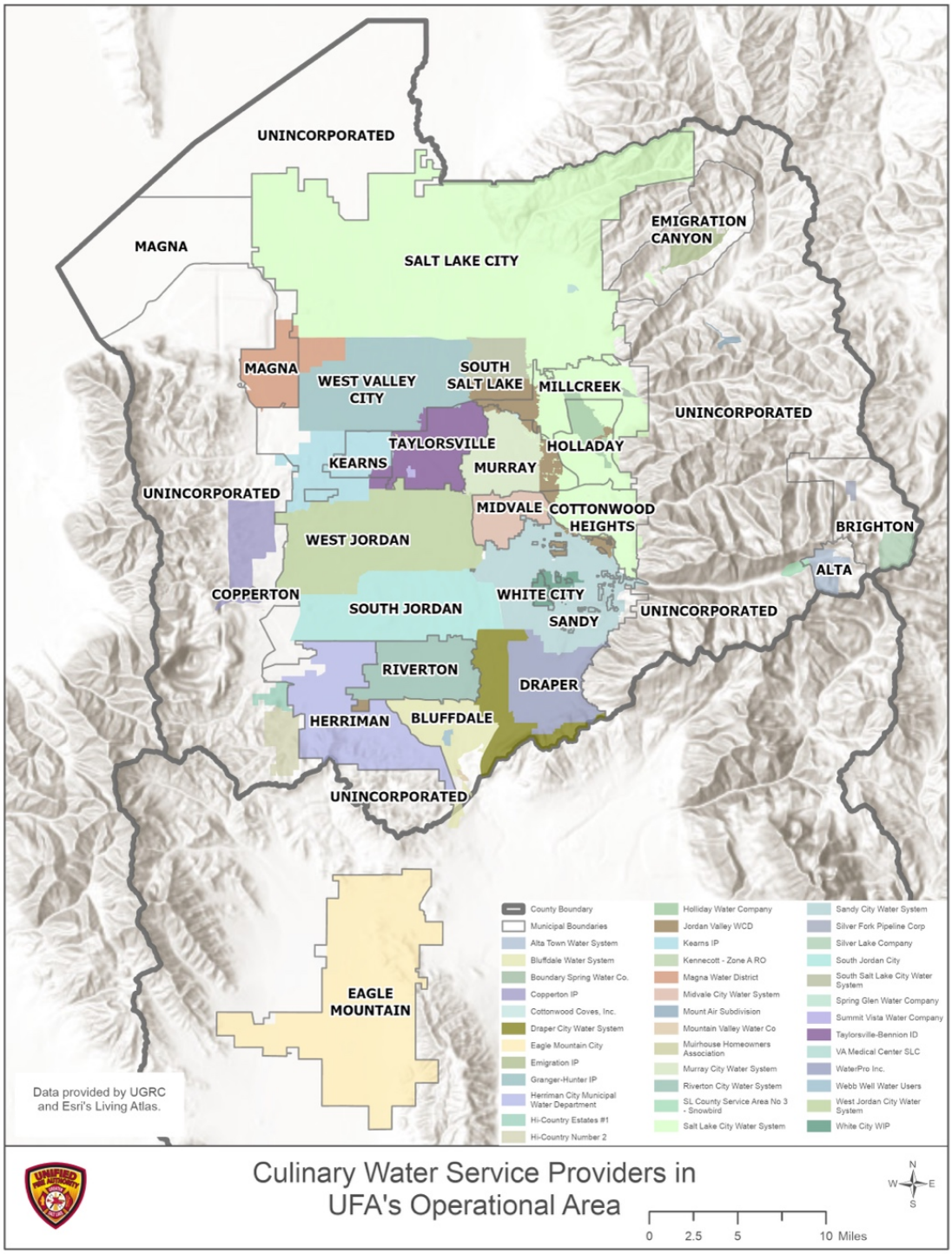
The Utah Transit Authority (UTA) is the primary provider of mass transit within the State of Utah and Salt Lake County. UTA provides commuter rail (FrontRunner), light rail (Transit Express or TRAX), and bus systems. There are also multiple freeways and highways that run through the Salt Lake Valley, and the State of Utah, providing critical transportation corridors with both a primary East/West Interstate (I-80) and a North/South Interstate (I-15).



Map 3 - Municipalities with Transport Corridors

Infrastructure – Water Supply

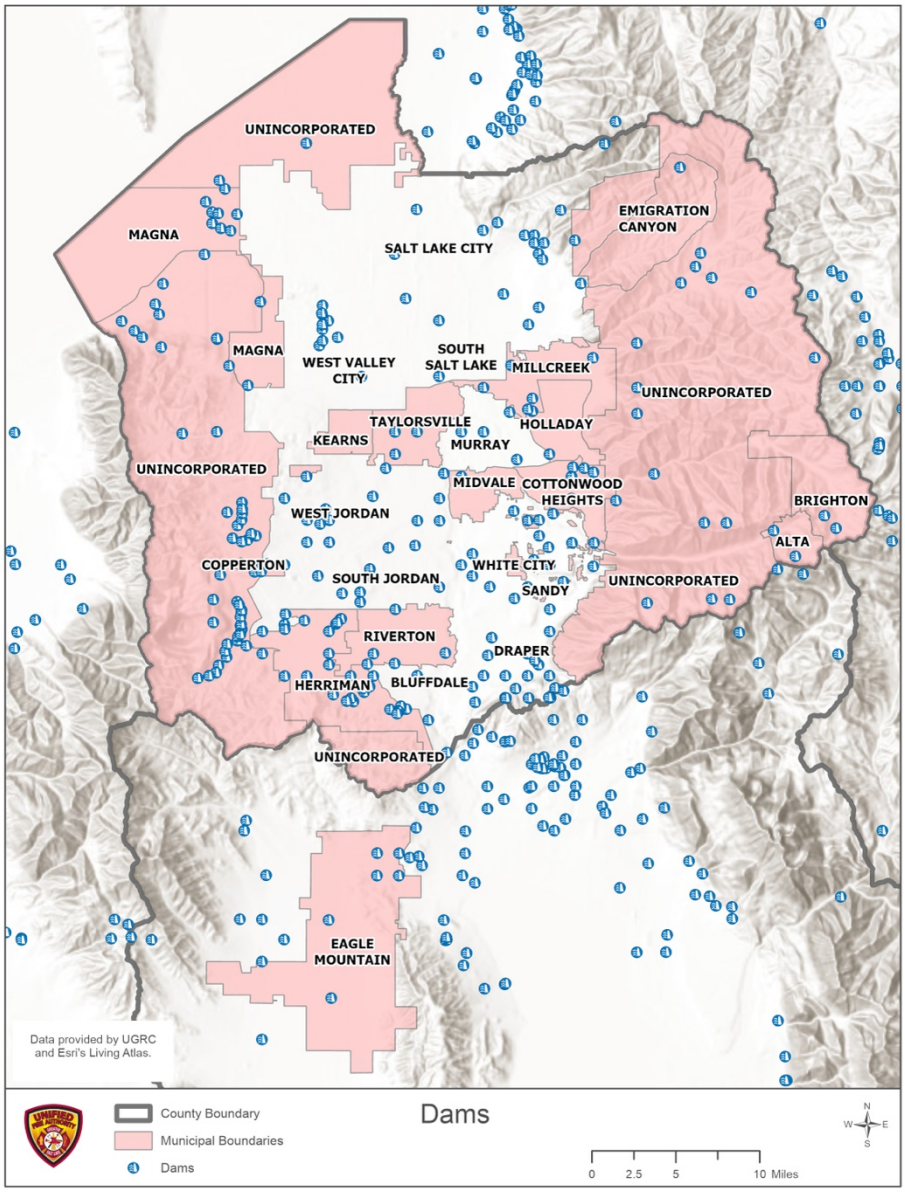
Within the Salt Lake Valley, there are twenty-nine water districts, all either special service districts or municipally-based water districts. Within UFA's municipalities, there are eighteen water districts.



Map 4 - Municipalities with Water Districts

Infrastructure – Dams

Within the Salt Lake Valley, there are 262 dams. Within UFA's Planning Zones, there are 152 of those dams.



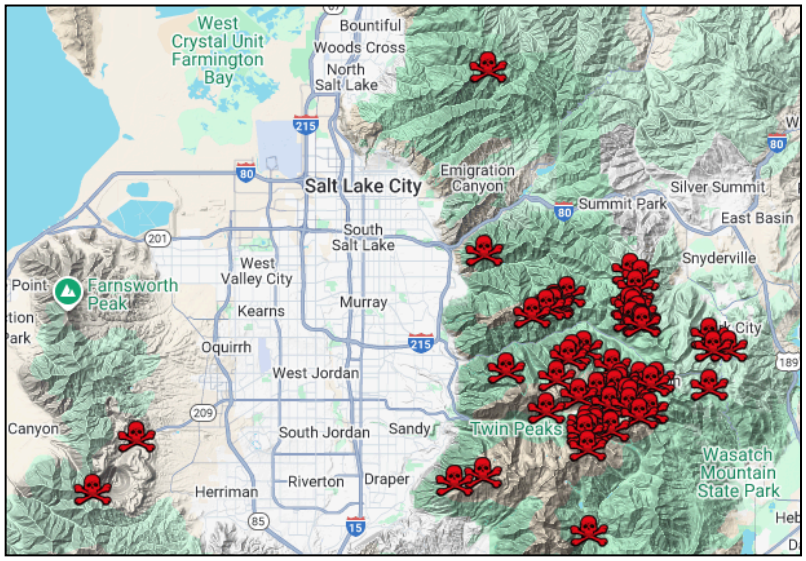
Map 5 - Dam locations within the Salt Lake Valley

Salt Lake County Natural Hazards Risks

Weather – Avalanche

The risk for avalanches exists primarily in the Wasatch Range—driven by high recreational usage and expanding wildland-urban interface (WUI) development—though they occur across all of Utah's mountainous terrain. Avalanche paths may remain dormant for years or even decades; however, the potential for high-magnitude events remains significant, particularly during seasons of above-average snowfall (**Utah SHMP 2024**).In Utah, 142 avalanche deaths have occurred from 1950-2024. Avalanche risk is particularly centered around the Big and Little Cottonwood Canyons as well as Millcreek Canyon. The Town of Alta is especially at risk to the impacts of avalanches.

The following maps from the Utah Avalanche Center shows the locations of all reported avalanche events from 2015 to 2024, as well as the locations of all reported avalanche fatalities in the Salt Lake County Region.



Map 6 - Salt Lake County Region Avalanche Fatality Locations: Source: https://utahavalanchecenter.org/avalanches

Highway 210 (Little Cottonwood Canyon) also has the highest avalanche hazard-rating index of any major roadway in the country. At times when UDOT and Alta agree that conditions are unsafe, the town goes into an Interlodge Alert, meaning all occupants of the town (including both visitors and residents) must remain indoors until conditions are deemed safe. At times, Interlodge can last days until the storm cycle is over and proper avalanche control work has been performed.

Alta's General Plan covers Highway 210 access and possible mitigation activities to keep this critical road open. It also provides background on the Little Cottonwood Canyon Road

Committee, a group consisting of representatives from Alta, Snowbird, Salt Lake County, Unified Fire Authority, UDOT, UTA, and USFS, that meet monthly to discuss access, usage, and safety and security issues related to the canyon road. (SLCoHMP)

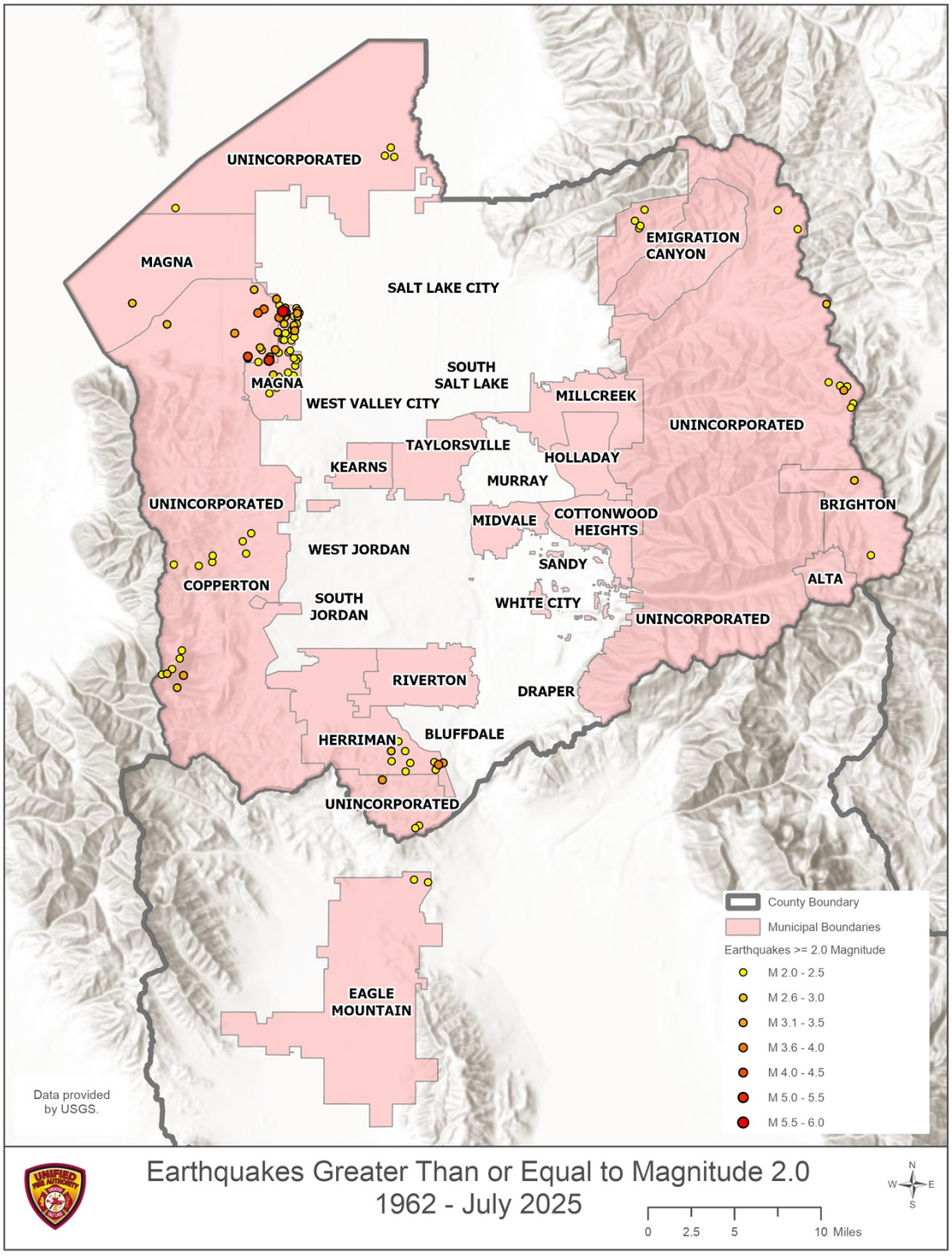
Earthquake

Utah's earthquake hazard is greatest within the Intermountain Seismic Belt (ISB), which extends 800 miles from Montana to Nevada and Arizona, and trends from North to South through the center of Utah (The Wasatch Fault, UGS PIS 40). The Wasatch Fault traces along the base of the Wasatch Mountain Range. It is made up of 10 segments that act independently, meaning that a part of the fault ruptures separately as a unit during an earthquake.

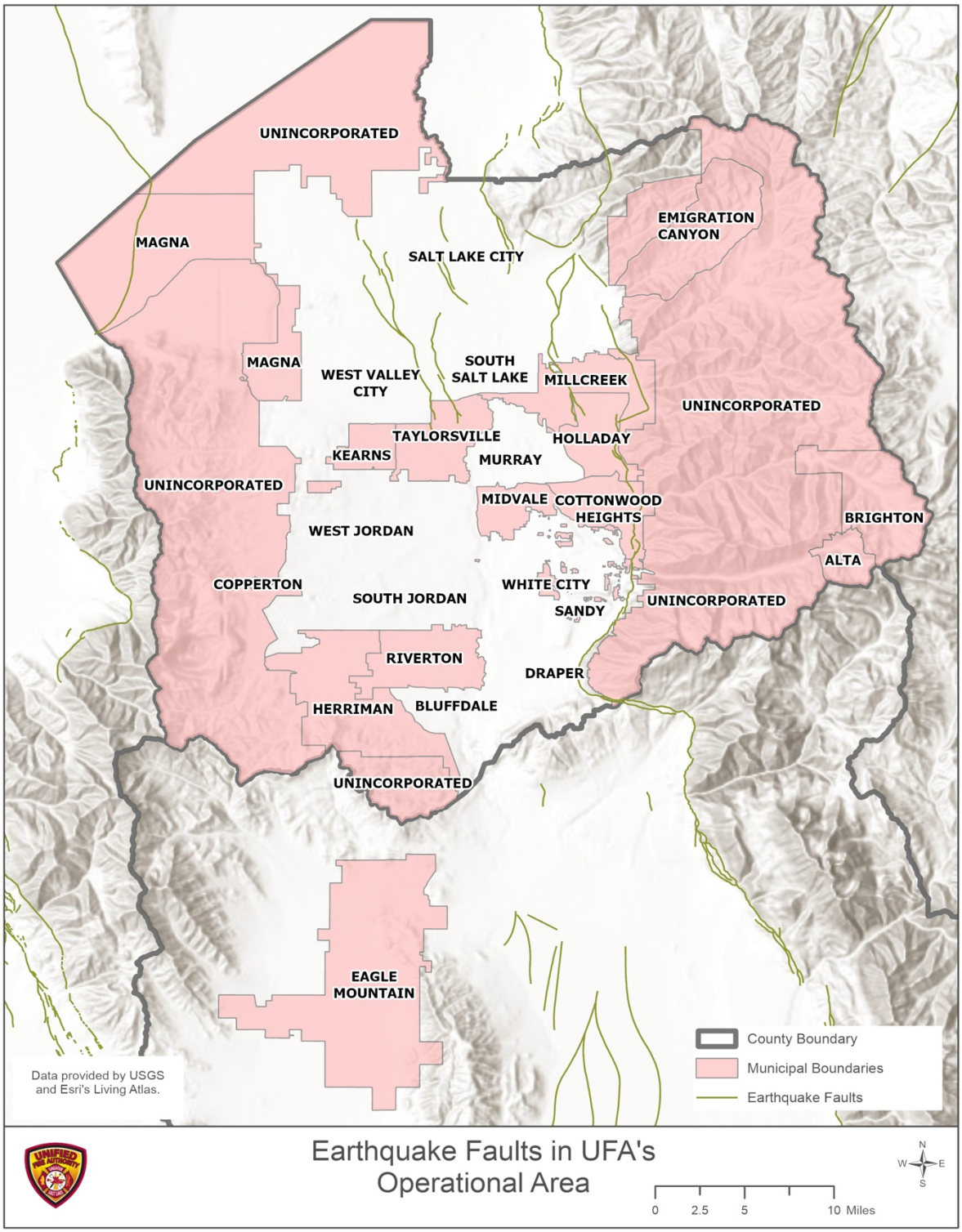
Map 7 - Earthquakes in Salt Lake County >2.0, 1962-July, 2019: Source: www.earthquake.usgs.gov

According to USGS records, there have been roughly 300 recorded earthquakes of 2.0 magnitude or greater that occurred in or immediately around Salt Lake County from 1962 through Dec 31, 2024.

Significant earthquakes have occurred in Salt Lake County within the last 50 years. In 2020, a 5.7 earthquake occurred in Magna. In 1962, a 5.2 Richter magnitude quake also jolted the Magna area. In 1992, a magnitude 4.2 quake shook the southern portion of the County.



Map 8 - Earthquakes in UFA Jurisdiction ≥2.0, 1962-July, 2025:

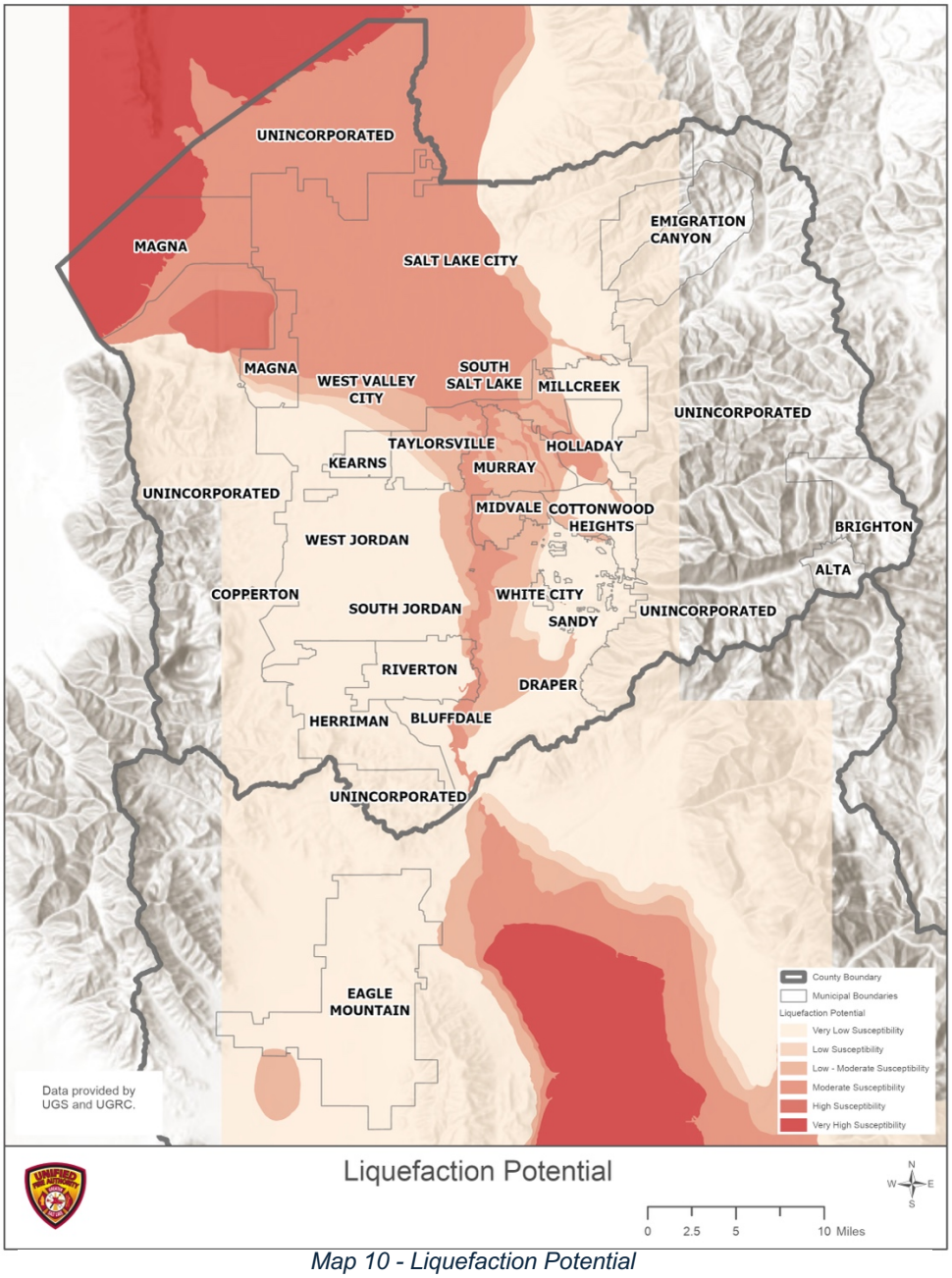


Map 9 - Earthquake Faults in the Salt Lake Valley

The faults illustrated in the above map include the following (see table below).

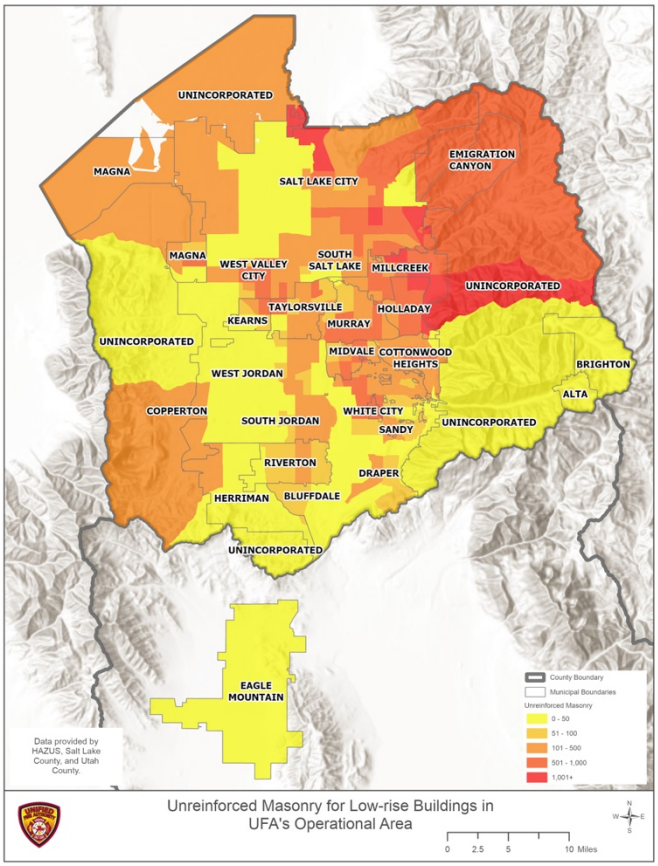
Name	Fault Type	Length (km)	Time of Most Recent Deformation	Recurrence Interval
East Great Salt Lake fault zone, Antelope Island section	Normal	35	586 201/-241 cal yr B.P.	4,200 years
Wasatch fault zone, Salt Lake segment	Normal	43	1,300 ± 650 cal yr B.P.	1,300 years
West Valley fault zone, Granger segment	Normal	16	1,500 ± 200 cal yr B.P.	2,600-6,500 years
West Valley fault zone, Taylorsville segment	Normal	15	2,200 ± 200 cal yr B.P.	6,000-12,000 years

Table 3 - Quaternary Faults, Salt Lake County
Source: USGS Earthquake Catalogue

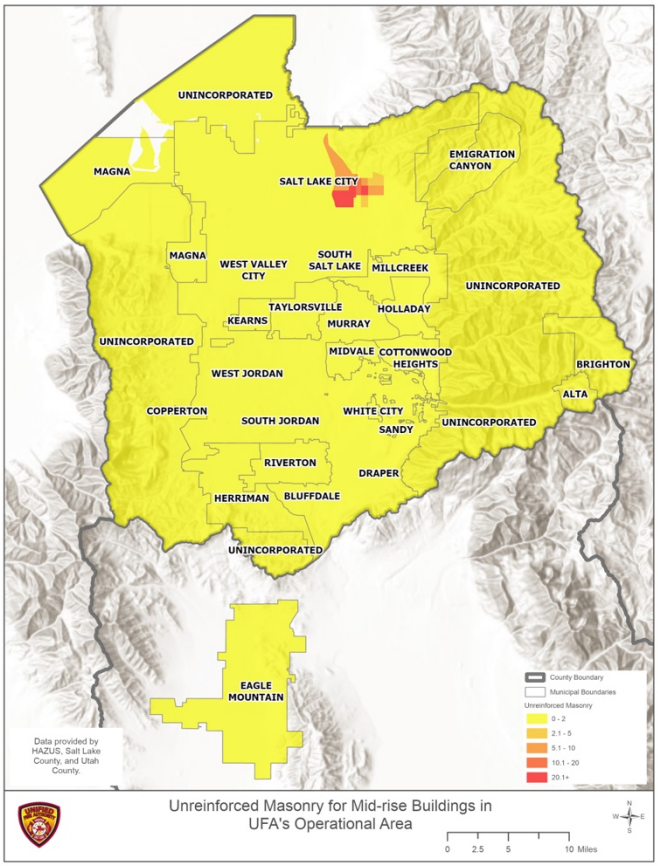


Map 10 - Liquefaction Potential

One of the primary risks that is inherent with any earthquake is the amount of unreinforced masonry (URM) structures in a given area. The associated maps show the primary locations of URM's in UFA's areas for both low and mid-rise buildings. This is based off of FEMA HAZUS data and only shows areas by census tracts.

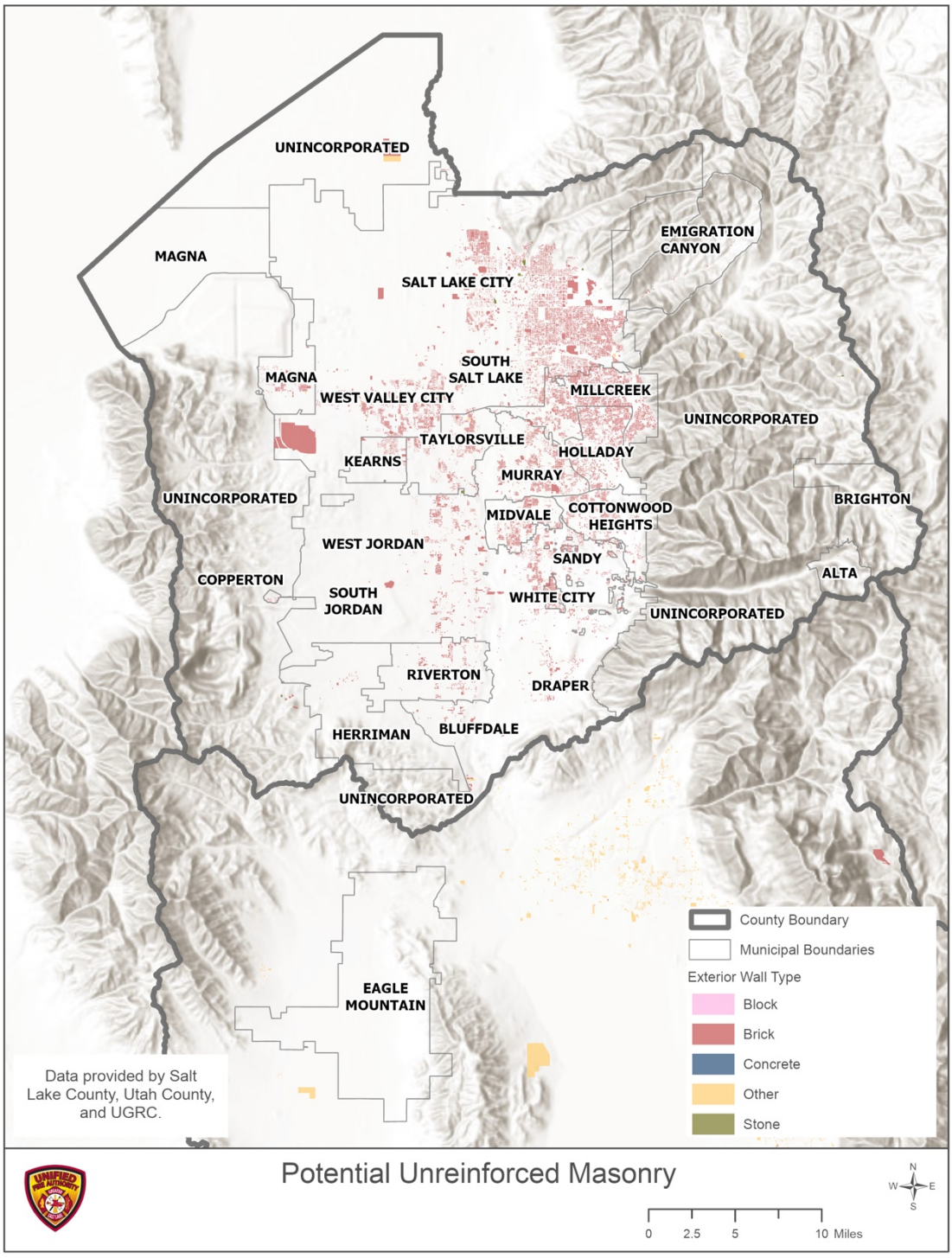


Map 12 – Unreinforced Masonry Low-Rise Buildings



Map 11 – Unreinforced Masonry Mid-Rise Buildings

The map below shows structures within the planning zones that are most likely URM's based off of FEMA HAZUS data.

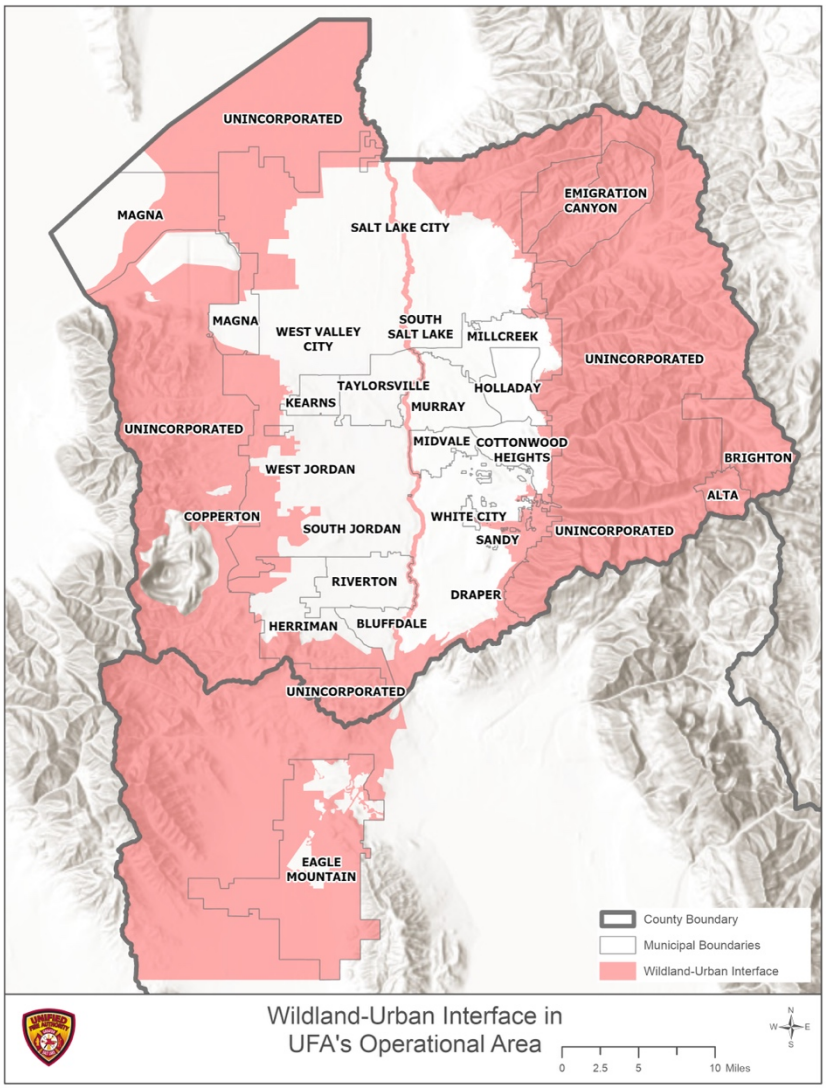


Map 13 - Potential URM Buildings in Salt Lake County

Wildland Urban Interface (WUI)

Portions of Utah and Salt Lake County could experience a significant amount of destruction due to a wildland fire include the foothills and the bench areas on or near the Wasatch Range, Traverse Mountain and the Oquirrhs.

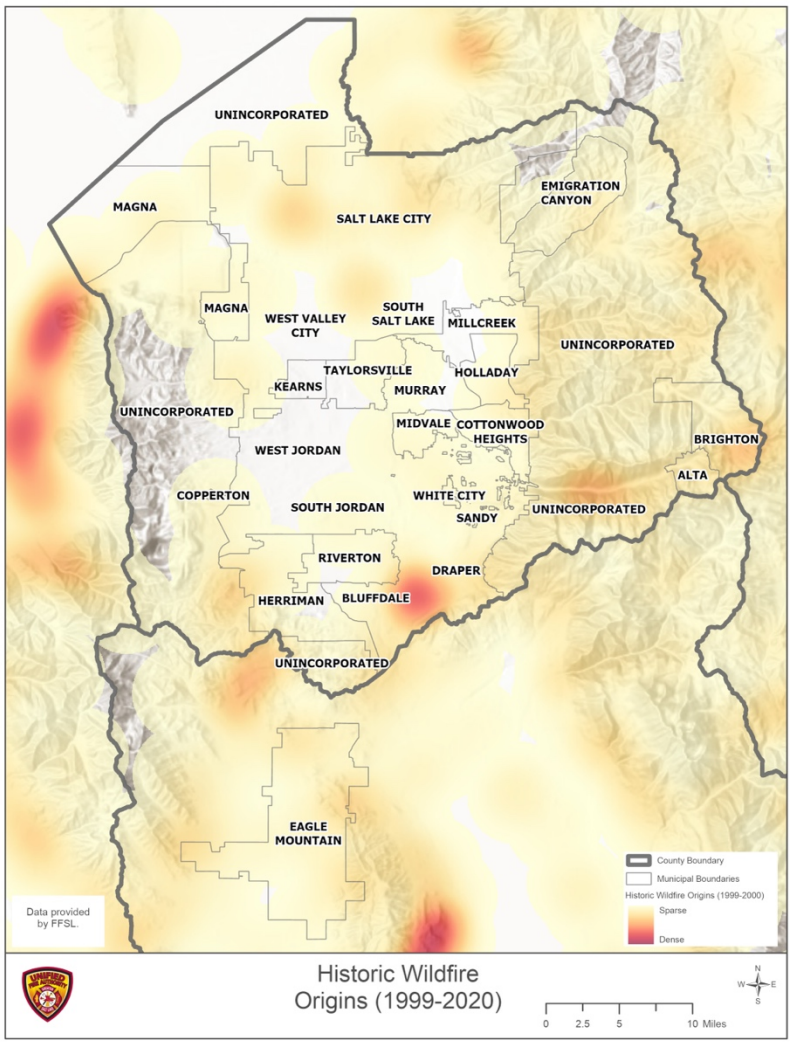
These WUI areas are threatened most because of the number of forested lands and the increasing population growth spreading into the foothills. Identified environmental hazards include native and invasive flora such as sagebrush, mountain scrub oak, pinyon-juniper, and cheatgrass, particularly within rural and riparian ecosystems



Map 14 - Wildland Urban Interface Areas in Salt Lake County

Sagebrush and mountain shrub burn hot and fast, spreads easily and is found throughout the county. During prime burning conditions (hot, dry and windy) the pinion juniper class will burn. As can be seen in the map below, historical wildfire ignition points have been marked, and areas most likely to be the source of ignition

based on historical patterns are darkly shaded (2025 Salt Lake County Multi-Jurisdictional Hazard Mitigation Plan).



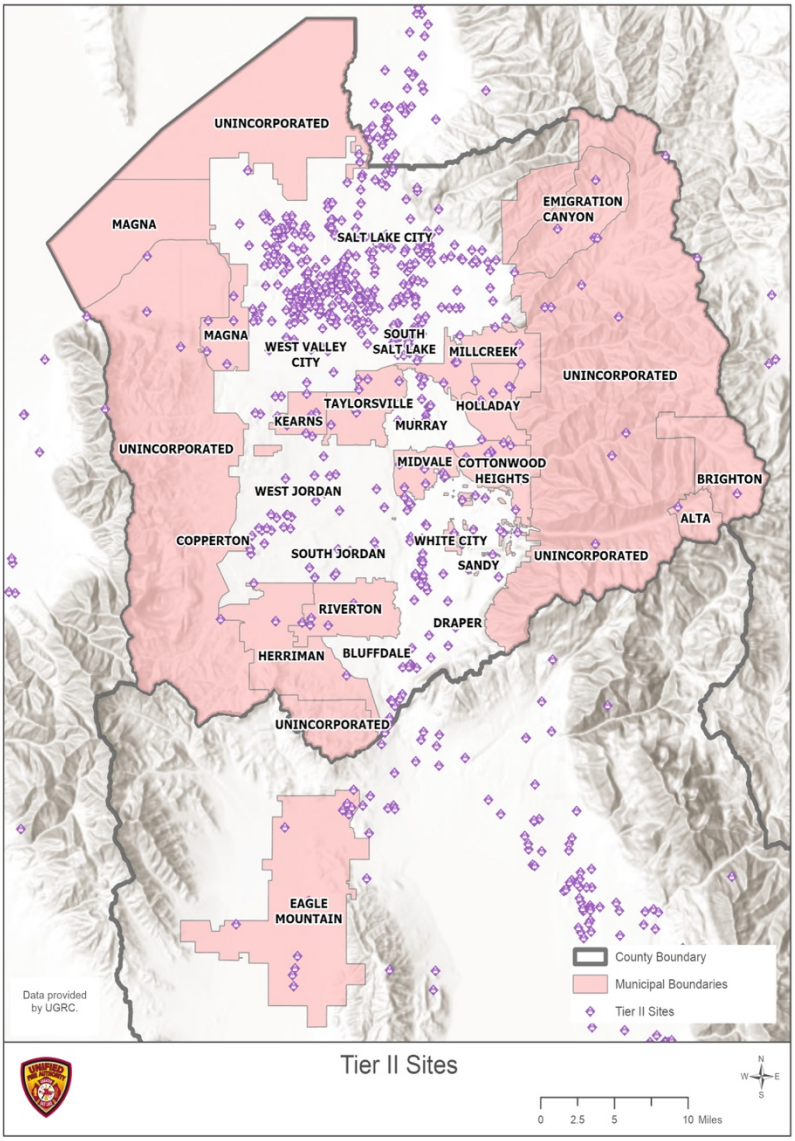
Map 15 - Historical Wildfire Ignition Points, SLCo

As population growth continues, pressure to develop in WUI areas is likely to increase the threats associated with fire. Mitigation measures will need to be recognized and enforced to reduce these threats. Mitigation efforts include the development and implementation of Community Wildfire Protection Plans (CWPPs). These plans provide a localized framework for aligning building codes, development reviews, and municipal ordinances, enabling authorities to protect high-value assets through community-specific risk assessments. Within the State of Utah, there have been significant recent legislative changes that are changing the way municipalities have to approach urban interface fire preparation including requiring a review of an individual's property if they fall within certain areas that are currently being identified and under review. This process is currently in review and has legislative components that are wrapped up into it.

Hazardous Material

Occupancies which contain hazardous materials potentially pose a risk to the community and can create dangerous environments for first responders when responding to a spill or fire. Specialized equipment, protective clothing and additional training is required to mitigate a HazMat incident.

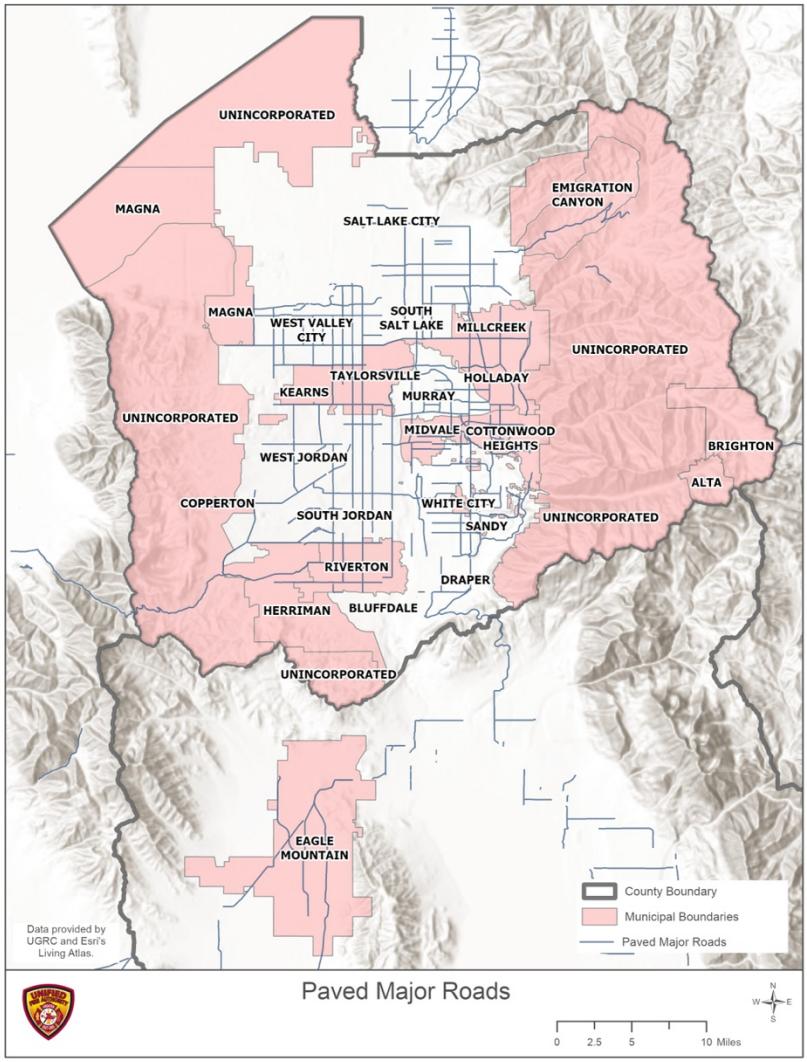
The associated map shows the location of Tier II sites within the service area, of which there are 204 within UFA's area and 1,590 in the Salt Lake Valley.



Map 16 - Tier II Sites in UFA Response Areas

Highways and Roads

The highways and roads within the Unified Fire Authority Service Area are what provide the necessary access and egress to emergency incidents. These transportation corridors are intertwined and are a mix of surface streets, intersected highways, and freeways all within the jurisdiction. Surface streets are most common and provide the main travel routes to emergency incidents. Bangerter Highway and Mountain View Corridor are intersected highways that are main routes north and south through the Service Area. The main interstate is I-15, which divides much of the area from east to west, and I-215 which is a belt route that provides access to interior areas of the jurisdiction.

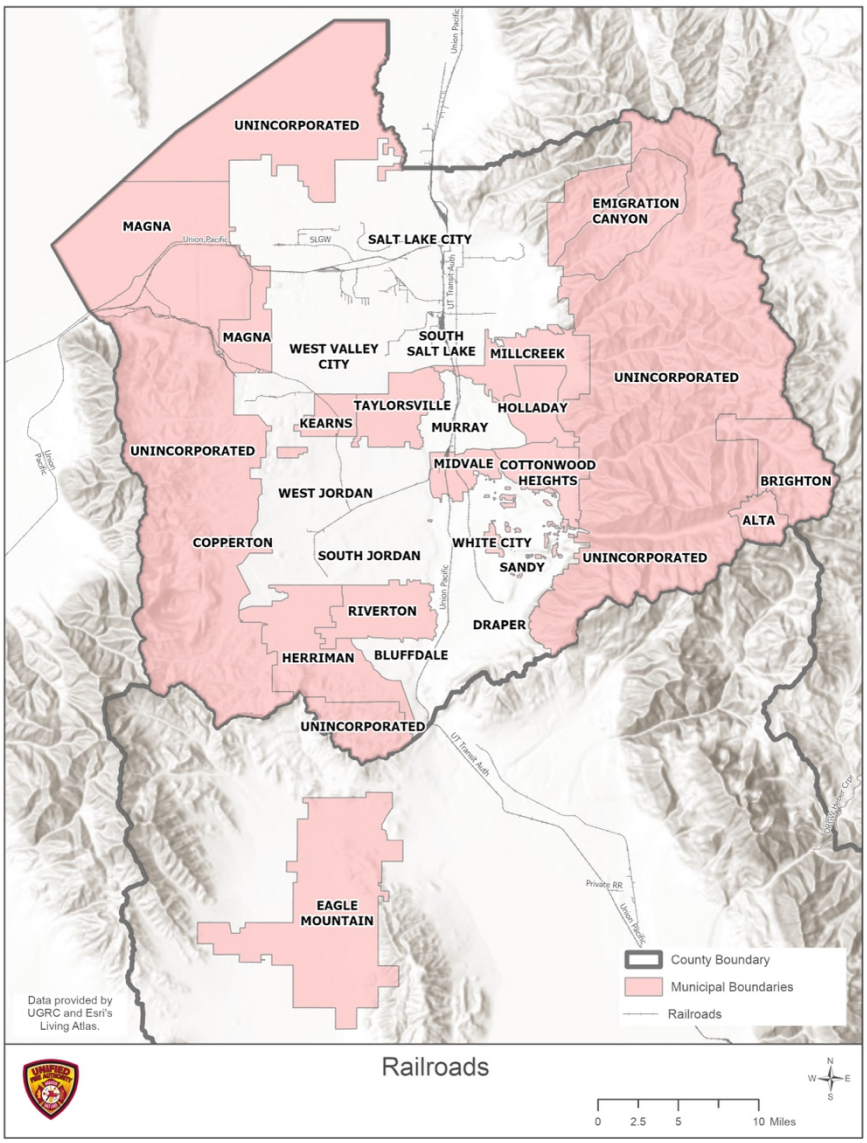


Map 17 - Location of Major Freeways/Highways Within the Service Area

Railroads

Several railroad lines traverse through Salt Lake County and the lines run through portions of the Unified Fire Authority service area.

The major rail lines carry various commodities which include hazardous materials and other dangerous cargo. One major rail yard operated by Union Pacific (Roper Yard) is located in Salt Lake County, just outside of the service area. Passenger rail which includes Amtrak and commuter rail from UTA also runs through the jurisdiction.



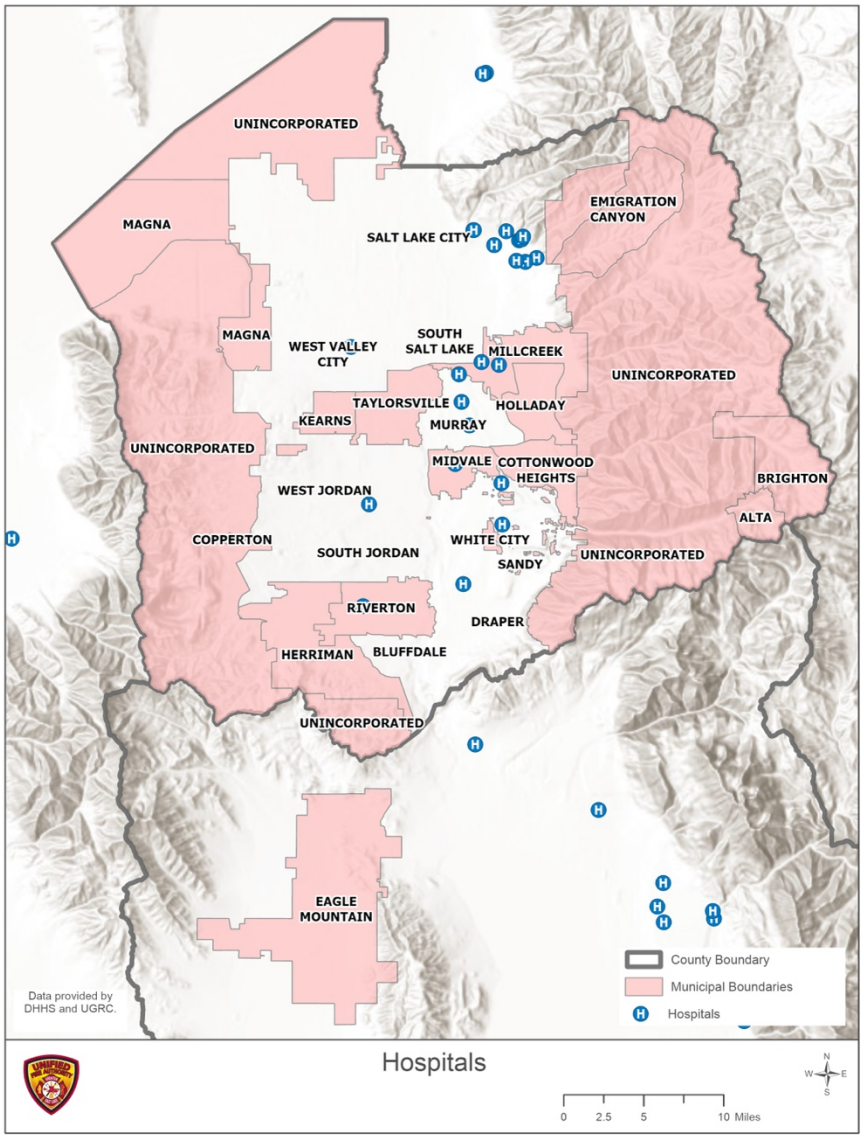
Map 18 - Location of All Rail Lines Within the Service Area

Several spur lines operated solely for industrial use are operated in the western section of the service area by the Bingham Canyon Mine (Rio Tinto).

Hospitals

Hospitals provide a critical service to injured, sick and vulnerable populations. These facilities are usually constructed of highly fire resistive construction with built in fire protection.

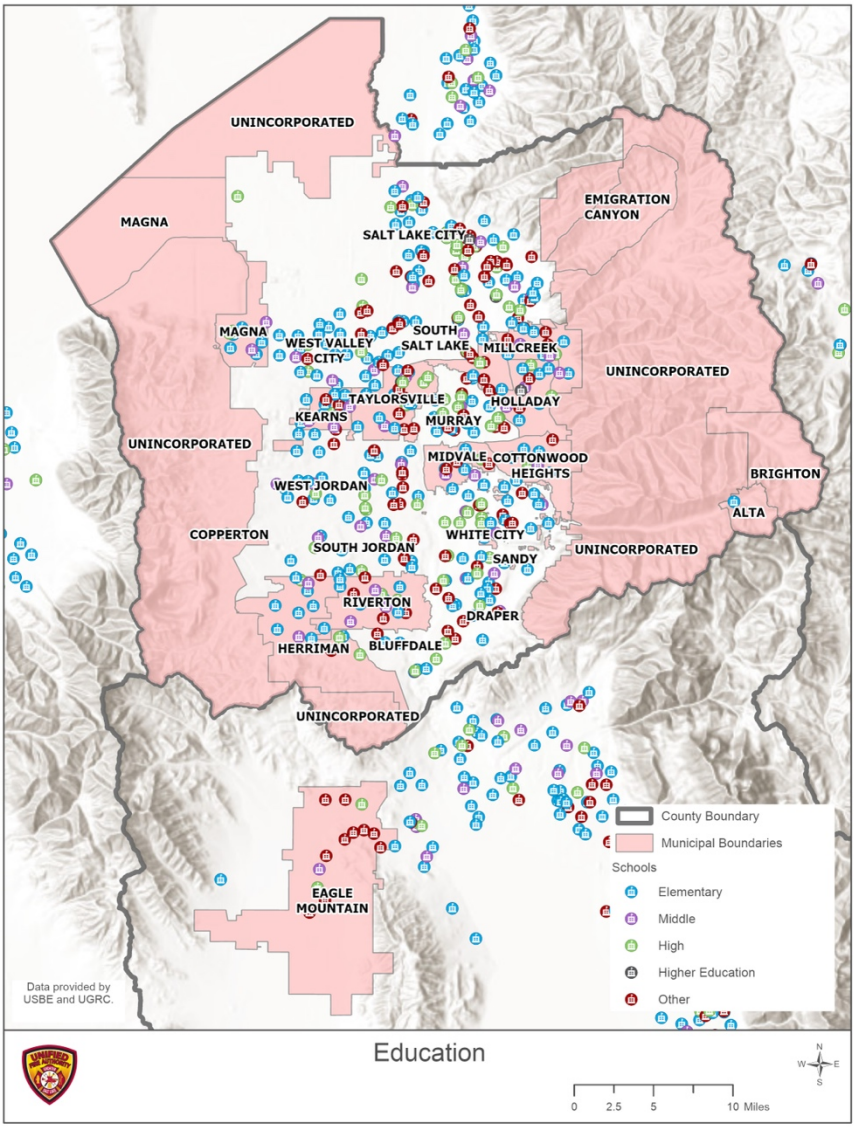
Emergencies which include but are not limited to fire incidents, may require emergency personnel to facilitate the rapid movement of patients away from the hazard.



Map 19 - Location of All Hospitals Within the Service Area

Schools (Public/Private)

Multiple school districts and private educational institutions operate within the service area. Unified Fire Authority provides protection to 72 elementary schools, 20 middle/junior high schools and 17 high schools. There are also 6 charter/private schools within the jurisdiction. This does not include the multitude of private and public preschools and day cares.

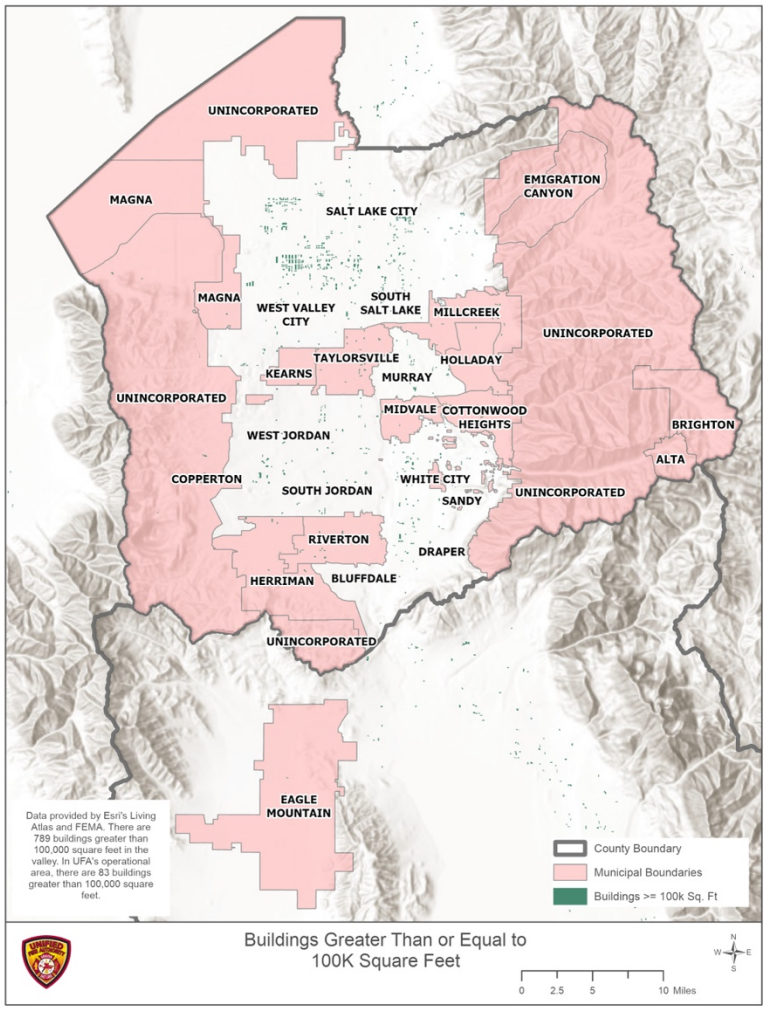


Map 20 - Location of All Schools Within the Service Area

Large Square Footage Buildings

Larger buildings such as warehouses, malls, and big box stores present several risks to response. These buildings which are over 100,000 square feet of space will require more water, apparatus, and personnel to effectively control fires.

Within Unified Fire Authority there are 83 buildings which meet the definition of a large square footage building.



Map 21 - Location of All Large Buildings Within the Service Area

Mid-Rise Buildings

Buildings which are three or more stories in height are often classified as mid-rise buildings.

These buildings have specific hazards which include building heights that will typically require the use of an aerial apparatus to access the upper floors and the roof.

The number and placement of aerial apparatus assist in response to mid-rise buildings and also accomplishes the desired requirement of the ISO which is that an aerial apparatus is within two and a half miles from buildings that are three or more stories in height.

UFA protects approximately 411 mid-rise buildings.

Unified Fire Authority

3380 South 900 West
Salt Lake City, UT 84119