

APPENDIX C

FIRE HAZARD SEVERITY FORM

This appendix is to be used to determine the fire hazard severity.

A. Subdivision Design

	Points
1. Ingress/Egress	
Two or more primary roads	1__
One road	10__
One-lane road in, one-lane road out	15__
2. Width of Primary Road	
20 feet or more	1__
Less than 20 feet	5__
3. Accessibility	
Road grade 5% or less	1__
Road grade 5-10%	5__
Road grade greater than 10%	10__
4. Secondary Road Terminus	
Loop roads, cul-de-sacs with an outside turning radius of 45 feet or greater	1__
Cul-de-sac turnaround	5__
Dead-end roads 200 feet or less in length	8__
Dead-end roads greater than 200 feet in length	10__
5. Street Signs	
Present but unapproved	3__
Not present	5__

B. Vegetation (IUWIC Definitions)

1. Fuel Types	
Surface	
Lawn/noncombustible	1__
Grass/short brush	5__
Scattered dead/down woody material	10__
Abundant dead/down woody material	15__
Overstory	
Deciduous trees (except tall brush)	3__
Mixed deciduous trees and tall brush	10__
Clumped/scattered conifers and/or tall brush	15__
Contiguous conifer and/or tall brush	20__

2. Defensible Space	
70% or more of lots completed	1__
30% to 70% of lots completed	10__
Less than 30% of lots completed	20__

C. Topography

Located on flat, base of hill, or setback at crest of hill	1__
On slope with 0-20% grade	5__
On slope with 21-30% grade	10__
On slope with 31% grade or greater	15__
At crest of hill with unmitigated vegetation below	20__

D. Roofing Material

Class A Fire Rated	1__
Class B Fire Rated	5__
Class C Fire Rated	10__
Nonrated	20__

E. Fire Protection—Water Source

500 GPM hydrant within 1,000 feet	1__
Hydrant farther than 1,000 feet or draft site	5__
Water source 20 min. or less, round trip	10__
Water source farther than 20 min., and 45 min. or less, round trip	15__
Water source farther than 45 min., round trip	20__

F. Siding and Decking

Noncombustible siding/deck	1__
Combustible siding/no deck	5__
Noncombustible siding/combustible deck	10__
Combustible siding and deck	15__

G. Utilities (gas and/or electric)

All underground utilities	1__
One underground, one aboveground	3__
All aboveground	5__

Total for Subdivision

Moderate Hazard	50–75
High Hazard	76–100
Extreme Hazard	101+

Wildfire and Preparedness in EC Metro Township - May 2021

Note: if you want to just read the part about tonight ,scroll down to the red star on p.2 😊



Background Information:

Increasing wildfire threat and increasing damage and costs from wildfires throughout the West in 2020, with a **forecast for even hotter and drier weather in 2021, as well as a longer fire season, with record number of “Red Flag” days.**

Firefighting resources are already stretched thin, and protection once a fire begins is **NOT** a guarantee.

Preparation in advance of any fire is essential, on individual, community, agency and state levels

- Thoughtful preparation pays off - **Every 1\$ spent on prevention saves \$35 of the cost involved in firefighting, property losses, environmental damages and cleanup.** (data from CalFire, USFS, and CA Legislative Analysts Group, BLM, and others)
- “Hardening” homes, roadsides, and critical infrastructure to be more resilient to wildfire is proven to help.
- Even a small fire is expensive to a community. (4 acre Cottonwood Heights fire in 2020 = more than \$110K bill from UFA)
- Preparation also pays off in reducing home insurance premiums, and increasingly, in the ability to obtain insurance against wildfire damage.

Where we are now - the Big Picture

- Emigration Canyon has a long history of community education and awareness concerning wildfire preparation. We have coordinated with UFA, Utah State Division of Forestry and Fire, and NPFA for two decades, and have been designated a Firewise Community for over 15 years. Residents take an active role in creating and maintaining defensible space around their homes.
- Our ordinances take into account current fire concerns in our building code, and in regulation of fires and pyrotechnics in the canyon. We are well prepared to take some of the “next steps” that are currently recommended by NPFA, USFA WUI guidelines, USFS, and National Interagency Fire Center.
- Many of these steps have already been taken in neighboring states, primarily in response to already having faced devastating wildfires in WUI communities. We have the opportunity to act BEFORE we are in the same situation.

What Are The Next Steps?

Here is an overview of WUI policy and “Outthink Wildfire” Initiative from NPFA and Firewise.org. This give a “30,000 foot” look at the direction we want to go. Links to entire policy follow.

A Call to End the Destruction of Communities by Wildfire in 30 Years - NFPA Statement

Over the past decade, the U.S. has witnessed a steady increase in wildfire activity. Experts predict this trend will remain. Despite the \$2 to \$3 billion per year to support wildland fire suppression efforts, the number of homes lost in wildfires per year has increased by 163 percent and wildfires now cost the U.S. an estimated \$63 to \$285 billion per year in losses.

To stem the trend in wildfire-caused human and property losses, the U.S. must make significant policy changes at all levels of government. NFPA has released a comprehensive strategy that will push for the transformation that, over time, will significantly reduce risk to communities. The strategy is rooted in two realities – wildfires are going to happen, and the fire service will not be able to extinguish these fires at a pace to save people and property in their path.

To solve the wildfire problem, these five tenets must be supported by all levels of government:

1. Require all homes and business in the wildland urban interface (WUI) to be more resistant to ignition from wildfire embers and flames
2. Current codes and standards, as well as sound land use practices must be in use and enforced for new development and rebuilding in wildfire-prone areas
3. Fire departments for communities in the WUI must be prepared to respond safely and effectively to wildfire
4. Government must increase resources for vegetative fuel management on public land
5. The public must understand its role and take action in reducing wildfire risk

<https://www.nfpa.org/-/media/Files/About-NFPA/Wildfire-policy/WildfirePolicyOverview.ashx>

<https://www.nfpa.org/-/media/Files/About-NFPA/Wildfire-policy/WildfirePolicy1.ashx>

<https://www.nfpa.org/-/media/Files/About-NFPA/Wildfire-policy/WildfirePolicy2.ashx>

<https://www.nfpa.org/-/media/Files/About-NFPA/Wildfire-policy/WildfirePolicy3.ashx>

<https://www.nfpa.org/-/media/Files/About-NFPA/Wildfire-policy/WildfirePolicy4.ashx>

<https://www.nfpa.org/-/media/Files/About-NFPA/Wildfire-policy/WildfirePolicy5.ashx>



Immediate Steps - what we need to do tonight:

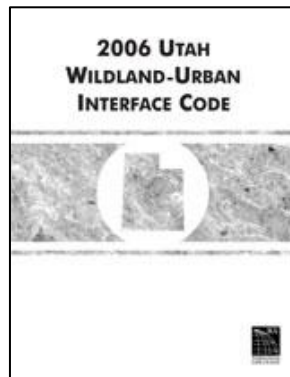
- Bring EC Metro Township ordinances in line with current SLCo ordinances, and existing UFA and State Forestry and Fire requirements for fire insurance (we are close, but need some minor modifications). This requires a modification to our ordinances in Chapter 9.
- With regard to WUI, SLCo has an additional section, 9.90.025, which appears to have been inserted after our code was created. This is important, as it is currently required by the State Division of Forestry, Fire, and State lands in order for us to be covered financially from expenses incurred by UFA and State Wildland Fire crews when fighting a wildfire.

- Designate the whole of EC Metro Township as a WUI community. This eliminates the need to consider (for example) is it okay to have an open fire in one place, but not in another, which is our current situation. All of the canyon meets WUI criteria, and acknowledging this and designating it as such formally increases our ability to take more steps towards wildfire resilience, and potentially makes us eligible for more funding.

Steps for the near future (summer of 2021):

- Explicitly incorporate ICC WUI code in all areas where it is relevant, including vegetation management, landscape guidelines, road requirements and future development. It is currently referenced in some chapters, but not explicitly adopted.
- Continue efforts to collaborate with agencies on the county, state and federal level to have a coordinated approach to seasonal wildfire hazards, with the focus on steps to manage risk and make both the community and critical infrastructure more resilient in the event of wildfire.
- Continue efforts at community organization and preparedness, with a focus both defensible space, individual preparedness, and community response/readiness in the event of a large wildfire within the canyon.

Wildland-Urban Interface Site Plan/Development Review Guide



GREATER SALT LAKE
**Municipal Services
District**

This document is a graphic representation of the major provisions of the Utah Wildland-Urban Interface Code and amendments adopted by the Unified Fire Authority.

This material is designed to be used as code interpretation for code authorities, architects, contractors, engineers and individual property owners. Questions pertaining to this document can be obtained by calling the Unified Fire Authority, Fire Prevention Division at 801-743-7233.

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Submittal Requirements:

- ☐ Completed Fire Severity Hazard Form

- ☐ Site Plan detailing the following:
 - topography
 - width and percent of grade of access roads
 - landscape and vegetation details
 - locations of structures or building envelopes
 - existing or proposed overhead utilities
 - existing or proposed above or below ground propane tanks
 - structures and their appendages
 - defensible space envelope

- ☐ Fire Protection Plan
 - The plan shall be based upon a site-specific wildfire risk assessment that includes considerations of location, topography, aspect, flammable vegetation, climatic conditions and fire history. The plan shall address water supply, access, building ignition and fire-resistance factors, fire protection systems and equipment, *defensible space* and vegetation management.

- ☐ Vegetation Management Plan
 - Vegetation management plans shall describe all actions that will be taken to prevent a fire from being carried toward or away from the building. A vegetation management plan shall include at least the following information:
 1. A copy of the site plan.
 2. Methods and timetables for controlling, changing or modifying areas on the property. Elements of the plan shall include removal of slash, snags, vegetation that may grow into overhead electrical lines, other ground fuels, ladder fuels and dead trees, and the thinning of live trees.
 3. A plan for maintaining the proposed fuel-reduction measures.

- ☐ Vicinity Plan
 - Plan shall include details regarding the vicinity within 300' of property lines, including other structures, slope, vegetation, fuel breaks, water supply systems and access roads. (This may be incorporated into the site plan.)

Procedure:

1. Complete the Fire Severity Hazard Form. Consult the following table for defensible space requirement.

TABLE 603.2 REQUIRED DEFENSIBLE SPACE	
WILDLAND-URBAN INTERFACE AREA	FUEL MODIFICATION DISTANCE (feet) ^a
Moderate hazard	30
High hazard	50
Extreme hazard	100

For SI: 1 foot = 304.8 mm.
a. Distances are allowed to be increased due to site-specific analysis based on local conditions and the fire protection plan.

2. Obtain water supply information. (Contact the water purveyor.)
 - Available Fire-flow
 - Water Tank Capacity
 - Location of nearest fire hydrants
3. Develop site plan. Site plan must include the items listed on page 3.
4. Submit application to Salt Lake County. Review cannot be completed without all of the items listed on page 3.

Upon receipt of a complete application the Fire Inspector will conduct a site visit. The following table will be used to determine the level of exterior fire rated construction.

TABLE 503.1 IGNITION-RESISTANT CONSTRUCTION ^a						
DEFENSIBLE SPACE ^c	FIRE HAZARD SEVERITY					
	Moderate Hazard		High Hazard		Extreme Hazard	
	Water Supply ^b		Water Supply ^b		Water Supply ^b	
	Conforming ^d	Nonconforming ^e	Conforming ^d	Nonconforming ^e	Conforming ^d	Nonconforming ^e
Nonconforming	IR 2	IR 1	IR 1	IR 1 N.C.	IR 1 N.C.	Not Permitted
Conforming	IR 3	IR 2	IR 2	IR 1	IR 1	IR 1 N.C.
1.5 × Conforming	Not Required	IR 3	IR 3	IR 2	IR 2	IR 1

a. Access shall be in accordance with Section 402.

b. Subdivisions shall have a conforming water supply in accordance with Section 402.1.

IR 1 = Ignition-resistant construction in accordance with Section 504.

IR 2 = Ignition-resistant construction in accordance with Section 505.

IR 3 = Ignition-resistant construction in accordance with Section 506.

N.C. = Exterior walls shall have a fire-resistance rating of not less than 1-hour and the exterior surfaces of such walls shall be *noncombustible*. Usage of log wall construction is allowed.

c. Conformance based on Section 603.

d. Conformance based on Section 404.

e. A nonconforming water supply is any water system or source that does not comply with Section 404, including situations where there is no water supply for structure protection or fire suppression.

Fire Department Access Requirements:

Restricted access. Where emergency vehicle access is restricted because of secured access roads or driveways or where immediate access is necessary for life-saving or fire-fighting purposes, the code official is authorized to require a key box to be installed in an accessible location. The key box shall be of a type *approved* by the code official and shall contain keys to gain necessary access as required by the code official. [UWUIC 403.1]

Building and Facilities: Fire apparatus access roads must be provided such that no portion of the facility or any portion of an exterior wall of the first story of the building is located more than 150-feet from fire apparatus access as measured by an approved route around the exterior of the building or facility. [IFC 503.1.1]

Specifications: Fire Department Access must be of an all-weather surface, a minimum clear width of 20-feet and a minimum vertical clear height of 13-feet 6-inches (13'-6"). [IFC 503.2.1]

Surface: Fire apparatus access roads must be designed and maintained to support the imposed loads of 75,000 lbs for fire apparatus. [IFC 503.2.3 & D102.1]

Turning Radius: The turning radius of 28-feet must be provided for the fire apparatus access road. [IFC 503.2.4]

Dead Ends: Dead-end fire apparatus access roads in excess of 150-feet in length must be provided with approved provisions for the turning around of fire apparatus. [IFC 503.2.5]

Bridges and Elevated Surfaces: When a bridge or an elevated surface is part of a fire apparatus access road, it must be constructed and maintained in accordance with AASHTO Standard Specification for Highway Bridges and must be designed for a live loading sufficient to carry the imposed loads of fire apparatus. [IFC 503.2.6]

Grade: The gradient for a fire apparatus access road must not exceed 10%, unless approved by the Fire Code Official. [IFC 503.2.7]

Access Road Identification: Approved signs must be provided and maintained for fire apparatus access roads to identify the road and prohibit the obstruction thereof or both. [IFC 503.3]

All road identification signs and supports shall be of noncombustible materials. Signs shall have minimum 4-inch-high (102 mm) reflective letters with 1/2 inch (12.7 mm) stroke on a contrasting 6-inch-high (152 mm) sign. Road identification signage shall be mounted at a height of 7 feet (2134 mm) from the road surface to the bottom of the sign. [UWUIC 403.4]

Water Supply Requirements:

Required water supply. An *approved* water supply capable of supplying the required fire flow for fire protection shall be provided to premises upon which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction. [IFC 507.1]

Required fire flow will be based upon building construction type as defined in the IBC as well as gross square footage of the proposed structure. For the purpose of determining fire flow the gross square footage shall include all areas within the exterior walls, beneath the roof line, finished and unfinished habitable space.

Fire hydrant systems. [IFC 507.5]

Where required. Where a portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than 400 feet (122 m) from a hydrant on a fire apparatus access road, as measured by an *approved* route around the exterior of the facility or building, on-site fire hydrants and mains shall be provided where required by the *fire code official*.

Exceptions:

1. For Group R-3 and Group U occupancies, the distance requirement shall be 600 feet (183 m).
2. For buildings equipped throughout with an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the distance requirement shall be 600 feet (183 m).

Code Modification:

Practical difficulties. When there are practical difficulties involved in carrying out the provisions of this code, the code official is authorized to grant modifications for individual cases on application in writing by the owner or a duly authorized representative. The code official shall first find that a special individual reason makes enforcement of the strict letter of this code impractical, the modification is in conformance to the intent and purpose of this code, and the modification does not lessen any fire protection requirements or any degree of structural integrity. The details of any action granting modifications shall be recorded and entered into the files of the code enforcement agency.

If the code official determines that difficult terrain, danger of erosion or other unusual circumstances make strict compliance with the vegetation control provisions of the code detrimental to safety or impractical, enforcement thereof may be suspended, provided that reasonable alternative measures are taken. [UWUIC 105.1]

Definitions:

ACCESSORY STRUCTURE. A building or structure used to shelter or support any material, equipment, chattel or occupancy other than a habitable building.

DEFENSIBLE SPACE. An area either natural or man-made, where material capable of allowing a fire to spread unchecked has been treated, cleared or modified to slow the rate and intensity of an advancing wildfire and to create an area for fire suppression operations to occur.

FIRE PROTECTION PLAN. A document prepared for a specific project or development proposed for the *wildland-urban interface area*. It describes ways to minimize and mitigate the fire problems created by the project or development, with the purpose of reducing impact on the community's fire protection delivery system.

FIRE-RESISTANCE-RATED CONSTRUCTION. The use of materials and systems in the design and construction of a building or structure to safeguard against the spread of fire within a building or structure and the spread of fire to or from buildings or structures to the *wildland-urban interface area*.

FLAME SPREAD INDEX. A comparative measure, expressed as a dimensionless number, derived from visual measurements of the spread of flame versus time for a material tested in accordance with ASTM E 84.

FUEL BREAK. An area, strategically located for fighting anticipated fires, where the native vegetation has been permanently modified or replaced so that fires burning into it can be more easily controlled. Fuel breaks divide fire-prone areas into smaller areas for easier fire control and to provide access for fire fighting.

FUEL MODIFICATION. A method of modifying fuel load by reducing the amount of nonfire-resistive vegetation or altering the type of vegetation to reduce the fuel load.

IGNITION-RESISTANT BUILDING MATERIAL. A type of building material that resists ignition or sustained flaming combustion sufficiently so as to reduce losses from wildland-urban interface conflagrations under worst-case weather and fuel conditions with wildfire exposure of burning embers and small flames, as prescribed in Section 503.

IGNITION-RESISTANT CONSTRUCTION, CLASS 1. A schedule of additional requirements for construction in wildland-urban interface areas based on extreme fire hazard.

IGNITION-RESISTANT CONSTRUCTION, CLASS 2. A schedule of additional requirements for construction in wildland-urban interface areas based on high fire hazard.

IGNITION-RESISTANT CONSTRUCTION, CLASS 3. A schedule of additional requirements for construction in wildland-urban interface areas based on moderate fire hazard.

LOG WALL CONSTRUCTION. A type of construction in which exterior walls are constructed of solid wood members and where the smallest horizontal dimension of each solid wood member is at least 6 inches (152 mm).

NONCOMBUSTIBLE. As applied to building construction material means a material that, in the form in which it is used, is either one of the following:

1. Material of which no part will ignite and burn when subjected to fire. Any material conforming to ASTM E 136 shall be considered noncombustible within the meaning of this section.
2. Material having a structural base of *noncombustible* material as defined in Item 1 above, with a surfacing material not over 1/8 inch (3.2 mm) thick, which has a flame

spread index of 50 or less. Flame spread index as used herein refers to a flame spread index obtained according to tests conducted as specified in ASTM E 84 or UL 723.

“Noncombustible” does not apply to surface finish materials. Material required to be noncombustible for reduced clearances to flues, heating appliances or other sources of high temperature shall refer to material conforming to Item 1. No material shall be classified as noncombustible that is subject to increase in combustibility or flame spread index, beyond the limits herein established, through the effects of age, moisture or other atmospheric condition.

NONCOMBUSTIBLE ROOF COVERING. One of the following:

1. Cement shingles or sheets.
2. Exposed concrete slab roof.
3. Ferrous or copper shingles or sheets.
4. Slate shingles.
5. Clay or concrete roofing tile.
6. *Approved* roof covering of *noncombustible* material.

TREE CROWN. The primary and secondary branches growing out from the main stem, together with twigs and foliage.

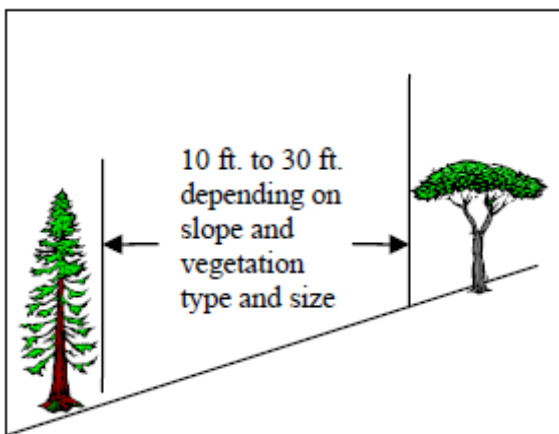
UNENCLOSED ACCESSORY STRUCTURE. An accessory structure without a complete exterior wall system enclosing the area under roof or floor above.

WILDLAND-URBAN INTERFACE AREA. The line, area or zone where structures or other human development (including critical infrastructure that if destroyed would result in hardship to communities) meet or intermingle with undeveloped wildland or vegetative fuel.

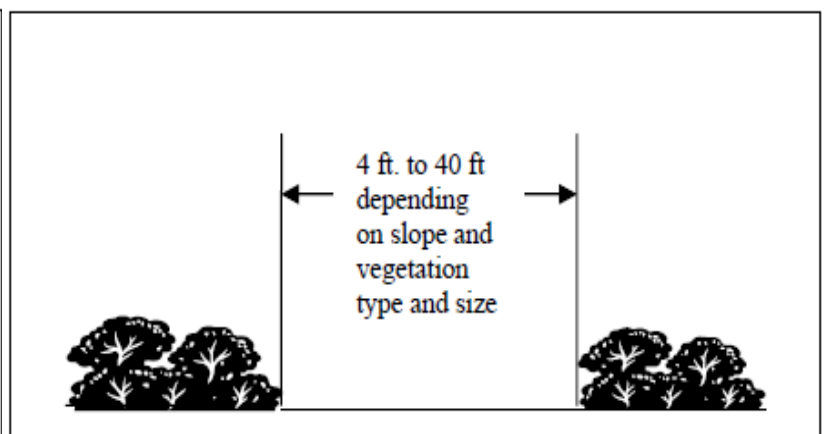
Supplemental Information:

Vegetation Clearance Guidelines:

Plant Spacing Guidelines		
Guidelines are designed to break the continuity of fuels and be used as a “rule of thumb”		
Trees	Minimum horizontal space from edge of one tree canopy to the edge of the next	
	Slope	Spacing
	0% to 20 %	10 feet
	20% to 40%	20 feet
	Greater than 40%	30 feet
Shrubs	Minimum horizontal space between edges of shrub	
	Slope	Spacing
	0% to 20 %	2 times the height of the shrub
	20% to 40%	4 times the height of the shrub
	Greater than 40%	6 times the height of the shrub
Vertical Space	Minimum vertical space between top of shrub and bottom of lower tree branches: 3 times the height of the shrub	

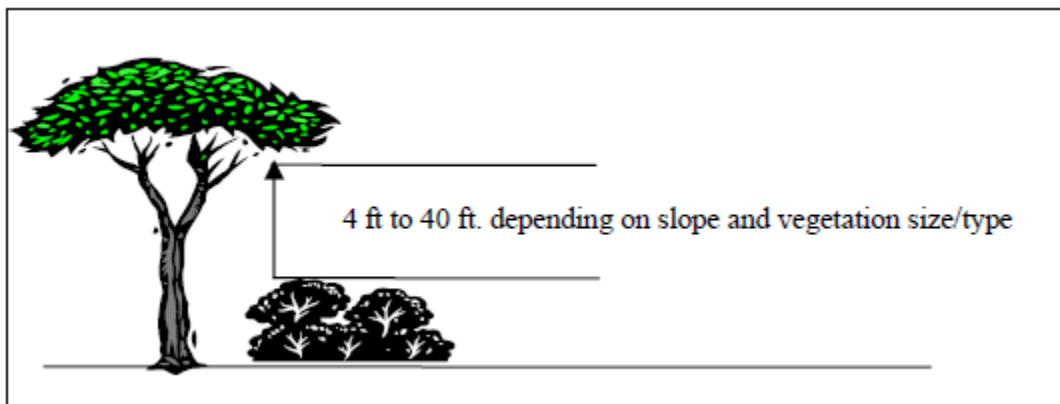


Trees



Shrubs

Horizontal Clearance Between Aerial Fuels

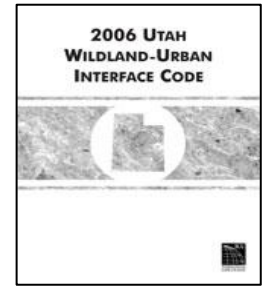


Vertical Clearance Between Aerial Fuels

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SECTION 405

Fire Protection Plan:



405.1 Purpose. The plan is to provide a basis to determine overall compliance with this code, for determination of Ignition Resistant Construction (IRC) (See Table 503.1) and for determining the need for alternative materials and methods.

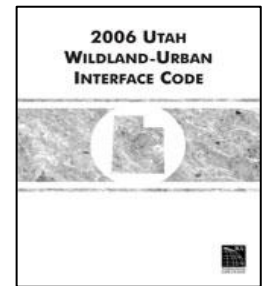
405.2 General. When required by the code official, a fire protection plan shall be prepared.

405.3 Content. The plan shall be based upon a site-specific wildfire risk assessment that includes considerations of location, topography, aspect, flammable vegetation, climatic conditions and fire history. The plan shall address water supply, access, building ignition and fire-resistance factors, fire protection systems and equipment, *defensible space* and vegetation management.

405.4 Cost. The cost of fire protection plan preparation and review shall be the responsibility of the applicant.

405.5 Plan retention. The fire protection plan shall be retained by the code official.

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SECTION 504

Class 1- Ignition-resistant Construction:

504.1 General. Class 1 ignition-resistant construction shall be in accordance with Sections 504.2 through 504.11

504.2 Roof covering. Roofs shall have a Class A roof covering or a Class A roof assembly. For roof coverings where the profile allows a space between the roof covering and roof decking, the space at the eave ends shall be fire-stopped to preclude entry of flames or embers.

504.3 Protection of eaves. Eaves and soffits shall be protected on the exposed underside by materials approved for a minimum of 1-hour fire-resistance-rated construction, 2-inch (51 mm) nominal dimension lumber, or 1-inch (25.4 mm) nominal fire-retardant-treated lumber or $\frac{3}{4}$ -inch (19 mm) nominal fire-retardant-treated plywood, identified for exterior use and meeting the requirements of Section 2303.2 of the International Building Code. Fascias are required and shall be protected on the backside by materials approved for a minimum of 1-hour fire-resistance-rated construction or 2-inch (51 mm) nominal dimension lumber.

504.4 Gutters and downspouts. Gutters and downspouts shall be constructed of noncombustible material.

504.5 Exterior walls. Exterior walls of buildings or structures shall be constructed with materials approved for a minimum of 1-hour fire-resistance-rated construction on the exterior side or constructed with approved noncombustible materials.

Exception: Heavy timber or log wall construction. Such material shall extend from the top of the foundation to the underside of the roof sheathing.

504.6 Unenclosed under-floor protection. Buildings or structures shall have all under-floor areas enclosed to the ground with exterior walls in accordance with Section 504.5.

Exception: Complete enclosure may be omitted where the underside of all exposed floors and all exposed structural columns, beams and supporting walls are protected as required for exterior 1-hour fire-resistance-rated construction or heavy timber construction.

504.7 Appendages and projections. Unenclosed accessory structures attached to buildings with habitable spaces and projections, such as decks, shall be a minimum of 1-hour fire-resistance-rated construction, heavy timber construction or constructed of approved noncombustible materials or fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the International Building Code.

When the attached structure is located and constructed so that the structure or any portion thereof projects over a descending slope surface greater than 10 percent, the area below the

structure shall have all under-floor areas enclosed to within 6 inches (152 mm) of the ground, with exterior wall construction in accordance with Section 504.5.

504.8 Exterior glazing. Exterior windows, window walls and glazed doors, windows within exterior doors, and skylights shall be tempered glass, multilayered glazed panels, glass block or have a fire protection rating of not less than 20 minutes.

504.9 Exterior doors. Exterior doors shall be approved noncombustible construction, solid core wood not less than 1¾ inches thick (45 mm), or have a fire protection rating of not less than 20 minutes. Windows within doors and glazed doors shall be in accordance with Section 504.8.

Exception: Vehicle access doors.

504.10 Vents. Attic ventilation openings, foundation or under-floor vents, or other ventilation openings in vertical exterior walls and vents through roofs shall not exceed 144 square inches (0.0929 m²) each. Such vents shall be covered with noncombustible corrosion-resistant mesh with openings not to exceed ¼ inch (6.4 mm), or shall be designed and approved to prevent flame or ember penetration into the structure.

Attic ventilation openings shall not be located in soffits, in eave overhangs, between rafters at eaves, or in other overhang areas. Gable end and dormer vents shall be located at least 10 feet (3048 mm) from property lines. Under-floor ventilation openings shall be located as close to grade as practical.

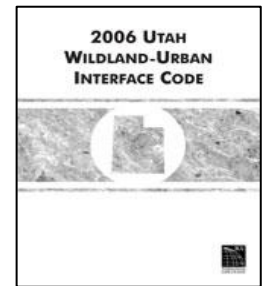
504.11 Detached accessory structures. Detached accessory structures located less than 50 feet (15 240 mm) from a building containing habitable space shall have exterior walls constructed with materials approved for a minimum of 1-hour fire-resistance-rated construction, heavy timber, log wall construction or constructed with approved noncombustible materials on the exterior side.

When the detached structure is located and constructed so that the structure or any portion thereof projects over a descending slope surface greater than 10 percent, the area below the structure shall have all under-floor areas enclosed to within 6 inches (152 mm) of the ground, with exterior wall construction in accordance with Section 504.5 or under-floor protection in accordance with Section 504.6.

Exception: The enclosure may be omitted where the underside of all exposed floors and all exposed structural columns, beams and supporting walls are protected as required for exterior 1-hour fire-resistance-rated construction or heavy-timber construction.

See Section 504.2 for roof requirements.

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SECTION 505

Class 2 - Ignition-resistant Construction:

505.1 General. Class 2 ignition-resistant construction shall be in accordance with Section 505.

505.2 Roof covering. Roofs shall have at least a Class A roof covering, Class B roof assembly or an *approved noncombustible* roof covering. For roof coverings where the profile allows a space between the roof covering and roof decking, the space at the eave ends shall be fire-stopped to preclude entry of flames or embers.

505.3 Protection of eaves. Combustible eaves, fascias and soffits shall be enclosed with solid materials with a minimum thickness of 3/4 inch (19 mm). No exposed rafter tails shall be permitted unless constructed of heavy timber materials.

505.4 Gutters and downspouts. Gutters and downspouts shall be constructed of *noncombustible* material.

505.5 Exterior walls. Exterior walls of buildings or structures shall be constructed with materials approved for a minimum of 1-hour fire-resistance-rated construction on the exterior side or constructed with noncombustible materials.

Exception: Heavy timber or log wall construction. Such material shall extend from the top of the foundation to the underside of the roof sheathing.

505.6 Unenclosed under floor protection. Buildings or structures shall have all under floor areas enclosed to the ground, with exterior walls in accordance with Section 505.5.

Exception: Complete enclosure shall not be required where the underside of all exposed floors and all exposed structural columns, beams and supporting walls are protected as required for exterior 1-hour fire-resistance-rated construction or heavy timber construction.

505.7 Appendages and projections. *Unenclosed accessory structures* attached to buildings with habitable spaces and projections, such as decks, shall be a minimum of 1-hour fire resistance-rated construction, heavy timber construction or constructed of non-combustible materials.

When the attached structure is located and constructed so that the structure or any portion thereof projects over a descending slope surface greater than 10 percent, the area below the structure shall have all under floor areas enclosed to within 6 inches (152 mm) of the ground, with exterior wall construction in accordance with Section 505.5.

505.8 Exterior glazing. Exterior windows, window walls and glazed doors, windows within exterior doors, and skylights shall be tempered glass, multilayered glazed panels, glass block or have a fire-protection rating of not less than 20 minutes.

505.9 Exterior doors. Exterior doors shall be *approved noncombustible* construction, solid core wood not less than 13/4-inches thick (45 mm), or have a fire protection rating of not less than 20 minutes. Windows within doors and glazed doors shall be in accordance with Section 505.8.

Exception: Vehicle access doors.

505.10 Vents. Attic ventilation openings, foundation or under-floor vents or other ventilation openings in vertical exterior walls and vents through roofs shall not exceed 144 square inches (0.0929 m²) each. Such vents shall be covered with *noncombustible* corrosion-resistant mesh with openings not to exceed 1/4 inch (6.4 mm) or shall be designed and *approved* to prevent flame or ember penetration into the structure.

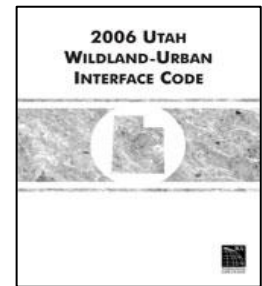
Attic ventilation openings shall not be located in soffits, in eave overhangs, between rafters at eaves, or in other overhang areas. Gable end and dormer vents shall be located at least 10 feet (3048 mm) from property lines. Under floor ventilation openings shall be located as close to grade as practical.

505.11 Detached accessory structures. Detached accessory structures located less than 50 feet (15 240 mm) from a building containing habitable space shall have exterior walls constructed with materials *approved* for a minimum of 1-hour fire resistance-rated construction, heavy timber, log wall construction, or constructed with *approved noncombustible* materials.

When the detached structure is located and constructed so that the structure or any portion thereof projects over a descending slope surface greater than 10 percent, the area below the structure shall have all under floor areas enclosed to within 6 inches (152 mm) of the ground, with exterior wall construction in accordance with Section 505.5 or under floor protection in accordance with Section 505.6.

Exception: The enclosure shall not be required where the underside of all exposed floors and all exposed structural columns, beams and supporting walls are protected as required for exterior 1-hour fire-resistance-rated construction or heavy-timber construction or fire-retardant treated wood on the exterior side. The fire-retardant treated wood shall be labeled for exterior use and meet the requirements of Section 2303.2 of the *International Building Code*.

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SECTION 506

Class 3 - Ignition-resistant Construction:

506.1 General. Class 3 ignition-resistant construction shall be in accordance with Sections 506.

506.2 Roof covering. Roofs shall have at least a Class A covering, Class C roof assembly or an *approved noncombustible* roof covering. For roof coverings where the profile allows a space between the roof covering and roof decking, the space at the eave ends shall be fire-stopped to preclude entry of flames or embers.

506.3 Unenclosed under-floor protection. Buildings or structures shall have all under-floor areas enclosed to the ground with exterior walls.

Exception: Complete enclosure may be omitted where the underside of all exposed floors and all exposed structural columns, beams and supporting walls are protected as required for exterior 1-hour fire-resistance-rated construction or heavy timber construction.

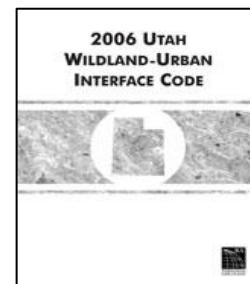
506.4 Vents. Attic ventilation openings, soffit vents, foundation or under-floor vents or other ventilation openings in vertical exterior walls and vents through roofs shall not exceed 144 square inches each. Such vents shall be covered with noncombustible corrosion resistant mesh with openings not to exceed ¼ inch.

SECTION 507

Replacement or Repair of Roof Coverings:

The roof covering on buildings or structures in existence prior to the adoption of this code that are replaced or have 25 percent or more replaced in a 12-month period shall be replaced with a roof covering required for new construction based on the type of ignition-resistant construction specified in accordance with Section 503.

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SECTION 603

Defensible Space:

603.1 Objective. Provisions of this section are intended to modify the fuel load in areas adjacent to structures to create a *defensible space*.

603.2 Fuel modification. In order to qualify as a conforming defensible space for individual buildings or structures on a property, fuel modification shall be provided within a distance from buildings or structures as specified in Table 603.2. For all other purposes the *fuel modification* distance shall not be less than 30 feet (9144 mm) or to the property line, whichever is less. Distances specified in Table 603.2 shall be measured on a horizontal plane from the perimeter or projection of the building or structure as shown in Figure 603.2. Distances specified in Table 603.2 are allowed to be increased by the code official because of a site-specific analysis based on local conditions and the fire protection plan.

Persons owning, leasing, controlling, operating or maintaining buildings or structures requiring defensible spaces are responsible for modifying or removing non fire-resistive vegetation on the property owned, leased or controlled by said person.

Trees are allowed within the *defensible space*, provided the horizontal distance between crowns of adjacent trees and crowns of trees and structures, overhead electrical facilities or unmodified fuel is not less than 10 feet (3048 mm). Deadwood and litter shall be regularly removed from trees.

Where ornamental vegetative fuels or cultivated ground cover, such as green grass, ivy, succulents or similar plants are used as ground cover, they are allowed to be within the designated *defensible space*, provided they do not form a means of transmitting fire from the native growth to any structure.

TABLE 603.2

REQUIRED DEFENSIBLE SPACE

Wildland-Urban Interface Area	Fuel Modification Distance (feet)
Moderate Hazard	30
High Hazard	50
Extreme Hazard	100

SECTION 604

Maintenance of Defensible Space:

604.1 General. Defensible spaces required by Section 603 shall be maintained in accordance with Section 604.

604.2 Modified area. Non fire-resistive vegetation or growth shall be kept clear of buildings or structures, in accordance with Section 603, in such a manner as to provide a clear area for fire suppression operations.

604.3 Responsibility. Persons owning, leasing, controlling, operating or maintaining buildings or structures are responsible for maintenance of *defensible spaces*. Maintenance of the *defensible space* shall include modifying or removing non fire-resistive vegetation and keeping leaves, needles and other dead vegetative material regularly removed from roofs of buildings and structures.

604.4 Trees. Tree crowns extending to within 10 feet (3048mm) of any structure shall be pruned to maintain a minimum horizontal clearance of 10 feet (3048 mm). Tree crowns within the *defensible space* shall be pruned to remove limbs located less than 6 feet (1829 mm) above the ground surface adjacent to the trees.

Portions of tree crowns that extend within 10 feet of the outlet of a chimney shall be pruned to maintain a minimum horizontal clearance of 10 feet.

Deadwood and litter shall be regularly removed from trees.

SECTION 605

Spark Arrestors:

Chimneys serving fireplaces, barbecues, incinerators or decorative heating appliances in which solid or liquid fuel is used, shall be provided with a spark arrester. Spark arresters shall be constructed of woven or welded wire screening of 12 USA standard gage wire (0.1046 inch) (2.66 mm) having openings not exceeding 1/2 inch (12.7 mm).

The net free area of the spark arrester shall not be less than four times the net free area of the outlet of the chimney.

SECTION 606

Liquefied Petroleum Gas Installations:

606.1 General. The storage of liquefied petroleum gas (LP gas) and the installation and maintenance of pertinent equipment shall be in accordance with the *International Fire Code* or, in the absence thereof, recognized standards.

606.2 Location of containers or tanks. LP-gas containers or tanks shall be located within the *defensible space* in accordance with the *International Fire Code*.

(See Figures 1 and 2 on Page 20)

SECTION 607

Storage of Firewood and Combustible Materials:

607.1 General. Firewood and combustible material shall not be stored in unenclosed spaces beneath buildings or structures, or on decks or under eaves, canopies or other projections or overhangs. When required by the code official, storage of firewood and combustible material stored in the *defensible space* shall be located a minimum of 20 feet (6096 mm) from structures and separated from the crown of trees by a minimum horizontal distance of 15 feet (4572 mm).

607.2 Storage for off-site use. Firewood and combustible materials not for consumption on the premises shall be stored so as to not pose a hazard.

Utah Fire Resistive Species

Adapted from "Utah Forest Facts: Firewise Plants for Utah Landscapes"

Utah State University Extension, 2002

Grasses:

Agropyron cristatum (Crested Wheatgrass)
Agropyron smithii (Western Wheatgrass)
Huchloe dactyloides (Buffalograss)
Dactylis glomerata (Orchardgrass)
Festuea cinerea and other species (Blue Fescue)
Lolium species (Rye Grass)
Poa pratensis (Kentucky Bluegrass)
Poa secunda (Sandberg Bluegrass)

Herbaceous Perennials

Achillea clavennae (Silvery Yarrow)
Achillea lilipendulina (Femleaf Yarrow)
Achillea - other species & hybrids (Yarrow)*
Aquilegia - species & hybrids (Columbine)
Armeria maritime (Sea Pink, Sea Thrift)
Artemisia stelleriana (Beach Wonnwood, Dusty Miller)
Artemisia - other species & hybrids (Various names)*
Bergenia species & hybrids (Bergenia)
Geranium species (Geranium)
Hemerocallis species (Daylily)
Heuchera sanguinea (Coral Bells, Alum Root)
Iberis sempervirens (Evergreen Candy tuft)
Iris species & hybrids (Iris)
Kniphofia species & hybrids (Red-hot Poker)
Lavandula species (Lavender)
Leucanthemum X superbum (Shasta Daisy)
Limonium latijolium (Sea-lavender, Statice)
Linum species (Flax)
Liriope spicata (Lily-turf)
Lupinus species & hybrids (Lupine)*
Medicago sativus (Alfalfa)
Oenothera species (Primrose)
Papaver species (Poppy)
Penstemon species & hybrids (Penstemon)
Perovskia atriplicifolia (Russian Sage, Azure Sage)
Potentilla nepalensis (Nepal Cinquefoil)
Potentilla tridentata (Wineleaf Cinquefoil)
Centranthus ruber (Red Valerian, Jupiter's Beard)
Cerastium tomentosum (Snow-in-summer)
Potentilla verna (tabernaemontani) (Spring Cinquefoil; Creeping Potentilla)
Coreopsis auriculata var. *Nana* (Dwarf Mouse Ear Coreopsis)
(Coreopsis .. ~ other perennial species (Coreopsis)
*Potentilla .. other non-shrubby species & hybrids (Cinquefoil, Potentilla)**

Delosperma nubigenum (Hardy Ice Plant)
Dianthus plumarius & others (Pinks)
Erigeron hybrids (Fleabane)*
Gaillardia X grandiflora (Blanket Flower)
Geranium cinereum (Hardy Geranium)
Geranium sanguineum (Bloody Cranesbill, Bloodred Geranium)
Salvia species & hybrids (Salvia, Sage)*
Sedum species (Stonecrop, Sedum)
Sempervivum tectorum (Hen and Chicks)
Stachys byzantina (Lamb's Ear)
Yuccafilamentosa (Yucca)

Shrubs and Woody Vines

Atriplex species (Saltbush)
Ceanothus americanus (New Jersey Tea)
Ceanothus ovatus & others (Ceanothus)
Cistus species (Rock-rose)
Cotoneaster dammeri (Bearberry Cotoneaster)
Cotoneaster horizontalis (Rockspray or Rock Cotoneaster)
Cotoneaster - other compact species (Cotoneaster)
Hedera helix (English Ivy)
Lonicera species & hybrids (Honeysuckle)
Mahonia repens (Creeping Oregon Grape)
Parthenocissus quinquefolia (Virginia Creeper)
Prunus besseyi (Sand Cherry)
Purshia tridentata (Bitterbrush, Antelope Bitterbrush)
Pyracantha species (Firethorn, Pyracantha)
Rhamnus species (Buckthorn)
Rhus trilobata (Skunkbush Sumac)
Rhus -- other species (Sumac)
Ribes species (Currant, Gooseberry)
Rosa rugosa & other hedge roses (Rugosa Rose)
Shepherdia canadensis (Russet Buffaloberry)
Syringa vulgaris (Lilac)
Vinca major (Large Periwinkle)
Vinca minor (Dwarf Periwinkle, Common Periwinkle)

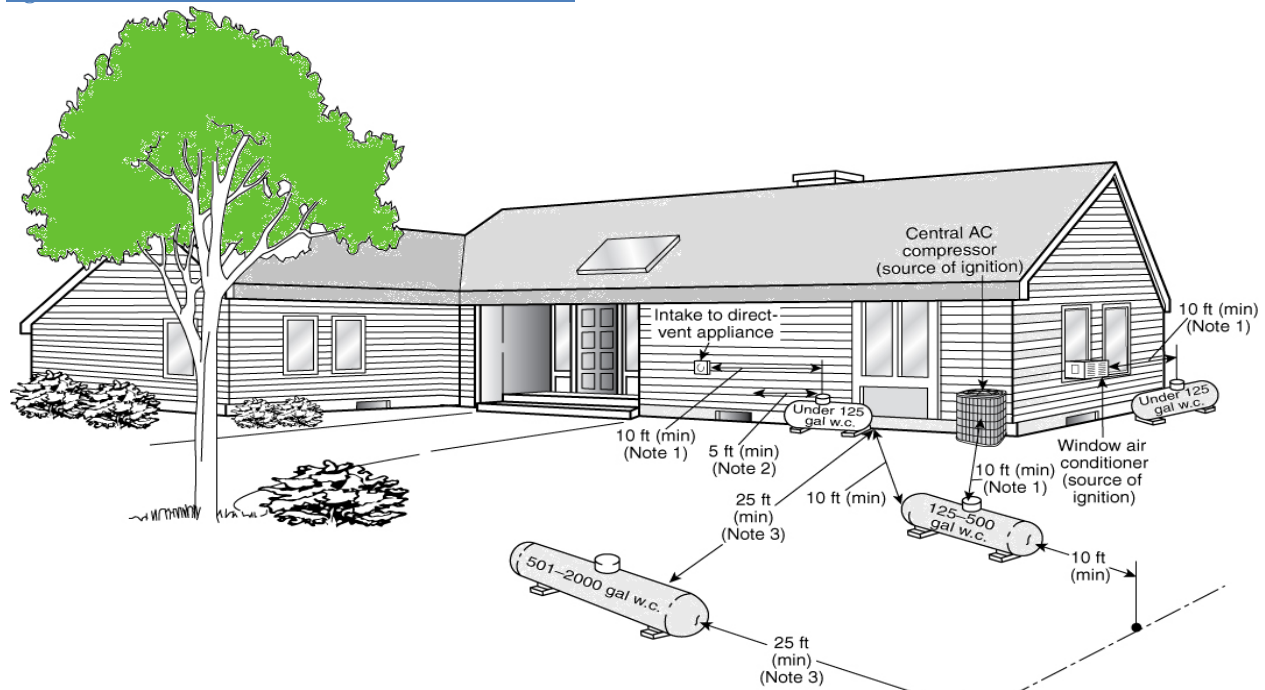
Trees

Acer species (Maple)
Betula species (Birch)
Cercis canadensis (Eastern Redbud)
Populus tremuloides (Quaking Aspen)
Populus - other species (Poplar, Cottonwood)
Salix species (Willow)

*** Plants or groups of plants marked with an asterisk (*) can become weedy in certain circumstances, and may even be noxious weeds with legal restrictions against their planting and cultivation. Check with your local Extension office or State Department of Agriculture for information on noxious weeds in your area.**

Note: Some of the listed plants may not be considered "water-wise" or drought-tolerant for arid climate

Figure 1: Above Ground LPG Tank Installation Guidelines:

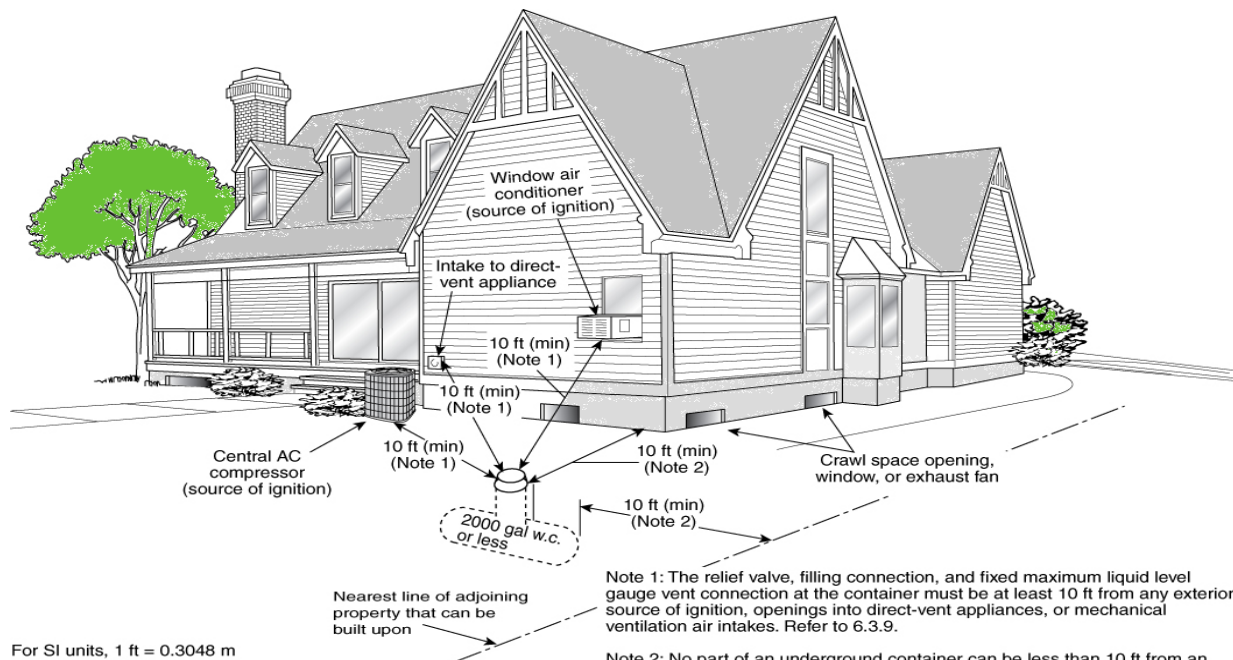


Note 1: Regardless of its size, any ASME container filled on site must be located so that the filling connection and fixed maximum liquid level gauge are at least 10 ft from any external source of ignition (e.g., open flame, window AC, compressor), intake to direct-vented gas appliance, or intake to a mechanical ventilation system. Refer to 6.3.9.

Note 2: Refer to 6.3.8.

Note 3: This distance can be reduced to no less than 10 ft for a single container of 1200 gal (4.5 m³) water capacity or less, provided such container is at least 25 ft from any other LP-Gas container of more than 125 gal (0.5 m³) water capacity. Refer to 6.3.3.

Figure 2: Underground LPG Tank Installation Guidelines:



For SI units, 1 ft = 0.3048 m

Note 1: The relief valve, filling connection, and fixed maximum liquid level gauge vent connection at the container must be at least 10 ft from any exterior source of ignition, openings into direct-vented appliances, or mechanical ventilation air intakes. Refer to 6.3.9.

Note 2: No part of an underground container can be less than 10 ft from an important building or line of adjoining property that can be built upon. Refer to 6.3.4.2.



APPENDIX C

FIRE HAZARD SEVERITY FORM

**A. Subdivision Design**

Points

1. Ingress/Egress

Two or more primary roads

1__

One road

10__

One-lane road in, one-lane road out

15__

2. Width of Primary Road

20 feet or more

1__

Less than 20 feet

5__

3. Accessibility

Road grade 5% or less

1__

Road grade 5-10%

5__

Road grade greater than 10%

10__

4. Secondary Road Terminus

Loop roads, cul-de-sacs with an outside turning
radius of 45 feet or greater

1__

Cul-de-sac turnaround

5__

Dead-end roads 200 feet or less in length

8__

Dead-end roads greater than 200 feet in length

10__

5. Street Signs

Present but unapproved

3__

Not present

5__

B. Vegetation (IUIWIC Definitions)

1. Fuel Types

Surface

Lawn/noncombustible

1__

Grass/short brush

5__

Scattered dead/down woody material

10__

Abundant dead/down woody material

15__

Overstory

Deciduous trees (except tall brush)

3__

Mixed deciduous trees and tall brush

10__

Clumped/scattered conifers and/or tall brush

15__

Contiguous conifer and/or tall brush

20__

2. Defensible space

70% or more of lots completed

1__

30% to 70% of lots completed

10__

Less than 30% of lots completed

20__

C. Topography

Located on flat, base of hill, or setback at crest of hill

1__

On slope with 0-20% grade

5__

On slope with 21-30% grade

10__

On slope with 31% grade or greater

15__

At crest of hill with unmitigated vegetation below

20__

D. Roofing Material

Class A Fire Rated

1__

Class B Fire Rated

5__

Class C Fire Rated

10__

Nonrated

20__

E. Fire Protection—Water Source

500 GPM hydrant within 1,000 feet

1__

Hydrant farther than 1,000 feet or draft site

5__

Water source 20 min. or less, round trip

10__

Water source farther than 20 min., and 45 min. or less
round trip.

15__

Water source farther than 45 min., round trip

20__

F. Siding and Decking

Noncombustible siding/deck

1__

Combustible siding/no deck

5__

Noncombustible siding/combustible deck

10__

Combustible siding and deck

15__

G. Utilities (gas and/or electric)

All underground utilities

1__

One underground, one aboveground

3__

All aboveground

5__

TOTAL FOR SUBDIVISION: _____**FIRE HAZARD SEVERITY**

MODERATE HAZARD

50-75

HIGH HAZARD

76-100

EXTREME HAZARD

101 +

2006 UTAH WILDLAND-URBAN INTERFACE CODE

Project Information:**Project Number:** _____**Project Address:** _____**Applicant:** _____

CHAPTER 1 ADMINISTRATION

SECTION 101 GENERAL

101.1 Title. These regulations shall be known as the Wildland-Urban Interface Code of Wasatch County, hereinafter referred to as “this code.”

101.2 Scope. The provisions of this code shall apply to the construction, alteration, movement, repair, maintenance and use of any building, structure or premises within the wildland-urban interface areas in this jurisdiction.

Buildings or conditions in existence at the time of the adoption of this code are allowed to have their use or occupancy continued, if such condition, use or occupancy was legal at the time of the adoption of this code, provided such continued use does not constitute a distinct danger to life or property.

Buildings or structures moved into or within the jurisdiction shall comply with the provisions of this code for new buildings or structures.

101.3 Objective. The objective of this code is to establish minimum regulations consistent with nationally recognized good practice for the safeguarding of life and property. Regulations in this code are intended to mitigate the risk to life and structures from intrusion of fire from wildland fire exposures and fire exposures from adjacent structures and to mitigate structure fires from spreading to wildland fuels.

The unrestricted use of property in wildland-urban interface areas is a potential threat to life and property from fire and resulting erosion. Safeguards to prevent the occurrence of fires and to provide adequate fire-protection facilities to control the spread of fire in wildland-urban interface areas shall be in accordance with this code.

This code shall supplement the jurisdiction’s building and fire codes, if such codes have been adopted, to provide for special regulations to mitigate the fire- and life-safety hazards of the wildland-urban interface areas.

101.4 Retroactivity. The provisions of the code shall apply to conditions arising after the adoption thereof, conditions not legally in existence at the adoption of this code, to conditions which, in the opinion of the code official, constitute a distinct hazard to life or property.

101.5 Additions or alterations.

Additions or alterations may be made to any building or structure without requiring the existing building or structure to comply with all of the requirements of this code, provided the addition or alteration conforms to that required for a new building or structure.

Exception: Provisions of this code that specifically apply to existing conditions are retroactive. See Sections 601.1 and Appendix A.

Additions or alterations shall not be made to an existing building or structure that will cause the existing building or

structure to be in violation of any of the provisions of this code nor shall such additions or alterations cause the existing building or structure to become unsafe. An unsafe condition shall be deemed to have been created if an addition or alteration will cause the existing building or structure to become structurally unsafe or overloaded; will not provide adequate access in compliance with the provisions of this code or will obstruct existing exits or access; will create a fire hazard; will reduce required fire resistance or will otherwise create conditions dangerous to human life.

101.6 Maintenance. All buildings, structures, landscape materials, vegetation, defensible space or other devices or safeguards required by this code shall be maintained in conformance to the code edition under which installed. The owner or the owner’s designated agent shall be responsible for the maintenance of buildings, structures, landscape materials and vegetation.

SECTION 102 AUTHORITY OF THE CODE OFFICIAL

102.1 Powers and duties of the code official. The code official is hereby authorized to administer and enforce this code, or designated sections thereof, and all ordinances of the jurisdiction pertaining to designated wildland-urban interface areas. For such purposes, the code official shall have the powers of a law enforcement officer.

102.2 Interpretations, rules and regulations. The code official shall have the power to render interpretations of this code and to adopt and enforce rules and supplemental regulations to clarify the application of its provisions. Such interpretations, rules and regulations shall be in conformance to the intent and purpose of this code.

A copy of such rules and regulations shall be filed with the clerk of the jurisdiction and shall be in effect immediately thereafter. Additional copies shall be available for distribution to the public.

102.3 Liability of the code official. The code official charged with the enforcement of this code, acting in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered personally liable for damages that may accrue to persons or property as a result of an act or by reason of an act or omission in the discharge of such duties. A suit brought against the code official or employee because of such act or omission performed by the code official or employee in the enforcement of any provision of such codes or other pertinent laws or ordinances implemented through the enforcement of this code or enforced by the code enforcement agency shall be defended by this jurisdiction until final termination of such proceedings, and any judgment resulting therefrom shall be assumed by this jurisdiction. The code enforcement agency or its parent jurisdiction shall not be held as assuming any liability by reason of the inspections authorized by this code or any permits or certificates issued under this code.

102.4 Other agencies. When requested to do so by the code official, other officials of this jurisdiction shall assist and cooperate with the code official in the discharge of the duties required by this code.

SECTION 103 COMPLIANCE ALTERNATIVES

103.1 Practical difficulties. When there are practical difficulties involved in carrying out the provisions of this code, the code official is authorized to grant modifications for individual cases on application in writing by the owner or a duly authorized representative. The code official shall first find that a special individual reason makes enforcement of the strict letter of this code impractical, the modification is in conformance to the intent and purpose of this code, and the modification does not lessen any fire protection requirements or any degree of structural integrity. The details of any action granting modifications shall be recorded and entered into the files of the code enforcement agency.

If the code official determines that difficult terrain, danger of erosion or other unusual circumstances make strict compliance with the vegetation control provisions of the code detrimental to safety or impractical, enforcement thereof may be suspended, provided that reasonable alternative measures are taken.

103.2 Technical assistance. To determine the acceptability of technologies, processes, products, facilities, materials and uses attending the design, operation or use of a building or premises subject to the inspection of the code official, the code official is authorized to require the owner or the person in possession or control of the building or premises to provide, without charge to the jurisdiction, a technical opinion and report. The opinion and report shall be prepared by a qualified engineer, specialist, laboratory or fire safety specialty organization acceptable to the code official and the owner and shall analyze the fire safety of the design, operation or use of the building or premises, the facilities and appurtenances situated thereon and fuel management for purposes of establishing fire hazard severity to recommend necessary changes.

103.3 Alternative materials or methods. The code official, in concurrence with approval from the building official and fire chief, is authorized to approve alternative materials or methods, provided that the code official finds that the proposed design, use or operation satisfactorily complies with the intent of this code and that the alternative is, for the purpose intended, at least equivalent to the level of quality, strength, effectiveness, fire resistance, durability and safety prescribed by this code. Approvals under the authority herein contained shall be subject to the approval of the building official whenever the alternate material or method involves matters regulated by the International Building Code.

The code official shall require that sufficient evidence or proof be submitted to substantiate any claims that may be made regarding its use. The details of any action granting

approval of an alternate shall be recorded and entered in the files of the code enforcement agency.

SECTION 104 APPEALS

104.1 General. To determine the suitability of alternative materials and methods and to provide for reasonable interpretations of the provisions of this code, there shall be and hereby is created a board of appeals consisting of five members who are qualified by experience and training to pass judgment on pertinent matters. The code official, building official and fire chief shall be ex officio members, and the code official shall act as secretary of the board. The board of appeals shall be appointed by the legislative body and shall hold office at their discretion. The board shall adopt reasonable rules and regulations for conducting its investigations and shall render decisions and findings in writing to the code official, with a duplicate copy to the applicant.

104.2 Limitations of authority. The board of appeals shall not have authority relative to interpretation of the administrative provisions of this code and shall not have authority to waive requirements of this code.

SECTION 105 PERMITS

105.1 General. When not otherwise provided in the requirements of the building or fire code, permits are required in accordance with Section 105.

105.2 Permits required. Unless otherwise exempted, no building or structure regulated by this code shall be erected, constructed, altered, repaired, moved, removed, converted, demolished, or changed in use or occupancy unless a separate permit for each building or structure has first been obtained from the code official.

When required by the code official, a permit shall be obtained for the following activities, operations, practices or functions within an wildland-urban interface area:

1. Automobile wrecking yard.
2. Candles and open flames in assembly areas.
3. Explosives or blasting agents.
4. Fireworks.
5. Flammable or combustible liquids.
6. Hazardous materials.
7. Liquefied petroleum gases.
8. Lumberyards.
9. Motor vehicle fuel-dispensing stations.
10. Open burning.
11. Pyrotechnical special effects material.
12. Tents, canopies and temporary membrane structures.

13. Tire storage.
14. Welding and cutting operations.
15. Other activities as determined by the code official.

105.3 Work exempt from permit. Unless otherwise provided in the requirements of the International Building Code or International Fire Code, a permit shall not be required for the following:

1. One-story detached accessory buildings used as tool and storage sheds, playhouses and similar uses, provided the floor area does not exceed 120 square feet (11.15 m²) and the structure is located more than 50 feet (15 240 mm) from the nearest adjacent structure.
2. Fences not over 6 feet (1829 mm) high. Exemption from the permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this jurisdiction.

The code official is authorized to stipulate conditions for permits. Permits shall not be issued when public safety would be at risk, as determined by the code official.

105.4 Permit application. To obtain a permit, the applicant shall first file an application therefor in writing on a form furnished by the code enforcement agency for that purpose. Every such application shall:

1. Identify and describe the work, activity, operation, practice or function to be covered by the permit for which application is made.
2. Describe the land on which the proposed work, activity, operation, practice or function is to be done by legal description, street address or similar description that will readily identify and definitely locate the proposed building, work, activity, operation, practice or function.
3. Indicate the use or occupancy for which the proposed work, activity, operation, practice or function is intended.
4. Be accompanied by plans, diagrams, computation and specifications and other data as required in Section 106 of this code.
5. State the valuation of any new building or structure or any addition, remodeling or alteration to an existing building.
6. Be signed by the applicant or the applicant's authorized agent.
7. Give such other data and information as may be required by the code official.

105.5 Permit approval. Before a permit is issued, the code official, or an authorized representative, shall review and approve all permitted uses, occupancies or structures. Where laws or regulations are enforceable by other agencies or

departments, a joint approval shall be obtained from all agencies or departments concerned.

105.6 Permit issuance. The application, plans, specifications and other data filed by an applicant for a permit shall be reviewed by the code official. If the code official finds that the work described in an application for a permit and the plan, specifications and other data filed therewith conform to the requirements of this code, the code official is allowed to issue a permit to the applicant.

When the code official issues the permit, the code official shall endorse in writing or stamp the plans and specifications APPROVED. Such approved plans and specifications shall not be changed, modified or altered without authorization from the code official, and all work regulated by this code shall be done in accordance with the approved plans.

105.7 Validity of permit. The issuance or granting of a permit or approval of plans, specifications and computations shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. Permits presuming to give authority to violate or conceal the provisions of this code or other ordinances of the jurisdiction shall not be valid.

105.8 Expiration. Every permit issued by the code official under the provisions of this code shall expire by limitation and become null and void if the building, use or work authorized by such permit is not commenced within 180 days from the date of such permit, or if the building, use or work authorized by such permit is suspended or abandoned at any time after the work is commenced for a period of 180 days.

Any permittee holding an unexpired permit may apply for an extension of the time within which work may commence under that permit when the permittee is unable to commence work within the time required by this section for good and satisfactory reasons. The code official may extend the time for action by the permittee for a period not exceeding 180 days on written request by the permittee showing that circumstances beyond the control of the permittee have prevented action from being taken. No permit shall be extended more than once.

105.9 Retention of permits. Permits shall at all times be kept on the premises designated therein and shall at all times be subject to inspection by the code official or other authorized representative.

105.10 Revocation of permits. Permits issued under this code may be suspended or revoked when it is determined by the code official that:

1. It is used by a person other than the person to whom the permit was issued.
2. It is used for a location other than that for which the permit was issued.
3. Any of the conditions or limitations set forth in the permit have been violated.

4. The permittee fails, refuses or neglects to comply with any order or notice duly served on him under the provisions of this code within the time provided therein.
5. There has been any false statement or misrepresentation as to material fact in the application or plans on which the permit or application was made.
6. When the permit is issued in error or in violation of any other ordinance, regulations or provisions of this code.

The code official is allowed to, in writing, suspend or revoke a permit issued under the provisions of this code whenever the permit is issued in error or on the basis of incorrect information supplied, or in violation of any ordinance or regulation or any of the provisions of this code.

SECTION 106 PLANS AND SPECIFICATIONS

106.1 General. Plans, engineering calculations, diagrams and other data shall be submitted in at least two sets with each application for a permit. When such plans are not prepared by an architect or engineer, the code official may require the applicant submitting such plans or other data to demonstrate that state law does not require that the plans be prepared by a licensed architect or engineer. The code official may require plans, computations and specifications to be prepared and designed by an architect or engineer licensed by the state to practice as such even if not required by state law.

Exception: Submission of plans, calculations, construction inspection requirements and other data, if it is found that the nature of the work applied for is such that reviewing of plans is not necessary to obtain compliance with this code.

106.2 Information on plans and specifications. Plans and specifications shall be drawn to scale upon substantial paper or cloth and shall be of sufficient clarity to indicate the location, nature and extent of the work proposed, and show in detail that it will conform to the provisions of this code and all relevant laws, ordinances, rules and regulations.

106.3 Site plan. In addition to the requirements for plans in the International Building Code, site plans shall include topography, width and percent of grade of access roads, landscape and vegetation details, locations of structures or building envelopes, existing or proposed overhead utilities, occupancy classification of buildings, types of ignition-resistant construction of buildings, structures and their appendages, roof classification of buildings, and site water supply systems.

106.4 Vegetation management plans. When utilized by the permit applicant pursuant to Section 502, vegetation management plans shall be prepared and shall be submitted to the code official for review and approval as part of the plans required for a permit. See Appendix B.

106.5 Fire protection plan. When required by the code official pursuant to Section 405, a fire protection plan shall be prepared and shall be submitted to the code official for review and approved as a part of the plans required for a permit.

106.6 Other data and substantiation. When required by the code official, the plans and specifications shall include classification of fuel loading, fuel model light, medium or heavy, and substantiating data to verify classification of fire-resistive vegetation.

106.7 Vicinity plan. In addition to the requirements for site plans, plans shall include details regarding the vicinity within 300 feet (91 440 mm) of property lines, including other structures, slope, vegetation, fuel breaks, water supply systems and access roads.

106.8 Retention of plans. One set of approved plans, specifications and computations shall be retained by the code official for a period of not less than 90 days from date of completion of the work covered therein; and one set of approved plans and specifications shall be returned to the applicant, and said set shall be kept on the site of the building, use or work at all times during which the work authorized thereby is in progress.

SECTION 107 INSPECTION AND ENFORCEMENT

107.1 Inspection.

107.1.1 General. All construction or work for which a permit is required by this code shall be subject to inspection by the code official and all such construction or work shall remain accessible and exposed for inspection purposes until approved by the code official.

It shall be the duty of the permit applicant to cause the work to remain accessible and exposed for inspection purposes. Neither the code official nor the jurisdiction shall be liable for expense entailed in the removal or replacement of any material required to allow inspection.

Approval as a result of an inspection shall not be construed to be an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction. Inspections presuming to give authority to violate or cancel the provisions of this code or of other ordinances of the jurisdiction shall not be valid.

A survey of the lot may be required by the code official to verify that the mitigation features are provided and the building or structure is located in accordance with the approved plans.

107.1.2 Authority to inspect. The code official shall inspect, as often as necessary, buildings and premises, including such other hazards or appliances designated by the code official for the purpose of ascertaining and causing to be corrected any conditions that could reasonably be expected to cause fire or contribute to its spread, or any violation of the purpose of this code and of any other law or standard affecting fire safety.

107.1.3 Reinspections. To determine compliance with this code, the code official may cause a structure to be reinspected. A fee may be assessed for each inspection or reinspection when such portion of work for which inspection is called is not complete or when corrections called for are not made.

Reinspection fees may be assessed when the approved plans are not readily available to the inspector, for failure to provide access on the date for which inspection is requested or for deviating from plans requiring the approval of the code official.

To obtain a reinspection, the applicant shall pay the reinspection fee as set forth in the fee schedule adopted by the jurisdiction. When reinspection fees have been assessed, no additional inspection of the work will be performed until the required fees have been paid.

107.2 Enforcement.

107.2.1 Authorization to issue corrective orders and notices. When the code official finds any building or premises that are in violation of this code, the code official is authorized to issue corrective orders and notices.

107.2.2 Service of orders and notices. Orders and notices authorized or required by this code shall be given or served on the owner, operator, occupant or other person responsible for the condition or violation either by verbal notification, personal service, or delivering the same to, and leaving it with, a person of suitable age and discretion on the premises; or, if no such person is found on the premises, by affixing a copy thereof in a conspicuous place on the door to the entrance of said premises and by mailing a copy thereof to such person by registered or certified mail to the person's last known address.

Orders or notices that are given verbally shall be confirmed by service in writing as herein provided.

107.3 Right of entry. Whenever necessary to make an inspection to enforce any of the provisions of this code, or whenever the code official has reasonable cause to believe that there exists in any building or on any premises any condition that makes such building or premises unsafe, the code official is authorized to enter such building or premises at all reasonable times to inspect the same or to perform any duty authorized by this code, provided that if such building or premises is occupied, the code official shall first present proper credentials and request entry; and if such building or premises is unoccupied, the code official shall first make a reasonable effort to locate the owner or other persons having charge or control of the building or premises and request entry.

If such entry is refused, the code official shall have recourse to every remedy provided by law to secure entry. Owners, occupants or any other persons having charge, care or control of any building or premises, shall, after proper request is made as herein provided, promptly permit entry therein by the code official for the purpose of inspection and examination pursuant to this code.

107.4 Compliance with orders and notices.

107.4.1 General compliance. Orders and notices issued or served as provided by this code shall be complied with by the owner, operator, occupant or other person responsible for the condition or violation to which the corrective order or notice pertains.

If the building or premises is not occupied, such corrective orders or notices shall be complied with by the owner.

107.4.2 Compliance with tags. A building or premises shall not be used when in violation of this code as noted on a tag affixed in accordance with Section 107.4.1.

107.4.3 Removal and destruction of signs and tags. A sign or tag posted or affixed by the code official shall not be mutilated, destroyed or removed without authorization by the code official.

107.4.4 Citations. Persons operating or maintaining an occupancy, premises or vehicle subject to this code who allow a hazard to exist or fail to take immediate action to abate a hazard on such occupancy, premises or vehicle when ordered or notified to do so by the code official shall be guilty of a misdemeanor.

107.4.5 Unsafe conditions. Buildings, structures or premises that constitute a fire hazard or are otherwise dangerous to human life, or which in relation to existing use constitute a hazard to safety or health or public welfare, by reason of inadequate maintenance, dilapidation, obsolescence, fire hazard, disaster damage or abandonment as specified in this code or any other ordinance, are unsafe conditions. Unsafe buildings or structures shall not be used. Unsafe buildings are hereby declared to be public nuisances and shall be abated by repair, rehabilitation, demolition or removal, pursuant to applicable state and local laws and codes.

SECTION 108 CERTIFICATE OF COMPLETION

108.1 General. No building, structure or premises shall be used or occupied, and no change in the existing occupancy classification of a building, structure, premise or portion thereof shall be made until the code official has issued a certificate of completion therefor as provided herein. The certificate of occupancy shall not be issued until the certificate of completion indicating that the project is in compliance with this code has been issued by the code official.

108.2 Certificate of occupancy. Issuance of a certificate of occupancy shall not be construed as an approval of a violation of the provisions of this code or of other pertinent laws and ordinances of the jurisdiction. Certificates presuming to give authority to violate or cancel the provisions of this code or other laws or ordinances of the jurisdiction shall not be valid.

CHAPTER 2 DEFINITIONS

SECTION 201 GENERAL

201.1 Scope. Unless otherwise expressly stated, the following words and terms shall, for the purposes of this code, have the meanings shown in this chapter.

201.2 Interchangeability. Words stated in the present tense include the future; words stated in the masculine gender include the feminine and neuter, and the singular number includes the plural and the plural the singular.

201.3 Terms defined in other codes. Where terms are not defined in this code and are defined in other International Codes, such terms shall have the meanings ascribed to them as in those codes.

201.4 Terms not defined. Where terms are not defined through the methods authorized by this section, such terms shall have their ordinarily accepted meanings such as the context implies.

SECTION 202 DEFINITIONS

ACCESSORY STRUCTURE. A building or structure used to shelter or support any material, equipment, chattel or occupancy other than a habitable building.

APPROVED. Approval by the code official as the result of review, investigation or tests conducted by the code official or by reason of accepted principles or tests by national authorities, or technical or scientific organizations.

BRUSH, TALL. Arbor-like varieties of brush species and/or short varieties of broad-leaf trees that grow in compact groups or clumps. These groups or clumps reach heights of 4 to 20 feet. In Utah, this includes primary varieties of oak, maples, chokecherry, serviceberry, and mahogany, but may also include other species.

BRUSH, SHORT. Low growing species that reach heights of 1 to 3 feet. Sagebrush, snowberry, and rabbit brush are some varieties.

BUILDING. Any structure used or intended for supporting or sheltering any use or occupancy.

BUILDING OFFICIAL. The officer or other designated authority charged with the administration and enforcement of the International Building Code, or the building official's duly authorized representative.

CERTIFICATE OF COMPLETION. Written documentation that the project or work for which a permit was issued has been completed in conformance with requirements of this code.

CODE OFFICIAL. The official designated by the jurisdiction to interpret and enforce this code, or the code official's authorized representative.

DEFENSIBLE SPACE. An area either natural or man-made, where material capable of allowing a fire to spread unchecked has been treated, cleared or modified to slow the rate and intensity of an advancing wildfire and to create an area for fire suppression operations to occur.

DRIVEWAY. A vehicular ingress and egress route that serves no more than two buildings or structures, not including accessory structures, or more than five dwelling units.

FIRE AREA. The floor area, in square feet (square meters), used to determine the adequate water supply.

FIRE CHIEF. The chief officer or the chief officer's authorized representative of the fire department serving the jurisdiction.

FIRE PROTECTION PLAN. A document prepared for a specific project or development proposed for the wildland-urban interface area. It describes ways to minimize and mitigate the fire problems created by the project or development, with the purpose of reducing impact on the community's fire protection delivery system.

FIRE WEATHER. Weather conditions favorable to the ignition and rapid spread of fire. In wildfires, this generally includes high temperatures combined with strong winds and low humidity.

FIRE-RESISTANCE-RATED CONSTRUCTION. The use of materials and systems in the design and construction of a building or structure to safeguard against the spread of fire within a building or structure and the spread of fire to or from buildings or structures to the wildland-urban interface area.

FLAME SPREAD RATING. As used herein refers to rating obtained according to tests conducted as specified by a nationally recognized standard.

FUEL BREAK. An area, strategically located for fighting anticipated fires, where the native vegetation has been permanently modified or replaced so that fires burning into it can be more easily controlled. Fuel breaks divide fire-prone areas into smaller areas for easier fire control and to provide access for fire fighting.

FUEL, HEAVY. Vegetation consisting of round wood 3 inches (76 mm) or larger in diameter. The amount of fuel (vegetation) would be 6 tons per acre or greater.

FUEL, LIGHT. Vegetation consisting of round wood less than ¼ inch (6.4 mm) in diameter. The amount of fuel (vegetation) would be ½ ton to 2 tons per acre.

FUEL, MEDIUM. Vegetation consisting of round wood ¼ to 3 inches (6.4 mm to 76 mm) in diameter. The amount of fuel (vegetation) would be 2 to 6 tons per acre.

FUEL MODIFICATION. A method of modifying fuel load by reducing the amount of nonfire-resistive vegetation or altering the type of vegetation to reduce the fuel load.

FUEL MOSAIC. A fuel modification system that provides for the creation of islands and irregular boundaries to reduce the visual and ecological impact of fuel modification.

FUEL-LOADING. The oven-dry weight of fuels in a given area, usually expressed in pounds per acre (lb/a) (kg/ha). Fuel loading may be referenced to fuel size or timelag categories, and may include surface fuels or total fuels.

GREEN BELT. A fuel break designated for a use other than fire protection.

HAZARDOUS MATERIALS. As defined in the International Fire Code.

HEAVY TIMBER CONSTRUCTION. As described in the International Building Code.

LEGISLATIVE BODY. The governing body of the political jurisdiction administering this code.

LOG WALL CONSTRUCTION. A type of construction in which exterior walls are constructed of solid wood members and where the smallest horizontal dimension of each solid wood member is at least 6 inches (152 mm).

MULTILAYERED GLAZED PANELS. Window or door assemblies that consist of two or more independently glazed panels installed parallel to each other, having a sealed air gap in between, within a frame designed to fill completely the window or door opening in which the assembly is intended to be installed.

NONCOMBUSTIBLE. As applied to building construction material means a material that, in the form in which it is used, is either one of the following:

1. Material of which no part will ignite and burn when subjected to fire. Any material conforming to ASTM E 136 shall be considered noncombustible within the meaning of this section.
2. Material having a structural base of noncombustible material as defined in Item 1 above, with a surfacing material not over 1/8 inch (3.2 mm) thick, which has a flame spread rating of 50 or less. Flame spread rating as used herein refers to rating obtained according to tests conducted as specified in ASTM E 84.

“Noncombustible” does not apply to surface finish materials. Material required to be noncombustible for reduced clearances to flues, heating appliances or other sources of high temperature shall refer to material conforming to Item 1. No material shall be classed as noncombustible that is subject to increase in combustibility or flame spread rating, beyond the limits herein established, through the effects of age, moisture or other atmospheric condition.

NONCOMBUSTIBLE ROOF COVERING. One of the following:

1. Cement shingles or sheets.

2. Exposed concrete slab roof.
3. Ferrous or copper shingles or sheets.
4. Slate shingles.
5. Clay or concrete roofing tile.
6. Approved roof covering of noncombustible material.

SLOPE. The variation of terrain from the horizontal; the number of feet (meters) rise or fall per 100 feet (30 480 mm) measured horizontally, expressed as a percentage.

STRUCTURE. That which is built or constructed, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some manner.

TREE CROWN. The primary and secondary branches growing out from the main stem, together with twigs and foliage.

UNENCLOSED ACCESSORY STRUCTURE. An accessory structure without a complete exterior wall system enclosing the area under roof or floor above.

WILDFIRE. An uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures.

WILDLAND. An area in which development is essentially nonexistent, except for roads, railroads, power lines and similar facilities.

WILDLAND-URBAN INTERFACE. The line, area, or zone where structures or other human development (including critical infrastructure that if destroyed would result in hardship to communities) meet or intermingle with undeveloped wildland or vegetative fuel.

CHAPTER 3

WILDLAND-URBAN INTERFACE AREAS

SECTION 301

WILDLAND-URBAN INTERFACE AREA DESIGNATIONS

301.1 Declaration. The legislative body shall declare the wildland-urban interface areas within the jurisdiction. The wildland-urban interface areas shall be based on the maps created in accordance with section 302.

301.2 Mapping. In cooperation, the code official and the Division of Forestry, Fire and State Lands (FFSL) wildfire representative, will create or review Wildland-Urban Interface Area maps, to be recorded and filed with the clerk of the jurisdiction. These areas shall become effective immediately thereafter.

301.3 Review of wildland-urban interface areas. The code official and the FFSL wildfire representative shall reevaluate and recommend modification to the wildland-urban interface areas in accordance with Section 302.1 on a three-year basis or more frequently as deemed necessary by the legislative body.

CHAPTER 4

WILDLAND-URBAN INTERFACE AREA REQUIREMENTS

SECTION 401 GENERAL

401.1 Scope. Wildland-urban interface areas shall be provided with emergency vehicle access and water supply in accordance with this chapter.

401.2 Objective. The objective of this chapter is to establish the minimum requirements for emergency vehicle access and water supply for buildings and structures located in the wildland-urban interface areas.

401.3 General safety precautions. General safety precautions shall be in accordance with this chapter. See also Appendix A.

SECTION 402 APPLICABILITY

402.1 Subdivisions. Subdivisions shall comply with Sections 402.1.1 and 402.1.2.

402.1.1 Access. New subdivisions, as determined by this jurisdiction, shall be provided with fire apparatus access roads in accordance with the International Fire Code and access requirements in accordance with Section 403.

402.1.2 Water supply. New subdivisions as determined by this jurisdiction shall be provided with water supply in accordance with Section 404.

402.2 Individual structures. Individual structures shall comply with Sections 402.2.1 and 402.2.2.

402.2.1 Access.

Individual structures hereafter constructed or relocated into or within wildland-urban interface areas shall be provided with fire apparatus access in accordance with the International Fire Code and driveways in accordance with Section 403.2. Marking of fire protection equipment shall be provided in accordance with Section 403.5 and address markers shall be provided in accordance with Section 403.6.

402.2.2 Water supply.

Individual structures hereafter constructed or relocated into or within wildland-urban interface areas shall be provided with a conforming water supply in accordance with Section 404.

Exceptions:

1. Structures constructed to meet the requirements for the class of ignition-resistant construction specified in Table 503.1 for a nonconforming water supply.
2. Buildings containing only private garages, carports, sheds and agricultural buildings with a floor area of not more than 600 square feet (56 m²).

402.3 Existing conditions. Existing buildings shall be provided with address markers in accordance with Section 403.6. Existing roads and fire protection equipment shall be provided with markings in accordance with Sections 403.4 and 403.5, respectively.

SECTION 403 ACCESS

403.1 Restricted access. Where emergency vehicle access is restricted because of secured access roads or driveways or where immediate access is necessary for life-saving or fire-fighting purposes, the code official is authorized to require a key box to be installed in an accessible location. The key box shall be of a type approved by the code official and shall contain keys to gain necessary access as required by the code official.

403.2 Driveways. Driveways shall be provided when any portion of an exterior wall of the first story of a building is located more than 150 feet (45 720 mm) from a fire apparatus access road. Driveways shall provide a minimum unobstructed width of 20 feet (3658 mm) and a minimum unobstructed height of 13 feet 6 inches (4115 mm). Driveways in excess of 150 feet (45 720 mm) in length shall be provided with turnarounds.

A driveway shall not serve in excess of five dwelling units.

Driveway turnarounds shall have inside turning radii of not less than 30 feet (9144 mm) and outside turning radii of not less than 45 feet (13 716 mm). Driveways that connect with a road or roads at more than one point may be considered as having a turnaround if all changes of direction meet the radii requirements for driveway turnarounds.

Vehicle load limits shall be posted at both entrances to bridges on driveways and private roads. Design loads for bridges shall be established by the code official.

403.3 Fire apparatus access road. When required, fire apparatus access roads shall be all-weather roads with a minimum width of 20 feet (6096 mm) and a clear height of 13 feet 6 inches (4115 mm); shall be designed to accommodate the loads and turning radii for fire apparatus; and have a gradient negotiable by the specific fire apparatus normally used at that location within the jurisdiction. Dead-end roads in excess of 150 feet (45 720 mm) in length shall be provided with turnarounds as approved by the code official. An all-weather road surface shall be any surface material acceptable to the code official that would normally allow the passage of emergency service vehicles to protect structures and wildlands within the jurisdiction.

403.4 Marking of roads. Approved signs or other approved notices shall be provided and maintained for access roads and driveways to identify such roads and prohibit the obstruction thereof or both.

All road identification signs and supports shall be of noncombustible materials. Signs shall have minimum 4-inch-high (102 mm) reflective letters with ½ inch (12.7 mm) stroke on a contrasting 6-inch-high (152 mm) sign. Road identification signage shall be mounted at a height of 7 feet (2134 mm) from the road surface to the bottom of the sign.

403.5 Marking of fire protection equipment. Fire protection equipment and fire hydrants shall be clearly identified in a manner approved by the code official to prevent obstruction.

403.6 Address markers. All buildings shall have a permanently posted address, which shall be placed at each driveway entrance and be visible from both directions of travel along the road. In all cases, the address shall be posted at the beginning of construction and shall be maintained thereafter, and the address shall be visible and legible from the road on which the address is located.

Address signs along one-way roads shall be visible from both the intended direction of travel and the opposite direction.

Where multiple addresses are required at a single driveway, they shall be mounted on a single post, and additional signs shall be posted at locations where driveways divide.

Where a roadway provides access solely to a single commercial or industrial business, the address sign shall be placed at the nearest road intersection providing access to that site.

403.7 Grade. The gradient for fire apparatus access roads and driveways shall not exceed the maximum approved by the code official. It will be up to the code official to ascertain the standard based on local fire equipment. The grade shall not exceed 12 percent.

SECTION 404 WATER SUPPLY

404.1 General. When provided in order to qualify as a conforming water supply for the purpose of Table 503.1, an approved water source shall have an adequate water supply for the use of the fire protection service to protect buildings and structures from exterior fire sources or to suppress structure fires within the wildland-urban interface area of the jurisdiction in accordance with this section.

404.2 Water sources. The point at which a water source is available for use shall be located not more than 1,000 feet (305 m) from the building and be approved by the code official. The distance shall be measured along an unobstructed line of travel.

Water sources shall comply with the following:

1. Man-made water sources shall have a minimum usable water volume as determined by the adequate water supply needs in accordance with Section 404.5. This water source shall be equipped with an approved hydrant. The water level of the water source shall be maintained by rainfall, water pumped from a well, water hauled by a tanker, or by seasonal high water of a stream or river. The design, construction, location,

water level maintenance, access, and access maintenance of man-made water sources shall be approved by the code official.

2. Natural water sources shall have a minimum annual water level or flow sufficient to meet the adequate water supply needs in accordance with Section 404.5. This water level or flow shall not be rendered unusable because of freezing. This water source shall have an approved draft site with an approved hydrant. Adequate water flow and rights for access to the water source shall be ensured in a form acceptable to the code official.

404.3 Draft sites. Approved draft sites shall be provided at all natural water sources intended for use as fire protection for compliance with this code. The design, construction, location, access and access maintenance of draft sites shall be approved by the code official.

The pumper access point shall be either an emergency vehicle access area alongside a conforming access road or an approved driveway no longer than 150 feet (45 720 mm). Pumper access points and access driveways shall be designed and constructed in accordance with all codes and ordinances enforced by this jurisdiction. Pumper access points shall not require the pumper apparatus to obstruct a road or driveway.

404.4 Hydrants. All hydrants shall be designed and constructed in accordance with nationally recognized standards. The location and access shall be approved by the code official.

404.5 Adequate water supply. Adequate water supply shall be determined for purposes of initial attack and flame front control as follows:

1. One- and two-family dwellings. The required water supply for one- and two-family dwellings having a fire area that does not exceed 3,600 square feet (334 m²) shall be 1,000 gallons per minute (63.1 L/s) for a minimum duration of 30 minutes. The required water supply for one- and two-family dwellings having a fire area in excess of 3,600 square feet (334 m²) shall be 1,500 gallons per minute (95 L/s) for a minimum duration of two hours.

Exception: A reduction in required flow rate of 50 percent, as approved by the code official, is allowed when the building is provided with an approved automatic sprinkler system.

2. Buildings other than one- and two-family dwellings. The water supply required for buildings other than one- and two-family dwellings shall be as approved by the code official but shall not be less than 1,500 gallons per minute (95 L/s) for a duration of two hours.

Exception: A reduction in required flow rate of up to 75 percent, as approved by the code official, is allowed when the building is provided with an approved automatic sprinkler

system. The resulting water supply shall not be less than 1,500 gallons per minute (94.6 L/s).

404.6 Fire department. The water system required by this code can only be considered conforming for purposes of determining the level of ignition-resistant construction. (See Table 503.1)

404.7 Obstructions. Access to all water sources required by this code shall be unobstructed at all times. The code official shall not be deterred or hindered from gaining immediate access to water source equipment, fire protection equipment or hydrants.

404.8 Identification. Water sources, draft sites, hydrants and fire protection equipment shall be clearly identified in a manner approved by the code official to identify location and to prevent obstruction by parking and other obstructions.

404.9 Testing and maintenance. Water sources, draft sites, hydrants and other fire protection equipment required by this code shall be subject to periodic tests as required by the fire code official. The fire code official shall establish a periodic testing schedule. Costs are to be covered by the water provider. All such equipment installed under the provisions of this code shall be maintained in an operative condition at all times and shall be repaired or replaced where defective. Additions, repairs, alterations and servicing of such fire protection equipment and resources shall be in accordance with approved standards. Mains and appurtenances shall be installed in accordance with R309 Environmental Quality, Drinking Water Rules of the State of Utah and with standards as established by the Wasatch County and its special service districts.

404.10 Reliability. Water supply reliability shall comply with Sections 404.10.1 through 404.10.3.

404.10.1 Objective. The objective of this section is to increase the reliability of water supplies by reducing the exposure of vegetative fuels to electrically powered systems.

404.10.2 Clearance of fuel. Defensible space shall be provided around water tank structures, water supply pumps and pump houses in accordance with Section 603.

404.10.3 Standby power. Stationary water supply facilities within the wildland-urban interface area dependent on electrical power supplied by power grid to meet adequate water supply demands shall provide functional standby power systems in accordance with the current "National Electrical Code" to ensure that an uninterrupted water supply is maintained. The standby power source shall be capable of providing power for a minimum of two hours.

Exceptions:

1. When approved by the code official, a standby power supply is not required where the primary power service to the stationary water supply facility is underground or there is an onsite generator.

2. A standby power supply is not required where the stationary water supply facility serves no more than one single-family dwelling.

SECTION 405 FIRE PROTECTION PLAN

405.1 Purpose. The plan is to provide a basis to determine overall compliance with this code, for determination of Ignition Resistant Construction (IRC) (see Table 503.1) and for determining the need for alternative material and methods.

405.2 General. When required by the code official, a fire protection plan shall be prepared.

405.3 Content. The plan shall be based upon a site-specific wildfire risk assessment that includes considerations of location, topography, aspect, flammable vegetation, climatic conditions and fire history. The plan shall address water supply, access, building ignition and fire-resistance factors, fire protection systems and equipment, defensible space and vegetation management.

405.4 Cost. The cost of fire protection plan preparation and review shall be the responsibility of the applicant.

405.5 Plan retention. The fire protection plan shall be retained by the code official.

CHAPTER 5 SPECIAL BUILDING CONSTRUCTION REGULATIONS

SECTION 501 GENERAL

501.1 Scope. Buildings and structures shall be constructed in accordance with the International Building Code and this code.

Exceptions:

1. Accessory structures not exceeding 120 square feet (11 m²) in floor area when located at least 50 feet (15 240 mm) from buildings containing habitable spaces.
2. Agricultural buildings at least 50 feet (15 240 mm) from buildings containing habitable spaces.

501.2 Objective. The objective of this chapter is to establish minimum standards to locate, design and construct buildings and structures or portions thereof for the protection of life and property, to resist damage from wildfires, and to mitigate building and structure fires from spreading to wildland fuels. The minimum standards set forth in this chapter vary with the critical fire weather, slope and fuel type to provide increased protection, above the requirements set forth in the International Building Code, from the various levels of hazards.

SECTION 502 FIRE HAZARD SEVERITY

502.1 General. The fire hazard severity of building sites for all buildings hereafter constructed, modified or relocated into wildland-urban interface areas shall be established in accordance with Appendix C.

502.2 Fire hazard severity reduction. The fire hazard severity is allowed to be reduced by implementing a vegetation management plan in accordance with Appendix B.

SECTION 503 IGNITION-RESISTANT CONSTRUCTION

503.1 General. Buildings and structures hereafter constructed, modified or relocated into or within wildland-urban interface areas shall meet the construction requirements in accordance with Table 503.1. Class 1, Class 2 or Class 3 ignition-resistant construction shall be in accordance with Sections 504, 505 and 506, respectively.

SECTION 504 CLASS 1 IGNITION-RESISTANT CONSTRUCTION

504.1 General. Class 1 ignition-resistant construction shall be in accordance with Sections 504.2 through 504.11

504.2 Roof covering. Roofs shall have a Class A roof covering or a Class A roof assembly. For roof coverings where the profile allows a space between the roof covering and roof decking, the space at the eave ends shall be firestopped to preclude entry of flames or embers.

504.3 Protection of eaves. Eaves and soffits shall be protected on the exposed underside by materials approved for a minimum of 1-hour fire-resistance-rated construction,

**TABLE 503.1
IGNITION-RESISTANT CONSTRUCTION ^a**

DEFENSIBLE SPACE ^c	FIRE HAZARD SEVERITY					
	Moderate Hazard		High Hazard		Extreme Hazard	
	Water Supply ^b		Water Supply ^b		Water Supply ^b	
	Conforming ^d	Nonconforming ^e	Conforming ^d	Nonconforming ^e	Conforming ^d	Nonconforming ^e
Nonconforming	IR 2	IR 1	IR 1	IR 1 N.C.	IR 1 N.C.	Not Permitted
Conforming	IR 3	IR 2	IR 2	IR 1	IR 1	IR 1 N.C.
1.5 x Conforming	Not Required	IR 3	IR 3	IR 2	IR 2	IR 1

- a. Access shall be in accordance with Section 402.
- b. Subdivisions shall have a conforming water supply in accordance with Section 402.1.
IR 1 = Ignition-resistant construction in accordance with Section 504
IR 2 = Ignition-resistant construction in accordance with Section 505.
IR 3 = Ignition-resistant construction in accordance with Section 506.
N.C. = Exterior walls shall have a fire-resistance rating of not less than 1-hour and the exterior surfaces of such walls shall be noncombustible. Usage of log wall construction is allowed.
- c. Conformance based on Section 603.
- d. Conformance based on Section 404.
- e. A nonconforming water supply is any water system or source that does not comply with Section 404, including situations where there is no water supply for structure protection or fire suppression.

2-inch (51 mm) nominal dimension lumber, or 1-inch (25.4 mm) nominal fire-retardant-treated lumber or 3/4-inch (19 mm) nominal fire-retardant-treated plywood, identified for exterior use and meeting the requirements of Section 2303.2 of the International Building Code. Fascias are required and shall be protected on the backside by materials approved for a minimum of 1-hour fire-resistance-rated construction or 2-inch (51 mm) nominal dimension lumber.

504.4 Gutters and downspouts. Gutters and downspouts shall be constructed of noncombustible material.

504.5 Exterior walls. Exterior walls of buildings or structures shall be constructed with materials approved for a minimum of 1-hour fire-resistance-rated construction on the exterior side or constructed with approved noncombustible materials.

Exception: Heavy timber or log wall construction.

Such material shall extend from the top of the foundation to the underside of the roof sheathing.

504.6 Unenclosed underfloor protection. Buildings or structures shall have all underfloor areas enclosed to the ground with exterior walls in accordance with Section 504.5.

Exception: Complete enclosure may be omitted where the underside of all exposed floors and all exposed structural columns, beams and supporting walls are protected as required for exterior 1-hour fire-resistance-rated construction or heavy timber construction.

504.7 Appendages and projections. Unenclosed accessory structures attached to buildings with habitable spaces and projections, such as decks, shall be a minimum of 1-hour fire-resistance-rated construction, heavy timber construction or constructed of approved noncombustible materials or fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the International Building Code.

When the attached structure is located and constructed so that the structure or any portion thereof projects over a descending slope surface greater than 10 percent, the area below the structure shall have all underfloor areas enclosed to within 6 inches (152 mm) of the ground, with exterior wall construction in accordance with Section 504.5.

504.8 Exterior glazing. Exterior windows, window walls and glazed doors, windows within exterior doors, and skylights shall be tempered glass, multilayered glazed panels, glass block or have a fire protection rating of not less than 20 minutes.

504.9 Exterior doors. Exterior doors shall be approved noncombustible construction, solid core wood not less than 1 3/4 inches thick (45 mm), or have a fire protection rating of not less than 20 minutes. Windows within doors and glazed doors shall be in accordance with Section 504.8.

Exception: Vehicle access doors.

504.10 Vents. Attic ventilation openings, foundation or underfloor vents, or other ventilation openings in vertical exterior walls and vents through roofs shall not exceed 144 square inches (0.0929 m²) each. Such vents shall be covered

with noncombustible corrosion-resistant mesh with openings not to exceed 1/4 inch (6.4 mm), or shall be designed and approved to prevent flame or ember penetration into the structure.

Attic ventilation openings shall not be located in soffits, in eave overhangs, between rafters at eaves, or in other overhang areas. Gable end and dormer vents shall be located at least 10 feet (3048 mm) from property lines. Underfloor ventilation openings shall be located as close to grade as practical.

504.11 Detached accessory structures. Detached accessory structures located less than 50 feet (15 240 mm) from a building containing habitable space shall have exterior walls constructed with materials approved for a minimum of 1-hour fire-resistance-rated construction, heavy timber, log wall construction or constructed with approved noncombustible materials on the exterior side.

When the detached structure is located and constructed so that the structure or any portion thereof projects over a descending slope surface greater than 10 percent, the area below the structure shall have all underfloor areas enclosed to within 6 inches (152 mm) of the ground, with exterior wall construction in accordance with Section 504.5 or underfloor protection in accordance with Section 504.6.

Exception: The enclosure may be omitted where the underside of all exposed floors and all exposed structural columns, beams and supporting walls are protected as required for exterior 1-hour fire-resistance-rated construction or heavy-timber construction.

See Section 504.2 for roof requirements.

SECTION 505 CLASS 2 IGNITION-RESISTANT CONSTRUCTION

505.1 General. Class 2 ignition-resistant construction shall be in accordance with Sections 505.2 through 505.11.

505.2 Roof covering. Roofs shall have at least a Class A roof covering, Class B roof assembly or an approved noncombustible roof covering. For roof coverings where the profile allows a space between the roof covering and roof decking, the space at the eave ends shall be firestopped to preclude entry of flames or embers.

505.3 Protection of eaves. Combustible eaves, fascias and soffits shall be enclosed with solid materials with a minimum thickness of 3/4 inch (19 mm). No exposed rafter tails shall be permitted unless constructed of heavy timber materials.

505.4 Gutters and downspouts. Gutters and downspouts shall be constructed of noncombustible material.

505.5 Exterior walls. Exterior walls of buildings or structures shall be constructed with materials approved for a minimum of 1-hour fire-resistance-rated construction on the exterior side or constructed with approved noncombustible materials.

Exception: Heavy timber or log wall construction.

Such material shall extend from the top of the foundation to the underside of the roof sheathing.

505.6 Unenclosed underfloor protection. Buildings or structures shall have all underfloor areas enclosed to the ground, with exterior walls in accordance with Section 505.5.

Exception: Complete enclosure may be omitted where the underside of all exposed floors and all exposed structural columns, beams and supporting walls are protected as required for exterior 1-hour fire-resistance-rated construction or heavy timber construction.

505.7 Appendages and projections. Unenclosed accessory structures attached to buildings with habitable spaces and projections, such as decks, shall be a minimum of 1-hour fire-resistance-rated construction, heavy timber construction or constructed of approved noncombustible materials or fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the International Building Code.

When the attached structure is located and constructed so that the structure or any portion thereof projects over a descending slope surface greater than 10 percent, the area below the structure shall have all underfloor areas enclosed to within 6 inches (152 mm) of the ground, with exterior wall construction in accordance with Section 505.5.

505.8 Exterior glazing. Exterior windows, window walls and glazed doors, windows within exterior doors, and skylights shall be tempered glass, multilayered glazed panels, glass block or have a fire-protection rating of not less than 20 minutes.

505.9 Exterior doors. Exterior doors shall be approved noncombustible construction, solid core wood not less than 1¾-inches thick (45 mm), or have a fire protection rating of not less than 20 minutes. Windows within doors and glazed doors shall be in accordance with Section 505.8.

Exception: Vehicle access doors.

505.10 Vents. Attic ventilation openings, foundation or underfloor vents or other ventilation openings in vertical exterior walls and vents through roofs shall not exceed 144 square inches (0.0929 m²) each. Such vents shall be covered with noncombustible corrosion-resistant mesh with openings not to exceed ¼ inch (6.4 mm) or shall be designed and approved to prevent flame or ember penetration into the structure.

Attic ventilation openings shall not be located in soffits, in eave overhangs, between rafters at eaves, or in other overhang areas. Gable end and dormer vents shall be located at least 10 feet (3048 mm) from property lines. Underfloor ventilation openings shall be located as close to grade as practical.

505.11 Detached accessory structures. Detached accessory structures located less than 50 feet (15 240 mm) from a building containing habitable space shall have exterior walls constructed with materials approved for a minimum of 1-hour fire-resistance-rated construction, heavy

timber, log wall construction, or constructed with approved noncombustible material on the exterior side.

When the detached structure is located and constructed so that the structure or any portion thereof projects over a descending slope surface greater than 10 percent, the area below the structure shall have all underfloor areas enclosed to within 6 inches (152 mm) of the ground, with exterior wall construction in accordance with Section 505.5 or underfloor protection in accordance with Section 505.6.

Exception: The enclosure may be omitted where the underside of all exposed floors and all exposed structural columns, beams and supporting walls are protected as required for exterior 1-hour fire-resistance-rated construction or heavy-timber construction.

See Section 505.2 for roof requirements.

SECTION 506 CLASS 3 IGNITION-RESISTANT CONSTRUCTION

506.1 General. Class 3 ignition-resistant construction shall be in accordance with Sections 506.2 through 506.4.

506.2 Roof covering. Roofs shall have at least a Class A roof covering, Class C roof assembly or an approved noncombustible roof covering. For roof coverings where the profile allows a space between the roof covering and roof decking, the space at the eave ends shall be firestopped to preclude entry of flames or embers.

506.3 Unenclosed underfloor protection. Buildings or structures shall have all underfloor areas enclosed to the ground with exterior walls.

Exception: Complete enclosure may be omitted where the underside of all exposed floors and all exposed structural columns, beams and supporting walls are protected as required for exterior 1-hour fire-resistance-rated construction or heavy timber construction.

506.4 Vents. Attic ventilation openings, soffit vents, foundation or underfloor vents or other ventilation openings in vertical exterior walls and vents through roofs shall not exceed 144 square inches (0.0929 m²) each. Such vents shall be covered with noncombustible corrosion-resistant mesh with openings not to exceed ¼ inch (6.4 mm).

SECTION 507 REPLACEMENT OR REPAIR OF ROOF COVERINGS

507.1 General. The roof covering on buildings or structures in existence prior to the adoption of this code that are replaced or have 25 percent or more replaced in a 12-month period shall be replaced with a roof covering required for new construction based on the type of ignition-resistant construction specified in accordance with Section 503.

CHAPTER 6

FIRE PROTECTION REQUIREMENTS

SECTION 601 GENERAL

601.1 Scope. The provisions of this chapter establish general requirements for new and existing buildings, structures and premises located within wildland-urban interface areas.

601.2 Objective. The objective of this chapter is to establish minimum requirements to mitigate the risk to life and property from wildland fire exposures, exposures from adjacent structures and to mitigate structure fires from spreading to wildland fuels.

SECTION 602 AUTOMATIC SPRINKLER SYSTEMS

602.1 General. An approved automatic sprinkler system shall be installed in all occupancies in new buildings required to meet the requirements for Class 1 ignition-resistant construction in Chapter 5. The installation of the automatic sprinkler systems shall be in accordance with nationally recognized standards.

SECTION 603 DEFENSIBLE SPACE

603.1 Objective. Provisions of this section are intended to modify the fuel load in areas adjacent to structures to create a defensible space.

603.2 Fuel modification. In order to qualify as a conforming defensible space for individual buildings or structures on a property, fuel modification shall be provided within a distance from buildings or structures as specified in Table 603.2. For all other purposes, the fuel modification distance shall not be less than 30 feet (91 467 mm) or to the property line, whichever is less. Distances specified in Table 603.2 shall be measured on a horizontal plane from the perimeter or projection of the building or structure as

shown in Figure 603.2. Distances specified in Table 603.2 may be modified by the code official because of a site-specific analysis based on local conditions and the fire protection plan.

Persons owning, leasing, controlling, operating or maintaining buildings or structures requiring defensible spaces are responsible for modifying or removing nonfire-resistive vegetation on the property owned, leased or controlled by said person.

Trees are allowed within the defensible space, provided the horizontal distance between crowns of adjacent overhead electrical facilities or unmodified fuel is not less than 10 feet (3048 mm). Deadwood and litter shall be regularly removed from trees.

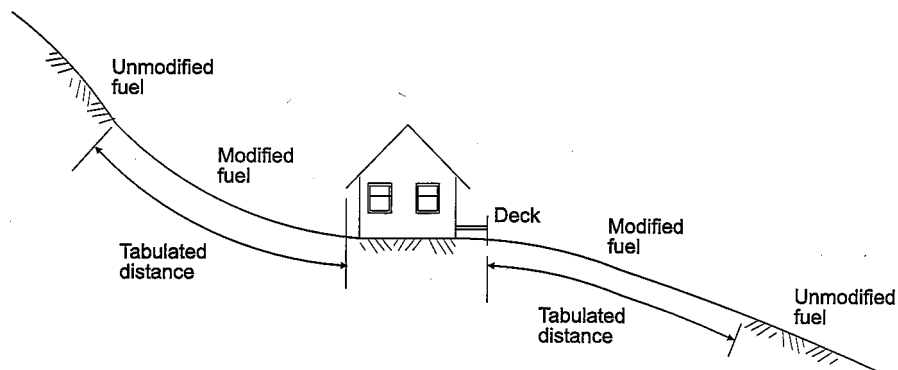
Where ornamental vegetative fuels or cultivated ground cover, such as green grass, ivy, succulents or similar plants are used as ground cover, they are allowed to be within the designated defensible space, provided they do not form a means of transmitting fire from the native growth to any structure.

**TABLE 603.2
REQUIRED DEFENSIBLE SPACE**

WILDLAND-URBAN INTERFACE AREA	FUEL MODIFICATION DISTANCE (feet) ^a
Moderate hazard	30
High hazard	50
Extreme hazard	100

For SI: 1 foot = 304.8 mm.

a. Distances are allowed to be increased due to site-specific analysis based on local conditions and the fire protection plan.



**FIGURE 603.2
MEASUREMENTS OF FUEL MODIFICATION DISTANCE**

SECTION 604 MAINTENANCE OF DEFENSIBLE SPACE

604.1 General. Defensible spaces required by Section 603 shall be maintained in accordance with Section 604.

604.2 Modified area. Nonfire-resistive vegetation or growth shall be kept clear of buildings or structures, in accordance with Section 603, in such a manner as to provide a clear area for fire suppression operations.

604.3 Responsibility. Persons owning, leasing, controlling, operating or maintaining buildings or structures are responsible for maintenance of defensible spaces. Maintenance of the defensible space shall include modifying or removing nonfire-resistive vegetation and keeping leaves, needles and other dead vegetative material regularly removed from roofs of buildings and structures.

604.4 Trees. Tree crowns extending to within 10 feet (3048 mm) of any structure shall be pruned to maintain a minimum horizontal clearance of 10 feet (3048 mm). Tree crowns within the defensible space shall be pruned to remove limbs located less than 6 feet (1829 mm) above the ground surface adjacent to the trees.

Portions of tree crowns that extend within 10 feet (3048 mm) of the outlet of a chimney shall be pruned to maintain a minimum horizontal clearance of 10 feet (3048 mm).

Deadwood and litter shall be regularly removed from trees.

SECTION 605 SPARK ARRESTERS

605.1 General. Chimneys serving fireplaces, barbecues, incinerators or decorative heating appliances in which solid or liquid fuel is used, shall be provided with a spark arrester.

Spark arresters shall be constructed of woven or welded wire screening of 12 USA standard gage wire (0.1046 inch) (2.66 mm) having openings not exceeding ½ inch (12.7 mm).

605.2 Net free area. The net free area of the spark arrester shall not be less than four times the net free area of the outlet of the chimney.

SECTION 606 LIQUEFIED PETROLEUM GAS INSTALLATIONS

606.1 General. The storage of liquefied petroleum gas (LP-gas) and the installation and maintenance of pertinent equipment shall be in accordance with the International Fire Code or, in the absence thereof, recognized standards.

606.2 Location of containers.

LP-gas containers shall be located within the defensible space in accordance with the International Fire Code.

SECTION 607 STORAGE OF FIREWOOD AND COMBUSTIBLE MATERIALS

607.1 General. Firewood and combustible material shall not be stored in unenclosed spaces beneath buildings or structures, or on decks or under eaves, canopies or other projections or overhangs. When required by the code official, storage of firewood and combustible material stored in the defensible space shall be located a minimum of 20 feet (6096 mm) from structures and separated from the crown of trees by a minimum horizontal distance of 15 feet (4572 mm).

607.2 Storage for off-site use. Firewood and combustible materials not for consumption on the premises shall be stored so as to not pose a hazard. See Appendix A.

APPENDIX A GENERAL REQUIREMENTS

The provisions contained in this appendix are optional.

SECTION A101 GENERAL

A101.1 Scope. The provisions of this appendix establish general requirements applicable to new and existing properties located within wildland-urban interface areas.

A101.2 Objective. The objective of this appendix is to provide necessary fire-protection measures to reduce the threat of wildfire in an wildland-urban interface area and improve the capability of controlling such fires.

SECTION A102 VEGETATION CONTROL

A102.1 General. Vegetation control shall comply with Sections A102.2 through A102.4.

A102.2 Clearance of brush or vegetative growth from roadways. The code official is authorized to require areas within 10 feet (3048 mm) on each side of portions of fire apparatus access roads and driveways to be cleared of nonfire-resistive vegetation growth.

Exception: Single specimens of trees, ornamental vegetative fuels or cultivated ground cover, such as green grass, ivy, succulents or similar plants used as ground cover, provided they do not form a means of readily transmitting fire.

A102.3 Clearance of brush and vegetative growth from electrical transmission and distribution lines.

A102.3.1 General.

Clearance of brush and vegetative growth from electrical transmission and distribution lines shall be in accordance with Section A102.3.

Exception: Section A102.3 does not authorize persons not having legal right of entry to enter on or damage the property of others without consent of the owner.

A102.3.2 Support clearance. Persons owning, controlling, operating or maintaining electrical transmission or distribution lines shall have an approved program in place that identifies poles or towers with equipment and hardware types that have a history of becoming an ignition source, and provides a combustible free space consisting of a clearing of not less than 10 feet (3048 mm) in each direction from the outer circumference of such pole or tower during such periods of time as designated by the code official.

Exception: Lines used exclusively as telephone, telegraph, messenger call, alarm transmission or other lines classed as communication circuits by a public utility.

A102.3.3 Electrical distribution and transmission line clearances.

A102.3.3.1 General. Clearances between vegetation and electrical lines shall be in accordance with Section A102.3.3.

A102.3.3.2 Trimming clearance. At the time of trimming, clearances not less than those established by Table A102.3.3.2 shall be provided. The radial clearances shown below are minimum clearances that shall be established, at time of trimming, between the vegetation and the energized conductors and associated live parts.

Exception: The code official is authorized to establish minimum clearances different than those specified by Table A102.3.3.2 when evidence substantiating such other clearances is submitted to and approved by the code official.

**TABLE A102.3.3.2
MINIMUM CLEARANCES BETWEEN VEGETATION
AND ELECTRICAL LINES AT TIME OF TRIMMING**

LINE VOLTAGE	MINIMUM RADIAL CLEARANCE FROM CONDUCTOR (feet)
2,400-72,000	4
72,001-110,000	6
110,001-300,000	10
300,001 or more	15

For SI: 1 foot = 304.8 mm.

A102.3.3.3 Minimum clearance to be maintained. Clearances not less than those established by Table A102.3.3.3 shall be maintained during such periods of time as designated by the code official. The site-specific clearance achieved, at time of pruning, shall vary based on species growth rates, the utility company-specific trim cycle, the potential line sway due to wind, line sag due to electrical loading and ambient temperature and the tree's location in proximity to the high voltage lines.

Exception: The code official is authorized to establish minimum clearances different than those specified by Table A102.3.3.3 when evidence substantiating such other clearances is submitted to and approved by the code official.

**TABLE A102.3.3.3
MINIMUM CLEARANCES BETWEEN VEGETATION
AND ELECTRICAL LINES TO BE MAINTAINED**

LINE VOLTAGE	MINIMUM CLEARANCE (inches)
750-35,000	6
35,001-60,000	12
60,001-115,000	19
115,001-230,000	30.5
230,001-500,000	115

For SI: 1 inch = 25.4 mm.

A102.3.3.4 Electrical power line emergencies. During emergencies, the utility shall perform the required work to the extent necessary to clear the hazard. An emergency can include situations such as trees falling into power lines, or trees in violation of Table A102.3.3.3.

A102.4 Correction of condition. The code official is authorized to give notice to the owner of the property on which conditions regulated by Section A102 exist to correct such conditions. If the owner fails to correct such conditions, the legislative body of the jurisdiction is authorized to cause the same to be done and make the expense of such correction a lien on the property where such condition exists.

SECTION A103 ACCESS RESTRICTIONS

A103.1 Restricted entry to public lands. The code official is authorized to determine and publicly announce when wildland-urban interface areas shall be closed to entry and when such areas shall again be opened to entry. Entry on and occupation of wildland-urban interface areas, except public roadways, inhabited areas or established trails and campsites that have not been closed during such time when the wildland-urban interface area is closed to entry, is prohibited.

Exceptions:

1. Residents and owners of private property within wildland-urban interface areas and their invitees and guests going to or being on their lands.
2. Entry, in the course of duty, by peace or police officers, and other duly authorized public officers, members of a fire department and members of the Wildland Firefighting Service.

A103.2 Trespassing on posted private property.

A103.2.1 General. When the code official determines that a specific area within an wildland-urban interface area presents an exceptional and continuing fire danger because of the density of natural growth, difficulty of terrain, proximity to structures or accessibility to the public, such areas shall be restricted or closed until changed conditions warrant termination of such restriction or closure. Such areas shall be posted in accordance with Section A103.2.2.

A103.2.2 Signs. Approved signs prohibiting entry by unauthorized persons and referring to this code shall be placed on every closed area.

A103.2.3 Trespassing. Entering and remaining within areas closed and posted is prohibited.

Exception: Owners and occupiers of private or public property within closed and posted areas; their guests or invitees; authorized persons engaged in the operation and maintenance of necessary utilities such as electrical power, gas, telephone, water and sewer; and local, state and federal public officers and their authorized agents acting in the course of duty.

A103.3 Use of fire roads and defensible space.

Motorcycles, motor scooters and motor vehicles shall not be driven or parked on, and trespassing is prohibited on, fire roads or defensible space beyond the point where travel is restricted by a cable, gate or sign, without the permission of the property owners. Vehicles shall not be parked in a manner that obstructs the entrance to a fire road or defensible space.

Exception: Public officers acting within their scope of duty.

Radio and television aerials, guy wires thereto, and other obstructions shall not be installed or maintained on fire roads or defensible spaces, unless located 16 feet (4877 mm) or more above such fire road or defensible space.

A103.4 Use of motorcycles, motor scooters, ultralight aircraft and motor vehicles. Motorcycles, motor scooters, ultralight aircraft and motor vehicles shall not be operated within wildland-urban interface areas, without a permit by the code official, except on clearly established public or private roads. Permission from the property owner shall be presented when requesting a permit.

A103.5 Tampering with locks, barricades, signs and address markers. Locks, barricades, seals, cables, signs and address markers installed within wildland-urban interface areas, by or under the control of the code official, shall not be tampered with, mutilated, destroyed or removed.

Gates, doors, barriers and locks installed by or under the control of the code official shall not be unlocked.

SECTION A104 IGNITION SOURCE CONTROL

A104.1 General. Ignition sources shall be in accordance with Section A104.

A104.2 Objective. Regulations in this section are intended to provide the minimum requirements to prevent the occurrence of wildfires.

A104.3 Clearance from ignition sources. Clearance between ignition sources and grass, brush or other combustible materials shall be maintained a minimum of 30 feet (9144 mm).

A104.4 Smoking. When required by the code official, signs shall be posted stating NO SMOKING. No person shall

smoke within 15 feet (4572 mm) of combustible materials or nonfire-resistive vegetation.

Exception: Places of habitation or in the boundaries of established smoking areas or campsites as designated by the code official.

A104.5 Equipment and devices generating heat, sparks or open flames. Equipment and devices generating heat, sparks or open flames capable of igniting nearby combustibles shall not be used in wildland-urban interface areas without a permit from the code official.

Exception: Use of approved equipment in habited premises or designated campsites that are a minimum of 30 feet (9144 mm) from grass-, grain-, brush- or forest-covered areas.

A104.6 Fireworks. Fireworks shall not be used or possessed in wildland-urban interface areas.

Exception: Fireworks allowed by the code official under permit in accordance with the International Fire Code when not prohibited by applicable local or state laws, ordinances and regulations.

The code official is authorized to seize, take, remove or cause to be removed fireworks in violation of this section.

A104.7 Outdoor fires.

A104.7.1 General. No person shall build, ignite or maintain any outdoor fire of any kind for any purpose in or on any wildland-urban interface area, except by the authority of a written permit from the code official.

Exception: Outdoor fires within inhabited premises or designated campsites where such fires are in a permanent barbecue, portable barbecue, outdoor fireplace, incinerator or grill and are a minimum of 30 feet (9144 mm) from any combustible material or nonfire-resistive vegetation.

A104.7.2 Permits. Permits shall incorporate such terms and conditions that will reasonably safeguard public safety and property. Outdoor fires shall not be built, ignited or maintained in or on hazardous fire areas under the following conditions:

1. When high winds are blowing,
2. When a person 17 years old or over is not present at all times to watch and tend such fire, or
3. When a public announcement is made that open burning is prohibited.

A104.7.3 Restrictions. No person shall use a permanent barbecue, portable barbecue, outdoor fireplace or grill for the disposal of rubbish, trash or combustible waste material.

A104.8 Incinerators, outdoor fireplaces, permanent barbecues and grills. Incinerators, outdoor fireplaces, permanent barbecues and grills shall not be built, installed or maintained in wildland-urban interface areas without approval of the code official.

Incinerators, outdoor fireplaces, permanent barbecues and grills shall be maintained in good repair and in a safe condition at all times. Openings in such appliances shall be provided with an approved spark arrestor, screen or door.

Exception: When approved by the code official, unprotected openings in barbecues and grills necessary for proper functioning.

A104.9 Reckless behavior. The code official is authorized to stop any actions of a person or persons if the official determines that the action is reckless and could result in an ignition of fire or spread of fire.

A104.10 Planting vegetation under or adjacent to energized electrical lines. No vegetation shall be planted under or adjacent to energized power lines that, at maturity, shall grow within 10 feet (3048 mm) of the energized conductors.

SECTION A105 CONTROL OF STORAGE

A105.1 General. In addition to the requirements of the International Fire Code, storage and use of the materials shall be in accordance with Section A105.

A105.2 Hazardous materials. Hazardous materials in excess of 10 gallons (37.8 L) of liquid, 200 cubic feet (5.66 m³) of gas, or 10 pounds (4.54 kg) of solids require a permit and shall comply with nationally recognized standards for storage and use.

A105.3 Explosives. Explosives shall not be possessed, kept, stored, sold, offered for sale, given away, used, discharged, transported or disposed of within wildland-urban interface areas, except by permit from the code official.

A105.4 Combustible materials.

A105.4.1 General. Outside storage of combustible materials such as, but not limited to, wood, rubber tires, building materials or paper products shall comply with the other applicable sections of this code and this section.

A105.4.2 Individual piles. Individual piles shall not exceed 5,000 square feet (465 m²) of contiguous area. Piles shall not exceed 50,000 cubic feet (1416 m³) in volume or 10 feet (3048 mm) in height.

A105.4.3 Separation. A clear space of at least 40 feet (12 192 mm) shall be provided between piles. The clear space shall not contain combustible material or nonfire-resistive vegetation.

SECTION A106 DUMPING

A106.1 Waste material. Waste material shall not be placed, deposited or dumped in wildland-urban interface areas, or in, on or along trails, roadways or highways or against structures in wildland-urban interface areas.

Exception: Approved public and approved private dumping areas.

A106.2 Ashes and coals. Ashes and coals shall not be placed, deposited or dumped in or on wildland-urban interface areas.

Exceptions:

1. In the hearth of an established fire pit, camp stove or fireplace.
2. In a noncombustible container with a tightfitting lid, which is kept or maintained in a safe location not less than 10 feet (3048 mm) from nonfire-resistive vegetation or structures.
3. Where such ashes or coals are buried and covered with 1 foot (305 mm) of mineral earth not less than 25 feet (7620 mm) from nonfire-resistive vegetation or structures.

**SECTION A107
PROTECTION OF PUMPS AND
WATER STORAGE FACILITIES**

A107.1 General. The reliability of the water supply shall be in accordance with Section A107.

A107.2 Objective. The intent of this section is to increase the reliability of water storage and pumping facilities and to protect such systems against loss from intrusion by fire.

A107.3 Fuel modification area. Water storage and pumping facilities shall be provided with a defensible space of not less than 30 feet (9144 mm) clear of nonfire-resistive vegetation or growth around and adjacent to such facilities.

Persons owning, controlling, operating or maintaining water storage and pumping systems requiring this defensible space are responsible for clearing and removing nonfire-resistive vegetation and maintaining the defensible space on the property owned, leased or controlled by said person.

A107.4 Trees. Portions of trees that extend to within 30 feet (9144 mm) of combustible portions of water storage and pumping facilities shall be removed.

A107.5 Protection of electrical power supplies. When electrical pumps are used to provide the required water supply, such pumps shall be connected to a standby power source to automatically maintain electrical power in the event of power loss. The standby power source shall be capable of providing power for a minimum of two hours in accordance with the ICC Electrical Code.

Exception: A standby power source is not required where the primary power service to pumps are underground as approved by the code official.

**SECTION A108
LAND USE LIMITATIONS**

A108.1 General. Temporary fairs, carnivals, public exhibitions and similar uses must comply with all other provisions of this code in addition to enhanced ingress and egress requirements.

A108.2 Objective. The increased public use of land or structures in wildland-urban interface areas also increases

the potential threat to life safety. The provisions of this section are intended to reduce that threat.

A108.3 Permits. Temporary fairs, carnivals, public exhibitions or similar uses shall not be allowed in a designated wildland-urban interface area, except by permit from the code official.

Permits shall incorporate such terms and conditions that will reasonably safeguard public safety and property.

A108.4 Access roadways. In addition to the requirements in Section 403, access roadways shall be a minimum of 24 feet (7315 mm) wide and posted NO PARKING. Two access roadways shall be provided to serve the permitted use area.

When required by the code official to facilitate emergency operations, approved emergency vehicle operating areas shall be provided.

**SECTION A109
REFERENCED STANDARDS**

IFC-2006 International Fire Code A104.6, A105.1

APPENDIX B VEGETATION MANAGEMENT PLAN

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION B101 GENERAL

B101.1 Scope. Vegetation management plans shall be submitted to the code official for review and approval as part of the plans required for a permit.

B101.2 Plan content. Vegetation management plans shall describe all actions that will be taken to prevent a fire from being carried toward or away from the building. A vegetation management plan shall include at least the following information:

1. A copy of the site plan.
2. Methods and timetables for controlling, changing or modifying areas on the property. Elements of the plan shall include removal of slash, snags, vegetation that may grow into overhead electrical lines, other ground fuels, ladder fuels and dead trees, and the thinning of live trees.
3. A plan for maintaining the proposed fuel-reduction measures.

B101.3 Fuel modification. To be considered a fuel modification for purposes of this code, continuous maintenance of the clearance is required.



Emigration Canyon Monthly Report January 2022

Calls for service: 32

Initial Reports: 9

Report Date:	Time:	Case Number:	Offense:	Location:
01/06/22	13:18	22-1899	Parking Violation	1900 N Pinecrest Canyon Rd
Three vehicles were cited for parking on the roadway.				
01/08/22	17:00	22-2662	Burglary	5820 E Emigration Canyon Rd
This home is new and being built, correct address is 5798 E. Unknown suspect forced entry through the garage door and took a compressor and nail gun. No suspect leads currently.				
01/11/22	11:46	22-3680	Citizen Assist	3700 E Emigration Canyon Rd
I deployed the VMS trailer at the mouth of the canyon. This was for the mask mandate at the request of the mayor.				
01/12/22	13:53	22-4107	Civil Case	5290 E Emigration Canyon Rd
This was a civil case involving the new owners and old owner of the listed residence. Nothing further to report.				
01/12/22	06:27	22-3948	Vehicle Strip	749 N Emigration Canyon Rd
The victim's vehicle was parked in the detached garage, unknown suspects entered the garage and stole the catalytic converter from the vehicle. No suspect leads currently.				
01/14/22	15:03	22-4826	Littering	4804 E Emigration Canyon Rd
We received a call about four juveniles in a vehicle littering while in the canyon. Contact was made with the registered owner; she indicated her son most likely was driving the car. She was going to talk to him once he returned home.				
01/19/22	15:03	22-6373	Fraud – Identity Theft	6007 E Pioneer Ridge Circle
The victim received a letter from the Utah Department of Workforce Services indicating that he was filing a claim for unemployment. The victim is the owner of the business and obviously hadn't filed the claim. He reported the fraud to the Utah Department of Workforce Services and UPD. In speaking to the Utah Department of Workforce Services this is happening all the time currently. No suspect leads currently.				
01/19/22	12:12	22-6374	Theft from yard	5771 E Pioneer Fork Rd
The complainant had a package that was stolen back in 09/20/21, it showed delivered on that date by the carrier. No suspect leads currently.				
01/20/22	15:58	22-6802	Vehicle Burglary	588 N Emigration Canyon Rd
The victim's vehicle was burglarized sometime between 12:30 and 13:00 hours while she went for a hike. The suspect took her backpack, no suspect leads currently.				
01/21/22	18:02	22-7193	Impounded Vehicle	3400 E Emigration Canyon Rd
Officer Omer observed the involved vehicle showed to have expired on 12-20, a traffic stop was conducted. The vehicle was state tax impounded, no citation issued.				



ANIMAL SERVICES

A close-up, black and white photograph of a dog's face, likely a pit bull or similar breed, looking directly at the camera. The dog's eyes are light-colored and focused, and its ears are slightly flopped out to the sides. The background is a solid dark gray.

EMIGRATION CANYON

2021 ANNUAL REPORT

2021 HIGHLIGHTS



Animal Services provided care & assistance to 14,000 pets



Our field department responded to 17,200 calls for service.



Animals in the shelter were provided with 15,000 lbs. of food. The Pet Pantry distributed 32,000 lbs. of food to 4,000 pets in need.



Our in-house veterinary clinic provided 3,700 spay/neuter surgeries & 4,000 microchips.



Our amazing volunteers provided 3,000 in shelter service hours. 700 pets were cared for in foster homes providing 71,000 foster care hours.

SHELTER/CLINIC OPERATIONS

Shelter Operations are now re-opened to the public. Staff is still maintaining a cautionary approach to Covid by wearing masks and sanitizing regularly.

In the last part of the 4th quarter our shelter overcame a potentially fatal outbreak of canine distemper. Dogs that were afflicted were immediately quarantined and emergency protocols went into place for new and non afflicted dogs.

Thanks to our proactive approach and with the help of partner organizations the outbreak was quickly contained; a feat which is almost unheard of in our industry.





1,740
Found
Forever
Homes!

2,990
Animals
Returned
Home!



FIELD OPERATIONS

Animal Services field operations is fully operational with the addition of cautionary measures to limit Covid exposure to staff and the public.

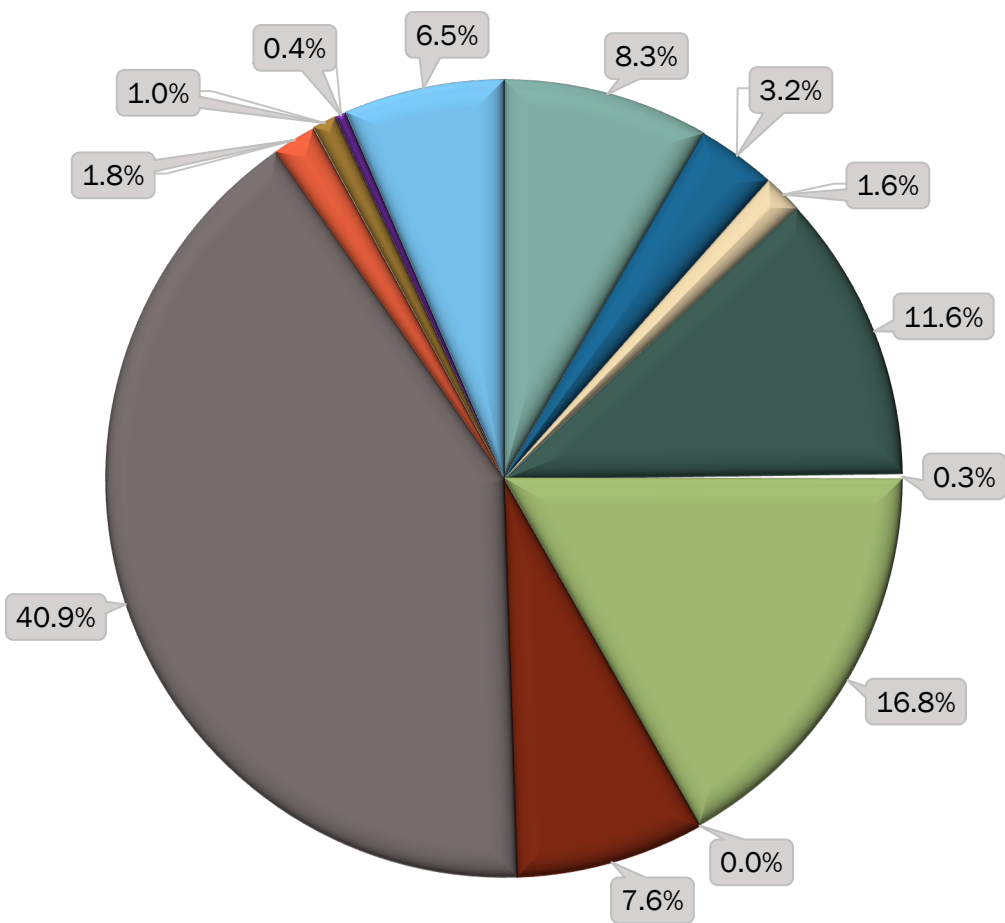
- All requests for service are handled in a timely manner according to priority.
- When possible and appropriate no contact response is encouraged.



Description	4th Quarter	2021 Total
An01 - Animal Impound	0	2
An02 - Animal At Large	4	8
An03 - Animal Cruelty	0	2
An04 - Animal In Vehicle	0	1
An07 - Animal Attack	2	5
An08 - Livestock Problem	0	1
An09 - Animal Bite	6	6
An11 - Animal Nuisance	2	5
An13 - Special Assignment	0	1
An14 - Citizen Inquiry	4	7
An15 - Permit Inspection	0	1
Total	18	39
Average Response Times per VECC	4th Quarter	2021 Average
Priority 1	N/A	18 minutes
Priority 2	12 minutes	47 minutes
Priority 3	145 minutes	244 minutes

EMIGRATION CANYON

ANNUAL FIELD STATISTICS



CITATIONS & NOTICE OF VIOLATIONS

OFFICER OF THE YEAR AWARD

Sergeant Robert Naylor has worked for Animal Services since 2004. Throughout the years he has gained a vast amount of knowledge and experience. Animal Services is thrilled to award Sgt. Naylor the Officer of the Year award for his outstanding service and dedication.

Per management: “Rob has gone over and above his duties on an almost daily basis. While we are without a technology specialist, Rob has utilized his skills to step up and fill that role unofficially and has resolved every single problem that he has faced. Add to this that he became Sergeant of his team due to his leadership abilities. Feedback from others consistently identify his patience and skill in explaining to people at the level they need.”



SPAYGHETTI GALA

Despite not being able to have an in-person event this year our virtual gala was a huge success!

The event featured dozens of baskets/prizes that were auctioned off live, available pets for adoption, and messages from our dear sponsors. In total we raised over \$90,000!

Spayghetti also featured a tribute to Mike Tams, featured here alongside his pup and Pawlitical Pets . Not only was he a huge animal lover, but he was also a key donor for many of our life saving programs, an advocate for animals in the community, and the life of the party at many of our events. Mike was a dear friend to Animal Services and will be greatly missed.



PET CREW PANTRIES

One of the most successful and popular programs we offer is the Pet Crew pantry. Animal Services continues to ensure families in our community can keep their furry companions happy and healthy.

Through grants and donations, we were able to stock a multitude of pet food for the community.

Salt Lake County Animal Services, Pet Crew Pantry, has been recognized with a Human Services Achievement Award from The National Association of Counties (NACo). The awards honor innovative, effective county government programs that strengthen services for residents.





HUMANE EDUCATION

Hannah Black and our helper pup Yosemite attended 407 schools in our community presenting to roughly 6,925 children!

Our Humane Education Program focuses on teaching youth important skills in subjects such as:

- Responsible Pet Ownership
- Bite prevention
- What to do if they encounter a stray animal.

HURRICANE IDA DISASTER RELIEF

Louisiana reached out to our agency for aide after Hurricane Ida devastated their region.

Our agency graciously accepted and sent 4 staff equipped with 2 Animal Control trucks to assist New Orleans Animal Control in helping retrieve animals, transport, reunite pets with their loved ones, and rescue homeless four-legged friends.





PETAPALOOZA

This year our annual Petapalooza adoption extravaganza was moved to our very own shelter!

Even though the venue changed adoptable pets were present from 10 pet rescues across Utah! Featuring local pet product vendors, a pet psychic, “tattoos” for pets, food trucks, and local pups got to try out our new agility run.

The shelter parking lot was fenced off to host all the vendors and adoptable pets. Animal Control Officers assisted in microchips and licensing.

In total 85 pets found their new forever homes!

EMIGRATION CANYON

M E T R O T O W N S H I P

GENERAL PLAN 2022



ACKNOWLEDGMENTS

GENERAL PLAN STEERING COMMITTEE

ROBERT PINON (*CHAIR*)

ANDREW WALLACE (*VICE CHAIR*)

DALE BERRETH

STEVE BORST

PAUL BROWN

TIM HARPST

WILLY STOKMAN

BILL TOBEY

PLANNING COMMISSION

ROBERT PINON (*CHAIR*)

ANDREW WALLACE (*VICE CHAIR*)

DALE BERRETH

TIM HARPST

JIM KARKUT

METRO TOWNSHIP COUNCIL

JOE SMOLKA (*MAYOR*)

JENNIFER HAWKES (*DEPUTY MAYOR*)

DAVID BREMS (*COUNCIL MEMBER*)

GARY BOWEN (*FORMER - COUNCIL MEMBER*)

CATHERINE HARRIS (*COUNCIL MEMBER*)

ROBERT PINON (*COUNCIL MEMBER*)

NICOLE WATT (*COUNCIL CLERK*)

GREATER SALT LAKE MUNICIPAL SERVICES DISTRICT

MARLA HOWARD (*GENERAL MANAGER*)

BRIAN HARTSELL (*ASSOCIATE GENERAL MANAGER*)

LUPITA MCCLENNING (*DIRECTOR OF PLANNING AND DEVELOPMENT SERVICES*)

JIM McNULTY (*FORMER - PLANNING MANAGER*)

WENDY GURR (*PLANNING COORDINATOR*)

KATE DAVIES (*FORMER - SENIOR LONG RANGE PLANNER*)

KAYLA MAULDIN (*CURRENT - SENIOR LONG RANGE PLANNER*)

MIKALA JORDAN (*FORMER - LONG RANGE PLANNER*)

MATTHEW STARLEY (*LONG RANGE PLANNER*)

ALEX RUDOWSKI (*SENIOR GIS ANALYST*)

TRAVIS HAIR (*FORMER - PLANNER II*)

MARIDENE ALEXANDER (*COMMUNICATIONS MANAGER*)

MELISSA ANDERSON (*PLANNING MANAGER*)

JIM NAKAMURA (*PLANNER II*)

ERIN O'KELLEY (*LONG RANGE PLANNER*)

OTHER CONTRIBUTORS

TODD ANDERSEN (*FORMER - MUNICIPAL ECONOMIC DEVELOPMENT
COORDINATOR, SALT LAKE COUNTY*)

ALL PARTICIPATING MEMBERS OF THE PUBLIC



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EXECUTIVE SUMMARY

Overview:

This **Emigration Canyon 2022 General Plan** is the first general plan for Emigration Canyon since the Municipality incorporated as a Metro Township in 2017.

The Plan synthesizes data and public feedback to assess current conditions, formulate a future vision, and prepare a work program for navigating forward from today.

The Plan includes contextual information about Emigration Canyon, the planning process and public engagement, methods of data collection and analysis, five elements (Land Use, Transportation and Mobility, Economic Development, Environment, and Resilience and Infrastructure) and a work program specific to progressing actions on each element.

Existing Conditions:

Emigration Metro Township lies within Emigration Canyon, which comprises approximately nineteen square miles of land in Utah's Wasatch Mountain Range; the area is characterized by a dry, four season climate and semiarid rolling mountains.

The Municipality shares a border with Salt Lake City to the west.

Emigration Canyon Road is the only arterial

road in the township. It runs approximately 7.8 miles from Salt Lake City's Hogle Zoo to UT-65, which also connects to US-80.

The 2020 Decennial Census reports Emigration Canyon Metro Township's total population as 1,466 residents. The population of the Canyon has been increasing since 2000 at a rate over twice that of Salt Lake County, largely due to construction of homes in the Emigration Oaks subdivision, which is now mostly built-out.

Despite increases in housing within the Metro Township, the area is characterized by low population densities and a vast amount of open space, with approximately 68 percent of the land in the Municipality devoted to this use. Many environmental constraints, such as slope and water quality and quantity, limit development in the Canyon.

The current population represents an older, highly educated and wealthy demographic, with a median age of 47.7 and over 92 percent of adults age 25 and over having at least some college training.

The median household income for the Canyon in 2020 is estimated to be \$174,625, nearly twice the median income of Salt Lake County.

The population of Emigration Canyon is predominantly White, Non-Hispanic.

Approximately 15 businesses that provide employment for 173 employees are based in Emigration Canyon, but the vast majority of the work force commute out of the Canyon to work.

Strengths and Challenges:

The community of Emigration Canyon is generally well educated and affluent, two characteristics that can provide an important foundation to build upon when it comes to advancing the goals and objectives outlined in this Plan.

Another strength is the substantial amount of open space and public lands designated in the Canyon. Approximately 72% of Canyon lands are publicly owned, making it a veritable wonderland for wildlife and outdoor enthusiasts alike.

The close proximity of Emigration Canyon to downtown Salt Lake City is both a strength and a challenge, because while it enables Canyon residents to easily commute to work, it also means the Canyon is vulnerable to overuse by visitors.

Other substantial challenges for the community are also related to geography. How to consider and address development pressures, water quality and quantity issues, and the risk of wildfires and other hazards

associated with the Wildland-Urban Interface are among key concerns for residents of the area.

Moving Forward:

This Plan addresses these challenges by protecting and leveraging existing assets, planning future development around unique ‘Character Areas’, integrating local and regional planning efforts, seeking to establish strategic partnerships, and taking a precautionary and intergenerational approach to planning for the future.

The following vision statement was developed to guide future planning initiatives and decision-making:

- Emigration Canyon is a progressive,

family-oriented community with many opportunities for its residents to enjoy active, healthy, and modern lifestyles.

- Emigration Canyon is comprised of distinct neighborhoods with residents who are dedicated to fostering a sense of community and are actively involved in public activities.
- Emigration Canyon is a nationally recognized historic landmark and its residents embrace that heritage.
- Emigration Canyon residents enjoy and value the Canyon’s many excellent, cherished, well-maintained recreational amenities.
- Emigration Canyon residents are committed to maintaining and protecting

the Canyon’s important ecosystems and resources.

This vision statement is further supported by actions included in the Community Work Programs included with each element.

This Plan is intended to guide Emigration Canyon forward for the next five years, after which point the Plan will be re-evaluated to ensure that it continues to meet the needs of the community.

Thank you to all the elected officials, community leaders, and members of the public who contributed to this Plan!

USING THIS DOCUMENT

This General Plan is divided into seven chapters that describe the vision and a plan forward for Emigration Canyon. Together, these chapters build a foundation from which the Municipality can adopt programs and policies that support the values held by Emigration Canyon residents.

Each chapter includes an analysis of existing conditions related to that topic and a description of the community’s feedback, vision, and goals related to that topic. At the end of each chapter, a Work Program is included to provide a series of steps that the

Municipality could take in order to achieve its envisioned future. Explanations of underlying planning concepts are interspersed throughout the Plan (look for blue boxes or panels such as the one found on page 10).

Although subjects are divided into distinct chapters or elements in this General Plan, they remain tightly interwoven, so that common themes emerge across the document.

CHAPTER 1: Introduction

This chapter introduces the; “when, why, and how?” of the General Plan. It explains the need

for a General Plan, State Code Requirements, and the methodology used to prepare this Plan for Emigration Canyon.

CHAPTER 2: Land Use & Character Areas

This chapter is required by Utah State Code and addresses questions such as How is our land currently used? How are land uses changing? How should land be used in the future to meet the needs and desires of our community?

CHAPTER 3: Transportation & Mobility

This chapter is required by Utah State Code and considers street classifications, regional use and planning implications, and future transportation projects that will help to progress the needs and interests of canyon residents and visitors. Questions such as; Can residents effectively access their daily needs using the transportation system? How are our transportation patterns changing? How should we prepare for future transportation and mobility needs? are addressed.

CHAPTER 4: Economic Development Considerations

This chapter is not required by Utah State Code but is important for ensuring the

future success and financial sustainability of the Municipality. The chapter addresses questions such as What is the state of the local economy? What regional trends are impacting our market? What kinds of economic opportunities would be appropriate to encourage in the area?

CHAPTER 5: Environment

This chapter is not required by Utah State Code but is needed to guide decision making to ensure that environmental protections are in place and a high environmental quality is maintained in the Canyon today, and for future generations.

CHAPTER 6: Resilience & Infrastructure

This chapter is not required by Utah State Code but is important for ensuring the preparedness and adaptive capacity of the Municipality. The chapter addresses questions such as How cohesive is the Emigration Canyon community? What hazards are the greatest risk to the area? How can we become more resilient to hazards and changes?

CHAPTER 7: Community Work Program

This chapter summarizes the work plans (including goals, objectives, and actions) from the previous chapters.

TERMS DEFINITIONS

This General Plan is intended to be actionable. Towards that end, the Plan breaks down high-level priorities and strategies into implementable pieces. The following terms and definitions are important to understand in using the document for implementation:

Vision: A description of the “preferred future”; a statement that describes how the future will look if the issues that are important to the community are perfectly addressed.

Values: Beliefs about desirable states or modes of conduct that guide behavior and prioritization of goals and objectives.

Goals: Broad qualitative statements about what the organization hopes to achieve by following the General Plan.

Objectives: Statements regarding how improvements will take place and therefore tend to be quantitative in nature. Usually begin with something akin to “increase” or “decrease.”

Actions: An approach or method for attaining objectives and resolving specific issues. Generally start with a verb.

Policies: Statements that inform elected officials and decision-makers. Should provide

a path towards achieving goals.

Programs: Intentional, structured and supported efforts to progress the attainment of goals.

Metric: A system or standard of measurement or evaluation that can be used to assess progress toward meeting goals.

A glossary is also included in Appendix A of this document, to provide readers with definitions of key terms used in the Plan.

ABBREVIATIONS & ACRONYMS

AADT – Annual Average Daily Traffic

AASHTO – American Association of State Highway and Transportation Officials

APAE – Achieve, Preserve, Avoid, and Eliminate analysis

BEAR – Business Expansion and Retention programs

BWA – Balsam Woolly Adelgid

Camp K – Camp Kostopulos/Kostopulos Dream Foundation

CARES Act – Coronavirus Aid, Relief, and Economic Security

ECCTC – Emigration Canyon Community Council

EC Metro – Emigration Canyon Metro Township Council

COVID-19 – Novel Coronavirus

DEQ – Utah Department of Environmental Quality's

DNR – Utah Department of Natural Resources

EAS – National Emergency Alert System

EID – Emigration Canyon Improvement District

E. coli – Escherichia coli

ECRIC – Emigration Canyon Roadway Improvement Committee

Emigration Canyon – Emigration Canyon Metro Township

Engineering – Salt Lake County Public Works Engineering Department

EPA – United States Environmental Protection Agency

FCOZ – Foothills and Canyons Overlay Zone

FEMA – Federal Emergency Management Agency

GPSC – Emigration Canyon Metro Township General Plan Steering Committee

HOA – Homeowners Association

IDA – International Dark-Sky Association

LRP – Long Range Planning Team (MSD, PDS)

MPO – Metropolitan Planning Organization

MSD – Greater Salt Lake Municipal Services District

the Municipality – Emigration Canyon Metro Township

NACTO – National Association of City Transportation Officials

NOAA – National Oceanic and Atmospheric Administration

PC – Emigration Canyon Metro Township Planning Commission

PDS – Planning and Development Services Department (MSD)

SLC – Salt Lake City

SLCDPU – Salt Lake City Department of Public Utilities

SLCo – Salt Lake County

SWOT – Strengths, Weaknesses, Opportunities and Threats Analysis

TMDL – Total Maximum Daily Load

UDOT – Utah Department of Transportation

UFA – Unified Fire Authority

UoL – Utah Open Lands Conservation Association

UPD – Unified Police Department

USDA – United States Department of Agriculture

USGS – United States Geological Survey

USFS – United States Forest Service

UTA – Utah Transit Authority

WFRC – Wasatch Front Regional Council

WUI – Wildland-Urban Interface





Fall mountain view. Photo Courtesy of Maridene Alexander.

CHAPTER 1: INTRODUCTION

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What is a General Plan?

A General Plan is an advisory policy document that outlines the long-range vision, priorities, and intentions for a place such as a municipality or a city. Through the planning process, existing conditions are examined, desired future conditions are established, and a path is laid out to bring a community from its present state to its envisioned future. Decision-makers,

residents, and other stakeholders can and should use the General Plan to coordinate and implement decisions about land use, infrastructure, parks, recreation and open space, city services, housing supply and affordability, and other public resources. As such, the General Plan is a living, fluid document that should be regularly reviewed and updated.

Little Mountain Summit Sign. Photo Courtesy of Maridene Alexander.

1.1 GENERAL PLAN OVERVIEW

1.1.1 Why Make a General Plan?

Municipalities make plans for many reasons. The main purpose of a General Plan is to aid a community in defining and achieving its desired future. More specifically, municipalities make General Plans because:

Plans strengthen community autonomy; by establishing a community vision, priorities, and goals, communities avoid change “just happening” to them.

Plans enhance decision-making: syncing data, local knowledge, and on-the-ground conditions enable decisions to be comprehensively informed.

With plans, communities can bolster strengths, achieve goals, and minimize and re-solve problems and threats.

Through the establishment of common goals, the planning process brings together various community members.

Utah State Code 10-9a-401 requires each

municipality in Utah to prepare a General Plan.

1.1.2 Planning Authority

Emigration Canyon Metro Township (also referred to as Emigration Canyon, the Canyon, or the Municipality throughout this Plan) became an independent municipality with its own governing authority by a vote of the residents of Emigration Canyon in 2015. Incorporation took place in 2017. Emigration Canyon boundaries and key points of interest are shown in Figure 1.1.

The Municipality is governed by an elected legislative council, the Emigration Canyon Metro Township Council (EC Metro). This group has the authority to enact laws and ordinances to carry out its responsibilities such as land use and development regulations (zoning) as long as these laws and ordinances are consistent with the Utah Municipal Code and other state statutes. Emigration Canyon has all the municipal powers allocated by the Utah Municipal Code with the exception of

certain powers of taxation. The Municipality does not have the power to enact a property tax or municipal energy taxes. One member of the EC Metro is selected by the others to be the Mayor. The Mayor is the chief executive officer of the Municipality.

Emigration Canyon is a member of the Greater Salt Lake Municipal Services District (MSD). The MSD provides the Municipality with planning and development services as part of its membership agreement. The EC Metro appoints a Planning Commission (PC) and a General Plan Steering Committee (GPSC) to work with MSD Long Range Planners on the development of Emigration Canyon’s General Plan. The GPSC and PC make recommendations to the EC Metro regarding the adoption and amendment of the General Plan. The EC Metro can adopt, reject, or revise a recommended General Plan. See Figure 1.2 for an overview of the general planning process and Figure 1.3 for a detailed timeline.

Figure 1.2: The general planning process shown with involved parties (adapted from Utah Department of Workforce Services, 2018).





Is a General Plan Required?

Utah State Code Section 10-9a-401 requires every county and municipality to have a long-range general plan in order to provide for the health, safety, and welfare of each community and its residents. Section 10-9a-403 of the code outlines the components that can be included in a general plan. Land use and transportation elements are required for all counties and municipalities. Many additional elements are also frequently included in general plans. Such sections may cover housing, economic development, infrastructure,

natural hazards and resilience, or the environment.

Land Use: “The General Plan shall designate the long-term goals and the proposed extent, general distribution, and location of land for housing, business, industry, agriculture, recreation, education, public buildings and grounds, open space, and other categories of public and private uses of land as appropriate; and may include a statement of the projections for and standards of population density and building intensity recommended for the

various land use categories covered by the plan.”

Transportation: “The General Plan shall provide a transportation and traffic circulation element consisting of the general location and extent of existing and proposed freeways, arterial and collector streets, mass transit, and any other modes of transportation that the planning commission considers appropriate, all correlated with the population projections and the proposed land use element of the general plan.”



Turning Goals Into Actions

Goals are important because they guide us towards implementing the community vision. However, goals on their own are not enough: while they indicate where a community aims to be, they do not explain how a community can get there, or how progress will be measured along the way.

This plan is meant to be useful for elected and appointed officials, property owners, developers, and other community members; as such, it needs to be implementable.

Objectives clarify the direction of progress that is expected in order to

move towards goal attainment; words such as “increase” or “decrease” will commonly be used to lay out the Plan objectives.

Actions are the method through which community goals can be realized. Actions lay out a path from today towards the vision for tomorrow. In this plan, the Work Program lists the actions necessary for the Emigration Canyon community to take in order to accomplish the goals and make progress towards the community vision. Actions range from forming partnerships, to collaborating on tasks, to applying for

grants, to conducting public outreach, and much more.

The Work Program also answers questions such as who is responsible for the action, when does the action need to take place, and approximately how much will the action cost; such details make the Work Program clear and more achievable. After the General Plan is adopted, the responsible parties named in the Work Program can look to the Work Program to guide their next steps. The Work Program can also be used to review and evaluate progress toward achieving the community goals and implementing the community vision.

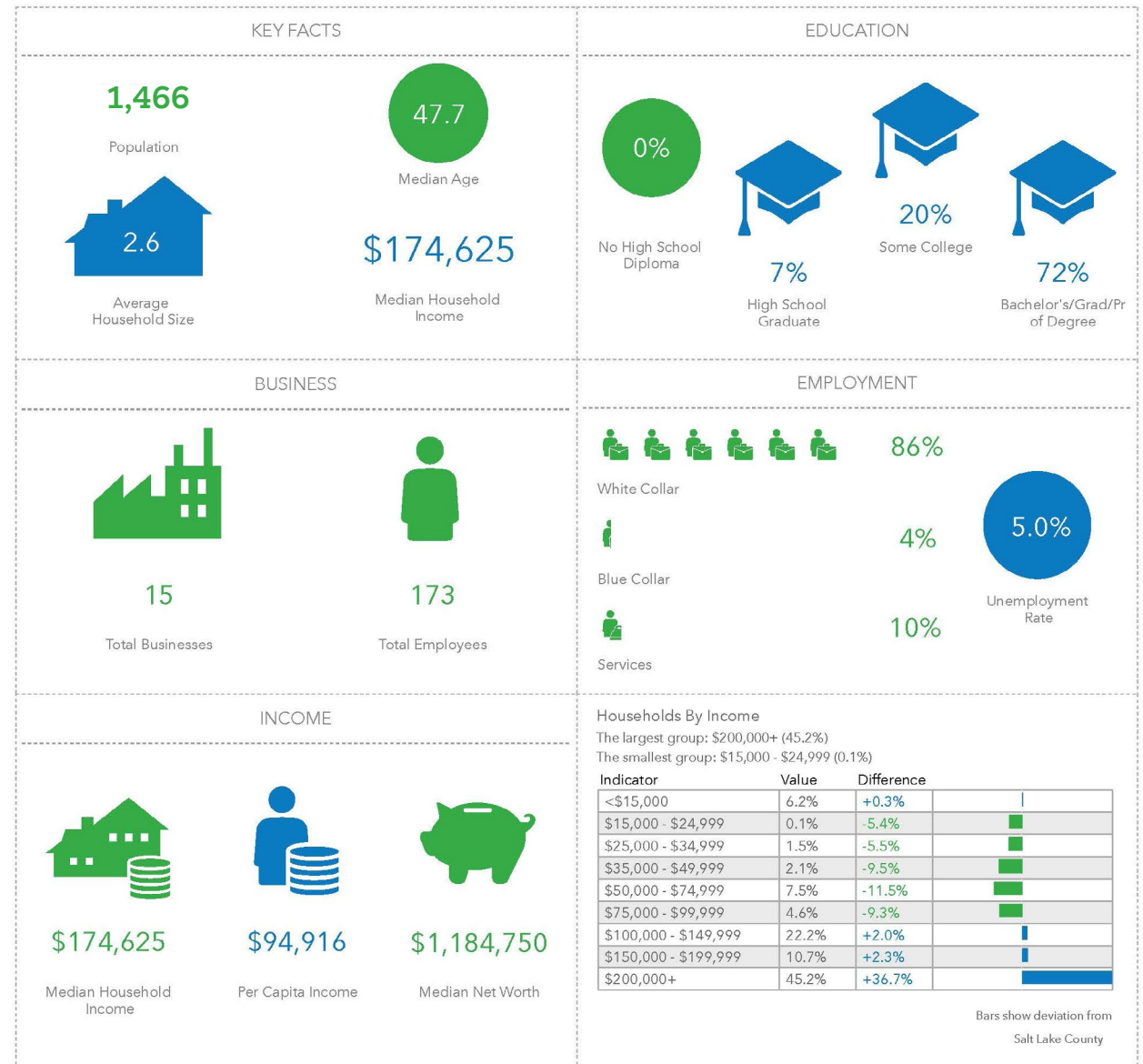
1.2 EMIGRATION CANYON PROFILE

Emigration Canyon comprises approximately 19 square miles of land in Utah's Wasatch Mountain Range. The Municipality shares a border with Salt Lake City to the West. Emigration Canyon Road is the only arterial road in the Municipality. It runs approximately 7.8 miles from Salt Lake City's Hogle Zoo to UT-65, which also connects to I-80 (See Figure 1.1).

The population of Emigration Canyon in 2020 is estimated to be 1,466 (Figure 1.3; Esri, 2020). The area also serves as an important recreational destination for bikers, hikers, and wildlife viewers from neighboring municipalities in the Salt Lake Valley.

1.2.1 Emigration Canyon at a Glance

The 2020 population estimate for Emigration Canyon is 1,466 (Figure 1.3; Esri, 2020). The population of the Canyon has been increasing since 2000 at a rate over twice that of Salt Lake County but has shown since of stabilization in recent years. This trend is largely due to construction of homes in the Emigration Oaks subdivision. The population represents an older demographic, with a median age of 47.7. This older demographic is likely to have implications for long-range planning in the Metro Township, as more than 24 percent of residents are expected to be over 65 by the year 2024. During that same time period, the population of children



This infographic contains data provided by Esri, Esri and Infogroup. The vintage of the data is 2020, 2025.

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Figure 1.3: Key statistics for Emigration Canyon (Esri, 2020).



under the age of 18 is expected to increase to approximately 22 percent. Emigration Canyon is a highly educated and affluent population. Over 92 percent of adults age 25 and over have had at least some college training, and the median household income for the Canyon in 2020 is estimated to be \$174,625, nearly twice the median income of Salt Lake County. Household size has been decreasing in the Township, with the average household size estimated at 2.6 in 2020. The population of Emigration Canyon is predominantly White, Non-Hispanic. In upcoming years, the percentage of residents reporting that they belong to a minority race or ethnicity is expected to increase, but not at the rate of increase expected in Salt Lake County at large. Approximately 15 businesses that provide employment for 173 employees are based in Emigration Canyon. Historically, the vast majority of the work force have commuted out of the Canyon to work. Recent “Remote Work” trends may reduce the percentage of persons commuting out of the canyon on a regular basis to accommodate employment requirements.

1.2.2 Environmental Conditions

Emigration Canyon is located within the Semiarid Foothills ecoregion demarcated by the United States Department of Agriculture (USGS, 2000). This area is characterized by a dry, four season climate and semiarid rolling mountains. Emigration Canyon’s environmental conditions and ecological systems should be given careful consideration when any development is proposed.

Emigration Canyon’s climate, like Salt Lake County and the rest of the southwestern United States, is very dry. Emigration Canyon has moderately hot summers and cold winters. July is typically the hottest time of the year, with an average high of around 90 degrees; the average low in January is approximately 22 degrees. The average annual precipitation is around 23 inches (Best Places, 2020).

Elevations in Emigration Canyon range from about 5,100 feet near the mouth of the canyon to just over 8,900 feet at the summit of Lookout Peak along the northern township boundary. Much of the canyon is dominated by lands where slopes exceed 30 percent.

Emigration Canyon has varied topography and a variety of vegetation zones which correlate to slope, elevation and soil types. The foothill communities located at the lower part of the Canyon are dominantly scrub oak of various varieties. Scrub oak is the most extensive plant community in the canyon environment. It begins in the lower foothills at about 5,000 feet and covers most of the areas up to about 7,500 feet. Streamside communities are dominated by maple, chokecherry, birch, alder, and cottonwood. Many varieties of deciduous shrubs are also found in this community. Rising in elevation, plant communities are dominated by aspen, fir, and spruce. At higher elevations, the most abundant trees are the Douglas Fir, Englemann Spruce and Alpine Fir. Above the timberline, at high elevation, a variety of shrubs dominate the vegetation pattern.

1.2.3 Human History

The rich history of Emigration Canyon has strongly influenced the present community. Even before Mormon pioneers trekked through Emigration Canyon on their way to settle the Salt Lake Valley, native peoples were relying on the Canyon's water supply and abundant wildlife for sustenance. Although there is little evidence that these early populations lived permanently in Emigration Canyon, it is believed by researchers that both Ute and Shoshone tribes hunted the Canyon's forest and fished the Emigration Creek, once heavily populated with trout (Carlstrom & Furse, 2019). Residents have even discovered arrowheads buried on their properties (ibid).

Although first discovered and cultivated by early native tribes, Emigration Canyon derives its name from the many pioneers who passed through it as they 'emigrated' to the Salt Lake Valley and beyond. The Donner-Reed party was one of the first and most notable early groups of emigrants, traveling the canyon in 1846, as a part of their ill-fated

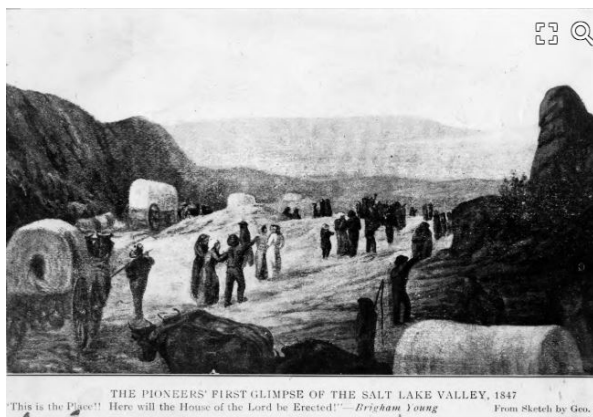
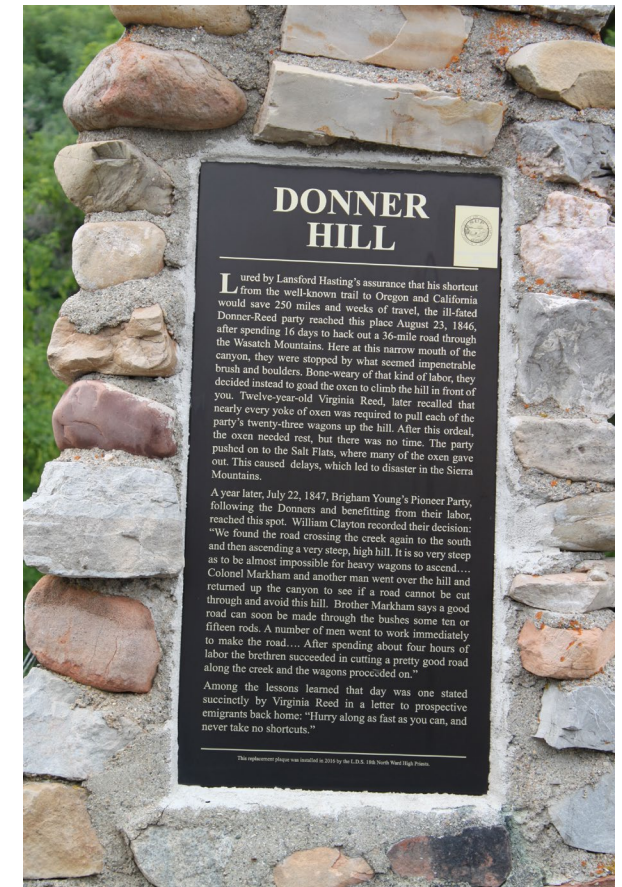
journey on the Hasting's Cutoff (Carlstrom & Furse, 2019). And in July of 1847, Mormon refugees from the east made their final camp in Emigration Canyon before descending into the Salt Lake Valley, the place that they would ultimately stay and make their home (ibid). As they established their new civilization in the valley, the Canyon became a path for future travelers, mail, and freight, as well as the source of timber and stone for building.

Over time, several businesses established themselves in Emigration Canyon, including the Wagener Brewery (1864-1914), Pinecrest Inn (1913-1949), and the famous Ruth's Diner (1949-Present).

These businesses took advantage of Salt Lake residents craving an escape into the cooler temperatures of the Canyon, as well as the more lenient laws that came because of their location outside of City boundaries (Carlstrom & Furse, 2019).

From 1907 to 1917, the Emigration Canyon Railroad operated between Salt Lake City and

quarries at the top of the Canyon. Although the original purpose of the rail line was to carry heavy stone from the mountain quarries down into the City for building, the advent



of Portland Cement soon made the stone industry obsolete, and the railroad began to primarily serve passengers (ibid). Residents of Salt Lake Valley could take the train from the City up into the alpine territories of the Canyon to enjoy fishing, hiking, and picnicking. Eventually, the presence of the train led to further development of the Canyon. Streetcar suburbs popped up near train stops, and the Pinecrest Inn (see Figure 2) was built near the end of the line to accommodate guests with overnight lodging, food, and entertainment (ibid). Although the Emigration Canyon



Railroad was financially unsustainable and dismantled after just ten years, the Canyon continued to thrive. The land that had been cleared for the railroad tracks provided automobile access, and residents from the surrounding valleys continued to establish summer cabins throughout the Canyon's wilderness.

Autonomy has long been a core value of the Emigration Canyon community. In 1950, the Emigration Canyon Planning District formed to represent the many interests of residents, namely water quality, litter pick-up, wilderness preservation, and maintenance of the Canyon's low cost of living (Carlstrom & Furse, 2019). Very early on, the Planning District

decided to implement a zoning structure which significantly limited opportunities for commercial development in the Canyon - an attempt to preserve the quiet and natural environment that had drawn residents to settle in the area. Attempts to expand development in the canyon have consistently met with resistance from canyon residents over the years (see Carlstrom & Furse, 2019 for several examples). Since then, the Canyon has continued to show ownership over its own planning and decision-making, and several community interest groups (e.g. Emigration Canyon Community Council, Emigration Canyon Sustainability Alliance) have formed over the years to address issues facing life in the Canyon (e.g. littering, water pollution, fire



danger, vandalism, and growth pressures). In 2017, Emigration Canyon was incorporated as a Metro Township and continues to be served by a Metro Township Council and Planning Commission.

Today, Emigration Canyon is beloved both by residents and visitors. It is frequented by hikers and bikers looking for refuge in the open lands surrounding the Salt Lake Valley. Although the environment has been altered by humans, it is still possible to see coyote, mule deer, elk, rattlesnakes, fox, porcupine, cougars, bobcats, moose, and several species of bird (Carlstrom & Furse, 2019).

Formal and informal recreational opportunities abound, including Camp Kostopulos, which has existed in Emigration Canyon since 1971 and provides recreational, educational, and personal development opportunities for persons of all abilities (Kostopulos Dream Foundation, 2019). Since 1961, Emigration Canyon has also been recognized as a National Historic Landmark, symbolizing the uniqueness of this Canyon and its importance to the surrounding Salt Lake Valley.



Photo Credits:

Page 19: Old pioneer drawing of pioneer seeing the Salt Lake Valley for the first time from Emigration Canyon. Photo Courtesy of the Utah Division of State History | Road to Zion sign. Photo Courtesy of Maridene Alexander | Donner Hill sign. Photo Courtesy of Maridene Alexander | Wagener's Imperial Beer sign, January 1913, Clipping found in Goodwins's Weekly.

Page 20: Ruth's Diner front door. Photo Courtesy of Maridene Alexander | Emigration Canyon Railroad. Photo Courtesy of the Utah Division of State History.

Page 21: Pinecrest Inn. Photo Courtesy of the Utah Division of State History | Camp Kostopulos. Photo Courtesy of the Utah Division of State History.



1.3 COMMUNITY INPUT

This General Plan was developed using a participatory approach that engaged members of the Emigration Canyon community in planning for the future of the Municipality.

Details on this process are provided in the subsections that follow. All elements of the Plan were developed with guidance and input from the Emigration Canyon Metro Township General Plan Steering Committee (GPSC), a group composed of Planning Commissioners

(PCs) and other dedicated local residents appointed by the Metro Township Council (EC Metro). Public meetings held over 18 months included 30 GPSC meetings, nine PC meetings, and ten EC Metro meetings in which general planning content, progress and direction was discussed with planning staff (Figure 1.4).

Wider public input on key elements of the Plan was also gathered from a workshop and a survey, in addition to statutory requirements

that allow for input during meetings and hearings.

A Participatory Approach to Planning

The planning process used to develop this General Plan relied on a participatory, community-engaged approach to planning and decision making. Table 1.1 highlights just a few of the benefits of engaging citizens in government decisions in this way.

Involving the public in the planning process



Transportation Planning Workshop at the Salt Lake County Government Center. Photo courtesy of MSD Long-Range Planning Team.

means that residents are able to share their unique community-based knowledge with planners, local leaders, and elected officials. At the same time, residents can learn about the planning and decision-making opportunities and challenges facing their community from the perspective of experts and leaders.

Through participatory processes, decisions can come to better reflect residents' values and lived experiences. Robust community engagement also gives the public ownership over projects and decisions. When community members feel that their voices were represented in a decision, they are more

likely to become active advocates for and participants in decision outcomes.

1.3.1 Public Meetings

All general planning meetings held by the GPSC, PC, and EC Metro were open to the public (in-person or virtually) and were noticed in accordance with public meeting requirements. Several GPSC meetings focused entirely on developing and reviewing content for the elements required by State code (transportation and land use). Additionally, experts were occasionally invited to present at GPSC meetings on a topic determined by the

group to be of particular importance, interest, or concern (e.g. transportation, water). The PC and EC Metro also set aside time to review and comment on the required elements during public meetings prior to adoption. All elements were discussed at length by the GPSC and reviewed and commented on by the PC and EC Metro.

The Emigration Canyon General Planning Process:

July 2019 - November 2020

30 - General Plan Steering Committee Meetings

10 - Emigration Canyon Metro Meetings

9 - Planning Commission Meetings

1- Workshop

1 - Survey

Advantages of Citizen Participation in Government Decision Making		
	Advantages to citizen participants	Advantages to government
Decision process	Education (learn from and inform government representatives) Persuade and enlighten government Gain skills for activist citizenship	Education (learn from and inform citizens) Persuade citizens; build trust and allay anxiety or hostility Build strategic alliances Gain legitimacy of decisions
Outcomes	Break gridlock; achieve outcomes Gain some control over policy process Better policy and implementation decisions (tailored to local context)	Break gridlock; achieve outcomes Avoid litigation costs Better policy and implementation decisions (tailored to local context)

Table 1.1: Advantages of citizen participation government decision making, adapted from Irvin & Stanbury, 2004.

1.3.2 SWOT and APAE Analysis

In the early stages of its work developing a draft of the General Plan, the GPSC conducted a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis (Figure 1.5), which is used to inform the goals and objectives associated with each element of the General Plan. The GPSC also conducted an Achieve, Preserve, Avoid, and Eliminate (APAE) analysis (Figure 1.6), which highlights possible actions relevant to every element included in this Plan. The SWOT analysis helps a community assess its assets and challenges, while the APAE analysis forms the basis for the plan of action to ensure desired future outcomes. The topics included in both the SWOT and APAE analyses are not ranked, quantified, or exhaustive, but they provide an early-stage brainstorm of topics likely to be of interest or concern for the residents of Emigration Canyon.

Figure 1.5: Emigration Canyon Metro Township General Plan Steering Committee SWOT (strengths, weaknesses, opportunities, and threats) analysis. This analysis informs the goals and objectives associated with each element (for details see Chapter 7 and the Work Programs for each chapter).

		Helpful to achieving the objective	Harmful to achieving the objective
Internal origin (attributes of the community)		Strengths Love for outdoors Physically active community Affluent Well educated Rural mountain feel Open space Hiking, biking, outdoor recreation activities Community involvement Wildlife	Weaknesses Low sense of community High traffic volume Lack of awareness of environmental issues Maintaining roads Difficulty communicating with other residents of the canyon Slow internet Wildland fires Timely snow removal Poor parking options
		External origin (attributes of the environment)	Opportunities Promote conservation Easement to protect open land for public Buy land at trailheads for parking Nature Clean air Participate in septic smart week Wildlife viewing Support sustainable local businesses

	Do you have it?	
	No	Yes
	Achieve Connected trails system Parking (study, at trails, enforcement) Restrooms in safe/convenient areas Wildlife awareness/preservation Light pollution awareness/ordinance Sustainable water resource use Water conservation program Sense of community Community events (hikes, potlucks, music) Improved zoning regulations to control development High speed internet/Fiber optic (support telehealth, etc) Septic tank zoning update Septic tank improvement program Safety improvements for cyclists/road improvements Hazards/emergency preparedness Increased regulation of fireworks/improve fireworks education Short term rentals ordinance (so the Canyon can avoid them) Support sustainable local businesses	Preserve Water resources/natural resources Historic areas Stream flow Rural character/Character areas Night sky Open Space Land easement programs (Utah Open Lands) Clean air Code Red Firewise status Wildlife Wildlife corridors and habitats Recreational character/value Workspace for local artists/ musicians
	Avoid Loss of resources Unintended consequences from changes Overdevelopment Short term rentals Parking issues/Increased traffic Fires in the Canyon Invasive species Fire hazards (e.g. Balsam Fir) Water Rights Issues Overburdened onsite sewer systems Increasing traffic (especially through road improvements e.g. widening) Overuse of concrete barriers on road Exceeding limits of water resources	Eliminate Light pollution Noise pollution Air pollution Water pollution/Impaired waters Illegal camping Uncontrolled growth/development Fire hazards (e.g. fireworks, target shooting) Invasive species Septic system failures/health issues Illegal bow hunting (privacy/safety/habitat issues) Off road vehicles (off pavement use) Pull off at mouth of Canyon
Do you want it?	Yes	No

1.3.3 Workshops and Surveys

To encourage wider community input, outreach to the Emigration Canyon community was conducted at key stages of General Plan development. Residents were invited to participate in a transportation planning workshop and/or a transportation and land use survey. Although this outreach focused on gathering input on the required general planning elements (i.e. transportation and land use), other related topics, such as open space, air quality, and economic development were also covered (see Appendix B and C for details). Unfortunately, due to the COVID-19 pandemic that arrived in Utah in March 2020, it was not possible to safely hold community-wide workshops to discuss Emigration Canyon's General Plan in person after this date..

Transportation Planning Workshop

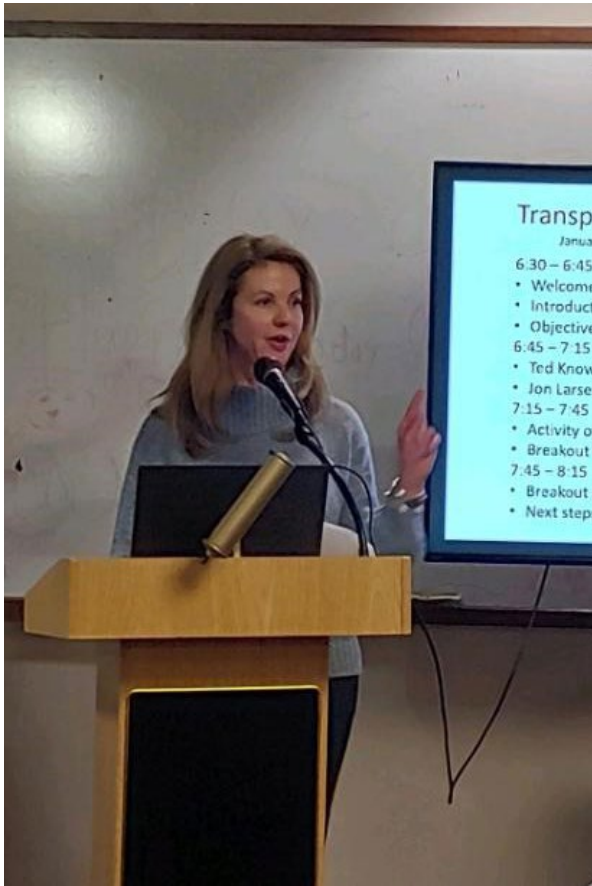
To elicit input on broad transportation planning needs across all of the MSD member communities, a Transportation Planning Values and Principles Workshop was held on January 30, 2020. At this workshop, 32 members of MSD-community Planning Commissions, Councils, General Plan Steering Committees, and several involved members of the public, developed a list of transportation values broadly applicable across the MSD. Five Emigration Canyon representatives contributed to the development of this list, which was then used to guide more in-depth discussions and explorations of transportation and land use planning options that would potentially be relevant for the Canyon (for details, see Chapter 3 and Appendix B).

Transportation and Land Use Survey

A Transportation and Land Use Survey was developed and disseminated to Emigration Canyon residents to get a better idea of the needs, concerns, and values associated with the area. The survey was sent to the EC Metro, PC, and GPSC on April 9th, 2020, posted on the MSD website, shared on MSD social media with targeted advertising, and posted on the EC Metro website. The survey was open through May 14th, 2020. The intention was to gather input from Emigration Canyon residents on their transportation and land use interests and needs (similar to an open house), rather than to collect a dataset

Figure 1.6: Emigration Canyon Metro Township General Plan Steering Committee APAE (achieve, preserve, avoid, and eliminate) analysis. While the SWOT analysis helps a community assess its assets and challenges, the APAE analysis forms the basis for the plan of action to ensure desired future outcomes (for details see Chapter 7 and the Work Programs for each chapter).

that was statistically representative of the demographics of the area. This kind of non-probability convenience sampling is commonly used to collect data on the key interests and needs of a group of people within a community, but inferences based



Lupita McClenning, Director of Planning & Development, presenting at the Transportation Planning Workshop held at the Salt Lake County Government Center. Photo courtesy of MSD Long-Range Planning Team.

on the sample should be made only about the sample itself (Bornstein et al., 2017). The data from this study is therefore considered as only one of several important components that inform the recommendations made throughout this General Plan.

The Transportation and Land Use Survey utilized an online survey platform, ArcGIS Survey 1-2-3, to ask MSD-area residents about their transportation and land use concerns and values in 14 questions. The questions included spatial and mapping components to allow for site-specific concerns and opportunities to be shared. Ninety-seven (97) Emigration Canyon residents completed the survey. The top concerns regarding development in Emigration Canyon identified by survey respondents are shown in Figure 1.7 (for details, see Chapter 4; Greater Salt Lake Municipal Services District, 2020; and Appendix C)

1.3.4 Data Analysis

For all elements of the General Plan, the variety of data and information collected from the community was analyzed, reviewed, and referenced with consideration for: publicly available reports and academic literature, the environment and history of Emigration Canyon, and current planning best practices and principles. This robust approach to data analysis establishes a fact-based foundation that can be used to guide future planning and decision making in Emigration Canyon.

Information on the kinds of analyses conducted for each element of the General

Plan are included in the subsections that follow. Workshop and survey data was analyzed using summary statistical analysis and thematic analysis techniques (for details see Appendix B and C).

Technical Assessment

The Technical Assessment is an integral component of the General Plan, as it provides detailed, fact-based information about the current state of Emigration Canyon, and makes basic projections about how its future could be shaped. The assessment is prepared by planning staff, who collect and analyze data and information and present the results in a clear format for consideration by the public and decision makers involved as the General Plan is developed. Data for the Technical Assessment is drawn from a variety of sources, most notably the US Census Bureau's American Community Survey 5-Year Estimates and Esri's Business Analyst. See Appendix D for the full Technical Assessment.

Land Use & Character Areas

ArcGIS was used extensively for analyses in the Land Use Chapter, including the land use inventory and character area analysis. The Wasatch Front Regional Council's (WFRC) shapefile layer: Salt Lake County Land Use Parcels 2018 was a key source of data. Although the data is two years old, it provided the most robust and accurate information on key items such as parcel size, total market value, land use, and square footage of structures available at the time. Major discrepancies are identified with asterisks or other notes. In the character area

analysis, population of each character area is estimated by multiplying the dwelling units of the character area (from WFRC data) by the average household size for Emigration Canyon. Esri Community Analyst was also used to provide some of the data found in this chapter.

Transportation & Mobility

The Transportation Chapter relied heavily on publicly available data from Wasatch Front Regional Council (WFRC), Utah Department of Transportation (UDOT), and the Lochner Report (2016) (included in Appendix E). Maps included in the Transportation Chapter were produced using ArcGIS, and sources of map data are included in figure subtitles. Data from the US Census Bureau's 5-year estimates were used to describe residents' transportation preferences and commuting patterns.

Economic Development Opportunities

The Economic Development Chapter includes data analysis of both local and regional economic conditions. Data regarding Emigration Canyon employment, businesses, and household spending patterns were derived from Esri Business Analyst or Community Analyst Reports and US Census Bureau's 5-year estimates. An analysis of location quotient and shift share was conducted using the US Bureau of Labor Statistics' Quarterly Census of Employment and Wages for Salt Lake County and is included in Appendix F. This analysis was accompanied by an overview of area market real estate reports that revealed trends in real estate vacancy

and net absorption for Northern Utah. This analysis relied heavily on NAI Excel's 2019 Outlook for Northern Utah.

Environment

The Environment Chapter includes data drawn from a range of reports and plans. Very little data specific to Emigration Canyon were available to include in this General Plan. Future actions that can be taken to remedy this issue are included in the Work Program for this element.

Resilience & Infrastructure

The Resilience and Infrastructure Chapter

includes data provided by the General Plan Steering Committee (social cohesion), and Emigration Canyon Improvement District (water systems). Maps included in the chapter were produced using ArcGIS, and sources of map data are included in figure subtitles. The hazards and risks analysis included in the chapter is primarily drawn from the recently completed Hazards Mitigation Plan for Emigration Canyon (Salt Lake County Emergency Management, 2019). Esri Community Analyst was used to conduct many of the other analyses included in the chapter.

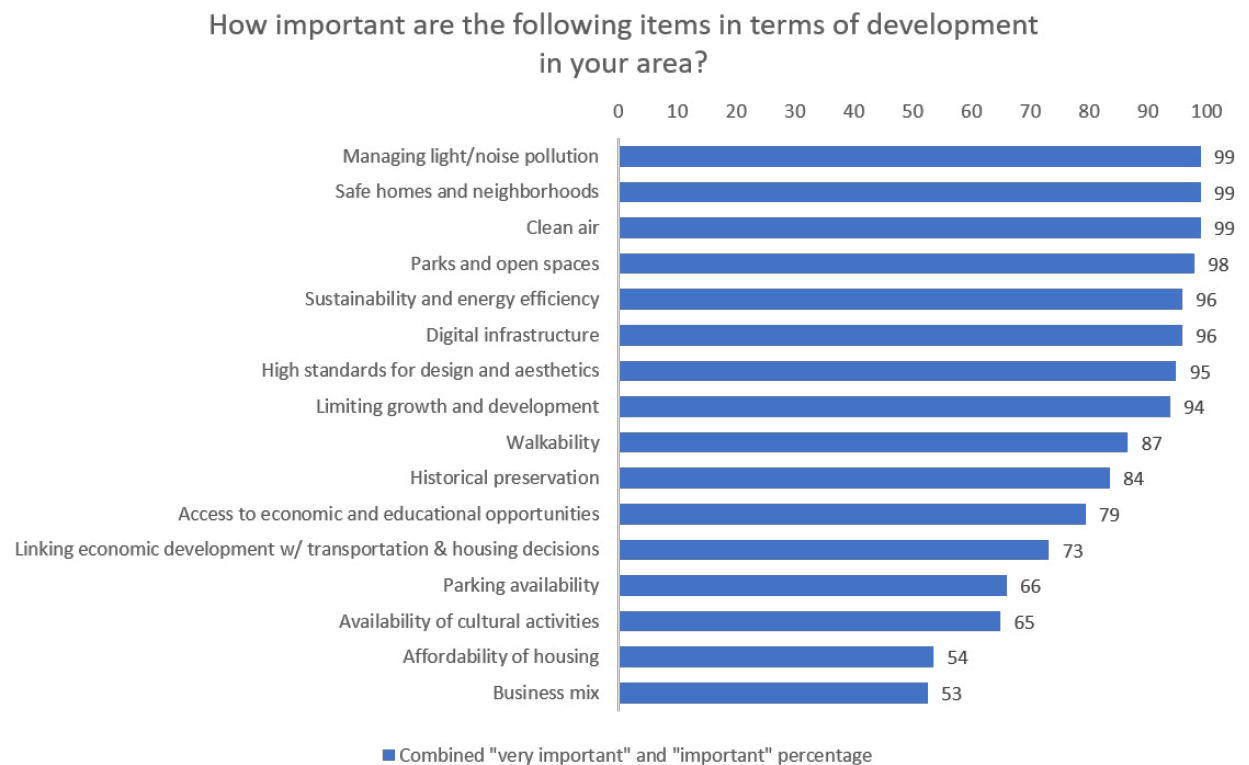


Figure 1.7: Emigration Canyon resident responses to the Land Use and Transportation Survey question "How important are the following items in terms of development in your area?"

1.3.5 Key Findings

Key themes, including trends, challenges, and opportunities, emerged from the overall analysis of community input. For example, several issues identified by the GPSC in the SWOT and APAE exercises are also highlighted by the wider Emigration Canyon community members who participated in the Transportation and Land Use survey (Figure 1.7). Clean air, managing noise and light pollution, and safe homes and neighborhoods each received a 99 percent response rate in terms of being considered either “very important” or “important” by Emigration Canyon residents who responded to the survey. Parks and open spaces, sustainability and energy efficiency, digital infrastructure (e.g. access to broadband), high standards for design and aesthetics, and limiting growth and development were also considered either “very important” or “important” by between 94 and 98 percent of survey respondents. Although water quality and quantity concerns were not included as an option for survey respondents, this issue was raised repeatedly by the GPSC, was included in write-in responses to the survey, and was emphasized in the literature review. The key themes to emerge as essential to consider in planning for the future of the Emigration Canyon community are therefore as follows:

Local character

Preserving qualities such as peace, quiet, tranquility and privacy by managing noise and light pollution, supporting design standards that respect local character, and managing growth and development.

Open spaces and ecosystems

Ensuring preservation of and access to parks, trails, open spaces and healthy, functioning ecosystems.

Road safety

Enhancing road safety for all users.

Environmental sustainability

Managing human impacts on the environment, including considerations of land, air, water, plants and wildlife, now and in the future.

Hazards planning

Increasing management of and planning for hazards and climate change.

Community connectedness and engagement

Enhancing community support networks, identity, and involvement, including improvements to digital infrastructure and support for local businesses.

These themes are considered throughout Emigration Canyon’s General Plan, and inform the goals, objectives, and actions that are included in the Community Work Program at the end of each chapter and in Chapter 7.





Aerial photo of Emigration Canyon. Photo courtesy of Andrew Wallace.



1.4. The Future We Choose

1.4.1 Community Vision

The community vision statement provides the overarching sense of purpose and direction for Emigration Canyon's General Plan. It outlines the desired long-term results of implementing the goals, objectives, and actions that are associated with each element of the Plan. The vision statement below was developed by the GPSC with input from the PC and the EC Metro.

Emigration Canyon is a progressive, family-oriented community with many opportunities for its residents to enjoy active, healthy, and modern lifestyles.

Emigration Canyon is comprised of distinct neighborhoods with residents who are dedicated to fostering a sense of community and are actively involved in public activities.

Emigration Canyon is a nationally recognized historic landmark and its residents embrace that heritage.

Emigration Canyon residents enjoy and value the Canyon's many excellent, cherished, well-maintained recreational amenities.

Emigration Canyon residents are committed to maintaining and protecting the Canyon's important ecosystems and resources.

1.4.2 Community Values

The following five values have been developed from the Emigration Canyon Vision Statement, SWOT/APAE Analysis, Transportation and Land Use Survey results, and with input from the GPSC, PC and EC Metro. Values are beliefs about desirable states or modes of conduct that guide behavior and prioritization. Each chapter of the General Plan includes

a work program that links these five values to goals, objectives, actions, outcomes and performance indicators. This work program can be used to evaluate progress towards the achievement of community goals, and the maintenance of community values. The process will help ensure that planning decisions are made based on the overarching values held by the members of the Emigration Canyon community.

Environmental sustainability & protection

Emigration Canyon can protect the natural environment of the canyon and aim to maintain or enhance environmental sustainability and stewardship now and for future generations; this includes but is not limited to features such as water quality, open space, noise management, dark skies, air

quality, biodiversity and climate resilience.

Community commitment

The Emigration Canyon community should celebrate its history and foster a strong sense of cohesive community identity through a commitment to public service, the enjoyment of shared open and community spaces, and the pursuit of intergenerational well-being.

Quality of life

Emigration Canyon should promote a range of well managed educational, cultural, economic and recreation opportunities that support the achievement of active, healthy, and modern lifestyles for all residents.

Health & safety

All members of the Emigration Canyon community should have access to a healthy, quiet, safe environment where traffic is well controlled and natural hazards are well managed and they can live, work, and play with peace of mind.

Engaged citizenry

All citizens of Emigration Canyon should have the opportunity to be knowledgeable about and encouraged to engage in local decision-making.

1.4.3 Using the Vision and Values to Guide this Plan

The vision and values of Emigration Canyon are reflected throughout this General Plan and guide the actions included in the Community Work Programs. For example, environmental sustainability works its way

into the Transportation Chapter, with actions oriented toward reducing vehicles miles traveled and improving air quality. Health and safety and quality of life are key components of the Land Use Chapter, which focuses on preserving and improving access to the open spaces which support human health and wellbeing. Commitment to community is reflected in our focus on creating opportunities for the community to gather to celebrate our history and identity, this is especially evident in the Land Use and Economic Development Chapters. Finally, engaged citizenship is a consideration throughout the General Plan. This is especially reflected in the Community Work Program, which creates active spaces for residents to get involved in the implementation of their General Plan.

1.4.4 Key Recommendations

Future challenges for the Emigration Canyon community are often linked to geography. The close proximity of Emigration Canyon to downtown Salt Lake City is both a strength and a challenge when it comes to progressing the community vision and upholding the community values. While this proximity makes it easy for Canyon residents to commute to work and other amenities, it also means the Canyon is vulnerable to overuse by visitors. Other substantial challenges for the community include – how to manage development pressures, how to manage water quality and quantity, and how to control the risk of wildfires and other hazards associated with the Wildland-Urban Interface. Seven key recommendations have been developed

to address these essential challenges in the coming years. These recommendations arose as top priorities for implementation from the many goals, objectives, and actions described in the Work Programs that accompany each chapter of this Plan.

Recommendation 1:

Preserve and enhance the ecological features, viewsheds, wildlife corridors, and open space of Emigration Canyon for future generations.

Recommendation 2:

In land management decision-making, protect watershed quality and ensure sustainable use of all water resources.

Recommendation 3:

Improve the safety, sustainability, and resilience of the built environment, including trails and other outdoor recreation infrastructure.

Recommendation 4:

Provide a safe, efficient transportation network for all users.

Recommendation 5:

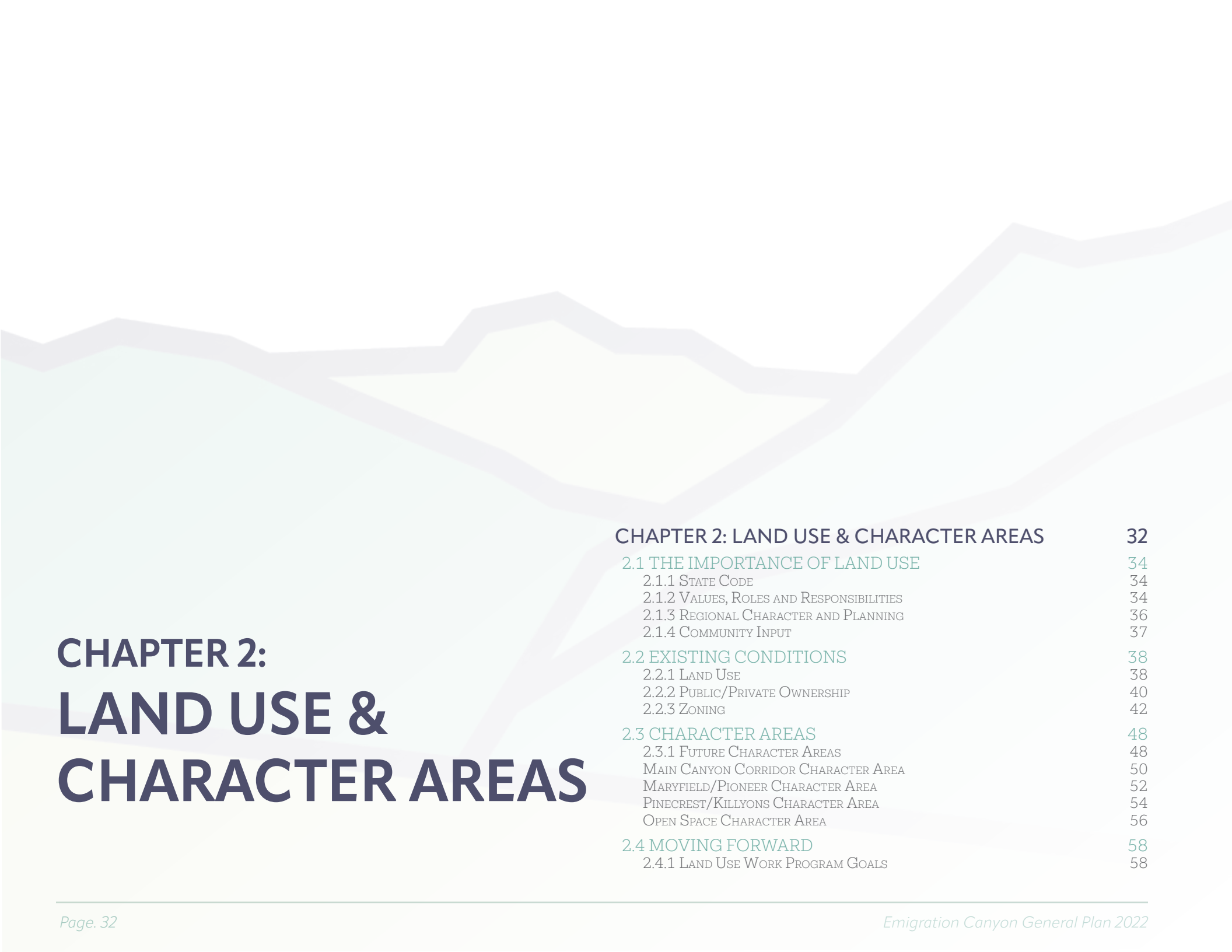
Enhance community connectedness, engagement, and sense of place.

Recommendation 6:

Prepare for, mitigate and adapt to the effects of climate change, natural disaster risk, and other hazards.

Recommendation 7:

Foster responsible, equitable, and sustainable economic development in keeping with the character and values of Emigration Canyon.



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View of homes in Emigration Canyon. Photo Courtesy of Katie Cook Oborn.

2.1 THE IMPORTANCE OF LAND USE

The Land Use element of the General Plan establishes a vision for the future pattern of development in a community. It weaves each of the plan's unique sections together. Understanding current land use challenges and planning for future land use opportunities is critical because land use is part of the fabric of a community. Land use impacts everything: housing, transportation, economic opportunities, access to daily needs, and overall quality of life. For example, thoughtful land use planning ensures that households have access to transportation and recreational amenities, that schools are not located near sources of pollution, that commercial centers receive the traffic necessary to stay in business, and that municipal services and infrastructure can be efficiently provided. The pattern of land use in a community is thus a major determinant of area character and quality of life. Throughout this chapter, the connections between Emigration Canyon's land use and the topics outlined above are explored through data analysis, public feedback, and on-the-ground experiences.

2.1.1 State Code

The State of Utah acknowledges the importance of land use in community development and wellbeing. To comply with state law, Utah municipalities must incorporate a land use element into the General Plan. According to Utah Code § 10-

9a-403(3), the General Plan must include, "a land use element that:

(A) designates the long-term goals and the proposed extent, general distribution, and location of land for housing for residents of various income levels, business, industry, agriculture, recreation, education, public buildings and grounds, open space, and other categories of public and private uses of land as appropriate; and

(B) may include a statement of the projections for and standards of population density and building intensity recommended for the various land use categories covered by the plan."

2.1.2 Values, Roles and Responsibilities

Aligning Emigration Canyon's land use goals with regional and statewide values and responsibilities increases the likelihood of acquiring funding and successfully implementing desirable projects. Acknowledging the roles and responsibilities of the organizations and institutions which could have some influence on decisions regarding land use and implementation in Emigration Canyon, will help to clarify management expectations and coordinate land use goals and opportunities. The following is a brief overview of organizations and institutions which are most likely to present opportunities for coordination regarding land use and land

use implementation strategies.

The State of Utah

The State of Utah recognizes the close connection between quality of life and land use issues, including housing costs, traffic congestion, air quality, and leisure time. With these topics in mind, the Utah Life Elevated 2020 Initiative (Governor's Office of Management and Budget, 2020) identifies the following goals as part of a land use strategy designed to further enhance quality of life and future prosperity for all Utahans:

1. Ensure that Utahans have access to ample opportunities for jobs, education, recreation, and affordable, market-driven housing choices within close proximity.
2. Leverage existing and future infrastructure investments to reduce travel times and road congestion, optimize the use of Utah's limited water and improve air quality.

Wasatch Front Regional Council

As the Metropolitan Planning Organization responsible for a broad region including Emigration Canyon, the Wasatch Front Regional Council (WFRC) promotes an interconnected, interdisciplinary approach to planning that addresses the interactions among key planning elements such as transportation and land use. In collaboration with stakeholders from around the region, WFRC has developed a suite of goals (Figure

3.2), which are applicable throughout the region and which guide many research and funding decisions made by WFRC.

United States Forest Service

Much of Emigration Canyon is included within the Uinta-Wasatch-Cache National Forest (Figure 2.2) as part of the United States Forest Service (USFS) Salt Lake Ranger District. The land managed by the District supplies more than 60% of the drinking water for Salt Lake City residents (US Forest Service, n.d.). The Salt Lake City Watershed includes Emigration Canyon “from Burr Fork and Killyon Canyon above a point at the intersection of State Highways 65 and 172.” This area is today known as the intersection of Emigration Canyon Road and Pinecrest Canyon Road. Various rules and regulations have been put in place to protect this valuable water resource and ensure that the land remains in its natural state.

Utah Open Lands Conservation Association

Due to its proximity to Salt Lake City, unprotected areas throughout Emigration Canyon have been and continue to be of interest to property developers. The Utah Open Lands Conservation Association is a 501(c)(3) nonprofit land trust conservation association in the United States that is chartered to preserve and protect open space in order to maintain Utah’s natural heritage and quality of life for present and future generations. Since 2001, Utah Open Lands has raised funds and established partnerships to preserve numerous parcels

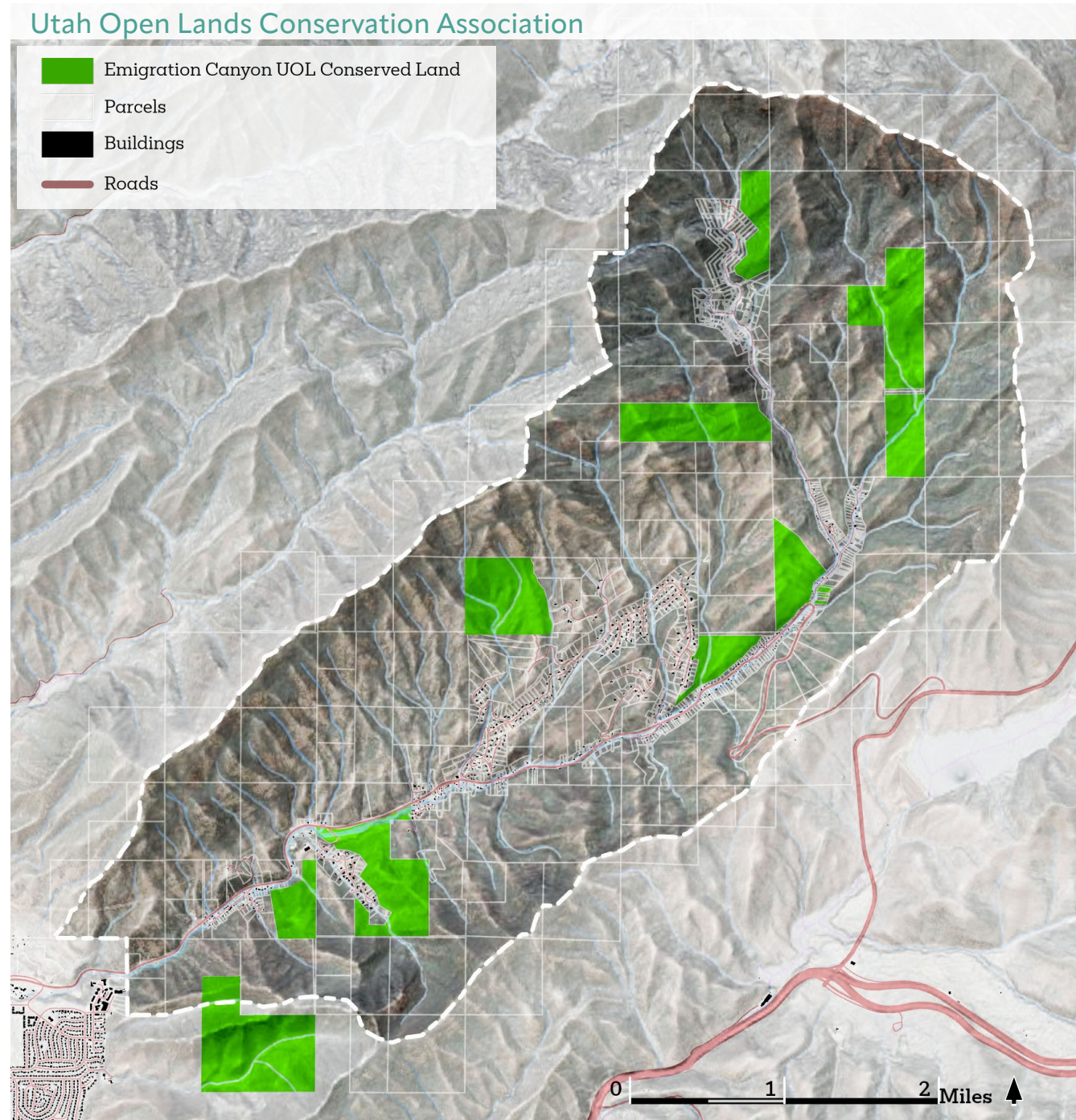


Figure 2.1: Lands held under easements by Utah Open Lands Conservation Association.

of land in Emigration Canyon, today totaling over 1,000 acres and approximately 9% of the land (Figure 2.1; Figure 2.2).

Salt Lake City

Lands in Emigration Canyon owned by the Salt Lake City Department of Public Utilities (SLCDPU) are maintained primarily for watershed and open space purposes. SLCDPU holds and maintains surface and groundwater rights in the Emigration Creek watershed for current and future water supply purposes. Title 17 Chapter 17.04 of the Salt Lake City Code defines a portion of the watershed as protected. This area is defined in the code as “All of the Emigration Canyon watershed area that contributes water to Emigration Creek from Burr Fork and Killyon Canyon above a point at the intersection of state Highways 65 and 172.” SLCDPU is currently updating a long-range watershed management plan for the area, which should be completed sometime in 2021.

Salt Lake County

Lands in Emigration Canyon owned by Salt Lake County are similarly maintained primarily for watershed and open space purposes. As part of this effort, Upper Emigration Creek (from Hogle Zoo to the headwaters) is designated as a Category 1 High Quality Waters in accordance with UAC R371-2, Standards of Quality for Waters of the State, Section R317-2-3, Antidegradation Policy (Salt Lake County Watershed Planning & Restoration, 2015). Designated Category 1 waters must be maintained at existing high quality. New point-source discharges are

prohibited in segments of Category 1 waters and diffuse sources must be controlled to the extent feasible through implementation of best management practices or regulatory programs. This designation helps to ensure that much of the publicly-owned and publicly-managed land in Emigration Canyon remains in its natural state.

Salt Lake County Public Health Department is also responsible for waste- and water-related permits in Emigration Canyon. County rules and regulations associated with water use or wastewater disposal may limit some land uses in the Canyon. For more details see <https://slco.org/health/permits/>

Emigration Canyon Improvement District

The Emigration Canyon Improvement District (EID) is a local special service district created under Utah Law. As such it is an independent governmental entity governed by a Board of Trustees. The EID is the governing body for water and wastewater for portions of Emigration Canyon and therefore establishes rules and regulations that govern this service including setting rates and fees. The EID also has the power to establish a property tax to help fund the services it provides. In recent years EID has installed fire hydrants in the canyon, which provide fire protection to most, but not all of Emigration Canyon residents. EID also supports water quality education and assists with septic system installation in some cases. The EID's role in planning and zoning is limited. The EID does not have any power to adopt land use control ordinances or approve

or deny any land use applications, but EID input on the adoption and implementation of general plans is needed to assist with long term planning regarding water and wastewater provision in the Canyon. The Municipality's plans will affect future demands on the EID for services and EID's capacity will affect the Municipality's ability to allow future growth.

2.1.3 Regional Character and Planning

Emigration Canyon is a community of approximately 1,466 residents whose homes are tucked into the folds of the Wasatch Mountains that rise above the growing metropolis of Salt Lake City and the surrounding Salt Lake Valley. Land uses are relatively constrained by a combination of mountainous geography, environmental characteristics, limited water resources, and local values. However, such close proximity to the thriving Wasatch Front region means that many external drivers must factor into Municipality planning and decision making. Emigration Canyon is not included in the Wasatch Canyons General Plan, a regional planning document that considers many of the surrounding canyons, there are many parallels in terms of planning interests and needs (see Appendix G for details). Like Emigration Canyon, the canyons and foothills included in the Wasatch Canyons General Plan are under increasing pressure from visitation, development, traffic, and other factors such as climate change (Salt Lake County Regional Development, 2020). Because of these concerns, this 2022 Emigration Canyon

General Plan seeks to manage the influence of these external drivers and to preserve the rural character of Emigration Canyon for future generations to enjoy.

2.1.4 Community Input

This General Plan was developed using a participatory approach that engaged members of the Emigration Canyon community in planning for the future of the Municipality. Details on this process are provided in section 1.4. As part of the community input process, a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis (Figure 1.5) and an Achieve, Preserve, Avoid, and Eliminate (APAE) analysis (Figure 1.6) was conducted by the GPSC. These analyses highlighted many subjects relevant to this Land Use element. A summary of key results are described in the two subsections that follow. Key results from the Transportation and Land Use Survey relevant for land use planning are described in the third subsection

SWOT Analysis (Land Use)

Land use strengths associated with Emigration Canyon as identified in Figure 1.5 include the rural mountain feel, open space, and outdoor recreation activities like hiking and biking enjoyed by area residents and visitors. Land use weaknesses included high traffic volumes, issues with internet and cellular access and a lack of community gathering spaces. Several land use opportunities were identified; these generally related to promoting, protecting, or enjoying open spaces and nature. Threats from over

development, traffic, water contamination and exceeding groundwater capacity were the major land use concerns raised.

APAE Analysis (Land Use)

Land use-related items identified in the APAE analysis (Figure 1.6) largely reflected the environmental sustainability and protection, community commitment, and quality of life values associated with Emigration Canyon. In terms of things to be achieved, this included a connected trails system and associated parking, increased wildlife awareness and preservation, sustainable resource use and supporting ordinances, and zoning that protects the dark skies and current character of the Canyon. Achieving a sense of community through better land use planning was also considered very important for Emigration Canyon. Characteristics that were identified as needing to be preserved included water and other natural resources, dark skies and open spaces (including the land easement programs that facilitate land conservation), and the rural and historic character of the area. Items to be avoided included parking issues (e.g. lack of safe parking), loss of resources, and over development of the Canyon, including short term rentals, and other unintended changes that could result from a lack of careful planning. Things that were identified that need to be eliminated included a range of contaminants such as air, water, and light pollution, uncontrolled growth, and illegal camping.

Transportation and Land Use Survey

The top land use development-related concerns for Emigration Canyon identified by the General Plan Steering Committee in the SWOT and APAE exercises are also largely reflected by the wider Emigration Canyon community members who participated in the transportation and land use survey (Figure 1.7). Issues such as managing noise and light pollution and safe homes and neighborhoods each received a 99 percent response rate in terms of being considered either “very important” or “important” by Emigration Canyon residents who responded to the survey. Parks and open spaces was also considered either “very important” or “important” by 98 percent of survey respondents from Emigration Canyon. High standards for design and aesthetics was supported by 95 percent, while limiting growth and development was supported by 94 percent of survey respondents as either “very important” or “important”.

This analysis informs the goals, objectives, and actions that follow in the Community Work Program at the end of the chapter and in Chapter 7.



2.2 EXISTING CONDITIONS

Double rainbow, Emigration Canyon. Photo Courtesy of Catherine Harris.

Land use planning is a decision-making process that specifies the appropriate or designated types of uses of a piece or pieces of land. Land use planning generally aims to balance private property rights with the desired community character and other broad considerations. This process can be accomplished, at least in part, through the application of zoning regulations that

specifically define and regulate the allowable uses, designs, and densities in specific areas. It is generally harder to change land use designations than zoning, as they operate at different scales (i.e. land use is more likely to apply to an area composed of multiple parcels, while zoning can be parcel by parcel).

2.2.1 Land Use

Emigration Canyon includes approximately 12,000 acres in total land area. Land in Emigration Canyon (Figure 2.3) is primarily devoted to open space/natural resources, with 8,163.84 total acres and approximately 68 percent of the total land area in the Canyon associated with this use. Not surprisingly,

Current Land Use

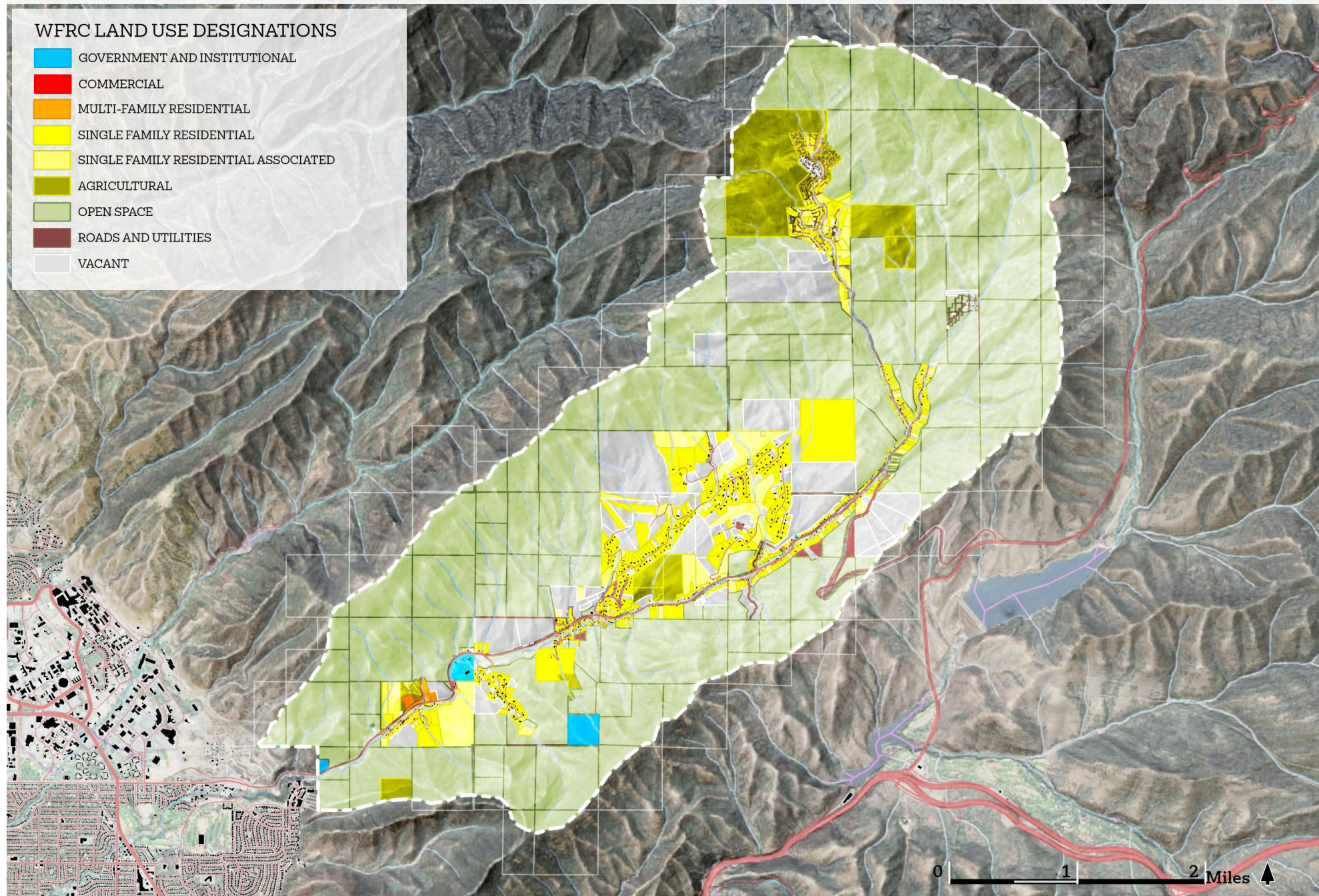


Figure 2.3: Current Land Use in Emigration Canyon.

this use also aligns closely with the areas in the Canyon that are publicly owned and managed (Figure 2.2). Vacant lots are currently listed as the second most common land use in the Canyon with 1,269.21 total acres, but a substantial amount of this area may be subject to conservation easements (for example with Utah Open Lands) and is therefore not available for development. Additional development constraints on many of these parcels include steep grades, public health permitting issues related to water and wastewater, lack of access, or other zoning conditions (e.g. see section on FCOZ). More details on vacant lots are included in the Character Areas section of this chapter, but all information provided in this General Plan is for reference only; more detailed assessments of individual parcels is required in order to make informed decisions about appropriate land use at that scale. Residential uses are the next most common in Emigration Canyon, with 866.91 total acres or just under 8 percent of the area in the Municipality associated with single-family residential uses, and 0.05 percent of the Municipality used for multi-family residential land uses. There are 642

acres designated for agricultural land use in Emigration Canyon but none of this land is currently used for intensive agricultural purposes.

2.2.2 Public/Private Ownership

In 2012, when the last General Plan for Emigration Canyon was completed, approximately 60 percent of Emigration Canyon was publicly owned or managed. This percentage has increased significantly (by at least 11 percent) in the ensuing eight years; in 2020, 71.6 percent or over 8,000 acres of Emigration Canyon is publicly owned or managed land (Figure 2.2). Public lands preservation has increased in recognition of the vital role that the Canyon plays in providing both water and recreation opportunities to the rapidly expanding population of Salt Lake City and Salt Lake County. The concerted preservation efforts of Utah Open Lands, Salt Lake City, Salt Lake County, and dedicated members of the community have contributed substantially to the cause in recent years.

The amount of public lands devoted to open space in Emigration Canyon has

increased through purchases, donations and designations over the years, but the recreational use of the area has also presumably increased along with regional population growth (Harris, 2019). This has led to concerns among residents regarding parking, traffic, biodiversity protection, noise, and sanitation. These concerns are addressed in some detail in the Trails Plan 2007 (Salt Lake County Parks and Recreation, 2007; Appendix H; Emigration Canyon Community Council, 2019) as well as in the goals and objectives included in the Land Use Work Program. Currently, trails in Emigration Canyon are largely informal and unmaintained and range across both public and private lands. The Municipality intends to develop multi-use designated trails, accommodating a mix of hiking and biking activities where appropriate, largely on public lands (see Appendix I for details). Additional details on these plans are included in the Character Areas section below.

Public Private Land Ownership

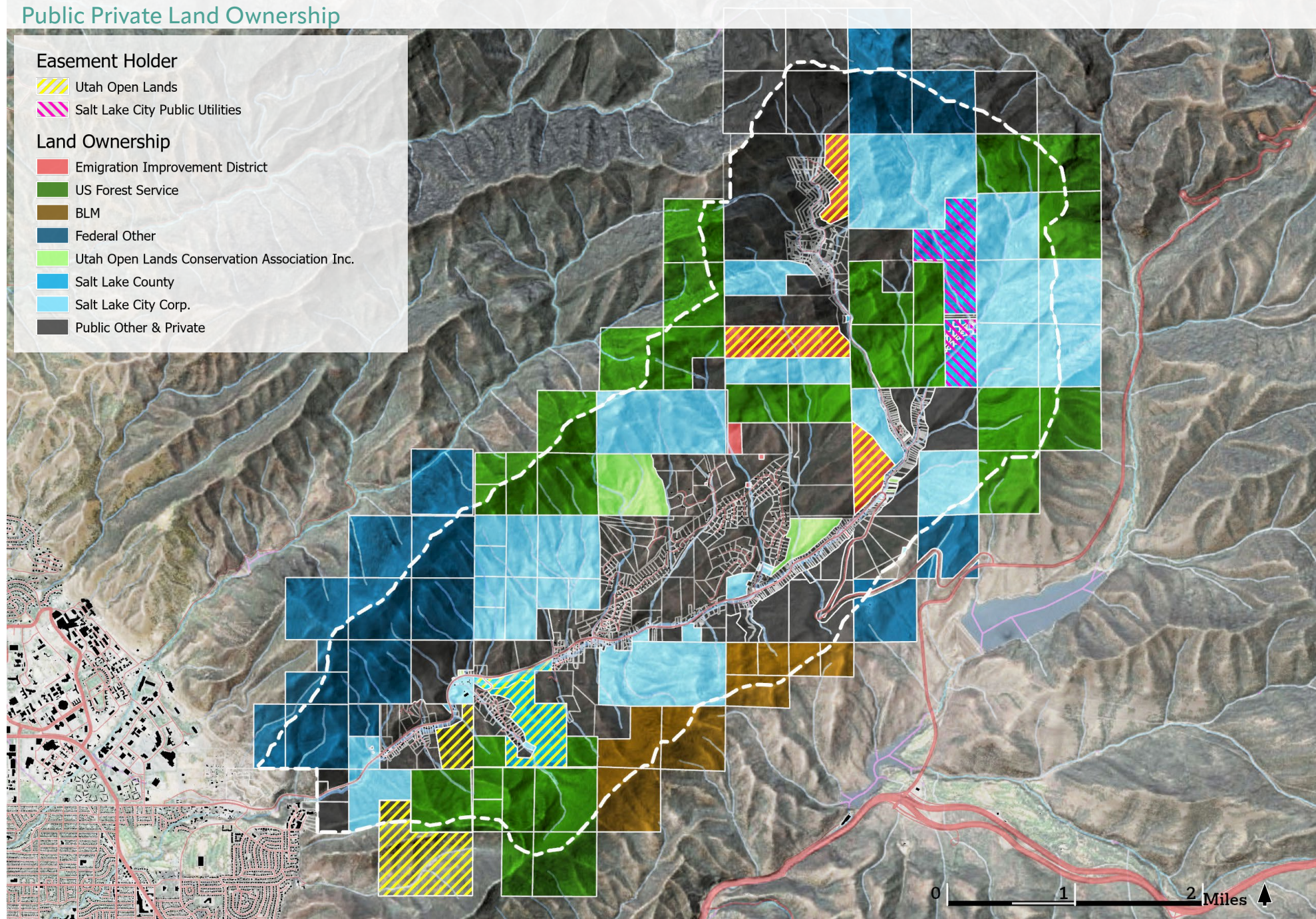


Figure 2.2: Public/Private Land Ownership in Emigration Canyon.

2.2.3 Zoning

Zoning codes are intended to implement land use policies and goals. Zoning codes are a set of rules that regulate what can and cannot be done on a particular piece of property. This is accomplished through standards such as minimum lot sizes, height requirements, lot coverage limits, and setback requirements that are established and enforced by the local land use authority. Zoning codes and associated maps (e.g. Figure 2.4) define and identify zone classifications (e.g. Table 2.1); zone classifications define allowable uses and the maps indicate zone boundaries. Figure 2.4 summarizes the current zoning designations in Emigration Canyon, while Figures 2.6-2.8 provide more detail on particular zoning categories or areas.

Nearly all the land in Emigration Canyon is currently zoned for Forestry and Recreation (FR) of various lot sizes. With limited commercial amenities, residents must travel outside of the Canyon for most of their daily needs, including food, employment, and education. Over 10,000 acres (88.5 percent) of the Municipality's land is zoned FR-20. This zone allows forestry, recreational, and single-family residential development but only if such development will not damage natural and scenic resources in the Canyon. Minimum lot size is 20 acres in the FR-20

EMIGRATION CANYON ZONING			
Zone	Acres by Zone	% of Total Acres	Zone Description
C-2 <i>*Includes recent zoning changes</i>	9.8	0.1%	Allows for the development of community commercial uses when zoning criteria are met.
R-M <i>*Includes recent zoning changes</i>	.09	0.0%	Allows for high-density residential development, but also permits agriculture. Minimum lot area is 5,000 sq ft for a single-family residential unit, plus 750 sq ft per additional unit. Short term rentals are a conditional use.
FR-0.5	257.8	2.2%	Permits forestry, recreational, and single family residential development where such development will not damage natural and scenic resources. (Lot size 0.5 acre)
FR-1	598.2	5.2%	Permits forestry, recreational, and single family residential development where such development will not damage natural and scenic resources. (Lot size 1 acre)
FR-2.5	19.7	0.2%	Permits forestry, recreational, and single family residential development where such development will not damage natural and scenic resources. (Lot size 2.5 acre)
FR-5	96.9	0.8%	Permits forestry, recreational, and single family residential development where such development will not damage natural and scenic resources. (Lot size 5 acre)
FR-10 <i>*Includes recent zoning changes (shown as FR-10/ ZC on zoning map)</i>	341.8	0.8%	Permits forestry, recreational, and single family residential development where such development will not damage natural and scenic resources. (Lot size 10 acre)
FR-20	10,200.7	3.0%	Permits forestry, recreational, and single family residential development where such development will not damage natural and scenic resources. (Lot size 20 acre)

Table 2.1: Zone Classification Source: Emigration Canyon Code, 2020.

Zoning

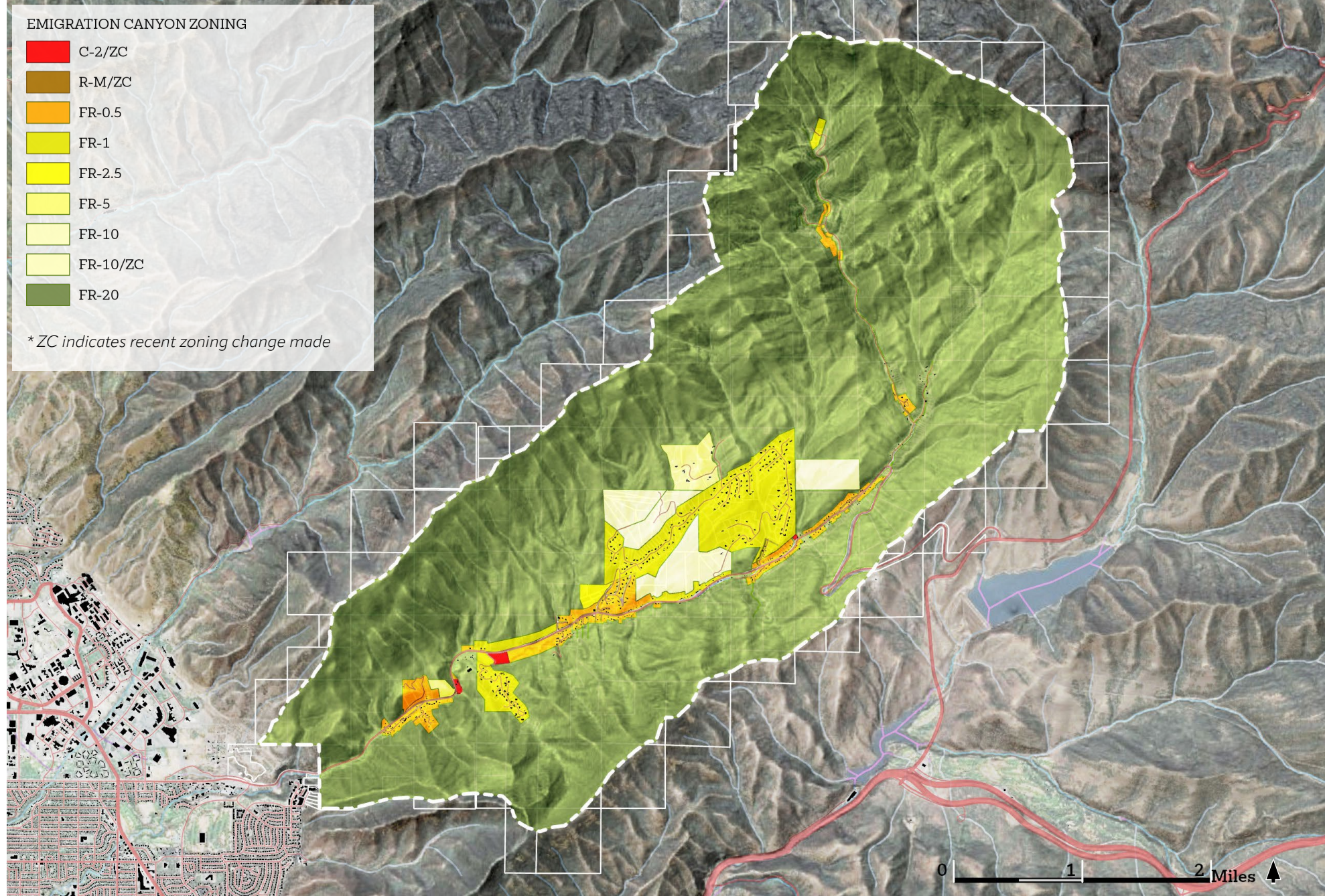


Figure 2.4: Current zoning for Emigration Canyon. See Figures 2.10 and 2.11 for details on commercial zoning.

Foothills and Canyon Overlay Zone (FCOZ)

In 1998, an overlay zone was applied to unincorporated areas of Salt Lake County in the Wasatch Canyons, including Emigration Canyon. The overlay zone and its associated zoning regulations are known as the Foothills and Canyons Overlay Zone or FCOZ. The general purpose of FCOZ is to preserve the natural character of the Wasatch Canyons by establishing standards for foothill and canyon development. FCOZ standards allow proposed development to be evaluated on a site-by-site basis, while ensuring that approved development will be compatible with the natural landscape. FCOZ sets limits on land disturbance and prohibits development on steeper slopes. FCOZ also establishes standards for required setbacks from stream channels, protected ridgelines (see Figure 2.5) and wetland areas.

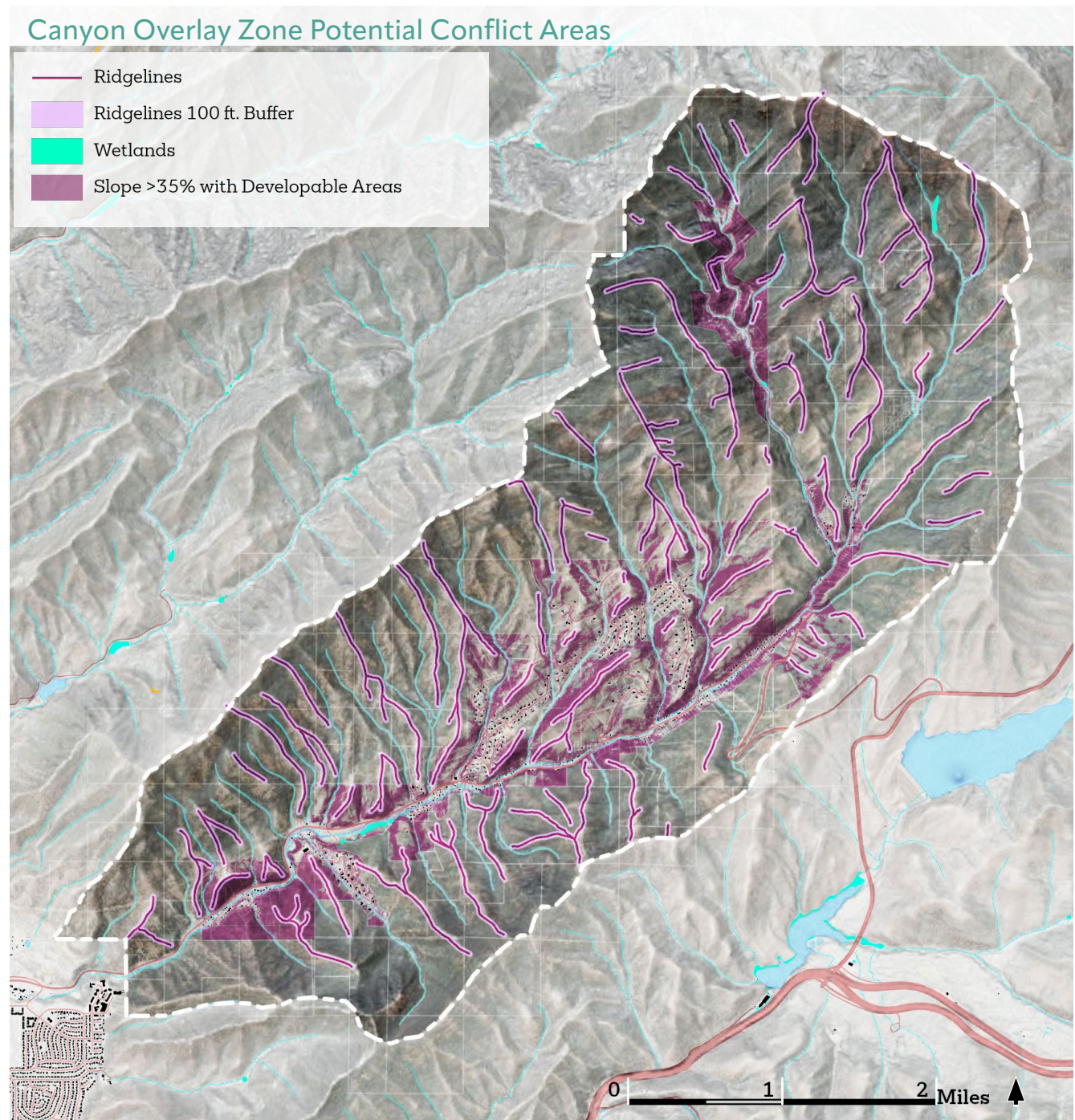


Figure 2.5: Ridgeline protection areas in Emigration Canyon.

Commercial Zones

Emigration Canyon has only a small amount of existing commercial development (Figure 2.6). In 2020, Esri Community Analyst indicated that there were approximately 15 businesses based in Emigration Canyon, while the MSD has closer to 25 businesses on record in the area. The most well-known businesses in the Canyon are Ruth's Diner and Emigration Brewing Company. Emigration Canyon has only limited brick-and-mortar commercial availability (Figures 2.7 and 2.8) and expansion is largely limited by lack of commercial property available in the Canyon, lack of available parking, environmental constraints, and limited appetite for additional commercial zoning within the community.

**Commercial & Residential Zones /
Former Sun and Moon Cafe Area** □

**Commercial & Residential Zones /
Ruth's Diner & Emigration Brewing
Company Area** □

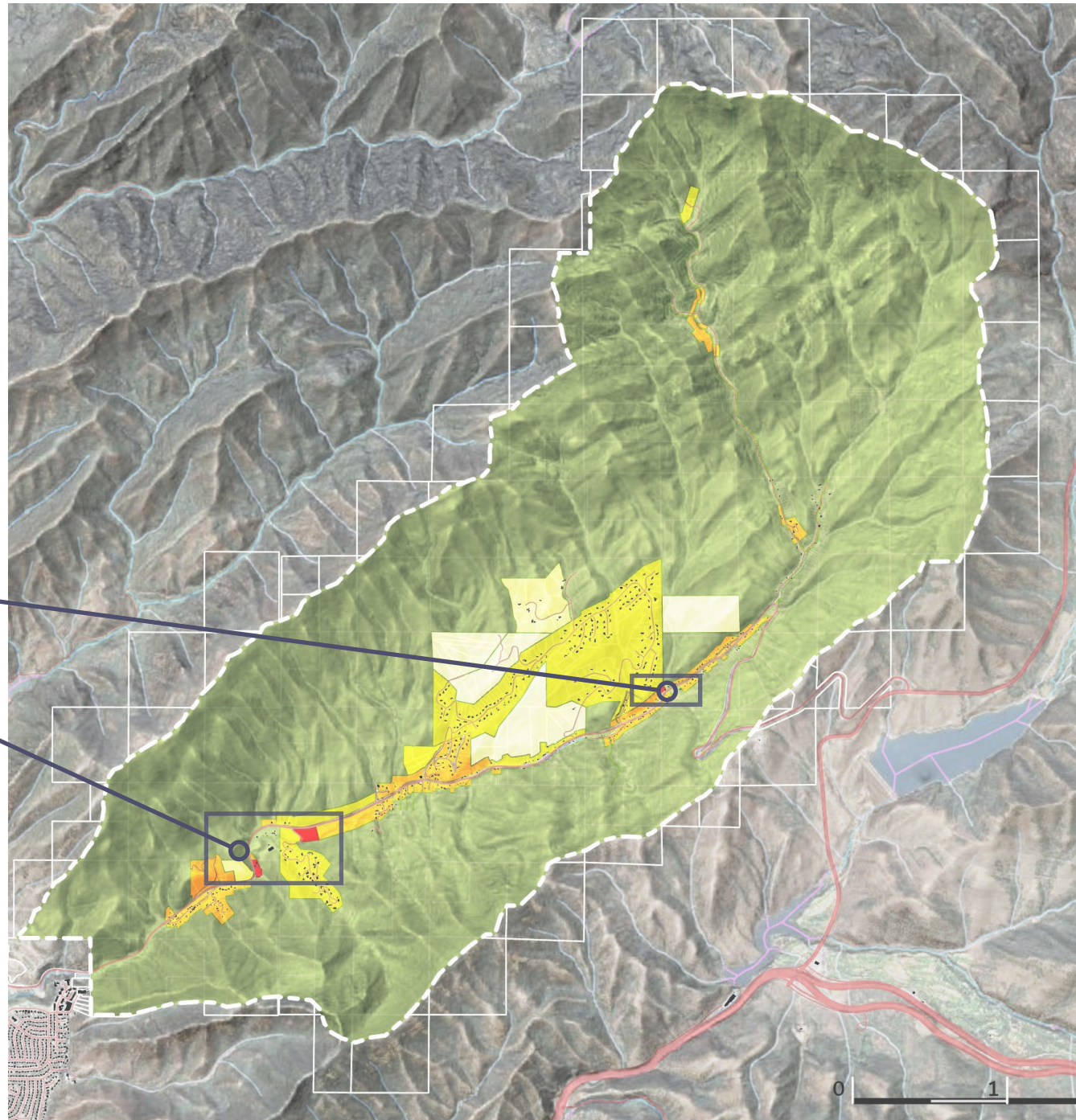


Figure 2.6: Residential and Commercially Developed Areas. See Figures 2.7 and 2.8 for details on commercial zoning.

Commercial & Residential Zones | Ruth's Diner Area

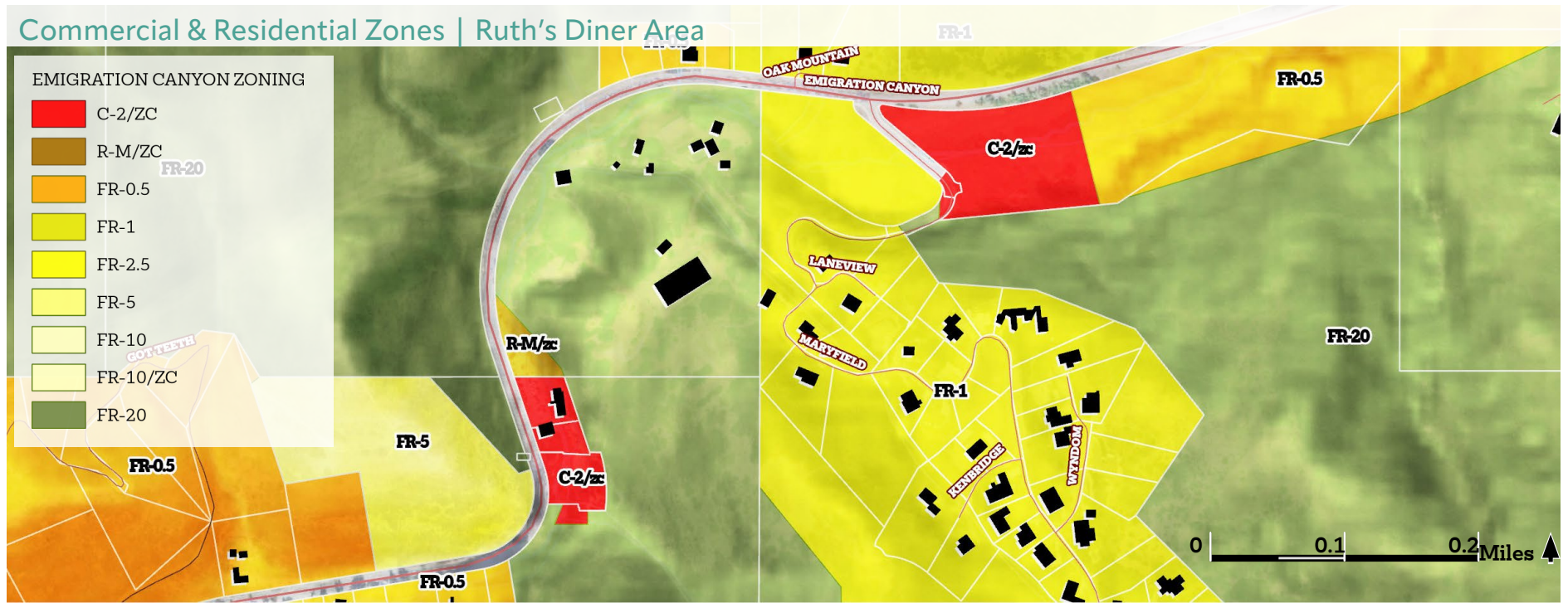


Figure 2.7: Commercial Zones near Ruth's Diner. Please note that the largest commercially zoned parcel shown is under a conservation easement and therefore is not available for commercial development. Updates to zoning ordinances that will reflect this change are included in the Community Work Program at the end of this chapter and also in Chapter 7.



Ruth's Diner in Emigration Canyon. Photo Courtesy of Maridene Alexander.



Emigration Canyon Brewery. Photo Courtesy of Maridene Alexander.

Commercial & Residential Zones | Former Sun and Moon Cafe Area

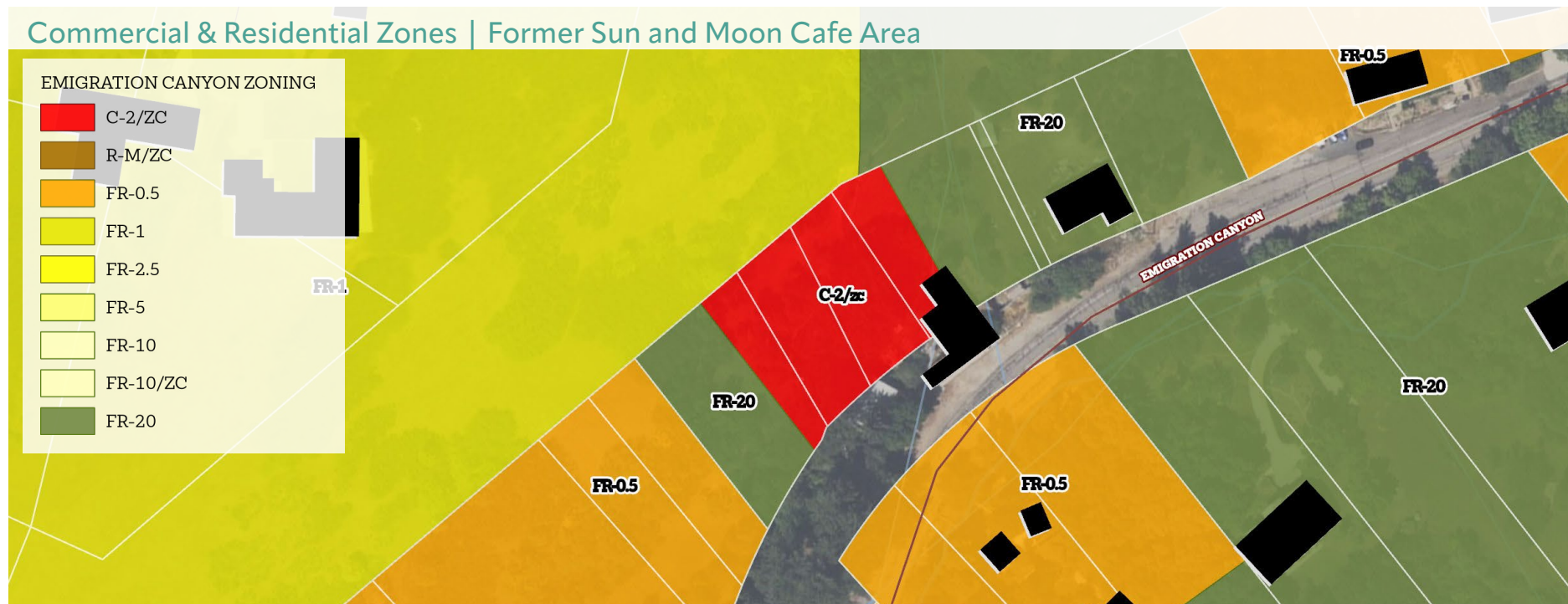


Figure 2.8: Commercial Zones near former Sun & Moon Cafe.



Emigration Canyon Former Sun and Moon Cafe. Photo Courtesy of John E.



2.3 CHARACTER AREAS

“Flavor is one thing Emigration Canyon does not lack. From its lasting historic significance to Utah and the West to its offbeat aura today, there is no place like it along the Wasatch Front.”

- Dennis Romboy, Deseret News

2.3.1 Future Character Areas

To take a holistic approach to planning for the future of Emigration Canyon’s land use, areas with different contexts that merit more sensitive design responses were grouped together into “character areas”. The character areas defined in this section are intended to acknowledge these varying settings. Building, landscape, and streetscape features, as well as the identities and interests of those who live and work in these areas, combine to form character areas.

Existing features, including both characteristics that are valued and concerns that need to be addressed, are considered in the development of a future vision for each

area in which new characteristics may also be introduced. The Future Land Use and Character Areas Map (Figure 2.9), along with the character area narratives that follow, lay out a vision, specific goals, appropriate land uses, and implementation strategies for Emigration Canyon’s unique areas and neighborhoods.

This combined information should be considered along with the current Land Use Map (Figure 2.3), the Zoning (Figure 2.4), and specific policies and ordinances when decision-makers consider land development questions or requests. The maps provided in this chapter, and throughout the General Plan, are for reference purposes only. Individual parcels will require detailed study before any

building activity is allowed.

In addition to the maps provided throughout this section, the supporting text provides a written description of the patterns of development that are acceptable in each area. The supporting narrative provides policy direction for regulating development with the goal of maintaining consistent character within each area in alignment with the community’s overarching vision and values. Where appropriate, statements for policies and goals are also established. There are four character areas in total for Emigration Canyon: Main Canyon Corridor, Maryfield/Pioneer, Pinecrest/Killyons, and Open Space.

Character Areas (All)

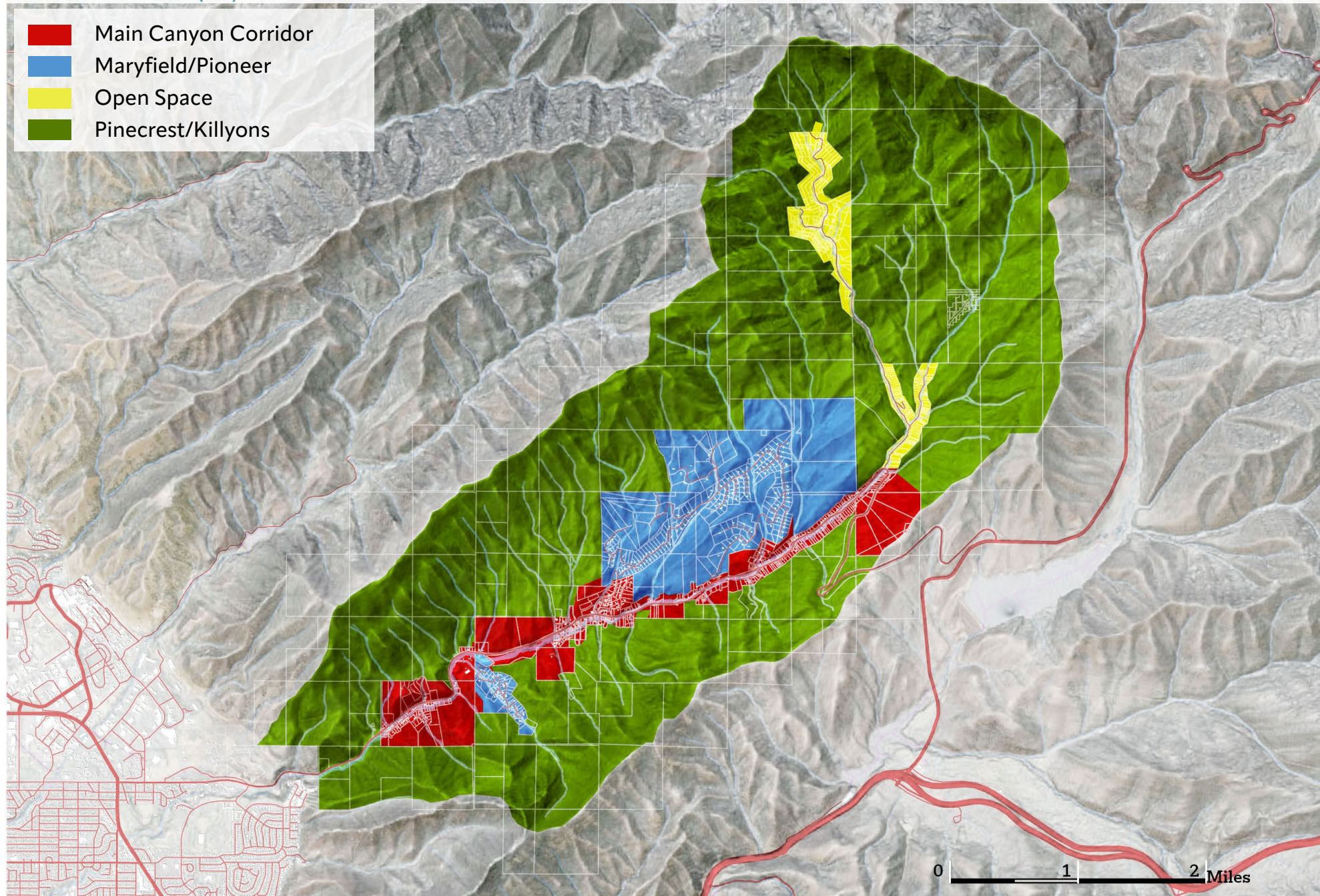


Figure 2.9: Future Land Use and Character Areas Map for Emigration Canyon.

Main Canyon Corridor Character Area

Description:

The Main Canyon Corridor Character Area is steeped in history and maintains a strong sense of community up and down the Canyon. The road itself provides ready access between Salt Lake City, Emigration Canyon, and points further east, making several of the area's most iconic sites, including Ruth's Diner, Camp Kostopulos, and two informal preserves (Perkins Flat Preserve and Owl's Meadow Preserve), accessible to visitors. As throughout the rest of Emigration Canyon, privately-owned land has been developed into a variety of residential lot sizes that are primarily single-family oriented. Sites near the road were largely developed some time ago, but some vacant lots remain due to building constraints such as steep hillsides.

Descriptions of neighborhoods incorporated into the Main Canyon Corridor Character Area (see [Appendix J, Figure A](#)) include Acorn Hills, Badger Hollow, Maple Grove, Quarter Mile Road, Skycrest, Sunnydale, and Trails End.

Area vision:

The cultural heritage and natural resources of the Canyon are well protected for future generations to enjoy, while a holistic and resilient community thrives. In particular, the small commercial area located near the western entrance to Emigration Canyon is preserved, and some additional spaces are made available for sustainable economic development compatible with the existing character of the Canyon. Visitation to

Emigration Canyon is well-managed to control noise and nuisance, and to protect the natural environment of the area.

Future zoning considerations: C-2, FR-0.5, FR-1, FR-2.5, FR-5, FR-10, FR-20, R-M, NC

Current Character Area Snapshot:

- **Area Acres:** 905.513
- **Dwelling units:** 288
- **Estimated population:** # dwelling units (288) x average household size (2.6) = 749
- **Density:** 288 dwelling units/905.513 acres = .318 du/acre

Main Canyon Corridor Character Area – Zoning Summary

Zone	Frequency	Acres
C-2/zc	5	9.551
FR-0.5	32	228.564
FR-1	4	65.982
FR-10	1	1.3225
FR-10/zc	1	0.024
FR-2.5	1	19.240
FR-20	7	554.194
FR-5	1	12.032
R-M/zc	1	0.888

Table 2.2 (above): Main Canyon Corridor Character Area Zoning Summary.

Main Canyon Corridor Character Area – Land Use Summary

Land Use	Parcels	Acres
Commercial and Associated Commercial	3 parcels	1.731
Multi-Family Residential and Associated Multi-Family Residential	33 parcels	25.080
Government and Institutional	3 parcels	24.778
Agricultural	9 parcels	20.651
Single Family Residential and Associated Single Family Residential	441 parcels	425.527
Vacant Properties	86 parcels	294.872
Preserves, Recreational Facilities, and Open Spaces	48 parcels	90.451
Roads and Utilities	42 parcels	22.421

Table 2.3 (right): Main Canyon Corridor Character Area Land Use Summary data from WFRC's Land Use Inventory (Wasatch Front Regional Council, 2018c).

Main Canyon Corridor Character Area Vision Implementation Strategies:

Strategies:

Allow small home-based businesses (e.g. limited to those persons living in the residence), as long as parking is available and deemed adequate for the type of business desired.

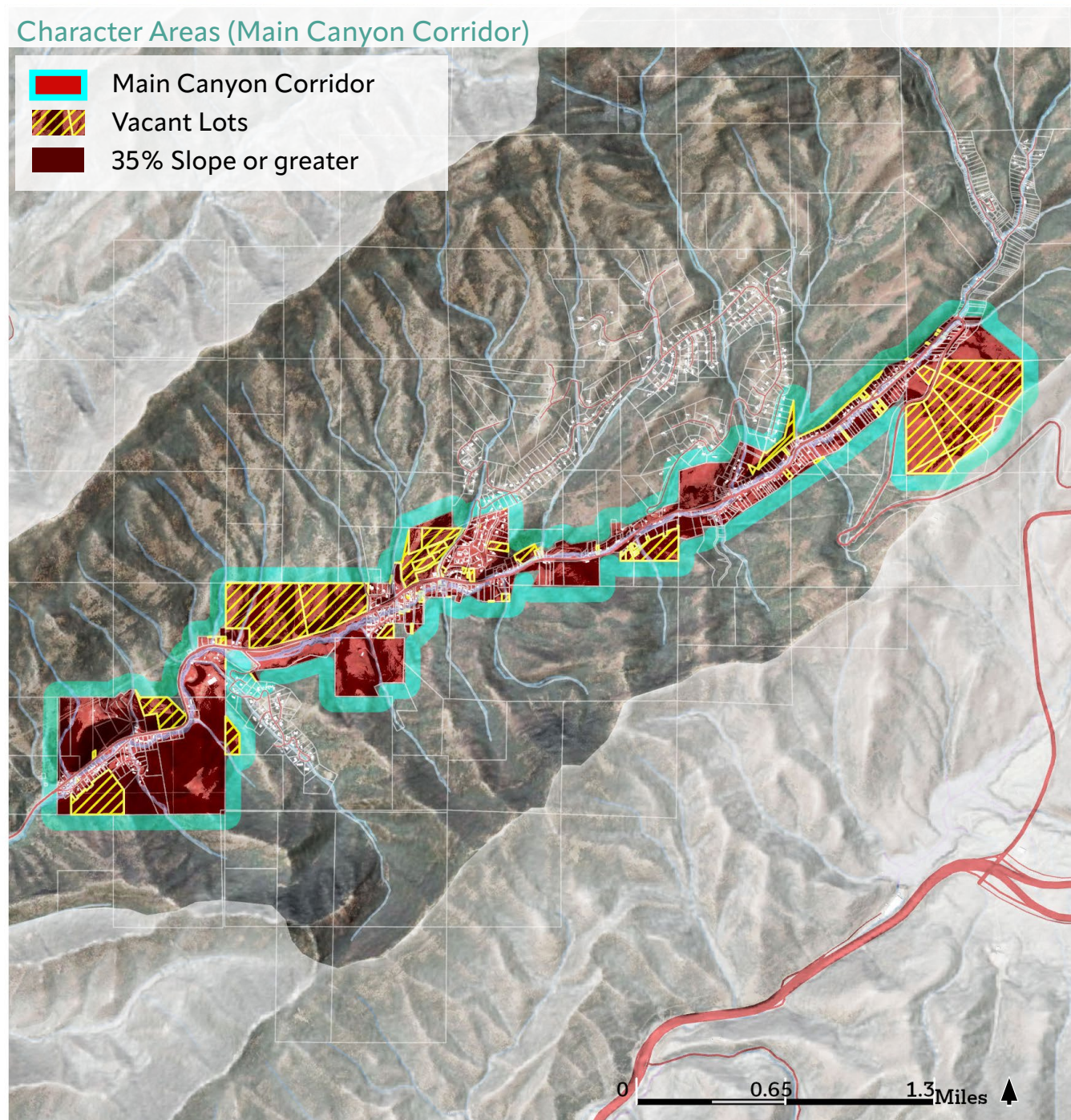
Preserve existing zoning standards that protect the unique canyon ecosystem and scenery, including those that mandate large-lot zoning where such zoning is appropriate for the mountain setting.

Support land use and development patterns that incorporate nature, scale and use into the built environment and increase public awareness and responsibility toward the natural environment.

Establish a working group, at EC Metro's discretion, of local artists, educators, and residents to develop historic markers, educational signage, and wayfinding signage.

Consider environmental impact, and impact on roads and traffic when evaluating proposed changes in commercial or residential zoning.

Figure 2.10: Vacant lot and slope constraints in the Main Canyon Corridor Character Area. According to WFRC's Land Use Inventory (Wasatch Front Regional Council, 2018c), there are 86 vacant lots totaling 294.871 Acres in the Main Canyon Corridor Character Area. The buildability of many of these lots is limited by a range of constraints, including large proportions of the land that have a greater than 35% slope, as shown in this figure.



Maryfield/Pioneer Character Area

Description:

The most recent developments in Emigration Canyon, put in place over the last few decades, include a variety of residential lot sizes that are primarily single-family oriented. These developments aim to provide a safe, private and serene sanctuary for their residents. They include roads built to current industry standards and surrounding open space that is often privately held or accessed.

Descriptions of neighborhoods incorporated into the Maryfield/Pioneer Character Area (see [Appendix J, Figure A](#)) include Emigration Place and Emigration Oaks.

Area vision:

The peaceful and rural atmosphere of the area is maintained while a high standard of service for residents is also upheld. While some trails, parking, and vacant lots may be developed in the area, maintaining the privacy of residents and the excellent condition of the surrounding open space generally takes precedence.

Future zoning considerations: FR-0.5, FR-1, FR-2.5, FR-5, FR-10, FR-20

Current Character Area Snapshot:

- **Area Acres:** 1340.926
- **Dwelling units:** 255
- **Estimated population:** # dwelling units (255) x average household size (2.6) = 663
- **Density:** 255 dwelling units/1340.926 acres = .190 du/acre

Maryfield/Pioneer Character Area - Land Use Summary		
Land Use	Parcels	Acres
Multi-Family Residential and Associated Multi-Family Residential	3 parcels	0.144
Agricultural	4 parcels	68.811
Single Family Residential and Associated Single Family Residential	284 parcels	763.797
Vacant Properties	78 parcels	488.832
Preserves, Recreational Facilities, and Open Spaces	16 parcels	17.954
Roads and Utilities	17 parcels	1.387

Table 2.4: Maryfield/Pioneer Character Area Land Use Summary data from WFRC's Land Use Inventory (Wasatch Front Regional Council, 2018c).

Maryfield/Pioneer Character Area - Zoning Summary		
Zone	Frequency	Acres
FR-0.5	3	1.281
FR-1	3	523.640
FR-10	2	194.993
FR-10/zc	2	146.303
FR-2.5	1	0.468
FR-20	4	400.288
FR-5	1	84.490

Table 2.5: Maryfield/Pioneer Character Area Zoning Summary.

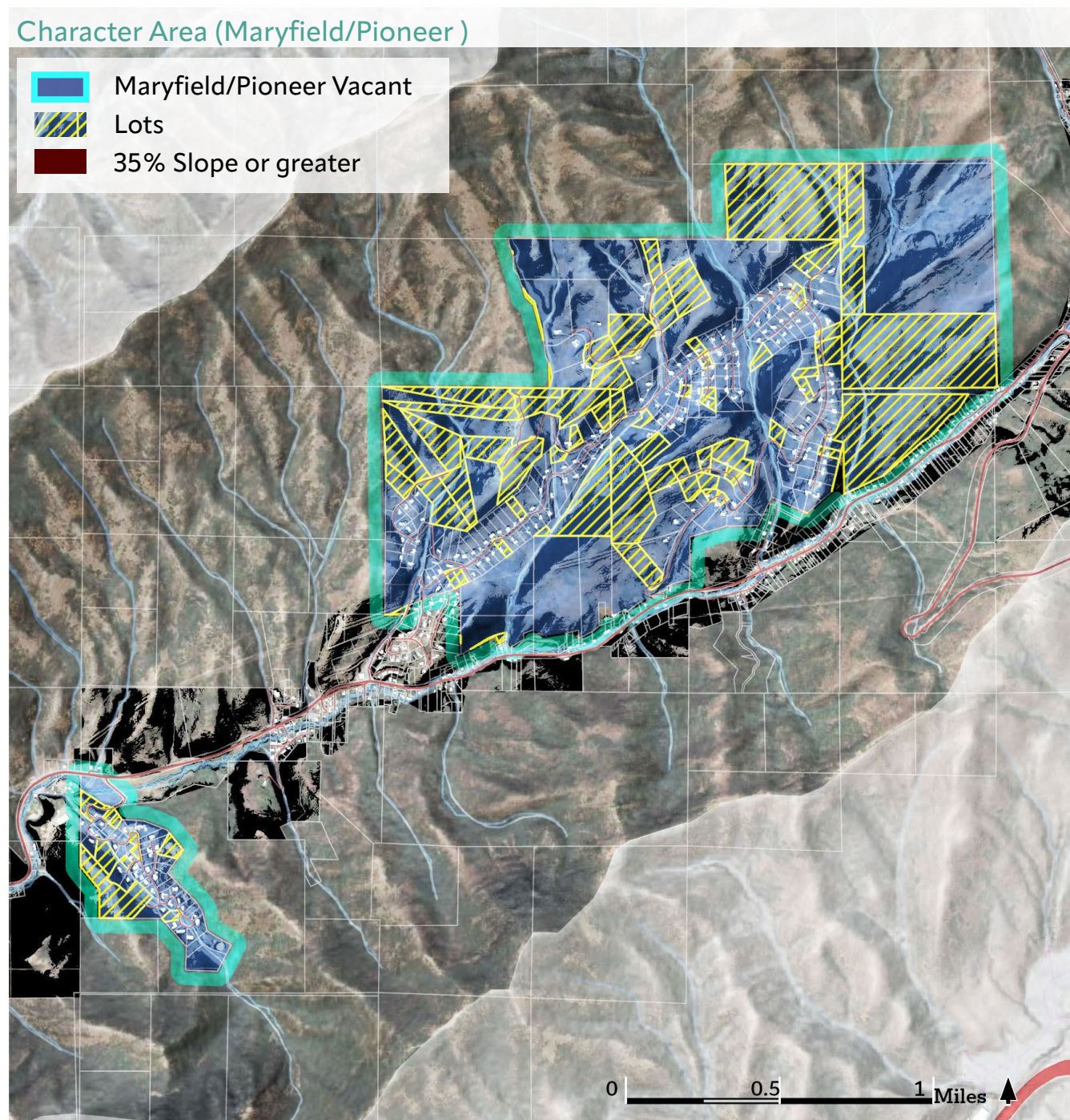
Maryfield/Pioneer Character Area Vision Implementation Strategies:

Establish a working group, at EC Metro's discretion, to develop guidelines and standards for new developments that will incorporate principles of open-space design, such as cluster subdivisions and planned-unit developments, where feasible and appropriate.

In adopting ordinances, consider working group recommendations regarding enhanced standards and guidelines for new developments.

Conduct a study of viable local park/open space access interests, needs, and future requirements for existing communities and new subdivisions.

Figure 2.11: Vacant lots and slope constraints in the Maryfield/Pioneer Character Area. According to WFRC's Land Use Inventory (Wasatch Front Regional Council, 2018c), there are 78 vacant lots totaling 488.832 Acres in the Maryfield/Pioneer Character Area. The buildability of some of these lots is limited by a range of constraints, including large proportions of the land that have a greater than 35% slope, as shown in this figure.



Pinecrest/Killyons Character Area

Description:

Pinecrest/Killyons was the first section of Emigration Canyon to be developed, yet it remains the most remote corner of the Canyon. Residents generally take pride in the pioneering spirit of the area, adhere to high environmental standards, and seek the secluded, rugged landscape of the Canyon's most mountainous reaches.

Some important land use features of note in this character area, include the fact that much of the area is covered by a 35 percent slope or greater, making additional building difficult under current FCOZ requirements. Much of Pinecrest/Killyons also falls within

the protected watershed of SLCDPU, which adds another layer of regulation to proposed development in the area. Another land use planning feature of note is that Pinecrest contains many small lots that were legally platted at one time but are non-conforming under current zoning conditions. Some roads preceded current County standards.

Killyons Canyon also includes a valuable open space preserve (269 acres). This pristine property contains rolling meadows, thick forests, and great vistas. It has been a popular outdoor recreation destination for both locals and visitors to the Canyon, and future infrastructure to help manage recreational

use is envisioned for the area.

Descriptions of neighborhoods incorporated into the Pinecrest/Killyons Character Area (see [Appendix J, Figure A](#)) include Killyons, Burr (Burnt) Fork, Pinecrest

Area vision:

Trails and associated infrastructure to facilitate some recreational access to this remote and rugged area are developed and maintained while protecting wildlife habitat/corridors, and maintaining the privacy of the area's residents.

Future zoning considerations: FR-0.5, FR-1, FR-20

Pinecrest/Killyons Character Area – Land Use Summary

Land Use	Parcels	Acres
Agricultural	21 parcels	53.752
Single Family Residential and Associated Single Family Residential	282 parcels	222.006
Vacant Properties	51 parcels	22.909
Preserves, Recreational Facilities, and Open Spaces	28 parcels	21.079
Roads and Utilities	28 parcels	1.335

Table 2.6: Pinecrest/Killyons Character Area Land Use Summary data from WFRC's Land Use Inventory (Wasatch Front Regional Council, 2018c).

Pinecrest/Killyons Character Area – Zoning Summary

Zone	Frequency	Acres
FR-0.5	9	27.226
FR-1	1	9.391
FR-20	3	300.508

Table 2.7: Pinecrest/Killyons Character Zoning Summary.

Current Character Area Snapshot:

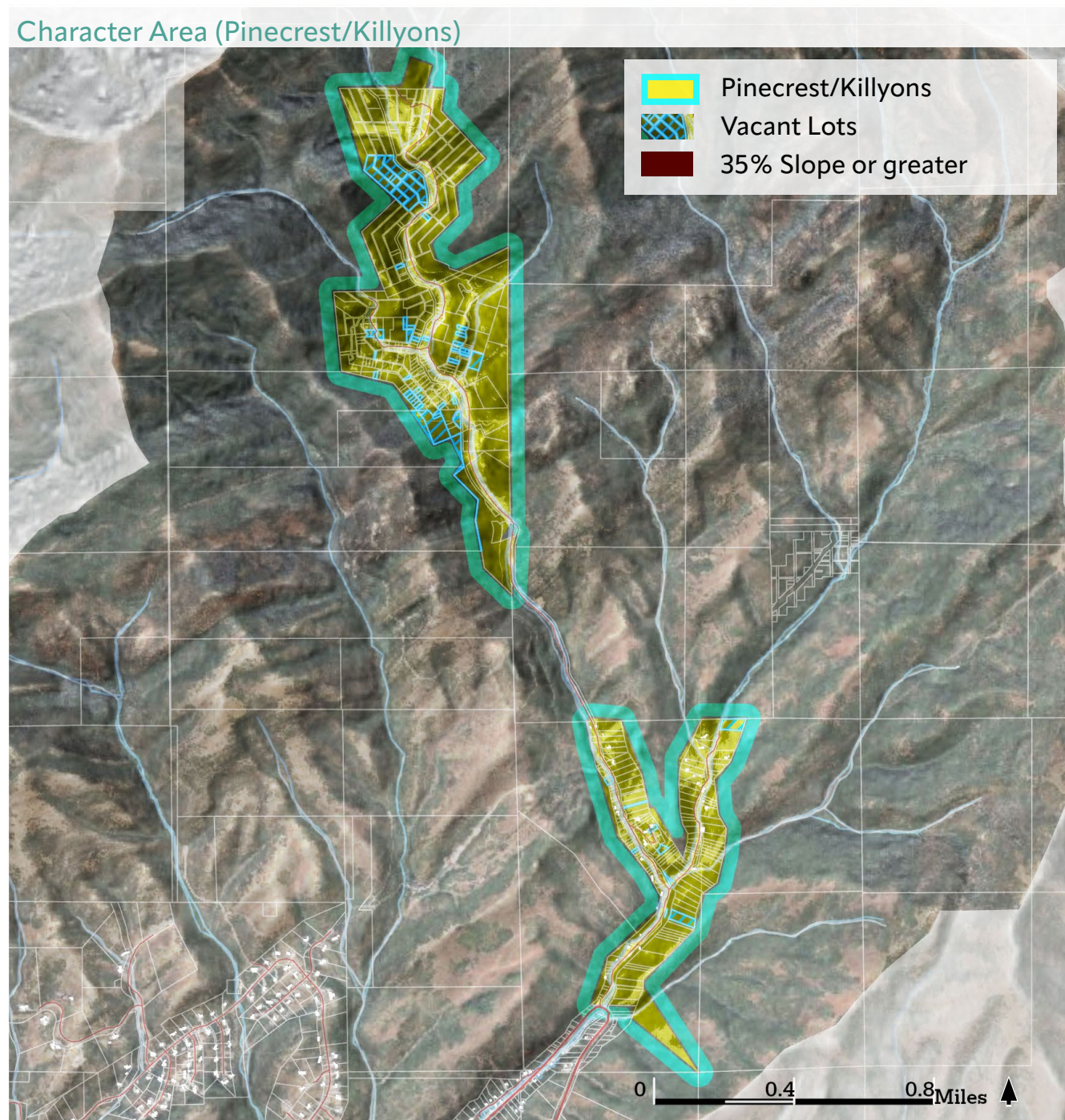
- **Area Acres:** 321.08
- **Dwelling units:** 100
- **Estimated population:** # dwelling units (100) x average household size (2.6) = 260
- **Density:** 100 dwelling units/321.08 acres = .311 du/acre

Pinecrest/Killyons Character Area Vision Implementation Strategies

Support land use and development patterns that incorporate nature, scale, and use into the built environment and increase public awareness and responsibility toward the natural environment.

Establish a working group, at EC Metro's discretion to develop appropriate design guidelines to address relevant safety, sustainability, and resilience issues as needed (e.g. architectural compatibility with surrounding environment, utilization of local and/or sustainable materials and technologies in new construction, natural resource and roadway constraints).

Figure 2.12: Vacant lots and slope constraints in the Pinecrest/Killyons Character Area. According to WFRC's Land Use Inventory (Wasatch Front Regional Council, 2018c), there are 51 vacant lots totaling 22.909 Acres in the Pinecrest/Killyons Character Area. The buildability of many of these lots is extremely limited by a range of constraints, including large proportions of the land that have a greater than 35% slope, as shown in this figure.



Open Space Character Area

Description:

The open spaces, parks, preserves, and trails of Emigration Canyon are considered by many to be among the area's greatest assets, not only because of the beautiful, often steeply graded and forested landscape, but also because they are home to a diverse range of plants and wildlife. Some of these areas are not accessible by vehicle.

Area vision:

Trails and associated infrastructure to facilitate enhanced recreational access to this remote and rugged area are developed, particularly on publicly owned lands. Where appropriate, lands are maintained for open space, viewshed and wildlife habitat, for the

enjoyment of current and future generations.

Future zoning considerations: FR-0.5, FR-1, FR-2.5, FR-5, FR-20

Current Character Area Snapshot:

- **Area Acres:** 8,938.625
- **Acreage per person:** 8,938.625 acres/1,466 people= 6.096 acres/pp
- **Dwelling units:** 61
- **Estimated population:** # dwelling units (61) x average household size (2.6) = 159
- **Density:** 61 dwelling units/8938.625 acres = .007 du/acre

Open Space Character Area Vision Implementation Strategies

Conduct a recreational use study of Emigration Canyon. Include impact of visitation and recreational use by visitors who are not residents.

Prepare an open space area plan for Emigration Canyon, including updating existing conservation easements and other ownership and conditions data, coordinating with and possibly connecting to existing regional plans, and identifying areas for preservation that have public benefit for preservation of open space, scenic views, trails, and critical wildlife habitat.

Open Space Character Area – Land Use Summary

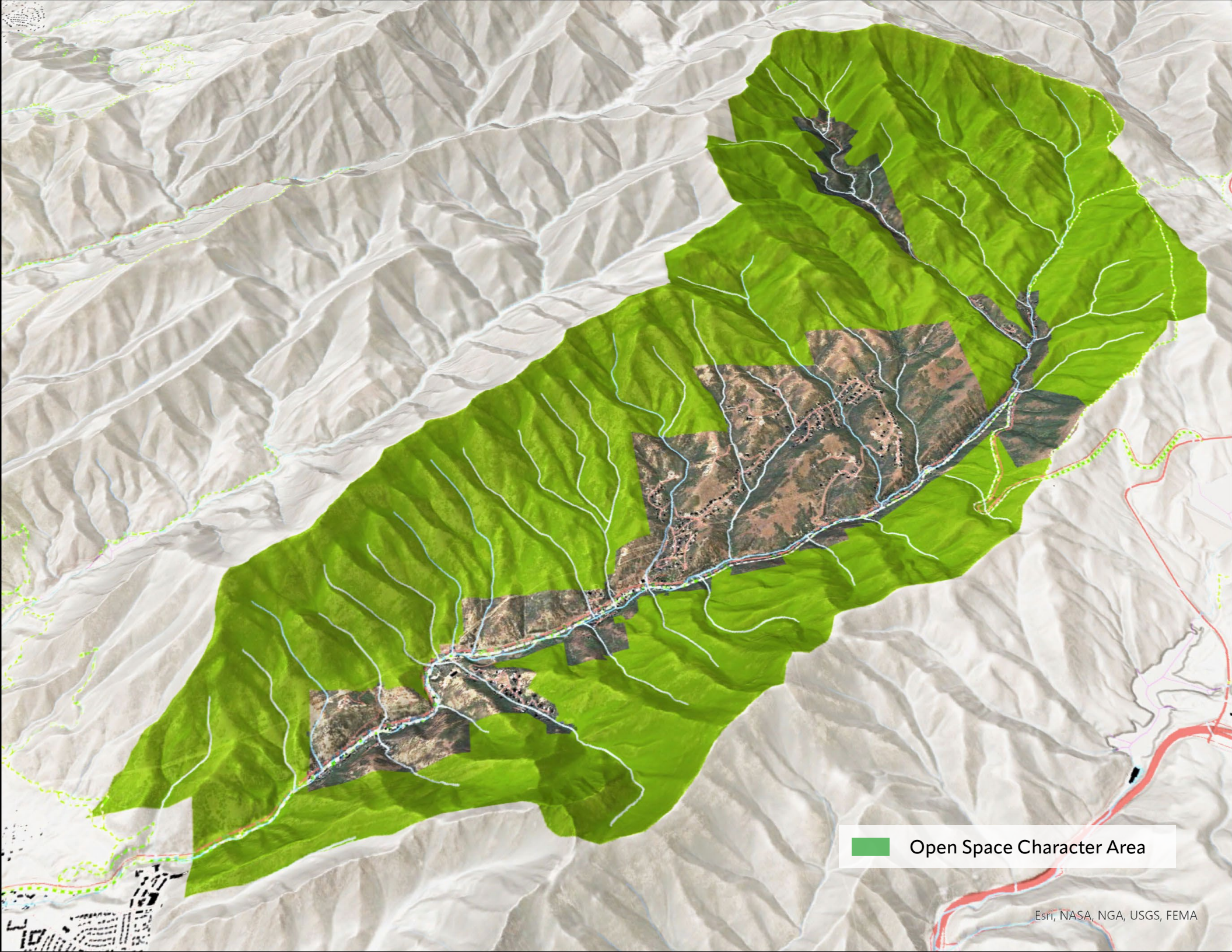
Land Use	Parcels	Acres
Associated Multi-Family Residential	3 parcels	0.063
Government and Institutional	7 parcels	43.125
Agricultural	13 parcels	501.876
Single Family Residential and Associated Single Family Residential	131 parcels	6.063
Vacant Properties	51 parcels	411.072
Preserves, Recreational Facilities, and Open Spaces	143 parcels	7958.854
Roads and Utilities	48 parcels	17.572

Table 2.8: Open Space Character Area Land Use Summary data from WFRC's Land Use Inventory (Wasatch Front Regional Council, 2018c).

Open Space Character Area – Zoning Summary

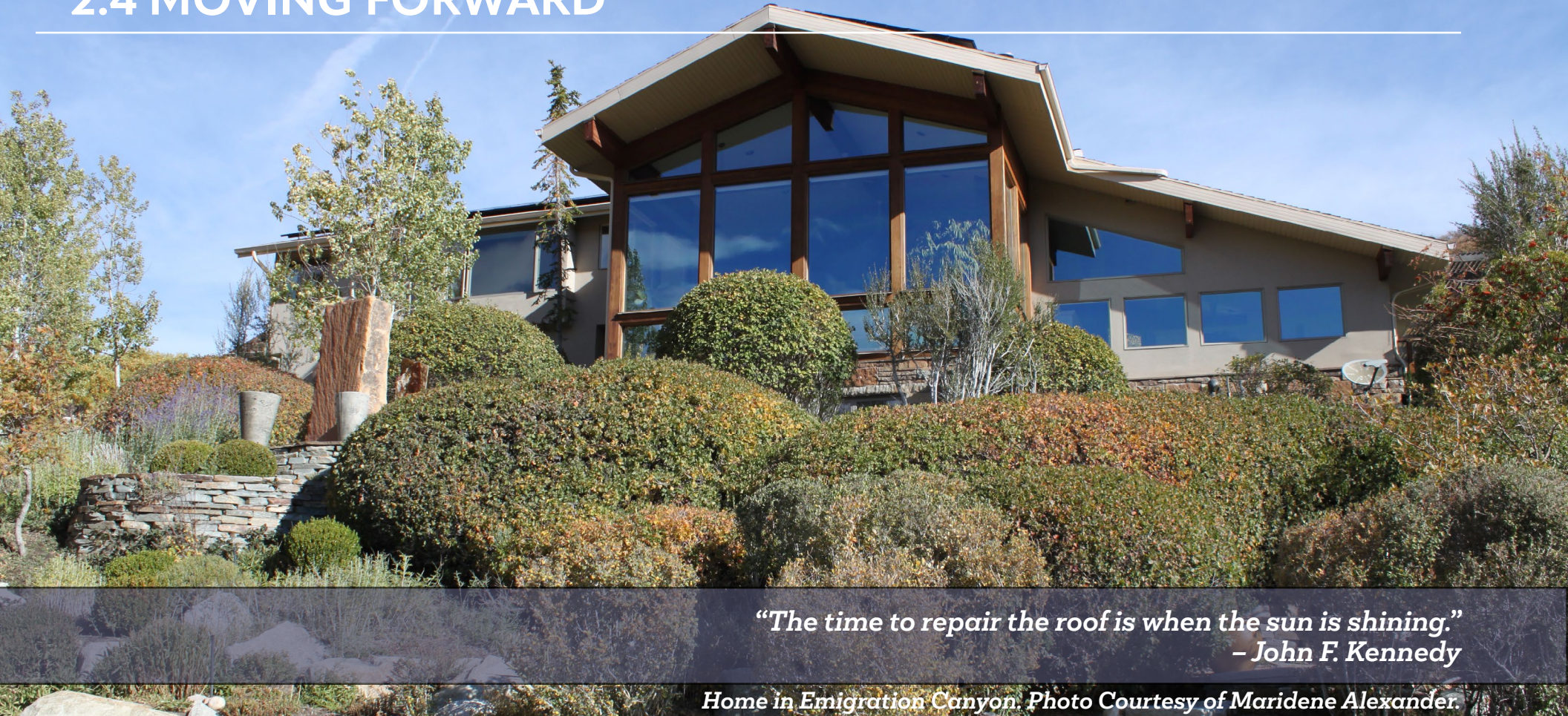
Zone	Frequency	Acres
C-2/zc	1	0.211
FR-0.5	9	1.080
FR-1	1	0.552
FR-2.5	1	0.075
FR-20	3	8958.885
FR-5	2	0.288

Table 2.9: Open Space Character Area Zoning.



Open Space Character Area

2.4 MOVING FORWARD



*“The time to repair the roof is when the sun is shining.”
– John F. Kennedy*

Home in Emigration Canyon. Photo Courtesy of Maridene Alexander.

2.4.1 Land Use Work Program Goals

The following Land Use Work Program Goals were developed with guidance from the GPSC, based on community input, and with consideration for the opportunities, challenges, drivers, and values outlined in this and previous chapters. The work program

can be used to guide the implementation of the General Plan and make progress on Emigration Canyon’s land use goals. The work program outlines goals, objectives, and actions, with the responsible parties, timeline for implementation, approximate cost, metrics for success, and relevant resources also delineated. However, the Emigration Canyon Metro Township Council is the governing

body of the Municipality and will determine how best to achieve the goals, objectives, and actions included in the work plan, including how best to implement recommendations such as the formation of working groups. Details such as possible leads, timelines, costs, metrics, and resources are included to support implementation but are not definitive.

Goal 2.1: Preserve the culture, identity, and character of Emigration Canyon's built environment.

- Objective 2.1.1: Enhance protection of the unique canyon ecosystem and scenery.
- Objective 2.1.2: Improve the safety, sustainability, and resilience of the built environment.

Goal 2.2: Enhance community connectedness and sense of place.

- Objective 2.2.1: Increase connectedness and sense of place within and between character areas.

- Objective 2.2.2: Increase spaces for local community gatherings and recreation.

Goal 2.3: Preserve and enhance ecological features, viewsheds, wildlife corridors, and open space.

- Objective 2.3.1: Improve management of existing open space amenities.
- Objective 2.3.2: Preserve and enhance views of the night sky and protections for nocturnal wildlife.

Goal 2.4: Preserve and enhance existing commercial activities.

- Objective 2.4.1: Increase support for commercial activities that enhance the quality of life of canyon residents and adhere to canyon character and values.



Home in Emigration Canyon. Photo Courtesy of Maridene Alexander.

CHAPTER 3: TRANSPORTATION & MOBILITY

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“With citizen participation, formulated policies might be more realistically grounded in citizen preferences, the public might become more sympathetic evaluators of the tough decisions that government administrators have to make, and the improved support from the public might create a less divisive, combative populace to govern and regulate”

(Irvin & Stansbury, 2004, pg. 55).

Entrance to Emigration Canyon. Photo Courtesy of Maridene Alexander.



3.1 IMPORTANCE OF TRANSPORTATION

Construction Equipment on Emigration Canyon Road. Photo Courtesy of PEC Construction.

While the land use element lays out patterns of uses across Emigration Canyon, the transportation element examines how people access these uses. Transportation involves both mobility – the ability to travel between places – and accessibility – the ability to reach valuable destinations within a reasonable amount of time. For Emigration Canyon residents and visitors, transportation planning is important to uphold a safe, accessible, and enjoyable transportation system that enables all users to meet their needs in the ways that work for them.

3.1.1 State Code

The State of Utah requires communities to plan for transportation. In Utah State Code

Section 10-9a-403, the State mandates that General Plans include a “transportation and traffic circulation element” (Municipal Land Use, Development, and Management Act, 2020). This element must contain the location of different road types as well as public and active transportation infrastructure, and it must connect to demographic projections and the Land Use element. Communities without a major transit investment corridor – such as Emigration Canyon – must plan for improved linkages among housing, employment, education, recreation, and commerce.

3.1.2 Relationships, Roles & Responsibilities

Broad thinking strengthens transportation

planning and connectivity. Several entities and agencies’ transportation values and plans are therefore important to consider in relation to Emigration Canyon’s local efforts. These include the Utah Department of Transportation, the Utah Transit Authority, the Greater Salt Lake Municipal Services District, Salt Lake County, and Salt Lake City.

Utah Department of Transportation

The Utah Department of Transportation (UDOT) “aim[s] to Keep Utah Moving. That includes everything from improving our roads and traffic signal timing to providing alternate means of getting from A to B, like bike lanes and public transit. We want to

make sure that whatever is being moved, freight and cargo or the people in a vehicle, arrives safe and promptly. It isn't easy, but Keeping Utah Moving is what keeps UDOT going" (Utah Department of Transportation, 2020). To complete these objectives, UDOT uses the core values depicted below (Figure 3.1). Emigration Canyon representatives may work with UDOT regarding any non-local roads adjacent to Emigration Canyon's boundaries (e.g. US 65, which influences traffic in Emigration Canyon). Additionally, UDOT has an Active Transportation Division that can support Emigration Canyon's initiatives regarding walking and biking.

Utah Transit Authority (UTA)
Utah Transit Authority (UTA) “provides integrated mobility solutions to service life’s connections, improve public health and enhance quality of life”; they “provide an integrated system of innovative, accessible and efficient public transportation services that increase access to opportunities and contribute to a healthy environment for the people of the Wasatch region” (Utah Transit Authority, 2020). Currently, there are no public transit routes in Emigration Canyon other than the Granite School District’s school bus route. However, any future efforts to explore public transit options will necessitate coordination with UTA regarding public transit options. Communicating feedback about possible route pathways, infrastructure conditions, and frequency of stops can be a useful way to engage UTA.

Wasatch Front Regional Council (WFRC)
The Wasatch Front Regional Council (WFRC) is the Metropolitan Planning Organization (MPO) that covers Box Elder, Davis, Morgan, Salt Lake, Tooele, and Weber counties. The responsibilities of the WFRC include regional transportation planning. Their current plan, Wasatch Choice 2050 (<https://wfrc.org/vision-plans/wasatch-choice-2050/>), establishes a range of goals related to transportation (Figure 3.2). The MSD works with the WFRC on regional initiatives involving various municipalities. WFRC provides funding for various types of transportation projects, for which Emigration Canyon is eligible.

Salt Lake County Public Works Engineering
Salt Lake County Public Works Engineering Department (Engineering) provides engineering services to the Greater Salt Lake Municipal Services District (MSD), including Emigration Canyon. As part of these services, Public Works Engineering helps to build and maintain roadways; administer encroachment, excavation and special event permits; and enforce stormwater (MS4) management compliance. Unincorporated Salt Lake County areas surround Emigration Canyon on all sides except for the western entrance to the canyon, which abuts Salt Lake City.



Figure 3.1: UDOT core values (Utah Department of Transportation, 2020).

Salt Lake City (SLC)

Salt Lake City (SLC) abuts Emigration Canyon at the western end of the canyon (see Figure 1.1 for boundaries). Traffic to and from SLC affects the canyon, especially on weekends when visitor numbers tend to increase. To manage this use, coordination is needed on issues that involve the main canyon road (Emigration Canyon Road) such as striping, signage, and active transportation treatments.

Greater Salt Lake Municipal Services District (MSD)

The Greater Salt Lake Municipal Services District (MSD) provides planning and development services for Emigration Canyon, including this General Plan. The MSD will continue working with the Emigration Canyon community and relevant partners from around the County, Region, and State

to coordinate and implement transportation projects and programs identified in this chapter.

3.1.3 Community Input

This General Plan was developed using a participatory approach that engaged members of the Emigration Canyon community in planning for the future of the Municipality. Details on this process are provided in section 1.4. As part of the community input process, a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis (Figure 1.5) and an Achieve, Preserve, Avoid, and Eliminate (APAE) analysis (Figure 1.6) was conducted by the GPSC. These analyses highlighted many subjects relevant to this Transportation element. A summary of key results are described in the two subsections that follow. Key transportation-related results from a workshop and a survey are described in the third subsection.

SWOT Analysis (Transportation)

The GPSC SWOT analysis identified transportation and mobility strengths of Emigration Canyon such as the rural mountain feel and the access to hiking, biking, and other outdoor recreation activities. Weaknesses included high traffic volumes, road maintenance, timely snow removal, and poor parking options. The only opportunity identified that was specifically related to transportation and mobility was buying land at trailheads for parking, although several others were peripherally related (e.g. easement to protect open land for public relates to access, which is connected to transportation and mobility issues). Threats from traffic/speed violations and high traffic volumes were the major transportation-related concerns raised.



Figure 3.2: Wasatch Choice 2050 goals (Wasatch Front Regional Council, 2019e).

APAE Analysis (Transportation)

The GPSC APAE analysis identified many transportation and mobility issues and possible ways forward relevant for Emigration Canyon. In terms of things to be achieved, many items focused on road safety improvements and/or trails access and infrastructure improvements such as the establishment of restroom facilities to accommodate the many recreational users in the area, as well as a connected trails system and associated parking. Transportation and mobility characteristics that were identified as needing to be preserved included rural character areas around Emigration Canyon and the recreational character and value associated with the area. Items to be avoided included parking issues, increased traffic, overuse of concrete barriers on the road, and over development (as it relates to increased traffic volumes). Transportation and mobility items that were identified as needing to be eliminated included noise pollution, off-roading, the pull off at the mouth of the Canyon, and uncontrolled growth/development, which would presumably increase traffic.

Workshop and survey results

Representatives from Emigration Canyon participated in a workshop to identify high-level transportation values that might be relevant to the Canyon community. For details see Transportation Planning Values box, page 64, section 1.4, and Appendix B.

A Transportation and Land Use Survey was also disseminated to Emigration Canyon residents to get a better idea of the specific values, needs, and concerns associated with the area (for details see section 1.4 and Appendix C). Key transportation and mobility-related concerns identified by survey respondents included that all 97 survey respondents agreed that “Inadequate maintenance of existing infrastructure” was either “very important” or “important” in terms of transportation concerns associated with Emigration Canyon. This was followed closely by “Inadequate bicycle and/or pedestrian infrastructure (e.g. sidewalks, bike lanes)” with 97 percent of respondents indicating that this topic was either “very important” or “important”, and “Unsafe travel” supported by 94 percent of respondents. For a complete list of transportation concerns, see Figure 3.4.



3.2 Transportation Planning Values

To be the most effective, values-based frameworks benefit from being tailored to reflect local values and needs. In January 2020, five representatives from Emigration Canyon participated in a Transportation Planning Values and Principles workshop along with other representatives from MSD-member communities. Emigration Canyon accounted for just under 16 percent of workshop attendees. At this workshop, 32 members of MSD-community Planning Commissions, Councils, General Plan Steering Committees, and several involved members of the public developed a list of transportation

values broadly applicable across the MSD (see section 1.4.3 and Appendix B).

Although the order of value prioritization will vary for Emigration Canyon, the list shown in Figure 3.1 captures a general suite of values that can help to broadly guide transportation decision making in Emigration Canyon. These values are ultimately linked to outcomes and performance indicators or metrics in the Community Work Program included at the end of this chapter and in Chapter 7. By evaluating these indicators, planners and decision makers can ensure that planning decisions are progressing the values held

broadly by MSD member communities, and by the residents of Emigration Canyon in particular.

Some additional transportation-related concerns raised by survey respondents as a write-in option included:

- Wildfire threats in the canyon are exacerbated by traffic congestion and overuse/abuse by visitors
- Better enforcement of the existing noise ordinance will also reduce speeding/accidents and improve quality of life in the canyon

The top transportation values generated at this workshop included (see Figure 3.3 for a complete list of the top values):

- Clean air
- Safe, user friendly streets for all types of users
- Aligning local and regional needs
- Ongoing engagement of stakeholders in local decision making
- Commitment to an outcomes-based approach to planning, design, and engineering
- Good health (of individuals and communities, mental and physical).

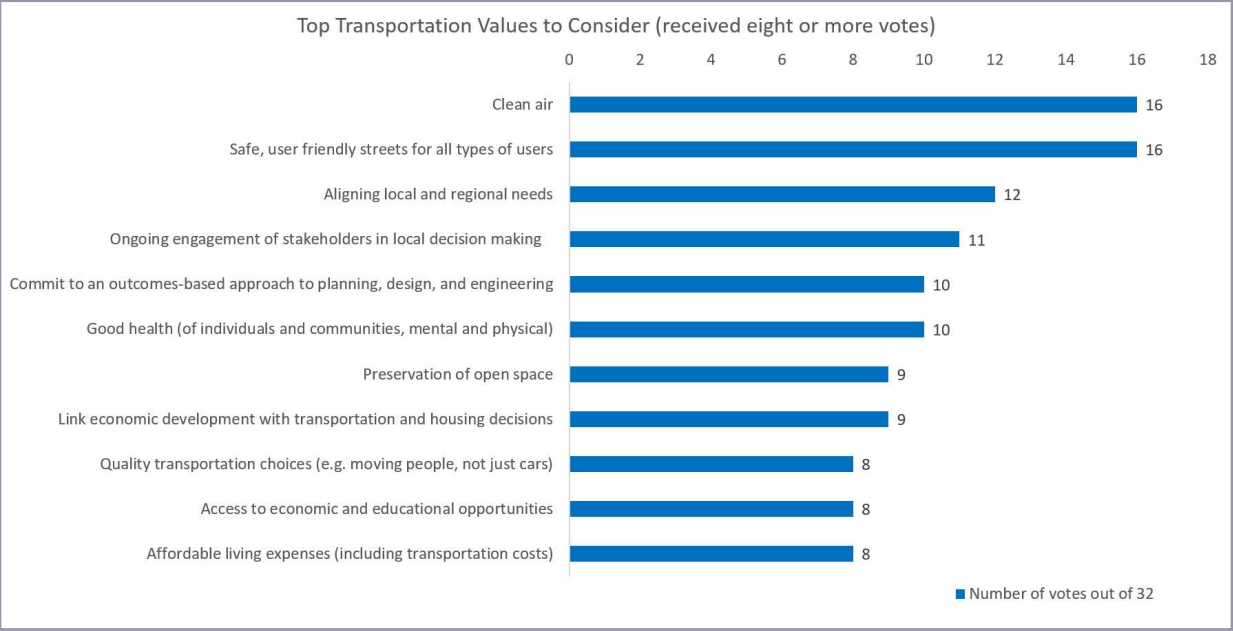


Figure 3.3: Top transportation values identified by participants at Transportation Planning Workshop (for details see section 1.4 and Appendix B).

- Shortage of culinary water is a major concern - Some areas are just not suitable for increased development or mass transit

These results inform the goals, objectives, and actions that follow in the Community Work Program at the end of the chapter and in Chapter 7.

Transportation and mobility-related solutions posed by survey participants

Many survey respondents wrote additional comments regarding transportation and mobility issues in Emigration Canyon. Respondents most often described safety, maintenance, and/or noise concerns regarding

the heavily utilized active transportation corridor of Emigration Canyon Road. Some also offered possible creative solutions to these issues, including:

- Install a toll for non-resident traffic, use the funds raised to build a safe bike trail off the road
- Install a pickup option for package delivery near the mouth of the canyon
- Stop home garbage collection in Pinecrest (too narrow, use dumpsters instead)
- Close off some streets at certain times for pedestrian/bike access only

- Well-timed/coordinated public transportation and/or ride share options
- 2-way bicycle use with vehicular traffic deferential to bicyclists – this is done effectively in Europe, would slow traffic, and prioritize use of the road by those who keep the air clean
- Develop the main canyon road as an Historic Byway
- Better internet capability would mean less commuting

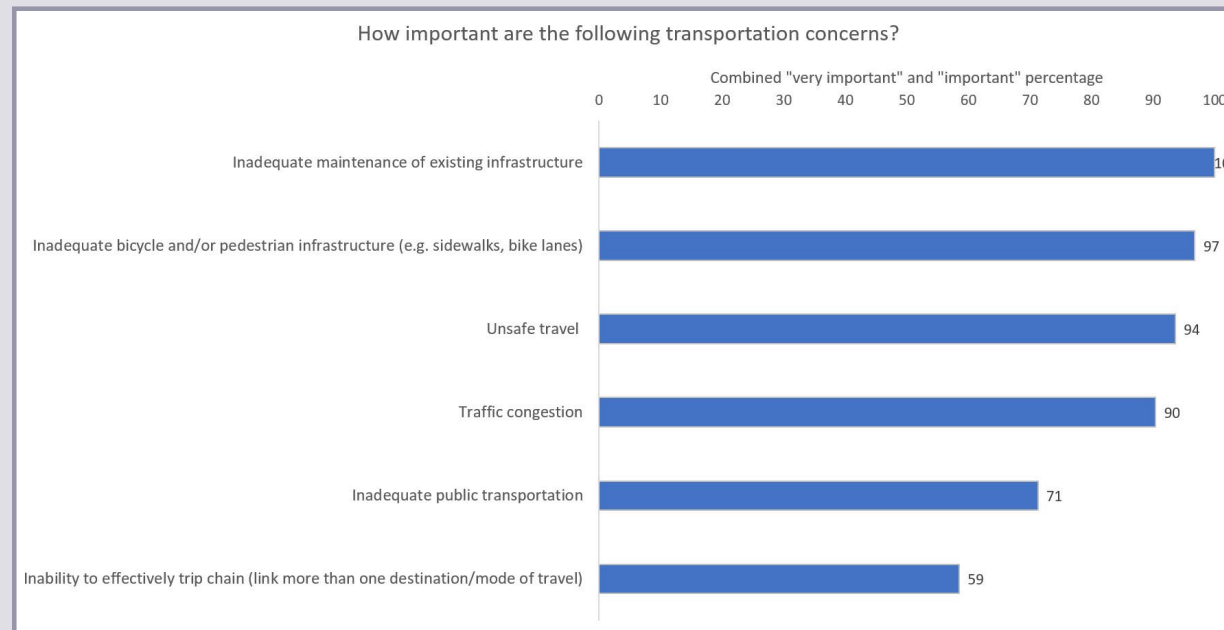
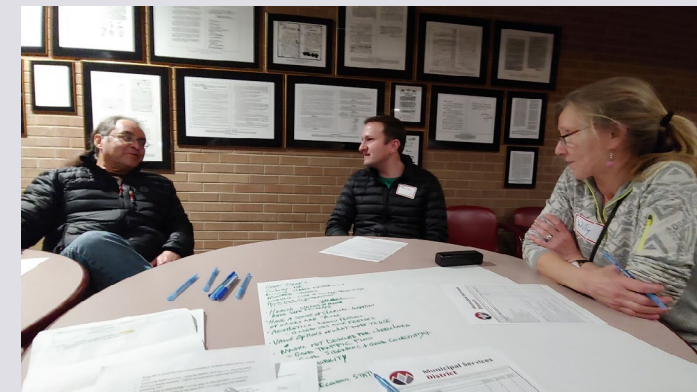


Figure 3.4: Transportation concerns marked as either "very important" or "important" by percentage of survey respondents.



Above: Participants at the Transportation Values and Principles Workshop, January 30, 2020. Photo courtesy of MSD Long Range Planning.



3.3 EXISTING CONDITIONS

Emigration Canyon is a quiet, mostly residential community located a mere 10-minute drive from the Salt Lake City downtown and even closer to the University of Utah. The community is situated in a peaceful, beautiful natural environment. The road leading into the canyon has a mild grade, and is very popular with cyclists and hikers.

Homes dotting the hillside in Emigration Canyon. Photo Courtesy of Maridene Alexander.

3.3.1 Street Network

Emigration Canyon attracts various users—cyclists of differing skill levels; commuting motorists from within and out of the canyon who are familiar with the corridor; school

buses; visitors who are unfamiliar with the corridor; and pedestrians, runners, long boarders and in-line skaters. This variety of motorists and active transportation users results in myriad opinions on how the corridor should be used, what problems or needs exist,

and how best to address such issues. The canyon is also used by non-canyon residents as an alternative route between SLC and Summit County, which adds to the safety concerns associated with the main canyon road (Emigration Canyon Road).

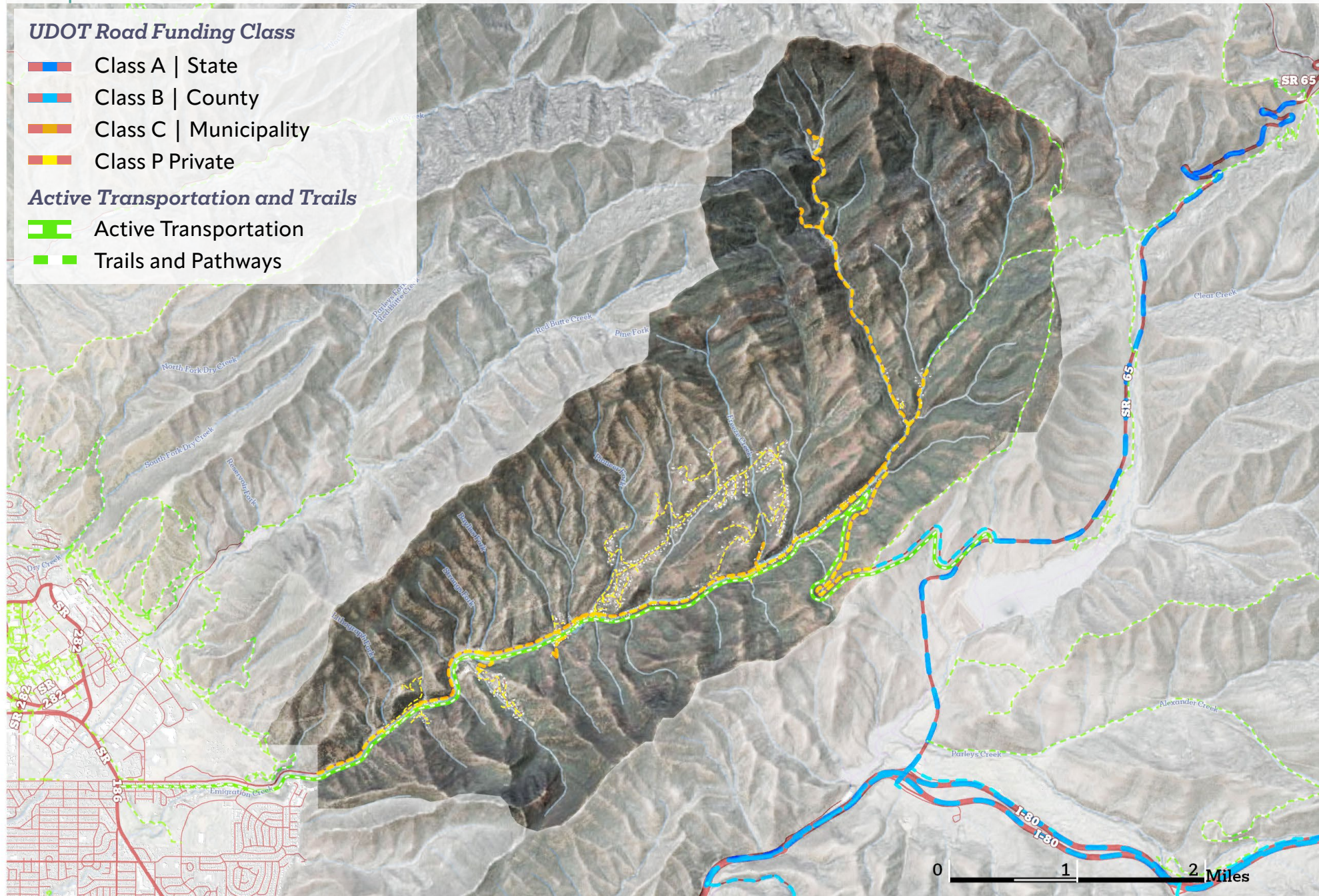
Transportation and Traffic Circulation

UDOT Road Funding Class

- Class A | State
- Class B | County
- Class C | Municipality
- Class P Private

Active Transportation and Trails

- Active Transportation
- Trails and Pathways



3.3.2 Street Classification

The functional classification of streets describes the grouping of streets or highways into ‘classes’ based on the character of service they are intended to provide (Federal

Highway Administration, 2000). This classification is important for understanding how roads in a network relate to one another. There are three functional classes of streets in Emigration Canyon. These are labeled in

Figure 3.5, and each class type is described in more detail in Table 3.1. Note that there are no freeways or expressways running through the Municipality.


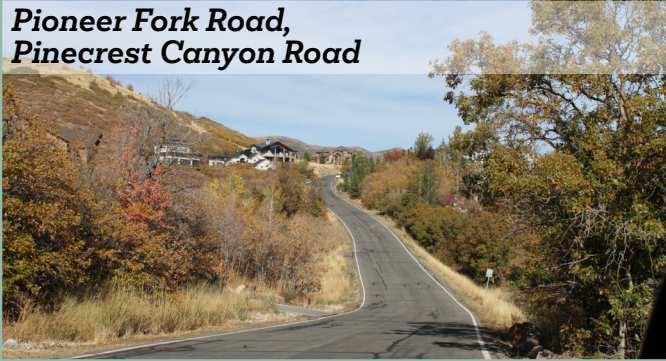

Functional Classification	Streets in Classification	Description
Arterial	Emigration Canyon Road 	Arterials serve a high level of mobility, providing fast flowing through-traffic movement but with low level land-access service. These streets typically provide the most direct route from A to B not only for vehicles but for pedestrians and bicyclists as well.
Collector	Pioneer Fork Road, Pinecrest Canyon Road 	Collectors balance both through-traffic and land-access functions. Collectors are used for shorter trips requiring increased access to destinations and can offer greater comfort and route choice for bicyclists because of the lower vehicle speeds and numerous access options for destinations.
Local Roads	All other roads in Emigration Canyon 	Local roads primarily serve land-access functions. Local road design and control facilitates the movement of vehicles onto and off the street system from land parcels. Through movement is difficult and is discouraged by both the design and control of this facility. This level of street network is likely to provide the highest level of comfort to the greatest number of bicyclists and pedestrians. Local roads will have the lowest speeds and be mostly absent of large vehicles.

Table 3.1: Functional classes of streets in Emigration Canyon.

3.3.3 Traffic Volume and Safety

Traffic accidents on Emigration Canyon Road, especially among different mode users (e.g. single occupancy vehicle drivers and bicyclists) have been a defining feature of the canyon transportation and mobility system for many years now (Figure 3.6). Obscured or obstructed access to the road from sharp turns, short drives, or garages at various points throughout the canyon can also contribute to safety issues.

A gradual increase in canyon traffic has occurred over time (Wasatch Front Regional Council, 2018b), adding to safety concerns. The most recent Annual Average Daily Traffic (AADT) counts from 2017 have increased over previous years' counts by at least 100 vehicles per day at all count locations (Table 3.2). This increase has generally kept pace with the growth of the residential population in the canyon, but anecdotal evidence suggests that more traffic traveling from Salt Lake City to Park City may also be using Emigration Canyon as an alternate route to avoid heavy traffic on Foothill Drive where it intersects Interstate 80. Noise pollution from this steady traffic has become an added nuisance, particularly for canyon residents who live adjacent to Emigration Canyon Road.

Top photo: Emigration Canyon Road, courtesy of PEC Engineering.

Middle photo: Residential Road in Emigration Canyon, Photo Courtesy of Maridene Alexander.

Bottom photo: Residential Road in Emigration Canyon, Photo Courtesy of Maridene Alexander.

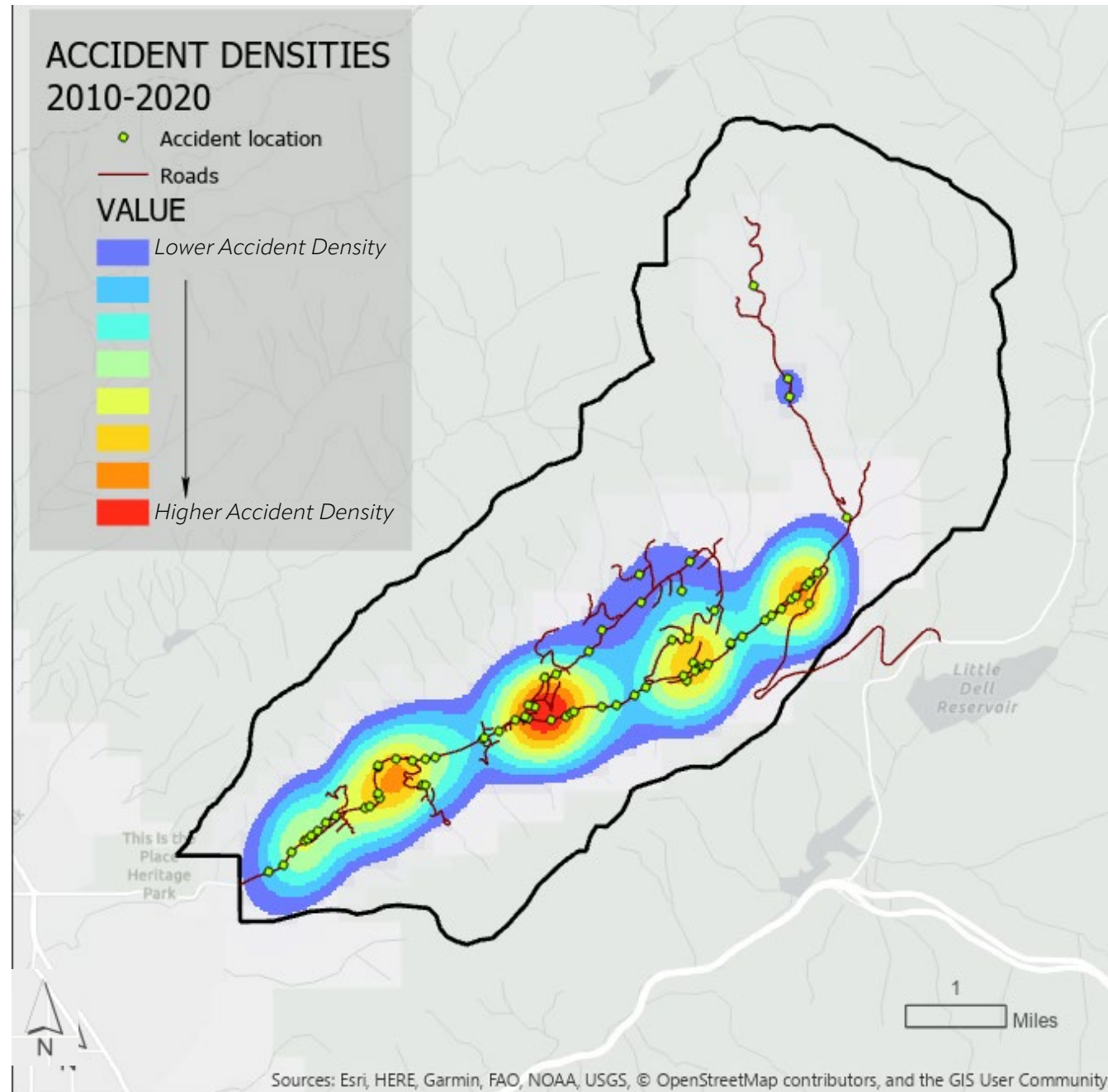


Figure 3.6: Accident data for Emigration Canyon from 2010-2020 reveals the highest density of accidents is at the intersection between Emigration Canyon Road and Pioneer Fork (out of 116 total incidents reported in that time). The focus of accidents in this area is consistent with previous work (Lochner, 2016, Fig. 3).

Traffic from cyclists is at least as concerning for canyon residents as traffic from vehicles. Today Emigration Canyon is one of the top destinations for cyclists in Utah, with more than 1,300 bike trips daily (Lochner, 2016), but the popularity of this activity has created “share the road” issues. Given the increasing use of the canyon over the years, the physical parameters of the canyon and the canyon road, natural hazards (e.g. loose rocks, drainage issues, visibility), and the lack of consistent recreational bicycle lanes in some areas where the canyon is too narrow to make them feasible; the conflicts between bicycles and motor vehicles has been of increasing concern to residents and recreational users alike.

3.3.4 Commuting Patterns

Most of the employed population of Emigration Canyon commute to jobs outside of the Canyon, with over 95 percent of working population employed in other locations in 2017 (Figure 3.7). In that year, only nineteen people (3.7 percent) lived and worked in Emigration Canyon (OntheMap

Arterial Highway Section	Annual average daily traffic (AADT) count
From E Sunnyside Ave to E Sunnydale Ln	4,200
From E Sunnydale Ln to Perkins Hollow	4,000
From Perkins Hollow to N Pinecrest Canyon Road	3,500
From N Emigration Canyon Road to 65	5,000

Table 3.2: 2017 AADT Data retrieved from UDOT. Source: Esri Community Maps Contributors, County of Salt Lake, Utah AGRC, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA.

Data, 2017; Appendix D).

Table 3.3 shows how these residents commute to and from their place of work. In 2018, 76.3 percent of residents drove alone to their job. This was an increase from the percentage of people driving alone in 2010. A similar number was also reflected in the data provided by the 97 people from Emigration Canyon who responded to the Transportation and Land Use survey (Appendix C).

Currently, there are no public transit routes in Emigration Canyon, nor have any been planned for the area in the near future (Wasatch Front Regional Council, 2019d). Granite School District’s public school bus route is the only public transit in the Canyon (for current information see <https://www.graniteschools.org/transportation/>).

Because people living in the Canyon commute to jobs elsewhere in Salt Lake County, overwhelmingly in single occupancy vehicles, there are implications for air quality, road infrastructure, and housing demand (for more detail on this topic see Appendix D).

3.3.5 Active Transportation

Emigration Canyon Road is popular with active transportation users and has the potential to be a top tier destination for them (see Figure 3.5 showing active transportation corridor). The allure of sweeping views, mild canyon grades, and proximity to downtown Salt Lake City has not escaped the attention of a growing number of cyclists and runners, but some substantial adjustments to the road are needed to improve safety for these diverse users. Sidewalks are non-existent in the canyon, as are other standard urban infrastructure such as streetlights, benches and restrooms. Infrastructure hazards including unstable slopes, encroaching residential structures, tight shoulders, and canyon curves bring design challenges that urban bike design guides like NACTO and AASHTO do not address.

A facilitated collaborative planning effort to address many of these challenges was undertaken in 2014 by the Emigration Canyon Roadway Improvement Committee (ECRIC), a group formed under the previous planning authority at Salt Lake County. Safety within a mixed-use corridor was the overarching consideration. The committee developed a range of recommendations for immediate action, including 79 specific roadway improvements (Lochner, 2016). An evaluation of the engineering deficiencies throughout the canyon, proposed costs for solutions recommended by the ECRIC, and additional engineering analysis were conducted following the release of these

recommendations and compiled into the Lochner report (2016). A summary of the findings from this report are included in the Next Steps section (Table 3.4).

3.3.6 Trails

Emigration Canyon is a natural playground for outdoor enthusiasts, but there is very little infrastructure such as parking, bathrooms, or even maintained trails to support these activities. While some informal trails exist in the canyon, these are mostly very rough and are not maintained or monitored. This means that excessive use by visitors can lead to erosion, property damage and pollution. A Trails Master Plan was adopted in 2007 to address many of these concerns, but little has been implemented since the adoption of the plan (Emigration Canyon Community Council, 2019; Salt Lake County Parks and Recreation, 2007). More details on trails are included in the land use section of this general plan, and in Appendix H and I.

3.3.7 Accessibility

Accessibility is a measure of how many destinations can be reached within a reasonable distance. The WFRC measures job accessibility by automobiles and by transit for much of the Wasatch Front, but does not include Emigration Canyon in the analysis (for details see Wasatch Front Regional Council, 2019a). However, even without this detailed analysis it is clear that residents of Emigration Canyon are largely dependent on the automobile or alternative transportation in order to access opportunities and amenities such as jobs, schools, grocery stores, health care facilities, and goods and services, due to the absence of transit and diverse land uses in the Canyon. On the other hand, canyon residents enjoy excellent access to open space and parks via both automobile and alternative transportation, though again not via transit. Accessibility is best where there is a mix of land uses at the neighborhood scale, good street connectivity, and a safe walking environment; these measures are unlikely to change in any substantial way in the near future for Emigration Canyon.

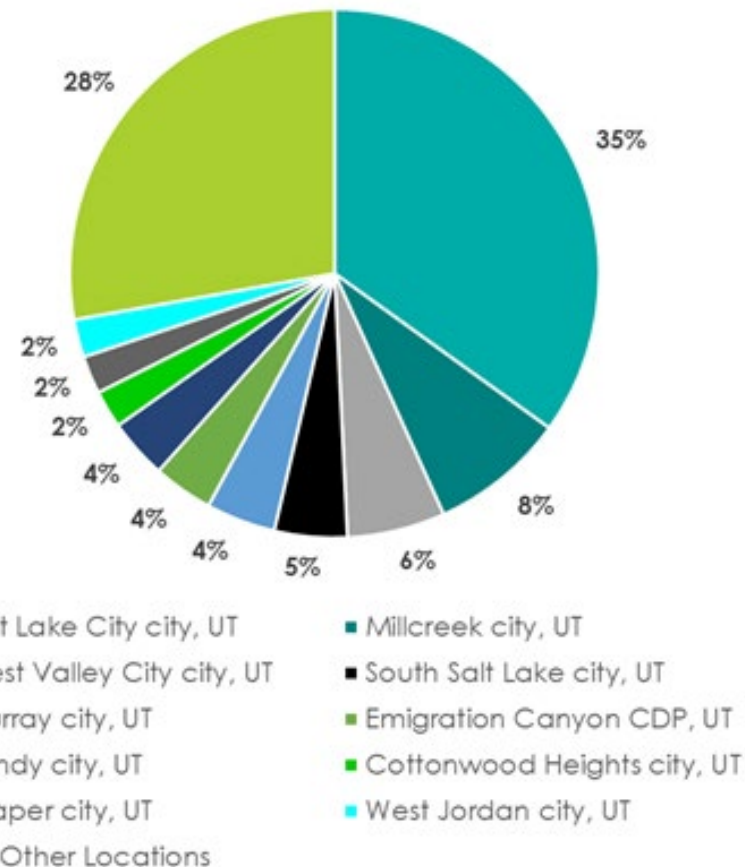


Figure 3.7: Share of Emigration Canyon residents employed by location. Source: OntheMap Data, 2017.

Table 3.3: Commuting Modes

Method	Emigration Canyon		Salt Lake City	Salt Lake Co	Utah
	2010	2018		2018	
Car, truck, or van - drove alone	73.5%	76.3%	67.5%	74.9%	76.0%
Car, truck, or van - carpooled	12.1%	5.4%	11.0%	11.5%	11.2%
Public transportation (excluding taxicab)	0.0%	0.0%	7.1%	3.8%	2.5%
Walked	2.4%	3.5%	5.5%	2.3%	2.5%
Bicycle	2.4%	4.8%	2.5%	0.8%	0.7%
Taxicab, motorcycle, bicycle, or other means	4.5%	3.5%	1.4%	0.9%	1.0%
Worked at home	5.1%	6.4%	5.1%	5.9%	6.2%

Source: U.S. Census Bureau ACS 5-Year Estimates 2010 and 2018 (S0801)



3.4 LOOKING AHEAD

“It’s better to look ahead and prepare than to look back and regret.”

- Jackie Joyner-Kersey

Deer Crossing the road. Photo Courtesy of Maridene Alexander.

3.4.1 Future Projections

Over the last ten years, traffic in Emigration Canyon has steadily increased across almost all road segments (Wasatch Front Regional Council, 2018b), as has the population living in the Canyon (Esri, 2020). Population projections for the canyon show a possible increase from around 1,800 people in 2020

to around 3,000 people in 2050 (for details see Appendix D). While traffic volume on the Emigration Canyon Road is likely to continue to keep pace with regional growth, Emigration Canyon’s population will likely stabilize before 2050 due to constraints on residential population growth such as 1) limited remaining buildable areas and 2)

water-related restrictions (see Chapter 2 for more details). Because of these factors, the future we are planning for revolves around only slight population growth within the Canyon itself, as well as enhanced use of the area by visitors.

Annual average daily traffic (AADT) forecasts for Emigration Canyon Road project an

increase of between 1000 to 5000 vehicles, reaching a high of approximately 9,700 by 2050. The the upper and lower sections of the road see greater increases in traffic. This is largely attributable to visitors accessing recreation resources. Within the more residential section an increase of 0 to 1000 vehicles is projected reaching up to 4,400 by 2050 (Figure 3.8).

The WFRC identified Emigration Canyon Road in their Future Active Transportation Network (Wasatch Front Regional Council, 2019b). However, there are no additional transit improvements outlined for the area (Wasatch Front Regional Council, 2019d). Should lower sections of Parley's canyon become obstructed or closed, Emigration Canyon Road is the only alternative traffic route for I-80. A coordinated effort between the Township, WFRC, UDOT, and SLCo is recommended to ensure the road is designed and maintained at a standard that ensures it is capable of fulfilling this potentially vital role.

Despite the relative stability projected for Emigration Canyon, if the population does continue to grow even slightly, a shift away from driving alone would help to reduce pressures on Emigration Canyon Road, especially during popular commute times. This trend could also help to reduce harmful emissions that contribute to poor air quality, a major concern in the Salt Lake Valley (Maffly, 2020) and one of the highest scoring issues for canyon residents (Appendix C). To address these concerns, efforts should be made now

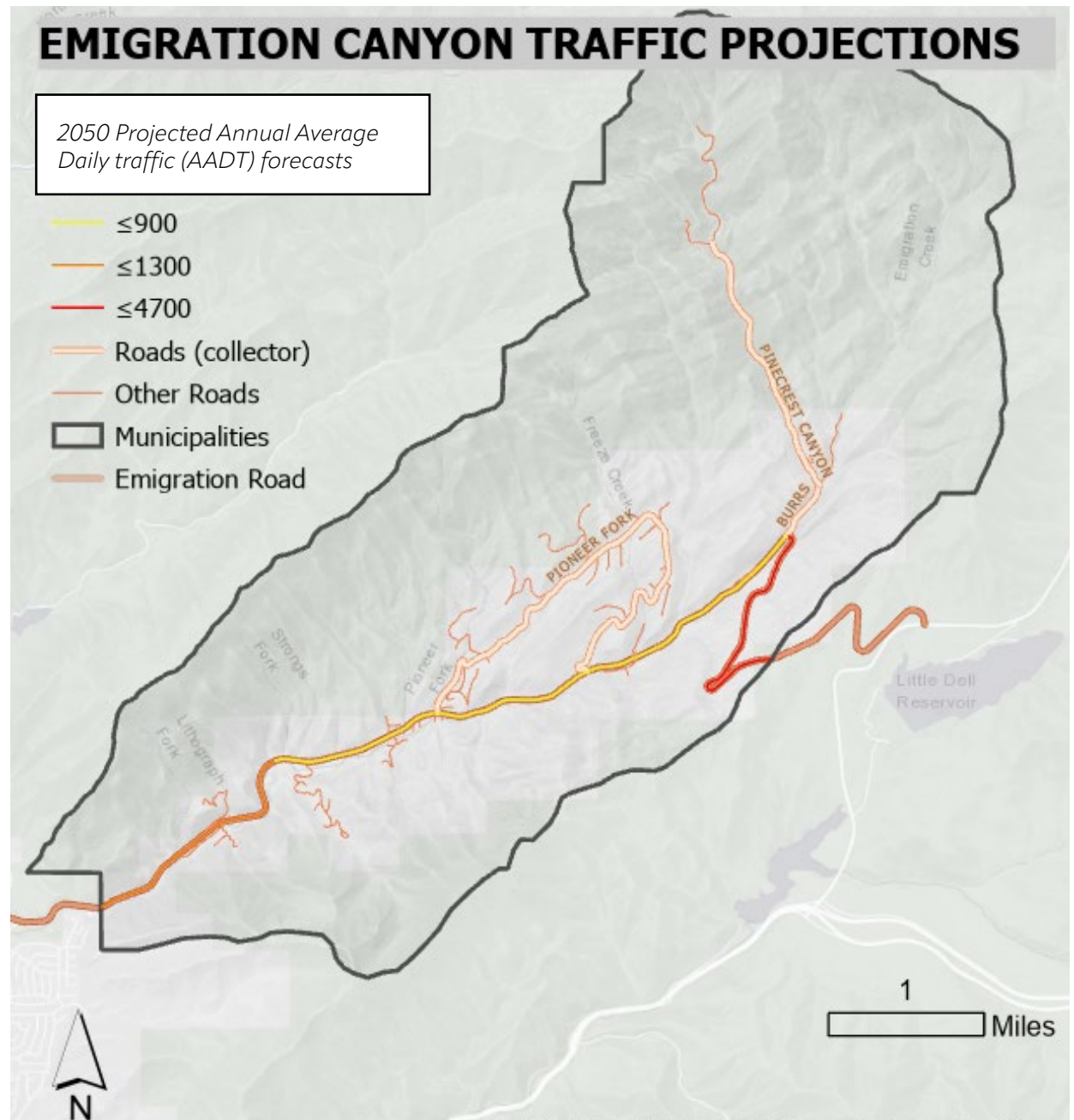


Figure 3.8: Emigration Canyon Traffic Growth Projections 2017 to 2050. Source: (Wasatch Front Regional Council, 2018b).

to enhance telecommuting access for canyon residents, as well as to support appropriate small-scale increases in economic opportunities located within the canyon itself, although these opportunities are unlikely to be primarily brick and mortar businesses (see Chapter 4 for details).

3.4.2 Next Steps: Roadway Improvements

In the summer of 2020, a paving project was undertaken to upgrade Emigration Canyon Road. This project implemented several of the recommendations made by Lochner, 2016 (Table 3.7). Other work in line with these recommendations is planned as funding becomes available.



Crews Working on Emigration Canyon Road. Photo Courtesy of PEC

Table 3.7: Summary of Lochner 2016 findings, recommendations, and progress		
Proposed improvement	Expected outcome	2020 progress towards outcome
Roadway infrastructure improvements including slope stability and pilot striping concepts.	Promote respect among all road users and lessen the severity of obstacles.	Engineering is applying for funding for slope stability projects.
Reduce speed limit to 30 mph in the stretch of roadway from Margarethe to Pinecrest (upper canyon).	Reduce hazards associated with this segment of road, which has narrow shoulders, unstable slopes, tight curves, and a high accident history.	Conducting speed studies to see if/where reductions would be plausible.
Implement solar VMS speed playback signage, flashing beacons, or high visibility flags over the reduced speed signage.	Reduce hazards associated with this segment of road, which has narrow shoulders, unstable slopes, tight curves, and a high accident history.	Under consideration.
Choke-point signing and striping: custom signage to promote awareness, striping to mitigate safety hazards. <i>Dots to represent narrow areas for both cyclists and motor vehicles.</i>	Reduce hazards for bicycles and vehicles.	The section in <i>italics</i> was not implemented as it was deemed a litigation risk to not follow standard striping. All other improvements implemented.
Future roadway widening: 11-foot travel lanes, 1-foot buffer and 40foot cycles lanes.	Reduce hazards for bicycles and vehicles.	11 -foot lanes and 5-foot bicycle lanes were installed where road width allowed.
Add a bicycle counter to lower canyon.	Provide data to help when applying for road improvement/maintenance funding.	Engineering has counted cars and used Strava data for bicycles.

3.4.3 Next Steps: Trail Development

The forecast is for Salt Lake Valley's population to grow from 1.1 million in 2015 to 1.7 million in 2050 (Kem C. Gardner Policy Institute, 2016) This suggests that all outdoor recreational resources will be heavily used – and those that are underdeveloped may suffer the most. Emigration Canyon needs to begin building a trails network designed and constructed to withstand the increased visitor pressures, and to protect its existing natural resources. A Trails Master Plan was developed by the community and adopted by Salt Lake County in 2007, but never implemented (Salt Lake County Parks and Recreation, 2007; Appendix H). In 2019, the Municipality reviewed that plan to identify a core set of trails and associated facilities that might be built relatively quickly, establishing a base for ongoing development (Emigration Canyon Community Council, 2019; Appendix I).

Key recommendations from this assessment are outlined below. Additional details can be found in Appendix I.

Key Trail Development Recommendations

Focus on establishing two main regional trailheads and improving signage at local trailheads

- Canyon Mouth Regional Trailhead
- Little Mountain Summit Regional Trailhead

Focus on creating/modifying two - three trails

- South Slope Regional Trail and the return loop (both together)
- East Slope Regional Trail and the 2nd return loop (both together)

Minor restoration of the Killyons Trail (eroded sections)

Partner with Salt Lake City Parks on the Canyon Mouth Regional Trailhead and associated trails

Develop a comprehensive trails management plan that provides for:

- Trail and trailhead facility maintenance
- Public education and signage
- Compliance with use and access restrictions in surrounding areas (Little Dell Watershed, Red Butte)
- Public safety monitoring and enforcement
- User impact mitigation, especially for private property owners who voluntarily allow public access

Funding plan – EC Metro, Non-profit, etc

Continue to pursue 2007 plan goals.

While only a small subset of the plan's proposed trails/trailheads are feasible for near-term implementation, others may eventually be realized if the Municipality pursues them with patience, persistence, and flexibility.



*Early fall, Freeze Creek.
Photo Courtesy of
Catherine Harris.*

3.4.4 Transportation and Mobility Work Program Goals

The following Transportation and Mobility Work Program Goals were developed with guidance from the GPSC, based on community input, and with consideration for the data, opportunities and challenges outlined in this and previous chapters. The work program can be used to guide the implementation of the General Plan and make progress on Emigration Canyon's transportation and mobility goals. The work program outlines goals, objectives, and actions, with the responsible parties, timeline for implementation, approximate cost, metric for success, and relevant resources also delineated. However, the Emigration Canyon Metro Township Council is the governing body of the Municipality and will determine how best to achieve the goals, objectives, and actions included in the work plan, including how best to implement recommendations such as the formation of working groups. Details such as possible leads, timelines, costs, metrics, and resources are included to support implementation but are not definitive.

Goal 3.1: Enhance the existing character, integrity, and environmental management of the Canyon roads.

- Objective 3.1.1: Improve traffic and growth management to maintain the character and integrity of Emigration Canyon.
- Objective 3.1.2: Increase enforcement to avoid and/or minimize light and noise pollution throughout Emigration Canyon.
- Objective 3.1.3: Increase trailhead parking and related facilities.

Goal 3.2: Provide a safe, efficient transportation network for all users.

- Objective 3.2.1: Improve safety of Emigration Canyon's roadways for all users.
- Objective 3.2.2: Improve regional, city-wide, and neighborhood transportation management to create an efficient traffic system and reduce traffic impacts on air quality, especially during high-use times.





Cyclist in Emigration Canyon. Photo Courtesy of Maridene Alexander.



CHAPTER 4: ECONOMIC DEVELOPMENT CONSIDERATIONS

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Emigration Creek at the Emigration Brewing Company. Photo Courtesy of Maridene Alexander.

4.1 ECONOMIC CONSIDERATIONS

Consideration of Emigration Canyon's economic development options is needed to guide long-term decision making related to economic challenges and opportunities in the Municipality. However, this element does not intrinsically support economic development. Instead, it examines options that could support responsible, equitable, and sustainable economic activities in the area, especially as part of a wider regional context, and clarifies the kinds of economic development that would not be appropriate for Emigration Canyon. A mix of market research, community feedback, and local and regional plan integration informs the goals, objectives, and actions included in this element of the General Plan.

4.1.1 An integrated approach

Economic opportunities are tied to land use, transportation, housing, infrastructure, and resilience decisions, as well as community history and identity. In Utah, sales tax revenue funds much of a Metro Township's budget, and Emigration Canyon's land use ordinances determine how many properties can generate sales tax. As a Metro Township, Emigration Canyon can use the revenue generated from sales tax to fund projects and endeavors that matter most to local residents. Local zoning determines where which types of businesses – home occupations, restaurants – are allowed and how they can operate. The connectedness of the transportation

network influences how convenient it is for customers and businesses to reach each other, potentially influencing a business' ability to move products. Housing costs determine how much income a household has left to spend on goods and services, including food, entertainment, and recreation. Meanwhile Emigration Canyon's resident (and visitor) population serves as a market that sets the framework for which business types can succeed. Community aesthetics such as curb appeal (the attractiveness of a property when viewed from the street), attract customers and impact business success. Well-maintained, safe infrastructure supports economic stability, and at the same time, economic stability enables infrastructure maintenance. Likewise, economically diverse communities are more resilient to hazards and changes (e.g. pandemics, earthquakes, demographic change). All of these connections encourage taking an integrated approach to economic development planning in Emigration Canyon.

4.1.2 Regional strategies

Emigration Canyon has not included a dedicated Economic Development element in any previous general plans, but there are some economic development strategies occurring in the region that are likely to influence future Canyon opportunities.

The Wasatch Choice 2050 is a regional plan developed by the Wasatch Front

Regional Council (WFRC) that aims to create a robust and collaborative vision for the entire Wasatch Front, including the area in and surrounding Emigration Canyon. Wasatch Choice 2050 proposes several transportation updates and land use clusters that may help direct sustainable growth in the area. On the Wasatch Choice 2050 Map, Emigration Canyon's general land uses are shown as either rural preservation green space (current), or parks or protected lands (future). The proximity of the Canyon to the research/education/office center and economic cluster at the University of Utah emphasizes the role that the Canyon plays as an important natural resource amenity that supports development elsewhere (Wasatch Front Regional Council, 2019c).

Comprehensive Economic Development Strategy:

2018-2030 The Wasatch Choice 2050 Vision includes ten goals (see Figure 3.2 for details) that directly tie to and impact economic development opportunities across the region through four key strategies described in the 2018-2023 Comprehensive Economic Development Strategy (Wasatch Front Regional Council, 2018a):

1. Link Development with Transportation and Other Infrastructure - Coordinated transportation, infrastructure, and land-use decisions to enhance household's access to jobs and educational

opportunities and employer's access to workforce and customers.

2. Create Fiscally Sustainable Places - Revenues and expenses are balanced and sustainable for households, communities, and the region.
3. Provide Amenities - Maintain quality of life elements that attract skilled labor by encouraging more walkable cities, open space preservation, and improved air and water quality.
4. Attract and Retain Businesses, and Encourage Innovation - Support and encourage business retention, job creation, workforce development, and innovation by partnering and information sharing.

Wasatch Canyons General Plan 2020

The recently adopted Wasatch Canyons General Plan does not include Emigration Canyon within its planning boundaries, but because it is associated with a neighboring area with similar canyon characteristics, some of the goals and strategies are likely to resonate with Emigration Canyon residents. The Wasatch Canyons General Plan sets out the following vision and a set of guiding principles for economy (Salt Lake County Regional Development, 2020; Appendix G):

VISION:

Sustain the Wasatch Canyons as a world-class recreation destination that provides significant economic benefit to the region. Enable businesses to continue providing goods and services without compromising

the environment.

GUIDING PRINCIPLES:

1. Context-Appropriate: Attract and retain canyon businesses that are economically and environmentally sustainable.
2. Tourism: Recognize that tourism is a fundamental component of the Utah economy and is dependent on healthy and abundant natural and scenic resources.
3. Stewardship: Encourage businesses to be environmental stewards through practices and educational outreach to customers and visitors.
4. Branding: Promote signage and branding that highlights the history and heritage of the Canyons, and promotes appreciation and stewardship.

4.1.3 Community Input

Details on the participatory approach used to engage members of the Emigration Canyon community in the development of this General Plan are included in section 1.4. As part of the community input, a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis (Figure 1.5) and an Achieve, Preserve, Avoid, and Eliminate (APAE) analysis (Figure 1.6) was conducted by the GPSC. A summary of key results relevant to this Economic element are included in the two subsections that follow. Key results from the Transportation and Land Use Survey relevant to economic development are described in the third subsection.

SWOT Analysis (Economic Considerations)

Strengths identified in the SWOT analysis and relevant to the economic element included the fact that Emigration Canyon is composed of a largely affluent, well educated, active community of residents. Weaknesses included slow internet, a low sense of community, and poor parking options (relevant for brick and mortar businesses). Opportunities to support sustainable local businesses and improve air quality (through having access to a more diverse local economy) were identified. Threats included over development and high traffic volumes.

APAE Analysis (Economic Considerations)

The APAE analysis identified several items relevant to consider in future economic decision making for Emigration Canyon. Achieving high speed internet/fiber optics in the Canyon was identified as a need, along with supporting sustainable local businesses and hosting local events that enhance a sense of community. The need to preserve historic areas, rural character, recreational values, and workspaces for local artists/musicians were also identified. Economic development considerations to avoid included overdevelopment, short-term rentals, parking issues and increased traffic. The elimination of issues such as pollution and uncontrolled growth/development were considered economically relevant items to aspire to in decision making.

Transportation and Land Use Survey

Public feedback makes it clear that Emigration Canyon survey respondents are not deeply interested in economic development in their area, with “Business Mix” scoring at the bottom of the list of “important” or “very important” considerations related to development in the area (Figure 1.7). However, in order to support strongly held environmental values such as “Clean Air” and “Sustainability and Energy Efficiency”, some consideration of sustainable economic development is needed. For example, if there were a few more local services in Canyon, residents might be able to avoid driving to access these goods. Similarly, the emphasis on the importance of “Parks and open spaces” means that respondents think of these areas as valuable assets that should be protected. Considering these assets as part of a sustainable economic development portfolio for both Emigration Canyon and the wider region can support conservation arguments.

Defining growth, development, and sustainability

Although the terms **growth** and **development** are often used interchangeably, they are not synonymous. Growth refers to any increase in a measure over time. Economic growth could indicate an increase in jobs or in gross domestic product (GDP) for example. Development, on the other hand, is a more complex and holistic term, focusing not just on the increasing measure of an indicator but

also on whether resulting changes are positive or negative, and what impacts changes have on various systems. Development typically includes some consideration for the overall well-being of human populations. Defined this way, development is “an unfolding of human potentials for meaningful participation in economic, social, political, and cultural process and institutions, so that people can improve their conditions” (Kamal, 2011). Economic development therefore looks at upward mobility, quality of life, diversity of businesses, and the ability for residents to meet daily employment, shopping, service, and financing needs. This element of Emigration Canyon’s General Plan therefore focuses on economic development, a critical component of Emigration Canyon’s future success.

Sustainable development, defined by the UN World Commission on Environment and Development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland, 1987)” is a crucial component of Emigration Canyon’s economic development plan.

Due to its low population density and the high value placed by the community on the abundant natural landscape, the conservation of natural lands is a key strategy needed to protect both the quality of life of Emigration Canyon residents, and to support the long-term economic viability of natural resource based activities such as outdoor recreation in the region. Emigration Canyon is an asset that supports economic growth

throughout Utah through attraction of new job-creating businesses, and recruitment of skilled workers. Any economic development strategies that are applied in Emigration Canyon must therefore support economic vitality without sacrificing the beauty and utility of the surrounding landscape (Partnership for Sustainable Communities, 2011). Sustainability strategies promoted by the United Nations Sustainable Development Goals platform to address such issues include:

- Encourage land use that prevents degradation and unsustainable exploitation of resources;
- Encourage the use of environmentally friendly practices;
- Promote sustainable natural resources use and management, including ecosystem conservation through community-based programs;
- *Promote safe and environmentally sound waste management practices (United Nations Department of Economic and Social Affairs, 2009).*

4.2 EXISTING CONDITIONS

4.2.1 Regional Trends

Emigration Canyon is located within Salt Lake County and with easy access to the University of Utah and Downtown Salt Lake City. The municipality is influenced by the growth that has been occurring throughout the Salt Lake Valley, and it is connected to regional destinations via Emigration Canyon Road and Route 65 (see Figure 1.1). Examining county-wide market trends helps us to understand Emigration Canyon's role within the regional economy and the opportunities that may lead to future economic success.

Based on a location quotient and shift share analysis (see Appendix F for details), in Salt Lake County, the most prominent emerging industries are Retail Trade, Accommodation and Food Services, Manufacturing, and other services. These industries demand commercial real estate, namely retail spaces and some industrial space to serve manufacturing needs. Options for expanding these industries in Emigration Canyon are extremely limited and of little interest to the community. However, growing industries in Salt Lake County include Professional and Technical Services, Transportation and Warehousing, Wholesale Trade, and Education Services. Some professional and technical service or education service businesses may not require a great deal of brick and mortar space, and a high percentage of the employed population of Emigration Canyon likely work in these

sectors. Therefore, some opportunities in these categories may align with the Canyon economic development goals outlined in this Plan (see work program).

Age Group	2018		2024*	
	Count	Percent	Count	Percent
Under 5 years	69	3.8%	92	4.7%
5 to 9 years	75	4.1%	122	6.3%
10 to 14 years	151	8.3%	136	7.0%
15 to 19 years	126	6.9%	124	6.4%
20 to 24 years	69	3.8%	56	2.9%
25 to 29 years	5	0.3%	50	2.6%
30 to 34 years	74	4.0%	74	3.8%
35 to 39 years	103	5.6%	112	5.8%
40 to 44 years	198	10.8%	133	6.9%
45 to 49 years	72	3.9%	122	6.3%
50 to 54 years	284	15.5%	136	7.0%
55 to 59 years	168	9.2%	152	7.8%
60 to 64 years	260	14.2%	158	8.2%
65 to 69 years	117	6.4%	157	8.1%
70 to 74 years	21	1.1%	144	7.4%
75 to 79 years	15	0.8%	93	4.8%
80 to 84 years	0	0.0%	44	2.3%
85 years and over	21	1.1%	30	1.5%
(Total)	1,828	100%	1,937	100%

Sources: U.S. Census Bureau, ESRI Business Analyst

Table 4.1 (at left): Age ranges, current and projected, for Emigration Canyon (Esri Business Analyst, 2018)

4.2.2 Demographic Overview

The population of Emigration Canyon has grown steadily over the last few decades, from 1,192 in 2000 to 1,806 in 2020 (Esri, 2020, Figure 4.1). If the population continues to grow at this rate, which is somewhat unlikely given environmental and other constraints, the population could increase to around

2,300 by 2030 (ibid). Over the next five years, the per capita income is not expected to increase substantially for Emigration Canyon residents, but current and projected per capita incomes are already well above the averages for Salt Lake City, Salt Lake County, and the State (for details see Appendix D).

Average household size has been relatively steady at around 2.7 persons per household in Emigration Canyon since 2000, and it is projected to remain the same for the next five years. There are currently 681 households in the Municipality, a dramatic increase of 56% from the 436 households in the Canyon in 2000. The area has traditionally had a very homogeneous racial and ethnic profile, although over the next five years a very modest increase in the percentage of residents identifying as minority racial and ethnic groups is projected for the area.

Prominent age brackets are highlighted in Table 4.1. The 2018 age distribution shows a large population that is middle-aged or in the early years of retirement, and many of these residents have pre-teen or teen children living at home. Over the next five years, the population of residents in 65+ age brackets will rise considerably. Because of these projected changes, looking forward the community will need to respond to the needs of diverse age groups, accommodating both an aging population and an increased population of youth.

4.2.3 Employment

Emigration Canyon is home to at least 15 local businesses who provide employment for approximately 173 employees (Table 4.2). Canyon residents generally have a high level of educational attainment, with 72 percent of the population holding a bachelor's degree or higher. Canyon residents also tend to work in professional level office jobs (86 percent) and to drive alone to work (76.3 percent). Ten percent of Canyon residents work in the service industry, four percent work in more physical labor positions, and the unemployment rate for residents in the Canyon is around 5 percent.

4.2.4 The Role of Visitors

Emigration Canyon offers visitors access to many world-class recreational opportunities in a beautiful, mountainous open space

setting, including:

- **Road cycling**
- **Hiking**
- **Mountain biking**
- **Snowshoeing**
- **Cross-country skiing**
- **Hunting**

Emigration Canyon and Big Mountain cycling routes have been in the top 10 roads for Utah cyclists, and are known around the US as well (Utah Office of Tourism, 2020). This popularity is likely to increase in the coming decades: Utah's population is projected to double by 2050 (Kem C. Gardner Policy Institute, 2016) and housing density is expected to increase in Salt Lake County, with an expected new housing development at the mouth of Emigration Canyon, where the University of Utah is planning construction of 7600 new

apartments and 950 townhomes over the next 20 years (Semerad, 2020).

With an influx of visitors in the coming years, how should Emigration Canyon balance economic sustainability with preserving the community's dedication to the environment, recreational amenities, and historic identity? The Wasatch Canyons General Plan frames this problem in terms of "visitor carrying capacity...when looking at the amount of people recreating or visiting the area in a period of time...There are many different types of capacity such as transit, vehicles on roads, trail head parking, trails, skiers... All of these different uses can have impacts on watersheds, ecosystems, wildlife and more" (Salt Lake County Regional Development, 2020, pg 10). Steps to respond to such impacts might include:

- Encouraging visitors to use alternative modes of transportation (e.g. public transit/ride sharing, carpooling, biking) to help prevent adverse effects on traffic, parking, and air quality.
- Promoting commercial uses or community events that enhance community bonding and attract visitors, but are small-scale, seasonal, or temporary, to limit their impact on the community's natural surroundings and small-town character (e.g. local food trucks, farmer's market, ice cream/shaved ice stand).
- Developing policies that protect wildlife from vehicles and erosion of habitats.

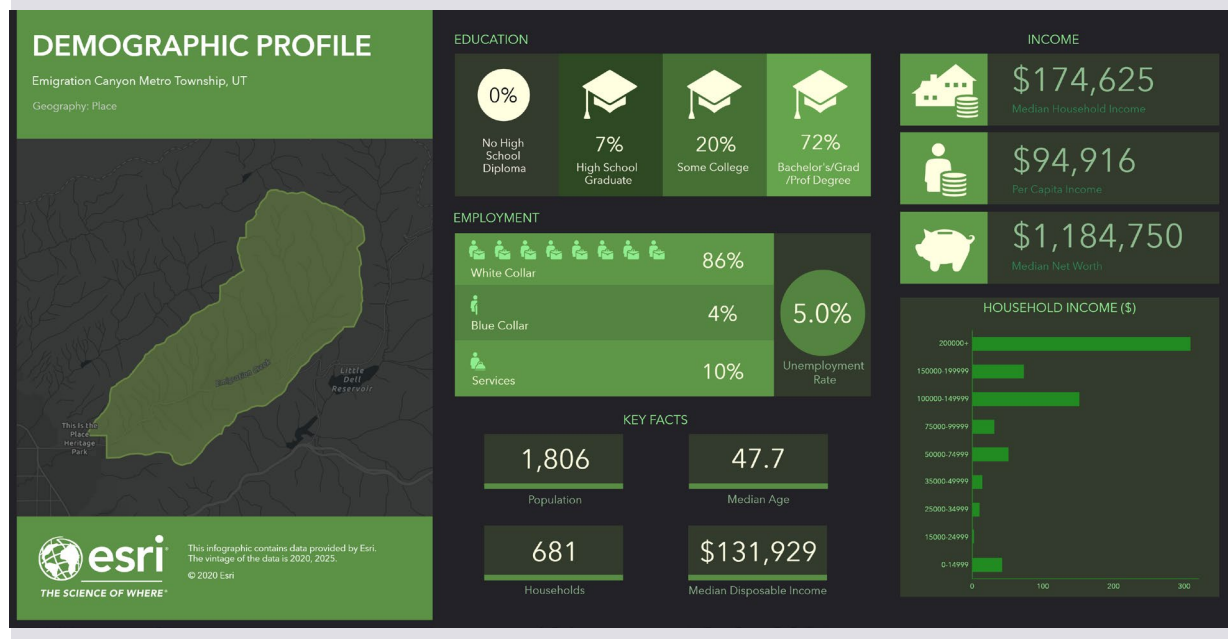


Figure 4.1: Demographic Profile of Emigration Canyon (Esri, 2020).

- Developing policies that protect the integrity of the Canyon's trails and hunting areas (e.g. prevent overcrowding, watershed contamination).
- Developing policies that protect the Canyon and its residents from fire danger and other hazards.

4.2.5 How We Spend Our Money

A program by ESRI Business Analyst characterizes populations. By taking these characteristics into account, civil servants can plan in ways tailored to the community. These characteristics indicate what economic development may thrive in a community. Emigration Canyon is characterized entirely

by a tapestry segment called “Top Tier”:

- Top Tier is a highly educated, successful consumer market: more than one in three residents has a postgraduate degree.
- Annually, they earn more than three times the US median household income, primarily from wages and salary, but also self-employment income and investments.
- Socially responsible consumers who aim for a balanced lifestyle, they are goal oriented and hardworking but make time for their kids or grandkids and maintain a close-knit group of friends.
- These busy consumers seek variety in life. They take an interest in the fine arts; read to expand their knowledge; and consider

the Internet, radio, and newspapers as key media sources.

- They regularly cook their meals at home, attentive to good nutrition and fresh organic foods.

4.2.6 Access to Digital Infrastructure

Emigration Canyon residents and businesses rely on high-speed internet access for many aspects of modern life. It is the gateway to more and better jobs, improved educational access, a portal to public services and quality healthcare, and generally improves quality of life (Tomer et. al, 2020). The COVID-19 pandemic has intensified residents' dependence on high-speed internet access, making access a dependency for residents who wish to participated in work and learning activities digitally. Further illuminating the “digital divide” that separates high-income and low-income neighborhoods in America (Hegel and Wilding, 2019). Those who don't have reliable high-speed internet access can miss out on economic opportunities. To address these challenges going forward, decision makers in Emigration Canyon could determine levels of broadband internet access within Emigration Canyon, identify existing gaps, and explore options that can narrow the “digital divide”.

Other widespread digital infrastructure concerns that could be considered for analysis in future iterations of this General Plan include access to digital technology such as laptops and WiFi hotspots. These devices are

Emigration Canyon – Existing Business summary		
Source: Esri Community Analyst – Business Summary (2020).		
NAICS Code	# of Businesses	# of Employees
Accommodation & Food Services	1	80
Other Services (except Public Administration)	1	50
Wholesale Trade	1	9
Educational Services	1	9
Construction	2	6
Real Estate, Rental & Leasing	2	5
Administrative & Support & Waste Management & Remediation	2	5
Professional, Scientific & Tech Services	1	3
Arts, Entertainment & Recreation	1	3
Public Administration	1	3
Unclassified Establishments	2	0
	15	173

Table 4.2: Current business and employees based in Emigration Canyon.

considered luxury items for many households, but have become a requirement during the pandemic in order for many children and adults to participate in educational and economic opportunities (Duffy and Tappe, 2020).

Existing Commercial Development in Emigration Canyon

Emigration Canyon has limited land use and zoning dedicated to commercial development (for details see Chapter 2). Area to expand existing commercial development is limited by current commercial zoning conditions, geographic constraints (e.g. slope), and little desire from community members to add commercial zoning (see details section 1.4). Some prominent local businesses include:

Kostopulos Dream Foundation (“Camp K”) is a charitable organization that provides access for children/adults with disabilities to recreational and educational opportunities such as ropes courses, horse riding, swimming, fishing, and summer camps.

Ruth’s Diner has been in business for almost 90 years and is featured on the Food Network’s “Top Places to Eat” and the hit show Diners, Drive-ins, and Dives.

Emigration Brewing Company was founded near the site of Utah’s first brewery (1865) and collaborates with local brewers to emphasize small batch, local and handcrafted beer with a European influence.

Photos from left: Camp Kostopulos, Ruth’s Diner, Emigration Brewing Co. Courtesy of Maridene Alexander.





4.3 LOOKING AHEAD

“Without environmental sustainability, economic stability and social cohesion cannot be achieved.”

- Phil Harding

Fall Color in Emigration Canyon. Photo Courtesy of Maridene Alexander.

4.3.1 Future Opportunities

This Economic Development element focuses on finding the key areas where data on existing conditions, regional trends, and community interests and needs align. The areas where alignment occurs represent the strongest opportunities for future economic development in Emigration Canyon. Three main categories emerge from this analysis:

Neighborhood Commercial; Recreational Support; and Culture and Identity.

Neighborhood Commercial

The Emigration Canyon community would benefit from providing additional support to existing local businesses, and potentially supporting some very small-scale neighborhood commercial opportunities. The addition of a light neighborhood commercial

zoning category that was tailored to support only those businesses that could provide goods and services to canyon residents and visitors while also aligning with the sustainability values expressed in this General Plan, could enhance the resilience and sustainability of Emigration Canyon. Strategies such as 1) ensuring that local businesses are well-connected to transportation routes; 2) adding features that promote stronger social cohesion

and 3) providing low-impact opportunities for visitors to access goods and services in the area (e.g. farmer's market, food trucks, art fair, music festival) would align with goals and objectives outlined in several other elements of this plan (e.g. Land Use, Transportation, Resilience).

The EC Metro can help champion local businesses by:

- Informing local businesses about county, state, or federal financial assistance/incentives/programs that are available to small businesses (e.g. Business Expansion and Retention (BEAR) programs available through Salt Lake County Office of Regional Development).
- Informing local businesses of the many employment resources from the Utah Department of Workforce Services to help them hire quality employees, provide training, and navigate difficult employment issues such as layoffs or downsizing.
- Cultivating an "open-door policy" where local businesses can feel comfortable expressing their wishes, questions, or concerns with community leaders, and get assistance navigating local government regulations.

Recreational Support

Emigration Canyon boasts world-class open space and a wide array of outdoor recreational opportunities. But currently there is little to keep people on-site after an event or recreational activity is over -- visitors don not

spend their money locally. Expanding uses that support recreation help capture recreation and tourism revenue. The Emigration Canyon Metro Township Council could explore small-scale, seasonal/temporary commercial uses that can entice visitors to spend their money in Emigration Canyon after they enjoy the community's natural beauties (e.g. local food trucks, farmer's market, ice cream/shaved ice stand).

Culture and Identity

Wayfinding is "an important tool for helping people navigate and fully experience an area. Well-placed signage ensures that people can safely reach desired destinations. It also can help people discover new areas of interest in an impromptu way. Good wayfinding design fits and even enhances the unique character of an area" (Slottach-Ratcliff & Cowgill, 2015, pg. 7). Wayfinding can encourage residents and visitors towards local goods and services and bring in recreation/tourism dollars (ibid). Looking ahead, the EC Metro could ponder the following question in the coming months and years: how can we enhance the unique identity of the area to draw people in and create one-of-a-kind experiences, while also managing visitor impacts through improved infrastructure/parking?

4.3.2 Economic Development Work Program Goals

The following Economic Development Work Program goals were developed with guidance from the GPSC, based on community input, and with consideration for the data,

opportunities and challenges outlined in this and previous chapters. The work program can be used to guide the implementation of the General Plan and make progress on Emigration Canyon's economic goals. The work program outlines goals, objectives, and actions, with the responsible parties, timeline for implementation, approximate cost, metric for success, and relevant resources also delineated. However, the Emigration Canyon Metro Township Council is the governing body of the Municipality and will determine how best to achieve the goals, objectives, and actions included in the work plan, including how best to implement recommendations such as the formation of working groups. Some details are included to support implementation but are not definitive.

Goal 4.1: Foster responsible, equitable, and sustainable economic development in keeping with the character and values of Emigration Canyon.

- Objective 4.1.1: Enhance a community environment that embraces sustainable economic growth, while preserving the community's dedication to the environment, recreational amenities and historic identity.

Case Study: Commercial Develop Typologies

Commercial development and redevelopment opportunities in the Township are limited. Providing guidance through planning and zoning can help to ensure that new development contributes to existing culture and identity, fulfills community need, and is open to the public and maintained throughout all four seasons.

Any retail or service oriented business within the canyon is isolated from a traditional commercial corridor that might help to generate foot traffic. This often results in businesses that rely heavily on seasonal traffic, will limit hours of operation daily, and close temporarily in off seasons.

This reduces opportunity for residence of the canyon to benefit and rely on the conveniences potentially offered by allowing commercial activity within the township. Seasonally vacant building in the community can lead to disheveled appearance and attract unwanted attention at the site.

Combining living and working allows for businesses which can accommodate the flexible schedules and seasonality potentially required for operation. It also provides a continual use and occupancy for the structure. Connecting the site with the fabric of the community on a continued basis, and helping to ensure long term success of the business owner by reducing overhead.

Live - Work Description

A small- to medium-sized (2 to 3.5-story) attached or detached structure consisting of one dwelling unit above or behind a fire-separated flexible ground floor space that can accommodate a range of non-residential use. The flex space and residential unit typically have separate street entrances. The flex space typically has a taller height (min. 10') and a shopfront frontage. This type does not include a rear yard



Source: <https://missingmiddlehousing.com/types/live-work#prettyPhoto>

Commercial - Residential Description

The CR zone is a low-intensity zone for small and isolated sites within low density residential neighborhoods. It allows for small scale retail and service uses for surrounding residential areas, and limits residential density where commercial uses are not present. Some buildings in this zone may be up to three stories tall, but overall scale is calibrated to nearby residential zones.



Source: <https://www.portlandmaps.com/bps/zoning/#/zones/base/CR>



CHAPTER 5: ENVIRONMENT

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"For me, it always comes back to the land, respecting the land, the wildlife, the plants, the rivers, mountains, and deserts, the absolute essential bedrock of our lives. This is the source of where my power lies, the source of where all our power lies."

- Terry Tempest Williams

Maple Draw below Pinecrest. Photo Courtesy of Bill Tobey.

5.1 INTRODUCTION

Careful management of the ecosystems of Emigration Canyon is needed to maintain a high quality of life, now and in the future, for all members of the Canyon community, human and otherwise. Factors such as light, noise, air and water pollution, water availability, sprawl development, overuse of trails and risk of fires have the potential to significantly degrade the habitats that provide this high quality of life to residents of the area, and that make it a sanctuary for visitors who live in more urban spaces. In recent years, population growth and increasing visitation has heightened these risks.

Balancing the needs and interests of the members of this complex and interconnected human-environmental system can be challenging. Some interests, such as conservation and development, may seem to inherently conflict with one another. This Environmental element of the General Plan takes into account many of these potential conflicts and guides decision making to ensure that environmental protections are in place and a high environmental quality is maintained in the Canyon today, and for future generations.

This element takes a holistic, ecosystem-based approach to environmental planning (after Hammond, 2002). The approach aims to ensure the protection, maintenance, and restoration of ecological health and biodiversity at a range of spatial and temporal

scales. The ecosystem-based approach also recognizes that human-environmental relationships are an inextricable component of the system (Secretariat of the Convention on Biological Diversity, 2004). The approach enables the development of a robust conceptualization of the goods and services, benefits and values associated with the ecosystems of the Canyon and therefore supports a full accounting of these systems in all decision making (Guerry et al., 2015). For example, instead of considering the value of individual natural resources (e.g. water or soil), the element considers the health of fully functioning ecosystems (and their relationships to humans) as a more appropriate metric. The ecosystem-based approach to environmental planning aligns with the environmental values of many Canyon residents, as set out in the values section of Chapter 1.

This chapter provides a guide to consider current and future environmental impacts and ensure that environmental protections are in place and a high environmental quality is maintained in the Canyon today, and for future generations. The chapter does NOT address the preparedness and adaptive capacity of the Municipality in any depth. That topic is covered in the following chapter on Resilience and Infrastructure.

5.1.1 State Code

Utah State Code section 10-9a-403 allows for an environmental element of general plans that addresses “the protection, conservation, development, and use of natural resources, including the quality of air, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources.” Although this chapter is not required by the code, it is an essential element for Emigration Canyon due to the close relationship that exists between the residents of the area, their built environments, and the natural environment that surrounds them. The chapter provides a guide to consider current and future environmental impacts and aims to prevent significant adverse effects on the valuable natural resources of Emigration Canyon.

5.1.2 Values, Roles, and Responsibilities

Values, roles and responsibilities guide environmental decision making and implementation in Emigration Canyon and the surrounding areas. While the Municipality has land use authority within its own boundaries as outlined in Chapter 1, decisions made in the surrounding areas also influence the available options. Aligning the goals of the Municipality with regional values and acknowledging the roles and responsibilities of different organizations and institutions

that have an influence over environmental decision making in Emigration Canyon increases the likelihood of acquiring funding and successfully implementing projects.

United States Forest Service

Much of Emigration Canyon is included within the Uinta-Wasatch-Cache National Forest (Figure 2.2) as part of the United States Forest Service (USFS) Salt Lake Ranger District and the Central Wasatch Management Area. The Salt Lake City Watershed is defined in the code as “All of the Emigration Canyon watershed area that contributes water to Emigration Creek from Burr Fork and Killyon Canyon above a point at the intersection of Emigration Canyon Road and Pinecrest Canyon Road. Various rules and regulations have been put in place to protect this valuable water resource and ensure that the land remains in its natural state.

United States Environmental Protection Agency

The mission of the United States Environmental Protection Agency (EPA) is to protect human health and the environment. The EPA works to ensure that Americans have clean air, land and water by implementing and enforcing rules and regulations that set standards which must be met by States and Tribes. The EPA has been involved in overseeing water quality remediation efforts associated with Emigration Creek.

United States Army Corps of Engineers

The United States Army Corps of Engineers,

in partnership with the EPA, is responsible for wetlands management, study and protection, including on private property. Federal laws require no net loss of wetlands, which means that if a designated wetland is eliminated, another wetland site must be acquired and preserved to replace the site that is lost. Jurisdictional wetlands have been delineated along Emigration Creek and there may be isolated wetland areas along tributary drainages.

Utah Division of Water Rights

The Utah Division of Water Rights (DWRi) is an agency of Utah State Government within the Department of Natural Resources that administers the appropriation and distribution of the State’s valuable water resources.

Utah Department of Environment Quality

The Utah Department of Environmental Quality’s (DEQ) mission is, “Safeguarding and improving Utah’s air, land and water through balanced regulation.” The organization implements State and federal environmental laws and works with individuals, community groups, and businesses to protect the quality of our air, land and water. The Division of Drinking Water plays an important role in protecting and monitoring well water and groundwater, while the Division of Water Quality monitors and maintains other water bodies across the State. The Division of Air Quality could also be an important partner in working towards protecting the environment of Emigration Canyon.

Utah Open Lands Conservation Association

Due to their proximity to Salt Lake City, unprotected areas throughout Emigration Canyon are of interest to property developers. The Utah Open Lands Conservation Association is a 501(c)(3) nonprofit land trust conservation association that is chartered to preserve and protect open space in order to maintain Utah’s natural heritage and quality of life for present and future generations. Since 2001, Utah Open Lands has raised funds and established partnerships to preserve numerous parcels of land in Emigration Canyon, today totaling over 1,000 acres and approximately 9% of the land (See Figure 2.1).

Salt Lake City

Lands in Emigration Canyon owned by the Salt Lake City Department of Public Utilities (SLCDPU) are maintained primarily for watershed and open space purposes. SLCDPU holds and maintains surface and groundwater rights in the Emigration Creek watershed for current and future water supply purposes. Title 17 Chapter 17.04 of the Salt Lake City Code defines a portion of the watershed as protected. This area is defined in the code as “All of the Emigration Canyon watershed area that contributes water to Emigration Creek from Burr Fork and Killyon Canyon above a point at the intersection of state Highways 65 and 172.” SLCDPU is currently updating a long-range watershed management plan for the area, which should be completed sometime in 2022.

Salt Lake County

Traditionally, federal agencies such as USFS were responsible for completing resource management plans for much of the public lands within Utah, but Utah State Code was amended in 2015 (and again in 2016) to require every county in Utah to complete a County Resource Management Plan addressing all public lands within its jurisdiction. More details on this plan are included in the following section.

Lands in Emigration Canyon owned by Salt Lake County are maintained primarily for watershed and open space purposes. As part of this effort, Upper Emigration Creek is designated as a Category 1 High Quality Waters in accordance with UAC R371-2, Standards of Quality for Waters of the State, Section R317-2-3, Antidegradation Policy (Salt Lake County Watershed Planning & Restoration, 2015). Designated Category 1 waters must be maintained at existing high quality. New point-source discharges are prohibited in segments of Category 1 waters, and diffuse sources must be controlled to the extent feasible through implementation of best management practices or regulatory programs. This designation helps to ensure that much of the publicly owned or managed land in Emigration Canyon remains in its natural state.

Other important environmental departments housed within Salt Lake County include:

- **Salt Lake County Health Department**
– responsible for monitoring and

maintaining water quality in Emigration Canyon, including septic tanks and wells, and adhering to EPA water quality standards.

- **Salt Lake County Watershed Restoration** – active in the Canyon, help with monitoring of water quality, are in charge of flood control measures and would be involved in designing and implementing measures for wetland restoration.
- **Salt Lake County Parks and Recreation** – operates fund for buying land to protect viewshed, wildlife habitat, and recreational access.

Emigration Canyon Improvement District

The Emigration Canyon Improvement District (EID) is a local special service district created under Utah Law. As such it is an independent governmental entity governed by a Board of Trustees. The EID is the culinary water provider for portions of Emigration Canyon and therefore establishes rules and regulations that govern this service including setting rates and fees. The EID also has the power to establish a property tax to help fund the services it provides.

The EID's role in planning and zoning is limited. The EID does not have any power to adopt land use control ordinances or approve or deny any land use applications, but EID input on the adoption and implementation of general plans is needed to assist with long term planning regarding culinary water

provision in the Canyon. The Municipality's plans will affect future demands on the EID for services and EID's capacity will affect the Municipality's ability to allow future growth.

5.1.3 Regional Efforts and Plans

Ecosystem-based planning approaches consider interactions across a range of spatial and temporal scales in order to protect, maintain, and restore the complex ecosystems that do not necessarily start or end at a municipal boundary. There are several regional planning efforts that are relevant to consider in relation to the environmental goals and objectives of Emigration Canyon.

United States Forest Service Plans

The most recent USFS plan (US Forest Service, 2003) relevant for Emigration Canyon maintains that the need to provide long-term, high quality culinary water to the Salt Lake Valley is the underlying premise of resource management in the Central Wasatch Management Area. The Plan also states that providing quality recreation opportunities within the framework of watershed protection will be an increasing challenge as the population and interest in the area as a recreation destination grows. To respond to these challenges, the Plan indicates that “continued coordination and cooperation among federal, state, and local government agencies, residents, businesses, and the recreating public will be imperative in order to meet these growing demands (pg. 4-153).”

Wasatch Choice 2050 Vision

The Wasatch Choice 2050 Vision (Wasatch Front Regional Council, 2019e), collaboratively developed with input from cities, counties, transportation partners, businesses, and community organizations regarding local and regional priorities, is supported by four key strategies:

1. Provide transportation choices, offering better access to transit and bicycle facilities.
2. Support housing options, responding to market demands and allowing for greater choices.
3. Preserve open space, providing unparalleled access to the outdoors, which is key to our quality of life and competitive advantage.
4. Link economic development with transportation and housing decisions, thinking about the interplay between them and ultimately the outcomes we want to achieve.

The first, third and fourth strategies are particularly relevant for the ecosystem-based planning efforts of Emigration Canyon, as alignments across these scales may create opportunities to leverage funding to facilitate implementation of Emigration Canyon's environmental goals and objectives.

Salt Lake County Resource Management Plan

All Counties are required by law to develop a County Resource Management Plan (CRMP). This is a planning document used to define

policy, goals, and objectives for managing natural resources on public lands (Transfer of Public Lands Act, 2012) within each county. The Act further defines 28 core resources which must be considered in the CRMP. In advance of the CRMP process, an assessment of County resources (Salt Lake Conservation District, 2013) identified the following priority concerns:

- 1. Water Quantity and Quality**
- 2. Noxious and Invasive Weeds**
- 3. Loss of Agricultural Lands**
- 4. Air Quality**

The Salt Lake County Resource Management Plan (Salt Lake County, 2017) addressed a range of topics relevant for Emigration Canyon, including Air quality; Cultural, Historical, Geological and Paleontologist Resources; Floodplains and river terraces; Forest management; Noxious and invasive species; Recreation and tourism; Riparian areas; Threatened, Endangered, and Sensitive Species; Visual Resources; Water Quality and Hydrology; Water Rights; Wetlands; and Wildlife.

Wasatch Canyons General Plan

The recently adopted Wasatch Canyons General Plan does not include Emigration Canyon within its planning boundaries, but because it is associated with a neighboring area with similar canyon characteristics, some of the goals and strategies are likely to resonate with Emigration Canyon residents. In particular, the vision and guiding principles set out for the environment in the Wasatch Canyons General Plan closely align with the

vision and goals set out in this chapter (Salt Lake County Regional Development, 2020):

VISION:

Serve as stewards to support healthy forests, connected ecosystems, habitats, and waterways for current and future generations. Promote programs that improve watersheds, air quality, vegetation, wildlife ecosystems, and scenic quality.

GUIDING PRINCIPLES:

1. **System:** Protect and steward open lands and natural resources (air, water, wildlife, fisheries, climate, trail systems, wetlands, dark skies, soundscape, soils, open space, and native vegetation).
2. **Open Space:** Promote the acquisition of natural and undeveloped lands for conservation.
3. **Water:** Protect, maintain, and improve watershed health, water supply, and water quality.
4. **Air:** Protect and improve air quality for protection of public health, environmental health, and scenic visibility.
5. **Native Species:** Maintain healthy populations of native species and support early detection and rapid response to eliminate invasive species and noxious weeds.
6. **Wildlife:** Preserve sensitive habitats and migration areas for wildlife.
7. **Property:** Respect approved private property uses and promote their stewardship of the environment.

8. **Wildfire:** Support wildfire safety and defensible space.

9. **Parking:** Ensure that parking management does not degrade watershed health or water quality.

5.1.4 Community Input

Details on the participatory approach used to engage members of the Emigration Canyon community in the development of this General Plan are included in section 1.4. As part of the community input, a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis (Figure 1.5) and an Achieve, Preserve, Avoid, and Eliminate (APAE) analysis (Figure 1.6) was conducted by the GPSC. A summary of key results relevant to this Environment element are included in the two subsections that follow. Key results from the Transportation and Land Use Survey relevant to environmental planning are described in the third subsection.

SWOT Analysis (Environment)

The majority of the characteristics included in the original SWOT analysis conducted by the GPSC (Figure 1.5) are relevant to

the development of goals and objectives for the Environment element of the General Plan. This is not surprising considering the high value placed by the community on the natural environment of the Canyon. The focus of the strengths and opportunities sections of the analysis was on enjoying, protecting and enhancing the natural environment, while concerns regarding environmental disturbances and pollution feature prominently in the weaknesses and threats sections.

APAE Analysis (Environment)

The majority of the characteristics included in the original APAE conducted by the GPSC (Figure 1.6) are relevant to the development of actions in the Environment element of the General Plan. An overarching focus on the preservation and protection of the environment from sources of pollution and overdevelopment, as well as hazards such as fires and invasive species, is clearly articulated throughout all sections of the analysis.

Transportation and Land Use Survey

Figure 1.7 demonstrates that many of the top environmental concerns for Emigration Canyon identified by the GPSC in the SWOT and APAE exercises were also largely reflected by the Emigration Canyon community members who participated in the Transportation and Land Use survey, and many of these concerns have environmental components. Clean air received a 99 percent response rate in terms of being considered either “very important” or “important” by Emigration Canyon residents who responded to the survey, while parks and open spaces and sustainability and energy efficiency also garnered more than 95 percent of support from survey respondents. A related category, limiting growth and development, was supported by 94 percent of respondents. These analysis inform the goals, objectives, and actions that are included in the work program at the end of the chapter.

5.2 EXISTING CONDITIONS

5.2.1 Overview

Emigration Canyon is located within the Semiarid Foothills ecoregion (US Geological Survey, 2000). This area is characterized by a dry, four season climate and semiarid rolling mountains. Some details regarding specific aspects of the environmental conditions of Emigration Canyon are included in the sections that follow.

Climate and Air Quality

Emigration Canyon's climate, like Salt Lake County and the rest of the southwestern United States, is very dry. Emigration Canyon has all four seasons, with moderately hot summers and cold winters. July is typically the hottest time of the year, with an average high of around 90 degrees; the average low in January is around 22 degrees. The average annual precipitation is approximately 23 inches (Best Places, 2020).

The principal winter precipitation in Emigration Canyon falls as snow. On the average, a foot or more of snow can be found on the mountain slopes by the middle of November and this snow cover usually remains until the middle of May. Only 10 days per month record 0.10 inches of precipitation or more. However, 24-hour snowfalls of two feet or more are common and have been observed during most of the winter and spring months. Snowfalls at locations along the Wasatch Front Range have reported the

heaviest accumulations by observing stations in the state.

Three distinct climatic zones are recognized in Emigration Canyon. These zones have been classified by the USDA Soil Conservation Service based on differences in the average annual temperature, amount of moisture received, and the length of the growing season. The climatic zones include: 1) Upland Climatic Zone, 2) Mountain Climatic Zone, and 3) High Mountain Climatic Zone (see Ramsey & West, 2009, pg. 53 for details).

Climate change is predicted to affect Utah by continuing to increase average temperatures across the state, causing more frequent and severe heat waves and drought (US Environmental Protection Agency, 2016). The local effects of climate change in Emigration Canyon are therefore likely to mean reductions in the amount of surface water in the creeks. The recharge rates of aquifers may also be reduced, thus influencing the availability of drinking water. The risk of wildfires is also likely to increase in Emigration Canyon due to climate change. Details on these risks and hazards, and their management at the local level, are included in Chapter 6, which addresses Resilience and Infrastructure.

Utah's topography and climate contribute to episodic air pollution during the winter and summer months. Seasonal temperature inversions trap emissions that form

Fall Color. Photo Courtesy of Maridene Alexander.



particulate matter and ozone. These harmful pollutants can rise to unhealthy levels, posing public health risks, economic consequences and decreased quality of life (Kem C. Gardner Policy Institute, 2020). Air quality is a significant challenge across Utah, but it is especially concerning in the high mountain valleys along the Wasatch Front, such as Emigration Canyon.

Topography and Vegetation Zones

Elevations in Emigration Canyon range from about 5,100 feet near the mouth of the canyon to just over 8,900 feet at the summit of Lookout Peak along the northern boundary of the Municipality. Much of the Canyon is dominated by lands where slopes exceed 30 percent.

Emigration Canyon has varied topography and a range of vegetation zones which correlate to slope, elevation and soil types (see Appendix K for details). The foothill communities located at the lower part of the Canyon are dominantly scrub oak of various varieties. Scrub oak is the most extensive plant community in the canyon environment. It begins in the lower foothills at about 5,000 feet and covers most of the areas up to about 7,500 feet. Streamside communities are dominated by maple, chokecherry, birch, alder, and cottonwood. Many varieties of deciduous shrubs are also found in this community. Rising in elevation, plant communities are dominated by aspen, fir, and spruce. At higher elevations, the most abundant trees are the Douglas Fir, Englemann Spruce and Alpine Fir. Above the timberline, at high elevation,

a variety of shrubs dominate the vegetation pattern. No lands in the area are capable/available for commercial timber harvest.

Invasive plant species are a concern for the varied habitats of Emigration Canyon, as they can disrupt the finely tuned ecosystems of an area, reducing the ability of system to resist and/or recover from wildfires, increasing the erosion of soils, and decreasing native forage for wildlife (US Forest Service, n.d.-a). Plants of great concern throughout the Wasatch Front's canyons are dalmatian toadflax,

garlic mustard, yellow star thistle, myrtle spurge, hounds tongue, a few non-native thistles, and Dyer's woad (Salt Lake County Regional Development, 2020). These plants can take root in disturbed areas such as roads, trails, campgrounds and construction sites, and then spread through human vectors (pathways) such as people, dogs, bicycles, and cars (ibid).

Other invasive species are also a concern when it comes to maintaining or restoring healthy ecosystems in Emigration Canyon.



Fall Leaf. Photo Courtesy of Katie Cook Oborn.

Insect species can be particularly damaging to forest vegetation and result in a range of adverse effects that can ripple out to influence the entire ecological system. For example, the Balsam Woolly Adelgid (BWA), a tiny sucking insect that was introduced to North America from Europe, has recently been identified in the Wasatch Mountains and can cause widespread mortality of subalpine fir trees (Salt Lake County Regional Development, 2020). This is a concern because there are few other tree species that can survive in this vegetation zone; if subalpine fir trees are lost in large numbers, severe ecological damage could result from increased erosion, reduced watershed health, loss of wildlife and their habitat, and reduced recreational values (Alston et al., 2018). Dead and dying fir trees can also increase the risk of severe wildfires.

Geology

Emigration Canyon is located along the western flank of the central Wasatch Mountain Range within the Middle Rocky Mountain physiographic province; folded mountains (anticlinal folds), are the dominant type of mountain in this province (US National Park Service, n.d.). The bedrock underlying the Municipality has been folded into a northeast-southwest trending syncline (or a broad U-shape) (Utah Geological Survey, n.d.). Sedimentary rocks of the Triassic, Jurassic, and Cretaceous ages line the roads of Emigration Canyon, with Jurassic Twin Creek Limestone, which includes oolitic, sandy, silty, fossiliferous, massive, and/or shaley (some intensely shattered) limestone

being characteristic of the area (ibid). Bedrock units found across the Municipality have a range of physical properties and some can pose severe development constraints because of instability, moisture sensitivity, shrink/swell potential, or poor percolation characteristics.

Watershed

The Emigration Creek Watershed, located in

the northeast corner of Salt Lake County in Northern Utah, drains a total of 24.1 square miles. It is divided into two sub watersheds based on differences in land cover, land use, elevation and topography (Figure 5.1) (Hubbard-Rice, 2015).

The Upper Emigration Creek Sub-watershed has a drainage area of 18.2 square miles and

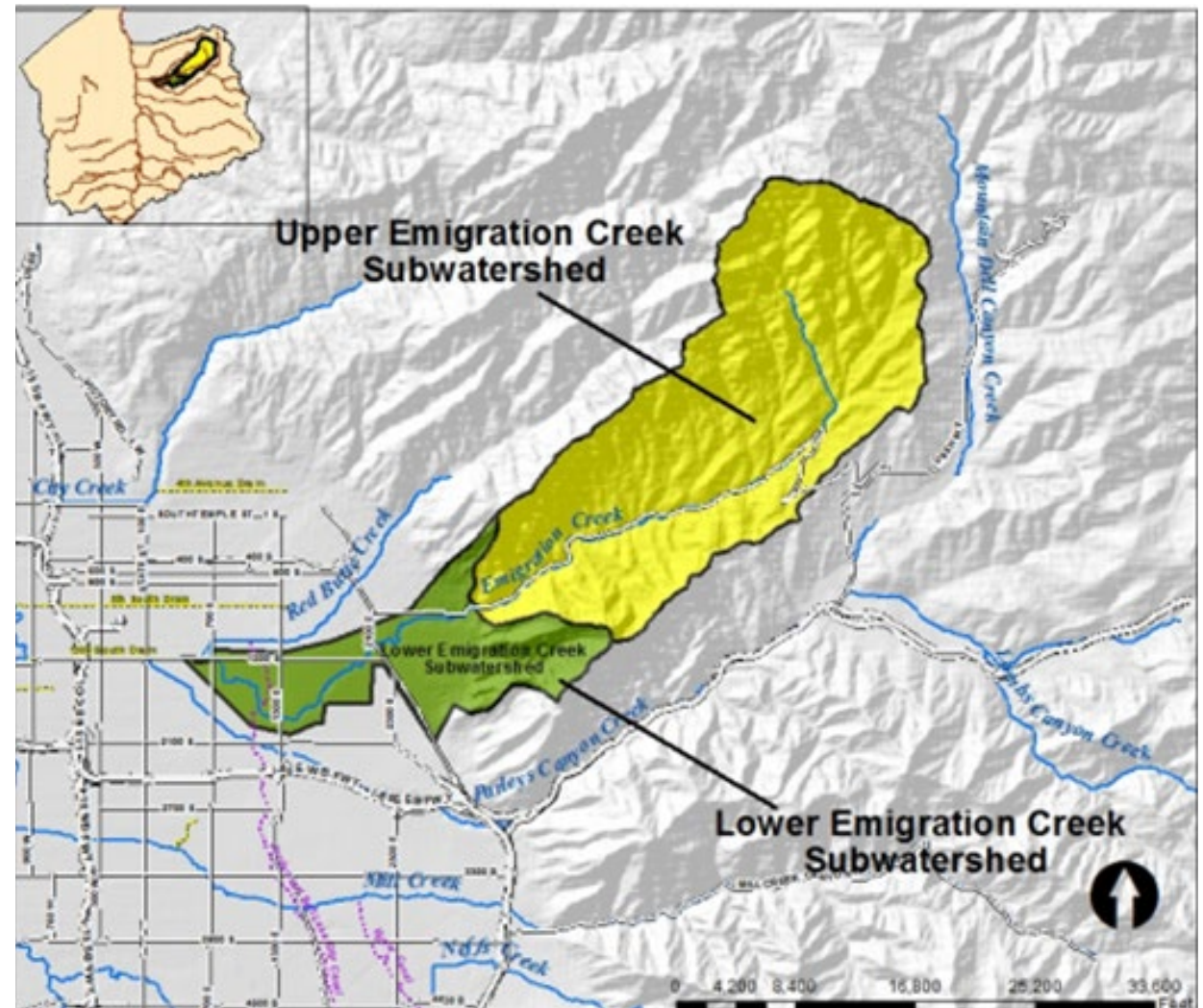


Figure 5.1: Emigration Creek Subwatersheds (Hubbard-Rice, 2015, pg. 3).

contains a groundwater recharge zone. The Lower Emigration Creek Sub-watershed has a drainage area of 5.9 square miles comprised of the bench area below the canyon outlet. This sub-watershed is located just outside of the Municipal boundaries of Emigration Canyon.

Annual stream flow volumes for Emigration Creek show a slight declining trend since 1970 (BIO-WEST, Inc., 2010, fig. 3.9). If this trend continues and/or accelerates due to the

influences of climate change, it could have adverse effects on wildlife, especially fish.

The relationship between stream flow and groundwater volumes is not straightforward, but groundwater can have a big impact on stream flow (Utah State University Extension, n.d.). Some Emigration Canyon residents, especially those who access drinking water from private wells, are concerned about how declining surface water volumes and lengthening drought season trends might

influence the water quality and quantity in the Canyon (O'Donoghue, 2019). The most recent publicly available study of Emigration Canyon's groundwater comes from a 1966 Master's thesis (Barnett, 1966). Based primarily on projected groundwater capacity, build limits have long been considered for Emigration Canyon (Hansen, 2018). Concerns have also been raised in relation to the quality of the Canyon's groundwater, but there is little recent, publicly available evidence to point to on this topic. A call for a comprehensive

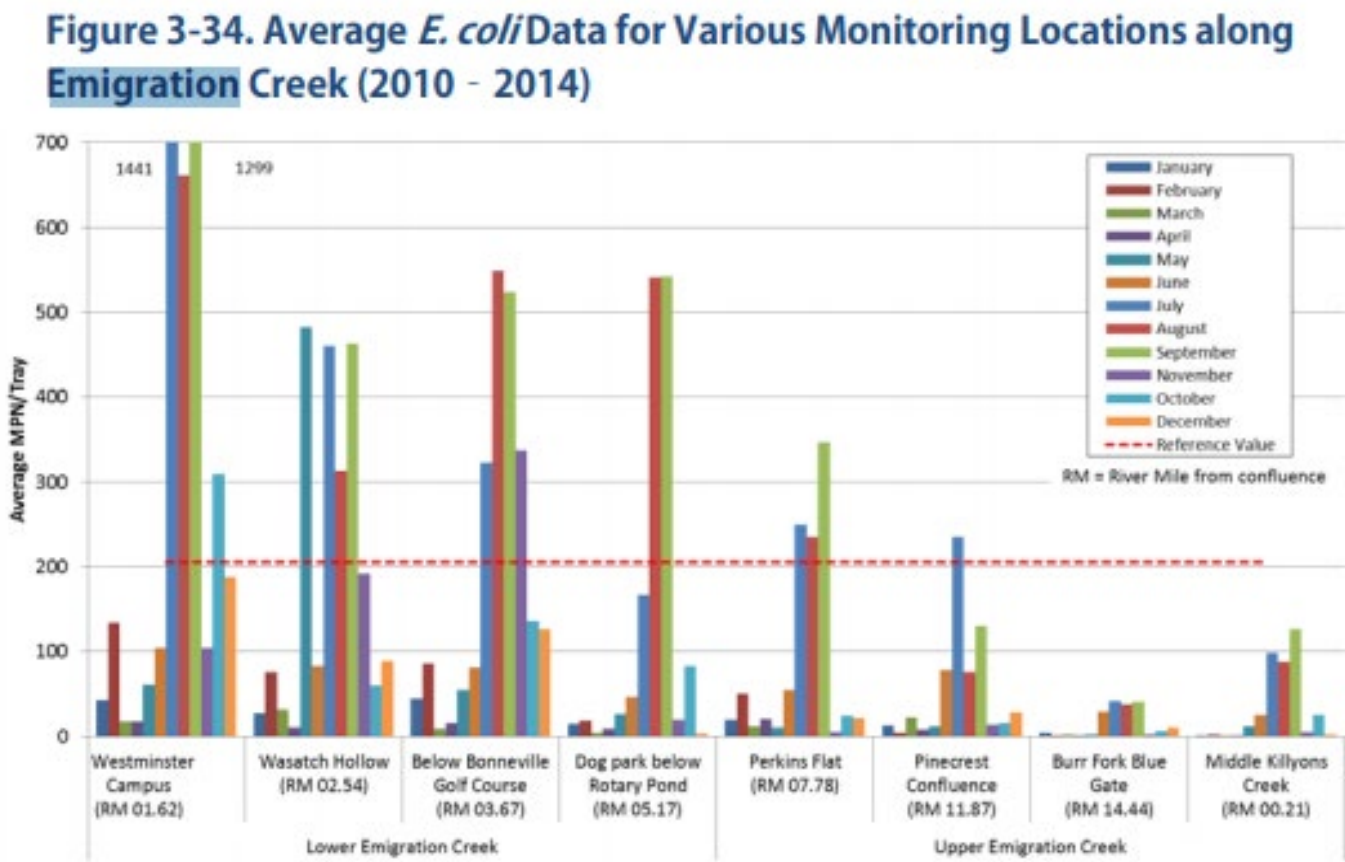


Figure 5.2: Average *E. coli* data for various monitoring locations along Emigration Creek (Salt Lake County Watershed Planning & Restoration, 2015, Figure 3-34).

watershed study was included in the 1999 General Plan to address this concern (Salt Lake County Planning and Development Services, 1999), but little action has been taken to progress this item until recently. In 2020 the Emigration Canyon Sustainability Alliance, a grassroots environmental organization, successfully applied for an EPA grant to conduct a watershed study that is expected to be completed by December 2021.

Upper Emigration Creek was first listed as impaired waters for pathogens (high fecal coliform levels) in 2002. In 2006, Utah switched to *Escherichia coli* (*E. coli*) as the indicator species for pathogens as it provides a better indicator of human health threat. In July 2012, the US Environmental Protection Agency approved the Total Maximum Daily Load (TMDL) document for *Escherichia coli* (*E. coli*) in the Upper Emigration Creek Watershed (Utah Department of Environmental Quality, 2011). The document addressed water quality impairments within the Upper Emigration Creek Sub-Basin and established allowable loading of *E. coli*.

The TMDL document defined the critical season as the months of July, August and September (Figure 5.2) and required a load reduction of 41% collectively. The observed loading is higher during the summer months due to a combination of several factors including warmer water temperatures and increased activity of humans, domestic animals and wildlife.

The TMDL (2011, pg 1) document concludes

that non-point sources of pollution are the primary causes of pollution in the Upper Emigration Creek watershed; studies suggest that the origin of non-point pollution in Emigration Creek may include “residential waste disposal, fecal contamination from dogs and wildlife, stormwater runoff, hydrologic modifications, and groundwater seepage from old holding vaults and septic tank leach fields.”

Although many improvements have been implemented in the Upper Sub-Basin, exceedances of water quality standards still occur on a regular basis, including Upper Emigration Creek not meeting water quality standards for recreational uses that involve physical contact with the water (Hubbard-Rice, 2015). Upper Emigration Creek is the only stream segment with ongoing TMDL studies and implementation planning in Salt Lake County (Salt Lake County Watershed Planning & Restoration, 2015). The focus of the implementation is the presence and condition of septic tanks serving residents and business in the watershed. As part of this effort, the EID, which provides water to the majority of the residents of Emigration Canyon and plays a role in waste management as well, has some responsibility to monitor regional collection and treatment of wastewater issues.

Jurisdictional wetlands have been delineated along Emigration Creek and there may be isolated wetland areas along tributary drainages (Salt Lake County Planning and Development Services, 1999). These wetlands, though small in size, provide

sanctuary for a diverse range of plants and wildlife, and contribute to the maintenance of the ecological balance of the area, including supporting hydrologic recharge and water quality improvements. Other values such as recreation are also supported by these areas, which are protected under federal laws administered by the EPA and US Army Corps of Engineers.

Wildlife

Wildlife is abundant in Emigration Canyon and the surrounding areas of the Wasatch Range. The wide variety of microclimates and habitats resulting from the range of elevation changes and slope aspects associated with the Canyon support a diverse range of mammal and bird species. There are no recent studies of Emigration Canyon’s wildlife, although the 1999 General Plan lists a wide range of species known to occupy the Canyon and demarcates some of their and vital habitats (Salt Lake County Planning and Development Services, 1999; Appendix L). Although there is a lack of current data on Emigration Canyon, neighboring Red Butte Canyon is designated as a Research Natural Area administered by USFS and it maintains good lists of wildlife known to occur in the area. Red Butte Canyon has recorded 39 species of mammals (Red Butte Canyon Research Natural Area, n.d.-b) and 106 species of birds (Red Butte Canyon Research Natural Area, n.d.-a).

Because of the unique history of Red Butte Canyon, which has largely been protected from human development and grazing since 1862, it is unlikely that all of these species

can be found in Emigration Canyon today. However, the close proximity and similar natural environments suggest that a great deal of overlap is possible.

Today the range of species known to inhabit or visit Emigration Canyon includes (but is not limited to):

- Mule deer, coyote, cottontails, rough-legged hawks, red-tailed hawks, thrashers, and scrub jays in the dry foothills of the Canyon.
- Moose, elk, deer, black bear, badger, bobcat, mountain lion, porcupine, ermine, squirrels, wild turkey, owls, stellar jays, and woodpeckers in the Canyon's forests and higher elevations.
- Emigration Creek once harbored rainbow, brook, brown and Bonneville cutthroat trout, but all of these species may not be present today given the current degraded state of the Creek. Beaver also once occupied the Canyon's creeks in substantial numbers and there is some interest in reintroducing them to the Canyon.

Visual Amenities

The visual resources of Emigration Canyon combine to create amenities that attract both residents and visitors year-round. Emigration Canyon has a wealth of visual amenities – views of unfettered natural landscapes, and clear, dark skies at night. In 2013, the area was listed among the top ten best stargazing spots in Utah (McFarland, 2013), and the area found its way onto a top 21 list again in 2018 (Stimac, 2018).

Cultural Resources

Emigration Canyon is associated with several key components of Utah's human history. The area was and is important for Native Americans living in the area, and some

artifacts from the Fremont people have been found in the Canyon (Carlstrom & Furse, 2019). The area is also well known for the role that it played in the settlement of the Salt Lake Valley by early Mormon pioneers. The Last Campsite of Brigham Young's group (July 23, 1847) before entering the Salt Lake Valley was demarcated by the Daughters of the Pioneers in 1936 (Figure 5.3). More recent mining and farming activities in the Canyon add layers to the cultural landscape of the area. These resources attract visitors to the area and contribute to the complex identities of Canyon residents.



Figure 5.3: Key historical locations in Emigration Canyon (Epperson, 2019).



5.3 INTERGENERATIONAL PLANNING

Emigration Canyon Wild Turkeys. Photo Courtesy of Catherine Harris.

An ecosystem-based approach to planning requires consideration of a range of spatial and temporal scales if it is to ensure the protection, maintenance, and restoration of ecological health and biodiversity. This approach does not necessarily align with a standard general planning process. These longer timescales and broader spatial scales must be considered, however, due to the scale and scope of the complex systems in play. Intergenerational planning that encompasses multiple life cycles of both humans and other Canyon residents, is therefore needed

when developing an effective environmental element for a general plan.

5.3.1 Visions for the Future Future Air Quality Vision

Canyon residents and visitors thrive on being outdoors, enjoying the fresh Canyon air and the many activities that access to Emigration Canyon's many open spaces provides. Through a commitment to supporting local activities, economies, and innovations, individuals reduce their non-point source

emissions. As a result, air quality improvement trends are evident across the Salt Lake Valley.

Given the importance of water resources in this area, both to Canyon residents, and to Salt Lake City beyond, watershed maintenance, protection and enhancement is a primary consideration in all land management decisions. Watersheds and streams provide high quality water supplies to the Salt Lake Valley. Various uses and developments (restroom facilities, picnic areas, trailheads and trails) are designed to prevent or fully

mitigate impacts, resulting in a healthy, high functioning condition in the Emigration Creek watershed. Impacts from historic activities are mitigated to the greatest extent that is economically feasible.

In responding to increasing recreation demands, water quality, riparian conditions, and wildlife habitat needs are considered first. Provisions are made for a wide range of recreation uses including access and sanitation facilities that prevent deterioration of watershed conditions. Major trailheads and restrooms are provided and maintained in cooperation with partners such as Salt Lake City Department of Public Works, the USFS, and the local municipal government. Users are aware of the need to restrict in-water activities because of water quality, and compliance with watershed ordinances is excellent. Public education about watershed protection and appropriate behavior in watersheds is consistently accomplished in cooperation and partnerships with a range of agencies. Residents are aware of the need for, and implement, water conservations strategies. A plan for monitoring the groundwater system is implemented to prevent overuse of finite water resources. Water quality is important to users as well as managers, and annual monitoring indicates that conditions are steadily improving.

Future Landscape Vision

A coordinated approach, including the allocation of funding, is taken across multiple partnering agencies to protect and restore the biodiversity of Emigration Canyon. Wildlife

needs are identified and then considered as a component of all land use decisions. Several habitat types and prime habitat areas and corridors needed to support biodiversity are protected, and areas for safe wildlife observation are developed. As a result, vegetation cover types form a mosaic of plant communities representing a diverse mix of ages, sizes, and species. Noxious weeds and invasive species are reduced throughout the Canyon. Wildlife is abundant, and species once lost to the area return or are reintroduced.

Protective measures and educational programs provide for the maintenance of species at risk and contribute to their recovery,

while proactive efforts educate and inform residents and visitors of the fundamental importance of biodiversity.

The scenery of the area, including the night skies, continues to be a valuable and pleasurable natural backdrop for the urban area. Views up and within the canyon of natural and developed areas are carefully managed to sustain scenic resources. Peace, quiet, and tranquility are protected as part of residents' privacy, for the benefit of wildlife, and to maintain the character of the Canyon.



Mama and baby Black Bear, photo by Gen Dee (licensed under CC by-ND 2.0).

Future Interrelationships Vision

A comprehensive evaluation of the existing open space and trail system (including user created routes) is conducted, and a strategy developed to meet increasing demands while maintaining watershed conditions and protecting the privacy rights of Canyon residents. Protection of the Canyon ecosystems is a primary factor in the management of roads, trails, and access. Parking options are improved to ensure safety, protect watersheds or to facilitate ride sharing/mass transit. Ride sharing/mass transit is commonly used during peak times. Partnerships are forged to explore options for reducing private vehicular use within the Canyon.

Visitors to this area take advantage of environmental education and appreciation programs that enhance their outdoor recreation experiences. People with diverse needs and values function in an atmosphere of cooperation and constructive resolution of differences. Inventory efforts document Indigenous and early European settlement of the area. Research and interpretive efforts educate residents and visitors about the culture and history of the area.

The Emigration Canyon environment enhances the quality of life of its residents, human and otherwise, while also improving the quality of life for many members of the large urban population of the Salt Lake Valley by providing access to stable watersheds and natural landscapes nearby.

5.3.2 Environment Work Program Goals

The following Environment Work Program Goals were developed with guidance from the GPSC, based on community input, and with consideration for the data, opportunities and challenges outlined in this and previous chapters. The work program can be used to guide the implementation of the General Plan and make progress on Emigration Canyon's environment goals. The work program outlines goals, objectives, and actions, with the responsible parties, timeline for implementation, approximate cost, metric for success, and relevant resources also delineated. However, the Emigration Canyon Metro Township Council is the governing body of the Municipality and will determine how best to achieve the goals, objectives, and actions that are included in the work plan, including how best to implement recommendations such as the formation of working groups. Details are included to support implementation but are not definitive.

Goal 5.1: Protect and enhance clean, clear air quality.

- Objective 5.1.1: Improve air quality in and around Emigration Canyon.

Goal 5.2: Preserve and enhance the health of the watershed to ensure that it has adequate quality and capacity to fulfill the needs of all those who depend upon it for life and well-being, both human and non-human.

- Objective 5.2.1: Improve water quality and maintain or improve water quantity in the Upper Emigration Creek sub-watershed.

Goal 5.3: Preserve and enhance natural areas and ensure that landscapes are functional and diverse.

- Objective 5.3.1: Increase open space preservation and access in Emigration Canyon.
- Objective 5.3.2: Increase coordination of biodiversity and invasive species management in Emigration Canyon.
- Objective 5.3.3: Preserve and enhance views of the night sky and protections for nocturnal wildlife.

Goal 5.4: Foster healthy, balanced relationships between humans and nature.

- Objective 1: Increase identification of cultural, historical, geological, archaeological and paleontologist resources.
- Objective 2: Increase education and outreach that encourages stewardship, sustainability, and other balanced interactions with the environment.



CHAPTER 6: RESILIENCE & INFRASTRUCTURE

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"When crisis comes we begin to see that community is the true and irreplaceable infrastructure."

-Unknown

Booths at the Firewise Fair, photo courtesy of Lisa Tippetts.

6.1 INTRODUCTION

Resilience is the ability for complex systems to change, adapt, and transform, in positive ways and within a reasonable timeframe, following hardships and disasters (adapted from Davoudi, 2012). In planning:

- Systems, in this context, are interconnected networks that include both social and ecological elements. The term is used to describe the relationships and interactions among and between people, wildlife, and the environment.
- Why do we say change, adapt, and transform? These three verbs convey that true resilience is when we learn from and improve upon past experiences, rather than returning to a “normal” that may not have benefited everyone in the community equitably.
- Hardships and disasters comprise a variety of short and long term, sudden or gradual, expected or unexpected, small or large, experiences: natural disaster, discrimination, pandemic, economic recession, digital revolution, autonomous vehicles, climate change, cyclical poverty, and violence, for example.

Infrastructure is the set of fundamental structures and facilities serving a society and enabling its operation. Infrastructure often calls to mind brick and mortar structures such as bridges, telephone poles, and stormwater drains. However, there is also digital infrastructure—services necessary

to a society’s information technology and communication capabilities—including internet access and reliability. There is social infrastructure too; the assets that act as a conduit to bring people together and strengthen relationships. Social infrastructure includes schools, community groups and events, outdoor markets, coffee shops, libraries, parks, religious institutions, and other physical assets that create a culture of neighborliness, acceptance, and connection (Landau, 2019).

Resilience planning recognizes that the mere presence of infrastructure does not ensure the social connectedness and cohesion that a community must rely on in order to adapt or respond to hardships and changes. The strength of social networks and associated levels of trust and connectedness within a community are an invisible but essential component of community resilience (Aldrich and Meyer 2015).

Infrastructure and resilience are tightly related. Well-maintained, high functioning infrastructure enables more resilient communities. Such communities have brick and mortar, digital, and social structures that support strong networks and build trust among community members, thus improving their quality of life.

Equity in Planning for Resilience and Infrastructure

The **equity** of a plan, policy, or practice (how fair and just it is for all people), is a key factor to consider when analyzing a community’s resilience and infrastructure. Resilient communities have social, brick and mortar, and digital infrastructure that is accessible to all, no matter a person’s age, race, ethnicity, gender, or other characteristics. If some people in a community are not able to access these kinds of services, then that community as a whole may struggle to respond to or recover from hardships and disasters.

When hardships occur or disasters strike, certain individuals or groups of people are often affected more than others. In the past, planning efforts have often neglected to consider these groups in advance of a crisis, and recovery efforts have exacerbated inequities. Engaging individuals and groups who are likely to be disproportionately affected by hazards or hardships in resilience planning in advance of a crisis can help to support the establishment of more equitable plans, policies, and practices.

6.1.1 Planning for Change

Communities that plan are generally more resilient to change. The planning process provides a space for community members to develop a collective understanding of their needs and desires and to discuss difficult, controversial, or complex topics. The planning process also provides an opportunity to analyze qualitative and quantitative data and consider possible ways forward based on these findings. Through this process, community members can develop a realistic understanding of current conditions, establish a collective vision for where they hope to be in the future, and suggest ways to work collectively towards achieving those aspirations. This process can enable a community to maintain its strengths, realize

its opportunities, plan for challenges, and mitigate threats – in essence, to develop its resilience.

This General Plan takes a comprehensive and participatory approach to resilience and infrastructure planning (e.g. after Sharifi & Yamagata, 2018). For details on how community input has guided the content of this element, see section 1.4. The Resilience and Infrastructure Chapter ties together the assets mentioned in the previous chapters (e.g. land use, transportation) and applies a resilience framework to them. This means asking questions such as: resilience of what, to what, and for whom? (Meerow & Newell, 2016). In this way, this chapter aims to strengthen and deepen the work undertaken in previous chapters, but not to replicate these

topics altogether.

Bringing It All Together

This General Plan recognizes, draws from, and builds upon relevant strategy documents, such as the 2019 Salt Lake County Multi-Jurisdictional Hazard Mitigation Plan (Salt Lake County Emergency Management, 2019). The Hazard Mitigation Plan assesses Emigration Canyon's legal, fiscal, and technical capabilities. It also identifies Emigration Canyon's specific hazard risks and proposes associated risk mitigation strategies. Additional consideration is given to topics drawn from the literature such as climate change, air quality, and social cohesion. The work programs from chapters 2-5 each contribute to infrastructure and resilience planning, but the work program for this chapter includes goals, objectives, and actions specific to the topic, offering an implementable program that supports improving infrastructure and resilience in Emigration Canyon.

6.1.2 Relationships, Roles, and Responsibilities

Connectivity across a range of scales strengthens the resilience of a community and its ability to prepare for or respond to a major shock or change. Many organizations, agencies, entities and individuals therefore have roles and responsibilities that support resilience planning and response efforts in Emigration Canyon. Some of the key roles and responsibilities are outlined in the subsections that follow.



Figure 6.1: The General Plan Steering Committee demonstrating their resilience by moving to online meetings when the COVID-19 pandemic made it too risky to continue in-person meetings.

Federal Agencies

The Federal Emergency Management Agency (FEMA) coordinates the federal government's role in preparing for, preventing, mitigating the effects of, responding to, and recovering from all domestic disasters. The Department of Defense coordinates federal military forces responding to and recovering from all domestic disasters. The National Weather Service, an arm of the National Oceanic and Atmospheric Administration (NOAA) issues severe weather watches and warnings. The Environmental Protection Agency (EPA) is responsible for setting and maintaining environmental and associated health standards.

State of Utah

Utah Division of Emergency Management is responsible for coordinating the State of Utah's response to disasters and provides support to local emergency management efforts as needed. The Utah National Guard also supports statewide emergency management efforts. The Utah Department of Environmental Quality - Division of Drinking Water is responsible for regulating and protecting public drinking water systems throughout the state.

Salt Lake County

Salt Lake County (SLCo) conducted an all-hazards assessment of potential vulnerabilities associated with all jurisdictions within its boundaries (Salt Lake County Emergency Management, 2019). This assessment can assist communities within SLCo, including Emigration Canyon,

to prioritize and direct hazard preparedness and planning efforts. The SLCo Emergency Management's Coordination Center located at 3380 South 900 West, Salt Lake City, Utah, will serve the affected communities served by the MSD as the command center for all disaster response operations, if requested by the Chief Elected Executive(s), or their designee(s) for Emigration Canyon. The Valley Emergency Communications Center operates a 24 hour/7 day a week 911 police, fire, and emergency medical services dispatch center that serves Emigration Canyon.

In some circumstances, such as the COVID-19 pandemic, SLCo administers federal relief funding (e.g. CARES Act funds) to communities within the County.

Salt Lake City

Salt Lake City Department of Public Utilities (SLCDPU) holds and maintains surface and groundwater rights in the Emigration Creek watershed for current and future water supply purposes. Title 17 Chapter 17.04 of the Salt Lake City Code defines a portion of the watershed as protected. This area is defined in the code as "All of the Emigration Canyon watershed area that contributes water to Emigration Creek from Burr Fork and Killyon Canyon above a point at the intersection of state Highways 65 and 172." SLCDPU are currently updating a long-range watershed management plan for the area, which should be completed sometime in 2021.

Greater Salt Lake Municipal Services District

The Greater Salt Lake Municipal Services District (MSD) is the interlocal government agency that provides current and long range planning, as well as building inspection and permitting, code enforcement, and engineering services to member communities. These services are crucial to preparing communities for infrastructure challenges, natural hazards, and other disasters. The MSD has supported Emigration Canyon to develop an Emergency Operations Plan (Emigration Canyon Metro Township, 2019) which establishes a framework to integrate and coordinate the emergency response and recovery actions across all levels of government, volunteer organizations, and the private sector within its jurisdiction.

Emigration Canyon Metro Township Council

The five elected members of the Emigration Canyon Metro Township Council (EC Metro) have an intimate knowledge of the community needed for robust decision making, especially in order to prepare for or respond to a crisis. The ability of the EC Metro to connect with local residents as well as other regional leadership is crucial to information sharing and leveraging resources. Trust in the decisions made by members of the Council is needed to bolster social cohesion in Emigration Canyon.

Emigration Canyon Metro Township Planning Commission

The five appointed members of the Planning Commission (PC) are key to the implementation of good planning principles within the Canyon, including resilience and infrastructure planning. Their intimate knowledge of the community combined with their professional advice supports robust decision making by the Council, which is needed to prepare for or respond to a crisis.



EMIGRATION CANYON
METRO TOWNSHIP

Emigration Canyon Community Council

The Community Council facilitates information sharing across the Emigration Canyon Community via a range of media and also sponsors community events that enhance social connectedness and cohesion. Members of the Community Council can and do serve as trusted and connected community leaders who provide essential information to residents in a disaster.



Emigration Canyon Improvement District

The Emigration Canyon Improvement District (EID) is a local special service district created under Utah Law. As such it is an independent governmental entity governed by a Board of Trustees. The EID is the culinary water provider for portions of Emigration Canyon and therefore establishes rules and regulations that govern this service including setting rates and fees. The EID also has the power to establish a property tax to help fund the services it provides. In recent years EID have installed fire hydrants in the canyon, which provide fire protection to most, but not all of Emigration Canyon residents. EID also supports water quality education and assists with septic system installation in some cases. The EID's role in planning and zoning is limited. The EID does not have any power to adopt land use control ordinances or approve or deny any land use applications, but EID input on the adoption and implementation of general plans is needed to assist with long term planning regarding culinary water provision in the Canyon. The Municipality's plans will affect future demands on the EID for services and EID's capacity will affect the Municipality's ability to allow future growth.

Unified Fire Authority

Station #119 is located mid-canyon on Emigration Canyon Road and can therefore provide quick response times to any incident that occurs in the canyon. The station also provides the only indoor public gathering space within the boundaries of the

Municipality. The space is regularly utilized by the community for community meetings and events. Additionally, Emigration Canyon has a high wildfire threat level, making the education provided by local Firefighters regarding prevention and preparedness an essential component of resilience planning in the canyon.



Unified Police Department

The Canyon Patrol Unit of the Unified Police Department (UPD), consisting of two Sergeants and 19 Officers, provide all aspects of law enforcement services within the canyon areas of Salt Lake County, including Emigration Canyon. Because no health care or hospital services are located in the canyon itself, UPD officers can provide the quick response needed to ensure the health and well-being of residents and visitors to the area.





6.2 EXISTING CONDITIONS

Resident with Smokey the Bear. Courtesy of Lisa Tippetts.

6.2.1 Social Cohesion

The resilience of a community; its ability to change, adapt, and transform in positive ways and within a reasonable timeframe following hardships and disasters, is dependent upon social factors as much as physical ones (Fonseca et al., 2019). Many resilience initiatives around the world consider the level of social cohesion within a community to be a key characteristic needed to support resilience (Resilient Rotterdam, n.d.). Social cohesion is high when a society or community works to ensure the well-being of all its members, fights exclusion and marginalization, creates a sense of belonging, promotes trust, and offers its members the opportunity of upward social mobility (Organization for Economic

Co-operation and Development, 2012).

In Emigration Canyon, any initiatives that strengthen networks and build trust, or support community activities and social interactions (Aldrich and Meyer 2015), contribute to the social cohesion of the canyon community.

Social Networks

Formal and informal social networks can facilitate the rapid spread of information and mobilize community members to take action in preparation for or response to an event such as a natural hazard. Resources such as medical supplies, emergency funds, tools or personnel can also be quickly mobilized by relying on the loose connections that exist

between and across agencies, organizations, and interest groups (MacGillivray, 2018). Low levels of trust across and between these groups can hamper effectiveness and slow response times, therefore reducing social resilience (Straub et al., 2020).

Emigration Canyon relies on a range of formal and informal methods of information dissemination and community mobilization. There is anecdotal evidence to suggest that these methods can reach many canyon residents, but speed, accuracy, and coordination across the range of methods could be improved.

Discrepancies in access to communication can complicate the efficient functioning of

both formal and informal social networks in Emigration Canyon. According to the Salt Lake County Health Department's Community Health Data Dashboard (Healthy Salt Lake, 2020), which draws on US Census data from 2014-2018, Emigration Canyon residents have a high level of internet and computing device access, but not all households have access. Approximately 87.5 percent of households have an internet subscription (similar to Salt Lake County with 85.9 percent) and 96.8 percent of households have one or more types of computing devices (similar to Salt Lake County with 94.4 percent). Additionally, reliable high-speed access to the internet varies across the Canyon, and no one in the Canyon has access to fiber optics, considered to be the most reliable internet access to date (see Table X for details).

An additional barrier to efficient communication that could be relevant for the area is 'linguistic isolation' – households that are linguistically isolated due to language barriers may have difficulty accessing services that are available to fluent English speakers. The Salt Lake County Health Department's Community Health Data Dashboard (Healthy Salt Lake, 2020) reports that Emigration Canyon has a 4.8 percent linguistic isolation level, which is slightly higher than that of Salt Lake County at large (3.4 percent).

Community Activities

Participation in community activities such as parades, fairs, and block parties that include moderator-led discussions of topics of interest to the community (e.g. the environment or

Formal and Informal Information Resources

- National Emergency Alert System (EAS) – National public warning system that requires radio and TV broadcasters, cable TV, wireless cable systems, satellite and wireless operators to provide the President with capability to address the American people within 10 minutes during a national emergency.
- CodeRED program – Opt-in telephone, email, text, and social media emergency warning system (e.g. evacuation notices, utility outages, fire, floods), available to Canyon residents and to visitors via the CodeRED app.
- News/radio stations
- Police (UPD) and Fire (UFA)
- [EC Metro website](#)
- [ECCC website](#)
- EC Metro and ECCC email lists
- Emigration Canyon Newsletter – Paper circulation twice annually to all residents, more frequent digital copies but only go to a subset of canyon residents.
- Public EC Metro/ECCC meetings
- Social media (e.g. Facebook, Twitter)
- Neighborhood chats/apps (e.g. Nextdoor app)
- Ham/amateur radio (local group of approximately 15 users)



Residents serving breakfast at the Firewise Fair, photo courtesy of Lisa Tippetts.

school choice), have been empirically proven to enhance social cohesion and trust among participating groups and individuals (Aldrich & Meyer, 2015). A list of some key community activities that support resilience are included in Table 6.1 below.

The novel COVID-19 pandemic, which arrived

in Utah in March 2020, has prevented large community gatherings throughout much of the writing of this plan. Many Emigration Canyon residents have adapted to the new normal and continued to participate in some community activities, such as EC Metro meetings, using online platforms during

this time. Other ways that the community has adapted include increased use of social media to stay connected, neighborhood mask making events, and outdoor music events or gatherings that do not involve food or drink sharing.

Other Social Factors

In order to prepare hazard mitigation efforts that consider the whole community, jurisdiction-specific social nuances must be understood, and key factors are highlighted in Table 6.2.

While there is a high percentage of residents over the age of 65 living in Emigration Canyon, only 5.2 percent of these residents reported living alone, compared to 24.2 percent in the same demographic who live alone across Salt Lake County. This statistic suggests that this demographic of Emigration Canyon residents is generally less socially isolated than residents of Salt Lake County.

Emigration Canyon residents are also more likely than residents of Salt Lake County to own their own homes (81.7 percent versus 63.1 percent), and generally have a higher level of educational attainment (68.9 percent of people 25+ have a Bachelor's Degree or higher, compared to 34.5 percent in Salt Lake County). These factors suggest that Emigration Canyon residents have good access to a suite of resources that can help them to cope in a crisis.

A range of health factors can also complicate access to social networks and reduce mobility. These are included in Table 6.3.

Program or Event	Contribution to social cohesion and community resilience
Firewise	Firewise programs teach people how to adapt to living with the potential of wildfire to prevent losses. The Emigration Canyon Community Council has been at the forefront in developing a Firewise program and information for Emigration Canyon. A popular community education event is held every year for canyon residents. http://www.emigrationcanyon.org/events/firewise/
Community Emergency Response Team	Emigration Canyon Community Council has offered community response training sessions every year. In 2020 more than 20 people signed up to participate, but the training was postponed due to COVID-19 health concerns.
Musical events	Benefit concerts are occasionally held at Camp Kostopulos. These events provide Canyon residents with an opportunity to socialize with neighbors and friends in an informal setting, deepening, reinvigorating, or developing new relationships.
Neighborhood gatherings	Skycrest neighborhood occasionally holds musical events in the local park. Pinecrest occasionally holds neighborhood potlucks.
Canyon clean ups	Emigration Canyon Community Council holds Canyon clean-up events twice a year. This provides Canyon residents with an opportunity to connect to each other and the Canyon environment.
Local businesses	Canyon residents frequent Ruth's Diner and Emigration Brewing Co with some regularity. There is a large room in upstairs at the Brewery that could potentially be used for public meetings in addition to private gatherings, although there are some parking limitations. Camp Kostopulos also has a large room that can be used for indoor gatherings if needed, although it too is usually reserved for private rather than public functions.
Religious institutions	Although there are no churches located in the Canyon, the Emigration Ward of the Church of Jesus Christ of Latter-Day Saints meets nearby at the mouth of the Canyon, and includes canyon residents.

Table 6.1: Key community programs or events that contribute to social cohesion and community resilience in Emigration Canyon.

Key Social Factors to Consider for Emigration Canyon Resilience Planning	Number in Community
Members of the community over 65 years old	222
Members of the community under 18 years old	425
Members of the community that identify as having disability status	66
Members of the community that speak English less than "very well"	6
Members of the community living below the poverty line*	157
The number of mobile homes in the community	0
Members of the community without health insurance	0
Occupied housing units with tenants without a vehicle	11
Housing units without heating fuel	0

Table 6.2: Key Social Factors to Consider in Resilience Planning, from (Emigration Canyon Metro Township, 2019) *Poverty levels and all other data from the US Census Bureau American Community Survey, 2017.

Health Factors (2014-2018)	Emigration Canyon	Salt Lake County
Persons with cognitive difficulty	2.3%	4.0%
Persons with a hearing difficulty	4.7%	2.7%
Persons with a self-care difficulty	1.9%	1.7%
Persons with a vision difficulty	1.3%	1.6%
Persons with an ambulatory difficulty	3.1%	4.5%
Persons with a disability living in poverty (5-year)	0.0%	18.3%

Table 6.3: Health factors that can complicate access to social networks and reduce mobility. Source: Salt Lake County Health Department Community Health Data Dashboard (Healthy Salt Lake, 2020).

6.2.2 Hazards and Risks

The geography and climate of Emigration Canyon renders the area more or less at risk for certain types of hazards and risks. Emigration Canyon is characterized as Intermountain Semi Desert (US Geological Survey, 2000). Emigration Canyon experiences all four seasons with moderately hot summers and cold winters. Emigration Canyon's climate, like Salt Lake County and

the rest of the southwestern states, is very dry, with an average annual precipitation of approximately 23 inches, though the Canyon receives more precipitation than Salt Lake Valley (Best Places, 2020).

According to the Emigration Canyon Hazard Mitigation Plan (Emigration Canyon Metro Township, 2019), the top five hazard events, based on a probability factor times the sum of weighted impact factors, are: Wildfire,

Flooding, Earthquake/Severe Winter Weather (tied for third place), Landslide and Slope Failure, and Severe Weather. A few additional hazards and risks that are likely to have a significant impact on the health and well-being of Emigration Canyon residents and visitors in the years to come, but operate across canyon boundaries, are also included below. These are Public Health Epidemic/Pandemic, Air Quality, and Climate Change.

The potential for a petroleum spill is also relevant to consider in future hazards management (due to the presence of an active pipeline through the Canyon), but this did not make the top five hazards in the 2019 mitigation plan. Additional concerns for the Municipality, in the event that any hazard affects the canyon, are 1) the limited ingress and egress to and from Emigration Canyon and 2) the lack of access to reliable wireless and internet in event of an emergency. These limitations pose major concerns as they relates to the multiple natural and manmade hazards that could affect the community.

Flooding

Stream flooding is highly likely and has the potential to cause roadway washouts. Emigration Creek and its tributaries are the principal drainages carrying runoff through Emigration Canyon. Most creeks have well-defined channels that have experienced historic flooding. Some small drainages flow continuously and some intermittently throughout the year. All drainage tributaries have the potential for high flows during the spring runoff period. After a winter of heavy

precipitation, many parts of Emigration Canyon dealt with high water and flooding issues during the Spring of 2011. Jurisdictional wetlands have been delineated by the US Army Corps of Engineers along Emigration Creek. Chances of riverine flooding greatly increase post-wildfire.

Wildfire

There is a high risk of wildfires in Emigration Canyon (Figure 6.2). While the community is a Firewise community (Table 6.1), fires are hard to fight given the area’s terrain. Residential development in Emigration Canyon often

interfaces with areas of undeveloped canyon lands that exist in a natural state. This bordering of residential development on open lands or what is termed the Wildland-Urban Interface (WUI) is part of the charm of the canyon for many residents. The WUI area has inherent risks associated with it, mainly dangers from a wildfire that can and do occur in the foothills and canyons from time to time. Whether these fires are started due to natural causes or by human activities, they can quickly spread across the thicker natural vegetation (fuels) of undeveloped areas and

threaten adjacent residential development. According to locals, Pinecrest is the only area in the canyon where fire suppression is considered to be inadequate.

Earthquake

No known active faults have been mapped within Emigration Canyon Township. The nearest active fault is the Salt Lake segment of the Wasatch Fault, located about two-and-a-half miles west of the mouth of Emigration Canyon. Seismic hazards in Emigration Township will come primarily from the seismic waves that are generated during large earthquakes, should such an event occur. However, given the nature of sediments found in the Emigration Canyon, the soil liquefaction potential is typically considered below average. The 5.7 magnitude earthquake centered in Magna, Utah that occurred at 7:09 AM MDT on March 18, 2020, could be felt in Emigration Canyon, but no substantial damage was reported in the Canyon as a result of the quake.

Severe Winter Weather

Winter storms are common in Emigration. Poor drainage in some areas of the canyon has historically created road icing in the winter and subsequent traffic safety issues, but the road repaving project undertaken in the summer of 2020 has aimed to address this issue. There is also an increased risk of avalanche in some areas of the Canyon, particularly in the Pinecrest area.

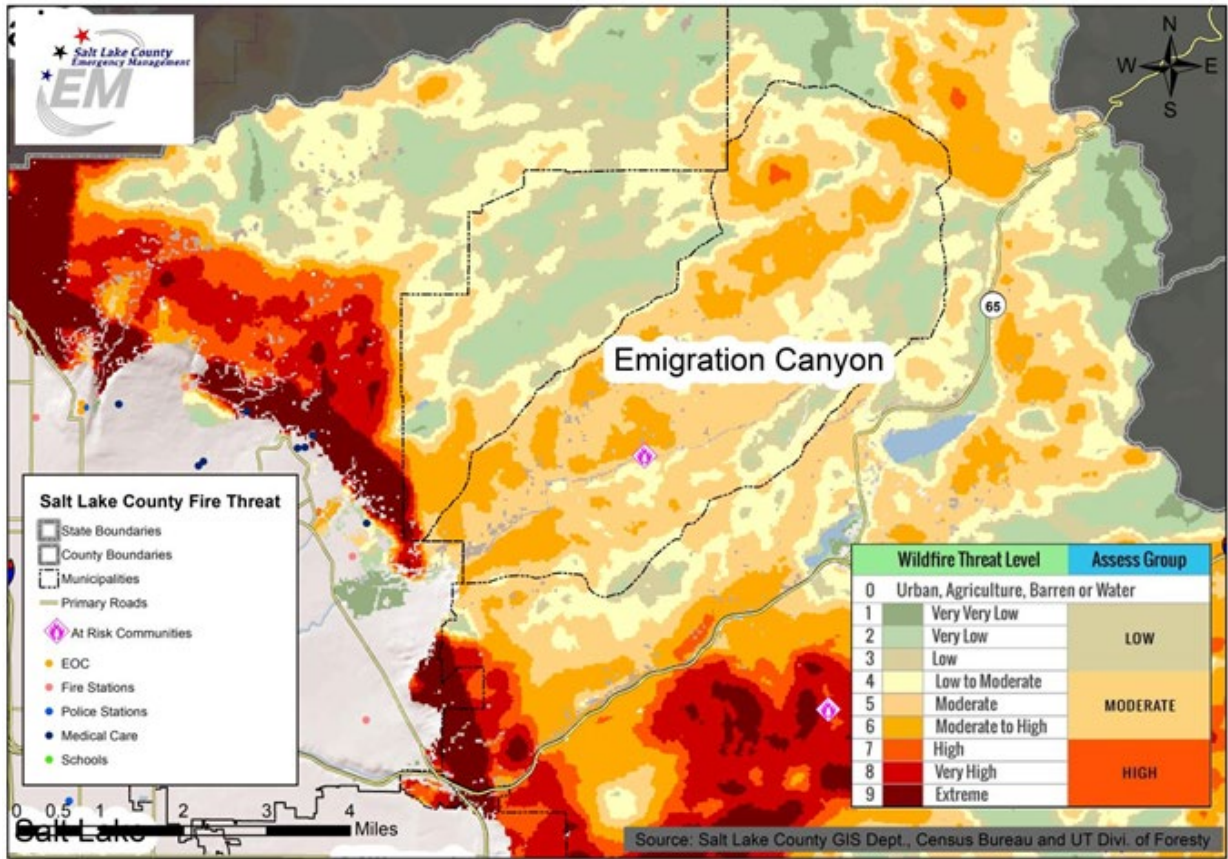


Figure 6.2: Wildfire risk for Emigration Canyon. Source: (Emigration Canyon Metro Township, 2019).

Landslide/Slope Failure

Elevations in Emigration Canyon range from about 5,100 feet near the mouth of canyon to just over 8,900 feet at the summit of Lookout Peak along the northern boundary of the Municipality. Due to the natural topography, slope stability issues are the most prominent geologic hazard encountered in the canyon. Historically, landslides have occurred in Emigration Canyon, especially in the steep areas of Pinecrest. Much of the Canyon is dominated by lands where slopes exceed 30 percent. Several places in Emigration Canyon

would experience road closure if a landslide were to occur.

Severe Weather (Wind)

Given the differing elevation and a large number of trees in the town, heavy winds can occur and impact some areas much worse than others, typically involving knocking large trees over, which is especially problematic when a fallen tree blocks a road.

Public Health Epidemic/Pandemic

Public Health Epidemic/Pandemic While a public health epidemic or pandemic ranks

sixth based on the probability and severity of occurrence in the Hazard Mitigation Plan (Emigration Canyon Metro Township, 2019), the COVID-19 pandemic, which arrived in Utah in March 2020, is still causing global disruptions as of the writing of this plan. People aged 65 years and older, those who are immunocompromised, or those with underlying conditions such as diabetes, are more susceptible to suffer severe illness or death. Governments, communities, and individuals have altered their habits in attempts to prevent the spread of the virus.

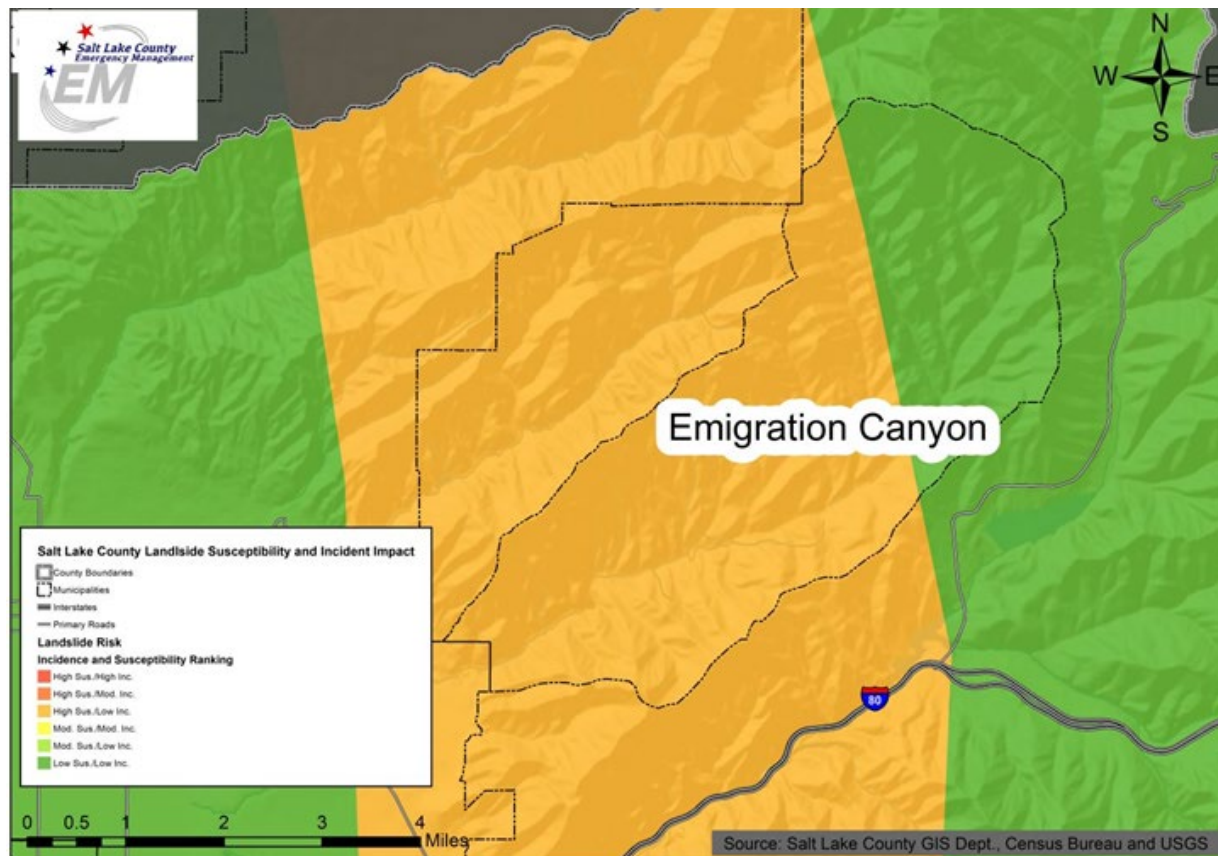


Figure 6.3: Landslide Susceptibility and Incident Impact Potential. Source: (Emigration Canyon Metro Township, 2019).



Wind Damage, September 8, 2020, Emigration Canyon trees uprooted.
Photo courtesy of Joe Smolka.

The full impacts and implications of this pandemic, including its impacts on planning and development, are yet unknown.

Air Quality

The Salt Lake Valley has some of the worst air quality in the nation, ranking 7th worst among large metro areas in the United States in a 2020 report (Maffly, 2020). While this issue is not as much of an immediate concern for residents of Emigration Canyon, as their geography prevents all but the worst air quality days from having severe impacts on Canyon residents, the collective issue of Salt Lake Valley air quality is a top concern for Canyon residents (see Appendix C). This topic is covered in more depth in Chapter 5.

Climate Change

Utah's climate is changing. Over the last 100 years, the state has warmed by almost two degrees (F). Heat waves and drought are more common, and snow is melting earlier in spring. While climate change is occurring on a global scale, the effects are felt at the local level. In the coming decades, Emigration Canyon is likely to see climate change effects such as decreased snow pack and water flows, more frequent and intense wildfires and storms, increasing invasive species and increasing rates of health effects such as respiratory disease, asthma prevalence and heat-related disease (US Environmental Protection Agency, 2016).

6.2.3 Infrastructure

There are three different kinds of infrastructure that support community health and wellbeing and facilitate community resilience in the event of a disaster or change; these are physical infrastructure, digital infrastructure, and social infrastructure. While there is some overlap among these categories, it is useful to separate them in order to highlight the crucial role of each in maintaining community resilience when confronting a challenging situation such as a natural hazard or an economic downturn.

Physical Infrastructure and Related



Photo above: Emigration canyon pipeline, courtesy Intermountain Region USFS.

Services

For each of the physical infrastructure types listed in the subsections that follow, it is important to consider the age, condition, location, and role the infrastructure plays locally – these are crucial factors in determining how these sectors will be impacted by events such as flooding (intensity, frequency), wildfires, etc.

Utility and Energy Right of Way

There are many designated utility rights-of-way in Emigration Canyon. These existing rights-of-way (ROWs) include pipelines that carry crude oil (Chevron)

and natural gas (Questar), as well as fiber-optic communication cables and electrical transmission lines. Although there is fiber-optic cable in the canyon, it doesn't serve canyon residents, but instead provides an important regional access line. Internet is dial-up, DSL or satellite. There is some cellular infrastructure in the Canyon, but coverage is not always reliable due to Canyon geography. TV is limited to airwaves and satellite. These ROWs are an important feature in the canyon as they often serve as the de-facto trails and function as wildlife corridors.

Water system and supply

The main source of water provided to Canyon residents is through the public water system operated by the Emigration Canyon Improvement District (EID). EID's water system covers approximately 70% of the area of the Canyon as of December 2020. The system begins just below the Fire Station, up the main canyon road to the lower portion of Pinecrest, Killyons Lane and the Emigration Oaks Development. The water system comprises two reservoirs totaling 1.3 million gallons of storage capacity and fire hydrants that meet or exceed the current fire flow codes. To date, all water provided by EID comes from three deep source wells. EID currently provides water to over 300 homes, but expects to provide water to as many as 500 potential homes located in the water system. There are over 100 homes from lower Pinecrest, Killyons and along the Main Canyon Road that rely on private wells for water.

The 60 lots of the Emigration Place

Development, plus five or six additional lots nearby, receive their water from Salt Lake City Department of Public Utilities (SLCDPU). SLCDPU runs a water line from Salt Lake City to provide water to Emigration Place and Camp Kostopulos and provide hydrants for fire protection to the Emigration Place Development and some hydrants along the Main Canyon Road to the mouth of the Canyon. Sunnydale Lane area residents rely on private wells for water and do not have access to the SLCDPU waterline.

There are two smaller public water systems in Emigration Canyon. Spring Glen Water Company provides water to approximately 16 homes located around Skycrest Lane. The system has a storage capacity of 60,000 gallons. This system is located within the EID's water system as an alternative source of water. When the EID expanded its water system in 2007, it included the Skycrest Lane area to provide an alternative water supply and provide adequate fire protection. The second public water system includes the Pinecrest Pipeline Operating Company (PPOC), which provides water to approximately 20 homes located in the Upper Pinecrest area. PPOC does have a few hydrants located in the area, however, the storage capacity would not meet current fire flow code nor provide adequate fire protection. The remainder of the homes in the area rely on private wells for water.

Typical system-wide indoor water use is in the range of 50,000-60,000 gallons of water per day outside the summer months. The total system water use now reaches about 250,000

gallons per day during the hottest and driest summer months when irrigation use is at peak demand. The EID promotes water conservation by canyon residents through a pricing structure that increases with volume used.

Land development affects both the quantity and quality of the groundwater. Because of this link, the impacts of existing and future development on this sensitive resource should be studied and managed with care. Public drinking water suppliers are required by state and federal laws to protect water quality in their wells by designating water protection zones and implementing restrictions that apply to each specific zone. Depending on the designated groundwater protection zone, septic systems may be prohibited or restricted. Protection of drinking water quality falls under the jurisdiction of both the Division of Drinking Water and Salt Lake County Health Department and is overseen by the EPA. The location of groundwater protection zones is restricted information under state and federal laws. For access to this information individuals can register with the Department of Environmental Quality and then access their interactive map here: <https://enviro.deq.utah.gov/>

The following regulations, Utah code, and ordinances apply to public water providers and protect drinking water in public wells:

- Utah Administrative Code, Rule R 309-600
- Salt Lake County Health Department,

regulation #13

- Salt Lake County Code of Ordinances, Chapter 9.25
- Emigration Canyon Metro Township, ordinance 18-18-01

Examples of how these regulations have affected land use and wastewater systems in Emigration Canyon:

- EID has installed a cluster system to divert wastewater from a small group of homes away from a groundwater protection zone associated with one of their wells.
- SLCDPU has prevented the installation of some standard or alternative septic systems because of concerns about water quality implications associated with one of the groundwater protection zones that they oversee.
- A permit to build a new home in a groundwater protection zone has been litigated due to groundwater protection regulations associated with the area.

Septic, wastewater, stormwater

In 2002 Emigration Creek was listed as an impaired waterbody for recreational use by the Utah Division of Water Quality (DWQ) based on data collected showing high bacterial levels (fecal coliform). “Impaired waters” are those waterbodies that currently fail to meet water quality standards established by the State. Subsequent to this listing, the State is required to develop a Total

Maximum Daily Load (TMDL) water quality study to establish pollutant level reductions in impaired waters and achieve water quality standards. A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet water quality standards. The TMDL process results in load allocations to each pollutant contributor. These allocations often result in regulatory controls and mandates. More details on water quality are included in Chapter 5: Environment.

Coordinated monitoring efforts by the State Division of Water Quality, Salt Lake County, Salt Lake Valley Health Department (SLVHD), Salt Lake City, University of Utah and U.S. Geological Survey (USGS) have suggested that potential origins of E. coli contamination in Emigration Creek include improper solid waste disposal, stormwater runoff, domestic animals including pets, wildlife, seepage from old sewage holding vaults, and poorly sited or failing septic tank leach fields (Hubbard-Rice, 2015).

All existing and new development is required by State Law to provide individual septic tank drain fields and holding vaults. The Salt Lake Valley Health Department is charged with the responsibility of regulating these facilities for compliance with laws governing groundwater contamination and source water protection. Due to the terrain and physical limitations of Emigration Canyon, a canyon-wide sewer system is not feasible or practical and is unlikely to be developed. Smaller treatment systems, called cluster systems, could be

feasible in some areas of the canyon as an alternative to an all-inclusive sewer system.

The State Division of Water Quality presently does not consider urban stormwater runoff as “wastewater” but does require that best management practices (mainly erosion and runoff controls) be implemented during both construction and post-construction phases.

Roads

Due to a combination of physical and use factors, multiple hazards are associated with the main canyon road. The popularity of the main canyon road as a destination for cyclists and other alternative mode users has “exploded” in recent years according to some locals (Salt Lake County, 2012). During the COVID-19 pandemic that started in 2020, sightseers seeking to escape the confines of Salt Lake City were also reported to break previous use records]. The popularity of the road with all kinds of users has led to ongoing ‘share the road’ issues between vehicle drivers and other mode users, which are compounded by the lack of consistent recreational bicycle lanes in some areas where the canyon is too narrow to make them feasible. Additional road hazards can arise from loose rocks, drainage issues, and visibility constraints. Road maintenance and improvement projects were initiated in 2020 based on the recommendations provided in a comprehensive road report (Lochner, 2016) and will continue as funding is available (see Transportation Chapter for details). There are several private roads located in Emigration Canyon that can further complicate

emergency and/or hazard response due to non-standard road widths and/or irregular maintenance.

Waste and Recycling

Although waste and recycling services are provided to canyon residents year-round, the provision of these services can be challenging under some conditions, especially in the more distant corners of the Canyon, or areas with non-standard roads. Wasatch Front Waste and Recycling (<https://wasatchfrontwaste.org/>) has provided three community dumpsters that service homeowners on steep, narrow, unpaved roads who cannot receive curbside trash/recycling service. In other parts of the Canyon, waste and recycling are picked up weekly. Vouchers for fee waivers for people who haul their trash to the landfill themselves can be obtained from Emigration Canyon's Community Council Representative. Wasatch Front Waste & Recycling District allows additional cans, for an additional annual fee. Waste and recycling are taken to the Trans-Jordan landfill located off Bacchus Highway in South Jordan City.

Parks and Open Space

Publicly owned lands constitute the majority of land area in Emigration Canyon. These lands contain many of the trails that exist in the canyon. Existing trails are identified in the Salt Lake County Current Regional Trails Map (Salt Lake County Parks and Recreation, n.d.), while potential future trails are identified in the adopted Emigration Canyon Trails Master Plan (Salt Lake County Parks and Recreation, 2007) and updated 2019 priority projects

list (Emigration Canyon Community Council, 2019). Canyon trails are generally multi-use designated, accommodating a mix of hiking and biking activities. Limited infrastructure exists to support these activities, which has led to some conflict among Canyon residents and visitors over parking and trail access. The narrow, non-standard Canyon roads, particularly in the upper limits of Pinecrest and Killyons, are easily congested by visiting parked cars.

Age and Type of Structures

The age and type of structures influence how most structures hold up after disasters. According to the Utah Seismic Safety Commission, structures built before 1975 are unreinforced masonry (2016). This means that structures do not have modern safety features, such as steel-reinforcements, roof to wall attachments, and wall to floor attachments. Such features enable the structure to handle disturbances, such as earthquakes.

- 356 structures were built in 1980 or later, indicating that they are built to better withstand earthquakes.
- 298 structures were built before 1970 and are unlikely to have earthquake safety features unless retrofitted later.
- 94 structures were built between 1970 and 1979 and may or may not have these safety features.

The age and type of structures impact safety and livability concerns as well. Older homes are more likely to deal with lead paint (widely used until a nationwide ban in 1978), inefficient

heating and cooling systems, low accessibility, high levels of radon gas, asbestos, unhealthy water quality, and poor indoor air quality (US Department of Health and Human Services, 2009). These characteristics negatively impact physical and mental health, with possible effects including increased likelihood for cancer, lead poisoning and developmental delays, depression, and respiratory disease (ibid). Older homes generally require more maintenance to remain livable and to combat outdated standards. If maintenance is neglected, whether due to its expense or the inability of the resident to conduct the repairs, the household may expose themselves to further risk.

Digital Infrastructure

Digital infrastructure comprises the physical resources that are needed to enable the use of data, computerized devices, methods, systems, and processes. Digital infrastructure has rapidly become indispensable to a high functioning society and is tightly intertwined with the quality of life of its citizens. Access to key components of a good quality of life such as jobs, education, public services, and healthcare is increasingly provided via high-speed internet and associated digital devices (Tomer et al., 2020). This situation has been intensified by the COVID-19 pandemic which has rapidly normalized work and school-from-home processes, thus illuminating the "digital divide" that separates high-income and low-income neighborhoods, or rural and urban ones, in America (Hegel & Wilding, 2019).

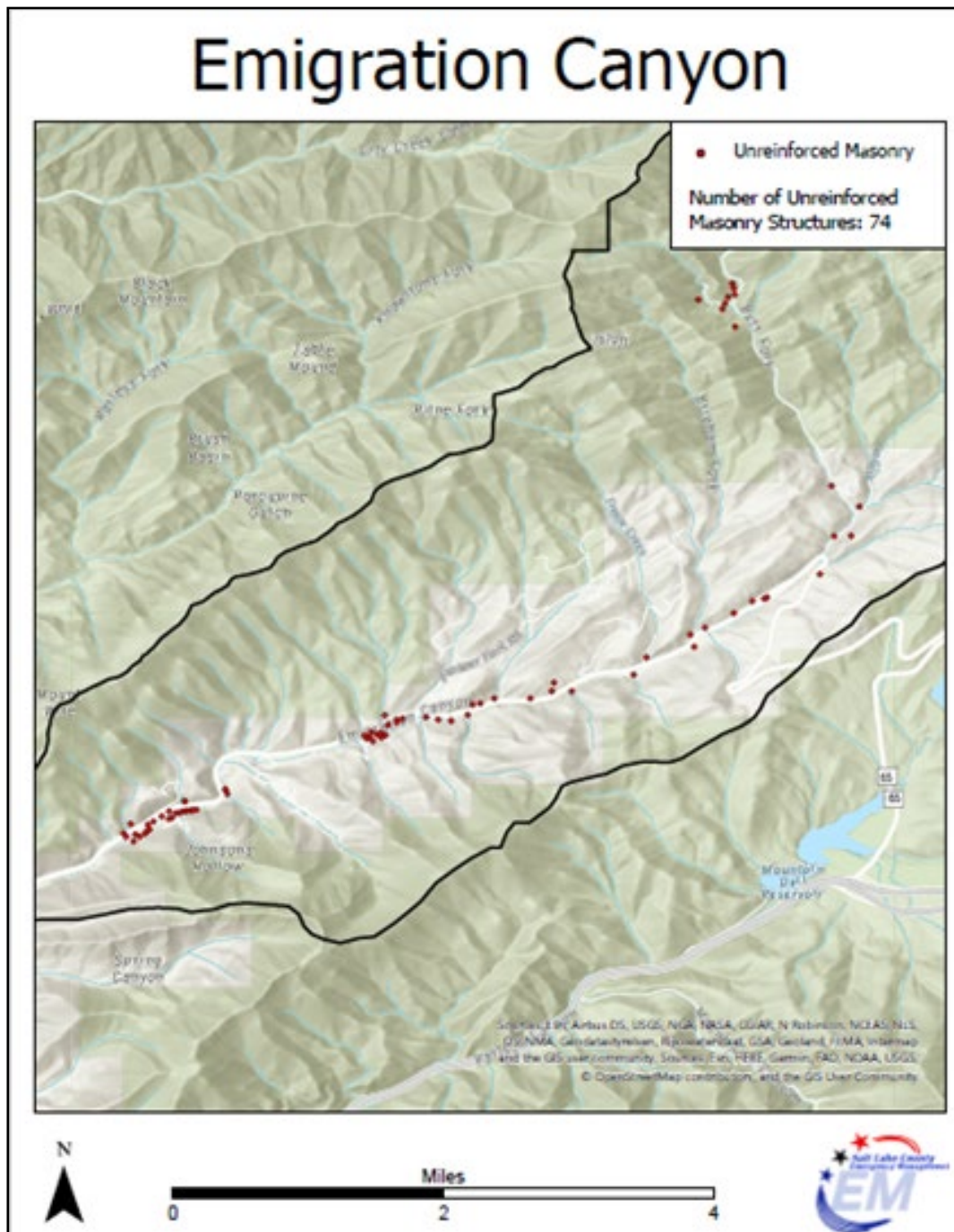


Figure 6.4: Unreinforced masonry in Emigration Canyon. Source: Salt Lake County Emergency Management Team.

Emigration Canyon houses some wireless telecommunications infrastructure, mainly at a site on Little Mountain. This property, owned by Salt Lake City, houses equipment for numerous service providers. Despite this concentration, the Municipality does have numerous areas where wireless phone and other providers encounter service issues and problems (see Table 6.4 for details on broadband access).

Upgrading and expanding services in the canyon is dependent upon several factors, including finding a suitable site (e.g. cannot impact aesthetics or intrude on designated ridgelines, would overcome “dead spots”). This has proved challenging. Several companies have looked at enhancing services in the canyon in recent years, but few advances have been made other than a new wireless telecommunication facility, intended to improve emergency communication and response, installed by Verizon Wireless in the early 2000s and located across from Standel Cove. Space in the facility is also set aside for privately-owned wireless radio equipment to facilitate emergency communication functions.

Social Infrastructure

While Social infrastructure includes schools, community groups, outdoor markets, coffee shops, libraries, parks, religious institutions, and other physical assets that create a culture of neighborliness, acceptance, and connection (Landau, 2019). Emigration Canyon’s social infrastructure is extremely limited; the Fire Station, Ruth’s, Emigration Brewery, Camp K and a few parks in the area are the primary locations where social connections might occur and services be provided within the canyon itself. The lack of access to in-canyon health and emergency services can be a concern for aging communities such as Emigration Canyon. However, while the social infrastructure in the canyon is limited, canyon residents still find opportunities to connect and to look after one another. In part perhaps

because the canyon lacks immediate access to many services, community members reportedly rely on one another for assistance and support in ways that may not be needed in a more urban setting, planning and development, are yet unknown.



Firewise fair, photo courtesy of Lisa Tippetts.

Broadband Definitions & Emigration Canyon' Connectivity Rate
<p>Minimum Standard Broadband Speed: a <u>download speed of 25 mbps (megabytes per second)</u> and an <u>upload speed of 3 mbps</u> (Zimmer, 2018). This “basic” can enable a household to use streaming services (such as Netflix or YouTube) on one or two devices without lag, play most online games, and have minimal loading times when surfing the internet (Cooper, 2020). Emigration Canyon Metro Township has coverage for the minimum standard broadband speed.</p>
<p>Average Broadband Speed: a <u>download speed of 100 mbps</u> and an <u>upload speed of 25 mbps</u>. A download speeds of 100 mbps is needed at a minimum for 3-4 people in a household to stream 4K content and play online games simultaneously (Cooper, 2020). Emigration Canyon Metro Township does not have coverage for the average broadband speed</p>
<p>Fiber: a <u>download speed of 1000 mbps</u>. The advocacy organization Broadband Now recommends fiber speeds for those who want more than speeds of 100 mbps; those who stream 4K on multiple devices, play online video games, own smart home/ IoT (Internet of Things) devices, and download very large files (Cooper, 2020). <u>Emigration Canyon Metro Township does not have coverage for fiber speeds.</u></p>

Table 6.4: Broadband details for Emigration Canyon.

The Socioeconomics of Broadband

High-speed internet access is now more important than ever. It is the gateway to more and better jobs, more educational success for our children, crucial access to public services and quality healthcare, and a higher quality of life. ¹ And it is even more important to understand that those who don't have reliable high-speed internet access can be left behind from these opportunities. There is a “digital divide” that separates high-income and low-income neighborhoods in America. ²

The “Digital Divide” At-a-Glance



Income

According to the 2013 American Community Survey, a household that made more than \$100,000 had a 92% likelihood of having broadband at home. For those who made \$25,000 or less, the chance of having home broadband fell to 47%. ²



Employment

Middle-skill jobs are those that require less than a bachelor's degree while paying at least \$15 an hour – what academics and others often consider a living wage. About 46% of overall labor demand is for middle-skill jobs, and some 82% of all middle-skill jobs are now “digitally intensive”. Jobs that require digital skills pay more and offer greater opportunity for career advancement than jobs without those requirements. ²

Broadband also makes it possible for people to telecommute, which can increase job satisfaction and productivity, decrease work-family conflict and have a positive impact on median household income at the census tract level. ²



Education

The Pew Research Center found that about a third of households with school-age children lacked home broadband in 2013. Another study showed that about half of students surveyed “were unable to complete homework due to lack of broadband and 42 percent said they received a lower grade due to lack of broadband as well.” ²

The digital divide hurts students who don't have a reliable internet connection at home. They lag in their studies and cannot compete well with their peers. They miss out on improving their socioeconomic status and can be more likely to repeat an inter-generational poverty cycle. ³

Sources

1 Regional Digital Economy Plan, 2014, pg. 7

2 *Disconnected: Seven Lessons on Fixing the Digital Divide*, The Federal Reserve Bank of Kansas City, July 2019,

<https://www.kansascityfed.org/community/~/media/31dc7512db164fce8ae79ec7709924fd.ashx>

3 “What is the Digital Divide?”, Carmen Steele, Digital Divide Council, February 22nd, 2019, <http://www.digitaldividecouncil.com/what-is-the-digital-divide/>



6.3 PLANNING FOR FUTURE RESILIENCE

“It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change.”

- Charles Darwin

Firewise fair, courtesy of Lisa Tippetts.

6.3.1 Key Challenges

Key challenges to address when planning for future resilience in Emigration Canyon include:

- A substantial aging population; by 2024, 24.2 percent of the Emigration Canyon population is expected to be over the age of 65 (Esri, 2020). Health factors associated with an aging population can complicate the response to hazards and other emergencies.
- Access to the internet is high in the area, but it is not universal, and not the best quality (see Table 6.4 for details), making communication across the entire canyon a multiple-platform process.
- Linguistic isolation, which may be minor concern at present and could increase as the population in the Canyon diversifies (Esri, 2020), is another factor that can complicate communication with Canyon residents.
- Although poverty is not a major concern for most Emigration Canyon residents, there are households at every income level that are housing cost-burdened (spending over 30% income on housing) (see Appendix D for details). This can create inequities within the Canyon in response to hazards and changes and

place a disproportionate burden on some members of the community if and when a hazard or emergency arises.

- Aging and outdated infrastructure in the Canyon may further complicate response or recovery from hazards and risks, especially when it comes to the roads in the area, some of which are very narrow and may not be maintained to industry standards. Ingress and Egress from the Canyon is an important related concern.

6.3.2 Key Opportunities

The Emigration Canyon community has many opportunities and resources that can be leveraged to support improved resilience planning in the future. These include:

- The relative affluence and high educational qualifications held by the majority of community members position the community to be able to respond to a wide range of challenges that could arise in the area. To support continued strengths in these areas, the community needs to consider investing in two key features:
 - Enhance fiscal capacity/economic resilience of the local government (Harvell, 2018; RUPRI, 2013)
 - Seek opportunities to expand access to fiber-based internet (Table 6.5)
- Strong social networks both within and extending beyond the Canyon boundaries can be counted on to leverage resources relatively quickly and efficiently in a crisis.

- The community has a history of successfully utilizing educational and behavior change programs such as Firewise to address hazards in the area. Additional programs that could be implemented to improve resilience in the area include:
- Green infrastructure programs that rely on natural resources to address hazards and risks

- Native planting guidelines <https://slco.org/watershed/stream-friendly-practices/choosing-native-plants/>
- USFS - Stabilization and planting after wildfires <https://www.fs.usda.gov/science-technology/fire/after-fire>
- Other green infrastructure resources
- <https://www.epa.gov/green-infrastructure/learn-about-green->

<p>UTOPIA Fiber was created by a group of 11 Utah cities in 2004 to build, deploy, and operate a fiber to the home (FTTH) network to every business and household within their communities. UTOPIA Fiber owns the infrastructure, but you get to choose your internet service provider (ISP) (West Point City, 2019a). UTOPIA bonds for and constructs the fiber infrastructure improvements. <u>The financial obligation of the bond is paid by the residents that use the fiber internet service</u> (West Point City, 2019b).</p>
<p>Google Fiber is only available in certain neighborhoods of Salt Lake County (<i>Downtown, Sugarhouse, Rose Park, & several others</i>) and expansion plans are entirely up to Google. It does not look like there is a way for businesses or government entities to request Google Fiber in certain cities or neighborhoods (Google, 2020). At the moment, this does not look like a viable option to improve the Emigration Canyon' broadband internet access.</p>
<p>Work with CenturyLink to expand fiber in Emigration Canyon: The MSD Board could attempt to create a public-private partnership with CenturyLink, and work with the provider to expand their fiber infrastructure to more neighborhoods in MSD service areas. The government of Springfield, MO partnered with CenturyLink in their community to expand fiber internet access to residents (Simmons, 2019).</p>
<p>Advocating for more Wi-Fi Hotspots available for checkout at Salt Lake area libraries: a Wi-Fi Hotspot is a portable device that lets you connect electronic devices to the internet virtually anywhere (Salt Lake Community College Libraries, 2020).. The Salt Lake City Public Library currently offers Wi-Fi Hotspots for free checkout, and the Salt Lake County library is beginning to offer them as well. Making more Wi-Fi Hotspots available for free checkout would especially help low-income residents who need more reliable internet access (<i>especially due to the global COVID-19 pandemic</i>) but can't afford to increase their bandwidth.</p>
<p>"Connect Program": in August 2020, Salt Lake City partnered with The Church of Jesus Christ of Latter-Day Saints to provide access to a free computer lab in an LDS meetinghouse in the Rose Park neighborhood (Salt Lake City, 2020).</p>

Table 6.5: The options included in this table could potentially expand fiber-internet access to more Emigration Canyon residents, thus improving community resilience. This table is included for reference only and does not represent an endorsement of any of the products or services mentioned.

[infrastructure](#)

- <https://www.slideshare.net/nado-web/green-infrastructure-basic-principles-tools>
- <http://cepd.cap.utah.edu/red-butte-creek-research-symposium-2018/green-infrastructure-research-facility/>

6.3.3 Resilience and Infrastructure Work Program Goals

The following Resilience and Infrastructure Work Program goals were developed with guidance from the GPSC, based on community input, and with consideration for the data, opportunities and challenges outlined in this and previous chapters. The work program can be used to guide the implementation of the General Plan and make progress on Emigration Canyon's resilience and infrastructure goals. The work program outlines goals, objectives, and actions, with the responsible parties, timeline for implementation, approximate cost, metric for success, and relevant resources also delineated. However, the Emigration Canyon Metro Township Council is the governing body of the Municipality and will determine how best to achieve the goals, objectives, and actions that are included in the work plan, including how best to implement recommendations such as the formation of working groups. Details are included to support implementation but are not definitive.

Goal 6.1: Practice fiscal responsibility and sustainability in all decision-making.

- Objective 6.1.1: Enhance Emigration Canyon Metro Township's fiscal capacity and economic resilience.
- Objective 6.1.2: Increase collaboration between utility providers and municipal services in timing of roadway and other infrastructure projects.
- Objective 6.1.3: Increase transparency in budgeting and spending decisions.

Goal 6.2: Maintain the infrastructure system in good working condition and ensure that it meets the needs of current and future residents and visitors.

- Objective 6.2.1: Improve the safety, sustainability, and resilience of groundwater resources and associated infrastructure.
- Objective 6.2.2: Maintain the road network in a safe and serviceable condition.

Goal 6.3: Mitigate the effects of climate change, natural disaster risk, and other hazards.

- Objective 6.3.1: Increase responsible

stewardship over energy and resources.

- Objective 6.3.2: Reduce key hazard risks for Emigration Canyon community members.

Goal 6.4: Adapt to climate change, natural disaster risk, and other hazards.

- Objective 6.4.1: Improve integration of emergency-preparedness in local decision-making, community outreach, and planning efforts.
- Objective 6.4.2: Improve communication across all members of the community, including those who may be disproportionately affected by a disaster or change.

Goal 6.5: Ensure that all community members enjoy a sense of belonging and high levels of social connectedness and trust.

- Objective 6.5.1: Improve opportunities for potentially disproportionately affected residents to become engaged in community leadership and service, especially planning and decision-making processes.
- Objective 6.5.2: Increase access to spaces where people from diverse backgrounds feel safe and welcome to gather, play, organize, and engage with one another.



Canyon Cleanup Day, Photo Courtesy of Catherine Harris.



CHAPTER 7: COMMUNITY WORK PROGRAM

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Fall Color. Photo Courtesy of Bill Tobey.

7.1 OVERVIEW

This chapter revisits the work program goals and objectives from all previous chapters and expands on them by adding detailed action items corresponding to each objective.. Each work program was developed from an analysis of existing conditions, the community's feedback, consideration of key underlying

planning concepts, and the community's vision and goals related to that topic. Although the General Plan is divided into distinct chapters, the subjects are tightly interconnected. Because of these relationships, common themes emerge across the work programs, but specific actions related to the chapter topic are

highlighted in each. Explicit overlap and connections have been highlighted in the resources section of the work program where relevant. As a whole, the Community Work Program provides a detailed outline of how the Municipality can achieve its envisioned future.

CHAPTER 2: LAND USE & CHARACTER AREAS WORK PROGRAM

GOAL 2.1: PRESERVE THE CULTURE, IDENTITY, AND CHARACTER OF EMIGRATION CANYON METRO TOWNSHIP'S BUILT ENVIRONMENT.

OBJECTIVE 2.1.1: ENHANCE PROTECTION OF THE UNIQUE CANYON ECOSYSTEM AND SCENERY.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Adopt the Ridgeline Protection Areas identified and delineated in the previously adopted Emigration Canyon General Plans (1999/2012).	PC, PDS	Immediate	Staff time	General Plan Adopted	Salt Lake County Planning and Development Services, 1999; Salt Lake County, 2012
b. Preserve existing zoning standards that protect the unique canyon ecosystem and scenery, including those that mandate large-lot zoning where such zoning is appropriate for the mountain setting.	PC, PDS	Immediate	Staff time	General Plan Adopted	
c. Establish a working group, at EC Metro's discretion, to develop guidelines and standards for new developments that will incorporate principles of connectivity and open space design, such as cluster subdivisions, where feasible and appropriate.	PC, PDS	Highest Priority	Staff time	Working group established	Sustainable Development Code Ch 3 Land Use and Community Character
d. Encourage subdivision design that promotes physical connectivity and multi-modal mobility between existing developments and proposed new ones.	PC, PDS	Priority	Staff time	Guidelines established, connectivity enhanced	
e. Encourage any new residential development to infill already existing neighborhoods, rather than building on currently undeveloped lands.	PC, PDS	Priority	Staff time	Guidelines established, connectivity enhanced	
f. In adopting ordinances, consider working group recommendations regarding enhanced standards and guidelines for new developments.	PDS, PC, EC Metro	Encouraged	Staff time	Ordinance adopted	

OBJECTIVE 2.1.2: IMPROVE THE SAFETY, SUSTAINABILITY, AND RESILIENCE OF THE BUILT ENVIRONMENT.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Support land use and development patterns that incorporate nature, scale and use into the built environment and increase public awareness and responsibility toward the natural environment.	PC, PDS	Immediate and ongoing	Staff time	Approved project assessment	Sustainable Development Code Ch 1-2 Low-impact Development
b. Establish a working group, at EC Metro's discretion, to develop appropriate design guidelines to address relevant safety, sustainability, and resilience issues and update General Plan as needed (e.g. architectural compatibility with surrounding environment, utilization of local and/or sustainable materials and technologies in new construction, natural resource and roadway constraints).	EC Metro, PC, PDS	Strongly Encouraged	Staff time	Working group established, guidelines produced	See also objective 5.2.1a, 6.2.1a
c. Develop and adopt ordinances to progress working group guideline recommendations.	PC, EC Metro, PDS	Encouraged	Staff time	Ordinance(s) adopted	N/A
d. Adopt a waterwise ordinance.	PC, EC Metro, PDS	High Priority	Staff time	Ordinance adopted	DNR Conservation Program
e. Encourage compliance with Firewise guidelines and ordinances.	EC Metro, ECCC, UFA	Immediate and ongoing	Staff time	Increase in participation and compliance	Berry et. al., 2016
f. Develop guidelines to incentivize landowners to install renewable energy technologies and green infrastructure on their properties.	EC Metro, PC, PDS	Strongly Encouraged	Staff time	Guidelines developed	Sustainable Development Code Ch 1-2 Low-impact Development
g. Seek funding to support renewable energy and green infrastructure incentivization efforts.	PDS	Encouraged	Staff time	Grants submitted	WFRC , EPA

GOAL 2.2: ENHANCE COMMUNITY CONNECTEDNESS AND SENSE OF PLACE.

OBJECTIVE 2.2.1: INCREASE CONNECTEDNESS AND SENSE OF PLACE WITHIN AND BETWEEN CHARACTER AREAS.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Establish a working group, at EC Metro's discretion, of local artists, educators, and residents to develop historic markers, educational signage, and wayfinding signage.	ECCC, PDS	Strongly Encouraged	Staff time	Working group established	N/A
b. Seek funding to support the establishment of historic markers, educational signage, and wayfinding signage.	ECCC, PDS	Encouraged	Staff time, grant match (\$)	Grants submitted	Utah Funding Directory
c. Consider future Ag/FR Zone conflicts, especially those associated with animals, and update zoning/ordinances as needed.	PC, PDS	High Priority	Staff time	Assessment conducted, updates made as needed	N/A

OBJECTIVE 2.2.2: INCREASE SPACES FOR LOCAL COMMUNITY GATHERINGS AND RECREATION.

Actions	Lead(s)	Priority	Cost	Metric	Resources
1. Conduct a study of viable local park/open space access interests, needs, and future requirements for existing communities and new subdivisions.	PDS	Highest Priority	Staff time	Completed study	Sustainable Development Code Ch 6 Healthy
2. Progress local park/open space access study recommendations as resources become available.	PC, PDS	Priority	Staff time	Recommendations incorporated into guidelines, ordinances, and projects	

GOAL 2.3: PRESERVE AND ENHANCE ECOLOGICAL FEATURES, VIEWSHEDS, WILDLIFE CORRIDORS, AND OPEN SPACE.

OBJECTIVE 2.3.1: IMPROVE MANAGEMENT OF EXISTING OPEN SPACE AMENITIES.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Apply for funding to support trails, bathroom and/or parking facility development in high priority open space areas already identified in previous plans.	PDS, Engineering, ECCC	Immediate and ongoing	Grants and grant match (\$), Staff time	Grants submitted	UORG
b. Develop trails, bathroom and/or parking facilities in high priority open space areas already identified in previous plans as funds become available.	PDS, Engineering, ECCC	Immediate and ongoing	Grants and grant match (\$), Staff time	Areas developed to enhance and manage open space access	Salt Lake County Parks and Recreation, 2007; Emigration Canyon Community Council, 2019
c. Conduct a recreational use study of Emigration Canyon.	PDS	Highest Priority	Staff time	Completed study	American Trails
d. Conduct an open space area plan for Emigration Canyon, including updating existing conservation easements and other ownership and conditions data, and identifying areas for preservation that have public benefit for preservation of open space, scenic views, trails, and critical wildlife habitat.	PC, ECCC, PDS	Highest Priority	Staff time	Completed plan	See also: Ch 5 Environment Work Plan
e. Progress open space plan recommendations as resources become available.	PC, ECCC, PDS	Priority	Staff time	Projects progressed	N/A
f. Dedicate funding for land acquisition/ education/outreach to preserve open space and wildlife habitat/corridors and encourage conservation easements in alignment with open space area plan recommendations.	ECCC, EC Metro, UoL	Strongly Encouraged	Staff time, grant match (\$), other \$	Funding available	See also: Ch 5 Environment Work Plan
g. Develop a holistic environmental review checklist to assess proposed new developments.	PC, PDS	Immediate and ongoing	Staff time	Environmental review process established	HUD Toolkit

h. Limit development that encroaches on the viewshed, threatens surface or groundwater quality, increases noise pollution, or infringes on critical plant and animal habitats and migration paths.	PC, EC Metro, PDS	Immediate and ongoing	Staff time	Approved project assessment	N/A
g. Incorporate current Wildland Urban Interface guidelines into planning and zoning in order to increase the resilience to wildfire.	Utah DNR, PC, EC Metro	Immediate and ongoing	Staff time	Recommendations incorporated into guidelines, ordinances, and projects	https://ffsl.utah.gov/fire/wildfire-community-preparedness/

OBJECTIVE 2.3.2: PRESERVE AND ENHANCE VIEWS OF THE NIGHT SKY AND PROTECTIONS FOR NOCTURNAL WILDLIFE.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Support the adoption of a Dark Sky compliant light-pollution control ordinance.	PDS, PC, EC Metro	Immediate and ongoing	Staff time	Ordinance enacted	IDA
b. Support the adoption of a natural view shed preservation ordinance.	PDS, PC, EC Metro	Highest Priority		Ordinance enacted	Monticello's viewshed

GOAL 2.4: PRESERVE AND ENHANCE EXISTING COMMERCIAL ACTIVITIES.

OBJECTIVE 2.4.1: INCREASE SUPPORT FOR COMMERCIAL ACTIVITIES THAT ENHANCE THE QUALITY OF LIFE OF CANYON RESIDENTS AND ADHERE TO CANYON CHARACTER AND VALUES.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Allow small home-based businesses as long as parking is available and deemed adequate for the type of business desired.	PC, PDS	Immediate and ongoing	Staff time	Approved project assessment	See also Chapter 4
b. Consider environmental impact, and impact on roads and traffic when evaluating proposed changes in commercial or residential zoning.	PC, PDS	Immediate and ongoing	Staff time	Approved project assessment	

CHAPTER 3: TRANSPORTATION AND MOBILITY WORK PROGRAM

GOAL 3.1: ENHANCE THE EXISTING CHARACTER, INTEGRITY, AND ENVIRONMENTAL MANAGEMENT OF THE CANYON ROADS.

OBJECTIVE 3.1.1: IMPROVE TRAFFIC AND GROWTH MANAGEMENT TO MAINTAIN THE CHARACTER AND INTEGRITY OF EMIGRATION CANYON.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Conduct continuous traffic and speed studies to provide cohesive datasets for future decision making, including consideration of road limitations.	Engineering, UPD, PDS	Immediate and ongoing	Staff time	Reports produced, presented, and made available online	Methods and Practices for Setting Speed Limits
b. Include the most up-to-date traffic and growth data available in planning staff reports regarding development proposals, especially those that modify zoning.	PDS, PC, EC Metro	Immediate and ongoing	Staff time	Decision makers access and reference reports regarding transportation planning and decision making.	N/A
c. Conduct a connectivity study for Emigration Canyon that addresses e.g. the feasibility of public transit, ride sharing, electric car infrastructure, and telecommunication improvement options, taking into consideration the needs of all, including residents, visitors, the vulnerable, and the character of the Canyon.	PDS, UTA	Encouraged	Staff time	Report(s) produced, presented, and made available regarding transportation planning and decision making.	Deschutes National Forest: Alternative Transportation Feasibility Study
d. Pursue recommended connectivity study improvements as soon as practical.	EC Metro	On the horizon	Staff time	Staff directed to pursue top priority projects.	N/A

OBJECTIVE 3.1.2: REDUCE AND/OR MINIMIZE NOISE POLLUTION THROUGHOUT EMIGRATION CANYON.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Strategize with UPD regarding opportunities to enhance noise pollution enforcement (including considerations of aircraft and drones).	UPD, Legal counsel, PDS	Immediate and ongoing	Staff time	Meetings among staff and strategy developed.	Noise Pollution Clearinghouse

b. Support improved noise pollution controls and enforcement measures (e.g. strict speed enforcement, use of EPA compliant exhaust systems on motorcycles).	UPD	Immediate and ongoing	Staff time	Increased enforcement record, reduced number of noise complaints.	N/A
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OBJECTIVE 3.1.3: INCREASE TRAILHEAD PARKING AND RELATED FACILITIES.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Design projects to be shovel-ready.	ECCC, PDS	Immediate and ongoing	Volunteer and staff time	Designs ready and approved by all partners.	See also objective 2.3.1
b. Apply for trail-related grants.	ECCC, PDS	Immediate and ongoing	Volunteer and staff time	Grants applied for.	
c. Build and maintain facilities in appropriate areas, based on 2019 priorities (e.g. where trails exist or are planned and in keeping with the current version of the Emigration Canyon Trails Master Plan) as funding becomes available.	ECCC	High Priority	Volunteer time, grant funding matches (\$).	Length of trails built/maintained, Number of parking and other support facilities built.	Salt Lake County Parks and Recreation, 2007; Emigration Canyon Community Council, 2019

GOAL 3.2: PROVIDE A SAFE, EFFICIENT TRANSPORTATION NETWORK FOR ALL USERS.

OBJECTIVE 3.2.1: IMPROVE SAFETY OF EMIGRATION CANYON'S ROADWAYS FOR ALL USERS.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Where practical, build and maintain all public roads to State and County standards.	Engineering, UPD, PDS	Immediate and ongoing	Staff time	Regular inspection reports.	Engineering
b. Build and maintain all private roads per the plans approved and permitted by MSD/Engineering.	Developer, property owners	Immediate and ongoing	Staff time	Regular inspection reports.	
c. Ensure the safety of all road users through the appropriate application of signage, striping, traffic calming and enforcement.	Engineering, UPD, PDS	Immediate and ongoing	Staff time	Regular inspection reports.	

d. Manage traffic speeds along the entire length of Emigration Canyon Road through the appropriate application of signage, striping, traffic calming, and enforcement.	UPD, Engineering, PDS	Immediate and ongoing	Staff time	Reports produced, presented, and available re: transportation planning and decision making.	Lochner, 2016
e. Implement projects in a priority order (identified in Lochner) to achieve the highest benefit/cost first, while recognizing there are limited funds available to achieve road improvements.	Engineering, PDS, EC Metro	Immediate and ongoing	Staff time	Grants applied for, projects funded.	
f. Implement roadway striping and signing improvements first, followed by the construction projects as prioritized in the Lochner 2016 Emigration Canyon Transportation Study, unless opportunities or new data suggest otherwise.	Engineering, PDS, EC Metro	Immediate and ongoing	Staff time	Regular reports.	

OBJECTIVE 3.2.2: IMPROVE REGIONAL, CITY-WIDE, AND NEIGHBORHOOD TRANSPORTATION MANAGEMENT TO CREATE AN EFFICIENT TRAFFIC SYSTEM AND REDUCE TRAFFIC IMPACTS ON AIR QUALITY, ESPECIALLY DURING HIGH-USE TIMES.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Organize a collaborative transportation and mobility working group, at EC Metro's discretion, to ensure that all future work adopts best practice design standards, traffic calming measures, recognizes Main Canyon Road's vital role as the only alternative route for sections of I-80 within Lower Parley's Canyon, and technologies to reduce congestion and delays and ensure the safety of Emigration Canyon residents and other users.	UPD, Legal counsel, PDS	Immediate and ongoing	Staff time	Meetings among staff and strategy developed.	BBC: The Technology that Could End Traffic Jams

CHAPTER 4: ECONOMIC DEVELOPMENT WORK PROGRAM

GOAL 4.1: FOSTER RESPONSIBLE, EQUITABLE, AND SUSTAINABLE ECONOMIC DEVELOPMENT IN KEEPING WITH THE CHARACTER AND VALUES OF EMIGRATION CANYON.

OBJECTIVE 4.1.1: ENHANCE A COMMUNITY ENVIRONMENT THAT EMBRACES SUSTAINABLE ECONOMIC GROWTH, WHILE PRESERVING THE COMMUNITY'S DEDICATION TO THE ENVIRONMENT, RECREATIONAL AMENITIES AND HISTORIC IDENTITY.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Apply for digital infrastructure improvement funding.	PDS, EC Metro	Immediate	Staff time	Grant applications submitted	WFRC, NSF
b. Develop a working group, at EC Metro's discretion, to establish economic development criteria and support options that would be appropriate for the unique character and environment of Emigration Canyon.	PDS, ECCC	Encouraged	Staff time	Working group established	N/A
c. Support sustainable economic growth opportunities that would strengthen the community, while still preserving the community's dedication to the environment, recreational amenities and historic identity.	PC, ECCC	On the horizon	Staff time	Information sharing increased	WFRC
d. Establish a framework of community arts & culture events that can bring diverse commerce to Emigration Canyon Metro Township while strengthening a sense of community and connection among canyon residents.	ECCC, PDS	Encouraged	Staff time	Framework established	Small Business Saturday
e. Develop a plan for digital infrastructure to provide faster and more reliable internet speeds and access for businesses and residents.	PDS	High Priority	Staff, consultant time	Plan produced	See Table 6.5, Southwest Georgia Digital Economy Plan
f. Upgrade digital infrastructure access.	PDS, EC Metro	Strongly Encouraged and ongoing	Staff time, leverage funds	Access improvements	WFRC, NSF

CHAPTER 5: ENVIRONMENT WORK PROGRAM

GOAL 5.1: PROTECT AND ENHANCE CLEAN, CLEAR AIR QUALITY.

OBJECTIVE 5.1.1: IMPROVE AIR QUALITY IN AND AROUND EMIGRATION CANYON.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Support policies and strategies that reduce driving miles.	PC, EC Metro	Immediate and ongoing	Staff time	Policies and strategies adopted and employed	Sustainable Development Code – Chapter 4: Mobility & Transportation
b. Support policies and strategies that enhance ride sharing/public transit in Emigration Canyon.	PC, EC Metro	Immediate and ongoing	Staff time	Policies and strategies adopted and employed	
c. Educate local community members about air quality issues.	EC Metro, ECCC, PDS	Encouraged	Staff time	Newsletter articles, other education materials developed	UCAIR

GOAL 5.2: PRESERVE AND ENHANCE THE HEALTH OF THE WATERSHED TO ENSURE THAT IT HAS ADEQUATE QUALITY AND CAPACITY TO FULFILL THE NEEDS OF ALL THOSE WHO DEPEND UPON IT FOR LIFE AND WELL-BEING, BOTH HUMAN AND NON-HUMAN.

OBJECTIVE 5.2.1: IMPROVE WATER QUALITY AND MAINTAIN OR IMPROVE WATER QUANTITY IN THE UPPER EMIGRATION CREEK SUBWATERSHED.

Actions	Lead(s)	Timeline	Cost	Metric	Resources
a. Complete a watershed plan to address surface water contamination and other issues that could threaten the health of the watershed and effect land use options.	EC Metro, PDS	Immediate and ongoing	Grants and grant match (\$)	Completed plan	EPA; Hubbard-Rice, 2015; See also objective 2.1.2d
b. Complete a groundwater study to help guide future land use decision making.	EC Metro, PDS	Highest priority or as funding is available	Grants and grant match (\$)	Completed study	
c. Identify funding sources to complete watershed plan and/or groundwater study recommendations where practical.	EC Metro, PDS	High Priority	Grants and grant match (\$), Staff time	Grants submitted	
d. Implement recommendations outlined by watershed plan and/or groundwater study, including implementing updates to General Plan as needed, as resources become available.	PC, EC Metro, PDS, Engineering	Encouraged	Grants and grant match (\$), Staff time	Updates or changes to plans and codes	
e. Support the application of the precautionary principle to proposed development projects to ensure that there is adequate ground and surface water available to fulfill the needs of all those who depend upon it for life and well-being, both human and non-human.	PC, PDS	Immediate and ongoing	Staff time	Instances of precautionary principle incorporated into decision making	IUCN
f. Educate local community and visitors on watershed protection (e.g. E. coli contamination of the creek from non-point sources such as recreational users, faulty septic systems, and stormwater runoff).	EC Metro, ECCC, PDS	Encouraged	Staff time, Signage (\$)	Educational materials produced and disseminated	EPA - Tools and resources to protect watersheds

g. Encourage coordination of regulatory and voluntary watershed management efforts across scales (e.g. local, regional, state).	EC Metro, Local groups	Encouraged and ongoing	Funds for participation in regional events (\$)	Participate in collaborative cross-scale forums, establish collaborative agreements and partnerships	DEQ Watershed Management, Utah Clean Water Partners
h. Develop incentives programs to improve septic management and reduce water use (e.g. provide financial support for installation of water meters on private wells, provide education on benefits of water efficient appliances, provide support for system assessments that reveal leaks and enhance water conservation).	EC Metro, ECCC	Encouraged	Staff time, incentive funding (\$)	Programs and educational materials developed and funded	Sustainable Development Code Ch 1-2 Low-Impact Development

GOAL 5.3: PRESERVE AND ENHANCE NATURAL AREAS AND ENSURE THAT LANDSCAPES ARE FUNCTIONAL AND DIVERSE.

OBJECTIVE 5.3.1: INCREASE OPEN SPACE PRESERVATION AND ACCESS IN EMIGRATION CANYON.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Complete an open space area plan as resources become available.	PDS	On the horizon	Staff time	Completed plan	Ridges to Rivers Open Space Network
b. Identify funding sources to complete plan recommendations.	PDS	On the horizon	Grants and grant match (\$), Staff time	Grants submitted	
c. Address priority projects as recommended by plan and as resources become available.	EC Metro	On the horizon	Grants and grant match (\$), Staff time	Projects completed	

OBJECTIVE 5.3.2: INCREASE COORDINATION OF BIODIVERSITY AND INVASIVE SPECIES MANAGEMENT IN EMIGRATION CANYON.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Support efforts to conduct a biodiversity assessment of Emigration Canyon.	Local partners, PDS	On the horizon	Staff time	Support provided	Red Butte Canyon
b. Support development of a management plan with key partners who operate across scales (e.g.local, regional, state).	Local partners, PDS	On the horizon	Staff time	Plan completed	
c. Support ecosystem-based management practices in line with plan.	Local partners	On the horizon	Staff time, management support materials (\$)	Management projects completed	
d. Support education of locals and visitors about the importance of biodiversity and invasive species management.	Local partners, ECCC	On the horizon	Staff time, Signage (\$)	Educational events/ opportunities supported	

OBJECTIVE 5.3.3: PRESERVE AND ENHANCE VIEWS OF THE NIGHT SKY AND PROTECTIONS FOR NOCTURNAL WILDLIFE.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Support the adoption of a Dark Sky compliant light-pollution control ordinance.	PDS, PC, EC Metro	Immediate and ongoing	Staff time	Ordinance enacted	See also objective 2.3.2a
b. Support the adoption of a natural view shed preservation ordinance.	PDS, PC, EC Metro	Highest Priority	Staff time	Ordinance enacted	See also objective 2.3.2b

GOAL 5.4: FOSTER HEALTHY, BALANCED RELATIONSHIPS BETWEEN HUMANS AND NATURE.

OBJECTIVE 5.4.1: INCREASE IDENTIFICATION OF CULTURAL, HISTORICAL, GEOLOGICAL, ARCHAEOLOGICAL AND PALEONTOLOGIST RESOURCES.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Complete an assessment of existing cultural resources and prioritize projects (as resources become available).	PDS, Local partners	On the horizon	Staff time	Assessment completed	Preservation Utah
b. Identify funding sources to support project implementation based on assessment priorities.	PDS, Local partners	On the horizon	Staff time	Grants submitted	
c. Implement projects as funding becomes available.	ECCC, EC Metro	On the horizon	Grant funding match (\$)	Projects completed	

OBJECTIVE 5.4.2: INCREASE EDUCATION AND OUTREACH THAT ENCOURAGES STEWARDSHIP, SUSTAINABILITY, AND OTHER BALANCED INTERACTIONS WITH THE ENVIRONMENT.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Support events that encourage environmental education, stewardship, and sustainability.	ECCC, EC Metro	Encouraged	Sponsorships (\$)	Events supported	USEE
b. Develop educational and outreach resources for Emigration Canyon MT website.	ECCC, PDS	On the horizon	Staff time, resources (\$)	Resources developed	
c. Identify funding sources to support educational outreach project implementation.	PDS, ECCC	On the horizon	Staff time	Grants submitted	
d. Develop and install educational signage at appropriate locations throughout Emigration Canyon as funding becomes available.	ECCC, EC Metro	On the horizon	Grant funding match (\$)	Projects completed	

CHAPTER 6: RESILIENCE AND INFRASTRUCTURE WORK PROGRAM

GOAL 6.1: PRACTICE FISCAL RESPONSIBILITY AND SUSTAINABILITY IN ALL DECISION-MAKING.

OBJECTIVE 6.1.1: ENHANCE EMIGRATION CANYON METRO TOWNSHIP'S FISCAL CAPACITY AND ECONOMIC RESILIENCE.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Conduct a fiscal capacity and economic resilience assessment as resources become available.	EC Metro, PDS	Encouraged	Staff time	Completed assessment	Rupri, 2013
b. Consider ongoing maintenance costs as a component of all new projects.	EC Metro, PDS	Encouraged	Staff time	Projects assessed	N/A
c. Progress recommendations resulting from assessment as practical.	EC Metro, PDS	Encouraged	Staff time	Projects completed	Rupri, 2013

OBJECTIVE 6.1.2: INCREASE COLLABORATION BETWEEN UTILITY PROVIDERS AND MUNICIPAL SERVICES IN TIMING OF ROADWAY AND OTHER INFRASTRUCTURE PROJECTS.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Coordinate timing of all infrastructure and utility projects as practical.	PDS, Engineering	Immediate and ongoing	Staff time	# of coordination meetings/projects	Federal Highway Administration, 2013
b. Support adoption of a “dig-once” policy.	EC Metro, PDS, Engineering	Immediate and ongoing	Staff time	# of coordinated projects	

OBJECTIVE 6.1.3: INCREASE TRANSPARENCY IN BUDGETING AND SPENDING DECISIONS.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Adhere to Open and Public Meetings Act requirements.	PDS	Immediate and ongoing	Staff time	# of public meetings posted	Open and Public Meetings Act, 2018
b. Publish outreach/educational information about budget and spending in EC newsletter and/or other relevant outlets.	PDS, EC Metro	Encouraged	Staff time	# of publications/posts	Emigration Canyon Community Council News

GOAL 6.2: MAINTAIN THE INFRASTRUCTURE SYSTEM IN GOOD WORKING CONDITION AND ENSURE THAT IT MEETS THE NEEDS OF CURRENT AND FUTURE RESIDENTS AND VISITORS.

OBJECTIVE 6.2.1: IMPROVE THE SAFETY, SUSTAINABILITY, AND RESILIENCE OF GROUNDWATER RESOURCES AND ASSOCIATED INFRASTRUCTURE.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Establish a working group, at EC Metro's discretion, to address relevant groundwater safety, sustainability, and resilience issues, including considering green infrastructure options.	EC Metro, PC, PDS	Strongly Encouraged	Staff time	Working group established, guidelines and recommendation produced	See also objectives 2.1.2, 5.2.1
b. Support updating General Plan and ordinances as needed to include recommendations of working group.	PDS, PC, EC Metro	Encouraged	Staff time	Updates adopted	N/A
c. Work with Salt Lake County Public Health to geolocate all septic tanks in Emigration Canyon Metro Township and update data and monitoring systems associated with these systems.	PDS, SLCo Public Health	Highest Priority	Staff time	Septic systems geolocated, data and monitoring systems updated	WelSTROM Project

OBJECTIVE 6.2.2 MAINTAIN THE ROAD NETWORK IN A SAFE AND SERVICEABLE CONDITION.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Support maintaining a regularly reviewed and prioritized road maintenance plan.	Engineering, PDS	Immediate and ongoing	Staff time	Report on road maintenance and Capital Improvement needs to EC Metro	N/A
b. Annually review roadway needs in a Capital Improvement Plan.	Engineering, PDS	Highest Priority	Staff time		

GOAL 6.3: MITIGATE THE EFFECTS OF CLIMATE CHANGE, NATURAL DISASTER RISK, AND OTHER HAZARDS.

OBJECTIVE 6.3.1: INCREASE RESPONSIBLE STEWARDSHIP OVER ENERGY AND RESOURCES.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Encourage fire-wise landscaping and land use, consistent with recommendations from Utah State University and other leaders in wildfire preparation.	EC Metro, ECCC, PDS	Immediate and ongoing	Staff time	# publications and outreach	USU
b. Support land use, transportation, and housing patterns that encourage energy- efficiency and reduce vehicle miles traveled.	PC, EC Metro	Immediate and ongoing	Staff time	Project approval assessment	Wasatch Choice 2050
c. Support development and adoption of a water-wise ordinance.	PDS, EC Metro	Highest Priority	Staff time	Ordinance adopted	See also 2.1.2f
d. Develop resources/programs that support public education on sustainable resource use, wildfire risk, climate change.	PDS, EC Metro	Encouraged	Staff time	# publications and outreach	EPA – Tools and resources for sustainability

OBJECTIVE 6.3.2: REDUCE KEY HAZARD RISKS FOR EMIGRATION CANYON COMMUNITY MEMBERS.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Identify sensitive lands prone to hazards and support adoption of an ordinance(s) to prohibit or restrict development in these areas.	PDS, ECCC, PC, EC Metro	Encouraged	Staff time	Lands identified, ordinance adopted	Planning for Hazards Resources
b. Work with SLCo health department to identify and address high- risk community health concerns.	EC Metro, ECCC, PDS	Encouraged	Staff time	# of meetings, recommendation ons, projects established	SLCo Health Department

GOAL 6.4: ADAPT TO CLIMATE CHANGE, NATURAL DISASTER RISK, AND OTHER HAZARDS.

OBJECTIVE 6.4.1: IMPROVE INTEGRATION OF EMERGENCY-PREPAREDNESS IN LOCAL DECISION-MAKING, COMMUNITY OUTREACH, AND PLANNING EFFORTS.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Work with partners to develop a toolkit to help households discuss and develop an emergency-preparedness plan.	UFD, UPD, PDS, ECCC	On the horizon	Staff time	Toolkit developed, outreach conducted	FEMA
b. Publish important data, programs, and plans related to resilience and hazard mitigation on municipal websites and social media pages.	EC Metro, PDS	On the horizon	Staff time	Information published, # times accessed	MSD
c. Set aside financial and material resources for use in community emergencies as practical.	EC Metro	On the horizon	Staff time	Resources allocated	N/A

OBJECTIVE 6.4.2: IMPROVE COMMUNICATION ACROSS ALL MEMBERS OF THE COMMUNITY, INCLUDING THOSE WHO MAY BE DISPROPORTIONATELY AFFECTED BY A DISASTER OR CHANGE.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Support collaboration between essential service entities within Emigration Canyon.	EC Metro, PDS	Immediate and ongoing	Staff time	# collaborative meetings and projects	N/A
b. Support coordination of hazard communications across a range of platforms.	ECCC, EC Metro	High Priority	Staff time	Hazards communication methods updated	N/A
c. Develop a plan for digital infrastructure to provide faster and more reliable internet speeds and access for businesses and residents.	PC, ECCC, PDS	High Priority	Staff, consultant time	Plan produced	See also Economic Development Work Program
d. Work with partners to develop resource packets specific to needs of potentially disproportionately affected people.	PDS, ECCC, UFD, UPD	On the horizon	Staff time	Resources developed, outreach conducted	See also 6.4.1a

GOAL 6.5: ENSURE THAT ALL COMMUNITY MEMBERS ENJOY A SENSE OF BELONGING AND HIGH LEVELS OF SOCIAL CONNECTEDNESS AND TRUST.

OBJECTIVE 6.5.1: IMPROVE OPPORTUNITIES FOR POTENTIALLY DISPROPORTIONATELY AFFECTED RESIDENTS TO BECOME ENGAGED IN COMMUNITY LEADERSHIP AND SERVICE, ESPECIALLY PLANNING AND DECISION-MAKING PROCESSES.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Support development of programs to help diversify community leadership (e.g. youth council)	EC Metro, PDS	On the horizon	Staff time	Programs supported	Youth Council Development Guide
b. Establish funding to support participation in service for under represented/under served groups as practical.	EC Metro, PDS	On the horizon	Staff time	Funding established	

OBJECTIVE 6.5.2: INCREASE ACCESS TO SPACES WHERE PEOPLE FROM DIVERSE BACKGROUNDS FEEL SAFE AND WELCOME TO GATHER, PLAY, ORGANIZE, AND ENGAGE WITH ONE ANOTHER.

Actions	Lead(s)	Priority	Cost	Metric	Resources
a. Support collaboration between active community organizations through partnership funding.	EC Metro, ECCC	Immediate and ongoing	Staff time, event funding (\$)	# collaborative meetings and projects	Utah Funding Directory
b. Conduct a study of viable local park/open space access interests, needs, and future requirements for existing communities and new subdivisions.	PDS	Highest Priority	Staff time	Completed study	See Land Use Work Program
c. Support community arts & culture events that can strengthen the sense of community and connection among canyon residents.	PC, ECCC	High Priority	Staff time	Support provided	See Economic Development Work Program
d. Progress local park/open space access study recommendations as resources become available.	PC, PDS	Priority	Staff time	Recommendations incorporated into guidelines, ordinances, and projects	See Land Use Work Program

e. Conduct annual reviews of Emigration Canyon policies and the impacts that they have on various communities.	PDS	Strongly Encouraged	Staff time	Review completed, report published	N/A
f. Establish a working group, at EC Metro's discretion, of local artists, educators, and residents to develop historic markers, educational signage, and wayfinding signage.	ECCC, PDS	Strongly Encouraged	Staff time	Working group established	See Land Use Work Program
g. Seek funding to support the establishment of historic markers, educational signage, and wayfinding signage.	ECCC, PDS	Encouraged	Staff time, grant match (\$)	Grants submitted	See Land Use Work Program
h. Increase opportunities for children and adults to participate in community educational events and classes as practical.	EC Metro, ECCC	Encouraged	Staff time	Opportunities developed and promoted	N/A



REFERENCES

Allen, A. (2003). Environmental planning and management of the peri-urban interface: Perspectives on an emerging field. *Environment and Urbanization*, 15(1), 135–148. <https://doi.org/10.1177/095624780301500103>

Alston, D. G., Davis, R., McAvoy, D., Spears, L. R., Malesky, D., Hebertson, L., & Keyes, C. (2018). Balsam Woolly Adelgid—Advanced Fact Sheet (p. 7). Utah State University Extension and Utah Plant Pest Diagnostic Laboratory. https://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=2854&context=extension_curall

Barnett, J. A. (1966). Ground-water Hydrology of Emigration Canyon, Salt Lake County, Utah [Masters Thesis]. University of Utah.

Best Places. (2020). Emigration Canyon, Utah Climate. <https://www.bestplaces.net>. https://www.bestplaces.net/climate/city/utah/emigration_canyon

BIO-WEST, Inc. (2010). Salt Lake City Riparian Corridor Study: Final Emigration Creek Management Plan. Salt Lake City Department of Public Utilities. <http://www.slcdocs.com/utilities/Stream%20Study%20website/Emigration/Final/6.%20BASELINE%20ASSESSMENT%20RESULTS.pdf>

Bornstein, M. H., Jager, J., & Putnick, D. L. (2013). Sampling in developmental science: Situations, shortcomings, solutions, and standards. *Developmental Review*, 33(4), 357–370. <https://doi.org/10.1016/j.dr.2013.08.003>

Bowling, T. (2008). Facing Uncertainty: Local Governments and the Precautionary Principle (MASGP 08-020). National Sea Grant Law Center. <http://nsglc.olemiss.edu/Precautionary%20Principle.pdf>

Brundtland, G. (1987). Report of the World Commission on Environment and Development: Our Common Future (A/42/427). United Nations General Assembly. <http://www.un-documents.net/our-common-future.pdf>

Carlstrom, J., & Furse, C. (2019). *Emigration Canyon: Gateway to Salt Lake City* (2nd ed.). Lulu Press, Inc.

Duffy, C., & Tappe, A. (2020, May 17). America's surprising breeding ground for inequality: The internet. CNN. <https://www.cnn.com/2020/05/17/economy/internet-access-universal-wifi/index.html>

Cooper, T. (2020, June 3). How Much Internet Speed Do I Need? Broadband-Now. <https://broadbandnow.com/guides/how-much-internet-speed-do-i-need>

Duffy, C., & Tappe, A. (2020, May 17). America's surprising breeding ground for inequality: The internet. CNN. <https://www.cnn.com/2020/05/17/economy/internet-access-universal-wifi/index.html>

Emigration Canyon Community Council. (2019). *Emigration Canyon: Trails Working Group*. Emigration Canyon Metro Township Council.

Emigration Canyon Metro Township. (2019). 2019 Salt Lake County Multi-Jurisdictional Hazard Mitigation Plan—Jurisdictional Annex: Emigration Canyon Metro Township. Emigration Canyon Metro Township.

EnviroAtlas. (2014). Fact Sheet: Employment to Housing Ratio. US Environmental Protection Agency. <https://enviroatlas.epa.gov/enviroatlas/DataFactSheets/pdf/Supplemental/Employmenthousingratio.pdf>

Epperson, C. (2019). How Did I Get Here? – Follow the Historical Markers. Utah Division of State History. <https://history.utah.gov/how-did-i-get-here-follow-the-historical-markers/>

Esri. (2020). *Community Analyst*.

Federal Highway Administration. (2000). Road Function Classifications [Factsheet]. US Department of Transportation. https://safety.fhwa.dot.gov/speedmgt/data_facts/docs/rd_func_class_1_42.pdf

Federal Highway Administration. (2013). Minimizing Excavation Through Coordination. https://www.fhwa.dot.gov/policy/otps/policy_brief_dig_once.pdf

Google. (2020). Google Fiber. Google Fiber. <https://fiber.google.com/cities/saltlakecity/>

Governor's Office of Management and Budget. (2020). Life Elevated 2020 Initiative. <https://gomb.utah.gov/life-elevated-2020-initiative/>

Greater Salt Lake Municipal Services District. (2020a). *Transportation Planning Principles Workshop Report*.

Greater Salt Lake Municipal Services District, Planning and Development Services.

Greater Salt Lake Municipal Services District. (2020b). *Transportation and Land Use Survey Report: Draft August 2020*. Greater Salt Lake Municipal Services District, Planning and Development Services.

- Guerry, A.D., Polasky, S., Lubchenco, J., Chaplin-Kramer, R., Daily, G.C., Griffin, R., Ruckelshaus, M., Bateman, I.J., Duraiappah, A., Elmqvist, T., Feldman, M.W., Folke, C., Hoekstra, J., Kareiva, P.M., Keeler, B.L., Li, S., McKenzie, E., Ouyang, Z., Reyers, B., ... Virá, B. (2015). Natural capital and ecosystem services informing decisions: From promise to practice. *Proceedings of the National Academy of Sciences*, 112(24), 7348. <https://doi.org/10.1073/pnas.1503751112>
- Hammond, H. (2002). *Ecosystem-based Planning: Principles and Process* (p. 12). The Silva Forest Foundation.
- Hansen, D. E. (2018). Hansen Memo 2018. <https://echo-association.com/wp-content/uploads/Hansen-Report-2018-.pdf>
- Harris, E. (2019). State and County Population Estimates for Utah: 2019 (p. 12). Kem C. Gardner Policy Institute, University of Utah. <https://gardner.utah.edu/wp-content/uploads/StateCountyPopEst-Dec2019.pdf>
- Hegel, J., & Wilding, J. (2019). *Disconnected: Seven Lessons on Fixing the Digital Divide*. Community Affairs Department of the Federal Reserve Bank of Kansas City. <https://www.kansascityfed.org/community/~media/31dc7512db164fce8ae79ec7709924fd.ashx>
- Hubbard-Rice, M. (2015). Section 319 Non-point Source Pollution Control Program—Assessment/Planning Project Final Report—Emigration Implementation Project. https://www.utahcleanwater.org/uploads/4/7/2/2/47227279/emigration_implementation_final_report_v3_2009_.pdf
- Irvin, R. A., & Stansbury, J. (2004). Citizen Participation in Decision Making: Is It Worth the Effort? *Public Administration Review*, 64(1), 55–65. <https://doi.org/10.1111/j.1540-6210.2004.00346.x>
- Kamal, M. A. (2011). Development vs growth [Education]. <https://www.slide-share.net/farha451288/development-vs-growth-l9>
- Kem C. Gardner Policy Institute. (2016). U.S. Census Bureau 2015 Population Estimates: Utah. Kem C. Gardner Policy Institute, University of Utah. <https://gardner.utah.edu/wp-content/uploads/May-Census-Estimates-Fact-Sheet-V21.pdf>
- Kem C. Gardner Policy Institute. (2020). *The Utah Roadmap: Positive Solutions on Climate and Air Quality* (p. 24). Kem C. Gardner Policy Institute, University of Utah.
- Kostopulos Dream Foundation. (2019). Kostopulos Dream Foundation: About Us. Camp K. <http://www.campk.org/about/>
- Kriebel, D., Tickner, J., Epstein, P., Lemons, J., Levins, R., Loechler, E.L., Quinn, M., Rudel, R., Schettler, T., & Stoto, M. (2001). The precautionary principle in environmental science. *Environmental Health Perspectives*, 109(9), 871–876.
- Lochner. (2016). *Emigration Canyon Transportation Study*. Salt Lake County Townships.
- Maffly, B. (2020, January 28). Salt Lake City's air quality is nation's 7th worst among large metro areas. *The Salt Lake Tribune*. <https://www.sltrib.com/news/environment/2020/01/28/salt-lake-citys-air/>
- Master, C. (n.d.). GUIDELINES FOR APPLYING THE PRECAUTIONARY PRINCIPLE. 11.
- McFarland, S. (2013, September 5). The 10 best stargazing spots in Utah. *The Salt Lake Tribune*. <https://archive.sltrib.com/article.php?id=56740305&i-type=cmsid>
- O'Donoghue, A. J. (2019a, January 2). Emigration Canyon and groundwater pumping in Utah: What's at risk? *Deseret News*. <https://www.deseret.com/2019/1/2/20662500/emigration-canyon-and-groundwater-pumping-in-utah-what-s-at-risk>
- O'Donoghue, A. J. (2019b, January 18). District's water diversion will continue in Emigration Canyon. <https://www.ksl.com/article/46471323/districts-water-diversion-will-continue-in-emigration-canyon>
- Partnership for Sustainable Communities. (2011). *Supporting Sustainable Rural Communities* (p. 52). United States Department of Agriculture. https://www.epa.gov/sites/production/files/documents/2011_11_supporting-sustainable-rural-communities.pdf
- Ramsey, R.D., & West, N.E. (2009). *Vegetation of Utah*. In *Rangeland Resources of Utah* (2nd ed.). Utah State University Cooperative Extension Service. https://extension.usu.edu/rangelands/ou-files/RRU_Final.pdf
- Red Butte Canyon Research Natural Area. (n.d.-a). Avian Fauna. Retrieved October 24, 2020, from <https://redbuttecanyon.net/avian.html>
- Red Butte Canyon Research Natural Area. (n.d.-b). Mammalian Fauna. Retrieved October 24, 2020, from <https://redbuttecanyon.net/mammalian.html>
- Salt Lake City. (2020, August). Pilot Program Offers Access To Internet, Computers for Rose Park Residents. SLC.Gov. <https://www.slc.gov/blog/2020/08/04/pilot-program-offers-access-to-internet-computers-for-rose-park-residents/>

Salt Lake Community College Libraries. (2020). Wi-Fi Hotspots FAQ. Salt Lake Community College Libraries. <https://libweb.slcc.edu/wi-fi-hotspots-faq>

Salt Lake Conservation District. (2013). Salt Lake County Resource Assessment. Salt Lake Conservation District. https://www.nrcs.usda.gov/wps/portal/nrcs/detail/ut/technical/dma/nri/?cid=nrcs141p2_034123

Salt Lake County. (2012). Emigration Canyon Township General Plan. <http://www.emigrationcanyon.org/wp-content/uploads/2020/01/EmigrationGeneralPlan-FINAL-Adopted2012.pdf>

Salt Lake County. (2017). Salt Lake County Resource Management Plan. Salt Lake County. <https://le.utah.gov/interim/2017/pdf/00005018.pdf>

Salt Lake County Emergency Management. (2019). 2019 Salt Lake County Hazard Mitigation Plan Jurisdictional Annexes.

Salt Lake County Parks and Recreation. (2007). Emigration Canyon Trails Master Plan. Salt Lake County Parks and Recreation.

Salt Lake County Planning and Development Services. (1999). Emigration Canyon Township General Plan.

Salt Lake County Planning and Development Services. <http://www.emigrationcanyon.org/wp-content/uploads/2018/11/1999-Emigration-Canyon-General-Plan.pdf>

Salt Lake County Regional Development. (2020). Wasatch Canyons General Plan Update (p. 202). Salt Lake County Regional Development. <https://slco.org/planning-transportation/wasatch-canyons-general-plan-update/>

Salt Lake County Watershed Planning & Restoration. (2015). 2015 Salt Lake County Integrated Watershed Plan. Salt Lake County Watershed Planning & Restoration. https://slco.org/globalassets/1-site-files/watershed/2015_slco_integratedwatershedplan_revsep2017.pdf

Secretariat of the Convention on Biological Diversity. (2004). The Ecosystem Approach. Secretariat of the Convention on Biological Diversity. <https://www.cbd.int/doc/publications/ea-text-en.pdf>

Semerad, T. (2020, June 10). University of Utah plans major revamp of research park on Foothill Drive, adding lots of housing. The Salt Lake Tribune. <https://www.sltrib.com/news/2020/06/09/dense-walkable-amenity/>

Simmons, L. (2019, August 13). Springfield City Utilities partnering with CenturyLink to expand high speed internet access. <https://www.ky3.com>.

<https://www.ky3.com/content/news/Springfield-City-Utilities-partnering-with-CenturyLink-to-expand-high-speed-internet-access-540397691.html>

Slottach-Ratcliff, L., & Cowgill, J. (2015). Wayfinding Plan for the City of Victoria. City of Victoria. https://conservancy.umn.edu/bitstream/handle/11299/184921/RCP-12a_PA-5511_report.pdf?sequence=3&isAllowed=y

Smart Growth America, & National Complete Streets Coalition. (2015). Complete Streets: Changing Policy.

Tomer, A., Fishbane, L., Siefer, A., & Callahan, B. (2020, February 26). Digital prosperity: How broadband can deliver health and equity to all communities. The Brookings Institution. <https://www.brookings.edu/research/digital-prosperity-how-broadband-can-deliver-health-and-equity-to-all-communities/>

Stimac, V. (2018, July 21). The 21 Best Places for Stargazing in Salt Lake City. Space Tourism Guide. <https://spacetourismguide.com/best-places-stargazing-salt-lake-city/>

Tomer, A., Fishbane, L., Siefer, A., & Callahan, B. (2020, February 26). Digital prosperity: How broadband can deliver health and equity to all communities. The Brookings Institution. <https://www.brookings.edu/research/digital-prosperity-how-broadband-can-deliver-health-and-equity-to-all-communities/>

Transfer of Public Lands Act, 63L-6-102 Utah Code (2012). https://le.utah.gov/xcode/Title63L/Chapter6/63L-6-S102.html?v=C63L-6-S102_1800010118000101

United Nations Department of Economic and Social Affairs. (2009). Rural Development: United Nations Sustainable Development Knowledge Platform. <https://sustainabledevelopment.un.org/topics/ruraldevelopment/decisions>

US Census Bureau. (2010). American Community Survey 2010-2014 5-Year Estimates. United States Census Bureau. <https://www.census.gov/programs-surveys/acs/technical-documentation/table-and-geography-changes/2014/5-year.html>

US Census Bureau. (2017). OnTheMap Emigration Canyon. <https://onthe-map.ces.census.gov/>

US Census Bureau. (2019). American Community Survey 2014-2018 5-Year Estimates. United States Census Bureau. <https://www.census.gov/newsroom/press-releases/2019/acs-5-year.html>

US Environmental Protection Agency. (2016). What Climate Change

Means for Utah (p. 2). US Environmental Protection Agency. <https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-ut.pdf>

US Forest Service. (n.d.-a) . Invasive Species. Retrieved November 2, 2020, from <https://www.fs.usda.gov/managing-land/invasive-species>

US Forest Service. (2003). Revised Forest Plan Wasatch-Cache National Forest. United States Department of Agriculture. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5347083.pdf

US Geological Survey. (2000). Ecoregions of Utah front [Map]. https://store.usgs.gov/assets/MOD/StoreFiles/Ecoregion/112579_ut_front.pdf

US National Park Service. (n.d.). Rocky Mountain System Provinces. Retrieved November 2, 2020, from <https://www.nps.gov/articles/rockies.htm>

Utah Code. Municipal Land Use, Development, and Management Act, 10-9a-401 Utah Code § Section 401 General plan required (2019). https://le.utah.gov/xcode/Title10/Chapter9A/10-9a-S401.html?v=C10-9a-S401_2019051420190514

Utah Code. Municipal Land Use, Development, and Management Act, 10-9a-403 Utah Code § Section 403 General plan preparation (2020). https://le.utah.gov/xcode/Title10/Chapter9A/10-9a-S403.html?v=C10-9a-S403_2020051220200512

Utah Department of Environmental Quality. (2011). TMDL for Escherichia coli (E. coli) in the Upper Emigration Creek Watershed. <https://documents.deq.utah.gov/water-quality/watershed-protection/total-maximum-daily-loads/DWQ-2015-006579.pdf>

Utah Department of Transportation. (2020). UDOT - Keeping Utah Moving. UDOT. <https://www.udot.utah.gov/connect/>

Utah Department of Workforce Services. (2018). An Introduction to General Planning: Guidance and Best Practices for Local Leaders. <http://www.ruralplanning.org/assets/general-plan-guide.pdf>

Utah Geological Survey. (n.d.). Geologic Guide to the Central Wasatch Front Canyons. Utah Geological Survey. Retrieved November 2, 2020, from <http://www.emigrationcanyon.org/wp-content/uploads/2018/11/pi-87-Utah-Geologic-Survey-Canyon-Geology.pdf>

Utah Office of Tourism. (2020). 10 Cycling Routes Chosen by Utah Cyclists | Visit Utah. <https://www.visitutah.com/articles/10-top-roads-for-cyclists/>

Utah State University Extension. (n.d.). Rivers and Streams. Water Quality. Retrieved November 2, 2020, from <https://extension.usu.edu/waterquality/learnaboutsurfacewater/watersheds/riversandstreams/index>

Utah Transit Authority. (2020). Mission and Vision. UTA. <https://www.rideuta.com/About-UTA/Mission-and-Vision>

Wasatch Front Regional Council. (2018a). Comprehensive Economic Development Strategy: 2018-2023. https://wfr.org/Committees/WFEDDStrategy/2019/04_May20/CEDS_2018_2023_Final_Draft_5.15.19.pdf

Wasatch Front Regional Council. (2018b). Utah Statewide Annual Average Daily Traffic (AADT)—Historic and Forecast. <https://wfr.org/traffic-volume-map/>

Wasatch Front Regional Council. (2018c, December 17). Salt Lake County Land Use Parcels. WFR Open Data Content. <https://data.wfr.org/datasets/salt-lake-county-land-use-parcels?geometry=-113.214,40.486,-110.601,40.851>

Wasatch Front Regional Council. (2019a). Access to Opportunities. <https://wfr.org/maps-data/access-to-opportunities/>

Wasatch Front Regional Council. (2019b). Active Transportation GIS Data Resources—Future AT Network. <https://wfr.maps.arcgis.com/apps/MapSeries/index.html?appid=87827ba730d44a09aeeae83a8f9dc43e>

Wasatch Front Regional Council. (2019c). Wasatch Choice Map—Economic Development. <https://wfr.org/wasatch-choice-map/#mapList=vision.transportation.landuse.econdev.recreation.ato&scale=72224&selectedMap=econdev&sideBarClosed=true&x=-12440110&y=4977622>

Wasatch Front Regional Council. (2019d). Wasatch Choice Map—Transportation. <https://wfr.org/wasatch-choice-map/#mapList=vision.transportation.landuse.econdev.recreation.ato&selectedMap=vision&sideBarClosed=false>

Wasatch Front Regional Council. (2019e). Wasatch Choice Regional Vision. Wasatch Front Regional Council. <https://wfr.org/vision-plans/wasatch-choice-2050/>

West Point City. (2019a). West Point City Fiber Project with UTOPIA Fiber—FAQ. West Point City. <https://westpointcity.org/wp-content/uploads/2020/01/FAQ-UTOPIA-Fiber-11.2019-on-letterhead.pdf>

West Point City. (2019b). West Point City Council Agenda. West Point City. <https://westpointcity.org/wp-content/uploads/2020/01/2019-05-21-Agen->

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Table 6.4: Broadband details for Emigration Canyon. - Page. 125

Table 6.5: The options included in this table could potentially expand fiber-internet access to more Emigration Canyon residents, thus improving community resilience. This table is included for reference only and does not represent an endorsement of any of the products or services mentioned. - Page. 127

APPENDIX A-L:

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EMIGRATION CANYON
METRO TOWNSHIP

Request: Recommendation of Approval

Planning and Development Services

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2022 General Plan Summary and Recommendation

Public Body: Emigration Canyon Metro Township Council

Emigration Canyon Metro Township Council Meeting Date: February 22, 2022

Location: All locations within Emigration Canyon Metro Township Council

Request: Approval and Adoption of General Plan

Applicant Name: Emigration Canyon Metro Township Council Plan Steering Committee

Planner: Matthew Starley

Planning Staff Recommendation: Approve General Plan with Revisions as Outlined

1 PROJECT DESCRIPTION

The applicant is requesting a recommendation of approval to the Emigration Canyon Metro Township Council of the Emigration Canyon General Plan 2022. This General Plan is Emigration Canyon's first comprehensive plan since the community incorporated as a metro township in 2017. The Plan synthesizes data and public feedback to describe current conditions, establish a vision for Emigration Canyon's future, and guide Emigration Canyon from its present conditions toward its desired vision. This General Plan meets the required State laws for general planning, including elements on Land Use and Transportation. It also includes the following supplemental elements: Introduction, Economic Development Considerations, Environment, and Resilience and Infrastructure. The General Plan and its Appendix can be found here: <http://bit.ly/lrp-ec>



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2 SUMMARY

2.1 BACKGROUND

Emigration Canyon became an independent municipality with its own governing authority in 2017 after a vote of Emigration Canyon residents in 2015. Emigration Canyon is governed by an elected legislative council. The Council has the authority to enact laws and ordinances to carry out its responsibilities such as land use and development regulations (zoning), as long as these laws and ordinances are consistent with the Utah Municipal Code and other state statutes.

Emigration Canyon is a member of the Greater Salt Lake Municipal Services District (MSD), a special local district established in 2015. The MSD provides Emigration Canyon with planning and development, business license, building inspection, and code enforcement services as part of its membership agreement. The Emigration Canyon Metro Township Council appoints a Planning Commission, working with MSD Planners, to make recommendations regarding land use decisions to the Council. The Council also appoints a General Plan Steering Committee to work with MSD Long Range Planners on the development of Emigration Canyon's General Plan.

The General Plan Steering Committee and Planning Commission make recommendations to the Council regarding the adoption and amendment of the General Plan. The Council can adopt, reject, or revise a recommended General Plan. To support the development of this Plan, the Emigration Canyon Metro Township Council appointed the following members of the Emigration Canyon Planning Commission and residents from the community to serve on the Steering Committee: Robert Pinon (Chair), Andrew Wallace (Vice Chair), Dale Berreth, Steve Borst, Paul Brown, Tim Harpst, Willy Stokeman, and Bill Tobey.

2.2 DOCUMENT DESCRIPTION

Emigration Canyon's General Plan 2022 is a guide for the Municipality's development decisions; holds a long-term perspective; communicates the wants and needs of the community to elected officials and to prospective residents; includes a transportation element and a land use element, per Utah State Code 10-9a-401; and is a "living" document that can be updated and altered as deemed necessary.

2.3 KEY CONTENT WITHIN THE PLAN

2.3.1 Vision Statement

- *Emigration Canyon is a progressive, family-oriented community with many opportunities for its residents to enjoy active, healthy, and modern lifestyles.*
- *Emigration Canyon is comprised of distinct neighborhoods with residents who are dedicated to fostering a sense of community and are actively involved in public activities.*



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- *Emigration Canyon is a nationally recognized historic landmark, and its residents embrace that heritage.*
- *Emigration Canyon residents enjoy and value the Canyon's many excellent, cherished, well-maintained recreational amenities.*
- *Emigration Canyon residents are committed to maintaining and protecting the Canyon's important ecosystems and resources.*

2.3.2 Land Use

Emigration Canyon's current zoning designations largely reflect land use desires expressed in General Plan Steering Committee meetings and public surveys. The Future Land Use and Character Area Map generated for this Plan (see page 39 of the General Plan) conveys the land use patterns envisioned for Emigration Canyon's future. Expressed desires include preservation of the existing character of the built environment, the cultural heritage of the area, and the ecological features of the area including viewsheds, wildlife corridors, and open space. Support for preserving and enhancing existing commercial areas, and carefully considering how to enhance commercial activities that could encourage community connectedness, sense of place, and sustainability, is also expressed in the Plan. It is recommended that careful management of new developments and visitation to Emigration Canyon is needed to protect the natural environment and limit noise and nuisance factors. See pages 133-137 of the General Plan for the Land Use Work Program.

2.3.2.1 The community's goals for Land Use are as follows

- *Goal 2.1: Preserve the culture, identity, and character of Emigration Canyon's built environment.*
- *Goal 2.2: Enhance community connectedness and sense of place.*
- *Goal 2.3: Preserve and enhance ecological features, viewsheds, wildlife corridors, and open space.*
- *Goal 2.4: Preserve and enhance existing commercial activities.*

2.3.3 Character Areas

The Land Use element of Emigration Canyon's General Plan includes several character areas: these are specific geographic areas that have unique or special characteristics that should be preserved; have potential to evolve into a unique area when provided specific guidance; or require attention suitable to their uniqueness. Four distinct character areas have been identified in this Plan with input from the General Plan Steering Committee and the Planning Commission. Specific assets, opportunities, and challenges are associated with each character area, and the Plan establishes vision statements and future zoning considerations for each. See page 49 of the General Plan for the Future Land Use and Character Area Map.



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2.3.4 Transportation

The transportation vision included in Emigration Canyon's General Plan aligns closely with the expressed land use desires. Participants in public meetings and surveys expressed a desire to plan for and better manage projected increased use of both roads and trails by visitors in the years to come, and to improve road safety for all types of users (especially bicycles). Mitigating the effects of high volumes of visitor usage on Emigration Canyon's roads, residents, and natural environment through the management of light, noise, and air pollution, and by increasing trailhead parking and other related infrastructure improvements, are considered a high priority. See pages 138-140 of the General Plan for the Transportation Work Program.

2.3.4.1 The community's goals for Transportation are as follows:

- *Goal 3.1: Enhance the existing character, integrity, and environmental management of the Canyon roads.*
- *Goal 3.2: Provide a safe, efficient transportation network for all users.*

2.3.5 Economic Development Considerations

Although not required by State Code, economic development is a critical component of Emigration Canyon's General Plan. This element does not intrinsically support economic development, but instead examines options that could support responsible, equitable, and sustainable economic activities in the area, especially as part of a wider regional context. It also clarifies the kinds of economic development that would not be appropriate for Emigration Canyon. Market data, community input, and related planning initiatives helped to inform the content of this element. The vision for economic development in Emigration Canyon follows the vision for land use, in that enhancing economic activity within Emigration Canyon should only be undertaken in keeping with the existing character and values of the area. Any expansion or enhancement of economic activity should therefore support community connectedness and sustainability goals, preserve the culture and identity of the Canyon, and enhance the quality of life of residents and visitors. Improvements to digital infrastructure and consideration of economic activities that do not require brick and mortar developments are highlighted as priorities for future work. See page 141 of the General Plan for the Economic Development Considerations Work Program.

2.3.5.1 The community's goals for Economic Development are as follows:

- *Goal 4.1: Foster responsible, equitable, and sustainable economic development in keeping with the character and values of Emigration Canyon.*

2.3.6 Environment

The environment element is not required by the State Code, but it is an essential element for Emigration Canyon to include in its General Plan due to the close relationship that exists between the residents of the area, their built environments, and the natural environment that surrounds and sustains them. The



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vision for the environment outlined in this element aligns closely with the land use desires expressed by Emigration Canyon residents, particularly in terms of the desire to preserve ecological features and enhance community connections and sense of place. Participants in public meetings and surveys expressed a desire to consider current and future environmental impacts and prevent significant adverse effects on the valuable natural resources of Emigration Canyon when making land use decisions. See pages 142-146 of the General Plan for the Environment Work Program.

2.3.6.1 *The community's goals for the Environment are as follows:*

- *Goal 5.1: Protect and enhance clean, clear air quality.*
- *Goal 5.2: Preserve and enhance the health of the watershed to ensure that it has adequate quality and capacity to fulfill the needs of all those who depend upon it for life and well-being, both human and non-human.*
- *Goal 5.3: Preserve and enhance natural areas and ensure that landscapes are functional and diverse.*
- *Goal 5.4: Foster healthy, balanced relationships between humans and nature.*

2.3.7 Resilience and Infrastructure

The resilience and infrastructure element is not required by the State Code, but it is an essential element for Emigration Canyon to include in its General Plan as It encourages the community to plan for the management of hazards and risks associated with a range of infrastructure types (i.e. physical, digital, and social). The element draws from relevant literature and strategy documents, as well as community input to develop a vision that aligns with the land use vision and supports improving infrastructure and resilience in Emigration Canyon. The element highlights the importance of preparing for, mitigating and adapting to the effects of climate change, natural disaster risk, and other hazards by maintaining and improving existing infrastructure; enhancing digital infrastructure and associated connectivity; and by supporting and enhancing social cohesion. See pages 147-152 of the General Plan for the Resilience and Infrastructure Work Program.

2.3.7.1 *The community's goals for Resilience and Infrastructure are as follows:*

- *Goal 6.1: Practice fiscal responsibility and sustainability in all decision-making.*
- *Goal 6.2: Maintain the infrastructure system in good working condition and ensure that it meets the needs of current and future residents and visitors.*
- *Goal 6.3: Mitigate the effects of climate change, natural disaster risk, and other hazards.*
- *Goal 6.4: Adapt to climate change, natural disaster risk, and other hazards.*
- *Goal 6.5: Ensure that all community members enjoy a sense of belonging and high levels of social connectedness and trust.*



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2.3.8 Key Recommendations from the Work Programs

Seven key recommendations arose from this planning process. These recommendations address major challenges identified for Emigration Canyon, and propose opportunities for mitigating, adapting to, or otherwise improving upon, those challenges. Key challenges associated with progressing the Emigration Canyon community vision and upholding the community values include; managing the use of the Canyon's roads and trails by visitors, managing development pressures, managing pressures that effect water quality and quantity, and managing wildfire risk and other hazards.

- *Recommendation 1: Preserve and enhance the ecological features, viewsheds, wildlife corridors, and open space of Emigration Canyon for future generations.*
- *Recommendation 2: In land management decision making, protect watershed quality and ensure sustainable use of all water resources.*
- *Recommendation 3: Improve the safety, sustainability, and resilience of the built environment, including trails and other outdoor recreation infrastructure.*
- *Recommendation 4: Provide a safe, efficient transportation network for all users.*
- *Recommendation 5: Enhance community connectedness, engagement, and sense of place.*
- *Recommendation 6: Prepare for, mitigate and adapt to the effects of climate change, natural disaster risk, and other hazards.*
- *Recommendation 7: Foster responsible, equitable, and sustainable economic development in keeping with the character and values of Emigration Canyon.*

The Work Programs associated with each chapter of the Plan expand upon these recommendations.

3 SITE & VICINITY DESCRIPTION

All properties and lands within Emigration Canyon Metro Township's boundaries are considered in and affected by this Plan.

4 PLANNING STAFF ANALYSIS

The MSD Planning Staff and the Emigration Canyon Planning Commission recommend approval and adoption of the Emigration Canyon General Plan 2022, with the revisions outlined *on Emigration Canyon_General Plan Update* ConceptBoard.com site; (Link: <https://app.conceptboard.com/board/54a9-uy77-bq8a-ym0c-fhox>).

Staff has determined that the following findings are in support of the application.

1. The document follows Utah State Code Requirements for General Plans.



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2. The document is data-driven, utilizing reputable sources such as the United States Census Bureau, ESRI Business Analyst, and others.
3. The document is community-driven, reflecting communicated desires of residents. It follows extensive public engagement from July 2019 through November 2020. See page 18 of the General Plan for details on the General Planning Process timeline.
4. The document is a living document and should be revisited and updated as circumstances necessitate.

- Emigration Canyon Metro Township General Plan
- Mayor Report
 - Reviewed current COVID cases in Emigration Canyon and vaccination numbers.
 - Mayor Smolka was appointed to the Wasatch Front Transportation Committee.
- Consideration of in-person meetings.
- Greater Salt Lake Municipal Services District (MSD) Bond.



PUBLIC MEETING

Recognize Visiting Officials

Mayor Smolka welcomed Council Member Pinon to the Emigration Canyon Metro Township Council and thanked former Council Member Bowen for his years of service.



Election of Leadership

Election of Mayor and Deputy Mayor

Council Member Brems, seconded by Council Member Harris, motioned to nominate Mayor Smolka to serve as Mayor and Deputy Mayor Hawkes to serve as Deputy Mayor of Emigration Canyon Metro Township. The motion passed unanimously.



Citizen Input

None.



Reports from Municipal Service Providers

Emigration Canyon Community Council Report (ECCC)

Bill Tobey stated the USFS Wildfire Research Team will present the findings from its study of community preparedness tomorrow morning from 9:00 – 10:30 a.m. via Zoom. Plans for the wildfire season is being finalized. The fire station has been reserved for the Firewise open house on May 7, 2022. The fuel mitigation part of the plan will include a canyon-wide chipping services possibly one or two fuel break projects. Emigration Canyons liaison for the state Division of Forestry Fire and State Lands has accepted a new role as Area Manager but will remain the ECCC liaison. The ECCC is monitoring the parking situation at This Is the Place Heritage Park. There was a meeting with Sunnyside East Community Council (SECC), park management, and Salt Lake City to discuss the parking issues. Depending on the outcome of the meeting, ECCC may consider submitting a letter in support of SECC's position that events need better planning

Unified Police Department (UPD)

Detective Jake Elsasser reviewed Emigration Canyon calls for service stating there were 43 calls for service with 10 initial reports.

Chief Wayne Dial stated the legislature is considering H.B. 72, a bill that will require an inspection of noise suppression equipment at the time of a vehicle emissions inspections as a prerequisite to registration of a motor vehicle. If the bill passed, it would have a big effect in the canyon and across the valley.

Unified Fire Authority (UFA)

Captain Michael Conn stated the first year of the 2021-2023 Strategic Plan has been completed and division leaders are reviewing action items and accomplishments for the year to present to the UFA Board. The 2022-2023 budget presentations will begin, with the Chief proposing a 5.5 percent wage increase. The Finance Committee will make its final recommendations to the UFA board in May and the final budget will be adopted in June. Three candidates are being considered to replace Chief Dan Peterson when he retires. There will be a meet and greet with the candidates on March 9, followed by interviews and presentations the next day. Final recommendations will be made to the UFA board on March 15 and the Change in Command ceremony will be held on April 2. Recruit camp will begin in February with at least 26 candidates, six additional candidates are pending offers. A groundbreaking for station 102 was held in December and construction has begun. An official notice to replace Captain Conn has been posted, the deadline to submit a letter of interest is February 4. The goal is to have the hiring process done by mid-February. The Council is invited to participate in the process to choose a liaison that will best fit in its community.

Unified Fire Authority (UFA) Budget Presentation

Council Member Harris stated UFA is working on the budget. The Finance Committee is reorganizing because a board member has left. She will be attending the finance committee meetings.

Captain Michael Conn stated the current budget is online and broken down. It explains what the goals are to spend each dollar.

Council Business

Council Member Pinon volunteered to be the Records Officer.

Mayor Smolka, seconded by Council Member Harris, motioned to appoint Council Member Pinon to serve as Emigration Canyon Metro Township's Records Officer. The motion passed unanimously.

Hiring of an Administrator

Council Member Harris stated she does not have any updates at this time.

Mayor Smolka asked Council Member Harris and Brems to get in contact with Brooke Barnes, Human Resources and Payroll Specialist, Greater Salt Lake Municipal Services District (MSD), to complete the job description.

Board Appointments

Mayor Smolka reviewed the various local district boards and who is currently appointed to them. Salt Lake County Animal Services is an advisory board and does not require a Council Member to be appointed to it. Former Council Member Gary Bowen has expressed interest in remaining the Emigration Canyon Metro Township representative.

The Council agreed to serve on the following boards:

<u>Council Member</u>	<u>Board</u>
Mayor Smolka	Greater Salt Lake Municipal Services District (MSD) Council of Governments (COG) Landfill Council Wasatch Front Regional Council Transportation Committee
Deputy Mayor Hawkes	Association of Municipal Council
Council Member Brems	Unified Police Department (UPD) Salt Lake Valley Law Enforcement Service Area (SLVLESA)
Council Member Harris	Unified Fire Authority (UFA) Unified Fire Service Area (UFSA)
Council Member Pinon	Wasatch Front Waste and Recycling District (WFWRD)

DATE TUESDAY JANUARY 25, 2022

SECTION II: Title 1, Chapter 12, Section 010 is amended as follows:

1.12.010 Penalty For Violation of Code Provisions

Any person found to have violated any provision or provisions of an ordinance included in these revised ordinances, or in ordinances hereafter enacted, shall be deemed guilty of a misdemeanor or a civil violation of Township code, and punished as provided by Township code or state criminal code for Class B misdemeanors. The township has sole discretion in deciding whether to file a civil or criminal case for the violation of any of its ordinances.

SECTION III: Effective Date. This Ordinance shall take effect upon publication.

PASSED AND APPROVED by the Emigration Canyon Metro Township Council, Utah, this 25th day of January in the year 2022.

EMIGRATION CANYON METRO TOWNSHIP

/s/ JOE SMOLKA
Mayor

ATTEST:

/s/ SHERRIE SWENSEN
Clerk

Council Member Harris, seconded by Council Member Hawkes, moved to adopt Ordinance 2022-01-01. The motion passed unanimously.

Legal Issues

Polly McLean stated she is creating the work plan for Peak Law and would like feedback from the Council on what it would like her to work on. At the end of the agenda there is a list of future agenda items that includes a noise and night sky ordinances. She is currently working on the noise issue, would the Council like her to follow-up on the night sky ordinance?

Mayor Smolka stated after the Emigration Canyon Metro Township General Plan is completed, he would like the Planning Commission to review the night sky issue.

Council Member Brems stated the Planning Commission should begin reviewing the night sky ordinance.

Council Member Pinon recommended sending the night sky ordinance to the Planning Commission right away. The Planning Commission does not have a heavy workload and when there is a break from the General Plan, it can begin working on the night sky ordinance.

Mayor Smolka asked to have the Planning Commission review the night sky ordinance. He would also like someone to follow H.B. 72 – Noise Pollution and update the Council on its status.

Cameron Platt stated he will follow H.B. 72 – Noise Pollution.

Ms. McLean asked if the Council would like her to work on the Wildland-Urban Interface (WUI) code.

Mayor Smolka stated the Planning Commission should start looking at the WUI code.

Council Member Harris stated the Planning Commission does not necessarily need to review the WUI code. She thinks there are individuals on the Planning Commission that could add positive feedback. Her concern is that the WUI code continues to move forward and does not get held up.

Ms. McLean stated the Metro Township inherited Salt Lake County's code which is focused on Salt Lake County issues. She would like to start amending the inherited codes to reflect Emigration Canyon Metro Townships needs and issues.

Council Member Brems asked how much time it will take to complete the amendments.

Ms. McLean stated it is a lot of work, she does not have a good estimate.

Mayor Smolka stated he thinks Ms. McLean should move forward, keeping in mind the budget that is allocated to legal counsel. The amendments will take a lot of time, he would like some time to remain available for other issues that come up.

Budget Items

Mayor Smolka stated payroll was processed and workers compensation, Utah Local Governments Trust liability insurance, Clerk services, and legal counsel invoices were paid.

Minutes

Council Member Brems, seconded by Council Member Harris, moved to accept the minutes of the Emigration Canyon Metro Township Council meetings held on November 16, 2021, and December 14, 2021. The motion passed unanimously.

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Council Member Reports

8

DATE TUESDAY JANUARY 25, 2022

Deputy Mayor Hawkes stated she made changes to the website and have been adding the meetings from the watershed best practices meetings.

CodeRED

Deputy Mayor Hawkes stated she continues to send CodeRED messages as needed.

Restrooms

Deputy Mayor Hawkes stated there is a project manager in place for the restroom project and she is in the process of getting things lined up and getting permits.

Association of Municipal Services

Deputy Mayor Hawkes stated the Association of Municipal Services meets monthly. The association is made up of all the municipalities that come together to discuss various topics and it invites experts, government officials, and other individuals to present on specific topics. Some of the topics that were discussed at the last meeting were the housing gap, air quality, affordable housing, transportation, non-profit organization that could benefit its communities, and raising money for non-profits to compliment the taxpayer funds for trails and parks. She discussed H.B. 72 – Noise Pollution and high-speed internet. Being able to connect and coordinate with different municipalities is beneficial.

Greater Salt Lake Municipal Services District (MSD)

Mayor Smolka stated the board made a job offer to an individual for the Chief Financial Officer position; however, the applicant and board could not reach an agreement. Other viable candidates are being reviewed. The MSD meets tomorrow night, and the majority of the discussions are about the bond and associated projects. Marla Howard, General Manager, MSD, has been in her role as General Manager for about a month and is doing a fantastic job.

Landfill Council

Nothing to report.

